TESTIMONY FOR PRESERVATION OF THE BELTZ FARM

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Tillamook County Planning Commission
Tillamook County Department of Community Development
201 Laurel Avenue
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Re: PROPOSED PACIFIC GAILES GOLF COURSE CONDITIONAL USE APPLICATION – CU-03-19

GOOD DAY:

I would like to speak to you about PASSION – PASSION for an area we all know as the Beltz Farm and the Sand Lake estuary. We also know the Beltz Farm is one of the last largely unspoiled estuary settings on the Oregon coast and the Sand Lake estuary appears much as it did 100 years ago, according to The Oregon Estuary Plan Book. Whether one is walking on the beach of Tierra Del Mar, crabbing, fishing or kayaking in Sand Lake, bird watching or viewing and photographing wildlife, camping, picnicking or hiking at Whalen Island or just driving along Sandlake road, this area is a portrait of beauty. We as a community see this beauty and it gives our lives a sense of peace, however, our passion for this magnificent area goes beyond its aesthetic qualities. Many of us who live here have had and will continue to have a sense of environmental responsibility to protect the uniqueness of the Beltz Farm and the Sand Lake estuary. We are not alone in this endeavor! Many professional resource scientists, educators, students, federal, state and regional agencies, journalists, writers, photographers, artists and concerned individuals from other parts of Oregon have created a history of their own passion through their research and their efforts in protecting and preserving the diverse ecosystem of the Beltz Farm, the Sand Lake estuary and the watershed that is so vital to their biological health and richness.

With rapid development on the Oregon coast over the past 10 years, there are very few places that have been left in their natural state. Most of Oregon's estuaries have been developed for industrial, commercial, agricultural or residential uses. The Beltz Farm, the Sand Lake estuary and the surrounding area is one of the last undeveloped, intact ecosystems on Oregon's coastline. **Why is it that this area has been spared development?** Credit must be given to the previously mentioned individuals who so passionately worked together for the past 27 years. I feel it is extremely important that you, the decision makers, know the history of our actions in maintaining, enhancing, and protecting this magnificent

natural landscape before a decision is made on The Pacific Gailes Golf Course Conditional Use Application.

Listed below is a chronological order of attachments. Each is an in-depth description of our actions as they relate to the Beltz Farm, the Sand Lake estuary, and the proposed golf course.

HISTORY OF OUR ACTIONS AND ORDER OF ATTACHMENTS:

1 – Letters sent to The Headlight Herald, The Oregonian and other newspapers OPPOSED to the golf course proposal and development on the Beltz Farm. I have personally collected over 100 letters that were sent "To The Editor" over the past 2 years. All individuals stated their concerns, objections and feelings about the Beltz Farm and the Sand Lake estuary. These letters express how passionate many people feel about this issue.

2 – Several passionate articles written about the Beltz Farm and the Sand Lake estuary and the golf course proposal which appeared in other newspapers, newsletters, and publications, presenting this issue to a state-wide audience. Coast residents, Matt Love, Nancy Slavin, Joe Serres, and Peter Smith expressed their feelings, concerns and opposition to this development. Peter Sleeth, The Oregonian writer, interviewed many local residents for his story on the golf course issue which is the most recently published article which appeared in The Oregonian.

3 – January 2004 – Confirmation from Oregon Parks and Recreation Department (OPRD) that the Beltz Farm is listed as a potential acquisition in their Draft Ocean Shores Management Plan. In OPRD's Summary of Recommended Actions, the Beltz Farm is listed as Unit N16-1 to acquire, if it is offered for sale, and would be managed for natural values and passive recreation. In describing the private land at the north end of the Tierra Del Mar beach, OPRD stated that a golf resort development would greatly change the level of use on the beach there and if the opportunity arises, to acquire the Beltz Farm, the north end could keep the use on this beach low and protect the habitat values there. Also, as stated, the beach is slated for western snowy plover recovery and could be negatively affected by resort development (page 36 of Plan). On page 80 of The Plan, OPRD describes the Beltz Farm as one of the last largely unspoiled estuary settings on the Oregon coast and acquisition by a public entity could fill a setting/habitat gap.

I believe that the acquisition of the Beltz Farm by OPRD or some other conservation entity, would be an asset to the adjacent Clay Meyers State Natural Area at Whalen Island, The Sand Lake Research Natural Area and The Reneke Creek Research Natural Area. The ecological integrity of the Sand Lake estuary would be enhanced and maintained if the Beltz Farm is purchased for protection and preservation.

4 – November-December 2003 – The Native Plant Society of Oregon has petitioned the Oregon Department of Agriculture Rare Plant Program and the US Department of Fish and Wildlife, to raise the status of one of Oregon's rarest plants, Sidalcea hendersonii, common name, Henderson's checkermallow. Historically, this species had between 8 and 10 locations in Oregon but today, only a single viable population exists. Of importance, in 2000, a single plant was found in the Sand Lake estuary area. This plant lives in an environment between salt and fresh water, much like that found on the Beltz Farm, and is exclusively restricted to estuaries and islands along the northern coast of Oregon. The 2003 survey did not relocate this plant where it was previously found in the Sand Lake estuary. The areas on or adjacent to the Beltz Farm were not surveyed. **In The Native Plant Society petitions, they have listed the prospective golf course site as a threat to this plant's historical habitat.**

Have the developers surveyed for Henderson's checkermallow? If not, The Native Plant Society should be given permission by the Beltz Farm owner for a survey in 2004 and beyond, before any permits for development are given. It is clearly evident that the Beltz Farm has irreplaceable habitat for flora and fauna as noted by The Native Plant Society of Oregon.

5 – October 2003 – Dr. Paul Adamus, courtesy faculty member in The College of Oceanic and Atmospheric Sciences at Oregon State University and a consultant on wetland functions and assessment to state and federal agencies for 24 years, surveyed the Sand Lake estuary tidal marshes for the purpose of collecting data to be included in his guidebook, **Tidal Marshes of Oregon's Coast**. Dr. Adamus and his assistants spent a full day surveying marsh and tidal channel characteristics, estimating vegetation cover by species and estimating proportions of adjoining land cover and habitat types. His guidebook, once completed, will be used by state and federal agencies, watershed councils, and consultants for routine monitoring of tidal marshes and their functions, making semi-quantitative estimates of the recovery of functions in restored tidelands and more importantly, **as an**

aid to state and federal agencies in deciding whether to grant a permit for altering a particular wetland. The Sand Lake estuary was chosen for his project's research being it is one of Oregon's major **natural** estuaries. Dr. Adamus sought permission from the Beltz Farm owner, to study the fresh water marsh behind the Beltz dike but access for his research was denied per my conversation with him on 10-9-03.

Important research should never be denied as it is imperative that we all know and understand the values and functions of ecologically unique ecosystems so that management/development decisions can be made intelligently. A better understanding of the functions of the Beltz Farm and the Sand Lake estuary will continue to be a high priority for research so we all can learn about their natural, undisturbed environments.

6 – August 2003 – After a year and one-half of much discussion on the proposed development of a private golf course north of Tierra Del Mar, a mailed ballot survey was sent to all Tierra Del Mar Community Association members, asking if they were in favor or opposed to this development. 124 ballots were returned with 72% opposed, 21% in favor and 7% had no opinion. The Board of Directors of this association voted unanimously to adopt a Resolution representing its members to officially be on record as opposing the construction of an 18-hole golf course and to officially OPPOSE The Conditional Use Application Permit filed by Golf Links, L.C.C. in Tillamook county.

Since the association was formed over 20 years ago, The Board of Directors has acted many times on behalf of its members to "promote the betterment and common good of the community". The desire to keep Tierra Del Mar as the very special place it is today was overwhelmingly expressed by the association's members and The Board of Directors.

7 – Spring 2003 – In March of 2003, after taking the class, "Understanding Your Watershed", presented by Matt Love and sponsored by The Nestucca-Neskowin Watershed Council(NNWC), Sitka Center for Art and Ecology, and Tillamook Bay Community College, local Tierra Del Mar and Sand Lake residents who participated in the class, held a meeting at the Tierra Del Mar Community Hall on June 7, 2003, for the purpose of forming The Sand Lake Watershed Group. Many residents attended and it was decided that representation for the Sand Lake watershed and the estuary officially must be represented by a watershed council. At the June 19th meeting of the

NNWC, eight residents from The Sand Lake Watershed Group requested inclusion and representation by this council. Members of the NNWC unanimously approved the request. Since this formation, The Sand Lake Watershed Group has received a $1000 donation to be used for the study of the watershed and for the first ever Sand Lake Estuary Clean-up on March 6, 2004. Also, the president of NNWC submitted a $25,000 grant request to the Oregon Watershed Enhancement Board(OWEB) for the purpose of a Sand Lake Assessment and Action Plan. Until this time, Sand Lake watershed was the only watershed on the Oregon coast that was not officially represented by a watershed council.

It was imperative to all of us who formed this group that the Sand Lake estuary and its watershed need projects that will protect and/or improve the natural resources of this diverse ecosystem, educate people about this area's watershed conditions and functions, as well as monitor changes in the watershed and the estuary. Our community takes seriously the role and responsibility of making sure the Sand Lake estuary and its watershed continues to be a healthy ecosystem that maintains the habitat indicative of this area. Water quality and quantity monitoring of all creeks and tributaries which flow into the Sand Lake estuary will now have additional data recorded. This will become very important in assessing Reneke and Beltz creeks which flow into the Beltz Farm.

8 – August 2002 – After two years of much hard work from Oregon Parks and Recreation staff, steering committees, Tillamook County Commissioners and county staff and the general public, The Clay Meyers State Natural Area at Whalen Island became a reality. It all began when 2 sisters, Karen DeRungs of Tillamook, and Kathleen Shaw of Beaverton, sold their 180 acres at Whalen Island to OPRD for its protection and preservation. OPRD's primary interest in acquiring this property was to protect its outstanding natural resource values under a "state natural area" designation being the Sand Lake estuary is noted as one of few estuaries that have been spared from major alterations by human activity. The Master Plan for the Whalen Island State Natural Area, presented in 2001, outlined the importance of maintaining the natural qualities and ecological importance of the island and the surrounding estuary. Minimum impact on the wildlife, fish, plant communities, significant habitat areas, scenic values and cultural resources all played a role in determining recreational uses. The recreation activities adopted were those that OPRD considered compatible with the need to protect the area's unique setting. The "Island Loop Trail"

of 1 ½ to 2 miles on the upland area of the park, was designed to avoid causing significant impacts on natural resources while providing pedestrian access to the island's scenic resources and nature viewing opportunities. The trail development seriously took into consideration the following: encroachment on the Oregon Watershed Enhancement Board's Conservation Easement that covers the estuarine marsh lands on the east side of the island and includes an adjacent 50' non-estuarine buffer along most of the island's upland-estuarine edge; encroachment on significant habitat areas of plant and wildlife communities; trail location in avoiding important ecological links between the forested uplands and the surrounding wetlands and estuary; the eroding shoreline along the island's northwest edge; and interpretive sites along the trail to communicate to visitors the island's natural and cultural history, biological resources and importance in the efforts to preserve and restore regional ecological functions and values.

One only needs to look south of Whalen Island to see the same unique ecosystem found on the Beltz Farm. In order to maintain the integrity of this whole area, OPRD has identified the Beltz Farm as an important acquisition to provide long-term viability for the natural resources found on Whalen Island and the Sand Lake estuary. Destruction of the dunes, wetlands, and forests of the Beltz Farm is not a compatible alternative when viewing this area's interrelationship with one another.

9 – Summer 2002 to Present – A Rapid Bio-Assessment inventory of the status of juvenile coho, chinook, steelhead, and cutthroat was conducted in the Nestucca-Neskowin and Sand Lake basins. Extensive snorkel surveys on rivers and streams provided data on juvenile fish numbers, cover in each pool, visibility and pool size, barriers to fish, water quality and potential salmonid habitat. This was the first time an extensive survey has been done in south Tillamook county. The distribution and abundance of coho juveniles observed during 2002 was the result of a wide spread increase in adult escapement during 2001. This increase was very significant in the Sand Lake basin where 0 coho were observed in 2001 and 2,940 were counted in 2002. There were 2,345 chinook, 155 steelhead, and 1,335 cutthroat. Of particular importance, the Sand Lake estuary was surveyed as receiving very cold water from Reneke and Beltz creeks. Although these creeks contained no coho or steelhead at the time of the survey, it was stated that there is potential for these streams to be very significant players in the health and productivity of the intertidal wetlands and estuary that they contribute to. In addition, juvenile salmonids could utilize these cold-water

habitats for refugia in years of higher abundance. Historically, local residents for many years, remember when chum, coho, and cutthroat occupied these 2 creeks. Previous streamnet database surveys found Reneke creek as having spawning and rearing habitat for coho, chum, and steelhead in 1.8 miles of its 2.2 mile length. Snorkel surveys for the 2003 Rapid Bio-Assessment were done in August. The completed report will be released in the near future. The status of this report relating to the Sand Lake estuary and Reneke and Beltz creeks will be reviewed and again reported on.

It is very important that the water from Reneke and Beltz creeks continue to contribute to the overall health of the Sand Lake estuary. Sanitation/septic absorption field discharge problems, fertilizers, pesticides, herbicides, and storm-water runoff associated with the proposed golf course development could cause degradation of the high quality water found in these 2 creeks that run through the proposed golf course site.

10 – January – February 2000 – Duck's Unlimited Project Proposal submitted to Oregon Watershed Enhancement Board(OWEB), would have restored estuarine function to approximately 100 acres of diked tidelands at the south end of Sand Lake on the Beltz Farm. It was noted that several species of endangered anadromous fish use the Sand Lake estuary system before beginning their ocean journey, therefore, restoring estuarine function to these wetlands would provide crucial nursery and rearing habitat to juvenile anadromous fish and increase the productivity of the estuary. Restoring the wetlands also would provide habitat for a wide variety of migratory shore birds, waterfowl, and other wetland dependent fish and wildlife. This project also would improve water quality conditions in the Sand Lake estuary. The NNWC, the Tillamook County Coastal Planner, US Fish and Wildlife Service Partners For Fish and Wildlife, and the Beltz Farm owner commented on and supported this project request. Due to the pending sale of the Beltz Farm to the golf course developers, this project and its application is on hold.

Had this proposal been approved, it would have been the first restoration project planned for the Sand Lake area. Improving water quality and habitat for endangered salmon ultimately could result in increased economic development through increased fish populations and related industries. Restoring and enhancing the Beltz Farm wetlands, instead of mitigating them for golf course development, should be the ultimate management objective.

11 – April 1999 – The Sandlake-Galloway Road Project's Environmental Assessment designated wetland mitigation sites to compensate for unavoidable impacts to wetlands caused by the improvements proposed for Sandlake-Galloway road. 3 sites were identified for wetland restoration, creation, enhancement, or preservation—The Sand Lake Estuary Site, The Salmon River Site and The Galloway Road Site. The preferred site originally chosen was The Sand Lake Estuary Site which would have provided an opportunity to restore approximately 50 acres of salt marsh habitat behind the Beltz dike. **As noted in the Assessment prepared by Fishman Environmental Servies and OBEC Consulting Engineers, "estuarine wetlands are regarded as among the most biologically productive and environmentally critical ecosystems on the planet and it is estimated that between 50% and 90% of tidal marsh systems within the individual estuaries along the Oregon coast have been lost. Rarely does an opportunity arise to restore the functions and values of these systems".** According to Fishman, breaching the Beltz dike would allow tidal flow into the existing fresh water marsh and would perform numerous benefits to Sand Lake's estuarine ecology, primarily the restoration of high salt marsh habitat for fish and other animals.

Many state, federal, regional, and public agencies, private organizations, businesses, and individuals commented on this project. Local oral and written testimony expressed concerns about breaching the Beltz dike for fear of flooding the community of Tierra Del Mar. For whatever reason, The Salmon River Site was selected for wetland mitigation. Had The Sand Lake Estuary Site been chosen, much research, enhancement and restoration to the marshes and wetlands of the Beltz Farm would have improved the values of this unique ecosystem.

Is it not ironic that Fishman Environmental Services prepared the biological assessment for this project and supported The Sand Lake Estuary wetland mitigation site on the Beltz Farm because of valuable ecological benefits to fish and other species? Now Fishman is involved with a proposal that could possibly result in the degradation of wetlands, marshes, dunes, forests, plant communities and water quality. Fishman's Preliminary Mitigation Plan for The Pacific Gailes Project does not mention wetland mitigation for the Beltz Farm as written in The Sandlake-Galloway Road Project---Why not? Mitigation sites for the golf course proposal were selected on the basis of providing connectivity to existing wetlands while not impacting the golf

operations! Although the 85 acre Beltz Farm wetland is proposed for preservation to be implemented through a conservation easement, donation to a public agency, or some other similar permanent transfer of title, no where in the Fishman Mitigation Plan was there mention of breaching the Beltz dike for restoration of salmonid habitat. This was mentioned only as wetland mitigation credit!

I find it very disturbing when scientific study can be manipulated or disregarded in order to reach a predetermined outcome for the sake of development!!!!

12 – May 1997 and March 1995 – 2 ecologically significant Research Natural Areas were established by the US Forest Service on The Siuslaw National Forest, both located in close proximity to the Beltz Farm and the Sand Lake estuary.

Reneke Creek Research Natural Area was established in 1997 to preserve, protect, and research a 480 acre ecosystem dominated by red alder, mature douglas-fir, western hemlock, and a sitka spruce/salmonberry community. 2 perennial streams, Reneke creek and its tributaries, provide a natural laboratory for the study of aquatic communities and nutrient cycling in a deciduous forest. The entire upstream intact watershed of Reneke creek eventually flows through the Beltz Farm before reaching the Sand Lake estuary. It is noted that anadromous fish runs are no longer present in the creek but a native cutthroat trout fishery still exists. The federally listed Threatened species marbled murrelet, has been sited at the upper reaches of this RNA. One sensitive plant species, Poa laxiflora(weakstemmed bluegrass) is found south of the area. Management and protection of Reneke Creek RNA is directed toward maintaining natural ecological processes and no activities of man will be permitted that will disturb or modify this RNA's ecological processes.

In 1995, the Sand Lake Research Natural Area was established to provide long-term protection and recognition of a native unstabilized dune grassland and associated adjacent mature sitka spruce and western hemlock forest. Sand Lake is the best intact example of a parabola dune ecosystem along the Oregon coast. This RNA is comprised of 241 acres and is also part of the Hebo Ranger District of The Siuslaw National Forest.

There are only 30 RNA's in western Oregon and Washington, thus having 2 RNA's within close proximity of one another is RARE. Identification of RNA's is based on a comprehensive list of ecosystems and organisms of critical scientific interest thus ecological and environmental research is one of the major objectives for establishing an RNA. Natural ecosystems indicative of these RNA's serve as benchmarks for comparison with similar ecosystems influenced by man. Most RNA's are generally small in size and are isolated from other natural ecosystems, thus one of the major threats to maintaining their integrity is the management of adjacent lands. Natural areas, especially those that protect a unique biological ecosystem and its wildlife, must be integrated into the surrounding landscape rather than separated because of human modification or development. Federal agencies, National Park Service, Bureau of Land Management, US Forest Service, and the US Fish and Wildlife Service clearly acknowledge that the greatest threat to these RNA's was and is human influence.

Reneke Creek RNA and The Sand Lake RNA along with The Clay Meyers State Natural Area at Whalen Island should not become isolated from the unique, biologically intact ecosystem of the Beltz Farm where the golf course is proposed. Long-term scientific research of these natural areas should be one of the management goals, along with protection and preservation of this wonderful area. Acquisition of the Beltz Farm by OPRD, USFS or another conservation entity would ensure these ecosystems(that are dependent upon one another) long-term health.

13 – March 1995 – January 2004 – Since 1995, the US Fish and Wildlife Service, US Forest Service, Bureau of Land Management, Oregon Department of Fish and Wildlife and Oregon Parks and Recreation Department have been actively involved in habitat identification and restoration efforts for Oregon's coastal population of the western snowy plover, a Threatened species under the State and Federal Endangered Species Act. Critical habitat essential to the conservation of this species has been identified and the Oregon Parks and Recreation Department has prepared a Habitat Conservation Plan which identified coastal emphasis areas necessary for the plover's continued existence. The Sand Lake spit (Recovery Unit OR-5) adjacent to the Beltz Farm, is designated as a Tier Two Emphasis Area where the sand spit, large dune backed beach, unvegetated beach strand, open space around Sand Lake estuary, salt marshes and creeks provide critical habitat for the plover's roosting, nesting, breeding, and feeding requirements. This area will emphasize habitat

restoration and presence/absence monitoring surveys. Field surveys were conducted in this area during April and June of 2003, which I participated in. No plovers were sighted but field biologists from OPRD and USFWS will continue surveying in 2004. Loss of the plover's habitat has occurred through the introduction and spread of European beach grass, direct and indirect impacts from development and human interactions, and more recently, predation. OPRD's Draft Ocean Shores Management Plan and their Habitat Conservation Plan For The Western Snowy Plover, released in January, 2004, **lists Unit OR-5 as slated for snowy plover recovery and could be negatively impacted by resort development. As stated, acquisition of the Beltz Farm could keep the use on the beach low and protect the habitat values there.**

In The Pacific Gailes Site Habitat Characterization and their Snowy Plover Assessment, it was stated that the proposed golf course will not impact potential nesting habitat as the foredune where the golf site is proposed does not provide nesting habitat for the plover. This is contradictory to OPRD's assessment of the impact the golf resort would have on plover habitat. Viewing the map of Unit OR-5 Emphasis Area for the plover, and the map of The Pacific Gailes Project Site, clearly show the plover restoration habitat being located where much of the golf course is proposed.

My concerns about the adverse impact the proposed golf course could have on the plover's habitat have been noted through much correspondence with state and federal entities, which are attached. My involvement will continue to emphasize preservation of this area, not only for the plover but for all species that depend on this unique area. The late Craig Roberts and I have much in common when it comes to protecting Tillamook county's last undeveloped beaches. His letter to The Headlight Herald must go into this proposal's record for he felt very strongly about preserving plover habitat as well as unspoiled beaches.

14 – February 1995 – US Forest Service attempted to purchase the 374 acre Beltz Farm as it would have made an ideal addition to The National Forest System. The Sand Lake estuary, fresh water lake, upland forested area, foredunes, wetlands, marshes, plant communities, and over one mile of Pacific ocean frontage was a high priority for acquisition in terms of protecting wildlife habitat. Protection of this unique coastal ecosystem would have been the paramount over-riding management objective. The Forest Service had much support for this acquisition. Oregon Department of

Fish and Wildlife, Oregon Natural Heritage Program, Tillamook Bay National Estuary Project, Oregon Wetlands Joint Venture, Trust For Public Lands, and many local residents sent written comments in support of their acquisition of the Beltz Farm.

Attaching the Beltz Farm to the Reneke Creek Research Natural Area, The Sand Lake Research Natural Area, and The Clay Meyers State Natural Area at Whalen Island would have provided protection of the whole Sand Lake estuary for wildlife and for future generations. **This was a major opportunity lost!!!!**

15 – 1990 – 1995 – In 1982, Congress established the Coastal Barrier Resources System(CBRS) to protect ecologically fragile and valuable landforms. Undeveloped coastal barriers placed in this protective system could no longer receive federal funds, including federal flood insurance subsidies for new development. This system originally applied to lands along the Atlantic and Gulf coasts of the United States. In 1990, Congress passed the Coastal Barrier Improvement Act(CBIA) which directed The Department of the Interior to identify, define and include coastal barriers on the Pacific coast. The USFWS was given the responsibility for this study and in December, 1993, their Draft Pacific Coastal Barrier Study was completed designating areas on the Oregon coast to be included into the CBRS. **Unit OR-8 was identified as the Beltz Farm/Sand Lake estuary, a coastal barrier that provides protection for the diverse aquatic and wildlife habitat within this area.** The Beltz Farm coastal barrier, as with any other barrier along the Pacific ocean, is subject to a variety of coastal hazards unique to the Pacific. These hazards include erosion and dune retreat, storm damage, wave run-up, high winds, landslides, tsunamis, subduction zone earthquakes, El Nino and La Nina oscillations. The unique habitat behind the Beltz Farm coastal barrier survives major disruption because the barrier receives the brunt of these hazards.

Pressures for certain uses of coastal barriers can lead to significant deterioration of coastal habitats. Construction and development, alteration of the primary and secondary dunes, ground water extraction and/or contamination associated with the proposed Pacific Gailes Golf Site could disrupt the natural coastal process and the ecological function of the Beltz Farm coastal barrier.

Had the Department of the Interior and Congress implemented the USFWS Draft Pacific Coastal Barrier Study, the golf course developers would not receive federal subsidies due to development in a hazard-prone area. Without federal subsidies, it is a fact that ¾ of all coastal developments would not take place. Many environmental problems are the result of coastal development patterns which disrupt the natural processes of coastal ecosystems and threaten the ecological and economic values of coastal areas.

As more of Oregon's coast become pressured into being developed, the short-comings of site by site and permit by permit decisions on development in potential hazardous areas, must be questioned. I urge Tillamook county decision makers to take into consideration the seriousness of the environmental impact this proposed development will have on the Beltz Farm coastal barrier, the Sand Lake estuary and the entire ecological system.

An example of an oceanfront golf course gone bad, we need look no further than the Ocean Trails Golf Course in Rancho Palos Verdes, California. The course opened on March 20, 1999, then on the morning of June 2, 1999, some 17 acres or 3 ½ million cubic yards of golf course slid into the ocean!!!! The developers blamed this disaster on a leak or break in the main county sewage line but others believe damage was caused by the original grading of the golf course. The original owners went bankrupt and now Donald Trump owns the course, hoping to open all 18 holes by this summer. Holes 9, 12, 18 and 1 Tee must be backfilled and reconstructed.

Had the California Coastal Commission, Rancho Palos Verdes Department of Planning, Building and Code Enforcement, and the City Council denied the building permit because of environmentally hazardous reasons, this beautiful piece of California coastline would have avoided this catastrophe. **Ironic that the owner of the Beltz Farm lives in Rancho Palos Verdes where this golf course dumped into the sea!!!** Attached is an article on the history of Ocean Trails Golf Course, project status, updates by the City of Rancho Palos Verdes Department of Planning.

We cannot let the Beltz Farm dune be subjected to such an event!!!

16 – April – July 1993 – After clear-cutting a 130 forest zoned parcel along Sandlake road, the Stuwe Land and Timber Company applied for a Conditional Use Application with the Tillamook Department of Community Development to develop and mine an upland aggregate quarry site on this

parcel. Local residents met with the Stuwe brothers on the proposed site and concluded this development would only bring environmental damage to the already clear-cut land. Several Tierra Del Mar and Sand Lake residents met with the USFS Hebo Ranger and expressed their concerns about the potential impact a quarry would have on the area. The quarry proposed abutted the Reneke Creek Research Natural Area. Logging had already disturbed the water quality of Reneke creek. The ecologist and coordinator for the RNA's of The Siuslaw National Forest, the Hebo District Ranger, the President of The Tierra Del Mar Community Association, and many local residents from the area filed their opposition for the CUP with the Tillamook Department of Community Development. Reasons for objection to this project were:

1. Quarry adjacent to Reneke Creek RNA could threaten the objectives for which the RNA was proposed.
2. Quarry and road sediment could enter Reneke creek and have a high impact on aquatic conditions associated with anadramous fish habitat.
3. Quarry drilling, blasting, hauling of materials could displace wildlife, namely: bald eagle habitat(nest is in close proximity to quarry site); marbled murrelets that use old growth; blue herons as nest site was already disturbed from clear-cut; waterfowl associated with the Sand Lake estuary; deer and elk and other species that use the forest then frequent the Beltz Farm and the Sand Lake area.
4. Quarry would impact the visual quality of the area. Three Capes Scenic Route is classified as a Sensitive Land 1 road within the Forest Service Plan.
5. Quarry would bring dust and noise from truck traffic, impacting the quietness of this rural, recreational and residential area.

After receiving oral and written statements during the public comment period, the Planning Commission rejected the quarry CUP. Had this quarry been allowed, the entire watershed, from the forested area upland, to the Beltz Farm and into Sand Lake estuary could have been changed from a natural area to a continuous disturbed area. Again, we as a community, are faced with a proposed development that would disrupt the natural processes of a unique ecosystem that many have fought to preserve!

17 – April 1989 – August 1995 – Decision of Department of Transportation Parks and Recreation Division to ban vehicles on the Tierra Del Mar beach after evaluation of petitions and oral and written testimony

given by local residents. Over 250 petitions were sent to community residents with 195 petitions returned for closure of the beach year round and 47 petitions returned for maintaining the existing policy. At this time, the Tierra Del Mar beach was experiencing safety issues, dune damage, log removal, and wildlife and habitat destruction from automobiles, dirt-bikes, and 3-wheelers. In 1989, Oregon Transportation Commission permanently closed the beach to motorized vehicles during legal holidays and all weekends throughout the year. From October 1 to April 30, vehicles are allowed on the beach during the week only, Monday through Friday. In 1995, due to continued problems with vehicles on the beach and dunes, the local residents petitioned again for permanent closure year round but the Commission upheld the restrictions previously designated, which remain today.

With regard to closure of vehicle use on this stretch of beach, not only were human needs addressed, but more importantly, the protection of the wildlife and the ecosystem of the dunes and shoreline of the Beltz Farm and the Sand Lake estuary were discussed. A golf course will only bring more vehicle use to the Tierra Del Mar beach from those who want to see the proposed development. Additional illegal driving on the beach will impact the western snowy plover habitat area designated by OPRD and other wildlife indicative of this shoreline and estuary.

18 – January 1989 – September 1991 – The Tierra Del Mar Water Company owner, Buck Miller, alerted area property owners on January 20, 1989, that the Hebo Ranger District of The Siuslaw National Forest proposed logging in the Beltz creek watershed, which supplies Tierra Del Mar and Sand Lake residents with high quality water. Mr. Miller's statement, "we have little reason to doubt that if completed, this timber sale will seriously damage the source water quality for a number of years and greatly increase the cost of delivering high quality drinking water to the community" began a 2 year process of appealing the Forest Service's decision to clear-cut 30 acres within the Beltz creek watershed.

110 property owners who get their water from Beltz creek watershed, signed an appeal presented to the USDA Forest Service Chief F. Dale Robertson. We wrote letters to our local officials, senators, congressmen, governor and President George Bush.

American Fisheries Society President joined our appeal stating that protection of Beltz creek would be one step in an intensifying effort to slow the rapid decline of aquatic biodiversity that is occurring throughout western Oregon and this organization went further in suggesting the Beltz creek watershed be combined with the Reneke Creek Research Natural Area for studies of 2 undisturbed watersheds, both important components in habitat diversity on this portion of the Oregon coast.

The lead ecologist and coordinator for marbled murrelet study and surveys from Oregon State University Department of Fisheries and Wildlife, reported to the Forest Service, murrelet habitat and sightings within the Beltz creek watershed. In her assessment, the Beltz creek watershed should not be harvested in the foreseeable future and perhaps never and the biological evaluation for the Beltz creek area should include a statement about "will adversely affect murrelet populations if logged".

Oregon Trout Director supported our appeal stating their concerns and objections to the clear-cut and road building in the Beltz creek watershed. Loss of water quality/quantity and loss of wildlife habitat relating to Beltz creek, Reneke creek and the Sand Lake estuary were discussed. Of importance, sedimentation in the streams of the Beltz creek watershed, and possibly in the fresh water marsh fed by Beltz and Reneke creeks, would occur due to tree and vegetation removal and road building. During high flows, the movement of sediments could be great enough to reach the Sand Lake estuary, negatively affecting the unique natural estuary's values. In Oregon Trout's summary, the statement, "the anticipated long-term negative impacts are in no way offset by the questionable projected short-term benefits" must apply to the golf course proposal.

On September 12, 1990, a letter from Hebo District Ranger gave notification that the timber sale proposed would not include the road construction to nor the harvest of Unit 27-A within the Beltz creek watershed.

Because of many concerned individuals, the Beltz creek watershed remains as the only unlogged watershed on the Hebo Ranger District of The Siuslaw National Forest. It continues to supply high quality water to the Beltz Farm fresh water marsh and to the many residents who depend on this water source. Beltz creek and Reneke creek both are adjacent to the proposed large septic system absorption field and the high quality water that discharges to the wetlands and estuary could be adversely impacted. **Saving**

the integrity of these 2 creeks makes no sense if downstream they have the possibility of becoming polluted.

The Oregonian article attached did a fine job of covering the "Save The Beltz Creek Watershed" campaign. This article brought state-wide attention to this issue.

19 – 1987 – The Nature Conservancy established the Bradley Bog Preserve, comprised of 48 acres north of Sand Lake. It is a north coast sphagnum-dominated bog and includes one of Oregon's best remaining examples of young dune forest with densely vegetated coastal wetland and plant communities. The Preserve harbors what is probably the northernmost population of California pitcher plant along with conifers, shore pines, western red cedar and coastal shrubs including wax myrtle and cascara.

With this description of an ecosystem so close and so similar to what can be found in the wetlands and forests of the Beltz Farm, we must question the potential destruction of an area that possibly supports or could support plant life yet identified.

20 – For your information, several very important scientific reports on the need for continued research, protection, preservation, and restoration of Oregon's estuaries, wetlands, marine ecosystems, and shorelines.

1. "Summary and Current Status of Oregon's Estuarine Ecosystems"
2. "Coastal Ecosystems – Salmon Research Examines Estuary Role"
3. "Summary of Current Status and Health of Oregon's Fresh Water Wetlands"
4. "Summary of Current Status and Health of Oregon's Marine Ecosystem"
5. "El Nino and La Nina – Erosion Impact Along the Oregon Coast"

These scientific reports all point out the fragile environments of Oregon's estuaries, wetlands, and marine ecosystems and how permits to develop within them will lead to more habitat destruction. **Understanding these environments before decisions are made must be included in the permit process.**

In closing, as you see, hundreds if not thousands of people have had a longstanding interest in maintaining the beautiful and biologically rich assets of the Beltz Farm, Sand Lake estuary and the surrounding preserved natural

landscapes. Many natural resource professionals have had a prominent voice in researching, defining, and educating us about the unique, interrelated habitats of this diverse ecosystem. I am deeply encouraged by the scientific knowledge we have gained through their PASSIONATE work in **pure science**, but very discouraged when developers can **buy science** that can be manipulated or disregarded in order to seek specific results for development. **Independent pure science** is exemplified in the many years of study of the Beltz Farm, the Sand Lake estuary and adjacent environments. **They should not be compromised.** The challenge for you, our decision makers, is understanding and acknowledging what is **true and doing what is right**. The livability of our communities and the natural resources and beauty of our landscapes are some of Tillamook county's greatest strengths. The immediate wishes and desires of the golf course developers cannot be placed ahead of long-term concerns and PASSION for the Beltz Farm, its wonderful wildlife and the communities it surrounds.

I strongly oppose The Pacific Gailes Golf Course Conditional Use Application and I urge you to deny this permit.

One of America's most PASSIONATE photographers, Ansel Adams, speaks for many of us with his statement, **"If no one knows the importance of preserving a beautiful place, that place is not likely to be preserved, but instead, transformed to something else and probably something less. The measure of enlightenment will be man's ability in the special places to recognize that the natural things which are there already are good things—these we inherit".**

Thank You,

Lynda K. Steiner and Family
5625 Jasmine Avenue, Tierra Del Mar
mailing address: Box 643, Pacific City, Oregon 97135
or: 9165 S.W. Elrose Court, Tigard, Oregon 97224
phone – 503-965-6987 or 503-639-0951

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503)231-6179 FAX: (503)231-6195

TAKE PRIDE IN AMERICA

Reply To: 9224.0003
File Name: Reneke Creek TR.doc
TS Number: 2008-1592

Memorandum **Date:** June 26, 2008

To: Amy Horstman, U.S. Fish & Wildlife Service, Oregon Fish and Wildlife Office, Portland, Oregon

From: Janine Castro, Geomorphologist, U.S. Fish & Wildlife Service, Oregon Fish and Wildlife Office, Portland, Oregon

Subject: Reneke Creek Site Visit

On March 19th, I visited Reneke Creek near Pacific City, Oregon, with John Gilliland and Teresa Morales, NRCS; Rachel Hoffman, TEP; Chris Knudsen and Michele Long, ODFW; Alex Sifford and Carol Bickford, Nestucca/Neskowin/Sand Lake Watersheds Council (NNWC); and Grant Graves from Tillamook County Public Works Department. The purpose of the field visit was to examine and evaluate a failed culvert and discuss project alternatives. I originally visited this site with Mary Holbert, FWS, and Carol Bickford and Andrea Johnson of the NNWC, on October 13th, 2004.

The following are my thoughts and recommendations regarding Reneke Creek.

PROJECT SITE DESCRIPTION:

Reneke Creek is a small perennial stream that flows from its headwaters in the Coast Range westward until it joins the Pacific Ocean. The project location is in the lower watershed where Reneke Creek crosses Sandlake Road in Tillamook County, Oregon. The Sandlake Road culvert filled with coarse sediment in the mid-1990s and the flow of the creek diverted into the roadside ditch where it joined outflow from a wetland and discharged through a smaller culvert. Cleaning of the plugged culvert was considered, but the existing culvert is undersized so the fix would only be temporary.

Since the main culvert has been plugged, Reneke Creek has continued to flow down the roadside ditch and discharge through the smaller pipe. Each winter Reneke Creek overflows the ditch and floods the road causing on-going concerns to the County and local drivers.

RECOMMENDATIONS:

In 2004, discussions for project alternatives focused on retaining Reneke Creek in its prior alignment through the undersized culvert. Alternatives included culvert replacement and reconstruction of the channel downstream of the culvert to provide improved longitudinal connectivity and fish passage. At that time, there were no discussions of realigning the channel to access the adjacent wetland to the south of the current channel location.

The site visit in 2008 was similar in terms of project evaluation because there is still a significant need to address the Reneke Creek culvert and stream alignment; however, the option to move Reneke Creek away from the road while taking advantage of the adjacent wetland has become a feasible alternative.

Based on two site visits and discussions with a variety of individuals familiar with the project, I have developed 3 primary alternatives for consideration at this site. Each alternative is composed of project components which can be modified based on site conditions, project constraints, and specific limiting factors. They are listed in order of preference from highest to lowest, based upon probable habitat improvements and geomorphic stability through time.

- Reconstruct and reroute Reneke Creek through the wetland east of the road and upgrade the receiving, undersized culvert.
    - Realign the stream channel starting several hundred feet upstream of the house. A relatively steep channel would transition into the wetland to the south where the gradient is reduced. Exact location for the point of diversion into the new channel would need to be determined from surveys and field site investigation.
    - Create a channel through the wetland. The channel through the wetland would likely be multiple-thread because of the dense vegetation. The wetland would also act as a filter for sediment and nutrients that are delivered from the upper watershed. Channel size, number and exact location would be based on surveys and field investigation of existing channels. Excavation should be minimized to the greatest extent possible.
    - Concentrate flows below the wetland. Flows emanating from the lower part of the wetland would collect into a single channel before discharging through a new, larger culvert.
    - Replace the existing culvert with a larger culvert using a stream simulation design.
    - Leave the downstream channel as is. The channel downstream of the new culvert would not be altered.
- Leave the channel in its existing location and upgrade/replace the receiving culvert through which Reneke Creek currently flows.
    - Maintain the existing channel upstream of the road.
    - Widen the roadside ditch to provide greater capacity and hopefully move the flows further away from the road embankment.
    - Upgrade the culvert that provides drainage for the wetland and existing location of Reneke Creek.
    - Leave the downstream channel as is. The channel downstream of the new culvert would not be altered.

- Replace the currently plugged culvert and construct a downstream channel west of the road.
    - Replace the plugged culvert with a larger culvert that can transport the water and sediment delivered by the creek.
    - Leave Reneke Creek in its current alignment upstream of the roadside ditch, but add a berm in the roadside ditch to direct flow into the new culvert.
    - Construct a channel downstream of the new culvert to restore longitudinal connectivity through the wetland. There are at least three realignment options.
        - The preferred option would be based upon existing topography, soils, vegetation, land ownership, and feasibility of equipment access. Reneke Creek would drain into wetland behind Beltz Dike.
        - The initial preference from the landowner would include reconstruction of the channel built in 1941, replacement or removal of the culvert under Beltz Dike, and redirection of Reneke Creek into the estuary.

Please let me know if you have questions, need clarification, or if I have made any errors or omissions.

Lynda Steiner

From: "Frank Isaacs" <isaacsf@onid.orst.edu>
To: "Lynda Steiner" <lyndasteiner@oregoncoast.com>
Cc: "Michael Mefford" <mjm@centurytel.net>
Sent: Tuesday, March 07, 2006 7:37 AM
Attach: BEagletAgeGuide.jpg
Subject: Re: Bald Eagle Nest Survey

Lynda -
There is a nest site called Reneke Point that is on Forest Service land overlooking the Sand Lake area. That site is monitored by long-time volunteer Michael Mefford. You could contribute by reporting numbers and ages of eagles that you see at the Sand lake Estuary. Those reports could indicate whether or not there is more than one nesting pair using the area and could give us clues as to where to look for a second pair's nest. The best clues are flight directions for adult bald eagles leaving the estuary carrying nesting material or prey. If we can locate another nest, you could monitor that site. I have attached a monitoring protocol and reporting guide and will add you to the nest survey mailing list. Thanks for your interest! Feel free to call or send e-mail if you have questions on eagles. I look forward to hearing about the Sand Lake eagles should you decide to send reports.

OBSERVATIONS AT BALD EAGLE NEST SITES IN OREGON

Dear Cooperator -

Following is information on protocol and reporting for the bald eagle nest survey in Oregon. It has six sections: 1) INTRODUCTION 2) PROTOCOL, 3) REPORTING, 4) EXAMPLES OF REPORTS, 5) WHERE TO SEND REPORTS, and 6) RELEVANT LITERATURE. Please send questions or comments on the survey, and suggestions for improvements to Frank Isaacs <isaacsf@onid.orst.edu>.

1) INTRODUCTION

Nesting season is underway and its time to begin monitoring bald eagle breeding areas. The goal of this project is to determine the outcome of nesting at every breeding area monitored. The following information will help you plan and report your monitoring efforts. If you have committed to monitoring a site but find that you won't be able to complete the task, please notify Frank as soon as possible so that arrangements can be made to get the site covered before the end of the breeding season.

Some thoughts on attitude and approach:
The bald eagle nesting population in Oregon has been increasing and the distribution of nest sites has been expanding for 20+ years. It is rare

for a breeding area to not be occupied by at least one adult bald eagle.

There are two sources of error that observers should be aware of and try to keep at a minimum:

Error 1 is concluding that a breeding area is unoccupied after minimal survey effort. What we perceive as a failure of bald eagles to occupy a site is more likely a failure of the observer to find the eagles. If eagles are not found on the first visit then follow-up visits are necessary. If all known nests in a breeding area appear to be unused, then a search for a new nest is warranted. Fresh material will usually be present on the edge of the nest in use

Error 2 occurs when trying to determine the number of eaglets on a nest. Eaglets can be out of view for long periods of time. Minimal survey effort can result in nests with young being classified as failures, or only one eaglet being counted where there are actually two or three.

If no chicks are immediately visible on a nest, look for evidence of young. White feces on the the tree trunk or limbs adjacent to the nest surface may indicate the presence of unseen young. Eaglets defecate over the edge of the nest and much of the feces ends up on tree trunk and branches. Down feathers stuck to sticks on and around the nest surface also might indicate there are young present. If you see either of those clues, suspect young and spend more time observing. If you see one chick on a nest and don't have a clear view of the nest surface, then suspect two or three chicks, and wait until an adult visits the nest with prey before concluding there is just one chick. Upon arrival of an adult a second, or even two more chicks may stand or move into view. The extra time spent observing the nest will often be rewarded with interesting eagle action that would otherwise be missed.

Thanks for helping with this project and have fun watching eagles!

2) PROTOCOL

NESTS SHOULD BE OBSERVED FROM A DISTANT LOCATION THAT DOES NOT DISTURB THE EAGLES. WE RECOMMEND OBSERVING WITH A SPOTTING SCOPE FROM A DISTANCE GREATER THAN 800 METERS (1/2 MILE), BUT REALIZE THAT YOU MAY NEED TO BE CLOSER. IF YOU DISTURB AN EAGLE, THEN LEAVE THE AREA.

DO NOT TRESPASS; ALWAYS GET PERMISSION BEFORE ENTERING PRIVATE PROPERTY!

OUR OBJECTIVE IS TO DETERMINE THE OUTCOME OF NESTING FOR EVERY PAIR OF BALD EAGLES IN OREGON, AND ALONG THE WASHINGTON SIDE OF THE COLUMBIA RIVER. This requires at least 2 visits to monitor nest sites at strategic times during the breeding season, which lasts from January through August. We realize that some of you observe nest sites outside the breeding season, and we welcome reports for September through

December even when no eagles are observed, because they help fill in gaps in our knowledge of bald eagle use of nest sites during that period.

The goal of the first monitoring session is to determine if a breeding area is occupied, the second session is conducted to determine the outcome of nesting. More than two visits may be required to determine nesting outcome.

THE BEST TIMING FOR THE FIRST MONITORING SESSION IS LATE MARCH OR EARLY APRIL. If no eagles are observed during that visit, the breeding area should be checked weekly until one or more adult bald eagles is observed, or 15 May, whichever comes first.

THE SECOND MONITORING SESSION SHOULD BE WITHIN A WEEK OF 1 JUNE. If mostly-feathered nestlings are observed; i.e., stage 3b or older (Carpenter 1990), and you are sure how many there are, or you are sure that the nesting attempt failed, no further visits are required. If the number of nestlings is uncertain, downy nestlings are observed (stage 3a or younger), or outcome is uncertain, additional monitoring is required. If nestlings are feathered and you need to verify the number of nestlings, then return within a few days. If outcome is uncertain, then return weekly until outcome is determined. If nestlings are downy during the late-May/early-June visit, then return in 4 weeks. Be aware that early nesting pairs may have eaglets that are at or near fledging on 1 June.

When conducting a monitoring session, assume it will take 2 hours to determine nest status. Usually it doesn't take that long, but its better to expect 2 hours and use 30 minutes than to think you will be done in a few minutes and then be disappointed for 2 hours. When looking for nestlings, assume there are nestlings and don't give up hope until you are certain none are present; it can take 2 or more hours or return visits to be positive. At places where nests are easy to observe, short monitoring sessions weekly or every two weeks are as effective as two long sessions.

PLEASE SEND A REPORT FOR EVERY DAY YOU OBSERVE A SITE. We realize that some of you observe sites almost daily, and will only send reports for significant events such as nest building, start of incubation, hatching, nesting outcome determined, fledging, etc. The goal is to determine the number of feathered nestlings. Fledging dates are not essential, but provide valuable information and should be reported when known.

The earliest nesting pairs begin incubating in mid February; late nesters begin incubating in late April. Egg laying has not been observed after 1 May. If a nest is not being used by 15 May, it will probably not be used that season. If you know that a pair are unusually early or late nesters, adjust your observation schedule accordingly.

Age of young should be described following the attached aging guide from Carpenter (1990).

3) REPORTING

NOTE: THIS SECTION HAS BEEN REVISED to improve documentation of eagle behavior, simplify data collection and summary, and reduce paper use.

THERE ARE NO FORMS, JUST SEND COPIES OF FIELD NOTES OR WRITTEN SUMMARIES OF YOUR OBSERVATIONS. Many of you already do this.

FIELD NOTES OR WRITTEN SUMMARIES OF OBSERVATIONS have provided the best descriptions of bald eagle nesting activities during this study. They can be submitted a variety of ways (e-mail, US mail, FAX, or phoned in), can follow a variety of formats or writing styles, and can be as concise or extensive as needed. Abbreviations can be used, as long as the meanings are obvious.

THE GOAL OF EACH REPORT SHOULD BE TO ACCURATELY DESCRIBE WHAT WAS OBSERVED DURING A MONITORING SESSION.

Reports should contain the following information: Observer Name and Contact Information (if you send e-mail that is automatically included); Date of Monitoring Session; Site Name; Survey Method (if it is something other than viewing from the ground); Observation Point; Number, Age Class, and Behavior of Each Bald Eagle Observed, including plumage stage of eaglets; Nest and Nest Tree Condition (if there has been a change); Observation Times; and Other Notes on anything that seems pertinent (other observers present, human activity that appears to be disturbing, weather that could have affected eagle behavior or the accuracy of the report, prey, eagle interactions with other species, etc.) For new nests, describe the nest, the nest tree, and the location of the new nest tree (send a detailed map if possible). If you use GPS coordinates to describe observation points or nest tree locations, then include the datum used (NAD27 or NAD83/WGS84). If you use compass bearings, indicate if they are based on magnetic north or true north.

Finally, If you don't want to change the way you have been submitting reports, then continue as you have done in the past and the information will still be used.

4) EXAMPLES OF REPORTS:

1/12/04 - 0830-0855 - Weatherly Cr. - Observed from the ODOT elevated pulloff N of Hwy. 38 across the river from the nest stand. No eagles observed. The new nest from last year is present, but I'm too far to judge nest condition; no obvious new material. Visibility is reduced due to low clouds and rain.

3/18/04 - 1800-1805 - Melrose -Observed from Evelyn Lane, W of the nest stand. Upon Arrival there were 4 BEs in flight above the nest stand; 2 adults, 1 adult or nearadult, and 1 subadult. 1 adult dropped to the nest, where it landed and settled into incubating position. The subadult was last observed flying SE and the other adult and adult-or-nearadult were flying close together, but I didn't follow them to see where they went.

4/13/04 - 1838-1844 - Ball Point - Observed from where Eagle Ridge Rd. leaves the shoreline and begins climbing towards Eagle Ridge Point. Located 1 nest with 1 adult present in incubating position. By map location, I assume the nest tree is 711. The nest is in a live co-dominant conifer and appears to be at or near the tree top. 1848 - Adult moving as if tending eggs or small young. 1851 - Both adults are on the nest, then 1 flew NW. 1852 - 1 adult still moving around on the nest.

4/27/04 - 1025-1032 - Potters -Observed this new nest tree from Sprague River Rd. between milepost 11 and the bridge. The nest tree has a manmade osprey platform on top; the nest is built on lateral branches below the platform. 1 adult perched on the platform. At least 2, plumage stage 1b-2, chicks active on the nest.

4/30/04 - 1030-1047- Bloody Point - Observed this site by walking into the open ponderosa pine stand W of the nest tree. First located 1 adult BE perched in a co-dom. snag, then found the nest with 1 adult BE perched on the nest rim. Could not see both birds from the same location. We flushed a RT Hawk from a nest near our observation point. That bird flew around calling and was joined by a 2nd RT Hawk. The Ad BE on the nest edge was also aware of our presence and watched us the entire time. 2nd Ad eventually arrived at the nest, then immediately flew when it saw us. Whitewash on a branch adjacent to the nest and adult behavior suggest there are small young present. NAD27 UTMs at the observation point = 615037e, 4758533n.

5/6/04 - 1740-1745 - Wallowa Lake - Observed from the Hwy. 82 pulloff NE of the nest stand. 2 chicks active on the nest; one in stage 2 and one in stage 3a plumage. Three young men sitting on the riverbank approximately 100 feet from the nest tree smoking and drinking. No adult BEs observed as of 1750.

6/10/04 - 1325 - Recreation Creek - Observed from the road W of the nest tree. Two stage 3d chicks on the nest; one standing and one laying.

5) WHERE TO SEND REPORTS

AFTER EACH MONITORING SESSION, SUBMIT YOUR REPORT to Frank Isaacs using one of the following methods:

e-mail:
isaacsf@onid.orst.edu

US Mail:
Frank Isaacs
580 Dampier Dr.
Philomath, OR 97370

Phone:
541-929-7154

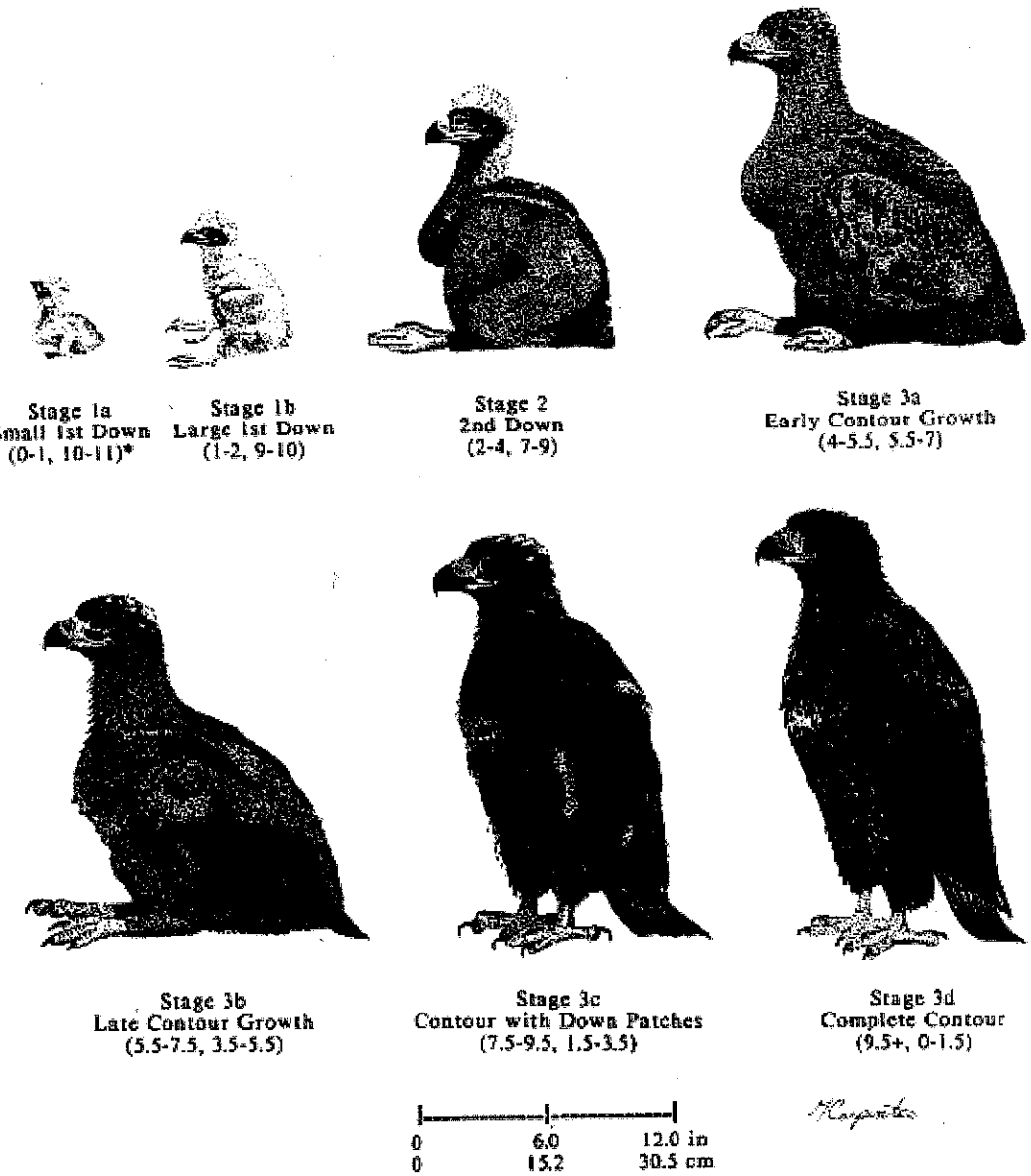
Cell Phone:
541-231-1674

6) RELEVANT LITERATURE

CARPENTER, G.P. 1990. An illustrated guide for identifying developmental stages of bald eagle nestlings in the field. Final draft, April 1990. San Francisco Zoological Society, Sloat Blvd. at the Pacific Ocean, San Francisco, California 94132 (415-753-7080). [attached]

ISAACS, F.B. and R.G. ANTHONY. 2004. Bald eagle nest locations and history of use in Oregon and the Washington portion of the Columbia River Recovery Zone, 1971 through 2004. Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University, Corvallis, Oregon, USA. [available upon request]

MCCOLLOUGH, M.A. 1989. Molting sequence and aging of bald eagles. The Wilson Bulletin. 101:1-10. [available upon request]



* (approximate number of weeks since hatching, approximate number of weeks until fledging)

FROM: Carpenter, George P. 1990. An illustrated guide for identifying developmental stages of bald eagle nestlings in the field. Final draft, April 1990. San Francisco Zoological Society, San Francisco, CA 94132.

- Frank

Frank B. Isaacs
24178 Cardwell Hill Dr.
Philomath, OR 97370-9368

Home & Office Phone: 541-929-7154
FAX (call for instructions)
Email: isaacsf@onid.orst.edu

Senior Faculty Research Assistant
Oregon Cooperative Fish & Wildlife Research Unit
Oregon State University
Corvallis, OR

On 28 Feb 2006, at 8:57 AM, Lynda Steiner wrote:

> Dear Frank: I met Carol Karlen at the Pacific City Birding and Blues
> Festival this last weekend. She gave me your email and I am very
> interested in surveying the prolific Bald Eagles nesting success in
> our area, which is the Sand Lake Estuary. I have had a beach house in
> Tierra Del Mar since 1980 and have seen Bald Eagles and their young
> each year. The last few years have been very successful for now we
> see quite a few immature eagles in the area. I believe their nest is
> on Forest Service land but I am not sure. I have not seen their nest
> through binoculars while watching them on the Beltz Farm and other
> areas of the Sand Lake Estuary. You may know where it is. Please let
> me know if this is an area that has or has not been surveyed. If not,
> I would truly enjoy participating in your survey. I also have a
> friend in Sand Lake, Yvette St. John, who willl help if for some
> reason I could not do the survey at a particular time. Looking forward
> to hearing from you. Sincerely, Lynda Steiner

Lynda Steiner

From: "Lynda Steiner" <lyndasteiner@oregoncoast.com>
To: "Frank Isaacs" <isaacsf@onid.orst.edu>
Cc: "MjM Software Design" <mjm@centurytel.net>
Sent: Thursday, March 04, 2010 8:06 PM
Subject: Galloway Nest

Hello Frank and Michael: I will try to observe this year when I am at the beach. They will not be as often as I would like but I will keep reporting if you feel it is necessary. Here are notes from the first observations this year.

2/28/10 - Galloway - 15:30-17:05 - Tree: 1425(same as last year). OP: Sand Lake Recreations Area's(SLRA) Tide Lands parking lot to mudflats in the Sand Lake estuary. Note: Adults - 3. Arrived at the mudflats at 15:30. Weather was fairly clear, pleasant and no wind. One adult BE was observed in the tree directly west of last year's nest tree. At 15:35, observed 2 adult BEs flying above the estuary and one flew north, and then out of site. The other flew east and out of site. At 15:40, adult BE flew from the north, flying over the roosting BE and then flew west to one of the island trees located at the entrance to the SLRA. The adult BE in the tree west of the nest tree then flew south to the island of trees in the estuary and landed. At this time, another adult BE flew from the south, into a tree below this adult BE and landed. 3 adult BEs in sight. At 16:00, one adult BE left the island tree, in the estuary, and flew INTO the nest tree. The other adult BE in the island tree, in the estuary, remained until 16:05, at which time it flew south, landed in a tree on the west side of Whalen Island. At 16:07, the adult BE in the nest tree, flew out of the nest, and landed in a tree next to the adult BE which was perched in a tree at the entrance to the SLRA. This eagle quickly flew south and out of site once the eagle from the nest tree landed. At 16:30, adult BE at Whalen Island flew south and out of site. At 16:35, adult BE still was perched in the tree at the entrance to SLRA. At 16:40, adult BE flew from the south and landed in one of the estuary island trees, and had prey. Observed eating a fish. At 16:50, both adults flew south and out of site. At 16:52, I arrived at the Fisherman's Day Use parking lot. Observed 2 adult BEs several yards apart, standing on a sand island in the middle of the estuary. At 17:05, one adult BE flew from the sand to a tree on the west side of Whalen Island. The other adult BE was still on the sand when I left at 17:10.

3/2/10 - Galloway - 13:50 - 15:45 - Tree 1425- OP: SLRA Tide Lands parking lot to mudflats in the Sand Lake estuary. Note: Adults - 2. Arrived at the mudflats at 13:50 and observed 1 adult BE roosting in a tree directly west of the nest tree. At 13:56, a second adult BE was seen flying west of the nest tree then flew out of site. After observing for 1 hour, I left at 15:00. The adult BE was still perched in the tree next to the nest tree. Arrived at Fisherman's Day Use parking lot at 15:03. No eagles in site. Weather was very hazy, looking toward Beltz Farm, thus could not see definition of trees. Left at 15:20. Arrived at Whalen Island at 15:30. No eagles in site. Left at 15:45.

From: lyndasteiner@aol.com
To: mjm@centurytel.net; issacsf@onid.orst.edu; Charles.R.bruce@state.or.us
Subject: Galloway Road-Sand Lake Bald Eagles
Date: Sat, 14 Mar 2009 5:01 pm

Hi Michael, Frank and Charles: Please excuse this email, if you received an email from me yesterday, via my oregoncoast.com email address--for some reason, my sending this email is not confirmed, so I am sending via AOL.

Hope you all are doing fine this year. I finally got to the beach a few days ago and did some surveying at Galloway. I will continue to send you reports, if you still want them. If not, I will just keep notes for myself. I so enjoy relaxing and viewing the eagles and wildlife when I can make it to the coast. I will also try to find other nests, if I see any other eagles in the area.

3/11/09 - Galloway - 15:00-16:35 - Tree: 1425(same as last year). OP: Sand Lake Recreation Area's Tide Lands parking lot to mud flats in the Sand Lake estuary. Note: Adults - 1; Immature - 1. Arrived at mud flats at 15:00. Weather was very clear, but cold and windy. One adult BE was observed in the nest tree. No other adult BE's in site at this time. At 15:35, 1 immature BE flew from the north, flying over the nest tree, then landed in one of the island trees located at the entrance to the Sand Lake Recreation Area. Within 10 minutes, this BE flew west and out of site. Observed area and nest tree until 16:35. Upon leaving, the adult BE was still in the nest tree but no observation of his/her mate during this visit. Note: many waterfowl, egrets, herons seen in the estuary.

3/12/09 - Galloway - 8:30-10:50 - Tree: 1425. OP: Sand Lake Recreation Area's Tide Lands parking lot to mud flats in the Sand Lake estuary. Note: Adults -2; Immature -1. Arrived at mud flats at 8:30. Weather was beautiful, cold but clear and sunny. Observed 1 adult BE perching in nearest tree east of the nest tree. At this time, no observation of BE in the nest tree. 9:40, adult BE east of nest tree, took flight north and out of site. Within a few minutes, observed the head of 1 adult BE in nest tree, after probable mate flew north. At 10:05, 1 immature BE, flying from the north, passed over the nest tree, then landed in estuary grass, west and a bit south of island trees in the middle of the estuary. Upon leaving at 10:50, 1 adult BE still in nest tree but no observation of other probable adult BE mate in site. Note: Again, many waterfowl, egrets and herons present in the estuary. Also, 3 red-tailed hawks were observed flying high above the estuary and 1 northern harrier seen flying from the north, heading south, through the estuary and out of site.

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From: MjM Software Design <mjm@centurytel.net>
To: lyndasteiner@aol.com
Subject: Re: galloway nest
Date: Wed, 22 Apr 2009 8:06 am

Lynda,

Thank you for the detailed report!

Its possible there are very young chicks now (incubation about a month and fledge about 6 weeks after hatch) and from your observation of prey being taken to the nest, that seems to be the case. Galloway is a challenge to observe so not seeing a bird in the nest at times is not surprising.

I just ignore juveniles. It's impossible to determine if there are last year's young or interlopers. After the juveniles fledge, the adults want nothing to do with them and will chase them away if they try to return. I often hear of reports that adults are teaching their young to fly or encouraging other activity. For example, when young become ambulatory, they back up to the edge of the nest and squirt outside the nest. They are not potty trained by adults. And they are not taught how to fly or catch prey or anything. All of their behavior is innate. Anthropomorphizing is a common error. Just remember these are birds with bird brains. Their eyes are are bigger than their brains.

Is the 'active tree' a good hunting perch? That is, good view of the estuary?

Observing 4 adults makes it difficult to say if there is a second nest. One bird will always be on the nest. The behavior, however, suggests not. An adult pair that have established a territory will not tolerate other adults or juveniles. None-breeding adults will perch close together. Perhaps there was road kill that drew their common interest. Eagles are scavengers (since its easy) as much as hunters.

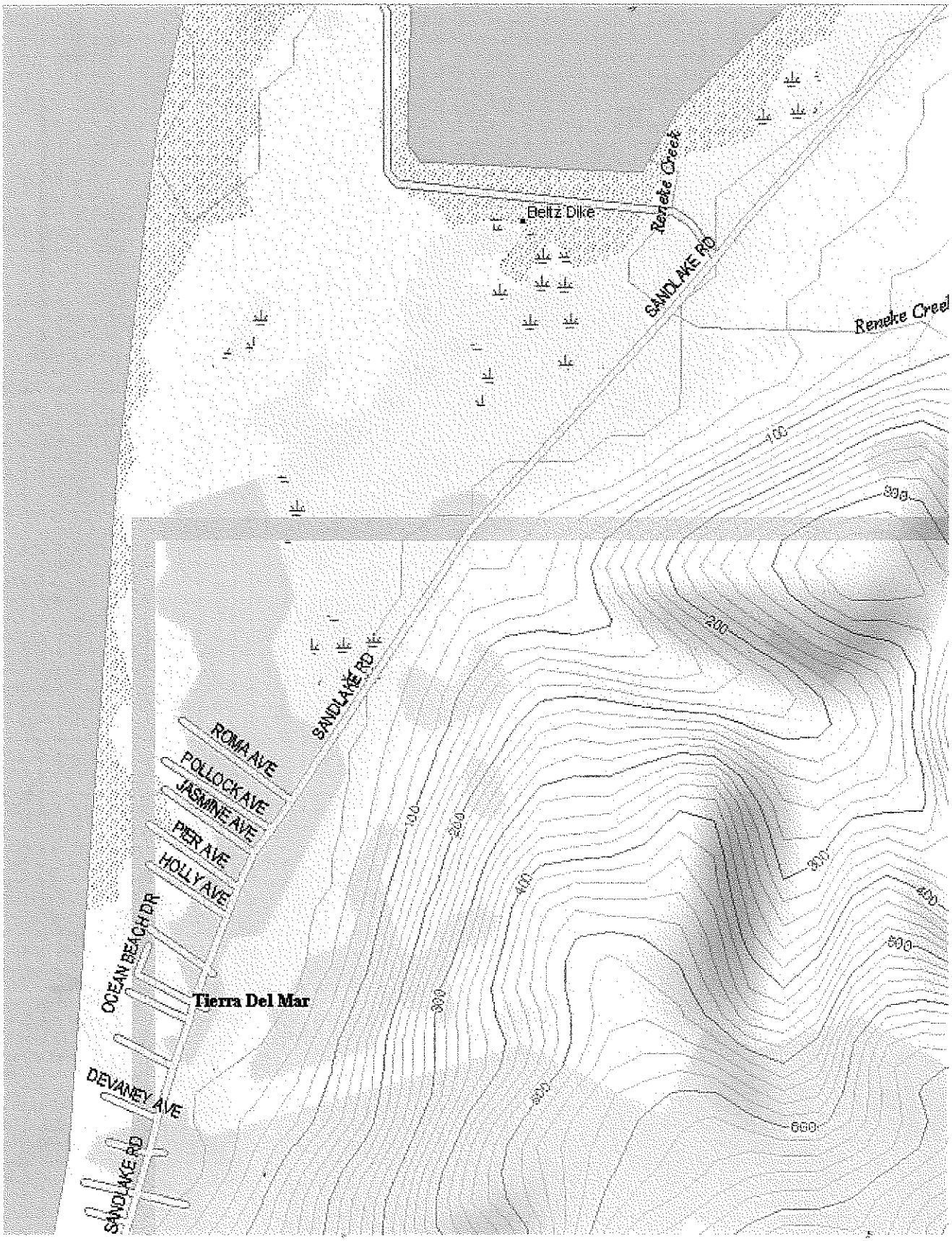
If there is a second nest, the tell will be an eagle with prey. It will go like an arrow to the nest.

Let me know if you have additional questions.

Can you mark on this map where the 'active tree' is at?

Thank you,

Michael J. Mefford



lyndasteiner@aol.com wrote:

Michael: this may be a long email for you to read but please bear with me!!! I will include below an observation, as usual, at the Galloway site and then tell you about the most rewarding experience with BE's in Tierra Del Mar. Not being an expert in eagle behavior, like you, I can only relay to you what I observed and maybe you can interpret their actions. Please excuse my anthropomorphizing!!!!

Our beach house sits on the dune, with full view of the beach north and south---north to Cape Lookout and south to Cape Kiwanda, as well as east to the forest behind Tierra Del Mar and most importantly, we have a fairly close view of the trees that border the wetlands and estuary of the southern most part of the Beltz Farm(west of Sandlake Road). Our bedroom is upstairs and often, I look toward the trees on the Beltz Farm and see an eagle perched, watching for prey or just taking it all in! Now that you get the picture of my observation point, here's the story.....

On the 16th, at 9 am, 2 adult BE's were perched in the trees I can see at the southern end of the Beltz Farm. At 9:30, 1 adult BE with 2 immature(looked like stage 3d or beyond) BE's were on the beach south of our house. The adult flew away from the juveniles and these 2 ate what looked like crab. At 10:00, the 2 adult BE's were still in a tree on the Beltz Farm(which I call the active tree). At 10:45, another adult BE flew into the same tree and the 3 BE's perched together. At 10:55, another adult BE(#4) came from the north, flew over the active tree with the 3 BE's and landed in a tree directly east of them. In the meantime, the 2 juveniles on the beach would fly off and out of site, then fly back to the beach. At 11:00, the 2 juveniles were directly in front of our beach house. A white SUV slowly pulled close to them, one flew before the car approached however, but the other juvenile stayed to eat...a man slowly got out of his SUV and took pictures of this eagle, which eventually flew away. He also observed what the eagle had been eating. The second juvenile, which flew away when the man got closer, landed in a forest tree behind our house. At 11:20, I looked to the trees where the 4 adults had been and observed only 2 adults remaining. For the next 40 minutes, these 2 BE's, sometimes together and once separate, would fly from the tree, to the beach, over the ocean, back to the beach and then fly north along the beach until they were out of site. They would return to the active tree, one at a time. After 12:00pm, one flew into the forest, and one flew north and out of site.....these eagles had the same viewpoint as I, so do you think they were introducing their young for the first time, to this area? Were they watching them, making sure they were OK on their own? I was curious about the eagles at Galloway, so I drove to the site and stayed(mudflats) from 12:20pm to 1:30pm----no eagles seen in the ne st tree or nearby. I stopped at Whalen Island and again, saw no eagles. When I got home at 2:20pm, I went upstairs to my bedroom to see if there were eagles still in the active tree...none, except a single juvenile was perched directly east of this tree and eventually flew away, north and out of site. Throughout the day, I would check the beach, the active tree and the forest and observed juveniles coming and going along the beach. At 8:00pm, 1 adult BE was observed west of the active tree, turning its head north,south,east,west, as if to locate the offspring!!!!

4/17/09 - 8:30 am--- From my bedroom upstairs, observed 1 adult BE on the beach with 1 juvenile. After 5 minutes, the adult BE flew away and the juvenile stayed on the beach for 25 minutes then flew east.
10:30 - became to foggy to see the active tree or any long distance on the beach
11:00 - Observed 2 ravens diving and chasing 1 juvenile along the beach.
1:00pm - 1 adult BE observed in a tree next to the active tree...this BE was looking toward the wetlands and estuary.
1:10 - 2 red-tail hawks flew above the adult BE in the active tree, then landed in a tree east of the active tree. When they landed, this BE flew west to another tree and perched.
1:25 - Adult BE mentioned above, moved to another tree directly west of the it had been in.
1:40 - Juvenile observed flying from the north, heading south, surveying forested hill area behind Tierra Del Mar.
1:55 - Fog rolled in.... lost view of trees and hillside.
3:40 - Adult BE perched west of the active tree, was observed, looking north toward wetlands and estuary. 3:45 - Another adult BE flew towards the perched adult BE, both took flight and flew together, finally disappearing north and out of site.
4:15 - 1 juvenile flew to a tree west of the active tree.
4:20 - This juvenile flew west toward the beach, then south and out of site.
5:20 - Adult BE observed in a tree directly east of the active tree, with 1 juvenile on a branch below. This juvenile still has white downy-like feathers on the front of its neck and partly on his/her breast. At the same time, I observed another juvenile landing in a tree west of the adult BE with the juvenile,

then another adult BE landed in the tree with the adult BE and the juvenile.
5:50 - 2 adult BE's and 2 juveniles, were still seen in the the trees described above.
6:15 - Both adults and 1 juvenile flew from the tree to the beach.
6:23 - Both adults on the beach, took flight to the trees and sent the other juvenile to the beach...the other juvenile that was first on the beach was not there when the 2nd juvenile landed on the beach.
7:00 - Observed only 1 juvenile in the tree east of the active tree..no adult BE's or the other juvenile were in site.
7:35 - 1 adult BE observed on the beach with 1 juvenile, eating...the other juvenile was still perched in the tree east of the active tree when seen at 7:00.
7:40 - 1 adult BE observed on the beach with the juvenile, took flight north and out of site.

4/18/09

8:17 am - 1 adult BE and 2 juveniles were observed in various trees as described earlier, on the southern end of the Beltz Farm.
9:15 - 2 juveniles and 1 adult BE were still in the same trees as seen at 8:17, facing the wetlands and estuary.
10:00 - 1 adult BE and 1 juvenile seen in the same trees.
10:25 - 1 juvenile seen in the same tree but the adult Be was not in site.
10:30 - 2nd juvenile flew into the tree east of the first juvenile...no adults in site.
12:00 - 1 adult BE observed in the active tree, then flew north and out of site.
1:00 - no adults or juveniles observed on the beach on in the trees.
3:20 - 1 adult BE observed circling the active tree area.
3:50 - 1 adult BE observed circling forested area behind Tierra Del Mar then flew south and out of site.
5:30 - no site of juveniles but 1 adult BE seen circling high above the wetlands and estuary north of the active tree.
6:40 - no site of eagles.

4/19/09

8:00 am - no site of eagles
9:50 - 2 adult BE's in trees west of active tree.
10:45 - 1 adult BE in the active tree.
1:00 - no eagles.
3:30 - no eagles.
5:55 - no eagles
7:15 - no eagles

4/20/09

8:00 am - 5:35 pm- no eagles in Tierra Del Mar, on beach, or in trees/active tree.

4/20/09 - Galloway - 13:40-16:10 - Tree: 1425- OP: Sand Lake Recreation Area's Tide Lands parking lot to mud flats in the Sand Lake estuary. Note - 2 adult BE's; 1 or maybe 2 juveniles. Arrived at mudflats at 13:40. Weather was beautiful, warm, clear and very little wind. Observed 1 adult BE and 1 juvenile on the southwestern end of the trees on Whalen Island. No eagles were observed at or near the nest tree. 13:50, adult BE on Whalen Island took flight north and landed in the nest of the nest tree. At 13:55, the juvenile on Whalen Island took flight south and out of site. At this time, periodically, I obsedrved a white head in the nest. 14:00, the adult BE was still in the nest. 1 juvenile was sited flying from the south, over the estuary, then circled the nest tree and flew north and out of site. 14:20, adult BE flew out of the nest into a tree directly west of the nest tree. No movement in the nest tree was observed at this time. 14:25, adult BE in the westerly tree flew back into the nest. 14:37, 1 juvenile was sited in a tree in the island of trees in the middle of the estuary, looking toward the nest tree. 14:45, the juvenile in the island tree flew north, circled high above the nest tree, then was joined by 1 adult BE. Both flew together for a few minutes, the the adult BE flew south, over Whalen Island and then out of site. The juvenile flew north and out of site. Meanwhile, the adult BE was still in the nest. 15:03, adult BE from the south, flew north through the estuary and then east toward the forest and out of site. 15:05, adult BE observed flying from the east(forest), landed in a tree directly west of the nest. 15:10, this adult BE flew south through the estuary(looking down on me!!!), circled then headed north and west where it landed in a

tree in the island of trees located at the entrance to the Sand Lake Recreation Area. 15:20, this adult BE swooped down to t he estuary, caught prey and took it immediately to the nest. 15:24, adult BE flew out of the nest and headed east and out of site. I left at 16:00, seeing a white head in the nest(adult or juvenile?) but no site of the other adult BE or the juvenile/juveniles observed in the estuary. Note: 2 red-tail hawks, 2 blue herons, 1 northern harrier.

No eagles observed on 4/20/09 in Tierra Del Mar.
No eagles observed on 4/21/09 in Tierra Del Mar so far.

Michael: Is it possible that I have seen the offspring of 2 adult BE's from another nest, not the Galloway nest? At first, I thought these were the juveniles from the nest site for when I visited the mudflats on the 16th, I didn't observe any eagles but then on the 20th, per my documentaion above. I saw a very active pair, flying into the nest tree with prey. What is really puzzling to me is when I saw the 4 adult BE's in the one tree on the Beltz Farm. It seems early to have young leaving the nest but my knowledge of timing is amateur----maybe you can explain!!!! I will visit the Galloway site today, if the fog clears. I must leave tomorrow for Tigard so I don't know if I will be able to go to Galloway in the morning, there must be another nest or two somewhere???? ....I will keep you posted.....WHAT A GREAT TIME I'VE HAD WITH THE EAGLES IN TIERRA DEL MAR.

----Original Message----
From: MjM Software Design <mjm@centurytel.net>
To: lyndasteiner@aol.com
Sent: Wed, 8 Apr 2009 6:41 am
Subject: Re: galloway nest

Thank Lynda.

lyndasteiner@aol.com wrote:

> 4/6/09 - Galloway - 12:15-14:05 - Tree: 1425 - OP: Sand Lake Recreation area's Tide Lands parking lot to mudflats in the Sand Lake estuary. Note: Adults -2. Arrived at mudflats at 12:15. Weather was sunny, warm, slighty windy and hazy. One adult BE perched in the tree directly west of the nest tree. At this time, did not see adult BE in nest tree but at 12:35, the whitehead of BE popped up from the nest, then lowered itself in the nest and out of site. At 12:40 adult BE west of the nest tree took flight north and flew out of site. Observed until adult BE, which took flight, returned to the same tree it was perched in. This was at 14:05. Could not see adult BE in the nest tree when I left at 14:12. Note: 2 red-tail hawks perched in the same tree, much further west of the nest tree. One northern flicker, waterfowl but no egrets or herons seen during my visit.

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Lynda Steiner

From: "Lynda Steiner" <lyndasteiner@oregoncoast.com>
To: "MjM Software Design" <mjm@centurytel.net>
Cc: <issacsf@onid.orst.edu>; <Charles.R.bruce@state.or.us>
Sent: Friday, March 07, 2008 3:06 PM
Subject: Galloway Road-Sand Lake Bald Eagles

Hi Michael, Frank and Charles: Hope you all are doing well this year. I have begun to observe BEs when I am down in Tierra Del Mar and will continue to do so. Here are a few days of enjoying!!!! Lynda

3/5/08 - Galloway- 15:30-18:00: OP: Sandlake Road, Sand Lake Recreation Area, Whalen Island: Note: Observed 2 Mature Bald Eagles (MBEs). Arrived at 24105 Sandlake Road at 15:30. Observed 1 MBE circling north of estuary island trees. At 15:45, this BE disappeared south toward Whalen Island. While at this OP, I scanned Reneke Point nest tree and did not see any activity in or near this nest tree used in year's past. Arrived at Sand Lake Recreation area's Tide Lands parking lot at 16:00. Walked to mudflats and sat down to observe. At 16:10, observed MBE in large tree east of last year's nest tree and observed another MBE on the west side of Whalen Island, perched in the tallest tree in the middle of Whalen Island. At 16:35, the MBE perched next to the nest tree, flew north and out of site. At 16:36, the MBE at Whalen Island flew south and out of site. Both MBEs not in site when I left the Tide Lands observation area. Arrived at Sand Lake Rec. area's Fisherman's Day Use parking lot at 17:15. No BEs in site. Left this OP at 17:35. Arrived at Whalen Island parking lot at 17:42. No BEs in site when I left at 18:00.

3/6/08 - Galloway - 14:40-16:35- OP: Sand Lake Rec area's Tide Lands parking lot: Note: Observed 2 MBEs. Arrived at 14:40 at Tide Lands parking lot and walked to mudflats to OP. No BEs in site. At 14:50, 1 MBE flew from the north and landed in the tallest tree in the mound of trees located at the entrance to the Sand Lake Rec. area. At 14:55, this MBE flew from this area, swooped low to the water at the very north edge of the estuary and caught a fish. This OP was directly south of the nest tree. This MBE took the fish to the first sandbar in front of the nest tree and ate the prey. At 15:55, this MBE flew to the nest tree, entered on the back side and faced north, out of my viewing range. At this point, I observed a white head frequently peaking through the branches then saw 2 white heads!!! 1 MBE flew to the highest branch of the nest tree, facing south toward the estuary. At 16:10, this MBE flew from the nest tree and flew north and out of sight. At this time, I could still see 1 MBE in the nest tree. Left at 16:30-still 1 MBE in nest tree but other BE not in site.

3/7/08 - Galloway - 7:55 am -10:20 am - OP: Sand Lake Rec area's Tide Lands parking lot to mudflats: Note: 2 MBEs observed. Arrived at 7:55 and walked to mudflats to OP. Sited 1 MBE in tallest tree in mound of trees located at entrance of Sand Lake Rec. area. Could not see MBE in nest tree at this time. At 8:05, MBE flew from tree on mound, south and landed on the west side of Whalen Island on the beach. This MBE spotted food and ate at this site for a few minutes then at 8:15, flew north and landed in the tallest tree at the end of the west side of Whalen Island. At this time, I still couldn't determine if a MBE was in the nest tree. At 8:17, MBE from Whalen Island, flew north to edge of estuary and picked up food dropped by a seagull, then landed on one of the island trees located north of Whalen Island. This MBE ate, then flew south and landed in tree directly west and next to the nest tree. I could now see a white head peak through the brances of the nest tree. At 8:35, MBE in the west tree from the nest tree, flew to the tallest island tree north of Whalen Island. White head of BE could still be seen in nest tree. At 8:55, MBE in island tree flew south to tallest Whalen Island tree on the west side, then at 9:15, flew east and out of site. At 10:20, I could still observe MBE in nest tree when I left this OP. Fog and clouds came rolling in, obstructing my viewing range so decided to leave.

Note: The past 3 days of observing, I also was delighted with observing a beautiful Northern Harrier, working the flats all around me as if I didn't exist!! And, as I suspected and reported last year, there must be a Great Blue Heron Rookery east of Sandlake Road. Observed all 3 days, herons flying over the red barn on Sandlake Road (near 24105 Sandlake Road) then passing the beige house nestled in the trees, to several areas with alders and firs. Must be a nesting area somewhere up there!!!!!

6/8/2007

Lynda Steiner

From: "Lynda Steiner" <lyndasteiner@oregoncoast.com>
To: "MjM Software Design" <mjm@centurytel.net>
Cc: "Frank Isaacs" <isaacsf@onid.orst.edu>
Sent: Friday, June 08, 2007 7:06 PM
Subject: Galloway Road Nest

6/8/07: Galloway Road New Nest? 14:30-16:35-OP: Turnout on Galloway Road east of Sand Lake Recreation Area. Walked to viewing site, arrived at 14:30-Could not site any BEs in nest tree. At 14:55, one mature BE flew from nest tree, heading east past Sandlake Road and disappeared over tree line. At 15:20 mature BE flew from the east and landed in the tallest fir tree to the right of the nest tree. Observed this BE until 16:35 and was still in the tree when I left at this time. Could not see any young or mature BE in nest tree.

6/8/2007

Portland, Oregon 97205
503.525.2724
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Crag is a client-focused law center that supports community efforts to protect and sustain the Pacific Northwest's natural legacy

Lynda Steiner

From: "Frank Isaacs" <fbisaacs@peak.org>
To: <Bald.Eagle.Nest.Survey@peak-mail-gateway.peak.org>
Sent: Tuesday, February 23, 2010 4:09 PM
Attach: BEagletAgeGuide.jpg
Subject: 2010 Bald Eagle Nest Survey

Dear Eagle Watchers -
The bald eagle nesting season is here again. This will be the third nesting season since the official statewide bald eagle survey project ended. Since that time I have been working on a report on the 30-year project (1978-2007) and have archived 2008 and 2009 nest monitoring reports submitted by many of you.

Even though the statewide project ended in 2007, we at OSU and Oregon Eagle Foundation continued to survey the Columbia River by helicopter and Willamette River by boat. That monitoring plus your reports covered a large percentage of the bald eagle breeding areas in Oregon and along the Washington side of the Columbia River and included discoveries of new nest trees and new breeding pairs during 2008 and 2009. I am currently soliciting funds through Oregon Eagle Foundation to pay for the review and summary of 2008-10 monitoring reports.

During 2010, please continue to send reports to me or to your local coordinator as you have in the past. It is especially important to report locations of, and bald eagle activity, at new nest trees. If funding is adequate, I will review and summarize the 2008-2010 reports after the 2010 nesting season and send an updated statewide inventory to all who contribute.

Please review the survey protocol and reporting guide pasted below and feel free to contact me if you have questions on eagle monitoring or bald eagles in general. Remember, bald eagles are still listed as a Threatened species by the State of Oregon and are protected by the Federal Bald and Golden Eagle Protection Act. Don't hesitate to report activities that you feel are disturbing nesting bald eagles to your local wildlife authorities.

Thanks for all of your past efforts and continued enthusiasm for monitoring nesting bald eagles!

Have a great spring and summer!
Sincerely,
- Frank

PS - After 31 March 2010 I will no longer be working at OSU. Please quit using the isaacf@onid.orst.edu e-mail address and start using the fbisaacs@peak.org address.

Frank B. Isaacs

24178 Cardwell Hill Dr.
Philomath, OR 97370

Home & Office Phone: 541-929-7154
FAX (call for instructions)
Email: fbisaacs@peak.org

Senior Faculty Research Assistant
Oregon Cooperative Fish & Wildlife Research Unit
Oregon State University
Corvallis, OR until 31 March 2010

BALD EAGLE NEST SURVEY AND REPORTING GUIDE:
REPORTING OBSERVATIONS AT NEST SITES IN OREGON

Dear Cooperator,
The following provides information on the protocol and reporting guidelines for bald eagle nest surveys in Oregon. It has six sections: 1) INTRODUCTION, 2) PROTOCOL, 3) REPORTING, 4) EXAMPLES OF REPORTS, 5) WHERE TO SEND REPORTS, and 6) RELEVANT LITERATURE. Please send questions or comments on the survey, and suggestions for improvements to Frank Isaacs <fbisaacs@peak.org>.

1) INTRODUCTION

Nesting season is underway and its time to begin monitoring bald eagle breeding areas. The goal of this project is to determine the outcome of nesting at all breeding areas monitored. The following information will help you plan and report your monitoring efforts.

Some thoughts on attitude and approach:
The bald eagle nesting population in Oregon has been increasing and the distribution of nest sites has been expanding for 30+ years. It is rare for a breeding area to not be occupied by at least one adult bald eagle and not unusual for new nesting pairs to show up where they haven't been before.

There are two sources of error that observers should be aware of and try to keep at a minimum:

Error 1 is concluding that a breeding area is unoccupied after minimal survey effort. What we perceive as a failure by bald eagles to occupy a site is more likely a failure of the observer to find the eagles. If eagles are not found on the first visit then follow-up visits are necessary. If all known nests in a breeding area appear to be unused, then a search for a new nest is warranted. Fresh material will usually be present on the edge of the nest in use.

Error 2 occurs when trying to determine the number of eaglets on a nest. Eaglets can be out of view for long periods of time. Minimal survey effort can result in nests with young being classified as failures, or only one eaglet being counted where there are actually two or three. If no chicks are immediately visible on a nest, look for evidence of young. White feces on the tree trunk or limbs adjacent to the nest surface may indicate the presence of unseen young. Eaglets defecate over the edge of the nest and much of the feces ends up on tree trunk and branches. Down feathers stuck to sticks on and around the nest surface also might indicate there are young present. If you see either of those clues, suspect young and spend more time observing. If you see one chick on a nest and don't have a clear view of the nest surface, then suspect two or three chicks, and wait until an adult visits the nest with prey before concluding there is just one chick. Upon arrival of an adult a second, or even two more chicks may stand or move into view. The extra time spent observing the nest will often be rewarded with interesting eagle action that would otherwise be missed.

2) PROTOCOL

NESTS SHOULD BE OBSERVED FROM A DISTANT LOCATION THAT DOES NOT DISTURB THE EAGLES. WE RECOMMEND OBSERVING WITH A SPOTTING SCOPE FROM A DISTANCE GREATER THAN 800 METERS (1/2 MILE), BUT REALIZE THAT YOU MAY NEED TO BE CLOSER. IF YOU DISTURB AN EAGLE, THEN LEAVE THE AREA.

DO NOT TRESPASS; ALWAYS GET PERMISSION BEFORE ENTERING PRIVATE PROPERTY! If you don't, you can be subject to criminal or civil trespass under state laws.

THE OBJECTIVE IS TO DETERMINE THE OUTCOME OF NESTING for each pair monitored. This requires at least 2 visits to nest sites at strategic times during the breeding season, which lasts from January through August. We realize that some of you observe nest sites outside the breeding season, and we welcome reports for September through December even when no eagles are observed, because they help fill in gaps in our knowledge of bald eagle use of nest sites during that period.

The goal of the first monitoring session is to determine if a breeding area is occupied, the second session is conducted to determine the outcome of nesting. MORE THAN TWO VISITS MAY BE REQUIRED TO DETERMINE NESTING OUTCOME.

THE BEST TIMING FOR THE FIRST MONITORING SESSION IS LATE MARCH OR EARLY APRIL. If no eagles are observed during that visit, the breeding area should be checked weekly until one or more adult bald eagles are observed, or 15 May, whichever comes first. Keep in mind that breeding pairs may have more than one nesting location within their territory. Check the surrounding trees and stand for new nests.

THE SECOND MONITORING SESSION SHOULD BE WITHIN A WEEK OF 1 JUNE. If

mostly-feathered nestlings are observed; i.e., stage 3b or older (Carpenter 1990), and you are sure how many there are, or you are sure that the nesting attempt failed, no further visits are required. If the number of nestlings is uncertain, downy nestlings are observed (stage 3a or younger), or outcome is uncertain, additional monitoring is required. If nestlings are feathered and you need to verify the number of nestlings, then return within a few days. If outcome is uncertain, then return weekly until outcome is determined. If nestlings are downy during the late-May/early-June visit, then return in 4 weeks. Be aware that early nesting pairs may have eaglets that are at or near fledging on 1 June.

When conducting a monitoring session, assume it will take 2 hours to determine nest status. Usually it doesn't take that long, but its better to expect 2 hours and use 30 minutes than to think you will be done in a few minutes and then be disappointed for 2 hours. When looking for nestlings, assume there are nestlings and don't give up hope until you are certain none are present; it can take 2 or more hours or return visits to be positive. At places where nests are easy to observe, short monitoring sessions weekly or every two weeks are as effective as 2 long sessions.

SEND REPORTS AS OFTEN AS YOU WANT. Some people like to send reports immediately after their observation and some like to send one report on all of their observations at the end of the nesting season. We realize that some of you observe sites almost daily. Send daily reports if you want or just send report about significant events such as nest building, start of incubation, hatching, nesting outcome determined, fledging, etc. The goal is to determine the number of feathered nestlings. Fledging dates are not essential, but provide valuable information and should be reported when known.

The earliest nesting pairs begin incubating in mid February; late nesters begin incubating in late April. Egg laying has not been observed after 1 May. If a nest is not being used by 15 May, it will probably not be used that season. If you know that a pair is unusually early or late nesters, adjust your observation schedule accordingly.

Age of young should be described following the attached aging guide from Carpenter (1990).

3) REPORTING

THERE ARE NO FORMS, JUST SEND COPIES OF FIELD NOTES OR WRITTEN SUMMARIES OF YOUR OBSERVATIONS THAT INCLUDE THE INFORMATION DESCRIBED BELOW.

FIELD NOTES OR WRITTEN SUMMARIES OF OBSERVATIONS provide the best descriptions of bald eagle nesting activities. They can be submitted a variety of ways. Abbreviations can be used, as long as the meanings are

obvious.

THE GOAL OF EACH REPORT SHOULD BE TO ACCURATELY DESCRIBE WHAT WAS OBSERVED DURING A MONITORING SESSION.

Reports should contain the following information: Observer Name and Contact Information (if you send e-mail that is automatically included); Date of Monitoring Session; Site Name; Survey Method (if it is something other than viewing from the ground); Location of Observation Point; Number, Age Class, and Behavior of Each Bald Eagle Observed, including plumage stage of eaglets; Nest and Nest Tree Condition (if there has been a change); Observation Times; and Other Notes on anything that seems pertinent (other observers present, human activity that appears to be disturbing, weather that could have affected eagle behavior or the accuracy of the report, prey, eagle interactions with other species, etc.)

For new nests, describe the nest, the nest tree, and the location of the new nest tree (send a detailed map if possible). If you use GPS coordinates to describe observation points or nest tree locations, then include the datum used (NAD27 or NAD83/WGS84). If you use compass bearings, indicate if they are based on magnetic north or true north.

Finally, If you don't want to change the way you have been submitting reports, then continue as you have done in the past and the information will still be used.

4) EXAMPLES OF REPORTS:

1/12/04 - 0830-0855 - Weatherly Cr. - Observed from the ODOT elevated pulloff N of Hwy. 38 across the river from the nest stand. No eagles observed. The new nest from last year is present, but I'm too far to judge nest condition; no obvious new material. Visibility is reduced due to low clouds and rain.

3/18/04 - 1800-1805 - Melrose -Observed from Evelyn Lane, W of the nest stand. Upon arrival there were 4 BEs in flight above the nest stand; 2 adults, 1 adult or nearadult, and 1 subadult. 1 adult dropped to the nest, where it landed and settled into incubating position. The subadult was last observed flying SE and the other adult and the adult or near adult were flying close together, but I didn't follow them to see where they went.

4/13/04 - 1838-1844 - Ball Point - Observed from where Eagle Ridge Rd. leaves the shoreline and begins climbing towards Eagle Ridge Point. Located 1 nest with 1 adult present in incubating position. By map location, I assume the nest tree is 711. The nest is in a live co-dominant conifer and appears to be at or near the tree top. 1848 - Adult moving as if tending eggs or small young. 1851 - Both adults are on the nest, then 1 flew NW. 1852 - 1 adult still moving around on the

nest.

4/27/04 - 1025-1032 - Potters -Observed this new nest tree from Sprague River Rd. between milepost 11 and the bridge. The nest tree has a manmade osprey platform on top; the nest is built on lateral branches below the platform. 1 adult perched on the platform. At least 2, plumage stage 1b-2, chicks active on the nest.

4/30/04 - 1030-1047- Bloody Point - Observed this site by walking into the open ponderosa pine stand W of the nest tree. First located 1 adult BE perched in a co-dom. snag, then found the nest with 1 adult BE perched on the nest rim. Could not see both birds from the same location. We flushed a RT Hawk from a nest near our observation point. That bird flew around calling and was joined by a 2nd RT Hawk. The Ad BE on the nest edge was also aware of our presence and watched us the entire time. 2nd Ad eventually arrived at the nest, then immediately flew when it saw us. Whitewash on a branch adjacent to the nest and adult behavior suggest there are small young present. NAD27 UTMs at the observation point = 615037e, 4758533n.

5/6/04 - 1740-1745 - Wallowa Lake - Observed from the Hwy. 82 pulloff NE of the nest stand. 2 chicks active on the nest; one in stage 2 and one in stage 3a plumage. Three young men sitting on the riverbank approximately 100 feet from the nest tree smoking and drinking. No adult BEs observed as of 1750.

6/10/04 - 1325 - Recreation Creek - Observed from the road W of the nest tree. Two stage 3d chicks on the nest; one standing and one laying.

5) WHERE TO SEND REPORTS

Send reports to:

Frank Isaacs
24178 Cardwell Hill Dr.
Philomath, OR 97370

e-mail = fbisaacs@peak.org
phone = 541-929-7154

6) RELEVANT LITERATURE

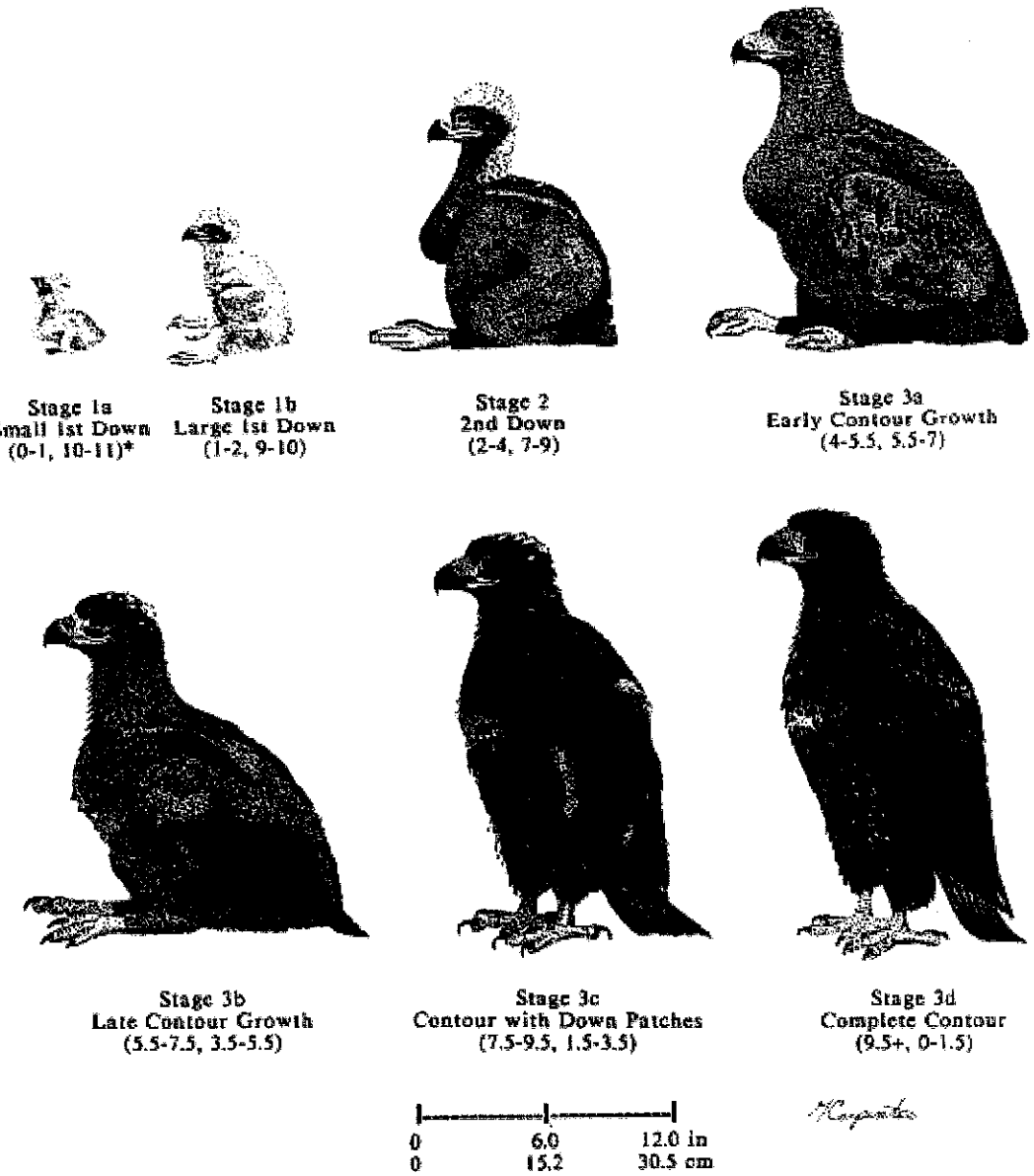
CARPENTER, G.P. 1990. An illustrated guide for identifying developmental stages of bald eagle nestlings in the field. Final draft, April 1990. San Francisco Zoological Society, Sloat Blvd. at the Pacific Ocean, San Francisco, California 94132 (415-753-7080). [attached]

ISAACS, F.B. and R.G. ANTHONY. 2008. Bald eagle nest locations and history of use in Oregon and the Washington portion of the Columbia River Recovery Zone, 1971 through 2007. Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University, Corvallis, Oregon, USA. [available upon request]

MCCOLLOUGH, M.A. 1989. Molting sequence and aging of bald eagles. The Wilson Bulletin. 101:1-10. [available upon request]

U.S. Fish and Wildlife Service Pacific Region Bald Eagle web page. 2010. http://www.fws.gov/pacific/eagle/

Version: 100223_1536



* (approximate number of weeks since hatching, approximate number of weeks until fledging)

FROM: Carpenter, George P. 1990. An illustrated guide for identifying developmental stages of bald eagle nestlings in the field. Final draft, April 1990. San Francisco Zoological Society, San Francisco, CA 94132.

- Frank

Frank B. Isaacs
24178 Cardwell Hill Dr.
Philomath, OR 97370

Lynda Steiner

From: "Frank Isaacs" <isaacsf@onid.orst.edu>
To: <Bald.Eagle.Nest.Survey@mail01.peak.org>
Sent: Wednesday, April 08, 2009 10:31 AM
Subject: 2009 Bald Eagle Nest Survey

The 2009 bald eagle nesting season is well underway. There is no official statewide survey in Oregon again this year. However, there are projects in progress that I wanted to let you know about:

1) The US Fish and Wildlife Service is conducting the first post-delisting National Bald Eagle Nest Survey. That survey includes random plots in Oregon that will be searched for existing and new nests by air. Their goal is to document population change based on nests. They will not be trying to determine nesting outcome. That survey will be repeated every 5 years. We are not directly involved in that project.

2) I am coordinating and conducting a survey of all sites along the Columbia River from Bonneville Dam to the ocean. That project is related to the US Army Corps of Engineers dredging project and a US Fish and Wildlife Service contaminants study. We will be determining nesting outcome and the results will be comparable to past surveys of that area.

3) Chuck Meslow, Bob Anthony and I are continuing a boat survey of the Willamette River from Eugene to Wilsonville. We will be determining nesting outcomes and results will be comparable to past surveys of that area.

4) There are local efforts on the Deschutes National Forest and in the Klamath Basin to continue monitoring nest sites in those areas.

If you monitored sites in the past and want to continue monitoring, your effort will not be wasted. I am archiving reports and will eventually incorporate them into the statewide database that goes back to 1971. I received many reports in 2008 and have received some for this year already. So, if you do check on nests send a report and I will archive it for later use.

I am still desk-bound most of the time trying to complete a report on 30 years of bald eagle nest monitoring in Oregon (1978-2007). Feel free to call or write if you have questions on bald eagles or monitoring nest sites. It is especially important to document new nest trees. If you find a new nest, please send details on location and bald eagle activity at the site.

Thanks for all of your past support of the bald eagle nest survey project! Have a wonderful spring!
- Frank

Lynda Steiner

From: "Frank Isaacs" <isaacsf@onid.orst.edu>
To: <Bald.Eagle.Nest.Survey@mail02.peak.org>
Sent: Friday, February 22, 2008 12:46 PM
Attach: BALD EAGLE NEST SURVEY PROTOCOL AND REPORTING GUIDE_2008.doc; BEagletAgeGuide.pdf
Subject: 2008 Bald Eagle Nest Survey

Coordination of Oregon Bald Eagle and Peregrine Falcon Nest Surveys and Monitoring for 2008

Dear Friends and Colleagues,

We would like to provide you with an update on proposed state coordination of bald eagle and peregrine falcon monitoring for the 2008 nesting season. Our primary objective is to keep the interest and data coming in a semi-coordinated fashion while we collectively transition from annual to staggered sampling years for both species.

Most of you are aware of some of the changes that have taken place in the bald eagle and peregrine monitoring world. The biggest change is that Frank will not be able to coordinate surveys or conduct field work in 2008 and 2009. The good news is that after he completes the statewide 2007 bald eagle nesting season report and a short summary on peregrine nesting information, he will dedicate the remainder of 2008 and 2009 to summarizing, analyzing, and writing up the 30 years (1978-2007) of data on bald eagles that many of YOU helped collect. Funding to begin that project has been secured from several state and federal agencies although we need still need additional funds to complete it.

On the management side of things, ODFW will be working on state bald eagle delisting this year so contact Charlie if you wish to discuss that effort. There will be plenty of opportunity for public and agency review along the way. There will likely be a state monitoring requirement coming out of that similar to peregrines as the proposed national plan will be limited to looking at nest occupancy at a regional scale (no productivity or habitat change information).

Related to federal delisting, be sure and check out the U.S. Fish and Wildlife Service Pacific Region bald eagle management and conservation guidelines web site at: . In addition, you are all probably aware that BLM and Forest Service are going through new forest planning efforts that may or may not lead to new policies regarding nest site protection and monitoring. We don't anticipate any significant changes. A final EIS for western Oregon BLM Districts is due out later this year.

As most of you are also aware, a national bald eagle monitoring plan is being developed by the Fish and Wildlife Service much like was done for

peregrines. Although the monitoring plan will not be finalized until later this year, 2009 is proposed as the first sample year. It's unclear whether it will actually start in 2009 as there is currently no federal funding identified. Western states generally don't see it as a priority given limited resources as well.

Coincidentally, 2009 will also be the third national peregrine monitoring year (conducted every 3 years) and the first state peregrine monitoring year (we'll sample about 60 more sites for more reliable population statistics). Because both state and federal monitoring plans will be based on known nesting locations, it's important that we continue to compile the most current monitoring and/or new nest site data between "official" monitoring years.

Many agencies and landowners are planning to continue to conduct selected surveys and monitor known nesting territories for land management purposes. Others would like to obtain information on the status of known nest sites near their lands (to avoid management disturbance). Many volunteers will continue to report field observations from their favorite nesting territories. We don't want that good information to get lost in your memory or agency files! We ask that you let us know if you plan on conducting surveys or monitoring know sites and which areas or sites. This will help avoid duplication and we can advise you on areas that landowners would like covered (e.g., north coast).

With that in mind, we encourage you to continue to monitor bald eagle and peregrine nest sites and send copies of reports to both Charlie Bruce and Frank so we have two collections of reports at different locations for backup reasons (isn't email great!). It is especially important to document and send reports on new or suspected nest sites. We also encourage you to follow protocols we have used in the past so we can compare current with past and future surveys. Attached are PDF copies of both protocols along with a basic peregrine field reporting form. We will make sure that a summary of the information collected will be compiled and reported back to all contributors, land owners and land managers.

Thanks to all of you for past efforts and have a great year watching eagles, peregrines and anything that flies by! Feel free to call or send e-mail if you have questions on bald eagle or peregrine nest site monitoring. Oh, if you are wondering, Frank is still working on the 2007 bald eagle and peregrine surveys reports. Look for them next month!

Charlie Bruce
Threatened and Endangered Species Coordinator
3406 Cherry Ave., NE
Salem, OR 97303
503-947-6317
FAX 503-947-6330

Email:

Frank Isaacs
24178 Cardwell Hill Dr.
Philomath, OR 97370
Home & Office Phone: 541-929-7154
FAX (call for instructions)
Email:

Lynda Steiner

From: "Frank Isaacs" <isaacsf@onid.orst.edu>
To: <Bald.Eagle.Nest.Survey@mail02.peak.org>; <Peregrine.Nest.Survey@mail02.peak.org>
Sent: Friday, October 26, 2007 3:00 PM
Subject: Big Change In Oregon Bald Eagle & Peregrine Monitoring

Dear Bald Eagle & Peregrine Survey Cooperators,
When Dr. Robert Anthony, Wildlife Unit Leader, Oregon Cooperative Fisheries and Wildlife Research Unit, Oregon State University, began a 2-year project on nesting bald eagles in Oregon in 1978, he didn't anticipate that the project would become something of an institution in the state and last 30 years. The beginning of the project coincided with listing of the bald eagle under the Federal Endangered Species Act in 1978, and the 30th year coincided with federal delisting which occurred on 28 June 2007. I was fortunate to join Bob in the nest survey effort in 1979 and have made an unplanned career out of coordinating the annual bald eagle nest survey for the past 29 years, as well as conducting several studies on wintering bald eagles, coordinating the annual Midwinter Eagle Count since 1988, and coordinating the annual statewide peregrine falcon nest survey since 2003. Those 29 years were a biologist's dream. Most of the work was field work and it was a rare opportunity to focus on one species for a relatively long time. During the project, I have had the pleasure of working with hundreds of enthusiastic cooperators. The energy and positive reinforcement of those folks was a big reason that I stayed with the project for so long.

Each year, the annual nest survey field work from March to July was the highlight of my work year. The results of that work combined with the reports contributed by cooperators was the basis for our annual status report on nesting bald eagles in Oregon. That report documented the recovery of the species in the state, and provided land managers up-to-date and accurate information on nest tree locations needed to fulfill habitat management objectives. We are grateful to all the organizations that contributed funding to make the project possible, and to all the individuals who contributed time and effort to making the project a success.

NOW, THE REASON FOR THIS MESSAGE: Dr. Anthony and I have decided that it is time to fully document the results of 30 years of bald eagle study in Oregon. We have received funding for most of this 2-year project. Consequently, I will not be coordinating or conducting field work on the bald eagle nest survey project in 2008 or 2009. Instead, I will be reviewing over a million words of personal field notes and thousands of reports from all of you, summarizing and analyzing 30 years of data, and writing a document describing what we have learned about bald eagles in Oregon during the past 30 years. The thought of all that computer time makes me cringe, but the importance of chronicling our findings is paramount. In addition, I will no longer coordinate the Midwinter Eagle Count and will not be conducting field

work for the annual peregrine falcon nest survey. Once the bald eagle document is done, I hope to return to helping with annual surveys as needed, and pursuing other interests... there must be more to spring and summer in Oregon than watching nesting bald eagles?

I encourage you to continue monitoring your eagles and peregrines and sending me reports through 2009. I will especially be interested in keeping up with discoveries of new bald eagle and peregrine falcon nest sites. 2009 is a national monitoring year for both bald eagles and peregrines and your help will be especially important that year. If someone else coordinates survey efforts in 2008 and 2009, I will provide them with the survey e-mail lists and any reports that I have collected.

Thank-you for being a part of 30 years of bald eagle recovery! I hope to thank all of you individually and in person should our paths cross in the future.
Sincerely,
Frank

Frank B. Isaacs
24178 Cardwell Hill Dr.
Philomath, OR 97370

Home & Office Phone: 541-929-7154
FAX (call for instructions)
Email: isaacsf@onid.orst.edu

Senior Faculty Research Assistant
Oregon Cooperative Fish & Wildlife Research Unit
Oregon State University
Corvallis, OR

Presented @ 5/26/07 TOM mtg

FRANK AND JOYCE BASTASCH, OWNERS OF THE BELTZ FARM, FILED A MEASURE 37 CLAIM WITH THE TILLAMOOK COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT IN SEPTEMBER,2006. THEIR CLAIM ASKED FOR COMPENSATION IN THE AMOUNT OF OVER 7 ½ MILLION DOLLARS OR A WAIVER OF THE CURRENT ZONING AND REINSTATEMENT OF THE COAST RESORT OVERLAY ZONE FOR THE PROPERTY.

AS MENTIONED IN THE NOTICE OF OUR ANNUAL TIERRA DEL MAR COMMUNITY ASSOCIATION MEETING, THE CLAIM WAS DENIED 2 TO 1 AT A PUBLIC HEARING HELD BEFORE OUR COUNTY COMMISSIONERS ON MARCH 21, 2007.

COMMISSIONERS TIM JOSI AND MARK LABHART VOTED TO DENY THE CLAIM. COMMISSIONER CHUCK HURLIMAN VOTED FOR WAIVER OF THE CLAIM.

JOSI'S STATEMENT FOR DENYING THE CLAIM WAS: THE COMMISSIONERS DID NOT REMOVE THE COAST RESORT OVERLAY ZONE OR ZONING RESTRICTIONS. THE DECEMBER 7, 1988, ORDINANCE AMENDMENT TO THE CR ZONE WAS IN PLACE BEFORE BASTASCH PURCHASED THE PROPERTY AND THIS AMENDMENT IS SELF-EXTINGUISHING. BASTASCH DID NOT EXERCISE HIS RIGHTS TO THE PRESENT, TO EXTEND THE CR ZONE ON HIS PROPERTY THUS BASTASCH DOES NOT HAVE A MEASURE 37 CLAIM.

LABHART'S STATEMENT FOR DENYING THE CLAIM WAS: THE CLAIM IS DENIED BECAUSE THE CLAIMANTS HAVE NOT DEMONSTRATED THAT A COUNTY LAND USE REGULATION HAS NEGATIVELY IMPACTED THE FAIR MARKET VALUE OF THE PROPERTY.

HURLIMAN'S STATEMENT FOR WAIVER OF THE CLAIM WAS: I FELT THE MOTION THAT SHOULD HAVE BEEN MADE WAS GRANTING THE 37 BACK TO THE DATE OF PURCHASE AND LETTING A JUDGE DO THE LAND USE ISSUE.

THE DAY AFTER THE HEARING, BASTASCH REQUESTED THE COMMISSIONERS RE-CONSIDER THEIR DECISION. THEY ELECTED NOT TO AND ON APRIL 4, 2007, THE COMMISSIONERS VOTED AGAIN 2 TO 1 TO UPHOLD THEIR DECISION THROUGH AN ORDER FOR THIS CLAIM. AT THIS HEARING, COUNTY COUNSEL STATED HE IS CONFIDENT THAT HE CAN DEFEND THE COMMISSIONERS DECISION IF BASTASCH FILES A LAWSUIT AGAINST THEIR DECISION.

BASTASCH STILL HAS THE OPTION OF FILING A NEW APPLICATION FOR DEVELOPMENT, FILING FOR REINSTATEMENT OF THE CR ZONE OR FILING A LAWSUIT AGAINST THE COUNTY FOR DENIAL OF HIS CLAIM. TO DATE,

THERE HAS NOT BEEN A CLAIM FILED IN COURT AND THERE HAVE BEEN NO LAND USE ACTIONS APPLIED FOR REGARDING THE DEVELOPMENT OF THE BELTZ FARM.

March 21, 2007

Tillamook County Commissioners:
Charles Hurliman
Tim Josi
Mark Labhart
201 Laurel Avenue
Tillamook, Oregon 97141

Re: TILLAMOOK COUNTY MEASURE 37 CLAIM NO. M-06-09 (FILED SEPTEMBER 26, 2006, FRANK AND JOYCE BASTASCH APPLICANTS)

Good Morning:

You all have previous correspondence I have submitted to you on this Measure 37 Claim: My personal comments in my letter to you, dated March 8, 2007, and in addition to my letter, my representation by the letter submitted to the Tillamook County Department of Community Development on February 19, 2007, from the CRAG Law Center.

Today, I would like to comment on the Coast Resort Overlay Zone (CR) that was originally applied to the Beltz Farm in 1983. As we know, through the filing of this Claim, Mr. Bastasch either wants $7,560,694.00 or reinstatement of the CR Zone on this property. Twenty Four years have passed since this zoning and as we look at the rapid development that has taken place along Oregon's coastline, we must ask, "If we knew then what our landscapes are looking like now, would we have applied a CR Zone to the Beltz Farm, allowing the type of development this Measure 37 Claim can permit? I HOPE NOT!!!!! Why do I say this? It is a fact that the Beltz Farm, the Sand Lake Estuary and the surrounding area have received more attention than any other landscape in Tillamook County. Why? Because there are very few places that have been left in their natural state.

In the past 20 years, hundreds, if not thousands of individuals have had a long standing interest and a sense of environmental responsibility for protecting the biologically rich assets of the Beltz Farm, the Sand Lake Estuary and the surrounding landscape. Articles and letters advocating protection of this area have appeared in newspapers, newsletters, and various publications, written by scientists, educators, writers, journalists, students and concerned individuals from all over the state. Natural resource professionals also have had a prominent role in defining, researching, educating, and advocating protection of this unique interrelated ecosystem. Oregon State Parks and the United States Forest Service have unsuccessfully tried to acquire the Beltz Farm in order to secure the integrity of the whole Sand Lake area as well as protect the abundant wildlife and their habitat. Many diverse entities have spoken loud and clear on why this property should be acquired and preserved. To name a few: The Trust for Public Lands, The Nature Conservancy, Oregon Department of Fish and Wildlife, Oregon Natural Heritage Program, Oregon Wetlands Joint Venture, Ducks Unlimited, Oregon Audubon Society, and Tillamook Bay National

Estuary Project.

Luckily, within the last 20 years, many natural places have been identified and preserved around the Beltz Farm. Why would we NOT want to protect a ecologically significant piece of property in order to maintain a WHOLE ecosystem, which are becoming rare on the Oregon coast.

This Claim, if not denied, would not only undo the tireless effort of so many people but would permit a development that will not enhance but destroy one of the most beautiful features in Tillamook County.

I urge you, our County Commissioners, to **DENY** this Measure 37 Claim, and **DENY** reinstatement of the CR Zone. Ordinance Amendment OA-88-10, adopted by the Tillamook County Board of Commissioners on December 7, 1988, allowed Mr. Bastasch to retain the CR Zone if a request had been made for an extension of time, as long as the circumstances had not changed significantly since the prior approval to render the zone change inappropriate. Circumstances have definitely changed. Our knowledge of the irreplaceable significance of the Beltz Farm to the Sand Lake area cannot be ignored. In my opinion, it is a good thing that Mr. Bastasch let the CR Zone sunset in 1992.

With the influx of so many Measure 37 Claims throughout the county and the state, those special places are all at risk of becoming developed in a very haphazard way. We can always develop but we can never undo development.

In closing, may I quote landscape photographer, Ansel Adams, who speaks for many of us, " If no one knows the importance of preserving a beautiful place, that place is not likely to be preserved, but instead, transformed to something else and probably something less. The measure of enlightenment will be man's ability in the special places to recognize that the natural things which are there, already are good things----these we inherit.

Sincerely,

Lynda Steiner

Lynda Steiner
5625 Jasmine Avenue
Tierra Del Mar mailing address: 9165 S.W. Elrose Ct., Tigard, Oregon 97224

March 8, 2007

Tillamook County Commissioners:
Charles Hurliman
Tim Josi
Mark Labhart
201 Laurel Avenue
Tillamook, Oregon 97141

Re: TILLAMOOK COUNTY MEASURE 37 CLAIM NO. M-06-09 (FILED SEPTEMBER 26, 2006, FRANK AND JOYCE BASTASCH APPLICANTS)

Dear County Commissioners:

I submit my **personal** comments on the Measure 37 Claim filed by Frank and Joyce Bastasch in **addition** to my representation by the letter submitted to the Tillamook County Department of Community Development on February 19, 2007, from CRAG Law Center. (Attachment #1). May I express my deep concerns about the fairness of this Claim and request **denial** of this Claim.

According to the Tillamook County Assessor's records, the current assessed real market value of Frank Bastasch's Beltz Farm is $267,944.00. However, the Bastasch Claim states the fair market value (if developed) to be estimated at $7,828,638.00. If this is correct, I can only conclude that Bastasch has been paying less property taxes on his 374 acre Farm compared to many of us in Tillamook County, owning one home on one lot. If the Beltz Farm is truly worth $7,828,638.00, then Bastasch has for years, been paying taxes on a very small percentage of his property's real value. Does he want us to believe that he has received no compensation whatsoever by staying in the current zoning of RM and SFW20? Who has been picking up the tab on the larger percentage of his property's taxes? It is the rest of Tillamook County property owners.

His Claim demands compensation for $7,560,694.00 or put his property back to the Coast Resort Overlay Zone (CR Zone). When he bought the Beltz Farm, he had the opportunity to "fulfill his dream", as stated in this Measure 37 Claim. The fact is, he never took action to exercise his option for development of a golf course and all the amenities that go with it. This is not the County's, State's or our fault. He has no one to blame for his inaction but himself. Could it be he let the CR Zone sunset in 1992 because the tax benefits were so attractive and development of a golf course would be a very expensive, time consuming endeavor?

I would like to summarize for you, a history of Bastasch's own inactions and intentions in trying to "fulfill his dream".

1. On October 31, 1990, Spencer Vail, representing Bastasch, wrote a letter to the Department of Community Development, asking for an extension of the CR Zone for the Beltz Farm. He also stated his intention of meeting with the County staff to go over the site-plan Bastasch's Development Team was working on. The extension of the CR Zone was granted but there never was a Conditional Use Application (CUP) filed for development of the Beltz Farm. (Attachment #2).
2. By March of 1992, the CR Zone had sunset with no correspondence requesting renewal. Instead of seriously developing a site-plan to "fulfill his dream", his letter dated January 11, 1994, addressed to the United States Forest Service (USFS), clearly indicated he was in the process of wanting to sell the Beltz Farm. See (Attachment #3) letter from Hebo District Ranger, Don Gonzalez, addressed to the County Commissioners on February 17, 1995, and other letters from: The Department of Fish and Wildlife; Oregon Natural Heritage Program; Tillamook Bay National Estuary Project; Oregon Wetlands Joint Venture; and the Headlight Herald article, showing tremendous support for the purchase of the Beltz Farm in order to protect and preserve the Sand Lake area. Unfortunately, the USFS and Trust For Public Lands (TPL) could not reach a monetary agreement with Bastasch, thus the Beltz Farm, since this period until the present, has been leased to a local Sand Lake dairy farmer for his cows.
3. In 2002, Bastasch began a process to sell the Beltz Farm again. This time, the Pacific Gailes Development Team, as you know, filed a CUP in August, 2003. Their application was reviewed diligently

and in January, 2004, the Department of Community Development requested additional information on some very serious issues that had not successfully been addressed in the CUP. (Attachment #4). No further information was submitted and the option to purchase the Beltz Farm by the Pacific Gailes group was not renewed by Bastasch and his name was dropped from the CUP----the project died.

4. Oregon State Parks, interested in acquiring the Beltz Farm for more than a decade, began negotiations with Bastasch. In June, 2004, Oregon Parks was given permission by Bastasch, to perform an appraisal on the Beltz Farm. Bastasch agreed with the appraisal value but again, purchase price disagreement resulted in another failed attempt to preserve the Beltz Farm and the Sand Lake area.

5. In September, 2005, Bastasch and his lobbyist, Roger Martin, presented to the Pacific City-Nestucca Valley Chamber of Commerce, their own and much more extensive golf/resort plan for the Beltz Farm. In October, 2005, the same plan was presented to the South Tillamook County Economic Development Symposium. Previously, to their presentations, both met with the Department of Community Development and were told they were required to file two primary applications. One, for a Conditional Use Permit for the proposed golf course and the other, an Ordinance Amendment with an Exception (reinstatement of the CR Zone). At both presentations, Bastasch and Martin assured the filing of a CUP by the end of 2005, with construction of the project to begin within 6 months from the filing. However, at the Chamber meeting, Bastasch suggested a Measure 37 Claim may be filed, getting necessary permits in place so potential investors would be more easily found. Being present for both presentations, myself and others didn't know what to believe!!

6. Again, no CUP was ever filed. Instead, on September 26, 2006, Measure 37 was filed and here we are today.

So, the big question for all of us is, "What is the true intent of the Claimant"? Does he wish to "fulfill his dream" or does he hope for a waiver with transferable rights? Measure 37 is strongly silent on whether a waiver can be transferred to a new owner when the property is sold. If the courts determine these waivers are transferable, then the Beltz Farm could potentially be developed into who knows what!!

This special class of landowners who receive waivers and are allowed to develop without regard to the surrounding community and the environment, are winning "big time". The inherent unfairness of the Bastasch Claim is what our community is realizing now. At risk is the quality of our life in Tierra Del Mar and the Sand Lake area. The natural beauty of the landscape and the abundant wildlife we all cherish and respect could be sold to the highest bidder. Tillamook County could lose one of her most unique areas that we are all so proud of and Tillamook County could be faced with drowning in unfounded infrastructure costs, benefiting one individual property owner.

I strongly hope you, our County Commissioners, will **deny** this Measure 37 Claim and see it for what it really is. The Claim is not only deficient, but unclear and unfair. Oregon's land use laws, the opponents of this Claim, or the Tillamook County Department of Community Development are not to blame for Bastasch's own inactions regarding the Beltz Farm. Your task of making a decision, when the Measure itself lacks clarity, is a responsibility that must be overwhelming for all of you, but your decision may very well shape the future of one of Oregon's most beautiful places.

Sincerely,

Lynda Steiner

Lynda Steiner
5625 Jasmine Avenue
Tierra Del Mar

cc: Bill Campbell
Lisa Phipps
Betsy Johnson
Governor Ted Kulongoski

1 ATTACHMENT

"PASSIONATE LETTERS IN OPPOSITION TO THE GOLF COURSE PROPOSAL"

Preserve this property

When I was 9 years old (1979), my parents bought property in Tierra del Mar. At that time, I couldn't understand why they chose a part of the coast where there was nothing to do. I wanted a place where I could have fun, such as Seaside or Lincoln City. Discovering the Beltz Farm was my answer to boredom.

At first, my parents introduced me to the many facets of this property — the beach, dunes, sandspit, estuary, wetlands, marshes and forest. As I grew older, my friends, my black Labs and I would spend weekends either hiking or exploring the inland trail, building forts from driftwood, camping in the forest or on the sandy beaches of the estuary. We became familiar with the abundance of wildlife that still call this place "home."

Although the Beltz Farm is privately owned, it has never been off limits to the area's children or adults seeking pleasure. I wonder how many others have enjoyed and learned from this classroom on nature. Has the Beltz Farm given to them, as it gave to me, knowledge far greater than what could be experienced growing up spending weekends in Seaside or Lincoln City? The Beltz Farm also taught me what "community" really means.

People alone do not make a community. The land, the sea, and the wildlife indicative of the Beltz Farm are an integral part of the Sand Lake, Tierra del Mar community. The beauty of this very special place should not be transformed into something far less than what it is today.

An 18-hole private golf course proposed for this property will bring out-of-state and foreign members whose main objective is to put a ball in a hole, with the magnificent surroundings only seen as a backdrop for their game. Will these golfers cherish and respect the existence of the Beltz Farm as we have? I think not, for after the game is over, the next destination will be on their agenda.

I ask the residents of Tillamook County to help protect the Beltz Farm from destruction so our children and their children can experience what only nature can teach. We must let our elected officials and county commissioners know that in this case, preservation over private development is the best and should be the only option for the Beltz Farm.

Kaysha Steiner
Tigard and Tierra del Mar

Bad use of the land

Originally I was tempted to be swayed by the argument that the exclusive and very expensive proposed golf course in Tierra del Mar was a lesser evil of possible permitted outcomes under the recreational zoning. Further examination found this to be just wrong.

Nothing will compare with the impacts of an 18-hole golf course which will totally destroy the southwest side of the Sandlake estuary and marsh. The impacts of a massive herbicidal assault necessary to maintain the course will be irreversible.

But the greatest insult is that destruction of this great natural space will come for the benefit of the few who will be able to translate their forthcoming tax cuts into extravagant indulgences, such as exclusive and distant golf memberships. In the meantime, the rest of us will struggle with diminished schools, services and the prospects of unfunded Social Security so the tax cut beneficiaries can indulge in their fantasies.

Even an RV park, which is permitted under the zoning, it could be argued, would open some beautiful access to others who might not have ready access to such a gorgeous beach at a lesser environmental cost. What is this exclusive golf course going to do for us or people like us?

J. Richard Forester
Tierra del Mar

Be wary of growth

At the end of April I had the distinct pleasure of spending a few days in Tillamook as well as an opportunity to explore some of the beautiful coast. What struck me was the pristine conditions still existing. Coming from the Atlantic Coast where development has become very intense along the beaches, it was so refreshing to see your coast.

I was dismayed to learn that a golf course is being proposed on the Beltz Farm property at Sandlake. I would entreat everyone involved to give this very careful consideration. It seems once a development project comes, many more follow and the whole environment is forever changed. I have a beach house on the outer banks of North Carolina and have seen first-hand what development growth is doing to a very special barrier island which probably was never intended to have a Wal-Mart and Home Depot side by side on it.

Hilary H. Klein
Hunt Valley, Md.

Consider golf with cows

Could this be a win-win solution between the Beltz Farm Scottish Golf Course proposal and local citizen objections to the privatization of a beautiful coastal area? A recent travel article in *The Wall Street Journal*, "Putting With Cows," provides a look at some successful alternatives.

In Glarus, Wis., a pasture is used for a golf course with a barn for a club house. Several "farm" courses can also be found in Oregon. There is the Daltonwood Golf and Country Club near Portland; and there are two in Central Oregon, the Condon Golf Course and Bear Valley Meadows Course, "where hazards include waist-high weeds, telephone poles and a helicopter pad ... aficionados say it is just an American twist to the Scottish tradition of playing on farmland with sheep dotting the landscape."

Perhaps the developers who are planning the Scottish Golf Course or the Beltz Farm could donate the dunes area golf course site for continued public use and put their golf course in the pasture there. Think of the millions that could be saved. Maybe, if there's room, a small, historic dairy, "hands on" museum might be established featuring hand milking cows, cranking a milk separator, freezing "homemade" ice cream, lifting blocks of ice ... the list goes on.

Bernie Wolf
Netart

We aren't that stupid

Several quotes in Ken O'Toole's article on the proposed private golf course north of Tierra del Mar should make us all ask, "How stupid do the developers think we are?"

Stating that "if they are successful, the golf course will be very lucky to break even" goes against all business logic. It was said, "the developers have made their money in telecommunications so this golf course will be like a hobby because it's not what they do for a living." If this is true, this golf course will be a first!

Has anyone ever seen a golf course stand alone, without hotels or condos, home sites, restaurants, shops, etc.? True, the developers may not make money on the golf course but there is plenty of money to be made on future development.

Suggesting that golfers will come "with a pocket full of money" somehow sounds like our community needs to be transformed into something better than what it is. I take offense at this statement because so many of us choose to live the easygoing lifestyle indicative of this area. Thinking their money will affect us all is arrogant and untrue.

We were told that most of the golfing visitors will fly into Portland, be shuttled to the golf course for 18 holes, then shuttled back to Portland or to another destination. What are we to believe? I don't see the developers spending a lot of time in our community. We can't even get them here on the weekend to hold their meetings with us!

The statement, "it's the love of nature, the love of golf and the opportunity to build something very special" is extremely contradictory. Loving nature means appreciating the qualities of something in its primitive state of existence. The Beltz Farm's dunes, forest, and wetlands will no longer represent nature once the bulldozers begin. The developers will destroy what they say they love, as well as an ecosystem found nowhere else on the Oregon coast.

We need to protect this very special place and not get sidetracked by dollar signs. Our children and their children will inherit our decision.

Lynda Steiner
Tierra del Mar

Disguised destruction

The proposed Sand Lake golf course development seems to bring jobs and some economic stimulus to the area, and prima facie looks very pretty. It really is destruction in disguise.

Golf courses require huge quantities of toxic herbicides to keep natural vegetation suppressed, and require large amounts of irrigation water to keep a very unnatural type of vegetation, a grass monoculture, established. The short-term effects are endangerment of groundwater quality and contamination of surface runoff; the long-term effects are unknown, but cannot be good.

Sure, people want to play golf, and they should be able to. But the price for that pleasure cannot be poisoning of the environment and destruction of one of the last natural freshwater estuaries on the Oregon Coast.

Why do the developers not want to build in an area that would support natural grass vegetation suitable for golf?

Because the site is spectacular in its natural beauty. It also supports a wide variety of plants and animals that have adapted to this site over thousands of years. They have nowhere else to go. All other places are taken by other plants and animals.

It cannot be allowed that such a rare natural treasure on the Oregon coast is sacrificed so a few can have a great view of the Pacific Ocean while golfing. That would be the pinnacle of ignorant selfishness!

Go build a golf course where it is suitable, and come to the Oregon Coast if you want to see its natural beauty.

Markus Opel
Grants Pass

Hidden agenda?

I oppose the development of Beltz farm as a golf course for all the reasons a multitude of citizens have stated: environmental issues of water and pollution, impact on community, and need to preserve a rare natural estuary.

I find it hard to believe that the developers are not sound businessmen. If the golf course will barely break even, as quoted in Ken O'Toole's article, what is their underlying plan to make a handsome profit? Are there other plans to make this barely-break even golf course a real financial possibility? Would the profit be all the necessary development that goes with a private golf resort?

We know the Oregon House has passed House Bill 3017, which allows lot, parcel or tract in exclusive farm use zone to be divided into lots or parcels if lot parcel or tract to be divided is contiguous to a golf course. Contiguous can mean across the road or highway.

Bill 3247 allows structures for food and beverage service and other accessory uses on golf courses established in certain areas zoned for exclusive farm use. We have been told repeatedly that farmland adjacent to the golf course will never be rezoned. With these bills it would not be necessary. Perhaps the developers are banking on these bills becoming law.

Perhaps they have other plans for the land once it is no longer a golf course. We could speculate forever on the possibilities. If it does not prove financially viable, will it be abandoned? Fit then for what? Certainly not one of the last remaining natural estuaries on the Oregon coast.

Yvette St.John
Cloverdale and Vancouver, Wash.

Weigh the impact

On a recent visit to Netarts, I became aware of the Sand Lake/Beltz Farm golf course proposal during a walk with m parents along the coastline where the development is planned.

Having spent the past 20-plus years in the resort, travel, tourism and hospitality business, I understand the importance — and economic value — of developments.

However, I also believe the is a sense of environmental responsibility and impact that must always be weighed when reviewing proposals such as t Sand Lake golf course. It seem considerably more prudent to select a site that would requir less environmental impact an allow residents and visitors t opportunity to continue to access a beautiful and special coastal and hiking area.

I hope the county Planning Commission will put their pr orities on environment and accessibility issues over a spe cial interest group that is clea ly in it for their personal enjo ment.

Holly Johns
Lafayette, Co

An environmentally destructive playground for the rich

If you were to ask most Oregonians what they believed was an appropriate fate for the largest stretch of undeveloped privately owned shoreline left on the whole Oregon coast, I doubt many of us would answer "How about an environmentally destructive exclusive playground for the rich?"

Unfortunately, this is exactly the proposal that a group of developers from Seattle is sugar-coating and feeding to the citizens of Tillamook County.

Over the past several months, the developers have been holding meetings to explain to us how their expert consultants will accommodate all of the community's concerns when they apply for a conditional-use permit from the county. By focusing on the details of their proposal, it seems that the developers would like us to complacently dismiss the absurdity of the concept of squeezing an 18-hole golf course between the beach and the Sand Lake Estuary — one out of only two major estuaries in the state zoned as "estuary natural." The glaring fact of the matter is that the proposal is completely inappropriate for the geologic setting and ecology of the spit, as well as for the community setting of the north Oregon coast. The golf course proposal fails Tillamook County's conditional-use criteria that states the parcel must be "suitable for the proposed use considering its size, shape, location, topography, existence of improvements and natural features."

Some people seem to have resigned themselves to thinking the spit will probably eventually get developed, so the current proposal for a private golf course might as well be the one. You may hear the argument that under the existing land-use zoning up to six private residences could potentially be permitted for construction on the spit. The argument that six residential homes would be worse than a golf course is meaningless when we consider the impact of the current proposal: 120 acres (about 75 percent) of the land cleared for development; consumption of approximately 450,000 gallons of off-site water per day (during the driest season of the year); construction of a clubhouse, guest "dormitory," restaurant, maintenance buildings, parking lots, and an onsite sewage treatment plant; routine spreading of pesticides, herbicides, and fertilizers across the landscape; the filling of at least an acre of wetlands; and up to 300 tourists per day swarming over the site.

All this so that the richest of the rich (annual course dues estimated at upwards of $40,000 a year) can pursue a hobby in our backyard while the community is thrown the scraps of a few seasonal minimum-wage jobs. Is this the Oregon coast we wish to leave for our kids? If this proposal offends you as much as it does me, please contact our local Planning Commission and county commissioners and let them know that you oppose the development of a golf course adjacent to the Sand Lake estuary.

Derek Sowers
Oceanside

Look at the 'big picture'

Some might bristle or roll their eyes at the mention of environmental groups becoming involved in the struggle to protect the Oregon Coast. I for one am grateful, as an Oregonian and homeowner at Tierra del Mar, that groups such as Oregon Coast Watch, FLOW, and Sierra Club have the "big picture."

While I wish to see Tierra del Mar remain the peaceful community that attracted me in the first place, it is about more than me — or a group of privileged golfers. It is about future Oregonians seeking the same peace. It is about dairy farmers whose livelihood could be threatened when pesticides start showing up in the milk of their herds. It's about people who live in an area poisoned by pesticides and fungicides. It's about a wildlife region that will turn into a "groomed wasteland." It's about Oregonians losing forever an area to just be an Oregonian on the coast.

I am thankful for the thoughtful people and groups who are helping us face the difficult realities of catering to a group of wealthy developers. Realtors and executives who would plunder an area of Oregon's coast for their personal gain and occasional recreation.

Linda R. Serres
Tierra del Mar

Let's support a people's preserve on Beltz Farm

The proposal to construct an 18-hole golf course, "bunkhouse," and whatever else the developers are able to do just north of Tierra del Mar is not a boon for Tillamook County residents.

The golf courses developed by this group charge private membership fees from $40,000 and up to $250,000 to join, and thousands more per month or year. Typical players belong to several of these exclusive clubs that they fly into and play for a week or so at a time.

The Beltz Farm property is a gorgeous, wild, wetlands area inhabited by eagles, hawks, otter, and covered by a variety of beach grasses, pines and firs. State Parks would like to purchase this property and preserve its use for our children, grandchildren, and generations to come. The owner, however, wants a sky-high price.

Price is no object to the jetsetters who play this type of ultra-expensive private club. They will pay an initiation fee of whatever the developers need to recoup their development costs. Five-hundred members at $50,00 per member, or 250 members at $100,000 can pay for a $25 million dollar golf course. What the members want is great golf in the midst of unparalleled natural beauty.

This proposed course will give them that. They can fly in and play golf next to Oregon's last undeveloped estuary where bald eagles and hawks used to soar and wild otter and fish used to thrive. No doubt this will be a special experience for the club members. But it is now and could continue to be a lot more special for Oregonians and their offspring to walk these grassy dunes, to watch the corsairs fly and hunt, to feel the shorepine needles on their faces and arms, and to see the giant fir limbs blown by the wind.

Golf is a great game. I love to play. But, it is wrong to blade out and industrialize this ancient and precious habitat, to spread chemicals over its floor, to divert millions of gallons of fresh water to its greens and fairways, and to have the golfcarts of multi-millionaires roaming its once pristine beauty and its once hidden groves.

Such special places are for Oregonians and for their friends and progeny. Let's support a people's preserve on Beltz Farm through State Parks, not a private preserve for the mega-rich.

Les Swanson
Tierra del Mar

Other options out there

I am distressed to hear people in Tillamook County saying there is no chance to buy the Beltz Farm property for the public good, and so a golf course is the next-best option for this ecologically diverse, beautiful piece of land.

This is simply untrue. There are quite a few options available for funding public purchase. Sources include the federal Land and Water Conservation Fund, private foundation money, and funds from Oregon's Measure 66, which devoted a portion of lottery proceeds for purchase of state parks and for habitat that benefit salmon.

Oregon State parks has long expressed an interest in Beltz Farm, should it become available for sale. It has been in the Parks Department's 2010 plan since 1990 as a property of interest. Thus, it has been identified for more than 12 years as a potential park site.

In February 1995, the U.S. Forest Service said, "This pristine estuary and associated wetlands is a high priority for acquisition to the National Forest System."

In addition, both the Nature Conservancy and the Trust for Public Land, two large and well-known land trusts, have indicated their interest in helping to acquire the property if the landowner is willing to sell.

A golf course is not inevitable on the Beltz Farm property. There are many other, better options. We should do well to remember that as the debate goes on.

Jim Spring, Chairman
Tierra del Mar Community Association
Pacific City

Don't allow another golf course to be built here

Years ago, my husband and I bought property in Pacific City because it was undiscovered. We did not want to live in an area that had a lot of tourism, including shops and golf courses.

If we wanted golf, there are two courses in Neskowin, several in Lincoln City as well as Alderbrook Golf Course in Tillamook. We like this area because it has natural areas for wildlife.

Please remember why you moved to this area and do not allow another golf course to be built here.

Joani Moore
Pacific City

Golf course developers must play by same rules

To Tillamook County Commissioners:

I regrettably am unable to attend the meeting on Aug. 29 about the proposed golf course to be built on the old Beltz Farm in Sandlake. I live nearby on Galloway Road, on the other side of the Sandlake Estuary. I am sure there are far worse uses to put that property to than a golf course, and since it is private property (and I strongly believe in private property rights), I would not object to this use as long as the owners have to follow all the same rules and regulations the county and state have subjected Tillamook County's property owners to over the years!

Let's see, Vic (Affolter, former director of Tillamook County Community Development Department, now a community facilitator with developers of the proposed golf course) that would include impacting the estuary in no adverse way — such as repairing or building dikes. You told us several years ago that the county and state could not allow us to repair the dike and floodgate on the old Meyers Farm property, even though it would have kept our rented tidelands pasture from flooding and being unusable for six months of every year.

Next would be constructing a building that close to the estuary — the county denied us a septic permit because of the water level and sandy substructure of the soil on our 15-acre parcel several times. (Finally, we asked the DEQ for help and, because we were asking for only one four-bedroom personal house, we were granted approval — no way would they give it to us if we had any intention of developing the property — ever. They made it very clear!.

The herbicide issue really bothers me — I can't believe you would allow any herbicide use anywhere near the estuary. Even the county road crews are no longer allowed to spray for weeds on Galloway Road because of the possible contamination of the estuary — and we are much farther away. You do know about the baby sand dollar beds in Sand Lake, right? I don't know how special they might be, but I know of no other place like this, either. I don't know how it will affect the river otters, sea birds, the lakes resident pair of eagles, their babies, the crabs or even the sand shrimp, do you?

Fill in the wetlands? — that is ridiculous — you just made a property owner on the other side of Tillamook Bay take out several loads of rock from his lowland property that he had placed there to widen his driveway 5 feet. Because of the variety and abundance of wildlife on the old Beltz Farm, there is no way that "mitigation" would work. Who tells the animals and seabirds where their new home is going to be anyway? What are the golf course owners going to do when that large, resident herd of elk come in for their usual late night snacks this fall?

And, of course, just the name of the place makes one wonder what is going on. It is farmland, after all, even if underused, and even Vic has stated that this is the hardest zoning of all to get changed.

So, I hope you commissioners can see past the dollar signs, and the big lawyers' guns and all the money, and do what is fair for all of the Tillamook County property owners who have been playing by your rules for the last 25 years. I ask only that these developers have to play by the same set of rules. (That doesn't mean by finding loopholes for everything, either!)

Linda Buell and Family
Sandlake

A losing proposition

As a homeowner in Tierra del Mar, I wish to express my opposition to the development of Beltz Farm property into an 18-hole "links" golf course proposed by Golf Links LCC.

This property, to be developed for only the privileged few, proposes to damage the transportation system, water resources, and wildlife habitat that exist in the area. It is hard to recall a more brazen attempt at community destruction in this state's history.

I share the concerns that have been addressed in the opposition letters to the editor in the *Headlight-Herald* and agree with the questions raised at the community meetings.

This is a losing proposition for the taxpayers and all residents of this area.

Kathleen Swyter
Tierra del Mar and Walla Walla, Wash.

Continued

Meetings left more questions than answers

As a relatively new member of the Tierra del Mar-Sandlake community, I attended the community meeting sponsored by the developers of the proposed Pacific Gailes golf course on Sept. 26. I felt that more questions were raised than were answered by the panel of consultants whom the developers have brought together.

Therefore, I set out to do my own research. From that research, I have concluded that, in their haste to convince the local community that a "links-style" golf course will provide the best possible local benefit from the Beltz Farm parcel and that it can be a financial success without residential development, a lot of half-truths are being communicated by the developers.

The developers say that they do not intend any residential development, short of the possibility of several simple bunkhouse-style rooms in their small lodge.

Yet it is common knowledge that the model they are using for the development is the "Bandon Dunes" and "Pacific Dunes" development in southern Oregon, where accommodations in the lodge start at $150 a night and go to $900 a night for a "golf suite."

Simple bunkhouse accommodations? At the Bandon Dunes Web site, I saw pictures of the Lily Pond rooms "just a wedge shot from the lodge" and connected by a paved walking trail.

I suppose it is conceivable, as the developers would like us to believe, that their business plan does not involve similar long-term plans for the Beltz Farm property, but if I were a betting woman, I would not place my money on that.

My next step was to spend an hour walking on the dike at the northern boundary of the property over the forested dunes, to the beach. Along the dike, I saw diving kingfishers, a majestic great blue heron flying overhead, the tracks of deer and bear in the wet mud of the path, and most special to me, a sleek beaver sliding across the fresh water marsh to disappear into its lodge. I tried to imagine that dike being the sole access of 175 golfers a day with their clubs, caddies and electric golf carts.

I tried to imagine the forested dune swept clean of trees, the habitat for birds and wildlife destroyed or irrevocably altered. It is simply beyond my imagination that anyone could allow such destruction to make way for a golf course, no matter how well intended the developers.

Please, don't take my word for any of the above. Do your own research. Most importantly, take that walk I did. Imagine the habitat left largely undisturbed. See the heron and beaver and the bear's muddy tracks. Then visit the Bandon Dunes Web site and take a good hard look at the pictures of the Pacific Dunes golf course. Try the photo of hole No. 17.

Then you may want to do as I have done: contact the local chapter of the Oregon Shores Conservation Coalition at greenhills@oregoncoast.com to lend your support to the quest for protection of this very special place.

Karen Reyes
Sandlake Road
and Portland

Oregonians will protect Sand Lake from Golf Course development

Throughout Oregon, people are learning about the proposal to develop the Sand Lake area for a "Scottish" golf course. People are astounded by the environmental significance of the area and the great risk to rare coastal habitat and wildlife this proposal brings to the North Coast.

Undeveloped, natural areas on the northern Oregon Coast are extremely rare and are critical for clean water, biological diversity, and human solitude. They are the last anchors of solace in areas increasingly being developed by commercial and real estate interests.

The responsibility to preserve the land and water in better condition for future generations should be our guide in making environmental decisions. Golf course development would significantly degrade the environment at Sand Lake and introduce chemical exposure to various species — including humans.

Sand Lake is of the dearest significance to many Oregonians and the public interest will be best served if Sand Lake is appropriately left to be as it is.

Joe Serres
Ashland (part-time resident of Tierra del Mar)

Impact of proposed golf course will affect all

Even Californians are in an uproar about the Pacific Gailes/Sand Lake Golf Course proposal. It appears that this project would threaten the coastline of Sand Lake and fill existing freshwater wetlands, remove pine trees from the dune area, and use 450,000 gallons of water per day.

According to the Oregon Dept. of Fish and Wildlife, "development on this tract would reduce the effectiveness of the habitat for nearly all wildlife species including eagles and herons."

There is no such thing as one's own "backyard" anymore. What affects one area will have consequences and impacts on all of us. Please consider supporting the opposition to this project.

Rita Carole
Arcata, Calif.

All that fresh water will damage ecosystem

I am deeply concerned about the proposal to construct a golf course at the Sandlake Estuary. As a retired science educator and a part-time resident of Tierra del Mar for 40 years, I see this unique estuary as a critical resource which provides the habitat necessary to support the fish, shellfish, birds and plant life in this area.

There are many reasons to be concerned about the commercial development of this estuary. One reason is the harm that will be done to this fragile ecosystem by pumping thousands of gallons of fresh water onto the golf course during the summer months when temperatures are highest and water flow in the estuary is lowest. This water will mix with pesticides and other inorganic pollutants from the golf course and wash into the estuary. The tidal and the stream currents will carry these pollutants throughout the entire estuary, trapping the pollutants and impacting microscopic organisms. These microscopic organisms, which are at the base of the food chain, are very sensitive to pollutants and even small changes can lead to very large shifts in fish, shellfish and wildlife populations.

The Sandlake Estuary is a valuable resource which must be protected in the public interest. How would we explain to our children and grandchildren that one of the last natural estuaries was destroyed so that a few economically privileged people could build a private golf course?

Pete Taylor
Tigard

Negligent to even consider such development adjacent to our public beaches

Let's ask ourselves if Tillamook County needs a golf course built in an estuary/wetland on the former Beltz Farm. It is absolutely and downright negligent to even consider such development adjacent to our public beaches, let alone in one of the most significant natural areas remaining on the Oregon coast.

The home we call Oregon has some of the best environmental protection laws in the nation, yet it seems through local county jurisdiction loopholes or back door dealing they are being circumvented for the benefit of out of state investors. Lawyers, consultants and "gold link advocates" have either current or former employment ties to Tillamook County, which constitutes a serious conflict of interest.

There are several other issues of concern that need to be addressed, among them:

Water: The demand from the golf course will be an estimated 450,000 gallons a day, in an area with limited water supplies. The assertion that golf course water will come from an alternate source does not negate Tierra del Mar water problems, as the alternate source is a back-up system for the community future drinking and fire safety needs. Further concern is exactly where this additional water is going to drain in an area with already high groundwater. What exactly will be in this water as it percolates onto our properties? Herbicides, pesticides and fertilizers which will not be contained to only 6 inches deep, as the advocates state.

Sewage: The impact to Tierra del Mar's current sanitary systems is obvious. Massive amounts of additional groundwater could force the failure of our septic systems, resulting in serious health risks. Additionally, a septic system to accommodate the golf course would directly impact the surrounding estuaries, polluting forever the pristine habitat there.

Ecological: Freshwater marshes adjacent to estuaries are very rare. Development of this course would eliminate up to two acres of this resource and pollute many more. Mitigation of wetlands is a joke. Adding additional "wetland" at another location on the property to replace the natural ones destroyed does not mitigate the environmental impact of the loss. The Sand Lake estuary is one of a few in the state given "natural" zoning. The proposed development threatens ecological values and violates the spirit of this special designation.

At every "community input meeting" the Golf Links LLC spokesmen change the story. The development expands and changes from meeting to meeting. Whatever the developers state will happen and whatever promises are made, be assured the community's interests are not the developers' interests and lip service is being given to us. Nonresident investors, sensing an easy mark in Tillamook County, are spending millions to buy their way around the land-use restrictions. If this project is given the green light, the developers and investors, as individuals, should be held accountable and bear all responsibility for the inevitable negative impacts that will occur. No hiding behind a limited liability corporation, when the liability will certainly not be limited.

Tillamook County officials have a burden and responsibility to the community to respect all restrictions, codes and land use laws and adhere to the strictest interpretation of the laws in regarding this conditional use. Let's hope they consider the facts and realities and are not blinded by the money being thrown at this project to produce whatever the developers think they want to hear.

Randy Ralls
Tierra del Mar
and Portland

An ill-conceived plan

The plan to install an 18-hole semi-private golf course on the estuary adjacent to the new state park at Whalen Island near Tierra del Mar may be well planned for golfers, but ill conceived for the generations to come.

This is not just about prohibiting further improvements in the area, as in the old saw "We, the present residents are here, and, please, no more development." It's about saving this, one of the state's largest and most environmentally significant undeveloped shoreline parcels, for posterity. On this site one finds a primordial neighborhood of wetland marshes, dunes, estuarine and riparian habitat.

Any development of a "Scottish-links" type of golf course is incompatible with needed protection of this very special place. I suggest to others opposed to this project that we advocate public purchase of the area and work toward securing funds to that end. If you'd like to help in this effort and want more information, please contact Oregon Shores Conservation Coalition, P.O. Box 1344, Depoe Bay, OR 97341 and/or contact Allison Asbjornsen, (503) 842-2408, or e-mail whiskeycreek@oregoncoast.com.

Ginger Harlow Allen
Cloverdale

Preserve this rare site

I am troubled by the proposal to build an 18-hole golf course on the Sand Lake estuary.

Although it might be attractive to those who golf and can afford the estimated $20,000 to $40,000 membership fee, the project offers little benefit to the vast majority of county and state residents.

There are currently 153 golf courses in the state of Oregon. Do we really want to let the bulldozers loose on one of the largest and most environmentally significant undeveloped shoreline parcels still in private hands on the Oregon coast just for the sake of golf course number 154?

My hope is that a way can be found to preserve this rare site so that some day my grandchildren will be able to explore and appreciate the wetlands, marshes and dunes that makeup this irreplaceable natural area.

Ron Bourke
Tierra del Mar and Portland

Is this commitment?

Twelve years ago I bought a beach cabin in Tierra del Mar, thinking I would be a weekender and perhaps rent it out occasionally for help with the expenses. Because of the beauty, tranquility and "rustic" character of the area, I soon found myself coming every weekend. I have upgraded the cabin to a comfortable home. I am active in many local community affairs. Eight years ago I retired and have essentially been living here full time since then. Out of the more than 200 homes in Tierra del Mar, I am one of the fewer than 40 full-time residents. This is my bias.

I do not live in Portland, or Seattle, or some more distant location. I am local and I resent it when people say they love the area around my home and have stayed at motels in Tillamook, Neskowin, and the Inn at Cape Kiwanda (in Pacific City) and appreciate how we feel about the area. Tierra del Mar is different from the three places they stayed. We have no commercial buildings. Pacific City is undergoing massive development and growth. Tierra del Mar is not. Tierra del Mar is a friendly neighborhood, where you know, visit and help your neighbors, as well as keep the streets and beaches cleaned from debris. Each summer there is a Tierra del Mar Summer Festival.

Tierra del Mar has a community association that has general meetings four times a year on the weekends. Carolyn McVicker and Vic Affolter, employees of the developers, Golf Links, LLC, were at the last meeting, where it was emphasized that the vast majority of property owners at Tierra del Mar still had jobs and had to take off work to come to meetings in the middle of the week. The developers must not have heard and appreciated that the people of Tierra del Mar wanted to have meetings on weekends because the next two meetings are scheduled for Sept. 26, a Thursday, and Nov. 7, another Thursday.

Is this the kind of cooperation they meant by "commitment" in the quote (from the *Headlight-Herald*, Sept. 4, Page A12), "The developers have made a commitment to connect with the community." I fear that the developers say they will listen, but they do not hear. I fear that the out-of-town developers have made a commitment to develop and they use words which have one meaning to them and a quite different meaning to the common person.

Terrance J. Frost
Tierra del Mar

Golf course concerns

My family and I have owned a home in Tierra del Mar for 35 years. In advance of meetings on the proposed Scottish-style golf course on the Beltz farm just north of Tierra del Mar, I have a number of concerns which should be addressed:

- Sewage disposal.
- Source of water supply.
- Number of private memberships.
- Traffic control and access.
- Fertilizer usage.
- Housing availability for golfers.
- Future supporting residential and commercial developments particularly on present farm lands to the east.

Patrick D. Dignan
Tierra del Mar

The best we can do?

In regard to the Beltz farm golf course proposal, is this truly the best we can do for posterity?

Picture this: a mile and a half of pristine dunes, wet lands and a tidal lake meet our gaze. As we gaze upon this idyllic setting, picture a golf course in its stead, deer trails replaced by cart trails.

That's quite a lesson and legacy to give to our children. The lesson: money talks, nature walks. The legacy: restricted use of a natural treasure for a select few, another constriction to the natural world that we so freely enjoyed as children.

When I walk through the dunes between the beach and Sand Lake and see the marker poles designating fairways and greens, I feel sick.

For our children, is this the lesson we want to give, and is this the legacy we want to leave?

Byron D. Morgan
Tierra del Mar

Golf course will benefit few, impact many

The developers of Pacific Gailes golf course have assembled a team of competent professionals to study and minimize impact although their answers to most questions about water usage, pollution, habitat destruction, waste disposal, traffic, and so forth, are vague at present. The impression is that they intend to be responsible with regards to their neighbors.

However, while this enterprise seems sort of harmless, it will actually benefit few and impact many. Local employment will be limited to low income service-type work that isn't likely to finance site-built homes for the workers. Generated taxes and fees are not likely to pay for road improvements beyond a turn lane and some traffic signs.

Current speeding, illegal passing and reckless disregard for pedestrian safety on Sand Lake Road are unlikely to improve. Land values may increase, but so will the cost of taxes, rentals, construction, etc.

"Quality of life" issues will be improved for some, worsened for others. We can anticipate more eateries and bigger wine-lists, but we're not sure we want to eat and drink in the company of supercilious twits like those encountered at a restaurant in Bandon, who after a bracing afternoon on the links thought it additional sport to disparage the help, menu and patrons.

But perhaps we'll get another boutique and gallery or two and even be able to buy Scottish wool locally, if we're tired of Pendleton.

The "Community Contract" sounds positive, but given a choice we'd rather see the developers plainly state what they intend to do for and to the community, and not expect us to try to anticipate their detrimental impacts. Most of us have little or no experience with issues such as nitrate poisoning of estuaries, wastewater treatment, or the impacts of large-scale projects on very small, environmentally sensitive areas. Why should we have to?

We've heard that Oregon Parks is next in line to purchase the property if this development falls through.

We've also heard talk about another destination golf course up Tillamook way. Is it conceivable that Beltz Farm could remain the unique undeveloped place it is and little-to-nothing be done?

Bill and Pam Wadsworth
Sand Lake

Golf course not needed

The Beltz farm golf course project is simply not needed for this area.

It provides no benefits to local residents other than many headaches we do not need (more traffic, huge demands on water resources, destruction of a quiet place to walk and contemplate the ocean) and it will end up ruining a pristine estuary and a supporting water system that barely supports the residents already here.

Surely there can be other locations to build a golf course where the environment is less sensitive and there would be less impact on the adjacent areas. I don't see how this project can be cost effective for anyone. Simple, common, ordinary, horse sense would tell anyone that this location could never produce a profit where the weather, let alone the poor access to the area, means that very few people will trek in to play golf.

If the developers think people who can afford the kind of fees proposed to come and play golf will put up with no place to stay, let alone eat, inadequate transportation and generally gusty winds a good deal of the time, they should certainly re-examine the advice they have been getting from whomever. I and many other residents can see bankruptcy written all over this kind of project, and it hasn't even been built. What a waste of human and material resources!

I say this from having already attended several of the information meetings in Pacific City and in Tierra del Mar. I was not impressed with the presentations nor with the overzealousness of interest in the local area. If the developers had a true interest in the area they wouldn't be coming here to build a golf course that would end ruining a lovely, peaceful area that is precisely that way because of the lack of business development. They would buy a small amount of property, live here when they could and enjoy the area for what it truly is like the rest of us.

This project has no redeeming values whatsoever. I can only hope that the permitting process will stop it all in its tracks and that those organizations who support leaving areas like this alone will go all out to stop this project. There is one value that is driving all of this, and it is plain to for all to see. It's ordinary greed on the part of the developer and the sellers of the various properties involved. In these trying times in our country, what we do not need is more greed. There's plenty to go around as it is. Why must our lovely area suffer for someone else's greed?

Greg A. Steinke
Cloverdale and Green Valley, Ariz.

Reasons why this is no place for golf course

I am a native Oregonian and I say that with pride. To me, being an Oregonian means that I enjoy activities in a state with many natural resources. The coastline of Oregon is a breathtaking natural wonder. I have spent many summers and spring breaks camping and exploring our coastline. I am not only an Oregonian exploring the many counties of Oregon, I am also a golfer. I feel that Oregon has many courses that offer challenges for golfers of all talents.

For a number of reasons I was surprised to learn that Tillamook County is actually entertaining the idea of mixing golf with the beauty of the coastline from Pacific City to Tillamook.

Traffic: Sand Lake Road cannot possibly absorb any more traffic. It is a narrow road that winds from U.S. 101 down through Pacific City. This road takes you from the highway into quiet areas that, unlike Seaside and Cannon Beach, have maintained their tranquility.

The road traveling from Sand Lake to Pacific City takes you past many small homes occupied by full-and part-time residents who enjoy their peacefulness but share the area with campers and recreational activities, such as the off-road adventures of Sand Lake. The activities at Sand Lake have grown over the years but remain relatively controlled. Adding more traffic on this road risks adding congestion that cannot be managed. Widening this road would take years and route and reroute traffic that would lessen any desires to travel to the area. What traffic management system would have to be in place?

Environment: The siting of this golf course, in my opinion, is extremely faulty. How will this affect the undeveloped environment? What type of water system would be used, insecticides or fertilizers? What effect would run-off have on the surrounding properties, the wildlife, marine life in the bay and ocean? What effect would the actual construction have on the environment? Where would our wildlife go during the time it would take to actually build this facility? Would the wildlife come back? Has the increased risk to the wildlife with the added traffic flow in and around the area been given any consideration? Who would be at risk? The wildlife or the people in the vehicles? Or both?

I feel this proposal is extremely shortsighted, for a few, and accessible for such a limited yearly time frame. Where are the priorities in even considering this proposal? Were we not promised sanctuaries for our wildlife and recreational sites that do not have to meet the demands of shortsighted developers who have no thought to our established environment? Can Oregon be bought by these developers who make no other investment in this state than their money?

Stevie Dwyer
Portland

See **LETTERS**, Page A7

A comparison study

With all the interest in the proposed golf course as part of the Beltz Farm property, I thought it would be interesting to do a little comparison study of two other coastal golf courses. One was proposed in Clatsop County and one is operating south in Coos County. The common feature of these two, as at the Beltz Farm one, was establishing a Scottish-like course in dunes near the ocean.

The Sunset Beach course was to be situated on Clatsop County-owned land and Camp Rialea land. The citizen opposition to the developer's plan was quite influential. Two commissioners voted against the proposal. Two commissioners voted for it. The fifth commissioner's seat was vacant. So it was a tie vote. In the following November election, the golf course proposal was one of the major issues debated. It is interesting to note that the two commissioners who voted for the golf course proposal lost the election and their commissioner positions.

The Bandon Dunes Golf Course, north of Bandon in Coos County, was approved and was successfully developed in a dunes area. There seems to have been no threat of mansions being built there. In fact, the developer, Michael Keiser, is quoted, in the Bandon *Western World*, Oct. 8, 1997, to have said that the Gold Beach Realtor who handled the sale called it "this albatross of a property." It appears that, on the surface, the environmental impact seems to be minimal. However, a sign on a path leading from the Bandon Dune Lodge says, "Please be aware — reclaimed water used for irrigation — avoid contact — do not drink." It makes one wonder.

Considering this little bit of history of one failed golf course proposal and one approved, what will unfold here in Tillamook County, if and when a permit to proceed with the Pacific Gailes Golf Course is submitted?

Bernie Wolff
Netarts

Make right choice on proposed golf course

Recently an editorial in the *Headlight-Herald* suggested residents contact our county commissioners to express opinions regarding two "land issues worth watching." Both sites are unique and represent the potential for significant conflict between ecological and social values. In particular, the proposed South County golf course site is one of five "natural" estuaries on the coast remaining in an undeveloped condition.

Recently, a hired hand for the developer disputed this fact at a Chamber of Commerce meeting by stating that there are, in fact, 18 estuaries on the coast, conveniently ignoring the developed status of 13 of those. This individual further belittled the flood of letters to the editor, some of which have been from part-time residents in the area, whom he arrogantly termed "outsiders." Interestingly, the developer isn't even a part-time resident.

Given the economic difficulties apparently facing the Western Salishan and other local golfing establishments, one has to question the wisdom of attempting such a risky venture. How will our minimal transportation infrastructure handle the proposed 30,000 visitors needed to make the project economically viable? SR 6 is already, by all accounts, a death trap.

An alternative exists to development of the Sand Lake property that would provide sustainable year-round social, economic and ecological benefits. Contrary to the statement by the editor that "if the project did fail, there would be an opportunity for public acquisition at a fair market value" public purchase of the property will definitely not be an option once the bulldozers set in and create a significantly altered landscape than what exists today.

Hopefully, our commissioners will recognize the myriad of problems and consequences associated with this project and deny the conditional-use permit if and when an application is submitted for this doomed project. Funds are currently available for public acquisition of this unique piece of property in its present state. Let's make the right choice.

Les Helgeson
Beaver

Treasured experiences

We are lifelong Oregonians, now in our 60s, who have had many magical experiences in the coastal Eden of your county. We write to you now in hopes that your newspaper can communicate to Tillamook area citizens the alarm we feel about the proposed development of a golf course community on the site of Beltz farm, across the Sand Lake estuary. We have no knowledge regarding water or sewage regulation, potential wildlife disruption or possible economic impact of these plans.

However, we do treasure the experiences we have had in the natural, beautiful areas in coastal Tillamook County these 40-odd years. We have tent-camped at Whalen Island and Cape Lookout. We have spent many memorable weeks these past eight years with friends who have had a home in Oceanside since the mid '50s. We have canoed Netarts Bay, Cape Meares Lake and the magnificent mouth of the Salmon River past Cascade Head. We have hiked the countless, beautifully maintained trails, reveling in the natural splendors so accessible to any visitor. We regularly bless the planners who chose to build the lovely Three Capes Scenic Route to prevent the garish commercial buildup one encounters at Seaside, Lincoln City, Newport, etc. We all know what befell the plans for Bay Ocean in the 1920s and, more recently, the awful fate of The Capes community in the 1990s.

Of course, there are many folks who consider a game of golf an "adventure in the great out-of-doors." But there are a number of courses, both private and public, along the coast — long established and frequented by tourists and natives alike. We also worry that, if the new course is built at Beltz farm, Mother Nature herself could take an unpredictable turn and bring utter ruination to the place.

Thank you for your attention to this long-winded plea to protect the magnificent Sand Lake site from the few moneyed interests who could change it forever.

Terry and Richard Daley
Portland

Mother Nature can be unpredictable

The developers, Golf Links, LLC, of the proposed golf course north of Tierra del Mar indicate they intend to do everything they can do to protect natural resources on this property and nearby parcels and to make sure they are not going to create adverse impacts on adjacent property and the community. They had an open house to present their latest draft proposal — but no technical reports were available.

The developers have hired an extensive team of experts to support their position, which is well and good. However, the experts do not seem to be able to accurately forecast what Mother Nature will do when coastal lands are developed.

In Tillamook County, alone, there are three cases where the unexpected happened regardless of what the experts forecast:

1. The drifting sand from Bob Straub Park to Cape Kiwanda. In Kiwanda Shores foundations of homes are undercut or sides of homes have drifts of sand halfway to the roof. Sand covers the streets and must be moved or removed from there and the beach front property each year. I heard a different type of beach grass was used to prevent the problem, but instead it exacerbated it.

2. The Capes development near Oceanside. The Cape's engineers assured everyone it was OK to build houses on a sand bluff. Yet in just a few years' time after being constructed, these houses began to slide down and the county was involved in a lawsuit.

3. The loss of the sizable Bay Ocean development and Third Street in Cape Meares becoming oceanfront property. This happened a long time ago, but the severely impacted property was not adjacent to the jetty which caused the damage.

The Clay Meyers State Natural Area at Whalen Island and the Tillamook County Island Park are appropriate uses for this fragile and beautiful area around the Sand Lake estuary. I believe that the land south of Sand Lake deserves the same consideration and reasoning for protection as the land north of Sand Lake. It is part of the same ecosystem and estuary. Why cause another problem for the people around Tierra del Mar to live with and for Tillamook County to handle?

Terrance J. Frost
Tierra del Mar

'Paving paradise'

Years ago a popular song ridiculed those who paved over paradise. As Oregonians, because the song was really about other places, we laughed at the lyrics that poked fun at the absurd choices made in California, Florida and Hawaii. We, quite naturally, laughed at the silliness and greed of those who traded their beautiful beaches for condominiums, huge parking lots, and crowds.

Today, the song is not so funny. We are now faced with "improvements" which threaten to pave over local pieces of paradise. One of these "improvements" is the proposed golf course on the Sand Lake estuary. If the golf course is built, the song will be about us.

Why? Golf courses are successful only if they have a large and well-heeled population to draw upon. Quite naturally, when golf courses are built in sparsely populated areas, regional development is always included in the business plan. Take, for example, the very successful Bandon Golf Course. Without its condominiums, the Bandon Golf course would fail financially.

Thus, if the Sand Lake golf course is to succeed, a good business prospectus must include development of the whole Sand Lake area. This being the case, what happens if Tillamook County allows the golf course to proceed? It is simple. We will trade a piece of paradise for a few minimum-wage jobs and a sprawling network of exclusive, "Anywhere, U.S.A." condominiums.

And what if the developers do not have such a development plan? What if, in other words, the developers are just plain business-stupid? Then the new golf course will struggle for a couple of years and then fail. The minimum-wage jobs it created will disappear and Tillamook County will have to deal with the costs of restoring the site.

Whichever the case, a beautiful spot will disappear — either under pavement or the auctioneer's gavel. Let the song be about the stupidity of others, not us.

George Jeffcott
Oceanside and Eugene

Golf course developers' process is a sham

The "community" process set up by the developers of the proposed golf course on the Sandlake Estuary is a sham. After attending a two-and-one-half hour session last Saturday, I left with the clear impression that it was designed to smoke out the opposition to the project, while imparting as little information about their plans as possible. Question after question was ignored, sidestepped or answered with pablum.

It is apparent that these out-of-state developers intend to proceed with this project regardless of local concerns. Pacific Gailes Golf Resort is meant to benefit those few wealthy golfers who can afford to fly in for a week to one of their many private playgrounds around the world. That is how these developers will get return on their investment, not by pumping any of that profit into the local economy.

The impact on the surrounding community — human, animal and plant — of dangerous chemicals, congested traffic, wasteful water usage and degradation caused by scouring a fragile sandspit for "turf management" does not give these developers any pause. They are in it for the money, the exorbitant fees paid by their elite clientele. For all they care, the rest of us can just go pound sand.

Kristine Olson
Tierra del Mar

Leave it undeveloped

We are property owners in the area and recently read your article regarding the proposed development of the Beltz farm in the Sand Lake estuary area with great interest. We believe the area is best left undeveloped in its natural state. We feel that the same reasons for the set aside of Whalen Island as a state park more than apply to the Beltz farm.

The Sand Lake estuary is a complex wetlands area providing a rich resource. The sand dunes and wetlands area filter water pollutants, limit water runoff, and provides nutrients to a large shell fish population. Young fish find the tidal areas important for protection and food. The bird life is very abundant, with ducks and geese using the area as a stopover on their migrations. Herons and eagles are also a vibrant part of the community. Elk, deer and even black bear are among the animals that share the area as habitat.

In addition, Beltz farm is one of only two areas of Oregon to be designated as "natural." Reneke Creek, designated by the U.S. Forest Service as a Research Natural Area, runs into the estuary and will also be affected by any changes. Any development will have a profound effect. Mitigating is not the same as preservation.

This is an important issue for Tillamook County and the state of Oregon. Do we preserve this precious resource, one of so few real natural areas, for future generations to enjoy or will its enjoyment be forever limited? The meetings proposed on Aug. 29 in Pacific City are one way to learn more. Though the date and the times may make it difficult, we hope many can turn out. We must protect and preserve this area.

Michael and Yvette St. John
Cloverdale

Proud to be a NIMBY

Call me a NIMBY (not in my back yard) and I'll agree that in this circumstance I am. When *The Oregonian* refers to Tierra del Mar as "a rustic community that resembles few towns along Oregon's coast" and even the *Headlight-Herald* says it is one of the very rare places like it left on the Oregon coast, why would we want to change it?

Even though the developers of the proposed golf course have said their course would not impact Tierra del Mar, we all know better. Just look at what has happened to Pacific City, and they are not finished yet. Bob Houston, who built the Inn at Cape Kiwanda and has plans for a hotel right on the cape itself was quoted in *Ruralite*, "The real story is the undiscovered beauty and solitude which is Pacific City. I talk to people every day who have come to Pacific City for the first time and are blown away by the natural beauty and untouched serenity of this section of the Oregon coast."

And how does he honor that untouched serenity? By building, building and building. Which is exactly what will happen to Tierra del Mar's serenity, its estuary and wetlands, the deer, elk, bear, eagles, etc. That's why I'm proud to be considered a NIMBY.

Ruth Fullman
Mike Reynolds
Tierra del Mar

Don't let them destroy our county's heritage

Out-of-state developers want to build a golf course in one of Tillamook County's significant natural areas. Sand Lake is an important estuary that is home to threatened species including the snowy plover, bald eagle and peregrine falcon. The lake is breeding ground for coho salmon, numerous birds and other wildlife.

Many of us are drawn to Tillamook County because of its beautiful natural areas, the abundance of wildlife, and the opportunity for water sports and recreation. We need to protect the wild areas that make Tillamook County such a special place. Golf courses can be put anywhere. Don't let out-of-state developers and absentee landlords destroy our county's heritage.

Suzanne Thompson
Rockaway Beach

Protest golf course plans

Pertaining to the recent plan of Golf Links, LCC, to develop a Scottish-links, 18-hole golf course (semi-private) on the 238-acre Beltz Farm property, north of Tierra del Mar, I wish to protest its proposed plans.

The potentials for damage to this pristine area runs the gamut — from habitat destruction, concerns about sewage, water and water treatment, impact on endangered species and herbicide use — to resulting traffic.

It may seem my objections are linked to the usual — "I bought here 40 years ago and this change is not good." However, in this particular case, it's the area chosen to be developed that is my objection. An area so pristine and so rare it boasts of marshes, sand dunes, bird habitats with two reported eagles' nests and, as sentimental as it sounds, the tranquility of an Eden.

With the development of a golf course, a clubhouse including a restaurant, "dormitories" for golfers and other amenities plus the proposed filling-in of several acres of wetlands makes these plans environmentally unsustainable.

This property needs to be bought for all not just in the hands of the privileged few. If you're concerned with this proposal and want more information about these efforts, contact the Oregon Shores Conservation Coalition, P.O. Box 1344, Depoe Bay, OR 97341, and/or contact Allison Asbjornsen (503) 842-2308, e-mail: whiskeycreek@oregoncoast.com

Chuck Allen
Tierra del Mar

A negative impact

The impending proposal to develop the 238-acre Beltz Farm north of Tierra del Mar into an 18-hole golf course would have a very negative impact on one of the few natural coastline areas left in Oregon. The Sandlake estuary, wetlands, and surrounding area provide habitat for wildlife, including several federally threatened species of birds. The concerns about habitat destruction, water supply, and the use of herbicides and fertilizer are very real to the residents of Tierra del Mar, Sand Lake and those who visit the area.

This land could (and should) be a precious heritage for future generations of all Oregonians rather than for a limited number of people utilizing or destroying several resources for seasonal enjoyment.

Marilyn Jagow
Tierra del Mar

Why destroy estuary?

Re: Proposed Golf Course on Beltz Farm-North of Tierra del Mar

We find it difficult to understand why anyone would want to destroy the Sand Lake estuary, which provides food for young fish and shellfish as well as birdlife with geese, ducks, etc., on their migration south, as well as eagles and herons. Deer, elk and black bear are among many animals sharing this area's habitat.

Our family built in the Tierra del Mar area 50 years ago, expressly because we have one of the most beautiful unspoiled coastal areas in our great state. Let's not turn it over to developers with dollar signs, ignoring all the excessive traffic and abundant chaos to our county and community.

Jim and Jackie Frahler
McMinnville

Golf course concerns

My family and I have owned a home in Tierra del Mar since 1964.

I have a number of concerns about the proposed Scottish-style golf course on the Beltz farm, just north of Tierra del Mar. Sewage disposal, source of water supply, traffic control and access, housing availability for golfers, future supporting residential and commercial developments particularly on present farmlands to the east. Fertilizer usage and number of private memberships are also concerns for the community.

Many new homes have been built in the years since I bought my home, but its still a quiet and wonderful community for weekends and vacations, and for those who live there permanently, and we hope it can stay that way.

Kenneth Hoggatt
Beaverton

Golf course issues

There are several issues that need to be addressed regarding the proposed golf course adjacent to Tierra del Mar.

First, with this being only one of two major estuaries designated as "natural" by the state of Oregon, is it justifiable to restrict access to a mere 600 or so individuals for perpetuity, and not allow access to others?

With more than one mile of Pacific Ocean frontage, the estuary, fresh water lake, upland forested area, foredunes, marshes, and bird and wildlife habitats, does it not seem reasonable to preserve it in some fashion so that our descendants can have an opportunity to experience a natural setting in this world which seems to pride itself in developing theme parks, shopping centers, destination resorts, etc?

Would the development of a golf course, along with a clubhouse, sewer system, storage building, possible dormitories, and parking facilities tend to destroy some of the existing natural beauty and wildlife?

Is it a worthwhile investment of our limited water resources to allow an estimated 450,000 gallons per day to be used for irrigation? Such an amount of water is apparently needed because the greens will be planted on sand. According to figures provided by the Water Resources Board of the state of Oregon, this amount of water would be sufficient to provide 6,000 people their daily water needs in a residential setting.

The developers say that this amount would be needed for June, July and August. Has it been considered that it is not unusual for this area to be extremely dry in May and September, also?

How would we be able to explain to future generations our squandering of one of the most valuable environmental areas in the state to be restricted so that only a handful has access forever?

The cost needs to be weighed against the advantages of this endeavor.

Vic and Lois Barnick
Tierra del Mar and Salem

Unanswered questions

Regarding the proposal to build a golf course on the Beltz farm north of Tierra del Mar, I have many concerns. Even though the golf course developers met with the community to provide information about the golf course, I still have many unanswered questions.

My primary concern has to do with the damage to and pollution of the Sand Lake estuary. Whalen Island on the other side of Sand Lake was recently purchased by the state of Oregon to protect this pristine area. What will the runoff from the fertilizers and pesticides from the golf course do to the same estuary? What will the estimated 450,000 gallons of water used each day during the summer do to the water table in the area, and how will the runoff affect Sand Lake? How will changing the habitat from natural grasses and trees to a golf course and filling in wetland areas, adding a club house, maintenance buildings and a sewage treatment system affect the animal life in the area?

I also have concerns about how this development would affect the community. There would be increased traffic moving through Tierra del Mar. How will this affect the residential homes in the area? When will the golf course lawn be mowed and watered? Will the community be listening to the lawn mowers and sprinklers at night instead of the sound of the ocean? How will the presence of the club house affect the rural nature of the area, and what is the truth about other development planned for the area. At the first meeting that I attended it was stated that there would be only a few dormitory rooms with the club house, but at a subsequent meeting the developers admitted that a few cottages are being planned. How many is a few?

I understand that the point of this golf course is to have it located adjacent to the coast, but just because there is money available to build the golf course doesn't mean this is the best decision. This is one of the few remaining natural areas along the Oregon coast. It deserves better than to be turned into a golf course.

Julie and David Rogers
Homeowners, Tierra del Mar

Another place in time

We have been longtime property owners in Tierra del Mar. My husband and I love what this non-commercial community offers our family. Arriving in Tierra del Mar continues to be like stepping into another place in time. Years ago the one commercial enterprise in town was a telephone booth. The telephone booth has long been gone, and now Tierra del Mar is threatened with an outside enterprise that could radically change the essence of what this community has been for so long. I am speaking of the proposed Scottish-links golf course on the Beltz Farm property. This truly is an issue of "progress" versus preservation — preservation of the unique Sand Lake Estuary and preservation of the essence of our non-commercial community.

It is in the commercial and biased interests of Golf Links, LLC to indicate that they are addressing all issues of environmental impact on this sensitive area. However, it is a known fact that the golf course will require a gluttonous use of water in summer months. It is a known fact that this pristine area will be subjected to the use of lots of fertilizers (golf courses have to be green); and it is a known fact that there will be tremendous destruction to habitat.

I have naively been under the impression that wetlands are protected. In years past, during a typically wet winter, the standing water has been so deep in the wetland area of this property that we as a family have paddled kayaks through the storm-buffeted waterways. I seriously doubt that only several acres of wetland are jeopardized.

This "progress" is about a wealthy minority golfing in the "wilderness."

Isabel Deaver
Tierra del Mar

What are we giving up?

I am greatly disturbed by new plans to destroy our scenic wetlands just north of Tierra del Mar by putting in a golf course that will displace wildlife and make the area off limits to the rest of the community.

The project is geared toward a wealthy minority, out-of-area executives and corporations, and the cost of joining the new club would be far too expensive for most of our area's residents.

While proponents argue that this complex will bring in new jobs, the relatively limited amount of minimum wage positions is not worth the high aesthetic price. Let's face it. If we wanted to live in Southern California, we would.

As Oregonians and inhabitants of this beautiful stretch of wildland, we have higher expectations for our community. We expect to see sea gulls, hawks, and bald eagles. We expect that the beach is clean and feels undisturbed. We expect that the trees are green and grow free. We expect that the fish in the ocean are healthy and that the sunset is perfect every single evening. Why else would we live here? If for something else, we would have moved to Portland long ago, or San Jose, or Los Angeles. I want to ask this community, what are we giving up?

Lillian Pasqual
Tierra del Mar

Why support golf course?

Recently we sat through more than two hours of presentations by the team professionals who hope to develop a "Scottish-links style" golf course on property in the Sandlake area.

To their credit, they are trying to solicit the public's ideas and concerns in a series of community meetings prior to hearings on the proposal.

However, not once during the meeting did we hear any valid reason why we (the public) should support this proposal. Nor did we hear any specific benefit to adjacent communities or residents near the proposed golf course, eg. how much do they expect to pay in taxes? How will they improve access roads and traffic problems, which are already bad? How will they improve — not just mitigate negative impacts — the infrastructures, scenic areas, ecological systems, and the like?

Thousands of dollars are being spent on scientific studies necessary to qualify for a conditional-use permit, and much more money will be spent to develop the golf course, if it is approved. What Tillamook County needs are road repairs, year round jobs (not just seasonal ones), affordable housing for the people who work here, and help for the schools — not a playground for the rich who can afford to come from around the world to play golf on this course.

Intrusion of big business

My husband and I built our home in Tierra del Mar more than 30 years ago. We have been notified by our Homeowners Association that Scottish Links, L.L.C., will be applying to Tillamook County for a conditional-use permit to build an exclusive, private golf course adjacent to Tierra del Mar. We are concerned and disturbed about the impact on our small community, as are our friends and neighbors. Our quiet community and small population will be impacted by big business, changing the natural estuary that everyone can visit and enjoy.

We are worried about the changes to our shoreline with new construction and fear we would incur shifting sands and loss of dunes, much the same as what happened at The Capes in central Tillamook County.

The water usage and its corresponding runoff is also a major issue. The water table impact could affect our sewage systems (septic tanks) throughout the area. What about the herbicides going into the estuary, causing possible contamination?

The highway going through Tierra del Mar is in very poor condition. The substantial increase in traffic will continue to further damage the thoroughfare. How will the county maintain this road, when we have been told the county does not have funds to make improvements?

The way this plan is going is comparable to the parable where you let a camel get his head in the tent and, before you know it, he is inside and everyone is displaced. We feel this is a spearhead effort, and that it is just the tip of the iceberg.

Private club with dormitories and cabins? Seems a small step away from a huge infrastructure where this modest little golf club takes over and will dominate our small unincorporated village. How will this elite private club benefit the citizens of Tillamook County?

The Sand Lake estuary provides a rich resource for fish and abundant bird life. It also provides for the deer, elk and bears. This area has been designated as a Natural Area. Why would anyone want to change something that nature has provided for all people to see and enjoy?

Jill and Reg Justus
Lake Oswego

Enjoy it, don't destroy it

We have visited the Pacific City/Sand Lake for short vacations over a period of several years. We especially enjoy the wildlife that we observe along the estuary whether bird-watching, hiking on the beach, or watching a winter storm. We support the Oregon Coastal Wetlands Joint Venture's Strategic Plan (May 1993) that the existing wetlands behind the Beltz dike be restored or enhanced.

To turn this fragile area into a private golf course would damage a unique area and habitat for several threatened species (bald eagles, peregrine falcons, snowy plovers) as well as blue herons, migrating waterfowl and shorebirds. The current recreational uses allow the public to enjoy but not destroy. Adding the area to the National Forest system would protect it. Developers of a private, expensive golf course could destroy one of only two remaining natural estuaries designated by the state of Oregon.

Turning a public resource into exclusive and expensive acreage will require bulldozers, clubhouse, work sheds, parking lots, extensive watering systems, restaurant, dormitory while it excludes hundreds of lower-income residents and visitors. Even people who enjoy golf may not be able to afford this course, whether that cost is in high user fees or the destruction of the estuary and the 374-acre Beltz Farm.

The development of a "Scottish-style" golf course is a destructive project that would cost Oregonians the loss of natural habitat that is unique and disappearing.
Sand Lake needs our protection.

Mary and Jerome Fulton
Portland

Estuary is in public domain

Regarding "Course of conflict" (Dec. 7), what would former Govs. Tom McCall and Bob Straub say about the proposed Pacific Gailes golf course?

Both in all likelihood would loudly proclaim: "We've been through that patch of thorns already; here's the deal: That estuary is in the public domain, and we don't want to be in a position where some Seattle developers are telling Oregon people when they can come and go to our beach; therefore, all future golf courses must be built to the east of any coastal highway."

K.R. BENTS
Troutdale

Area would be spoiled by golf course project

As Oregonians who enjoy vacationing in the area of Sand Lake, we object to the proposed "Scottish-links" golf course on the property known as Beltz Farm. The value of the wetlands and dunes on the margin of Sand Lake, a natural estuary, is too great to be spoiled by development of this type.

The freshwater marshes, the coho salmon run, the habitat for many birds could all be in danger if a large operation such as the planned golf course comes into being. The impact on the human community could also be negative with the increased water consumption and traffic.

We recognize the employment opportunities that the golf course would bring, but we think that is outweighed by the damage that would result. Having visited Bandon Dunes Golf Course, we experienced how access is restricted there. Currently, all Oregonians can enjoy the natural beauty of Sand Lake. A golf course could be enjoyed by only a few.

David and Sharon Chasko,
Lake Oswego

Don't damage a unique area and wildlife habitat

We have visited the Pacific City/Sand Lake area for short vacations over a period of several years. We especially enjoy the wildlife that we observe along the estuary whether bird watching, hiking on the beach, or watching a winter storm. We support the Oregon Coastal Wetlands Joint Venture's Strategic Plan (May 1993) that the existing wetlands behind the Beltz Dike be restored or enhanced.

To turn this fragile area into a private golf course would damage a unique area and habitat for several threatened species (bald eagles, peregrine falcons, snowy plovers) as well as blue herons, migrating waterfowl, and shorebirds. The current recreational uses allow the public to enjoy but not destroy. Adding the area to the National Forest System would protect it. Developing a private, expensive golf course could destroy one of only two remaining natural estuaries that are designated by the state of Oregon.

Turning a public resource into exclusive and expensive acreage will require bulldozers, club house, work sheds, parking lots, extensive watering systems, restaurant, dormitory or added living spaces. At the same time it excludes hundreds or thousands of us, the lower and middle income public who have lived and visited this area for years.

The development of a "Scottish-style" golf course is a destructive project that would cost Oregonians the loss of natural habitat and beauty that is unique and disappearing.

Mary and Jerome Fulton
Portland

Aren't there any laws?

We all need to work to save the Beltz Farm area, which is an area of wetlands and dunes just north of Tierra del Mar. We are deeply concerned that the proposed golf course would destroy one of the few remaining natural coastal sites in Oregon. Do we really need another golf course in Oregon?

A golf course is enjoyed by a few. A natural site is enjoyed by all (human and animal). Why would we deliberately destroy the ecological values that give the Sand Lake estuary and its surrounding area special significance. We thought there were laws to protect our wetlands. We thought there were laws to protect our salmon. We thought there were laws to protect our endangered species. Do the developers of golf courses get by with breaking laws the rest of us have to abide by?

John and Dorothy Riehl
Cloverdale

Enough is enough

How much longer is this debatable ongoing saga going to escalate regarding a proposed golf course south of Sand Lake?

After writing to a dozen, or more, county commissioners, state and federal elected officials, I've concluded nobody can see the seriousness of this proposal. How many letters and meetings of opposition does it take to persuade the golf links developers this is not a feasible project? Oh, how they continue to persist on. They have their public meetings, manipulate the county and press with very misleading answers and continue to change their plans.

Vic Affolter's conclusion from the last meeting in Pacific City was to state more people support it than were opposed. This is simply not true; at every meeting there's been an overwhelming majority in opposition, with questions never answered.

He goes on to speculate this proposal is the lesser of two evils. This statement alone is saying a golf course is evil by itself. A lesser than what? A trailer park, a housing development, condos or county park, what ever?

Most any other planned development would be a lesser impact to the estuary. The reason being other developments would be more technical in the planning stages, more enforced by local and state municipalities and most of all, not a continuing poisoning of fertilizers and the saturation of the subterranean water flow. A golf course is, by itself, the most evil impact of any.

These remarks and many more are nothing more than a charades game to manipulate the public and win a false favoritism with our county officials. Golf links advocates say it's a perfect site for this course; they have been looking for 10 years. I say, so what? We, the local citizens of the area, have the right to object. The proposed clubhouse and outbuildings are slotted off Sandlake Road in the middle of a flood zone. The seasonal water runoff could bring unforeseen problems beyond our control.

Just because the former Beltz farm happens to be in private ownership doesn't mean its development is its only option. The county needs to look beyond our man-made zoning laws and the uses permitted in this fragile area. What gives us the right to destroy nature's beauty for a few minimum-wage jobs, tidbits to the businesses of Pacific City and possibly a few extra dollars for the county budget? It's really plain and simple. This is just not worth the gamble.

Randy Ralls
Tierra del Mar
and Portland

Ill-conceived golf course plan

The plan to install an 18-hole semi-private golf course on the estuary adjacent to the new state park established south of Whalen Island near Tierra del Mar may be well planned for golfers, but ill conceived for the generations to come.

This is not just about prohibiting further improvements in the area — not the old saw — "We, the present residents are here, and please, no more development" — it's about saving this, one of the state's largest and most environmentally significant undeveloped shoreline parcels, for posterity. On this site one finds a primordial neighborhood of wetland marshes, dunes, estuarine and riparian habitat.

Any development of a "Scottish-links" type of golf course is incompatible with needed protection of this very special place. I'm suggesting to others opposed to this project that we advocate public purchase of the area and work toward securing funds to that end.

The development's personnel keep referring to their proposed "contract with the community," but one has only to ask our Native American brothers about making contracts with the monied and powerful among us.

If you'd like to help in this effort and want more information, please contact the Oregon Shores Conservation Coalition, P.O. Box 1344, Depoe Bay, OR 97341 and/or by contacting Allison Asbjornsen (503) 842-2408, or e-mail whiskey-creek@oregoncoast.com.

Ginger Harlow Allen
Cloverdale
e-mail: ginger@oregoncoast.com

A golf course at what cost?

It seems to me, the developers seeking approval for the construction of a golf course on Beltz farm (Tierra del Mar), are asking for a great deal.

The Sand Lake estuary is the very heart of a large and diverse wildlife population. It acts as a nursery for great numbers of fresh and saltwater fish and provides nesting and feeding opportunities for a host of bird species. Deer, elk, beaver, otter, seals and bear also frequent the area. It is home to a surprisingly varied plant community and in the spring and fall acts as an important resting and feeding site for a wide range of migrating waterfowl. It is a truly amazing intersection of land, sea, air and freshwater which has been designated by the state as a natural area in need of protection.

Considered by the Parks and Recreation Department (which wants to acquire it), as an excellent site for a state park, it is certainly a gem in the crown of the Oregon Coast. Are we to trade this for a handful of minimum-wage jobs?

Despite claims to the contrary, placing a golf course in the middle of this habitat will have a dramatic impact on its productivity. An average 18-hole course uses about 50,000 pounds of chemicals in a year, seven times the rate of large-scale agriculture. Given the sandy soil, a great deal of this is expected to end up in the estuary. To compound this problem, the developers intend to speed these chemicals into the groundwater by flushing the course with 450,000 gallons of water per day during summer months. Once there, only time will be able to remove these toxins from the food chain. Golf courses have also been associated with rates two to three times the national average for several types of cancer.

While I have nothing against golfing, and have occasionally enjoyed it myself, I know a bad deal when I see one. Golf courses are currently being built at a rate of about 350 a year; rare undeveloped coastal wetland, zero. As we forge into our future, where rich, unmolested areas like this will be increasingly rare, it would be sad indeed to sacrifice such a treasure to short-sighted politics and greed.

Shawn Snyder
Hebo

Rare bits of nature

Nearly 20 years ago, we discovered Whalen Island campground on the Sand Lake Estuary and enjoyed its beauty and abundance of birds many times over the ensuing years. We were therefore thrilled, four years ago, to purchase land and a house abutting the estuary, where we hope to live full time after retiring.

We have observed a growing population of bald eagle nesting, roosting and rearing their young in this, nature's perfect setting, as well as increasing populations of blue heron, egret and other shorebirds. While kayaking the estuary, we have marveled at the wonder of live Sand dollars in their natural setting, along with other shellfish (including wild oysters). The estuary is a finite treasure and something that should be saved for future generations, both human and otherwise.

The fact that the estuary is not flushed by freshwater streams, but only by tidal movement means that any contamination by pesticides may not easily be removed from the area. This would be especially harmful north of the bridge, and at times of low tidal flow such as summer, when most of these chemicals would be used. Additionally, most wells in the area draw from shallow aquifers, and would also be subject to contamination.

This problem is well known, with some golf course projects (most notably on New York's Long Island) being stopped before they are even completed.

Beltz Farm and Sand Lake are rare bits of nature that should be preserved for the enjoyment and education of all people, and not just a few. Any change to the ecology of the area is irreversible. Let us not find this out the hard way.

David and Kay Holt
Portland and Sand Lake

Consider the true value

The golf course proposed for the Beltz Farm area of Sand Lake, a pristine estuary surrounded by National Forest lands, state parks and farmland, follows the pattern of golf courses the world over. Although golf began in scrub land that was considered useless for other purposes, golf course developers today choose exquisitely beautiful terrain and then "manage" it with added freshwater and chemicals, completely altering the ecosystem.

The people of Oregon have carefully preserved their coastline, to the envy and wonder of those from other states. This unique environment with its mile of beach serves as a far greater draw as a state or federal treasure than as a golf course. The proposed development will be exclusive by design, preventing both Oregonians and tourists from access. It will eventually destroy the very environment the developers claim to appreciate, with ramifications for all adjacent lands.

There are already many golf courses along the coast to meet the sporting needs of the golfing public but this land and estuary remain one of the last undeveloped areas on the Oregon Coast. The value of this development to the community will be a limited number of low-wage jobs. The true value of this area to residents and tourists alike resides in its flora and fauna preserved in its natural state. I urge the current absentee landowners to consider the sale of this property to those who would not destroy it.

Penelope Kreinberg
Netarts and Portland

Oppose golf course plan

I am a 51-year-old Oregonian whose family state history runs deep and ties me to our incredible coastline. With roots in Astoria, Seaside, Cannon Beach, Warrenton and Tierra del Mar, I have had ample opportunities to observe the impact of development on our natural resources and once-pristine environment. I utterly oppose the Pacific Gailes/Sand Lake Golf Course development that would degrade the land and surrounding estuary of Beltz Farm.

The family home I have the privilege to enjoy in Tierra del Mar faces the estuary and is an amazing location for bird watching. As I have seen more and more habitat consumed by development over the years, this home is a place to retreat and embrace the profound beauty gifted us by nature. Knowing the ecological impact a golf course can wreak through chemical contamination of watersheds should, in itself, render Beltz Farm exempt from consideration. It is, frankly, astounding to me that a project of this kind could prevail in the face of indisputable facts regarding the devastation of endangered species and habitat, water quality and supply – degradation of a major natural estuary in a state that takes pride in policies regarding conservation.

I cannot speak strongly enough in opposition to this proposed "development." Please, don't let it happen.

Alison Rice
Portland

For benefit of the wealthy

My parents have owned a home at Sandlake for several years. I would like to respond to Mr. Ackley's letter of Feb. 26. I have seen bald eagles on Sandlake numerous times, as well as golden eagles recently, so I was amazed that Mr. Ackley has lived in Tillamook County since 1918 and seen only one immature bald eagle. Then upon reflection, I realized that, in fact, bald eagles for many years of his outdoor days were on the brink of extinction due to a multitude of bad ecological choices. Now that they are resurgent, we need to ensure they are not in danger again.

I would also like to see the fish hole near Whalen Island again teeming with the silver salmon he spoke of. With careful stewardship, it could happen. I know a golf course with its tons of chemicals and 450,000 gallons of water to wash it through the sand dunes into the estuary would not be in the best interest of protecting the rich potential of Sandlake or of encouraging the wildlife to thrive.

Regarding the economic advantages to a golf course, I do not see the area around Sandlake being saved as he claims Bandon Golf Course saved Bandon. If, in fact, Bandon has been saved, it may have been due to a variety of economic events. One very important fact is that the Bandon course is public. The Beltz Farm proposal is for a private club and would pull in only selected members. Eco-tourism could bring in more people and dollars than a private club, I believe.

The golf course would be a destruction of one of the few remaining natural areas for the benefit of the sports-minded who are wealthy enough to pay the price.

Heather Lane
Vancouver, Wash.
and Nehalem

Environmental threat

I am writing as a frequent visitor to the Pacific City/Sand Lake area to protest the building of the Pacific Gailes/Sand Lake Golf Course.

The proposed Scottish-style golf course would destroy the existing wetlands that provide a fragile habitat for many birds, fish, and water animals.

The area of the Beltz Farm and the Beltz Dam needs to be protected as one of only two remaining natural coastal estuaries that have been identified by the state of Oregon. In May 1993, the Oregon Coastal Wetlands Joint Venture's "Strategic Plan" recommended that these existing wetlands be restored or enhanced. Drainage projects near the Sand Lake Recreational Area are witness to the human upheaval that construction machinery inflicts on natural habitats. Building a golf course would do even more damage.

In addition to protecting an established natural habitat for a multitude of shorebirds and migrating fowl, the area can now be enjoyed by casual passers-by, bird watchers, hikers and bicyclists. The people who own land nearby settled there because of the natural beauty.

A golf course brings traffic, paved parking and roads (encouraging runoff and erosion), and several buildings. A golf course does not provide local people with jobs that pay livable incomes. A golf course planned for rich tourists adds nothing to the recreational opportunities of low and middle income residents and tourists.

Please prevent the invasion of the bulldozers and landscapers. The ongoing life cycles of nature give us irreplaceable beauty.

Mary W. Fulton
Portland

12-4-03

Citizens band against golf course

In response to Matt Love's commentary, "Needed: savior for an estuary" (Nov. 23), the proposed Pacific Gailes golf course on Sand Lake Estuary in Tillamook County will begin hearings before the county planning commission, probably in February.

Far more than a political savior, this estuary needs citizen activists who oppose such an ecologically and socially damaging development. There are many.

The Oregon Shores Conservation Coalition, a statewide group with more than 1,000 members, absolutely opposes the golf course proposal because of its effects on an important natural estuary that is, among other things, a rearing ground for federally threatened coho salmon.

The nearby community of Tierra del Mar is largely opposed as well; its homeowners association passed a resolution against the golf course. Oregon Shores is working hard to protect this valuable piece of our coast, representing many concerned citizens who are donating their time and energy.

ALLISON ASBJORNSEN
Board member
Oregon Shores Conservation Coalition
Tillamook

No going back if golf course built

The proposed golf course next to the Sand Lake Estuary is a statewide issue that will affect Oregon's economy and livability for decades to come ("Course of conflict," Dec. 7).

If you work or benefit from tourism, you're very aware that thousands visit Oregon as a wild and scenic alternative to the golf course- and resort-lined beaches of Florida or Southern California. If you benefit from Oregon's seafood industry, you understand how important natural estuaries are in the life cycle of commercial and game fish.

And if you are an Oregonian who values the breathtaking beauty of a peaceful walk on a lonely beach, you understand that we share a resource like no other.

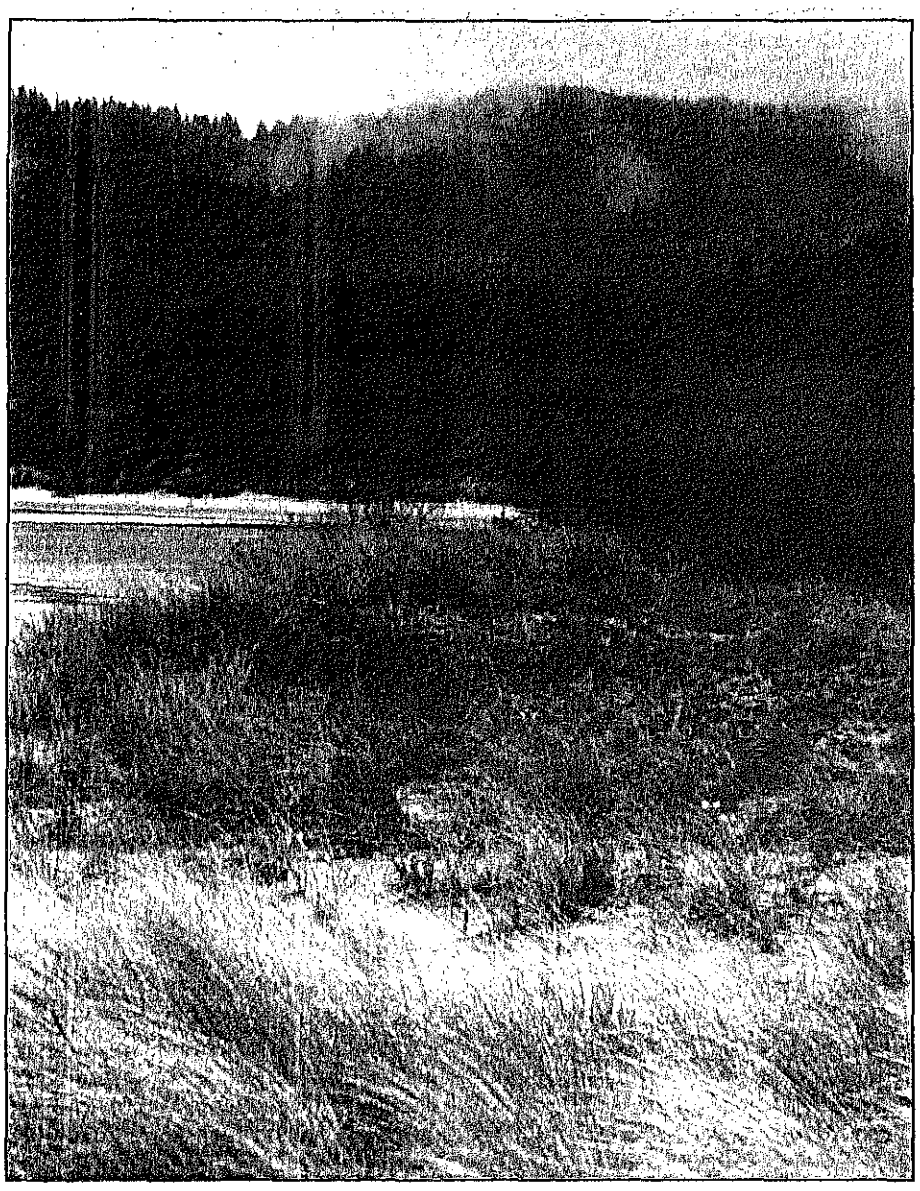
Once the bulldozers, chainsaws and inevitable leaching herbicides have their way on the Sand Lake dunes and estuary, there will be no going back. This proposed golf course threatens the quality of life of everyone who calls Oregon home.

RON BOURI
Northwest Portla

The Oregonian
12/20/03

2 ATTACHMENT

"PASSIONATE ARTICLES IN OPPOSITION TO THE GOLF COURSE PROPOSAL"



SAND LAKE ESTUARY— A proposed golf course at Sand Lake would be built next to the estuary on Sand Lake Spit, prime habitat for the threatened western snowy plover. *Photo by Lisa Skube*

Assessment and Coastal Health Act (better known as the Beach Act).

The Beach Act is designed to protect beach-goers from health risks by requiring states to warn the public when beach waters are unsafe for swimming, surfing and other activities. "The Beach Act sets up a really important program, but the program is underfunded," says Jackie Savitz of conservation group Oceana. "It's authorized at $30 million per year, but President Bush this year only asked Congress for $10 million."

In 2002, Oregon became the last coastal state to join the program. Oregon began by testing more than 50 beaches, but recently reduced testing to just 24, though it has increased the frequency of testing on many beaches to twice a month.

The Health Division has posted 33 health advisories in the last two years at 23 different beaches. The agency warns people that the water is unsafe for human contact, but does not close the beaches. Most of the contaminated beaches are north of Yachats, but Sunset Bay State Park beach near Coos Bay has had by far the largest number of violations, 37, as well as some of the highest levels of fecal pollution.

The health division does not always issue a warning when dangerous levels are of pollution are detected. A review of state beach monitoring data by Cascadia Times found that in 2002 no advisories were issued on six different Oregon beaches when dangerous levels of fecal bacteria was detected in the water. Some of these contaminated samples were taken in the D River, and by law the state cannot post freshwater streams. (See pages 14 and 15 for details on Oregon's beach pollution data.)

Under the stricter health standards enforced in the state of Washington, four additional Oregon beaches would have been unsafe for swimming.

On seven occasions, the Oregon health division detected fecal contamination at levels 10 times greater than Oregon's standard. Two tests came in at 27 times the safe level.

On average, health advisories for contaminated Oregon beaches have stayed in effect for a little more than three weeks, as officials wait for pollution levels to recede to safe levels. At Sunset Bay State Park, one health advisory remained in effect for four months.

By law, none of the federal funds for testing beaches under the Beach Act can be spent looking for the source of the pollution. And yet, it's not easy to stop the pollution if you don't know the cause, Mead says. The state of Oregon is pursuing federal grants under Section 319 of the Clean Water Act for pinning down the source of this pollution, but hasn't dedicated any of its own resources to investigate problems

The Health Division says bacterial contamination in coastal recreational waters can come from a variety of sources, including development, sewage treatment plants, failing septic tanks, urban stormwater runoff, disposal of human waste from boats, bathers themselves, and waste from animals.

Rural structures built on septic tanks next to the beach are possible sources of beach pollution. Contamination can include all kinds of chemicals and heavy metals from toilets, sinks, showers, storm drains, streets and parking lots. However, the state only tests for fecal coliform.

Many areas outside cities on the Coast have no sewage treatment facilities, and the individual septic systems attached to structures in these areas often drain into porous, sandy soils that cannot prevent fecal contamination from reaching the beaches, estuaries or rivers, especially after it rains. The pollution is potentially worse where septic tanks are failing.

This contamination harms not only humans, but aquatic ecosystems as well. Pollution can contaminate spawning areas close to shore and has been detected far out on the Continental Shelf.

Sand Lake, Oregon's most untouched estuary. Soon to be a golf course?

About 5 miles north of Pacific City, the tiny Sand Lake estuary has somehow been spared the development that has been transforming the rest of the Coast's tidal lands for 150 years. Other than a farm that operated beyond the south shore and a few homes in upland areas, the estuary has changed little.

But change is afoot, as is evident from the numerous signs posted in the area urging people to "Save Old Beltz Farm." A proposed golf course has been stirring heated opposition in the nearby Tierra del Mar and Netarts communities, as well in other places on the Coast and in the Willamette Valley.

Kathi Myron, who grew up in Tierra Del Mar, knows the location around Sand Lake estuary of most of the tiny orchids that sprout blue blossoms in the summer. "My dad first took us fishing at Sand Lake when I was 2 years old," she says, referring to herself and her brother.

"The aura around Tierra Del Mar from Sand Lake to Pacific City is in my blood, a part of me I cannot escape," she wrote in an essay about the estuary. "The ambience here has grounded me; given those of us who know this place sustenance, a sense of belonging to something bigger, something profound. The wild and almost untouched acreage surrounding the proposed golf course has been a part of this to our extended families.

"If you've known a place like this, you understand what I mean and you would know the environment here is incompatible with the planned development. This is not about prohibiting further improvements, this is about saving an area so rare, it still boasts of marshes, sand dunes, bird habitats, and as sentimental as it may sound, the tranquility of Eden."

WETLANDS LOST

Oregon's estuaries have lost most of their tidal wetlands. Only Sand Lake, Necanicum Estuary and Netarts Bay are largely untouched

Estuaries and the wetlands that surround them are the biological "hot spots" on the Coast. They are rich in food and play a key role in the life of salmon. They are also heavily used for agriculture and urban development. Since 1870, more than 68 percent of the coastal wetlands have been filled; 24 percent of the estuaries have been diked and converted to other uses. Yet little has been done to make up for past losses. Today, wetlands and estuaries are largely protected, but they are increasingly vulnerable to sprawl, pollution and logging on lands nearby. This chart lists Oregon's 17 major estuaries and the percent of wetlands and estuaries acreage each has lost.

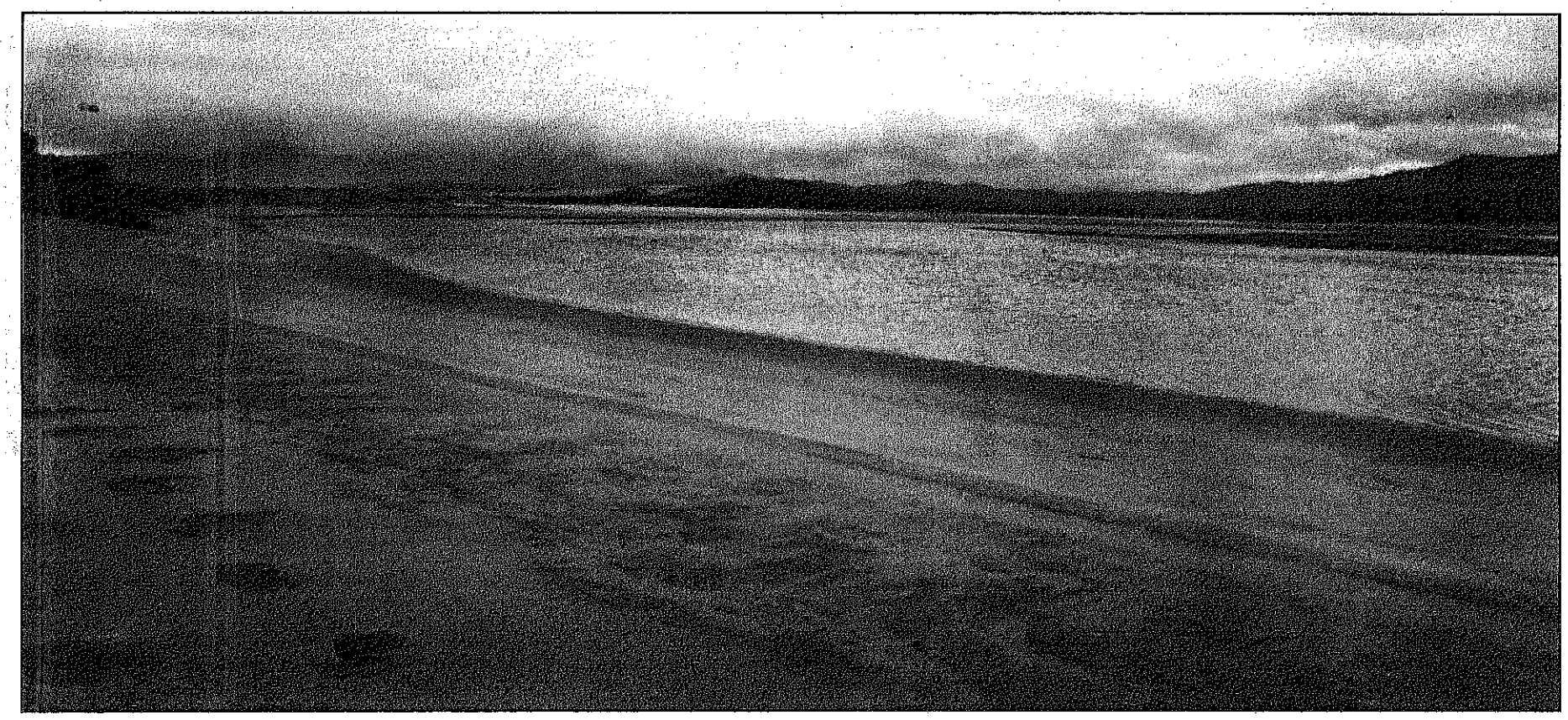
ESTUARY	WETLANDS LOSS
Coquille	-94%
Nestucca	-91%
Tillamook	-79%
Nehalem	-75%
Yaquina	-71%
Coos Bay	-66%
Columbia	-65%
Siuslaw	-63%
Siletz	-59%
Alsea	-59%
Salmon	-57%
Chetco	-56%
Umpqua	-50%
Rogue	-41%
Necanicum	-10%
Netarts	-7%
Sand Lake	-2%

Source: James W. Good, Summary and Current Status of Oregon's Estuarine Ecosystems, 2000

The estuary is a rearing area for native coho and chum salmon, as well as steelhead and cutthroat trout. Many species use the estuary for foraging, roosting and nesting, including the threatened western snowy plover. Other species that make a home in the estuary include bald and golden eagles, great blue herons, egrets, songbirds, shorebirds, waterfowl, beavers, otters, deer, elk and black bear. The golf course would be built next to the estuary on Sand Lake Spit, a prime habitat for the snowy plover.

Sand Lake estuary is the last of its kind in Oregon — a fully-functioning, undeveloped tidal and dune ecosystem.

Two years ago, Seattle developer John Fought announced plans to build on the south part of the estuary, just north of Tierra Del Mar. His plan called for a 16



TRADING WETLANDS FOR GOLF LINKS — The developers of the proposed golf course at Sand Lake would fill 7 acres of wetlands. Another 84 acres of wetlands are located in bottomland hardwoods next to the estuary that would be chopped down and filled. *Photo by Lisa Skube*

included a sandy spit between the estuary and the Pacific Ocean. His project was backed by two executives of Nokia Corporation, a Finnish cell phone company

"It's the largest block of undeveloped shoreline left in private ownership on the entire Oregon Coast," says Dan Serres, an activist who grew up nearby. He is director of Flow — Friends of Living Oregon Waters — a conservation group based in Grants Pass.

The developers said their private course would attract as many as 30,000 golfers a year who would mostly fly in and stay overnight in a modest-sized clubhouse — paying membership dues of $100,000 for the experience.

Fought and company trumpeted their assertion that the golf course, named Pacific Gailes, would be friendly to the environment. They said they intended to seek certification from "Audubon International," which would "independently confirm" that it had complied with national environmental standards for golf course management.

What the developers failed to mention is that Audubon International is hardly independent, but is in fact a front for the United States Golf Association, an industry group of golf courses. Other backers of Audubon International include four golf course superintendents associations, golf courses and a lawn mower manufacturer. For a fee, Audubon International designates golf courses as Audubon Cooperative Sanctuaries. Similar certifications are available from Audubon International to developers of cemeteries, municipal parks, campgrounds, resorts, stores, industrial facilities, marinas, residential communities, and preparatory schools.

Despite the similarities in name, there is no connection whatsoever between Audubon International and the National Audubon Society.

"Audubon does not certify golf courses, or any other development, as being environmentally sound," says John Flicker, president of the much-larger National Audubon Society, founded in 1905. "Indeed, Audubon more often opposes such development. Audubon also owns and manages many Sanctuaries around the country. Audubon Sanctuaries are natural places protected from development, not places certified for development."

The developers proposed to fill 7 acres of wetlands. They also would chop down another 84 acres of bottomland hardwoods next to the estuary.

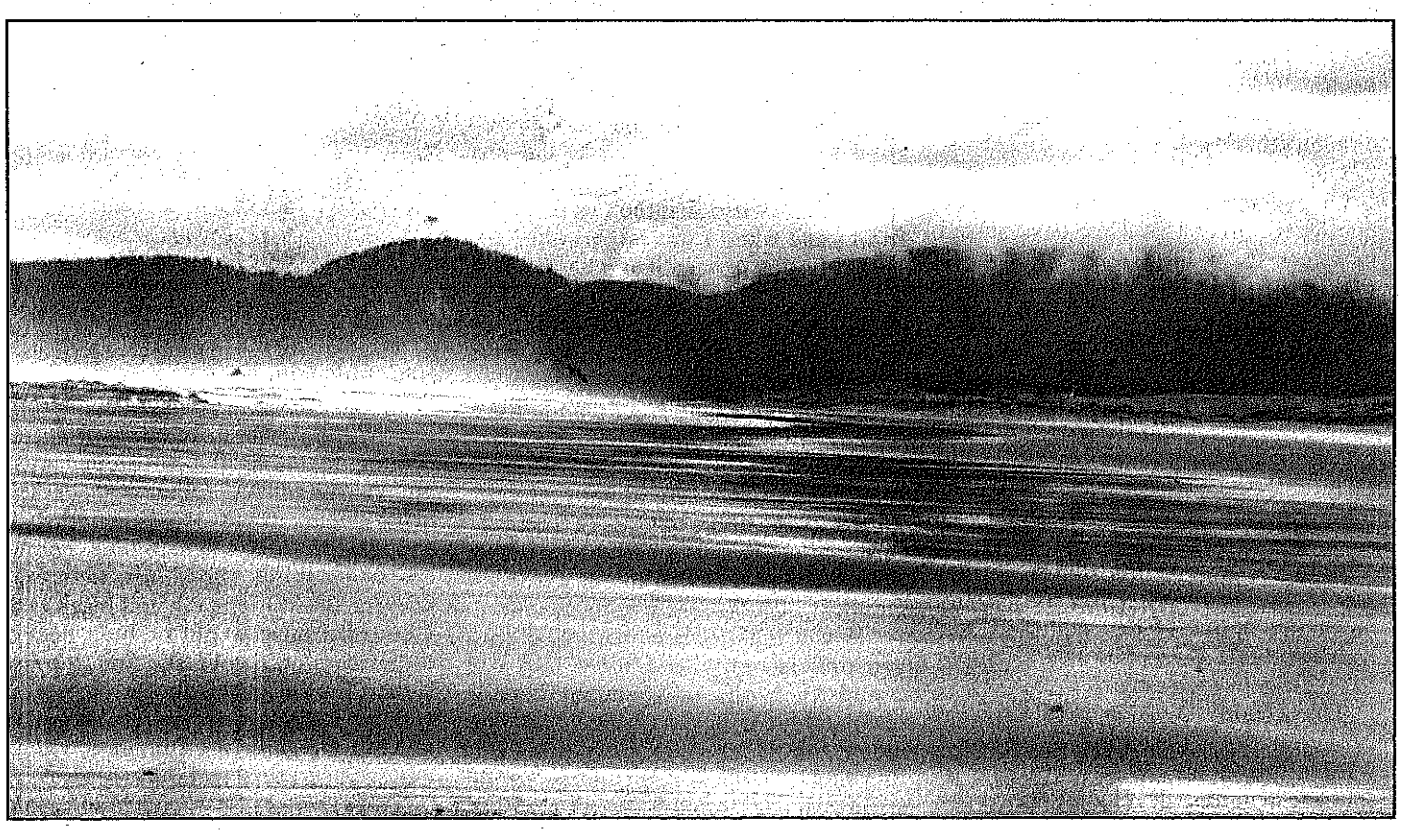
Sand Lake has seen less development than any other estuary on the Coast (see list on Page 11). This amount of wetlands loss would nearly equal all of Sand Lake's wetlands loss since 1870.

"There is no oceanfront site left on the Oregon Coast that can accommodate a development like this and avoid wetland fills of unacceptable magnitude, and the developers know it," according to the Northwest Environmental Defense Center, a legal advocacy group based in Portland.

The Sand Lake golf project has evolved in recent months. John Fought apparently has dropped out of the picture, but property owner Frank Bastasch of a Los Angeles suburb continues to show interest.

In June 2005 Bastasch and a consultant met with Tillamook County planning officials to discuss potential changes to the proposal. Bastasch, designer of the Eagle Creek Golf Course near Estacada, Ore., inquired whether the county would allow a hotel, timeshare condos and a restaurant in addition to a golf course at the site, according to Lisa Phipps, a county planner who also attended the meeting. Bastasch did not return a reporter's phone calls.

The Oregon State Parks and Recreation Department has attempted to purchase the site, but negotiations stilled because of the high asking price. Allison Asbjornsen, of Netarts and a member of Oregon



GOLF, ANYONE? — An eagle cruises over the surf at the mouth of the Sand Lake Estuary north of Pacific City. A plan to build an 18-hole golf course, condos and a restaurant has been discussed with Tillamook County officials. *Photo by Lisa Skube.*

Shores, whose Sand Lake Task Force, made up of local citizens, is fighting the golf course, has closely tracked the proposal. "The owner simply wants more money than the appraisal justifies. These sites are incredibly valuable, and few very are available," she says. "It's an area of great beauty, and it's close to Portland."

If the project is built, significant impacts on local drinking water supplies are likely, says Lynda Steiner of Tierra del Mar, directly to the south of Sand Lake. The Sand Lake golf course would use up to 450,000 gallons of water per day for summer irrigation. The runoff, filled with pesticides and fertilizers, would leach through the dunes into the wetlands, marshes and estuary, she says.

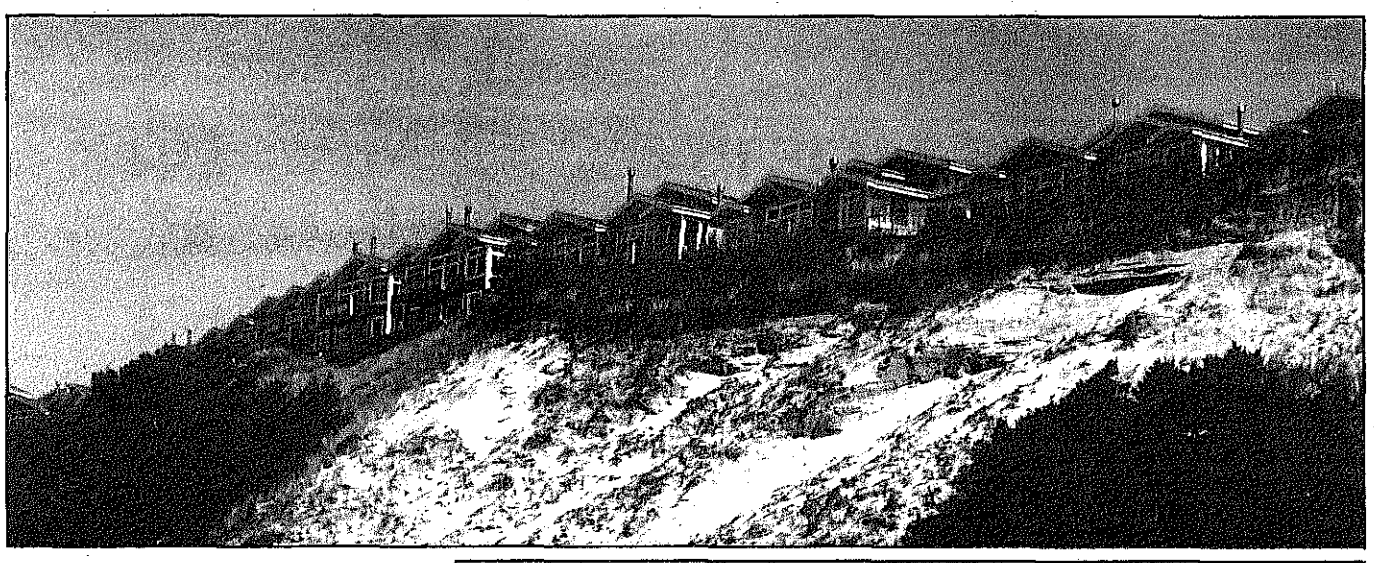
Tierra Del Mar hardly has enough water to meet its own needs — and sometimes it runs short. The community was without water for six hours over the Fourth of July weekend in 2005. "We solely depend on the Beltz Creek for water to our community as do Sand Lake property owners, and I don't think the development would have any rights to the water we are supplied from this creek," Steiner says.

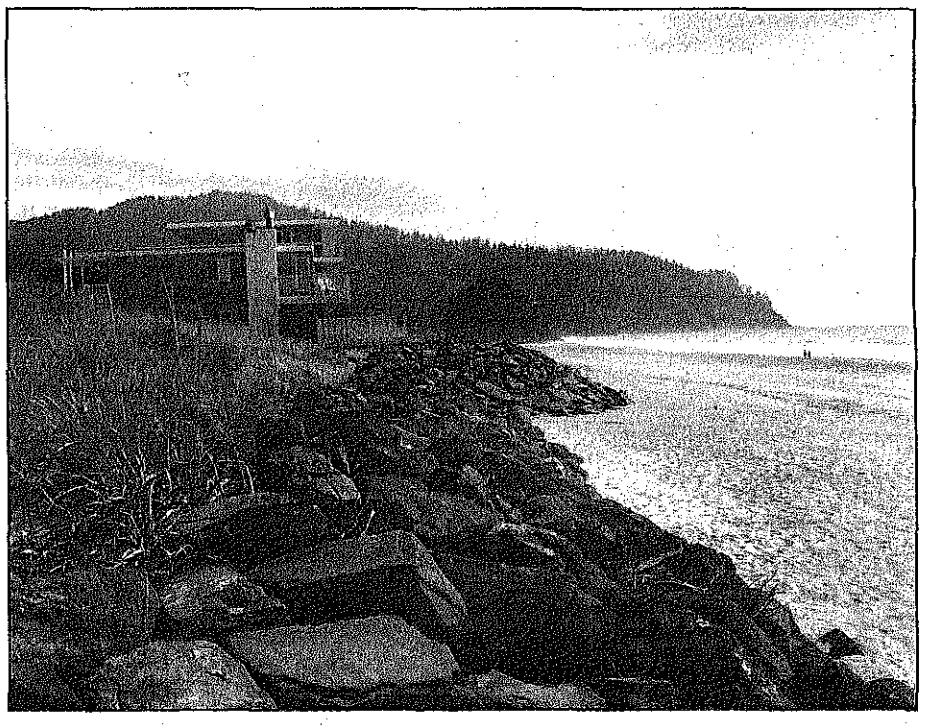
Developers of the nearby Nantucket Shores gated community, who support the golf course proposal, have offered to sell water to Tierra Del Mar residents as an enticement for them to drop their opposition, she says.

Tierra Del Mar's water supply has been threatened before. In the late 1980s, the U.S. Forest Service proposed a massive clearcut in the watershed that supplies their water.

The endangered marbled murrelet stopped the timber sale, Steiner says. "I personally spearheaded the appeals, went out with the marbled murrelet crews in surveying the proposed clearcut area and did see murrelets flying into the watershed and landing in trees."

Today, the watershed that supplies Tierra Del Mar's drinking water — the watershed just east of Sand Lake Estuary — is the only unlogged watershed on the Hebo Ranger District on the Siuslaw National Forest.





BUILT ON A SAND DUNE — Homes along the Oregon shore will always be vulnerable to the combined effects of wind, rain and erosion. In the photo at top, The Capes development hovers at the edge of a cliff that has been collapsing since 1997. During the siting of The Capes, the developers got numerous geologic hazard reports that progressively kept shrinking the recommended ocean front setback requirements. Owners sought to have riprap installed at the base of the cliff to prevent further erosion, but were denied the necessary permit. State law bans riprap in front of dwellings built after Jan. 1, 1997. Riprap prevents sand behind the rocks from replenishing the beaches, eventually leaving the beaches barren of sand. *Photo by Paul Koberstein*

WHERE'D WE PUT THE HOUSE? — At Falcon Cove south of Cannon Beach, middle photo, several streets of homes have fallen off the cliff. This home disappeared in the 1980s. *Photo by Joel Koberstein*

THE RAP AGAINST RIPRAP — At Neskowin, below right, this home was built before 1977 and therefore can legally be protected by riprap. Prof. Jim Good of Oregon State University predicts that many more beaches will be riprapped in the future, despite the state prohibition. Property owners who build too close to shore will demand a change in the law, he says. *Photo by Paul Koberstein*

Life on the Coast can be a real cliffhanger

About 10 miles north of Sand Lake, on the outskirts of Oceanside, the cliffs are crumbling beneath a massive condo development known as "The Capes." Intense winter storms swept away much of a sandy hillside during the late 1990s.

Built in 1992, the condos were marketed as a "new Salishan," a reference to an exclusive beachside golf resort south of Lincoln City. Today The Capes are stuck in a slow motion disaster, awaiting an eventual collapse. It serves as a curiosity as well as a warning to anyone thinking of building close to shore.

None of the 130 townhouses have fallen to the sea as of yet, but geologists say it's just a matter of time. One of the buyers was Mark Hatfield, the former Oregon senator.

The landslide under The Capes was first noticed in 1997 by local home owners. The slide began after winter El Niño-related storms wiped out the toe of dune, making it unstable. A small slope failure on the seaward side of a steep hill indicated that minor but steady movement was accelerating.

A stairway to the beach was damaged and had to be removed. Ground cracks opened, and lawns dropped 18 inches in January 1998. They fell another 5 feet a few weeks later, and fresh slumping was visible from the beach.

The main area that's been moving is about 900 feet long and 500 feet wide. It is currently endangering 10 houses, with 10 more at risk in the near future.

Many people saw it coming. "It was built on a dune," says Phillip Johnson of Oregon Shores' Coastwatch program.

Oregon Shores, which fought Tillamook County's issuance of a building permit for The Capes, contends that local governments are not considering landslide and erosion hazards when approving developments like this one. The group says the county allowed the developer to build much too close to the edge of the cliff.

The state of Oregon Department of Land Conservation and Development says the collapse at The Capes could have been easily prevented, if only the planners and developers had consulted existing geologic studies. The landslide is an old structure of sand lying over muddy debris. A high modern dune that had supported the toe of the landslide gave way, triggering the collapse.

When the hill beneath the condos at The Capes crumbles, it won't be the first time the forces of sea, wind and rain destroyed beachfront property on the Oregon Coast. Far from it.

In the early 20th Century, a small town on Bay Ocean Spit in Tillamook Bay grew to become a popular tourist resort. Today nothing remains but sand and brush. The ocean took it out. It's hard to find even the foundation of the hotel that once stood there.

In 1942, a development at an area known as "Jumpoff Joe" in Newport crashed down the cliff overlooking Nye Beach. More than a dozen homes were lost. In 1982, a condo development was

(Continued on Page 23)

Community Voices

Guest columns may be mailed to Commentary, The Oregonian, 1320 S.W. Broadway, Portland, OR 97201 or sent by fax to 503-294-4179 or by e-mail to commentary@news.oregonian.com. Offerings should not exceed 600 words and may be edited. For complete guidelines, phone 503-221-8150 or go to the www.oregonlive.com/oped/ Web site and click "Commentary."

Needed: savior for an estuary

Oregon leaders need to preserve the coast from a planned Sand Lake golf course

Once upon a time Oregon's politicians cared about the coast, and they often traveled west to save it.

In 1913 Governor Oswald West rode a horse over Arch Cape and Neahkahnie Mountain and into Nehalem. The experience inspired him to draft an ingenious bill declaring the state's beaches a public highway and thus in the public trust forever. When West signed it into law he said, "No selfish interest should be permitted, through politics or otherwise, to destroy or even impair this great birthright of our people."

IN MY OPINION

Matt Love

In 1967 Governor Tom McCall landed by helicopter at Cannon Beach to investigate a motel owner's crude attempt at usurping Oregon's open-beach tradition. McCall's televised stunt helped blast the "Beach Bill" into statute. He later said, "The interests of Oregon for today and in the future must be protected from the grasping wastrels of the land."

In 1967 State Treasurer Bob Straub drove to Pacific City to battle the proposed Nestucca Spit highway. Straub slew this insane plan to reroute U.S. 101 for all time. He later wrote, "We must act NOW. The Oregon beaches are in jeopardy. Real estate developers want to exploit them as an exclusive playground for the few who can afford their extravagant resorts."

This history lesson is offered to educate Oregonians about the state's (once) unsurpassed record of coastal conservation and to lay down a challenge to a state office-holder — current or prospective: Head west, immediately, to south Tillamook County on the Oregon coast, take the Three Capes Scenic Loop to just north of Tierra Del Mar, and fight a development proposal promising ecological defilement if it goes through.

At issue is saving the 900-acre Sand Lake Estuary, a gorgeous, mysterious, wild salmon-laden and relatively unsullied natural area. It's undoubtedly the most sublime estuary on the Oregon coast. It remains that way because U.S. 101 wasn't routed through it — as was done to practically every other estuary.

To save it from what?

Two Washingtonians propose building a "Scottish links-style" golf course on an unriprapped sand spit, 50 feet from the Sand Lake Estuary and an adjoining wetland. The project is called Pacific Gailes, the way the Scots spell the meteorological term.

Constructing the course entails plenty of earth-moving, tree-cutting and dispossessing wildlife. Maintaining the course entails plenty of herbicide spraying.

To address the impact on the estuary, a consultant produced a "mitigation" plan (check out www.beltzfarm.com), which amounts to planting trees and shrubs to compensate for the trees and shrubs removed so players have a clear shot off the tee. To suggest that planting 655 trees and shrubs "mitigates" what this golf course would do biologically and aesthetically to an Oregon estuary is an obscenity on the level of suggesting Tom McCall's body be disinterred to make way for a beachfront gated community.

The estuary "mitigation" is for losers, and Oregon's estuaries should never lose. They've been diked, drained, grazed, filled and poisoned — wrecked for a century.

Pacific Gailes isn't a done deal yet (the land-use hearings phase begins in December or January), but should the developers prevail, the result would be nothing less than an act of malice toward an Oregon estuary — all for leisure.

The challenge is laid down. Oregon requires a leader to save this great coastal natural space. It's the right and Oregon thing to do. Clearly, the precedent to lead has been established by both Republicans and Democrats. It needs resurrecting.

Who is the one? Who likes to walk barefoot on Oregon's beaches? Who wants to enter the Oregon pantheon of coastal conservation? Who can save the Sand Lake Estuary from a Viking-invented pastime? Who wants a new coastal park because of your winning effort? Really, there's no higher honor in this state. Leave Salem today and head west. A flock awaits you.

◆

Matt Love lives in south Tillamook County and has visited the Sand Lake Estuary about 50 times. He serves as caretaker for the Nestucca Bay National Wildlife Refuge and is the author of "Grasping Wastrels vs. Beaches Forever Inc: Covering the Fights for the Soul of the Oregon Coast." E-mail: mattlove100@netscape.net.

RANDY MACK BISHOP/NEWSART

alettertobeltzfarm:

by nancy slavin
photo by nancy slavin

Editors note: the 350 acre parcel of dune, forest, and wetlands just south of Sand Lake estuary is commonly known as the old Beltz Farm. Although private property, locals have used the land for over 30 years for natural recreation. The parcel is for sale and some developers have an option to buy. Writer and frequent trespasser, Nancy Slavin, writes a letter to the land.

November, 2002

Dear Beltz Farm:

As you know, I've been trespassing on you for years. Over the last decade, I've hiked your triangle-shaped land, tucked between the sea and Sand Lake, many times. I've always been grateful for your tide-shifted dunes, snarled woods, bogs, wetlands, and, of course, your teeming estuary.

Late this summer, I ventured out; I hiked the long beach up from Tierra del Mar, shading my eyes from the great wet wall of Cape Lookout, which radiated in the bright sun and spindrift off of blue-green waves. Along the south side of the estuary, two greater yellow-legs piped off warning cries and a few sanderlings poked around in the mud. Then, I cut inward to the edge of the forest where chartreuse old man's beard hung thick from spruce trees, grasses turned gold, sedges shined ever-green, and even after such a dry season, low-lying mudholes still bred some fierce mosquitoes. I'm almost positive I found a black bear track and I know I saw a few piles of berry-laden scat.

A murder of crows followed me from the flats all the way along the wetland's perimeter and a great blue heron squawked and gamboled from treetop to treetop, eyeing my dog who accompanied me. In the woods, I picked ripe huckleberries until I came to the sunbreak on the old dike where it was so hot I had to take off my shirt. A group of thrushes that ate both the Himalayan and Northwest blackberries fluttered off from the brambles when I passed.

When I reached the middle of the dike path, a large doe poked her head up on the other side of the canal -- her ears rose as big and alert as satellite saucers -- just twenty feet from us. My dog could smell her, but couldn't see her tucked in the twinberry and willow bushes as she was. I apologized to her for our disturbance but kept walking. I eventually took off my shoes and walked barefoot along the path. There were otter prints in the mudflats and a kingfisher flapped and flitted out its staccato cry. Right at the bend in the dike, a Northern Harrier soared, the stark white of its tailband flashed like a flare, then it veered and took a dive after a rodent in the lowlands. A few blue asters still bloomed, a cluster of cat's paw, wild calendula, yarrow, and all the sedges, grasses, rushes and reeds. Ripples made by fish ringed the water and I wondered if they were wild coho fingerlings waiting to migrate out to sea. I soaked it all in. I was so happy to be out there, so glad to know you'd hardly changed in all the years I've trespassed on you. So many times you have saved me.

On my way out, I cut across the dunes. The sandpaths worn by other human trespassers are now marked by survey poles, watertable-indicators, and staked neon-pink flagging tape, all signaling that things are about to change.

You are for sale, old farm. Over the years, you've had various "owners" who've mostly let you be, but your most recent "owner," wants to sell and he's asking 5.5 million dollars. The asking price is quite a bit more than your estimated value since your wetlands and estuary make for a lot of restrictions on development. It's strange to me to have any price put on you, but the important thing to know is this: a group of "principals" currently has the cash and an option to buy you.

The principals are made up of big-time golf professionals -- I'm talking PGA level -- and they are avid. They've trespassed on you too, and envisioned the possibility of a golf course along your strip of dunes and woods. Apparently, your 120 or so acres tucked between the estuary and the Pacific is a rare piece of land for the kind of golf course about which these developers dream. The layout that they're proposing is based on old traditions of golf that started in the Scottish highlands, where the landscape remains as close to possible as the original. It's called a Scottish links-style course, kind of like the new golf courses they built down south in Bandon.

On your behalf, I've gone to some of the community meetings the developers have been holding about you. Just so you know, our county's regulatory planning process doesn't require that potential buyers hold these community meetings -- they're offering them of their own accord to be courteous, accessible, and to keep the lines of communication open. All they really need is the conditional use permit from the county to start their project rolling.

The developers have assembled a whole group of experts: geologists, ecologists, hydrologists, wildlife biologists, a transportation expert and course designers to help the human community understand what might happen when this golf course goes in. These guys aren't dumb; they hired an attorney who grew up in the county and can speak of his personal connection to your land; they hired a local facilitator who worked on the sale of Whalen Island just to your north, which recently was dedicated as the first state park on the coast in thirty years; and most ingeniously, they hired the former county planning head, a guy who's generally respected for his fair-mindedness and ability to draw the full picture.

The meetings have been long. The moderator has been articulate and able, for the most part, to hedge off volatile human emotions with compassion. The experts have stood up and patiently answered all that they could about the boundaries and layout of the course, the various flora and fauna surveys, the grasses they plan on planting for the putting greens, the mitigation of the 1-2 acres of wetlands inside the dunes, concerns about pesticide, herbicide, and fertilizer run-off into the estuary, their use of water for irrigation, their plans for testing water-quality, and the potential impacts of increased usage on the already apt-to-flood septic systems of Tierra del Mar. The experts addressed ideas about possible interpretive signs, a trail along the estuary, human access to your land, local residents' usage of the links, and even the hazards of golf balls slicing off from the dunes onto the beach.

At the meetings, the developers have emphasized they're not interested in making a profit, they just want to "break even." They propose to build only the course, a modest clubhouse (which will only have six or so boarding rooms), a restaurant, a bar, and only one rest stop out on the links. They'll have a maintenance building to store fertilizers, pesticides, lawnmowers and such. The parking and traffic flow shouldn't be a problem, they say, and as far as increased litter, they said they'd go out and pick it up themselves. They estimate they'd employ 50-100 minimum-wage, new employees, use local contractors for construction, and encourage their guests to use the community's businesses. These guys claim that they want to have a low-impact course; a private refuge for 150 or so members who can afford the 20-40 thousand-dollar joining fee. It's kind of funny, seeing how I can barely count on my 10 fingers the number of people I know who make over $40 K a year in Tillamook County. I guess I know the wrong kind of people.

Actually, though, I believe the buyers don't want a lot of development on you either. They love the wildness of your land just like I do; that's one of the things, they say, that makes it so unique. They acknowledged that your land is one of the last pristine esturine habitats on the Oregon Coast. Out of the 15 estuaries, Sand Lake is one of the least developed, one of two in our fair county. But, really, we both know you're not totally pristine -- there is your dike, after all, and a lot of humans and horses have walked on top of you for years, and the distant rumble from the Sand Lake recreation area 4-wheelers echoes throughout your dunes all day long.

At the meetings, a few environmentalist-types have raised some questions like whether an elite golf course is a fair trade for the social loss of such rare habitat, and who is truly benefiting in the long run? I listened to their answers, but I have to admit, my mind kept wandering to what the weather is really like here on the coast in the winter months. Do you remember that old movie, Caddyshack? And that minister who played the best round of golf in his life during a torrential rainstorm because the wind kept blowing the ball in the hole? Remember how at the 18th hole he missed his putt, held his club into the air and cursed, then got struck by lighting? It made me laugh just thinking about it. But these principals hail from the Northwest; they're used to the rain. They say they want to live on the coast, raise their children and contribute to the community. Besides, they claim that golfers love to brag about how bad the weather is when they play. They're even proposing to name their golf

course "Pacific Gailes," which is the old Gaelic way of spelling "gale." I suppose that's pretty appropriate.

These principals are going above and beyond the call of most developers and they've offered to sign what they call a "contract with the community," a document that will put all their promises and concessions in writing so they can be held accountable. They even set up a website to continue the conversation with us humans, www.beltzfarm.com. I've checked it out -- only a few people have expressed their concerns there. According to the facilitator, hardly anyone has called the information line the developers set up. Some letters to the editor have been published in the local paper, both for and against the project.

Way back in August, after the first three-and-a-half hour meeting, I was awfully tired and hungry. I probably should have stopped for some food at the local pub, but something in me said to keep driving. So I headed North toward my home, right out of Pacific City, over Cape Kiwanda, past the junction of the latest local development, and then slowed down at Tierra del Mar until I was cruising the dark Sand Lake road alongside of you. Besides my physical hunger and exhaustion, other emotions suddenly started to growl inside of me; feelings I might call anger, loneliness, frustration, or heartbreak. I shook my head and said out loud, "God help me," and then I got some help: I started crying -- weeping, really, the kind of well-up that makes for dangerous driving along a pitch-black rural road. But I couldn't help it; a decade of love in an instant turned into grief. I wept all the way home and ended up crying on and off for days.

Friends tried to help me out of my sadness. "If development has to happen," they'd say, "this golf course is probably the best case scenario." That might be true. I believe the golfers are sincere in their love for the land, that they get salvation through their meditative sport the way I do just walking outside. I don't even loathe golf, you know. When I was a kid, living in Chicago, I had a boyfriend who was captain of the golf team and we'd play a few holes every so often, but inevitably I'd get bored and do cartwheels along the fairway instead. I always appreciated getting to be out there, though, in a space inhabited with more grass, trees, birds, and water than people. My brother is a big golfer, too. I spent a week once at his wedding on the Monterey Peninsula in California, which is home to 12 golf courses. I guess I just fear that the Oregon coast might soon look like Monterey if developers keep persuading citizens that golf courses are the best use option for private, undeveloped land.

Other friends, perhaps worried that my sadness was turning clinical, offered another favorite condolence -- the famous adage, "You can't stop progress." That slogan always makes me wonder about the definition of "progress," a word which implies improvement and betterment. I can't say which is better, wild lands or manicured greens. It's my own selfishness that wants access to you and your flowers, shrubs, trees, otters, deer, elk, bear, hawks, waterbirds, wetlands, estuary, open sky. It's a right of access I never even legally had. I simply trespassed on you because of my inability sometimes to shake my noise-polluted self without the help of your quiet soul.

Practical-minded friends tried to convince me that the only way to talk to developers is through money. I've heard some talk about conservatories or land trusts that could potentially buy you. Or maybe, even, Oregon State Parks could expand the new Whalen Island Park. But the post 9/11 federal administration seems to have cut all 60 million dollars allocated to public conservation, and besides, non-profits aren't allowed to pay more than the land value of the property, which is considerably less than the 5.5 million that the golfers can pay. In the past, other groups have tried to negotiate with your landowner about a price, but an agreement couldn't be reached. I'm sure the seller has heirs to think about.

The money-logic argument never gets me very far anyway -- I'm a writer who gets by on meager wages just because I love living here on the coast. I have wondered if I had a ton of money, what kind of legacy would I really want to leave for my family? Sport or space? Maybe there's some private philanthropist out there who could fork out the money, but they're hard to find.

I wish we could transform you, Beltz Farm, into something like Yasgar's farm, if only for one weekend before development begins. We could sing those old Joni Mitchell lyrics, "You don't know what you've got 'til it's gone." I know it's ridiculous, my silly nostalgia for a kind of consciousness that seems to have recessed just like the economy. I wondered sometimes if my Vietnam-conceived generation is simply too jaded and too cynical from a lifetime of questionable warfare practices to be open to really shouting out a rallying cry for sacred spaces. After all, that last Woodstock revival idea degenerated into a mess of riots, rapes and violence.

A lot of friends, of course, have told me that I'm way too sensitive. That comment is nothing new for me and I'm sure it's true. But my sensitivity is why I love living here on the Oregon coast: in the sensuality of your moist environment I get to feel, I get to be alive and in touch. And, besides, you're just as sensitive as I am.

Anyhow, I'm getting over my grief now. Autumn storms are brewing in the air and they help me sense that you can take care of yourself, old farm. I've thought about how when they cut down the trees to make room for the fairways your unstable sands might shift and cut a deep rut in the north end of the course right down to the estuary. Or, maybe when they relocate the the wetlands, a sinkhole will show up somewhere on the 7th green. Or after a dry summer like this one, their aquifers could dry up in a flash, with the maintenance men watering their course with as much as 450,000 gallons during peak days. Who knows, maybe the development won't make it past the permitting process, or the pubic hearings, or the county commissioners. (I've heard that one of our notoriously pro-development commissioners is against this project because Sand Lake happens to be in his backyard.) And if the proposal did make it through the county, other environmental groups likely will send the case to the Land Use Board of Appeals. There are all sorts of outcomes over which I have no control.

I'm really just writing, old farm, to tell you that no matter what happens, I wanted you to know how lucky I feel for having had the chance to get to reconnect my soul to yours. In fact, the last time I hiked on you I found an old horseshoe that had fallen from the hoof of another frequent trespasser. I took it as a sign for good luck and left the rusty metal there, stuck in the mud at the edge of the forest just in case you needed it.

But on second thought, I don't know if I should even wish you the kind of luck we humans have. I'll just wish you the kind of fortune, Beltz Farm, that only your natural resources can provide. Take care.

With love, Nancy

Golf Course Developers Take Aim at Sand Lake Estuary and Dunes

BY JOE SERRES, CO-DIRECTOR
FRIENDS OF LIVING OREGON WATERS

Near the communities of Tierra Del Mar and Pacific City lies an ominous threat to one of the last undeveloped stretches of coastline left on the Oregon Coast. This land, bordering the pristine Sand Lake Estuary, is the proposed site of a "Scottish Links" golf course. It is the largest privately held block of undeveloped land on the northern Oregon Coast and a natural refuge amidst the severe development occurring in the area.

The golf course site, on the west side of Sandlake Road, has 135 acres of upland, 16 acres of wetland, and 132 acres of estuary and salt marsh. Known locally as the Beltz Farm, the site is surrounded by farmland, Forest Service land, state parks, and Nature Conservancy ownership. The estuary itself is one of only five in Oregon classified as a "natural estuary."

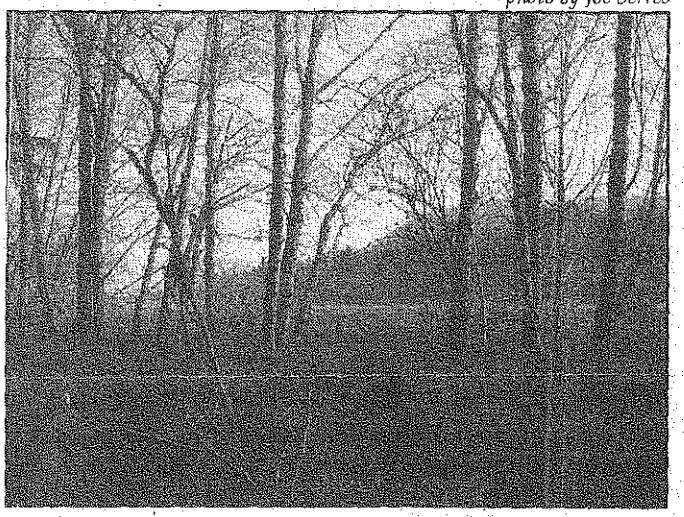
The golf course developers are the same "team" that developed the Bandon Dunes Golf Resort. The proposed Pacific Gailes Golf Course would have membership fees approaching $100,000 and bring 30,000 golfers a year to this pristine estuary. If the golf course were to be built, there would be significant real estate development surrounding the estuary and in the nearby communities. The local community of Tierra Del Mar already suffers from seasonal water shortages. The golf course would consume 450,000 gallons of water per day in the summer for irrigation.

Golf courses use herbicides, fungicides and fertilizers in large quantities. This golf course would be built on sand dunes, fill freshwater wetlands and be adjacent to a natural estuary. The chemicals used will leach directly into the Sand Lake Estuary. This estuary is rearing ground for native Coho salmon and contains some of the best eelgrass beds in the state.

The developers are proposing to fill the deflation-plain freshwater wetlands, rare to the Oregon Coast. These wetlands draw their water from the groundwater system, and the chemical leaching would certainly adversely affect groundwater quality.

The area is habitat for various species, including the snowy plover, Aleutian Canadian goose, great blue herons, bald eagles, brown pelican, peregrine falcon, and many large mammals like black bear and elk. Insects and vegetation sprayed with herbicides or insecticides can contain sufficient residues to kill hungry predators. Die-offs can happen even when pesticides are applied responsibly. Furthermore, sufficient quantities of pesticide residues remain in the stomachs of poisoned birds and animals to kill predators and scavengers, such as eagles.

photo by Joe Serres



Edge of the Sand Lake Estuary

The developer's attorney, Greg Hathaway, wants to develop a "contract with the community" to move the golf course development forward. According to Hathaway, "The concept of the 'contract with the community' is to identify every concern that the community has and attempt to identify mitigation measures to make sure those issues are being dealt with." With rapid development on the coast over the last decade, there are very few places that have been left in their natural state. Mitigation is not an option for local residents and visitors that want to protect Sand Lake.

There is tremendous public support for a public purchase of the area. Difficulties in the past have been that the property owner, Frank and Joyce Bastasch of Palos Verdes Estates, California, have asked for a much higher price than the appraised value of the land — making a deal with federal and state agencies unworkable.

As the ominous pressure of coastal development continues to increase, it is time for Oregonians to heed a call to action to prevent the Sand Lake Estuary and Dunes from becoming a golf course. A group of conservationists have organized the Sand Lake Task Force to fight the golf course proposal. For more information on how you can help, contact Lynda Steiner (lyndasteiner@aol.com, 503-639-0951 or 965-6987) or Cameron La Follette (thehomecountry@onemain.com, 503-540-3011) with the Oregon Shores Conservation Coalition or Joe Serres with Friends of Living Oregon Waters (flow@oregonwaters.org, 541-846-0159). More information and pictures of the area are at www.oregonwaters.org/sandlake.htm.

EDITORIAL

and produce markets while you still can. Valley Produce, north, across the street from Safeway. Fruit and veggie prices there are much cheaper. Bay City Market has some good buys too.

ANOTHER GOLF COURSE!

Astronomer's are reporting the planet Pluto's atmosphere is getting cooler. Meanwhile, here on earth... In two meetings, Aug 29th, Golf Links, LCC, experts put fourth their plans for a proposed $12 million, 238-acre golf course just north of Terra del Mar to a crowd of unhappy citizens. Amazingly, Vick Affolter former Director of Community Development once thought to be pro environment has switched gears, to be a consultant for the golf cabal. Actually Afolter claims to be acting as a "devil's advocate" to the golf promoters. Well of course everybody's got to make a living Vic! But devil's advocate,; what a resume stuffer! (See *Headlight~Herald* 9-04-02, Ken O'Tool article)

Among other concerns raised at the meetings was filling in an acre or more of some seven acres of freshwater wetlands for the greens. Sewage was another concern along with the 450,000 gallons of irrigation water needed a day to dilute the pesticides and fertilizers applied to the grass, with the clubhouse needing an additional 2,500 gallons of fresh drinking water to be added to the imported Scotch and gin that will be applied to wealthy golfers. Membership fees at this exclusive club rumored to be $40,000. Not too many locals will be joining except perhaps local boy, Greg Hathaway, attorney for the project. Jobs: some minimum wage positions will be created, parking cars, serving lunch and retrieving monogrammed golf balls from the rough. The day this course goes through will officially mark our passage from an independent county to that of playground for the rich. Some of us believe it has already happened.

Correction

In his article on the *North Coast Times Eagle* the editor left the false impression that David Lardy's only success in life was the paper he and Robert S. Need created. Nothing could be further from the truth. After leaving the paper David Lardy, joined the Navy, received a scholarship and earned a Masters Degree in Hospital Administration to the University of Pittsberg in Grotton Connecticut. He has had a long and sucessful career in that field.

Our sincere appologies if we created anything but a positive impression of Mr. Lardy.

Sincerly, Peter B. Smith, editor

COMING TOMORROW

The Portland-area housing market, which has been seemingly immune to Oregon's worst recession in two decades, should continue its healthy run next year, forecasters say.

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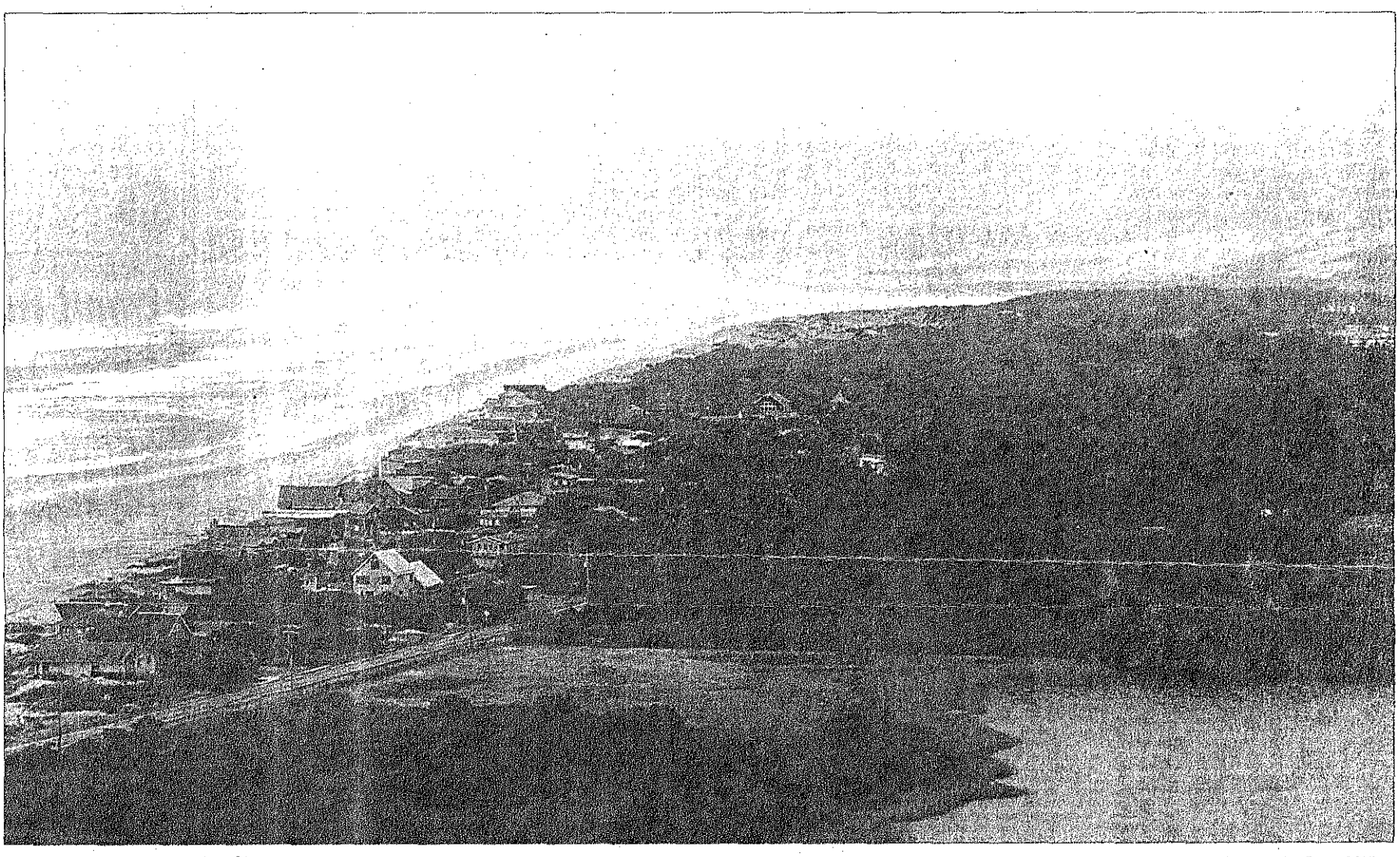
Course of conflict

A coastal town worries that a golf course threatens its way of life with development



STEVEN NEHL/THE OREGONIAN

Tierra Del Mar nestles against the beach near Cape Kiwanda. To the north, along the sand dunes, a planned 18-hole private golf course is stirring up controversy.

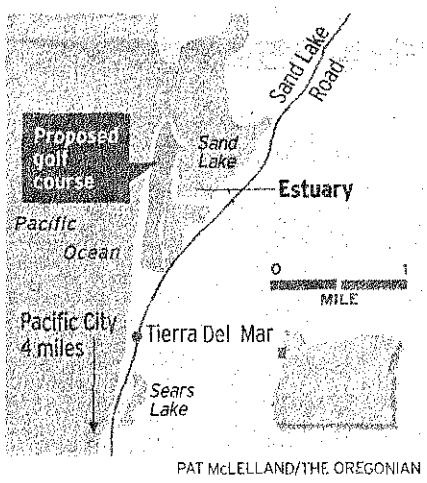
By PETER SLEETH • THE OREGONIAN

TIERRA DEL MAR — The 415-acre Beltz Farm has long been a refuge for locals and visitors alike. Rolling through wetlands and sand dunes, the privately owned piece of beach property is next to one of five natural estuaries left largely undisturbed on the Oregon coast.

Great blue herons wing through the sky and endangered coho salmon swim in the waters.

Unfettered freedom for nature lovers to wander through and enjoy the scene, though, is about to end. A group of Seattle-based investors is moving ahead with plans to build an exclusive "Scottish-links" style golf course on the coastal dunes here, four miles north of Pacific City. Individual memberships will cost an estimated $25,000 to $35,000 if the plan is approved.

Abutting both the public beach and the Sand Lake Estuary, the course is expected to cost between $15 million and $20 million to develop. The project's fate, residents say, will determine not just the future of Beltz Farm but the future of the local economy, as well.



PAT McLELLAND/THE OREGONIAN

The battle over development is a drama that is increasingly playing out up and down the Oregon coast.

For most of the 20th century, coastal towns grew slowly — if at all — on a diet of salmon and timber. Year by year, populations might increase by a few dozen or just by the brief swell of summer vacationers. Now, full of retirees and second homes for city dwellers, communities from Cannon Beach to Lincoln City to Brookings are crowding their city limits.

Small coastal areas, in short, are working their way through the same development controversies and tradeoffs that more heavily populated regions of the Willamette Valley have faced for the past 20 years.

The stretch of coastline between Cape Lookout on the north and Cape Kiwanda on the south, which brackets the proposed

Doug Olson owns a motel in Pacific City and recently submitted a resolution to the town's chamber of commerce in support of the proposed Pacific Gallies golf course.

Terry Frost retired to Tierra Del Mar, drawn by the quiet the secluded beach town offered. He plans on selling and moving if the golf course is built next door.

Please see **GOLF**, Page D2

"I don't picture these people coming in and becoming part of a community. I think this is an elite group who will have a severe impact."

KRIS OLSON, OWNER OF A BEACH HOME IN TIERRA DEL MAR

"We're trying to build a world-class golf facility. We're notin it to build houses or sell houses."

GREG HATHAWAY, ATTORNEY FOR PROJECT BACKERS

Golf: Some like idea, others talk of moving

Continued from Page D1

Pacific Gailes golf course, has remained stubbornly rural, with dairy farms, forest and beaches dominating the area. Tierra Del Mar is the only sizable community, with approximately 200 beach homes ranging from dozens of $100,000 shotgun shacks on lots originally designed for tents to $500,000 beach homes facing the ocean.

The unincorporated town has no commercial district, not even a convenience store. The only retail outlet is Lee King's rock shop, which he operates out of his home.

The town's residents, most of whom live there part time, don't have to look far to see the future. Four miles to the south, over Cape Kiwanda, Pacific City was once similar to Tierra Del Mar, a small coastal town swelled by summer visitors then deflated by a winter exodus. Today it is a booming town of approximately 1,000 full-time residents.

An estimated $40 million in new construction and remodeling projects is planned over the next six to seven years in Pacific City. Construction is under way on a beach hotel, which conservationists fought all the way to the state Court of Appeals trying to stop.

In Tierra Del Mar, the golf course development is facing stiff opposition from some residents who fear a similar gentrification and building boom in their rambling beach town.

"I don't picture these people coming in and becoming part of a community," Kris Olson, a former U.S. attorney in Oregon who owns a beach home in Tierra Del Mar, said of newcomers likely to be attracted by the golf course. "I think this is an elite group who will have a severe impact."

Recreation and retirement

But the opposition is hardly universal. Some residents welcome the course as an engine of growth in an area they say is changing regardless, nourished by the twin currencies of recreation and retirement.

Residents such as Olson worry that the peace of their rural section of the coast is at stake. They predict an influx of expensive homes, commercial development along Sand Lake Road and a subsequent rise in property values that will price out the middle class from one of the north coast's last affordable beach towns.

The project's biggest financial backers include a Seattle businessman and two executives of Nokia Corp., a Finnish cell phone company. Matt Mariani is a partner in a Seattle food equipment and supply company, and Rick Simonson and Mark Louison are senior Nokia executives. Simonson is chief financial officer.

All three men are using private funds for their portion of the investment, said their attorney, Greg Hathaway. He said all three are based in Seattle, although he didn't break down how the Nokia executives split their time between the Pacific Northwest and Europe.

The Tierra Del Mar site they want to develop is owned by Frank Bastasch of Palos Verdes Estates, Calif.

Envisioned as premier course

The Pacific Gailes project is scheduled to include an 18-hole course designed by John Fought, a clubhouse with restaurant and, of course, majestic coastal views. From the pine-covered dunes a golfer could gaze north to Cape Lookout, south toward Cape Kiwanda and northeast into the Sand Lake estuary, a wildlife haven replete with bald eagles and black bear.

The promoters think Pacific Gailes can emerge as one of the premier private courses in the nation. The proposed course is similar in many respects to Bandon Dunes, south of Coos Bay, a links-style course built in the late 1990s that zoomed to international prominence among the golf elite. Unlike Pacific Gailes, though, Bandon Dunes is open to the public.

Pacific Gailes faces extensive county, state and federal regulatory hurdles before it can become reality. Significantly, it is also certain to engender a battle between the forces in Oregon who want to retain the coastline in its natural state and those who want to develop private land for homes and recreation.

By itself, the course would have a low visibility on the coastal dunes, because no housing is planned and the links style calls for the holes to be played as much as possible around the natural lay of the land. Yet, distrust of the developers' intentions, as well as widespread concern for the health of the Sand Lake Estuary, has sparked considerable concern in the county.

Other worries center on potential environmental damage to the Sand Lake Estuary. It is home to coho salmon listed as threatened under the Endangered Species Act, as well as a wide range of other wildlife.

The project's backers, though, say critics have it all wrong. The developers plan to open the course for limited use by locals at certain times, and allow some public access to continue at the site.

"We're trying to build a world-class golf facility," said Hathaway. "We're not in it to build houses or sell houses."

Conservation group set for fight

The conservation group Oregon Shores Conservation Coalition is promising to fight the development next year when it comes before the Tillamook County Planning Commission. Hearings are expected in late winter, although no dates have been set.

"There has been much more vocal opposition than support so far," acknowledged Doug Olson, owner of a motel in nearby Pacific City, who calls himself a cautious supporter of the golf course. "But the support is hiding in the weeds."

Almost half of Oregon's coastline is publicly owned, but the rest of it — places such as Sand Lake Estuary — face growing pressure for development. Perhaps no other place on the Oregon coast today could accommodate the proposed Pacific Gailes golf course, so few are large parcels of oceanfront land.

As the coast is built out, available lands are becoming increasingly expensive, with any land not preserved as farm or forest a candidate for development. What used to be "pensioner properties" are becoming high-end real estate.

Not everyone thinks that's a bad thing. The Chamber of Commerce in Pacific City, like Tierra Del Mar an unincorporated community, is reportedly considering a resolution in support of the golf course.

Community leaders in Pacific City may be looking to Bandon for evidence to support their resolution. The Bandon Dunes course has become a huge success. Located outside the southern Oregon coast town by a couple of miles, it brings business to Bandon and has helped the town grow and prosper, said city manager Matt Winkel.

"Certainly it exposes us to more economic development opportunities," he said. "I think, speaking from the community perspective, Bandon Dunes has been a real asset."

Attractive to gated community

Already, one developer in the Pacific City area is hoping to realize similar benefits from Pacific Gailes.

Don and Barbara Giddings began developing the Nantucket Shores subdivision in 1997. It is built on the north side of Cape Kiwanda, set on a knoll with breathtaking views of the future golf course and surrounding area.

The gated community has seven homes on it so far, and, Barbara Giddings said, it will eventually have up to 100 homes costing approximately $500,000 each. The Giddings are hoping well-heeled members of the new golf course would be attracted to their community. Already, they are working on a deal to provide water to the golf course.

Nantucket Shores, however, is stalled in its own development controversy: The state thinks it is built on a potential landslide. Currently, no new homes are being built.

The people in Tierra Del Mar are well aware of the development pressures surrounding them, with the proposed golf course to the north and Nantucket Shores to the south. In August, the community association voted to oppose the golf course after surveying the community and finding 72 percent against a golf course at Sand Lake.

Some are planning to leave if the development goes forward. At the other end of the spectrum, local real estate agents say they get calls daily from people who want to speculate and buy land in Tierra Del Mar.

Terry Frost is among the former. Frost moved into Tierra Del Mar in 1990, seeing it as a retirement haven after a career with the Bonneville Power Administration. He liked the quiet isolation of the community.

"If I wanted to go to Seaside or Lincoln City I would have gone there," he said last week. If the golf course is approved, he said he would "probably sell and move way down south, because it's not going to be like it was."

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3 ATTACHMENT

"BELTZ FARM ON OREGON PARKS AND RECREATION DEPARTMENT'S POTENTIAL ACQUISITION LIST"

Draft
Ocean Shores Management Plan

Beach by Beach Inventory and Analysis

Oregon Parks and Recreation Department
January 2004

›endix E: Summary of Recommended Actions

Oregon Parks and Recreation Department is committed to undertaking a number of actions, over time, for management of the Ocean Shore, on it's own and in cooperation with partners. The actions have been organized into two categories, "Recommended Management, Development and Acquisition" and "Recommended Program Actions".

The "Recommended Management, Development and Acquisition" actions have been organized by region and beach, and in a north to south progression for easier reference. The recommendations include responsible agencies and a brief description of the action. The "Recommended Program Actions" are organized by program. State Park master plan proposals are not specifically mentioned here, but are addressed in the Consistency Section of the Appendix. Also, unless specifically mentioned for restrictions in this text, all existing beach access parking lots and campgrounds are recommended to continue to be open to the public. Any of the state parks actions will be initiated by the respective Area Manager.

Note: For specifics on the management actions and restrictions for Emphasis Areas, and related implementation options and priorities, see the Habitat Conservation Plan.

Recommended Management, Development & Acquisition

North Coast

Columbia River to Necanicum River

N1-1: Oregon Parks and Recreation Department, Implement management actions for Columbia River South Jetty Emphasis Area for Snowy Plover Recovery according to the Habitat Conservation Plan. The site is located along the riverbank, north and east of the viewing platform.

N1-2: Oregon Park and Recreation Department, Provide and maintain beach access improvements at the south jetty and Peter Iredale, at Fort Stevens State Park, for emergency vehicular use. Also provide parking and restrooms for persons with disabilities at the Peter Iredale motorized access site parking lot. This site currently provides motorized access to the beach for persons with disabilities.

N1-3: Oregon Parks and Recreation Department, Maintain the Fort Stevens State Park beach viewpoint at Peter Iredale upper parking lot. Restroom for persons with disabilities would be provided at the nearby Peter Iredale motorized beach access parking lot mentioned above.

N1-4: Oregon Parks and Recreation Department, Expand Fort Stevens State Park to the south by acquiring county land there, with county approval. Develop as a pedestrian beach access. Develop a parking lot with restrooms. This will require updating the Fort Stevens Master Plan.

N1-5: Oregon Guard/Oregon Parks and Recreation Department, Implement management actions for Camp Rilea Emphasis Area for Snowy Plover Recovery according to Habitat Conservation Plan.

N1-6: National Park Service, Provide new interpretive site and parking lot with pedestrian beach access, just south of Camp Rilea border, near Sunset Beach.

12-2: Oregon Parks and Recreation Department/Tillamook County, Acquire county and/or private land, when offered for sale, to consolidate public ownership of Bayocean spit to improve resource protection and provide access for low levels of recreational use.

N12-3: Tillamook County, Provide beach viewpoint with parking and restrooms for persons with disabilities at Cape Meares county access site.

N13 Maxwell Point to Netarts River

N13-1: Oregon Parks and Recreation Department, At Oceanside State Recreation Site, provide non-motorized access to water and/or viewpoint, with parking and restrooms for persons with disabilities. Maintain as emergency vehicular access.

N13-2: Tillamook County, Continue to provide public access to beach and parking near Netarts/Happy Camp.

N14 Netarts River to Cape Lookout

N14-1: Oregon Parks and Recreation Department, Implement management actions for Netarts Spit Emphasis Area for Snowy Plover Recovery according to Habitat Conservation Plan.

N14-2: Oregon Parks and Recreation Department, At Cape Lookout State Park, continue to monitor experimental foredune and area erosion and flooding, and provide for continued beach stabilization and nourishment.

N14-3: Oregon Parks and Recreation Department, At Cape Lookout State Park, maintain main campground beach access for emergency vehicular access.

N15 Cape Lookout to North Sand Lake

N15-1: US Forest Service, At Sand Lake, retain vehicular beach access and All Terrain Vehicles driving opportunity. Work with Oregon Parks and Recreation to have more prominent boundary signs installed at north and south end. Provide adequate supervision and enforcement on peak days. This site currently provides motorized access to the beach for persons with disabilities who can operate off highway vehicle's.

N15-2: US Forest Service/Oregon Parks and Recreation Department , Implement management actions at Sand Lake north spit Emphasis Area for Snowy Plover recovery according to Habitat Conservation Plan.

N15-3: US Forest Service, Acquire county inholding for consolidation of federal ownership of Sand Lake Recreation Area.

N16 Sand Lake to Cape Kiwanda

N16-1: Oregon Parks and Recreatation Department, Acquire the Beltz Farm, if it is offered for sale. Manage for natural values and passive recreation.

N16-2: Land owner/Oregon Parks and Recreation Department, Implement management actions for South Sand Lake Emphasis Area for Snowy Plover Recovery, according to the Habitat Conservation Plan.

gional Recreation Lands Opportunities
Chapter Two (c)

Looking beyond the sites that are recommended to provide beach access, there are places that are not currently owned or actively managed by public agencies that could provide benefits to the recreational use and resource protection of the ocean shore. These sites have been identified, by region, for their potential to fill these larger "land gaps". Most of these opportunities occur adjacent to the beach, rather than exclusively on the beach, but still support the state's interests of beach use and management. The location and importance of the sites is discussed here.

Recommendations for acquisitions, easements or management agreements can be found in the "Recommended Actions" chapter. Decisions about pursuing any of these sites would not be made until some future time, and this plan should not be construed to be the final word for any agency on increasing the extent of publicly held or managed lands on the coast.

North Coast Recreation Lands Opportunities

County land at Delaura Beach: Improved management of the county owned parcel located south of Fort Stevens is important to the management of official trails and illegal four wheel driving in the state park to the north, as is mentioned in the master plan for Fort Stevens State Park. Oregon Parks and Recreation Department acquisition of the county land here could be added to Fort Stevens State Park, and management and ownership could be consolidated for this area. This could also be the site of a new official, non-motorized beach access in this region.

Necanicum River/Circle Creek site: This is a lowland ranch with cattle grazing along Circle Creek and a farmstead site at one end, located between Highway 101 and Tillamook Head, has potential natural values and an opportunity for trail connections to Tillamook Head. The site is currently under consideration for grant funding for acquisition by the local land trust. Oregon Parks and Recreation Department would be the likely managing agency.

Tillamook Head consolidation: Adjacent parcels would, primarily, provide better protection for the Ecola State Park entrance road settling.

Silverpoint to Humbug Point: Undeveloped parcels would protect the beach setting.

Arcadia Beach area: This parcel could provide expanded day use parking, picnicking and trails potential to supplement beach access, as well as resource and setting protection.

Oswald West consolidation: This would consolidate the north slope of Cape Falcon itself, and ownership of the upland area on the east side of the highway between the Oswald West State Park parcel at Arch Cape with the main parcel to the south.

Bayocean Spit: The north end of the spit is owned by the county and Army Corp of Engineers. The southern portion is privately owned. Tillamook County provides a beach access site at the far south end. The public uses the county road to access public lands on the spit both on the bay and ocean shores sides, for birding,

clamming, fishing and other passive activities. Development of this spit would threaten the low use recreation setting and potentially high quality natural resource areas. Acquisition of private and/or county land, when available, would support protecting the recreational and resource values of the spit. Public ownership and/or management could be provided by either the county, or potentially by Oregon Parks and Recreation Department with county approval.

County land at Whalen Island: Although Whalen Island is located within the Sand Lake estuary and is somewhat removed from the ocean shore, it is easily viewed from the beach and the beach can be seen from the island. Most of the island was recently acquired by Oregon Parks and Recreation Department through a funding partnership with several entities. The south shore of the island remains in Tillamook County ownership and hosts a small but intensively used campground and day use area. Oregon Parks and Recreation Department has developed a small trailhead parking lot just to the north of the county park. Consolidating ownership and/or management of the entire island could provide more consistency in the type of experience available on the island and could bring more management resources to the park.

The Beltz Farm: Acquisition of the Beltz Farm by a public entity could fill a setting/habitat gap. The site is one of the last largely unspoiled estuary settings on the Oregon coast. However, the farm is currently undergoing county land use approval for the construction of a golf course and is likely to not be available.

Sears Lake site: This privately owned site is located across the county road from the Tierra del Mar end of the Cape Kiwanda beach access site. Currently, visitors park along the road to access the beach. If available, this site may be able to provide off road parking and a related small day use area, in a very heavily used area. The site has a small lake that offers nice views and some natural values.

Private site between Neskowin and Camp 'Winema: North of Neskowin is a large hill that has been considered for resort and residential development, and currently includes a few residences, with some potential for further residential development. This site, or a portion of it, could be considered for providing a small new beach access and to protect the existing natural setting from further development.

Central Coast Recreation Lands Opportunities

Fogarty Creek to Boiler Bay, and restaurant site at Whale Cove: Look for opportunities to purchase parcels that would protect the setting of the beach if protected from development.

Gift shop inholding at Cape Foulweather: Although this property does not provide access to the beach, it is mentioned here in regard to the larger Oregon Parks and Recreation Department interests along the ocean shore. It consists of a small private inholding with a gift shop at the high viewpoint at Otter Crest State Scenic Viewpoint. Clients of the gift shop use the public parking lot. If the use of the building were changed to a restaurant or other use requiring more parking, there may not be sufficient parking for visitors to enjoy the view. The site has potential to be used as a refuge from the weather for viewing the beach, by the general public, and for providing interpretation.

Beverly Beach addition on Spencer Creek: There is an area upstream from the campground at Beverly Beach that is privately owned, that is largely natural and could offer a buffer to the campground from surrounding land uses and provide additional trail access, if available.

Capacity:

- Level of peak use: Average number of people on peak season weekend day, 77.
- Perceived crowding: Level Two, Low Normal, unlikely to be a problem.
- Distribution of use: Dense along Cape Kiwanda north shore and adjacent to Tierra del Mar on peak days. Dispersed otherwise.
- Use is below capacity for crowding, but is at desired level on peak days.

Adjacent lands:

- Land uses: Currently undeveloped adjacent except for small Tierra del Mar residential neighborhood. Otherwise undeveloped private or public land. Private land at north end is planned for golf resort development and would greatly change the level of use on the beach there.
- Recreation lands/facilities: Cape Kiwanda State Park extends along the beach from the cape to Tierra del Mar. Day use beach access parking areas.
- Trails: Coast Trail runs along the beach from the north end of Tierra del Mar to the cape.
- Opportunities: Acquisition of the Beltz Farm at the north end could keep the use on that beach low and protect the habitat values there. This beach is slated for snowy plover recovery and could be negatively affected by resort development. Also, Sears Lake site, east of road, has potential for day use, beach access parking. County campground at Whalen Island has potential to be consolidated into OPRD ownership in future.
- Beach structures: Only along Tierra del Mar community.

Natural and Cultural Resources:

- Snowy Plover Recovery Area, USFWS draft Recovery Plan
- Cape Kiwanda Rocky Shore Cell
- Snowy Plover Emphasis Area, Habitat Conservation Plan, South Sand Lake
- Sand Creek is an anadromous fish stream and important estuarine habitat.
- Seabirds (primarily gulls) and shorebirds use the beach for foraging
- Confidential cultural resource potential.

Snowy plover management actions:

- 2003: None.
- Proposed: South Sand Lake Emphasis Area.

Issues heard about this beach: Concerns about impacts from proposed resort development at Beltz Farm. Other concerns about fireworks, jet ski and Sand Lake OHV noise, loss of sand Tierra del Mar. Concern about driving on beach occurring at north end.

4 ATTACHMENT

"THE NATIVE PLANT SOCIETY OF OREGON LISTS THE GOLF COURSE SITE AS THREATENED HABITAT FOR RARE PLANT"

Subj: **Re: Sidalcea hendersonii petitions**
Date: 11/14/2003 3:20:07 PM Pacific Standard Time
From: rglove@darkwing.uoregon.edu (Glen and Rhoda Love)
To: lyndasteiner@aol.com

Dear Lynda. Sand Lake is a well-known historic site for Sidalcia hendersonii. Here is the information that will be in my petition to ODA and USFWS: (The Sand Lake collection was made by Morton Peck of Willamette University in 1924.) Rhoda

Tillamook County:

(5) Historic site: Sand Lake. Morton Peck (#13420) 7/12/24. "South side of Sand Lake." Jean Siddall noted possible coordinates as: T3S R10W Sects30-31. (Near Whalen Island County Park?)Threats: Sand Lake Airport; prospective golf course site.

Searched for, not relocated in 2003.

(6) Nestucca Spit. Morton Peck (#6857) 8/_/1909. "Nestucca Bay." Siddall notes possible coordinates as: T4-5S R10-11W. Bob Straub State Park. No evidence that the state is managing for this species. Wendell Wood sighting and photos 7/12/87. Estimated 45 stems at that time. Relocated by Gisler and Marshall in 2000; they noted a single stem. Threats: Scots broom (?).

Searched for, not relocated in 2003.

>Rhoda: Will the Sand Lake Estuary be a listed area for Sidalcea in your
>petitions? If so, this may be another example as to why a golf
>course should not
>be proposed in an area that possibly could have this rare plant on it. Any
>information you may have to help our cause would be greatly appreciated.
>Lynda

--

---------- Headers ----------
Return-Path: <rglove@darkwing.uoregon.edu>
Received: from rly-yc05.mx.aol.com (rly-yc05.mail.aol.com [172.18.149.37]) by air-yc03.mail.aol.com (v97.8) with ESMTP
MAILINYC33-1dd3fb562fe2e9; Fri, 14 Nov 2003 18:20:07 -0500
Received: from darkwing.uoregon.edu (darkwing.uoregon.edu [128.223.142.13]) by rly-yc05.mx.aol.com (v97.7) with ESMTP
id MAILRELAYINYC57-1dd3fb562fe2e9; Fri, 14 Nov 2003 18:19:27 -0500
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for <lyndasteiner@aol.com>; Fri, 14 Nov 2003 15:19:23 -0800 (PST)
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Subj: **Sidalcea hendersonii petitions**
Date: 11/14/2003 12:18:18 PM Pacific Standard Time
From: rglove@darkwing.uoregon.edu (Glen and Rhoda Love)
To: wnpsmail@tardigrade.net, inspass@whidbey.net, npso@tardigrade.net (NPSO List), rglove@darkwing.uoregon.edu, bakerg@lanecc.edu, csimpson@uoregon.edu (Charlene Simpson), johnk@oregonnet.com, aryanaferguson@hotmail.com, ottingn@efn.org, dpredeek@msn.com, clickbeetle@earthlink.net, mar_c@efn.org, jenfry@earthlink.net, newhouse@efn.org, theacook@jasters.com, wildiris@efn.org (molly iris), johnccoggins@yahoo.com, natefrance@willamette.net, shineflower7@yahoo.com (Erin Page), newhouse@efn.org (Bruce Newhouse), luomad@fsl.orst.edu (Dan), bakerg@lanecc.edu (Gail), jddobak@pcez.com (Dave and Jan Dobak), vorobik@rockisland.com (Linda), rglove@OREGON.UOREGON.EDU (Rhoda Love), SLatimer@jsanet.com (ShaneLatimer), jessup@sou.edu (Steve Jessup), kayet@peak.org (Tom Kaye), mmckeag@attbi.com (Mike McKeag), ksturg@linfield.edu (KareenSturgeon), natives@willamettegardens.com, estherco@peak.org, jbaker@ucinet.com (Jerry Baker), jtduncan@mind.net (Jim), plaisane@mind.net (Elaine Plaisance), hardisol@bcc.orst.edu (Linda), kaanderson@starband.net (Karl Anderson), bulletin@npsoregon.org (TanyaHarvey), ottingn@efn.org (Nick Otting and Danna), dhanson@viclink.com (Dave Hanson), clickbeetle@earthlink.net (Michael J. Hartman), meinker@bcc.orst.edu (Robert Meinke), gislers@bcc.orst.edu (Steven_DGisler), Sundbers@bcc.orst.edu (Scott Sundberg), vstansel@harborside.com (Veva Stansell), crupinaqueen@charter.net (Cindy), kellivn@peak.org (Kelli Van Norman), guthpogel@earthlink.net, cgautier@efn.org, cutler@cvc.net, naa@natareas.org, cmarkham@teleport.com, garrett@bendcable.com (Stu Garrett), rottersberg@eoni.com (Bob Ottersberg), smalaby@cs.com (Sarah Malaby/ Mike Cutler), jjs@oregoncoast.com (Janet Stahl), imtu@TNC.ORG (Mandy Tu), chrisvs@qwest.net (Chris Van Schaack), csimpson@uoregon.edu (Charlene Simpson), brainerd@peak.org (Dick Brainerd), NADINE.STILWELL@STATE.OR.US, aceska@freenet.victoria.bc.ca, ed.r.alverson@ci.eugene.or.us, plun461@ecy.wa.gov, s.moore@co.snohomish.wa.us, lstorm61@aol.com, chris.chappell@wadnr.gov, kayet@peak.org, sue.vrilakas@oregonstate.edu, gislers@science.oregonstate.edu, meinker@science.oregonstate.edu, chamberk@bcc.orst.edu, Nancy_Eid@nps.gov, kathy_pendergrass@fws.gov, melanie@peak.org, amsberrk@bcc.orst.edu andy_robinson@fws.gov, vstansel@harborside.com, Zikap@aol.com, sundbers@bcc.orst.edu, ark@u.washington.edu, wildnatives@yahoo.com (Hope), frenkelr@geo.orst.edu, dpickering@TNC.ORG, ksayce@sbpac.com (Kathleen Sayce), florence.caplow@wadnr.gov (FLORENCE Caplow), tim.ennis@natureconservancy.ca, gmiller@oda.state.or.us (Glenn Miller dougeco@islandnet.com (George Douglas), flow@oregonwaters.org, orshores@teleport.com, greenhills@oregoncoast.com (Les Helgeson), joearryserres@oregonwaters.org (FLOW), natefrance@willamette.net, wlbluhm@juno.com (Wilbur L. Bluhm tgoxwang@theoregonshore.com (Oxwang), emkolkemo@msn.com (Siuslaw Emily Kolkemo), bmdurst@oregonfast.net (Siuslaw Marilyn Durst), EDLCarlsen@cs.com (Tillamook Diane Carlsen), claire_hibler@or.blm.gov (SalemBLM), lyndasteiner@aol.com (Sand Lake), thehomecountry@onemain.com (Sand Lake), johuml@webtv.net (Joe Hummel), hrap@hrap.org (Shelley Parker), enhadley@mcsi.net (TNC Hadley), hengle@earthlink.net (Helen Engle), Michelle.Michaud@STATE.OR.US (MICHAUD Michelle), ngcarter@harborside.com (Nancy & Gary Carter), owyhee@fbo.com (Yaquina Penelope Kaczmarek), wadsworth@oregoncoast.com (William_D._Wadsworth_P.E.), mstensvold@fs.fed.us (Alaska Mary Stensvold), deand@sjpt.org (San JuanDean Dougherty), wtu@u.washington.edu (UW Herbarium D Gilbin), bbaldwin@uclink4.berkeley.edu

Dear Sidalcea group:

Here is my November progress report on NPSO's petitions to list Sidalcea hendersonii:

(1) State listing. I have completed a draft of a petition to the Oregon Department of Agriculture (ODA) Rare Plant Program. This is currently being read and edited by Steve and Melanie Gisler, Sidalcea experts. When I receive it back from them and have incorporated their suggestions and corrections, I will have only the details about the 5 SIDHEN sites in the Siulaw estuary to add; then it will be sent to Bob Meinke at ODA. (I expect to receive the Siuslaw data including maps soon.)

USFWS per [illegible]

(2) Federal listing. I have my first draft of a petition to ~~ODFW~~ (15 pages) written and am editing that. This petition also requires details of the Siuslaw populations --site name, ownership, acres, no. of plants, site status -- declining or stable -- and threats; as well as maps, which I expect to have soon. I am hoping that Melanie and Steve will edit this petition for me as well.

It seems possible that these two petitions might be submitted by the end of this month. I am hoping to have them done before the holidays.

Rhoda Love

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---------- Headers ----------
Return-Path: <rglove@darkwing.uoregon.edu>
Received: from rly-xi01.mx.aol.com (rly-xi01.mail.aol.com [172.20.116.6]) by air-xi01.mail.aol.com (v97.10) with ESMTP id MAILINXI14-4be3fb538642aa; Fri, 14 Nov 2003 15:18:18 -0500
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Received: from [128.223.209.65] (cisco-ts6-line5.uoregon.edu [128.223.209.65])
by darkwing.uoregon.edu (8.12.10/8.12.10) with ESMTP id hAEK9npn001190;
Fri, 14 Nov 2003 12:09:50 -0800 (PST)
Mime-Version: 1.0
Message-Id: <p05100300bbdae21fa7cc@[128.223.210.30]>
Date: Fri, 14 Nov 2003 12:07:45 -0800
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>To: Sidalcea hendersonii interest group

From: Rhoda Love, Native Plant Society of Oregon

>Report on NPSO's Petitions to the Oregon Department and Agriculture
>and the US Fish & Wildlife Service requesting listing for Sidalcea
>hendersonii.
>
>In 2002 NPSO became concerned about the status of Malvaceae:
>Sidalcea hendersonii, Henderson's checkermallow, in Oregon. S.
>hendersonii was first collected for science in Oregon, and most
>certainly evolved in Oregon. (See evidence in our petitions.) By the
>year 2000, Oregon botanists were reporting that the plant had not
>been seen in its approximately ten historic Pacific Coast locations
>for many years. The only known viable population was on a TNC-owned
>island in the Siuslaw River Estuary in Lane County.
>

>In the summer off 2003, Rhoda Love organized searches of all
>historic locations. Results were negative, again in all locations
>except the Siuslaw Estuary where several additional aggregations of
>the species were discovered.
>
>The NPSO Board asked Rhoda Love to prepare petitions to ODA and
>USFWS when summer field work had ended and been evaluated.
>
>RL then spent well over 100 hours in the fall of 2003 in research
>and writing to prepare our petitions. The finished petitions were
>approximately 40 pages in length, with tables, maps, reports, photos
>and a 37-entry bibliography. The task was complicated by the fact
>that somewhat different petition formats were required by each
>agency. I am very grateful to those who did our careful field
>searches, and to those who helped me with advice and editing during
>the writing of the petitions.
>
>The petitions were mailed to ODA and USFWS on approximately December
>15, 2003. NPSO now awaits the required written acknowledgment from
>these agencies which must be received within one month of
>submission. ODA and USFWS will have 3 months to advise us in writing
>whether our petition presents sufficient evidence to justify
>proceeding, or whether additional data are needed. They then must
>make a final determination within 2 years
>
>A full copy of the petition text has been sent by e-mail to the NPSO
>Secretary for NPSO records.
>
NPSO is now awaiting acknowledgments from both agencies which were
required within 30 days and are, at the time I write this, expected
momentarily. (Acknowledgment was received from Dr. Robert Meinke of
ODA on January 20.)

Additional late information: The two weevils collected from Sidalcea
hendersonii at Cox Island, Lane County have been identified as
Macrorhoptus sidalcea and Anthonomus melancholicus, both have been
shown in the past to be SIDHEN predators, the latter a seed-eater.
For drawings of these see American Journal of Botany Vol 88 No. 8,
2001.

>
>Rhoda Love,
>Vice President NPSO
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>

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MAILINYJ22-804400eb7fb8f; Wed, 21 Jan 2004 12:34:19 -0500
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Sidalcea Summer Report
by Rhoda Love, Emerald Chapter Sept. 10, 2003

The fall rains have begun, our summer surveys of historic and potential sites for Henderson's checkermallow along the Oregon coast have come to an end, and it is time to report the results. Overall the outlook is bleak, but there are a few bright spots, as you will note below.

Perhaps readers recall from my previous Bulletin articles (May, 2003; Aug-Sept. 2003) that Henderson's Checkermallow (Malvaceae: *Sidalcea hendersonii*) grows in scattered salt marsh estuaries from Douglas County, Oregon to British Columbia, Canada; that the type specimen was found by Louis Henderson in Oregon near the mouth of the Columbia River in 1887, and that same year by Thomas Howell at the mouth of the Umpqua. Subsequently the plant was collected in at least ten locations in Clatsop, Tillamook, Lane and Douglas Counties by such botanists as Morton Peck, LeRoy Abrams, C. L. Hitchcock and Henderson himself. The last known vouchered collection in Oregon was by Hitchcock near Reedsport in 1951.

Sadly, in the last half-century, there have been no new collections in our state; and, although the species has been seen and documented in Washington and Canada, it is very seldom encountered or noted in Oregon. The exception is the Siuslaw River estuary in Lane County where The Nature Conservancy has been monitoring a site on Cox Island.

This summer dedicated searchers along the coast have been hunting for Henderson's checkermallow. The surveys were well organized and carried out, and we heartily thank the participants, some of whom are mentioned below. Historic sites were visited and other potential habitats surveyed – mostly, I am sorry to report, with negative results. Here are some of the details, county by county.

Clatsop County: Kathleen Sayce, Nancy Eid and Melanie and Steve Gisler searched on foot, with binoculars, by canoe and kayak along the Lewis and Clark River, Young's Bay, and Ecola Creek with negative results. They plan to explore Swash Lake and Trestle Bay next summer. They located an excellent site near Neacoxie Creek for possible restoration plantings.

Tillamook County: Michelle Michaud and friends searched Bob Straub State Park but did not find the plant. I have not yet received a report on searches of Sand Lake/Whalen Island.

Lane County: This was the bright spot in our summer's work. As I wrote in the Aug-Sept. Bulletin, *Sidalcea hendersonii* is alive and well on Cox Island in the Siuslaw River and was also found this year at several nearby sites. TNC's Neal Hadley led the effort to find and document Sidhen populations in the area. The good news is, however, clouded by the fact that, while Nature Conservancy ownership protects Cox Island, the other sites are presently on private property. Seeds were collected late this summer from Cox Island and Neal Hadley reports that the Nature Conservancy is supporting propagation efforts.

Douglas County: I must confess I had high hopes for the Reedsport site since we know Sidhen was there as recently as 1951. Alas, the plant was not found this summer. Nancy Brian and associates searched the BLM's Dean Creek Elk Viewing area without success; and Neal Hadley, Glenn Miller and Richard Sommer boated the Smith River-Umpqua estuary north of Reedsport with no luck. They reported finding excellent potential habitat on Blacks Island -- a possible site for reintroduction.

In the light of these disappointing results, NPSO will petition the Oregon Department of Agriculture for rare plant listing of *Sidalcea hendersonii*, and we will present data to the US Fish and Wildlife Service that we hope will earn the plant Species of Concern status in Oregon.

One very intriguing postscript: Late in the summer I received a message from Mary Stensvold of the Tongass National Forest at Sitka Alaska announcing that a tide-marsh checkermallow matching the description of Sidalcea hendersonii was found on the Chilkat Peninsula near Glacier Bay west of Juneau. If it proves to be our species, this is a range extension of over 750 miles from the northernmost known site in British Columbia -- and it would add a new family, Malvaceae, to the flora of Alaska!

Subj: **Sidalcea hendersonii**
Date: 7/18/2003 11:55:59 AM Pacific Daylight Time
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Hi Lynda. If I remember the locality correctly, Melanie and I saw the lone Sidalcea hendersonii individual in the narrow area of habitat situated between the water and the eastern edge of Sand Beach campground. The individual was about 10-20 feet towards the water from the edge of some shore pines. The approximate UTM (zone 10) coordinates are 425262E 5014864N. We also searched Whalen Island, and despite promising habitat there, we found no plants. I would be very interested to know if you find any more individuals in the area. Good luck! Let me know if you have any more questions.

--Steve Gisler

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id 6A7FA3977E; Fri, 18 Jul 2003 11:44:35 -0700 (PDT)
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MIME-Version: 1.0
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Content-Transfer-Encoding: 8bit
User-Agent: Internet Messaging Program (IMP) 3.2.1
X-Originating-IP: 167.131.14.9
X-Spam-Status: No, hits=0.6 required=7.0 tests=NO_REAL_NAME version=2.20
X-Spam-Level:
X-AOL-IP: 128.193.4.11

Revised regularly. Contact RL for current draft. March 2003

Henderson's Checkermallow: Facing Extinction in Oregon?

by Rhoda M. Love, Native Plant Society of Oregon
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Henderson's checkermallow (Sidalcea hendersonii) is a gorgeous wildflower in the hollyhock family — one of the treasures of the Pacific Northwest coast (see the accompanying photo which was not taken in our state!). Evidence suggests that the plant has virtually disappeared from Oregon, although it was originally known from at least ten scattered locations in this state from the mouth of the Umpqua River in Douglas County to the Columbia River estuary and from there along the coast of Washington and British Columbia to Sayward, north of Campbell River on Vancouver Island. This is, or was, its worldwide distribution. Where it still exists, the plant is found in a unique habitat: places where fresh water from lakes or streams approaches the Pacific Ocean. Its typical locations are tidal river estuaries, estuarine islands, outlets of sand dune lakes, or where fresh water marshes drain to the sea. A map of its historical and present distribution is virtually one-dimensional stretching in discrete dots up the Pacific coast of northern Oregon and Washington, then becoming more scattered among the islands of Puget Sound and southern British Columbia.

Where did this unique and spectacular species evolve, how did it spread to these isolated locations, and why has it virtually disappeared from Oregon? These questions have not yet been answered, but it seems likely that the species moved primarily from south to north. At least this is my hypothesis based on the fact that the genus Sidalcea is more diverse in California than in other locations. The Jepson Manual lists 18 species of Sidalcea for California (some of these with numerous subspecies); floras of Oregon unusually recognize 13 species (several of these with subspecies); Hitchcock recognized 3 species in Washington (again with some subspecies), and British Columbia has two species.

In his 1957 monograph on the perennial members of the genus Sidalcea, C. L. Hitchcock concluded that the closest living relative of S. hendersonii was Sidalcea nelsoniana, another rare species known only from Oregon. Thus it seems possible that Henderson's sidalcea evolved in Oregon, adapting to its unique coastal wetland environment. How it subsequently spread along the coast is not known. I have heard no evidence that its seeds are especially adapted to withstand saline conditions. Perhaps whole plants with soil torn loose in storms rafted northward on currents, coming to rest in coves and estuaries.

The species is vulnerable due to various factors. The first set is due to the vicissitudes of the estuarine habitat. Here, where fresh water meets salt, habitats may fall prey to flooding, siltation, storm surges, battering by driftwood and long-term changes in sea level. Other dangers are the anthropogenic threats, which arise due to land management such as forestry, urban or resort development, road, bridge and airport construction, grazing, and the introduction of weedy competitors. Research in BC has also shown that the plant's gynodioecious reproductive mechanism makes it vulnerable when population size becomes low. Weevils are known to feed on the seeds, perhaps also threatening smaller populations.

Sidalcea hendersonii was first made known to science by plant explorers in Oregon. Pioneer botanist Louis F. Henderson receives credit for sending the type specimen to the Gray Herbarium where it was named by Sereno Watson in 1887. Henderson collected the specimen probably near present day Fort Stevens State Park on the Columbia River estuary in Clatsop County. Simultaneously, it was found by another Oregon pioneer, Thomas Jefferson Howell, near the mouth of the Umpqua River in Douglas County. It has not been seen in either location for many years.

If Oregon is indeed the species' site of evolutionary origin, as well as the site of its first discovery, it is sad to contemplate what has apparently happened to it here. The list below shows 9 (or perhaps 10) historic sites in our state. Surveys will take place at these sites in 2003, but based on current local knowledge plus evidence from searches in the 1970s, Henderson's checkermallow has been found at only 2 sites in Oregon in the last 40 years. (At one of these sites, only a single stem was noted.)

Shockingly, for a species this rare and this vulnerable, Sidalcea hendersonii receives no active protection or regular surveys in Oregon or Washington at the present time. The situation is similar in British Columbia where sites are listed, but environmental protection is perfunctory. (See summaries below.) This remarkable species deserves to be closely

studied, but this may not happen unless it is recognized as a species of concern by the agencies whose job it is to monitor and protect our rare plants.

I suggest that our aim as concerned botanists should be to urge that this species be moved up in status so as to receive both study and protection. We must request that it receive formal listing by the Oregon Department of Agriculture We must also petition the US Department of Fish and Wildlife to designate it a Federal Species of Concern. And the Oregon Natural Heritage Program must list its global rating as G3 ("Threatened or rare throughout its range") to be in line with its present worldwide global rank. (See www.natureserve.org)

I hope that all NPSO members and other concerned plant lovers and conservationists will join me in these efforts. I also hope that you will organize and take part in field efforts during the summer of 2003 to survey the 9 historic sites in Oregon, as well as other likely but as yet unexplored sites in estuaries and similar habitats. Henderson's checkermallow is a beautiful plant, a part of our natural heritage that is apparently slipping into extinction in our state -- it deserves our attention and our efforts!

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SUMMARY OF WHAT IS CURRENTLY KNOWN ABOUT THE GLOBAL DISTRIBUTION OF SIDALCEA HENDERSONII

by Rhoda M. Love March, 2003

Listed by Province, State, and County from North to South:

BRITISH COLUMBIA:

In BC, the species has been placed on the "Blue List" with a rating of "Vulnerable." There are 27 Sidalcea hendersonii sites officially listed for the Province. Only one has official protection. The trend in the Province is described as "declining, due to habitat disappearance." Some sites have been lost to development. It is found in salt marshes on the east side of Vancouver Island, on the west coast of mainland BC, and on several islands. The most northerly site is at Sayward on Vancouver Island. It is also known near Campbell River, Comox Spit, Port Alberni and Duncan. One of these populations has 3,000+ individuals and one has 8. BC estimates that "more than 50,000 individuals" of S. hendersonii exist in the Province due to "extensive populations in several areas." On the mainland it is found in and near the Frazer River Delta. Small populations have been reported on Trial Island and North Pender Island. The plant has disappeared from sites near Victoria (where it was first collected in the 1880s), Vancouver and Gabriola Island. Its Provincial rank is S3 = "vulnerable to extirpation or extinction." . . . "due to the limited number of extant occurrences

and the fact that it is confined to a restricted range and habitat which is subject to destruction by development." A web site for BC information is: http://srmapps.gov.bc.ca/apps/eswp/

WASHINGTON:

Sidalcea hendersonii is on the "Watch List" for Washington. The species has not been formally tracked since 1981, although the Washington Natural Heritage Program maintains paper files on all Watch species, including S. hendersonii. Approximately 30 "recent" (since 1977) sites are known from the state. Counts per site vary in specificity, but the 30 sites in the Washington Natural Heritage Program files supported a total of at least 3,000 plants. S. hendersonii has been seen in estuarine systems in Pacific, Grays Harbor, Clallam, Island, Snohomish, Whatcom, and San Juan Counties, and was collected historically in King County. Most sites are in Pacific and Grays Harbor Counties. There was extensive inventory from 1980-1987, but little since that time, so the current status of most of the Washington populations is not known. The ownership of most of the sites is also not known, although it appears that many are on private land. I have pictorial evidence that one of these populations is healthy. (Possible seed source for future re-introductions in Oregon?) For details of distribution in Washington State in the 1980s, contact Florence Caplow, Washington Natural Heritage Program, PO Box 47014, Olympia, WA <florence.caplow@wadnr.gov>

OREGON:

• The Nature Conservancy describes Sidalcea hendersonii as "Critically imperiled in Oregon." This is absolutely correct. The species had between 8 and 10 historic locations in the state; however today only a single viable population in the Siuslaw River (and that with considerably fewer than 100 stems) can be found.

• In Oregon, Sidalcea hendersonii lacks state listing. I will petition the Oregon Department of Agriculture to add the species to the Candidate List. To see the list of state-protected species visit: www.oda.state.or.us

• The Oregon Natural Heritage Program places the species on List 2 = "Threatened or Endangered in Oregon, more common elsewhere." Technically this is true, but globally the plant is extremely uncommon, with a range of a few scattered populations (perhaps as few as 50-60) in estuaries from Reedsport Oregon (if it still exists there) to north of Campbell River, BC. Recent ONHP publications list S. hendersonii as G-3 "Threatened or uncommon throughout its Range"; or G-4 "Not rare; apparently secure." This should be changed to G-3, the present global rank. See: www.natureserve.org

• The species currently has no Federal status but should be designated a Federal Species of Concern with all haste. I will petition the U. S. Fish and Wildlife Service for such a rating. This species requires immediate listing, attention, and research. For information about Federal status contact Kathy Pendergrass, US Fish and Wildlife Service, Portland. <kathy_pendergrass@fws.gov>, or visit: www.endangered.fws.gov

We are dealing here with a fascinating and beautiful wildflower which has a habitat unlike all other members of its genus. Not only is it gorgeous to look at, but it lives in an environment between salt and fresh water, thus its distribution throughout its global range is essentially one-dimensional -- it is restricted to estuaries and islands along the Pacific coast of southern British Columbia, Washington and the northern half of Oregon. I believe it is safe to say that on a world-wide basis there are now far fewer than one hundred sites for this species – perhaps fewer than half that many.

The species' historic sites should be visited throughout its range to ascertain its health. This is especially crucial in Oregon where reasons for its demise should be ascertained and steps taken to reintroduce it into appropriate habitats.

Here is a review of the status of Sidalcea hendersonii in Oregon:

Clatsop County:

(1) Historic site: Type-site. "Near Clatsop Bay, Oregon" L. F. Henderson (#1413) 7/3/1887. (Exact site unknown.) May be in or near present-day Fort Stevens State Park; the species at one time appeared on a plant list for the park. Has not been seen recently. Look for in 2003. (Jean Siddall thinks the site may have been Clatsop Spit.) Probable threats: development, changes in hydrology.

(2) Historic site: "Seaside." LeRoy Abrams (#8917) 7/11/1922. Exact site not known. Jean Siddall gives coordinates as: T6N R10W Sect. 16 or 21. Has not been seen for years. Look for in 2003. Threat: development, highway construction.

(3) Historic site: "Moist hollows in sun, Elk Creek (Ecola Creek?) Cannon Beach." L. F. Henderson (#11360) 8/1/1929. Jean Siddall coordinates: T5N R10W Sect. 19 or 30. Has not been seen for years. Look for in 2003. Probable threats: development, draining of wetlands.

(4) Historic site: Cannon Beach. Morton Peck (#13274) 7/1/1924. "Small swamp island just above bridge, Cannon Beach." Jean Siddall gives coordinates as: T5N R10W Sect 20. Has not been seen for years. Look for in 2003. Probable threats: development, changes in hydrology, highway construction.

Tillamook County:

(?) OSU reports an unvouchered observation by Bluhm, Day, Stevenson, Urey, 1987, from "Neahkahnie Mt. and adjacent shore and beach area." T3N R10W Sect. 17. See Oregon Plant Atlas files, OSU Herbarium, list 178. Could this include part of Nehalem Bay?

(5a) Sand Lake: Historic site: "Swamp, South side of Sand Lake." Morton Peck (#13420) 7/12/24. Jean Siddall gives coordinates as: T3S R10W Sects30-31. Near Whalen Island County Park (?) Threats: Sand Lake Airport; prospective golf course site; dike and road have altered hydrology since 1924. Look for in 2003.

(5b) Sand Lake: North side of lake, just east of Sand Lake Campground. S. and M. Gisler found one plant here in 2000.

(6) Nestucca Spit. Morton Peck (#6857) 8/_/1909. "Nestucca Bay." Siddall gives coordinates as: T4-5S R10-11W. Bob Straub State Park. Is the state managing for this species? Wendell Wood sighting and photos 7/12/87. Estimated 45 stems at that time. East side of Nestucca Spit, open sun, wet meadow just west of tide flat. No recent reports. Threats: Scots broom (?). Check this site in 2003.

(Possible site to check: mouth of Salmon River approx. 10 mi. south of Nestucca Bay.

Lincoln County: No historic reports. Sites to check: Yaquina Bay (Newport), Alsea Bay (Waldport).

Lane County:

(7) Historic site: L. F. Henderson (# 13984) 7/11/1931. "Sandy flats of Siuslaw Bay, just above tide, Florence." Charlene Simpson believes this is the same as the next site. Would Henderson have described the Cox Island site as "sandy flats"?

(8) Cox Island in the Siuslaw River Estuary near Cushman. This may be the only viable site in Oregon. Nature Conservancy property. (Observation and photo, no collection.) Observed and photo'd by C. Simpson and B. Newhouse June 1995. T18SR11&12 W Sects 30&25. Size of population between 26 and? stems. Bob Frenkel: "On Cox Island the Sidalcea population is not backed up by forest but is at the uppermost edge of the developing marsh and falls off rapidly into a narrow belt of Carex lyngbyei." TNC botanists monitor the population annually. Possible threats: siltation, succession, changes in sea level. Trip planned in 2003 to check nearby island. The species is on the Emerald Chapter NPSO Rare and Endangered List. Visit: www.EmeraldNPSO.org

Douglas County:

(9) Historic site – this sighting is a mere 52 years old! Reedsport, Smith River. (About 6 miles east of Howell's site below – or possibly the same?) C. L. Hitchcock (# 19528) 7/1/51. "Sandy meadowland 1 mile north of Reedsport, Smith River. Coordinates given as T21S R12W Sect 25-26. Perhaps this population may be extant? Possible threats:

siltation, grazing, urban sprawl, highway construction, draining of wetlands, spread of purple loosestrife. Urgent: Check in 2003.

(10) Historic site: (Oldest record for Oregon.) Mouth of Umpqua River. T. J. Howell (# 7334) 6/15/1887. "In salt marshes, mouth of Umpqua." Jean Siddall gives coordinates as T22S R13W sect? No further information. No evidence that this site has been relocated for years. Check in 2003. Threats: How much has the mouth of the Umpqua changed in 116 years? Jetties, pollution, blowing sand, establishment of Winchester Bay? There are islands in the estuary here which should be checked. This is Oregon's most southerly record for the species. Survey trip planned for summer, 2003.

(No sites for Sidalcea hendersonii are listed in "Flora Survey of Douglas County," by Hopkins, Thiele, Fosback and Carlson, Douglas County Museum, 1986.)

Coos County: No records from Coos County, but Coos Bay should be checked. (Previous suggestion of a Sidalcea hendersonii sighting here was an error.)

* * * * * * * * * * * * * * * * * * *

Please contact me if you have any information about Sidalcea hendersonii.

Rhoda Love
rglove@oregon.uoregon.edu

email about

Subj: **Listing of Sidhen**
Date: 4/13/2003 9:03:48 AM Pacific Daylight Time
From: rglove@OREGON.UOREGON.EDU (Glen and Rhoda Love)
To: wnpsmail@tardigrade.net, inspass@whidbey.net, npso@tardigrade.net (NPSO List), rglove@OREGON.UOREGON.EDU, bakerg@lanecc.edu, csimpson@OREGON.UOREGON.EDU (Charlene Simpson), johnk@oregonnet.com, aryanaferguson@hotmail.com, ottingn@efn.org, dpredeek@msn.com, clickbeetle@earthlink.net, mar_c@efn.org, jenfry@earthlink.net, newhouse@efn.org, theacook@jasters.com, shineflower7@yahoo.com, wildirisflower@hotmail.com (molly iris), newhouse@efn.org (Bruce Newhouse), luomad@fsl.orst.edu (Dan Luoma), bakerg@lanecc.edu (Gail Baker), jddobak@pcez.com (Dave and Jan Dobak), vorobik@rockisland.com (Linda Vorobik), rglove@OREGON.UOREGON.EDU (Rhoda Love), SLatimer@jsanet.com (ShaneLatimer), jessup@sou.edu (Steve Jessup), kayet@peak.org (Tom Kaye), mmckeag@attbi.com (Mike McKeag), fredricks@worldaccessnet.com (Nancy Fredricks), ksturg@linfield.edu (KareenSturgeon), natives@willamettegardens.com, estherco@peak.org, jbaker@ucinet.com (JimBake deewhite1@mindspring.com (Dee White), jtduncan@mind.net (Jim Duncan), plaisane@mind.net (Elaine Plaisance), hardisol@bcc.orst.edu (Linda Hardison), kaanderson@starband.net (Karl Anderson), bulletin@npsoregon.org (TanyaHarve ottingn@efn.org (Nick Otting and Danna Litjen), dhanson@viclink.com (Dave Hanson), clickbeetle@earthlink.net (Michael J Hartman), meinker@BCC.ORST.EDU (Robert Meinke), gislers@bcc.orst.edu (Steven_DGisler), Sundbers@bcc.orst.edu (Scott Sundberg), vstansel@harborside.com (Veva Stansell), crupinaqueen@charter.net (Cindy Roche), kellivn@peak.org (Kelli Van Norman), msullivan@tnc.org (MollySullivan), guthpogel@earthlink.net (CandiceGuth), cgautier@efn.org (Gailclay smalaby@cs.com, cutler@cvc.net, naa@natareas.org (Schuller), cmarkham@teleport.com, garrett@bendcable.com (Stu Garrett), rottersberg@eoni.com (Bob Ottersberg), NADINE.STILWELL@STATE.OR.US, aceska@freenet.victoria.bc.ca, ed.r.alverson@ci.eugene.or.us, plun461@ecy.wa.gov, s.moore@co.snohomish.wa.us, lstorm61@aol.com, chris.chappell@wadnr.gov, kayet@peak.org, sue.vrilakas@oregonstate.edu, gislers@science.oregonstate.edu, meinker@science.oregonstate.edu, chamberk@bcc.orst.edu, Nancy_Eid@nps.gov, kathy_pendergrass@fws.gov, melanie@peak.org, amsberrk@bcc.orst.edu, andy_robinson@fws.gov, dgorham@oda.state.or.us, vstansel@harborside.co Zikap@aol.com, sundbers@bcc.orst.edu, ark@u.washington.edu, wildnatives@yahoo.com (Hope Stanton), frenkelr@geo.orst.edu, dpickering@tnc.org, ksayce@sbpac.com (Kathleen Sayce), florence.caplow@wadnr.gov (FLORENCE Caplow), tim.ennis@natureconservancy.ca, gmiller@oda.state.or.us (Glenn Miller), dougeco@islandnet.com (George Douglas), flow@oregonwaters.org, orshores@teleport.com, greenhills@oregoncoast.com (Les Helgeson), joeamyserres@oregonwaters.org (FLOW), natefrance@willamette.net, wlbluhm@juno.com (Wilbur L. Bluhm), tgoxwang@theoregonshore.com (Oxwang), emkolkemo@msn.com (Siuslaw Emily Kolkemo), bmdurst@oregonfast.net (Siuslaw Marilyn Durst), EDLCarlsen@cs.com (Tillamook Diane Carlsen), claire_hibler@or.blm.gov (SalemBLM), lyndasteiner@aol.com (Sand Lake), thehomecountry@onemain.com (Sand Lake)

Good news. At a meeting in Corvallis yesterday the Oregon Natural Heritage Information Center (www.oregonstate.edu/orhnhic/) agreed to raise Sidalcea hendersonii from List 2 to List 1 (Endangered or threatened throughout its range), and its global rank to G3 (Rare, Threatened or Uncommon throughout its range).

The US Fish and Wildlife Service has indicated it will give SIDHEN "Species of Concern" protection following this summer's field surveys if we document that it is as rare in Oregon as we fear.

For those of you planning surveys this summer: if you discover populations of Henderson's checkermallow, please measure or estimate area covered by the plant and count or estimate number of plants present. (Since one large plant may produce many flowering stems, be sure you do not overestimate number of plants.) And please assess threats. Also useful would be estimates of the percentages of female-only plants vs. perfect-flowered plants. If you can, take along a vial and collect any weevils you may find on flowers or capsules. (Weevils can be sent to Steve Gisler, Botany Dept., Cordley Hall, OSU.)

See the coming May Native Plant Society of Oregon Bulletin for an article on our efforts.

Thanks for your help. Rhoda Love

5 ATTACHMENT

"RESEARCH ON SAND LAKE ESTUARY AND BELTZ FARM FOR GUIDEBOOK, TIDAL MARSHES OF OREGON'S COAST"

Subj: **Sand Lake estuary marsh work**
Date: 10/9/2003 6:34:46 PM Pacific Daylight Time
From: adamus7@comcast.net (Paul Adamus)
Reply-to: adamus7@comcast.net (Paul Adamus)
To: lyndasteiner@aol.com

Lynda,

It was a pleasure talking with you today. Here is a short description of the project.

Paul
****

Tidal Marshes of Oregon's Coast: HGM Guidebook for Assessing Their Functions

An interagency project is developing methods and a guidebook for assessing the multiple functions of Oregon's tidal marshes. These products will be available in July 2004. The project is funded primarily by a grant from the U.S. Environmental Agency (Region 10) to the Oregon Division of State Lands (DSL) and Coos Watershed Association. Once testing is completed, the methods will be applicable all of Oregon's tidal wetlands south of the Columbia River Estuary.

The project is part of DSL's broader interest in strengthening tools for assessing multiple functions of wetlands in each of Oregon's major ecoregions. The first such project was completed in the Willamette Valley ecoregion, 1998-2001, and its products are currently being used in wetland decisionmaking there. Like that project, the Oregon Tidal Wetland Functions Project will use a national framework, known as the hydrogeomorphic (HGM) approach, for developing and organizing the methods. The HGM framework encourages the development of region-specific scoring models that can be used to assess the capacity of a wetland to support each of several functions, such as maintenance of channel/shoreline dynamics, and support of nutrient processing, habitat of overwintering fish, and habitat of migratory waterbirds. Simple, site-scale and landscape-scale, indicator variables are used in the construction of the scoring models. Typically, most of the indicators can be assessed by a trained user from aerial photographs, existing maps, and observations during brief site visits. The models are calibrated to conditions measured at least-altered reference marshes belonging to each marsh type.

After being tested, the simple scoring models and supporting protocols will be available to watershed councils, agencies, and consultants. A primary use will be for routine monitoring of tidal marshes and their functions, in the context of both formal watershed assessments and sustained monitoring programs at the state and watershed levels. The methods will be particularly useful for making semi-quantitative estimates of the recovery of functions in former tidelands that have been or may be restored, and thus, evaluating the quality of work completed at restoration sites. The methods also will be used to aid state and federal agencies in deciding whether to grant a permit for altering a particular wetland. If such a permit is granted, information from the methods might help suggest the extent and type of permit conditioning and monitoring, based partly on the site's relative capacity for particular functions. Finally, the methods might be used for helping identify marshes that might be the most functionally degraded and thus -- other factors being equal -- most

deserving of restoration, other remedial action, and/or particular levels of mitigation credit.

Like the previous effort in the Willamette Valley and one covering tidal wetlands along the western Gulf of Mexico, the Oregon tidal wetland assessment project is involving dozens of scientists, potential users, and citizen volunteers. The project will build upon and is seeking collaboration with many ongoing or recently completed projects, such as: EMAP (USEPA & Oregon DEQ); CLAMS, PNCERS, SWOP (multiple agencies); Oregon Coastal Atlas (Oregon State University); Oregon Estuary Plan Book/DEMIS (LCDC); Coastal Wetlands Trends Analysis (USFWS & DSL), projects of South Slough National Estuarine Research Reserve, Oregon Sea Grant program, University of Oregon, Tillamook Bay National Estuary Project, and watershed councils; as well as efforts in adjoining states. The project is being implemented as an independent part of the USEPA's West Coast Tidal Wetland Monitoring Venture.

During 2003, indicators of function and protocols for their estimation were drafted, documented by reference to reviewed literature, peer-reviewed in workshops involving tidal wetland experts, and finalized for initial field use. During summer 2003, two crews (one covering the north coast, the other the south) collectively surveyed 120 restored and unrestored tidal wetlands that spanned a range of sizes, salinities, climatic and geomorphic settings, and intensities and ages of disturbance/recovery (both human-related and natural). In each of about 30 of Oregon's major estuaries, 3-5 sites were visited. Selection of candidate study sites was facilitated by a GIS-based compilation and analysis of digital spatial data layers for the Oregon coast. The crews in some cases were joined by volunteers, and spent a full day at each site surveying marsh and tidal channel topography, assessing soil characteristics, estimating vegetation cover by species in 20+ quadrats, and estimating proportions of adjoining land cover and habitat types. Later in 2003 and in 2004, the collected field data will be analyzed statistically and will be used to support calibration of a scoring model for each function.

The final product will be a Guidebook that includes: (a) a manual for rapid assessment of functions of different types of Oregon tidal wetlands, with demonstration of its application to several restored sites, (b) a technical report characterizing Oregon tidal wetland landscapes and describing methods used to collect the data that were used to calibrate and test the function models, and (c) a CD that includes the complete set of collected data, statistical summaries, site photographs, selected maps, and software available for future use in analyzing some types of tidal wetland data. The Guidebook will provide sufficient explanation for most intended users to apply the methods with only minimal training.

Like the Willamette Valley project that preceded it, this project is being led by Dr. Paul Adamus, Courtesy Faculty member in the College of Oceanic and Atmospheric Sciences (COAS) at Oregon State University and a consultant on wetland function assessment to state and federal agencies for 24 years. The project manager is Dr. Jon Souder of the Coos Watershed Association. GIS analyses are being conducted by Russell Scranton, a graduate student in the Marine Resource Management program at Oregon State University who is advised by Dr. Adamus. The project officer at Oregon DSL is Janet Morlan and at USEPA Region 10, Yvonne Vallette. For technical questions about the project, please contact:

Dr. Paul Adamus (phone 541-745-7092)
ARA, Inc., 6028 NW Burgundy Dr., Corvallis, OR 97330

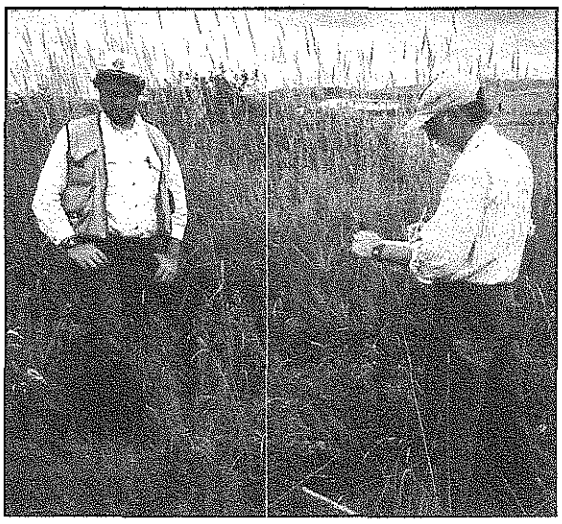
Subj: **Re: Sand Lake estuary marsh work**
Date: 10/9/2003 7:37:11 PM Pacific Daylight Time
From: lyndasteiner
To: adamus7@comcast.net

Dear Paul: Thanks so much for all the information on your research. I would very much appreciate being updated on this project and would enjoy volunteeing in any way I can. We in Tierra Del Mar and Sand Lake have recently been accepted into the Neskowin-Nestucca Watershed Council and are now known as the Sand Lake Watershed Group. We recently applied for a grant and received $1000 to be used in the Sand Lake estuary. We are planning a Sand Lake cleanup possibly next month or early next year and are very excited about Sand Lake finally being recognized for the wonderful estuary it is-----we just hope this golf course can be stopped at the county level for so many of us, scientists included, cannot understand how a development as this could possibly benefit this area---too much is at risk environmentally speaking. Thanks so much and I will keep you posted as to how things are going. If you ever want to see the REST of the area, please let me know.
Sincerely, Lynda

Update on the Oregon Wetland and Riparian Assessment Project

Since 1997, the Division of State Lands (DSL) has been developing a new method to evaluate wetland functions. The hydrogeomorphic (HGM) method is based on the premise that the functions of a wetland can be categorized according to the wetland's landscape setting and the sources and periodicity of its hydrology. Using a classification based on geomorphology and hydrology, several wetlands within a class (reference sites) are described in detail by a crew of field scientists. The resulting data are used to develop numerical models of wetland functions for that class of wetlands. The relative functional performance of another wetland can then be compared to the reference sites in the same HGM class. For example, the ability of Minto slough to trap sediment and phosphorus or to provide various sorts of habitat can be quantified relative to the functional capacity of similar riverine wetlands in the Willamette Valley.

Paul Adamus and A-Team volunteer Daniel Saar sample plant composition at a reference site in south Corvallis.



DSL has contracted with Paul Adamus, a wetland assessment expert, to develop the technical components of the Oregon Wetland and Riparian Assessment Project. With the assistance and critical review of several participating agencies, scientific and academic experts, and a large crew of volunteer field scientists, we have built a foundation for future use of HGM in Oregon. These products include: a classification of wetlands in each of 10 Oregon ecoregions according to HGM principles, profiles of the functions expected for each class, an outline of potential future applications of this methodology, technical peer review of functional indicators, location of reference sites, field characterization of about 140 wetland/riparian sites in the Willamette Valley, and analysis of this data.

During July of 2000, many wetland consultants and other scientists volunteered to collect data with us for secondary testing of the previous year's draft models. Paul Adamus is analyzing the new data, and the draft guidebooks for two wetland classes in the Willamette Valley are nearly complete. This winter, DSL will host a workshop to train potential users of the new method. In the future, we hope to secure funding to improve the assessment method's application in different seasons and by users with less experience, and to provide additional training for wetland scientists, watershed council members, and others.

Already, many wetland consultants are using HGM principles in their evaluation and design of wetlands for mitigation and restoration projects. While DSL has yet to discuss whether HGM will become part of our regulatory policy, we can see that this project has raised the bar for better scientific understanding of wetlands and their role in watershed processes.

For further information on this project, please contact Dana Field at 503-378-3805, ext. 238, or at **dana.field@dsl.state.or.us**

6 ATTACHMENT

"RESOLUTION BY THE TIERRA DEL MAR COMMUNITY ASSOCIATION TO OPPOSE THE GOLF COURSE PROPOSAL"

THE BOARD OF DIRECTORS OF THE TIERRA DEL MAR COMMUNITY ASSOCIATION (TDMCA), AT AN AUGUST 30, 2003 MEETING IN TIERRA DEL MAR, OREGON, ADOPTED THE FOLLOWING RESOLUTIONS:

WHEREAS, Golf Links, L.C.C. has filed with Tillamook County, Oregon, a Conditional Use Permit to construct an 18-hole golf course on acreage of oceanfront property that is partially on the Sand Lake estuary and adjacent to the community of Tierra Del Mar and Whalen Island State Park and estuary, and

WHEREAS, a mailed ballot survey of property owners who are paid-up members of the TDMCA resulted in 124 returned ballots, of which 89 members, 71.7% of those voting, opposed this development, and 26 members, 20.9% voting were in favor, and 9 members, 7.2% voting had no opinion, and

WHEREAS, in this same mailed ballot survey, members were asked if they were in favor or opposed to the TDMCA officially going on record on behalf of its members, 90 members, 72.5% of those voting were in favor, and 26 members, 20.9% voting were opposed, and 8 members, 6.4% voting had no opinion.

RESOLVED, the Tierra Del Mar Community Association will officially be on record as opposing the construction by Golf Links, L.C.C. of an 18-hole golf course.

RESOLVED, the Tierra Del Mar Community Association will officially oppose the Conditional Use Permit application by Golf Links, L.C.C. in Tillamook County, Oregon.

RESOLVED, since an expenditure of funds may be required for such items as mailings, legal expenses or other expenses in connection with this opposition, the Board of Directors of the Tierra Del Mar Community Association has authorized an expenditure of up to $1000.00 to be used for these purposes.

Approved unanimously by the Board of Directors of the Tierra Del Mar Community Association.

Jim Spring, Chairman
Pat Dignan, Vice-Chairman
Brad Telyea, Secretary
Cathy King, Treasurer
Doug Maxwell, Member-at-Large

7 ATTACHMENT

"FORMATION OF THE SAND LAKE WATERSHED GROUP"

Winter 2004

Newsletter of the Nestucca-Neskowin Watersheds Council
(covering the Sand Lake Watershed too)

The Flow

NNWC NOTES

Three new members join NNWC Board

In June of 2003, NNWC added new board members Misty Wharton, Sean Harding and Jerry Brumback. Carol Bickford and Andy Dufner will serve again as President and Vice President.

Coordinator resigns, hiring process underway

Matt Love resigned as Council Coordinator. After working 18 months at the job, he decided to pursue other professional endeavors.

Board President Carol Bickford will serve as interim Coordinator until a permanent replacement for Love is hired this spring.

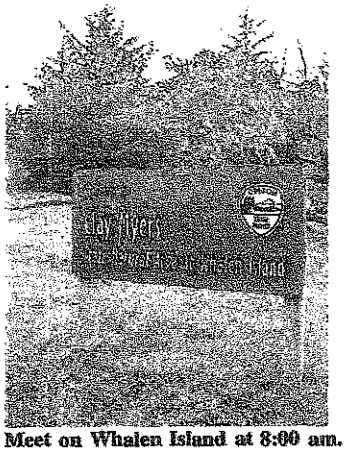
NNWC contracts solicitation

NNWC receives state and federal grants to fund watershed restoration activities. NNWC then awards contracts to and purchases supplies from several businesses engaged in watershed restoration. NNWC encourages woman and minority-owned businesses to indicate any interest in working with the Council on future projects.

First Ever Sand Lake Estuary Clean-up scheduled for March 6

Experience a chance to make local history on Saturday March 6, the day of the first ever Sand Lake Estuary Cleanup. Volunteers are needed to assist.

Sponsored by the Nestucca-Neskowin Watersheds Council and the Sand Lake Watershed Group, the cleanup hopes to attract people of all ages to pick up rubbish in the estuary's beach and intertidal areas.



Meet on Whalen Island at 8:00 am.

Netarts resident and longtime advocate for the Oregon Coast Jim Mundell has generously donated money to fund the project.

The cleanup affords residents and visitors a unique opportunity to interact with the Sand Lake Estuary in a community effort to keep this area natural by removing trash and debris.

People wanting to help out should meet on Whalen Island at 8:00 am. After a brief orientation, volunteers choose an area they want to clean. Some of these areas are suitable for small children. Captains have been designated to lead volunteers. The event will take place in rain or high winds and should conclude by noon.

Pacific City Birding and Blues Festival to feature many watershed and wildlife educational opportunities

The inaugural Pacific City Birding and Blues Festival kicks off February 27-29. This unique event affords residents and visitors a fantastic opportunity to learn more about the watersheds and wildlife of South Tillamook County.

For a complete list of events, log on to birdingandblues.com or check out the flyers and event guide available in the area.

NNWC members:

I want to thank all those who attended the June 19 meeting. It was one of the best NNWC meetings in recent memory and it bodes well for the future as the organization adjusts to a funding cut by the Oregon Watershed Enhancement Board (OWEB). More than ever the Council needs volunteers to come forward and help and there appears to be new folks who are ready to do exactly that.

In an attempt to improve communication between staff, the new Board and the Council membership, I have decided to initiate a periodic electronic newsletter/update for those on our mailing list. This is the inaugural issue. I will still produce "The Flow" our quarterly newsletter mailed to everyone in the watersheds, but this email version should be more timely—and inexpensive.

The Flow *6-23-03*

June 19 Meeting Recap

New Board Members

NNWC welcomes the addition of newly elected Board members Jerry Brumback (Sandlake), Misty Wharton (Cloverdale), and Sean Harding (Neskowin). Board members plan to meet July 17 to choose officers. Remaining Board members are Carol Bickford, Gordon Whitehead, Dale Buck and Andy Duffner.

Sandlake Added to NNWC

Eight residents from the Sandlake Watershed requested that their watershed be represented by NNWC. The Council unanimously approved the request.

Nestucca Bay Ecology Education Program (NBEEP) Set to Debut

NBEEP, NNWC"s new public education outreach effort is set to launch later this month. Look for posters around South Tillamook County advertising program events such as hikes, classes, tide pool explorations, and ecology talks. Coordinator Katia Sowers has put together an impressive list of events for all ages that should appeal to tourists and locals alike. She still needs volunteers for the Kiwanda Environmental Learning Program, particularly help with transporting equipment down to the tide pools. If you want to help, email or call NNWC at 503-392-6134.

NNWC Budget Outlook

It appears NNWC will receive approximately 70 percent of its council support grant to the Oregon Watershed Enhancement Board. This grant funds staff and

Nestucca Neskowin Sand Lake Watershed Council board meeting of September 18, 2003

Meeting called to order at 6:30 PM at NHS library./Present: Matt Love, Carol Bickford, Andy Duffner, John Casteel,,
Michelle Long, Sean Harding, Jerry Brumback, Dale Buck, Gordon Whitehead.

Seed Collection: Gordon reported on the seed collection workshop. Matt will e-mail principles to set up a meeting to organize a seed collection program.

Water Quality: The water quality monitoring program has received $4300 bridge funding to see us through the next few months while we decide where to take the program and/or look for new funding. Matt pointed out that water quality monitoring dollars are tight right now. Jerry suggested that Sand Lake has volunteers available. Dale suggested that we focus on Sand lake since it has received little attention so far. The suggestion was also made that whatever place we decide to focus, we identify a just a few sites and stretch the money as far as possible.

Streamside Planting: Matt reported that 20 land owners (8 - 9 stream miles) are currently signed up for this year's program, and a few more are pending. The partnership with SWCD is going well. Maintenance on last year's plantings is going well. There was some avoidable mortality due to inadequate filling and packing of soil around roots, but overall mortality is less than 20%.

Wild Fish Survey (Rapid Bioassessment): The second year of the survey is complete. There is enough money left over to do most of a third year. Do we want to find some money to fill in? Do we want to drop out a stream or two? John pointed out that three years of study would be nice because it would cover an entire coho life cycle.
>
Education and Outreach: NBEEP was a big success. There was great turnout As regard the Birding and Blues Festival, there continues to be confusion about NNWC's official role and responsibility. Gordon expressed discomfort with this kind of partnership until the confusion is cleared. Matt will investigate with a collective mind to developing a policy.

Culverts: Carol wrote a small grant to fix culverts on Sutton Creek. The first culvert was done on Sept 15th; the second needs to be done by the end of next week. There are problems with the Corps of Engineers permit, but the culvert will get in. The Smith Creek culvert did not go in this summer. Kami Ellingson will be giving a presentation on culvert

replacement in the Neskowin Watershed at the October meeting.

Dale made a report on the SWCD non-compliance letter.

Matt reported that the Beach Bill History Reprint first letter of intent was turned down. State parks advised him to wait a year and they will try to assist.

New Large Grants:
$50,000 from DEQ for riparian restoration
$10 - 15, 000 from DEQ for riparian maintenance
$25,000 from OWEB for the Sand Lake assessment and action plan

New Small grants:
Clear Creek restoration
seed collection
Neskowin Regional Sewer Authority may be looking at 319 money to extend the sewer line for water quality.

Carol Presented the budget report.

John Casteel presented the BLM culvert inventory

Michelle Long presented some information on Watershed Weeks activities

Sand Lake Estuary Cleanup: NNWC will be putting together a team in Late November. We will probably need to raise money.

Gordon Whitehead mentioned the October 21st South Tillamook County Economic Development Forum organized by Doug Olson, and suggested NNWC might want to participate as a presenter.

The next meeting will be on October 16th.

Spring 2003

Newsletter of the Nestucca-Neskowin Watersheds Council

The Flow

NNWC NOTES

NNWC to hold Board elections in June

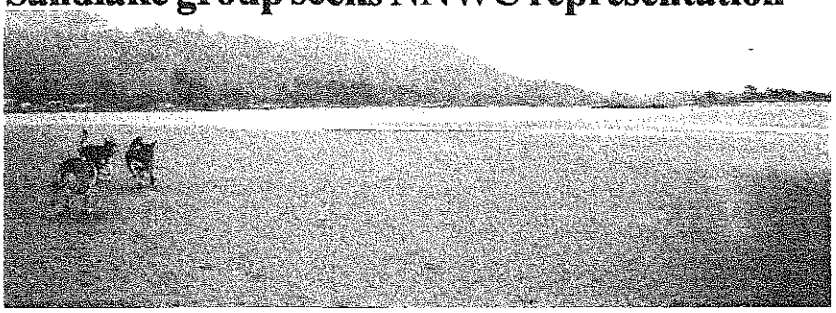
NNWC has set the June 19 meeting for electing new Board members. Anyone wishing to serve on the Board should submit their names in writing to the Council Coordinator, Matt Love, at least seven days prior to the June meeting. (An e-mail notice is acceptable.)

The June election will be by secret ballot, with all prospective members placed on the same ballot. Two of the Council members would read and tally the secret ballots. Those receiving a majority vote of the Council present would be elected to the Board, with terms to begin immediately.

OWEB funds NNWC for two more years

This April the Oregon Watershed Enhancement Board (OWEB) awarded NNWC, a non-profit organization with no regulatory authority, a $70,000 grant starting in July. The funds will in part pay for the Council Coordinator position for another two years. Coupled with match funding from Oregon DEQ, NNWC is on solid footing to continue its volunteer-based watershed restoration, monitoring and public outreach work.

Sandlake group seeks NNWC representation



The Sandlake estuary at low tide.

The Sandlake Watershed is the only watershed on the Oregon Coast not officially represented by a watershed council. Seeking to redress this, a group from the area has formed and approached NNWC about how to join up with the organization.

"Sandlake is an important ecologic area and watershed. Yet very little is known about it. We want the council to assist us in learning about the nature of this watershed so that we can make better decisions for the future protection, preservation and restoration of this vital habitat," said area resident Michael St. John.

Called the Sandlake Watershed Group, this group plans to formally request representation at the June 19 NNWC meeting. Those Sandlake Watershed residents interested in learning more should plan on attending a June 7, 11:00 AM, meeting at the Tierra Del Mar Community Center on Bilyeu. Contact Yvette or Michael St. John at 965-6657 for additional details.

NNWC grant funds boost local economy

Besides improving the health of South Tillamook County watersheds, NNWC also improves the health of the local economy.

Currently cycling through nearly $600,000 in state, federal and private foundation grants, NNWC in recent years has implemented successful on-the-ground projects that raise the value of private property and spend much-needed dollars in the area.

For example, NNWC's 2003 Streamside Planting program has pumped almost $75,000 into the local economy by way of funding staff, hiring contractors, reimbursing Nestucca Valley School District for bus transportation and substitute teacher costs, purchasing supplies and materials from local businesses and helping pay for a youth work crew to maintain riparian restoration sites this summer.

NNWC Board Elections--June 19--6:30 pm--Nestucca High School

Nestucca-Neskowin Watersheds Council

Agenda for June 19 meeting

Board Elections

Presentation by Sandlake Watershed Group

Presentation by BLM's Kurt Hekeroth on Tillamook Native Plant Cooperative

Council business

Thursday, June 19, 2003
Nestucca High School
6:30 pm –8:30 pm

Meeting notice

Sandlake Area Residents

WHAT: Informative Meeting with Matt Love of the Nestucca-Neskowin Watershed Council

WHEN: SATURDAY, JUNE 7, 2003 AT 11:00 AM

WHERE: Tierra Del Mar Community Hall
Bilyeu street in Tierra Del Mar

WHY: To form a group asking that the Sandlake watershed be included in the Nestucca-Neskowin Watershed Council.

Very little is known about the Sandlake watershed which is the only watershed in the area that is not represented by a watershed council. Watershed councils are volunteer organizations that represent all who share and live in the area. Improving, preserving and enhancing the watershed can help all of us who get our water from this area, as well as benefit the flora and fauna.

CONTACT: Michael & Yvette St. John 503-965-6657 or 360-574-3539
Dewey & Elaine Mallery 503-965-6514

5-28-03
TO: Oregon Watershed Enhancement Board
FROM: Michael St. John, Sandlake Watershed Group

RE: Grant Application Support

The Sandlake Watershed Group of interested citizens very much supports the Nestucca-Neskowin Watershed Council (NNWC) in its request for funds to include a study of the Sandlake watershed by the NNWC. There is a need to do an assessment of the watershed and develop an action plan. There are several reasons we feel the need is compelling and that there are local volunteer resources to carry the assessment out:

- The Sandlake watershed is the only watershed on the Oregon coast not to have a watershed council. Yet its location and condition clearly are important to the health of Oregon coast fisheries and wildlife. There is currently little data to base an action plan on to enhance or improve the area.
- It is imperative that a council represents Sandlake in the future. We feel this is best done as part of an existing one, the NNWC. This is a cost effective way to do it. The grant funds for the study can be a catalyst in getting people in the area to work together.
- There are many people in the area who are willing to assist the NNWC in carrying out the assessment. There are already people directly involved in meeting with the NNWC. Several attended a class on watersheds and have gone to a NNWC board meeting. An open meeting of Sandlake area residents will be held in June to learn more about the NNWC and what it is and can do. This will ensure the widest possible involvement from the community.

It is very important that funding be found to help support local efforts to learn more about Sandlake. With the proper data, I am sure that people can work together to enhance and improve the watershed. I hope the Oregon Watershed Enhancement Board funds this application. That is a great beginning.

Cc: Sandlake Watershed Group

Lynda:
FYI,
Michael

March 18, 2003

Oregon Watershed Enhancement Board
775 Summer Street NE
Salem, OR 97301

RE: Nestucca-Neskowin Watersheds Council

We property owners of Sand Lake watershed area recently became familiar with the work of the Nestucca-Neskowin Watersheds Council. We are most impressed by the kind of work that this council does in involving people in understanding and improving the various watersheds in our area. To our dismay, we found that the Sandlake watershed and estuary have no watershed board. Since there is little or no data or information on this small but vital area, we are interested in collecting data. Knowledge about the temperature, turbidity and bacteria levels might help us to develop ways to enhance the watershed. This would help to set a benchmark for the future. We therefore have expressed strong interest in being represented in the existing Nestucca-Neskowin Council.

We also want to be involved in riprarian enhancement. Some of us recently participated in a class on the Nestucca-Neskowin Watershed through Tillamook Bay Community College. In our field study part of the class, we planted native trees and shrubs that will improve stream quality. We feel that the Sandlake watershed will benefit from this same kind of involvement and access to assistance.

We are most impressed by the educational aspect of the watershed council and its voluntary nature. We are committed to the broadest public involvement possible. We plan to hold meetings for interested people in this area prior to the June Nestuccca-Neskowin Board meeting. Some of us having attended their March Board meeting, we are planning to return to the June meeting with even more interested people from our Sandlake watershed.

We realize that tough funding decisions are being made for the next biennium. We hope that the Oregon Watershed Enhancement Board will recognize that involving Sandlake in the Nekowin-Nestucca Council will require additional time and effort and, even with heavy volunteer involvement, additional money to grow the council. However, using an existing council will certainly use the additional funds most effectively.

Thank you for your attention.
Sincerely,

Yvette & Michael St. John	Gerald & Jan Brumback	Dewey & Elaine Mallery
26260 Sandlake Road	26230 Sandlake Road	26255 Sandlake Road
Cloverdale, OR 97112	Cloverdale, Or 97112	Cloverdale, OR 97112

cc: Matt Love

14.1 Oregon's watershed council program

"A long pull, and a strong pull, and a pull all together."
— Charles Dickens

What are local watershed councils?

Watershed councils are locally organized, voluntary, non-regulatory groups established to improve the condition of natural resources in the state's watersheds. In Oregon, nearly 90 recognized councils are engaged in a wide range of watershed work.

The 1995, the Oregon legislature unanimously passed House Bill 3441 to provide guidance on the formation of watershed councils. However, House Bill 3441 makes it clear that formation of a council is a local government decision, with no state approval required. Watershed councils are required to represent the interests in the basin and be balanced in their makeup. Watershed councils offer local residents the opportunity to independently evaluate watershed conditions and identify opportunities to restore or enhance conditions. Through the councils, partnerships between residents, local, state, and federal agency staff and other groups are developed. Through these partnerships and the resulting integration of local efforts, the state's watersheds are protected and enhanced.

How local watershed councils are formed

Establishment of a council is a local government decision made by a city, county, water supply, or sewer district. In practice, recognition of councils has been by formal letter, resolution, or order, usually from a county commission. Two primary guidelines are provided by the legislation: (1) that the watershed council be a voluntary, local group and (2) that the council represent a balance of interested and affected persons within the watershed. Watershed councils are composed of people from the local communities. They represent local knowledge and understand the local community and its complexities.

Some watershed councils form as non-profit corporations or adopt other formal organizational structures while others organize as informal groups. Many councils work closely with local soil and water conservation districts, council of governments, and resource conservation and development districts.

The role of local watershed councils

Watershed councils work across jurisdictional boundaries and across agency mandates to look at the watershed in its entirety. The primary purpose of the watershed council is to address watershed conditions from ridgetop to ridgetop. The council also plans and implements projects to protect or improve natural resources, educates people about watershed conditions and functions, and monitors changes in the watershed.

The council is a forum to bring local, state, and federal land management agencies together with local property owners and private land managers. It provides local people with a voice in natural resource management that can significantly influence watershed management decisions. Councils can also be a tool that watershed management decision makers use to disseminate information to the public, gauge local sentiment on specific management issues, and coordinate a broad-based review of management plans.

Watershed councils do not have any specific authority or ability to regulate land or water use.

They work as an advisory body but also undertake specific restoration, education, and monitoring projects. As a group that is recognized by local government, they incur no more or less liability to local governments than any other locally appointed advisory group (e.g., planning commission, design review board, etc.).

Local watershed councils and the Oregon plan

Local watershed councils are an essential part of The Oregon Plan. The Oregon Plan originally had two components: the Coastal Salmon Restoration Initiative, which deals with recovering coho salmon runs in coastal basins, and the Healthy Streams Partnership, which deals with improving water quality statewide to meet federal Clean Water Act standards. A third component addressing the restoration of potentially threatened steelhead trout has been added to The Oregon Plan and it is envisioned that eventually the plan will become a comprehensive approach to sustaining watershed health to meet the habitat requirements of all species.

Watershed councils, working through their local networks and relying upon technical expertise from local, state, and federal agencies, are compiling and analyzing data on current watershed conditions and developing prioritized work plans to solve natural resource problems. They are monitoring watershed conditions, tracking the effects of restoration work, and providing data to a centralized repository so that the overall effect of The Oregon Plan can be quantified. Watershed councils are also working hard to provide information and raise public awareness about watershed health issues. Helping people realize that they have an individual role and responsibility for the state's natural resources will, in the long run, help ensure the future viability of our watersheds.

Local watershed councils and GWEB

The Governor's Watershed Enhancement Board (GWEB) was directed by the 1995 Oregon legislature to support the work of local watershed councils. GWEB provides grant funds for activities that benefit the state's watersheds, provides technical assistance through its member agencies, and administers funding for implementation of The Oregon Plan. When evaluating applications for grant funds, GWEB gives preference to projects that are proposed or endorsed by watershed councils. Councils may also apply to GWEB for funding for coordinator salaries and council administrative costs. GWEB provides informational materials to councils, sponsors workshops for council members, and has developed a watershed assessment manual to provide uniform protocols for assessing current watershed conditions.

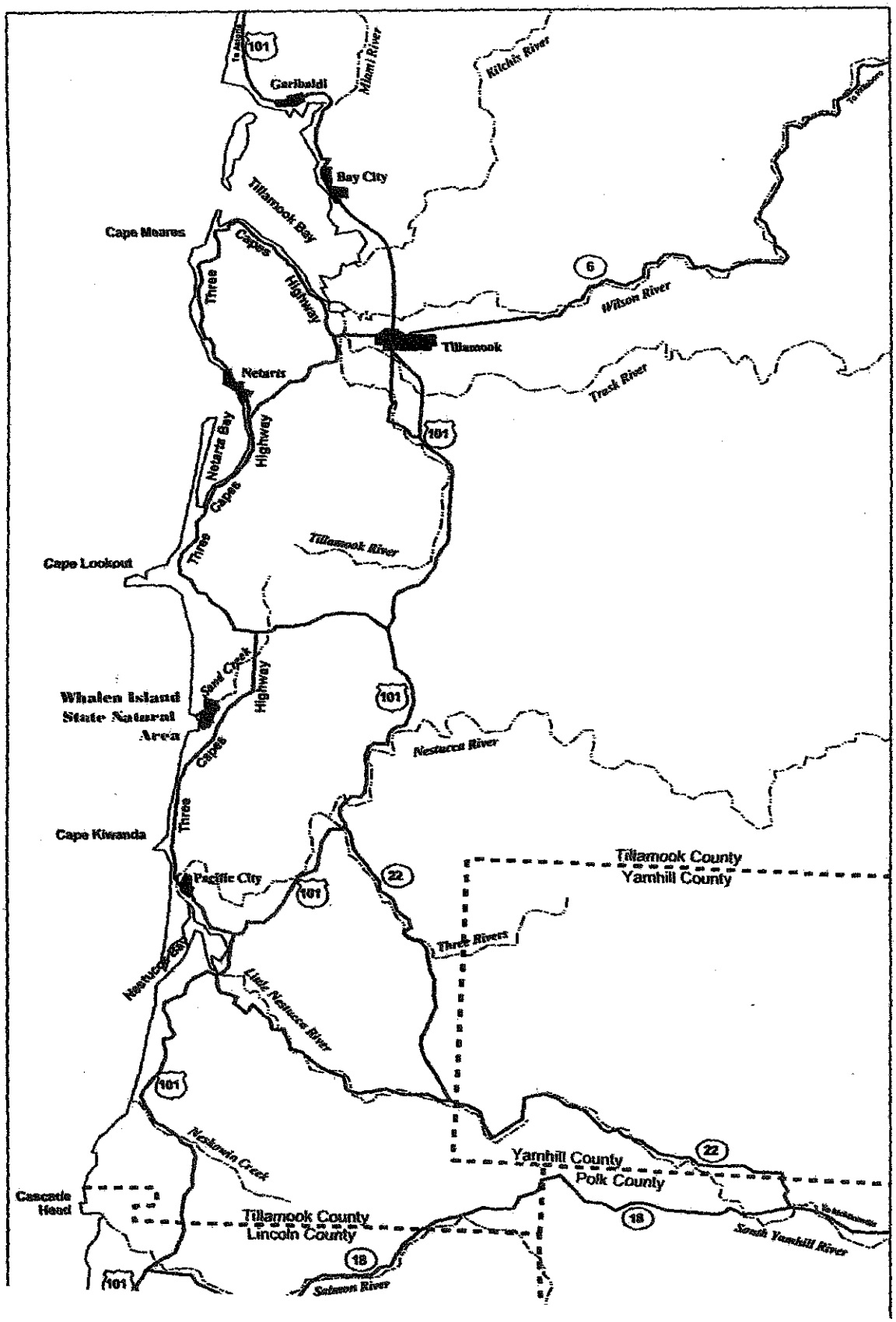
8 ATTACHMENT

"ACQUISITION AND ESTABLISHMENT OF THE CLAY MEYERS STATE NATURAL AREA AT WHALEN ISLAND BY OREGON PARKS AND RECREATION DEPARTMENT"

Whalen Island State Natural Area

Vicinity Map

Oregon Parks and Recreation Department



Myers to be honored at Whalen Island

BY KEN O'TOOLE
Headlight-Herald Staff

TIERRA DEL MAR — Former Oregon secretary of state and treasurer Clay Myers will be honored Saturday, Aug. 24, in a ceremony dedicating the state's recently acquired, 179.5-acre portion of Whalen Island.

The Oregon Parks and Recreation Commission voted unanimously at its meeting last week in Roseburg to name the parcel the Clay Myers State Natural Area at Whalen Island.

Myers, who played on the island as a youth when his family lived in South County, was Oregon's secretary of state from 1967-77 and state treasurer from 1977-84. He was secretary of state during the passage of the Oregon Beach Bill, establishing beaches as open recreational areas.

Honoring Myers "for all of those years of service" was the idea of Parks and Recreation Commission member George Bell, who said he worked with Myers as assistant secretary of state from 1967-75.

Myers, who now lives in Arizona, has been suffering from a long-term illness, but is expected to be able to attend the ceremony at 11:30, at the state portion of the island, near the county park. Participants are encouraged to bring a picnic lunch.

The facility is being called a natural area rather than a park, because its development will be limited, according to Ron Campbell park master planner with the state Department of Parks and Recreation.

Campbell said plans call for a loop trail system of from 1 1/2 to 2 miles on the uplands. There would be vehicle access to the trail system with an access road at the west end of the bridge, connecting with the county park area. The trailhead parking loop would have 15 standard-sized parking spaces and two longer spaces for buses or recreational vehicles, as well as a vault toilet building. Interpretive signs would be placed at a couple of key points along the trail system.

A portion of the trail — an estimated 1,500 feet — in the vicinity of the parking lot will be accessible to the disabled. On the east side, this access would extend to the edge of the marsh, and on the west side, it would include an area where the beach could be viewed. A small picnic shelter would probably be added in a later phase of construction, he said.

"That will be the extent of it, under the current master plan," Campbell said.

Campbell said the department had hoped to begin construction this fall, but this is not certain, as it is awaiting a matching federal grant from the Land and Water Conservation Fund, administered by the National Park Service.

The Parks and Recreation Department recently got approval from Tillamook County to rezone the property, making it more restrictive in use. It had been zoned rural residential. It now includes two zones, with the trailhead area designated recreational management and the uplands as a recreational natural zone. "This prohibits all but low-impact uses (mainly trails)," Campbell said.

Signage will include a state parks shield on the county road and an entrance sign to the natural area, he said.

Myers has yet another link to Tillamook county. His father, Henry Clay Myers Sr. was a Tillamook County commissioner from January 1959 to December 1962, and began his six years of service as the county judge (the equivalent of board of commissioners chairman) in January 1953.

Tillamook County had this form of county judge until 1973, according to County Analyst Paul Levesque. The commission board consisted of the judge (who also handled matters of probate) and two county commissioners, he said.

9 ATTACHMENT

"RAPID BIO-ASSESSMENT OF SAND LAKE BASIN – RENEKE CREEK AND BELTZ CREEK SURVEYED"

RAPID BIO-ASSESSMENT 2002

FINAL REPORT

PREPARED FOR:

Nestucca / Neskowin Watershed Council

PREPARED BY:

Steve Trask
Bio-Surveys,LLC.
Po Box 65
Alsea, Or.
97324

FUNDED BY:

Oregon Watershed Enhancement Board

RAPID BIO-ASSESSMENT 2002

INTRODUCTION

A Rapid Bio-Assessment inventory was conducted for the Nestucca / Neskowin Watershed Council (NNWC) during the summer of 2002. This inventory included the Nestucca, Neskowin and Sand Lake basins. The intent of the project was to gather information on the status of juvenile salmonid summer distributions and summer rearing densities. The inventory consists of extensive snorkel surveys in each basin that begin at the head of tidal influence and continue to the end of juvenile Coho distribution in each stream and it's tributaries (mainstem Nestucca begins at the confluence of Beaver Cr.). These surveys were conducted using funds granted to the NNWC by OWEB. The intent of these surveys is to develop base line data for each of three successive cohorts and to eventually identify long term trends in the distribution and abundance of juvenile Coho, Steelhead, Cutthroat and Chinook at the 6th field level in response to restoration and watershed management issues.

The escapement of adult Coho in all of the surveyed basins and ocean tributaries during the 2001 brood year was still insufficient to adequately seed the summer habitat currently available on a watershed scale throughout the four 5th fields in the NNWC management area. For many of the basins and subbasins, adult escapement is the primary limiting factor for production. The trend in the adult escapement of Oregon Coast Natural (OCN) Coho since 1990 has been positive for all of the NNWC basins with the highest recorded escapement in the last 12 years occurring in 2001. The Nestucca OCN Coho estimate for 2001 based on randomly selected adult spawning surveys was 3,940 and the Neskowin / Sand Lake estimate was 71. These estimates compared to escapement estimates of 1,171 and 0 for the year 2000 exhibit dramatic increases in abundance and are indicators of recent improvement in ocean conditions. ODFW's long term SRS monitoring of adult Coho escapement suggests that the 12 year trend for the North Coast monitoring area is one of only two statistically significant trends observed in the five coastal monitoring areas. This statistically significant trend was also detected in the more intensive monitoring associated with the Oregon Plan conducted between 1997 and 2001 (E-Map). Both methods suggest that the trend is driven primarily by abundance in the Nehalem River but that a significant positive trend is also quantifiable in the Nestucca.

It is important to recognize the significant role that changes in adult escapement can have on the observed distributions and densities of juvenile salmonids. The resultant distribution data from 2002 still does not describe all of the accessible and suitable spawning and rearing habitats for salmonids because of continued under escapement.

The survey method was designed to look at a sub sample (20%) of rearing habitats using a Rapid Assay technique that could cover large distances and succeed in describing the current distribution of Coho and quantify the rearing densities of Coho and the relative abundance of Cutthroat, Steelhead and Chinook in all of the surveyed streams and their tributaries.

The database contains the results of 175 stream miles that were surveyed. This includes the full extent of Coho distribution in the Sand Lake (10 miles), Neskowin (13 miles) and Nestucca basins (152 miles) except for the segment of the mainstem Nestucca between the head of tidal influence and the confluence of Beaver Cr. and the majority of West Beaver (inadequate visibility). If a stream is not included in the database it was not surveyed. This will occur only in situations where a mapped tributary was dry or where there was a lack of suitable visibility for the survey methodology.

METHODS

The basins and sub-basins surveyed were selected and prioritized by ODFW, BLM, USFS and NNWC technical advisors. Survey crews were concentrated within a basin to complete the sampling activity within a concise window of time. This approach led to transportation efficiency and eliminated any possibility of population shifts in response to changes in flow or temperature. This strategy was altered for the mainstem Nestucca where local knowledge from the technical advisory panel of the NNWC indicated that visibility in the lower mainstem could degrade during the summer months because of temperature driven algal blooms. This resulted in a hiatus of 33 days between surveys of the mainstem Nestucca between the first 13.4 miles surveyed above the confluence of Beaver Cr. and the remaining 19.6 miles surveyed to the end of Coho distribution.

Land owner contacts were made for all of the private, industrial and public ownerships that existed on both sides of every stream reach surveyed. Developing these contacts involved extensive research in the county tax assessor's office and then a personal contact to describe the survey and request permission for access. The land owner information was recorded (name, contact #, tax lot # and location) and will be available in subsequent years as a byproduct of this contract.

Most surveys were initiated by randomly selecting any one of the first five pools encountered. The protocol however was altered for small tributaries (2nd order) where Coho presence or absence was undetermined, in these tributaries, the first pool above the confluence was selected as unit number one. This alteration in protocol was adopted to identify minor upstream temperature dependant migrations that may not have extended

Sand Lake

Surveys conducted in the Sand Lake basin assessed the condition of 10.2 miles of available habitat. An additional 1.9 miles of potential habitat (16 % of the lineal total) was not surveyed due to poor visibility from tannins and / or sediment. The unsurveyed portions exist in lower Trib A of Sand Cr. and a no name Trib of Sand Cr. entering on the right above the confluence of Andy Cr.. Refer to the USGS quads included as a product of this inventory to identify the start point of Trib A.. The Sand Lake Estuary contains a single primary source of potential salmonid habitat, Sand Cr.. Sand Cr. is a 4th order stream with several significant tributaries, Jewell, Andy, Davis and Trib A.. In addition, the estuary receives extremely high quality fresh water input from three 2nd order streams that enter on the southern end of the bay, Gurtis, Reneke and Beltz.

(Table 7)
Expanded Sand Lake (5th field) Estimates of Juvenile Salmonid Production

Survey Year	Coho	0+	Sthd	Cut
2001	2,940	2,345	155	1,335

Sand Cr.

Both Coho and Steelhead were observed within the mainstem of Sand Cr. The expanded abundance of summer rearing Coho for all of Sand Cr. and it's tributaries was 2,940. This represents at least a minimum number present. Additional production is likely present in the 16 % of the lineal habitat uninventoried. The presence of these Coho is significant since the SRS adult inventory for the year 2001 observed 0 Coho in the basin. Coho distribution extended up mainstem Sand Cr. 3.3 miles above the head of tidal influence. The primary spawning activity was observed between RM 1.5 and 3.3. The average rearing density for Coho was 0.12 fish/sq.m of pool surface area with an observed peak density of approximately 0.7 fish/sq.m. The expanded rearing estimate for Sand Cr. excluding Jewell and Andy was 1,000 (34% of the basin total). Steelhead were present in the system but much less abundant than Coho and concentrated in a much narrower band of habitat from RM 1.5-2.7. The potential for restoration is significant in mainstem Sand with visible impacts from upslope harvest activity and agricultural use present.

Jewell Cr.

Jewell exhibited an average Coho rearing density of 0.28 fish/sq.m with a peak density of 1.4 fish/sq.m. Distribution extended 1.4 miles and an expanded estimate of abundance was 790 Coho (27% of the basin total). There were small numbers of steelhead present and excellent densities of Cutthroat (0.2 fish/sq.m avg.).

Andy Cr.

Andy Cr. contained abundant gravels that were well sorted. The average density of Coho was 0.37 fish/sq.m with a peak density of 1.1 fish/sq.m. Coho were broadly distributed and extended 1.8 miles above the confluence with Sand Cr. Andy Cr. contained an expanded estimate of 1,150 Coho (39% of the basin total). There were no Steelhead observed.

Davis Cr.

Davis was classified as exhibiting low gradient swampy habitat with very little if any potential for spawning. The substrates were silt dominated. There were only Cutthroat observed, no Coho or Steelhead present.

Trib A.

This lowest tributary of Sand Cr. was completely sand dominated with limited to no potential for spawning. There were only Cutthroat observed, no Coho or Steelhead present.

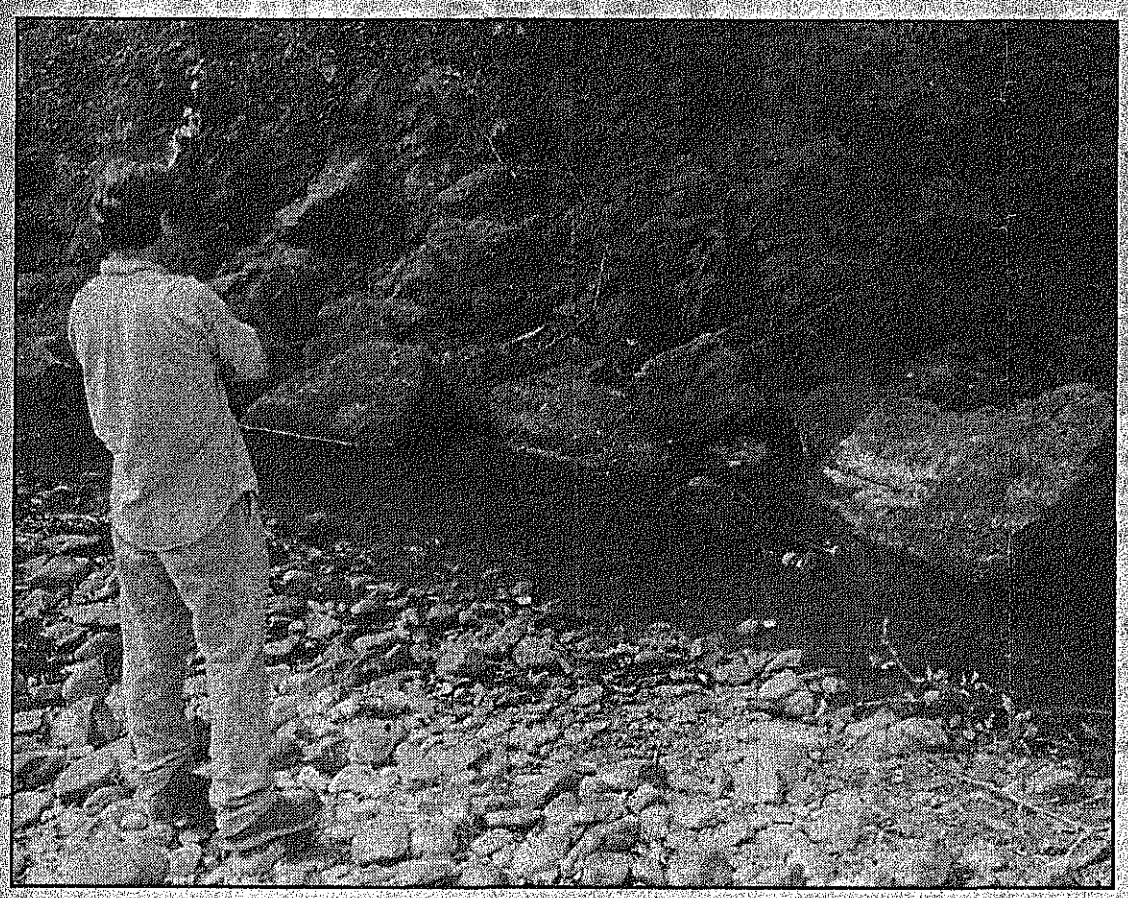
Sand Lake Southern Tributaries

Three 2nd order tributaries entering from the southern side of the estuary (Gurtis, Reneke, Beltz) exhibited significant summer flows that were contributing very cold water to the shallow Sand Lake estuary. All three of these tributaries originate on a north slope and emanate from well canopied headwaters. Two of the streams currently exhibit passage problems at the main hwy culvert. The 3 ft culvert on Beltz has a 3.5 ft drop to the stream channel and may pass adults but is a definitive barrier to the potential upstream temperature dependant migrations of juveniles. The 1 ft culvert on Reneke is almost entirely blocked and is probably not passable for adults or juveniles. The crossing on Gurtis is in good condition. Multiple domestic water diversions were present within the Gurtis Cr. survey. None of these tributaries contained Coho or Steelhead (even below the questionable culverts), none of them are high priority for large anadromous spawners because of the limiting size of the habitat. There is however, the potential for these three streams to be very significant players in the health and productivity of the intertidal wetlands and estuary that they contribute to. In addition, juvenile salmonids could utilize these cold water habitats for refugia in years of higher abundance.

Fish census will trace coho's life cycle

Study may show barriers that block fish from moving farther upstream

BY EZRA CASTEEL
Headlight-Herald Staff



EZRA CASTEEL/Headlight-Herald

Matt Love, Nestucca/Neskowin Watershed Council coodinator, looks on while Mike Lees, in the water, surveys one of the pools along Slab Creek, counting the juvenile fish.

SOUTH COUNTY — Swimming upstream in an effort to better understand how many salmon are in the Nestucca, Neskowin and Sand Lake basins, divers have begun their second year in a study to collect some of the most comprehensive data ever on populations of juvenile salmon.

For the most part, numbers have been encouraging.

The Rapid Bio-assessment is being conducted by Bio-Survey, based in Alsea. It has been contracted to do the survey of the basins by the Nestucca/Neskowin Watershed Council for a two-year study.

The extensive study is covering the entire Nestucca, Neskowin and Sand Lake watersheds with crews walking up each river and stream and counting juvenile fish in every fifth pool.

Last year's survey totaled more than 200 miles of rivers and streams surveyed.

Crews, in addition to counting juvenile fish in the pools, also evaluated the amount of cover in each pool, visibility, and pool size.

This is the first time that this extensive of a survey has been done in South County. Similar surveys have been conducted by Bio-Survey stretching from Heceta Head to the Nestucca basin.

The council first heard about the work being done when David Trask of Bio-Surveys was doing a similar survey from 1998-2000 in the Alsea area.

"We heard about his work and approached him to do the survey," said Matt Love, coordinator at the Nestucca/Neskowin Watershed Council.

His predecessor, Chris McDonald, wrote the grant that is funding the project.

"We wanted to know the state of wild juveniles," said Love. "We're establishing a baseline here."

With one year of the study complete, that data has been made available.

"The data has been made available to agencies and private groups," said Love. Anyone who wants can access it.

Much of the survey has been done on private lands with the landowners' consent. Less than 1 percent of landowners have refused access.

"Landowners have been fantastic," Love said. "They're always asking, 'what's the numbers?'"

"We don't know what the return rate will be," said Love, "but we are finding a lot more wild fish than last year."

The findings show that "a couple of creeks do most of the work," according to Love.

Many creeks that exhibit otherwise good conditions do not have very high concentrations of salmon.

One hypothesis for this from Mike Less, a survey crew member who also studied oceanography in college, is that when salmon numbers dropped, the fish concentrated into fewer rivers. As the population has increased they have not expanded back into the other rivers and streams.

Prior to 1999 the trend for salmon numbers were decreasing, according to Trask, after 2000 there has been an increase.

Trask said that the most well-established reason for this is most likely excellent ocean upwelling conditions, which result in higher ocean survival rates.

He said that it is generally agreed that the ocean upwellings are the primary driver in the improved salmon returns.

But the secondary driver is the Oregon Plan that works to improve fresh water habitat.

The Oregon Plan, initiated five years ago, placed control of the fish into state hands. This marks the first time that a state has taken over the job of recovering an federally listed species.

Robert Bradley, a Fish Biologist with Oregon Department of Fish and Wildlife, said the data is a "snapshot in time... It provides good data on a smaller scale."

Bradley noted that some of the most valuable information from the study may be about barriers that block fishing moving farther up the river and surrounding habitat.

"It can identify areas to be improved," said Bradley. Another area that Bradley said the numbers will be useful in is helping determine what the maximum level of juveniles the watershed will support. But due to the length of the study it will be hard to find any precise numbers because there are not enough other years to compare numbers with.

The study is funded by a grant from the Oregon Watershed Enhancement Board. The $90,000 grant was supplemented by a second United States Forest Service grant for $40,000 to pay for the project.

What initially was planned as a two-year study has been stretched to a third year due to the council's frugality.

One thing that this will help do, extending the study out another year, is to capture the entire life cycle of coho. Researchers will be able to see juvenile numbers and then the returning numbers in the third year and the resulting juveniles. The data is also being compiled into GIS maps that show density of salmon populations in different areas and can be as accurate as different streams.

What drove the study was the coho's threatened status, said Love, adding that a major part of the Oregon Plan is volunteerism.

"We've had hundreds of volunteer hours," Love said. "If the Oregon Plan succeeds, it keeps the feds out," said Love. For landowners who are interested in improving their land, Love said there is plenty of money for owners in restoration.

Some of that money is evident along Slab Creek, near the office of Nestucca/Neskowin Watershed Council at Neskowin Valley School.

Brush was cleared away from the riverbanks and trees were planted in their place.

It can be difficult to see the changes right away, according to Love, but 20 years down the line once the trees mature, the impact will be felt even more.

The council is a nonprofit organization that relies on grants to keep running. More than $500,000 has been spent by the council in South County from state, federal and private grants. In 2003 alone, almost $75,000 has been spent for the stream-side planting program.

Most of the work has been done on private land, according to Love.

Much of the work that the council does is what Love describes as ecological education with school children, as well as landowners.

Other work done is water quality testing and culvert replacements.

The Watershed Council was founded in 1996 and incorporated the Neskowin Watershed in 1997. A seven-person board meets every third Thursday from 6:30 to 8:30 p.m.

10 ATTACHMENT

"DUCK'S UNLIMITED PROPOSED RESTORATION PROJECT ON THE BELTZ FARM"

Z99-449

FEB 01 2000

R-1

Section I
APPLICANT INFORMATION

Please type in the information on pages 1 through 3 **USING THE PAGES PROVIDED**
(or reproduce the pages on your computer **using the spacing and layout shown**)
Pages 1 through 3 must accompany your application

Name of project: Sand Lake Estuary Restoration

GWEB dollars requested: $ 70,006 Total cost of project: $ 95,006

Applicant: Ducks Unlimited, Inc. Phone: (360) 263-3288 FAX: (360) 263-3289

Applicant Contact (if different): Steve Donovan Phone: (360) 263-3288 FAX: (360) 263-3288

Applicant Affiliation (if any): Ducks Unlimited, Inc.

Applicant Address: 708 East 15th Circle (Street) LaCenter, WA (City) 98629 (Zip)

Fiscal Officer (if any): Holly Andree Phone: (916) 852-2000 FAX: (916) 852-2200

Fiscal Officer Affiliation: Ducks Unlimited, Inc. Phone: (916) 852-2000 FAX: (916) 852-2200

Fiscal Officer Address: 3074 Gold Canal Drive (Street) Rancho Cordova (City) California 95670 (Zip)

Project location): Sand Lake (Watershed) Tillamook County (Sub-Watershed) (County)

Name of the watershed council in the area (if any): Nestucca-Neskowin Watershed Council

Endorsement of the watershed council: *Signature of Watershed Council Chairperson*

Section II
PROJECT SUMMARY

Check the type(s) of activity proposed: (check all that apply)

- ■ **Watershed Management**
- ☐ **Watershed Council Support**
- ☐ **Watershed Monitoring**
- ☐ **Watershed Education**
- ☐ **Watershed Assessment/Action Plan**

Summary of Project Proposal: The Sand Lake Restoration project will restore estuarine function to approximately 100 acres of diked tidelands at the south end of Sand Lake. Several species of endangered anadromous fish use the Sand Lake estuary system before beginning their ocean journey. Restoring estuarine function to these wetlands will provide crucial nursery and rearing habitat to juvenile anadromous fish and increase the productivity of this estuary. Restoring these wetlands will also provide habitat for a wide variety of migratory shore birds, waterfowl and other wetland dependent fish and wildlife. This project will also improve water quality conditions in the Sand Lake estuary.

Is this project related to:

■ The Oregon Plan for Salmon and Watersheds (i.e., improves coho and steelhead salmon habitat and/or improves water quality in water quality limited areas) This project will address key limiting factors to coho salmon by providing approximately 100 acres of juvenile rearing, overwintering and off-channel refugia habitats which have been diked, disconnected and degraded. Steelhead, chum salmon and searm cutthroat trout will also benefit from these improved habitat conditions.

1. List all agencies and organizations from whom funding is anticipated for the proposed project. (Note: At least 25% in other funding is required - see the Guidebook for a definition of other funding).

	Cost Share				
	Secured?		In-kind?		
Agency/Organization	yes	no	yes	No	$ Amount/Value
Oregon Watershed Enhancement Board	☐	■	☐	■	$70,006
US Fish and Wildlife Service	☐	■	☐	■	$20,000
Ducks Unlimited, Inc.	■	☐	■	☐	$5,000
Total Estimated Project Costs:					$95,006

2. Have any conditions been placed on other funds which may affect project completion?
☐ Yes ■ No If yes, explain: _____

3. Are there additional partners (agencies, landowners, volunteers)? What will they do
Ducks Unlimited, Inc. will provide engineering design, planning, permitting and construction management and inspection services. As proposed, the U.S. Fish and Wildlife Service will provide funding for the project.

4. a) Is the proposal part of an existing plan for the watershed? ☐Yes ✓ No If yes, name the plan:

   b) How does this proposal relate to other projects completed or planned in the watershed?

   This is the first restoration project planned for the Sand Lake area.

   c) How does this proposal relate to workforce and economic development plans in the local community?

   This project will improve estuarine conditions in Sand Lake, improving water quality and habitat for endangered salmon. Ultimately, this will result in increased economic development through increased fish populations and related industries. There will be no negative effects from this project.

5. If the project is not primarily for education and/or public awareness, how will you promote public awareness about watershed enhancement and the efforts being undertaken locally?

   Ducks Unlimited, Inc. will promote public awareness of this project by installing a project sign and publicizing the project through various media efforts.

6. What is the proposed schedule for the project?

   Ducks Unlimited Inc. will begin surveying and engineering efforts in 2000. Permits will be obtained early in 2001 and implementation of the project will occur in 2001.

7. Have affected individuals and organizations been contacted about this proposal and do they support it? ■ YES ☐ NO If no, please explain: _____

8. **Required Attachments: Be sure to complete and attach these forms to the back of your application:**
   - ■ Budget – Attachment 1
   - ■ Match Funding for GWEB Grants – Attachment 2
   - ■ Legal Requirements – Attachment 3
   - ■ Other documentation requested in Section III

DUCKS UNLIMITED INC.

DUCKS UNLIMITED, INC.
WESTERN REGIONAL OFFICE
3074 Gold Canal Drive
Rancho Cordova, California 95670-6116
(916) 852-2000
(916) 852-2200 Fax

FEB 1 2000

January 24, 2000

Mr. Ken Bierly, Program Manager
Oregon Watershed Enhancement Board
255 Capitol Street, NE, 3rd Floor
Salem, OR 97310-0203

Dear Mr. Bierly:

Enclosed is Ducks Unlimited, Inc.'s proposal to the Oregon Watershed Enhancement Board entitled "Sand Lake Restoration". DU and the partners involved are pleased to submit this proposal that will benefit the Sand Lake estuary through the restoration of approximately 100 acres of estuarine wetland. This project will benefit water quality and many species of fish and wildlife, including endangered fish. The total cost of the project is $95,006. We are requesting $70,006 from OWEB. DU is pleased to contribute $5,000 towards engineering costs associated with the project.

Thank you for your consideration of this proposal. If you have any questions regarding this proposed project, please contact Steve Donovan at (360) 263-3288 or sdonovan@ducks.org.

Sincerely,

Ronald A. Stromstad
Director of Operations

Enclosures

Nestucca/Neskowin Watershed Council

PO Box 255 Hebo, OR 97122 ❖ (503) 392-3161 fax: 392-4203 ❖ email: nnwc@oregoncoast.com

January 24, 2000

Governor's Watershed Enhancement Board
255 Capitol St. NE, 3rd Floor
Salem, Oregon 97310-0203

Dear Board Members:

The Nestucca/Neskowin Watershed Council supports and endorses the Sand Lake Restoration project to restore estuarine function to approximately 100 acres of diked tidelands at the south end of Sand Lake.

The Sand Lake Restoration project is outside the boundary assessed by the Watershed Council, however the council is supportive because of the potential of this project to restore wetlands on private lands, improve water quality and restore habitat for endangered species such as the newly listed coho salmon. This is a large wetland restoration project that can provide crucial nursery and rearing habitat to juvenile anadromous fish and increase the overall productivity of the marsh for numerous migratory shore birds, waterfowl and other wetland dependant species. Because of the size, location and nature of this project it will have far reaching benefits on a number of species that live in and outside the Sand Lake watershed.

By partnering with Ducks Unlimited and the private landowner, OWEB will be helping to enhance one of the last remaining intact estuaries along the Oregon Coast. Please let us know if the Council can provide further support to this project. Our Technical Assistant, Chris McDonald can be reached at (503) 392-3161 to answer questions or facilitate the process.

Sincerely,

Kate Skinner
Council President

cgm

Attachment 4

LAND USE INFORMATION SHEET

This information is needed to determine if the proposed project complies with statewide planning goals and is compatible with local comprehensive plans (ORS 192.180)

CITY/COUNTY LAND USE INFORMATION (to be completed by local planning official):

Please check below the one that applies:

- [ ] This project is not regulated by the local comprehensive plan and zoning ordinance.
- [ ] This project has been reviewed and is compatible with the local comprehensive zoning ordinance. (Please cite appropriate plan policies, ordinance section, and case numbers.)
- [ ] This project has been reviewed and is not compatible with the local comprehensive plan and zoning ordinance. (Cite appropriate plan policies, ordinance section, and case numbers).
- [x] Compatibility of this project with the local planning ordinance cannot be determined until the following local approvals are obtained:

____ Conditional Use Permit	✓ Development Permit
____ Plan Amendment	____ Zone Change
____ Other	

An application has ___ has not ✓ been made for the local approvals checked above.

- Signature of Local Official: Tom Fisher

Title: Coastal Resource Planner Date: 1/27/2000

- ***Must be authorized signature from your local City/County Planning Department***

TILLAMOOK COUNTY SUPPORTS THIS PROJECT.

A DEVELOPMENT PERMIT MAY BE REQUIRE FOR PLACEMENT OF THE 6'x8' PIPES BUT RESTORATION OF TIDAL FLOW IS COMPATIBLE WITH OUR PLAN. TF

Section III

SPECIFIC PROJECT ACTIVITY

☐ WATERSHED MANAGEMENT PROJECTS:

For on-the-ground (or in-the-stream) projects, please answer the following questions. If there are multiple locations, be specific for each site.

T1. What is the present situation? Describe the current conditions at the project site(s).

Presently, 100 acres of tidal marsh at the south end of Sand Lake are disconnected from the estuary by a large dike, which serves as an access road to the beach. This dike has one 36-inch diameter pipe/tidegate which no longer functions properly. There is negligible tidal connection between the marshlands and the estuary because the small pipe effectively constricts water exchange.

T2. What are you proposing to do? Supply sufficient detail to match the project's complexity and technical difficulty so that its viability can be evaluated.

We are proposing to remove the existing pipe and tidegate completely, and replace it with two large open pipes. These pipes will each be approximately six feet by eight feet "squash" pipes. Pipes rather than an open breach are the desired restoration technique because the landowner wishes to retain the access road to the beach. Once tidal exchange is restored, the physical character of the tide marsh will be restored. Increased tidal exchange will improve water quality conditions by decreasing water temperatures and improving nutrient cycling and exchange between the marsh and the bay. The open pipes will also provide much improved fish access to restored marshes.

T3. What are the project objectives?

The objectives of this project are to restore 100 acres of Sand Lake estuary for the benefit of anadromous fish, migratory birds and water quality.

T4. Who will inspect the completed work?

Ducks Unlimited, Inc. will be responsible for inspecting completed work.

T5. How will success be determined, i.e., what elements will be monitored/evaluated – by whom, how often and for how long? (OWEB's standard for post-project monitoring of on-site enhancement projects is 10 years). List:

Agency/Organization	Address	Activity & Frequency
Ducks Unlimited, Inc.	708 E. 15th Circle, LaCenter, WA 98629	Photos/Report – Annually

T6. Who will maintain the project and for how long? List:

Name/Agency/Organization	Address	Activity & Frequency
Landowner, Frank Bastasch	2725 Via Oleadas Palos Verdes Estates, Ca 90274	As needed-20 years
Ducks Unlimited, Inc.	708 E. 15th Circle LaCenter, Wa 98629	As needed-20 years (pending available funds)

T7. Which elements of the project will OWEB funds be used for?

OWEB funds will be used to engineering and biological services, administrative costs, culvert materials, and contracted services.

T8. Additional Required Attachments:

- ■ **Land Use Information** (attachment 4)
- ■ **Maps:** (attachment 5)
- ■ **Location:** Provide the township, range, section and 1/4 corner location of each site (attachment 6)
- ☐ **Photographs**: If applicable, provide photographs to aid in understanding the situation.

Attachment 1

WATERSHED MANAGEMENT BUDGET

Attach Additional Pages if necessary

Itemize projected costs under each of the following categories:	Unit (i.e. hours, each, foot)	Unit Cost	Donated Services/ Supplies*	Other Funds*	OWEB Funds	Total Costs
PERSONNEL (Position title, wages, benefits, etc.- all travel costs included in the hourly rate cost)						
Engineering Planning and Design	150 hours	$53/hour	$2,500		$5,450	$7,950
Engineering, Construction Management and Inspection	125 hours	$53/hour	$1,500		$5,125	$6,625
Biological Planning/Permitting	80hours	$53/hour	$1,000		$3,240	$4,240
CONTRACTED SERVICES (Labor for fencing, instream work, tree planting, technical consultation, project management, etc.)						
Mobilization	Lump sum	$3,000			$3,000	$3,000
Clearing and Grubbing	Lump sum	$2,000			$2,000	$2,000
Installing Large Culverts	Lump sum	$30,000			$30,000	$30,000
SUPPLIES/MATERIALS (Fertilizer, seed, fencing, boulders, logs, plants, film, etc.)						
Two Large Culverts	Lump sum	$35,000		$20,000	$15,000	$35,000
EQUIPMENT (Items usable beyond end of the project with a value greater than $100, i.e., rain gage, thermograph, Hach kits, etc.)						
Sub-Totals			$5,000	$20,000	$63,815	$88,815
ADMINISTRATION** (Costs associated with administering the grant, i.e., fiscal management.)						
Project administration/coordination	5%				$3,191	
MONITORING (Component to be monitored, cost per year, number of years, and total cost)						
Photo Documentation as required by OWEB	$300/year	10 years			$3,000	
TOTALS:			$5,000	$20,000	$70,006	$95,006

* List secured other funding on attached Match Funding form

** Administration costs may not exceed 10%

Attachment 2

MATCH FUNDING FOR OWEB GRANTS

Please document below that you have requested the match funding listed on page 2 of your grant application

Match funding does not have to be secured at the time of application but you must document that at least 25% of match funding has been sought. Should you receive a grant from OWEB, **at lease 25% in match must be secured prior to beginning your project.**

Match funding may be in the form of cash on-hand, cash that is pledged to be on-hand before the project begins, secured funding commitments, pending funding commitments (must be secured before the project begins and no later than 12 months from the date of the OWEB award), the value of donated conservation easements, or the value of donated labor and materials essential to the project.

This form is provided for your convenience. You may use it, or provide letters or other appropriate documentation from your project contributors.

Project Name: Sand Lake Estuary Restoration

Applicant: Ducks Unlimited

Match Funding Source	Signature of Authorized Representative	Dollar Value	Secured/ Pending	Date
Partnership for Fish & Wildlife - USFWS	Alan Wetzel	$20,000	Pending	1/24/00

Attachment 2

MATCH FUNDING FOR OWEB GRANTS

Please document below that you have requested the match funding listed on page 2 of your grant application

Match funding does not have to be secured at the time of application but you must document that at least 25% of match funding has been sought. Should you receive a grant from OWEB, **at least 25% in match must be secured prior to beginning your project.**

Match funding may be in the form of cash on-hand, cash that is pledged to be on-hand before the project begins, secured funding commitments, pending funding commitments (must be secured before the project begins and no later than 12 months from the date of the OWEB award), the value of donated conservation easements, or the value of donated labor and materials essential to the project.

This form is provided for you convenience. You may use it, or provide letters or other appropriate documentation from you project contributors.

Project Name: Sand Lake Restoration Project

Applicant: Ducks Unlimited, Inc.

Match Funding Source	Signature of Authorized Representative	Dollar Value	Secured/Pending/ Sought	Date
Ducks Unlimited, Inc.	[illegible]	$5,000	Secured	1/25/00
U.S. Fish and Wildlife Service (Partners for Fish & Wildl)		$20,000	~~Sought~~ Pending	

Attachment 3

LEGAL REQUIREMENTS

AGREEMENTS:

I/we, _____

of Ducks Unlimited, Inc., Rancho Cordova, California, hereby make application for financial assistance under the terms and conditions of the Governor's Watershed Enhancement Board in the amount of $70,006. The total cost of the project is $95,006, as shown on page 1.

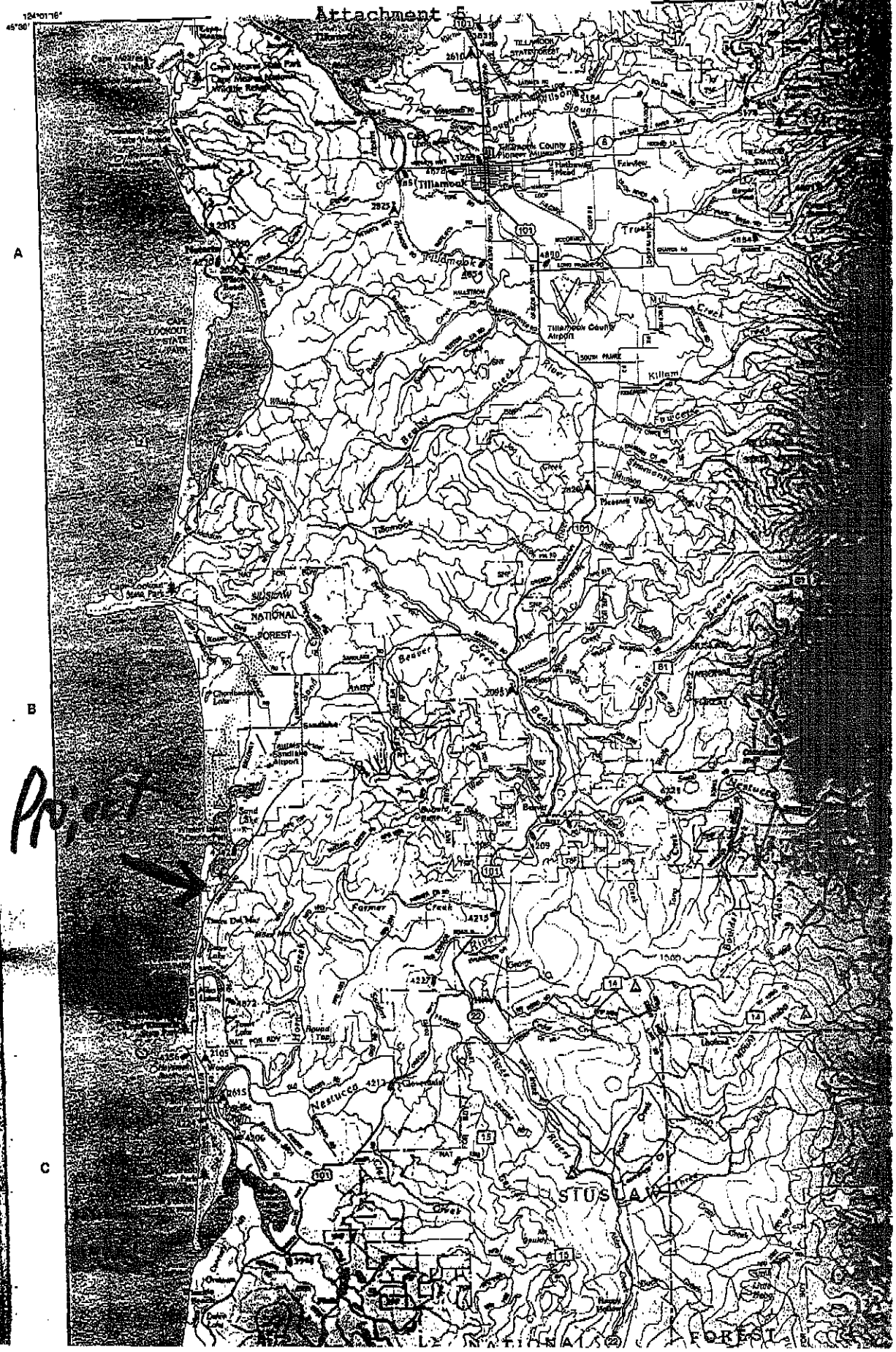
I/we understand that if this proposal is funded, I/we will be required to:

- Sign a Grant Agreement containing the terms and conditions upon which funds will be released, including submission of necessary permits and documents, a certification to comply with state, federal and local regulations, and a release of liability for the State of Oregon;
- Obtain landowner, monitoring and maintenance agreements;
- Certify that the project complies with state, federal and local regulations;
- Submit a report at the completion of project construction and subsequent periodic reports to the board on the project's performance; and
- Agree that educational products resulting from projects are public domain.

Signed: _____ Date: 1/25/00

Title: Director of Operations

Attachment 5



Project

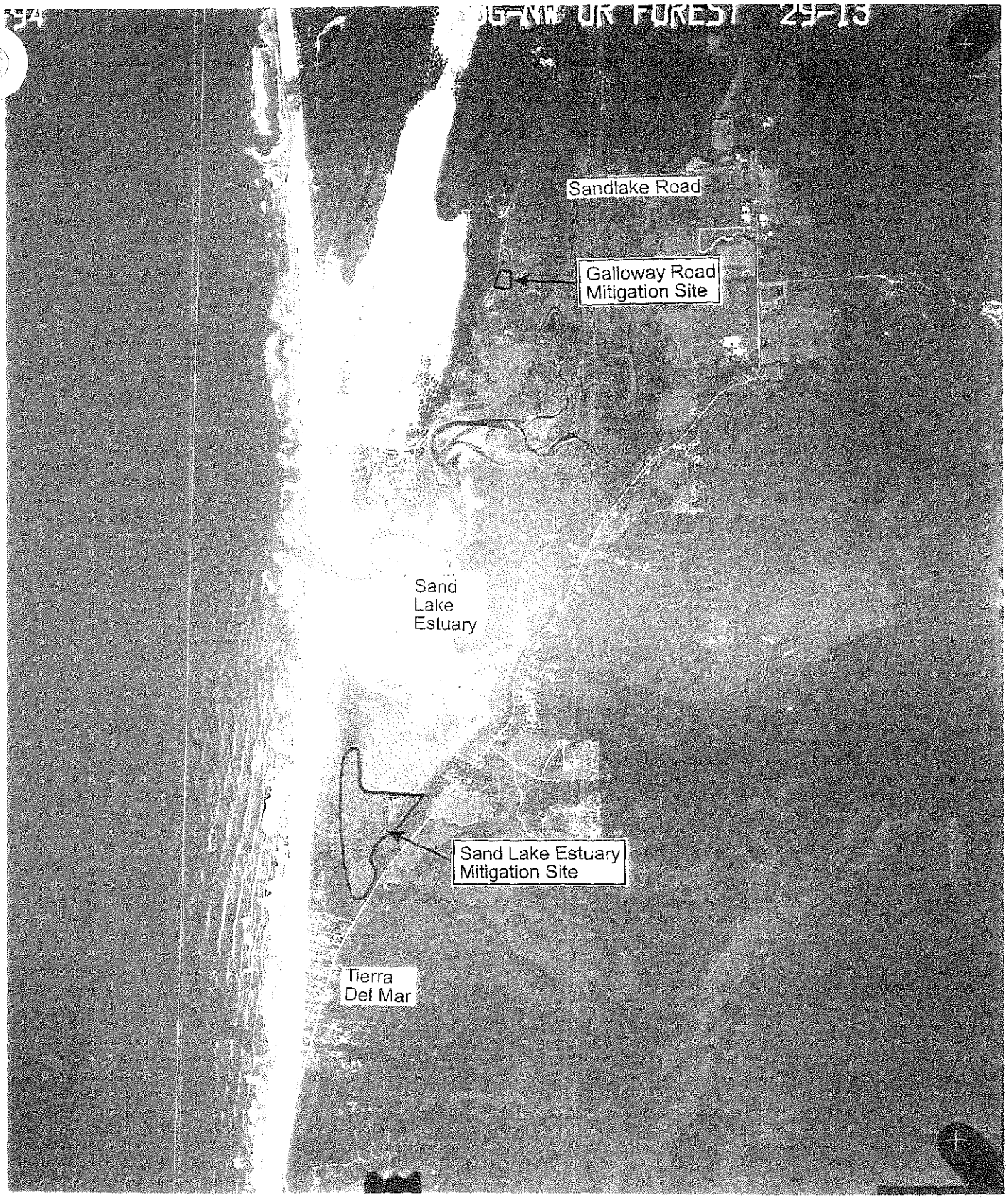
Attachment 6

Legal Description:

Township 3 South, Range 10 West, Section 31

11 ATTACHMENT

"WETLAND MITIGATION SITE BEHIND THE BELTZ FARM DIKE ORIGINALLY CHOSEN FOR THE SANDLAKE-GALLOWAY ROAD PROJECT"



PROPOSED WETLAND MITIGATION SITES:
SAND LAKE ESTUARY & GALLOWAY ROAD

SOURCE: Spencer B. Gross, 6/9/94

FIGURE 7

ENVIRONMENTAL ASSESSMENT

SANDLAKE-GALLOWAY ROAD

Oregon Forest Highway 164
Milepost 0.0 to 7.6
Tillamook County, Oregon

Submitted
Pursuant to Public Law 91-190
National Environmental Policy Act

Prepared By

OBEC Consulting Engineers
&
Fishman Environmental Services

For

US Department of Transportation
Federal Highway Administration
Western Federal Lands Highway Division

In partnership with

Tillamook County
USDA Forest Service

4/2/99
Date Approved

Carol H. Jacoby
Carol H. Jacoby, Division Engineer
Western Federal Lands Highway Division

The following person may be contacted for additional information:

Mike Odom, Design Operations Engineer
Western Federal Lands Highway Division
Federal Highway Administration
610 East Fifth Street
Vancouver, WA 98661-3893
(360) 696-7740

March 1999

CHAPTER 1: DESCRIPTION OF THE PROPOSED ACTION

Location of the Proposed Improvement

Oregon Forest Highway 164 is located in Tillamook County, Oregon. A vicinity map is shown in Figure 1. Sandlake Road begins at US Highway 101, approximately 19km (12mi) south of the City of Tillamook, and continues southwest towards the Pacific Ocean.

The proposed project is divided into three segments totaling 12.2km (7.6mi). Segment 1 of the project begins at the intersection of US Highway 101 and Sandlake Road (MP 0.0) and continues to the intersection with Cape Lookout Road (MP 4.4). Segment 2 extends from Cape Lookout Road junction to Galloway Road junction (MP 5.3). Segment 3 begins at Galloway Road and ends at the US Forest Service Sand Lake Recreation Area (MP 7.6). The proposed project is located in Township 3 South, Range 10 West, Sections 9, 10, 11, 12, 16, 17, 19, 20, 21 and 30 and Township 3 South, Range 9 West, Section 7.

The project begins at the junction of Sandlake Road with Highway 101 in the West Beaver Creek sub-watershed, crosses a divide, then enters the Sand Creek watershed where it continues to the terminus of Galloway Road at the Sand Lake Recreation Area. The proposed project passes through private forest, agricultural, residential, and commercial land uses. Approximately 2.8km (1.8mi) of the project are adjacent to the Siuslaw National Forest. Segments 1 and 2 are part of the Oregon Coast Bike Route and the Three Capes Scenic Route. The Sand Lake Estuary is located to the south of the end of Segment 3.

Scope and Nature of the Proposed Work

The scope and nature of the proposed project is to upgrade and improve Sandlake and Galloway Roads. These improvements include pavement restoration and widening of Sandlake and Galloway Roads, roadway alignment improvements, correction of settlement and drainage problems, bridge replacement, culvert replacement, and accommodation of bicycles. Details of the proposed improvement are described in Chapter 3, where the preferred alternative and other alternatives considered are discussed.

Construction activities involve clearing, excavation, placing fill, grading, drainage improvements, bridge construction, hauling and spreading road subgrade materials, paving, signing, striping, revegetation and other improvements specific to each alternative considered. Construction is planned to begin in the year 2001, with an estimated two to three year timeframe.

Funding

Construction of the Sandlake-Galloway Road Project will be funded from the Forest Highway portion of the Public Lands Highway Program. These funds are available for improving designated public Forest Highways, leading into or located near a National Forest, which serve National Forest related traffic and provide access to National Forest resources. Projects funded by the Forest Highway portion of the Public Lands Highway Program have been jointly selected by the FHWA, Forest Service, Oregon Department of Transportation (ODOT), and in the case of this project, Tillamook County. Tillamook County will fund right-of-way acquisition.

the COE stating their support of the proposed project and the conceptual wetland mitigation plan is included in Appendix B.

Conceptual Wetland Mitigation Plan

Wetland mitigation is required to compensate for unavoidable impacts to wetlands caused by the improvements proposed for the Sandlake-Galloway Road project. To compensate for the impacts to existing wetlands, wetland habitat needs to be restored, created, enhanced, or preserved. Wetland mitigation for this project is guided by the Oregon Division of State Lands (DSL) administrative rules for freshwater wetland compensatory mitigation (DSL, 11/30/94), in conjunction with the U.S. Army Corps of Engineers - Portland District and other regulatory agencies. Wetland mitigation for the project will satisfy all required conditions for compensatory wetland mitigation. The goal of the conceptual wetland mitigation plan is to balance the loss of wetlands and reduction of functions and values with wetland restoration, creation, or enhancement, resulting in an end result of no net loss of wetland area or wetland functions and values.

Compensatory mitigation ratios have been established by DSL as follows:

- 1.0 acre of wetland impact restored for each acre of wetland impacted. Wetland restoration involves restoring historical wetlands that no longer satisfy wetland criteria necessary to be classified as a wetland. The most common form of restoration involves restoring wetland hydrology to historical wetlands that have been successfully drained for agricultural purposes.

- 1.5 acres of wetland created for each acre of wetland impacted. Wetland creation involves creating wetlands from existing upland habitat, and usually involves regrading the landform topography and revegetating with native wetland plants.

- 3 acres of wetland enhanced for each acre of wetland impacted. Wetland enhancement involves enhancing existing wetlands that have been degraded by artificial drainage, invasive plant species, etc., and have reduced wetland function and values.

- 10 acres of wetland preserved for each acre of wetland impacted. Wetland preservation involves preserving existing high value wetlands (i.e. mature forested wetlands, estuaries, etc.) to protect their wetland functions and values.

Other ratios may be established by DSL if mitigation includes restoration of wetland functions or values lost historically in the area, or the mitigation is based on regional priorities as developed in watershed or wetland conservation plans.

Three potential wetland mitigation sites have been identified for the Sandlake-Galloway Road project:

- Approximately 20 privately-owned hectares (50 acres) at the south end of the Sand Lake Estuary that is isolated from the estuary by a dike (Sand Lake Estuary Site);

- Approximately 12 federally-owned hectares (30 acres) that contains a former trailer park and wetland complex adjacent to the Salmon River at the intersection of Highway 101 and Highway 18 in northern Lincoln County (Salmon River Site); and

- A portion of an 8 hectare (20 acre) privately owned parcel located adjacent to Galloway Road on Segment 3 (Galloway Road Site).

The enhancement of the southern end of the Sand Lake Estuary site is the preferred site for the project's wetland mitigation. Although this site would provide "out-of-kind" mitigation for the types of wetlands impacted by the project, it provides an opportunity to restore approximately 50 acres of privately-owned former salt marsh habitat, a regionally important fish and wildlife habitat type that has been severely depleted and infrequently restored. The Sand Lake Estuary site could provide all of the project's wetland mitigation at a single site in a cost-effective manner. The Salmon River site and the Galloway Road site are secondary alternatives for the project's wetland mitigation. The Salmon River site could restore/enhance wetland habitat adjacent to the Salmon River, potentially increasing both cold and warm water fish habitat in an area targeted for stream and wetland restoration and enhancement. The Salmon River site could provide all of the project's wetland mitigation at a single site at an estimated cost slightly greater than the Sand Lake Estuary site. The Galloway Road site could provide on-site enhancement/creation of forested wetlands along the project route. The Galloway Road site would only partially provide for the total mitigation hectares required for the project, and would be the least cost-effective of the three potential mitigation sites. Additional mitigation areas would be needed.

The three sites are discussed below for their potential to provide wetland mitigation for the project. The proposed mitigation presented here is conceptual and is based on information currently available for the sites. Additional studies will be necessary prior to formal permit submittals.

Sand Lake Estuary Site

The Sand Lake estuary is located just south of the project area. This bar-built estuary is the receiving waters for the waterways within the project area. At the southern end of the estuary is a privately-owned portion of the estuary that has been diked for over 60 years (known locally as the Beltz Dike). The diking originally affected approximately 26 hectares (65 acres), with current estimates at approximately 20 hectares (50 acres) due to the dike's only culvert having lost its tide gate. This area is potentially available for the Sandlake-Galloway Road project wetland mitigation, and would involve strategic breaching of the existing dike to restore historic salt marsh habitat (the Sandlake-Galloway Road project does not impact estuarine habitat).

Estuarine wetlands are regarded as among the most biologically productive and environmentally critical ecosystems on the planet (Odum 1971, Mitch and Gosselink 1986). It is estimated that between 50 and 90% of tidal marsh systems within the individual estuaries along the Oregon coast have been lost, and of these, nearly 90% of these losses occurred before 1930, largely as a result of agricultural activity (Boule' and Bierly, 1987; Frenkel and Morlan, 1991).Morlan 1991). Rarely does an opportunity arise to restore the functions and values of these systems.

The enhancement of the existing freshwater marsh would perform numerous benefits to Sand Lake's estuarine ecology, primarily the restoration of high salt marsh habitat for fish and other animals (particularly salmonids) and enhancing the transport of organic materials and nutrients to and from the estuary. Restoration of salmonid habitat is an environmental priority in Oregon, particularly where it involves cooperative restoration of private land-holdings.

Conceptual mitigation at the Sand Lake Estuary would involve sufficiently breaching the dike to allow tidal flow into the majority of the existing freshwater marsh. A thorough hydrologic study would be performed to assist in breach size and placements, and to accurately predict the flow system after breaching. In addition, baseline biological and cultural studies would need to be performed on and off-site prior to breaching.

The current owner would retain ownership of the parcel and access across the dike. A conservation easement would be employed on the mitigation site. Currently, the dike contains one box-culvert that no longer contains a tide gate. This allows tidal flows from the estuary to reach a roughly estimated 4 hectares (10 acres) of land behind the dike during higher flows. Table 9 lists the potential mitigation credit available for the Sand Lake Estuary site. Although exact acreage figures are not yet available and the site's current conditions have not been fully assessed, it appears that the Sand Lake Estuary mitigation would result in more mitigation credit than is required to off-set the project's wetland impacts.

Table 9: Sand Lake Estuary Mitigation Site

Mitigation Site Area*	Mitigation Type	Mitigation Ratio	Mitigation Credit*
20 hectares (50 acres)	enhancement	3:1	6.8 hectares (16.7 acres)
			Total = approx. 6.8 hectares (16.7 acres)

* site and mitigation areas are estimates

Mitigation costs at the Sand Lake Estuary site have been roughly estimated at $37-49,000 per hectare ($15-20,000 per acre) of mitigation credit.

Salmon River Site

The Salmon River site is an approximately 12 hectare (30 acre) parcel located immediately north of the intersection of U.S. Highway 101 and Oregon Highway 18 in northern Lincoln County. The site, currently owned by the U.S. Forest Service, contains approximately 4 hectares (10 acres) of a former trailer park and 8 hectares (20 acres) of a wetland complex that appears to contain some upland. The site is diked along its frontage to the Salmon River to the north, with smaller berms adjacent to U.S. 101 to the west and OR 18 to the south/southeast.

Currently, the site contains two distinct habitats: the former trailer park area and the degraded wetland complex. The trailer park area currently contains only a few structures, with asphalt pavement throughout. The wetland complex contains a mix of emergent wetlands dominated by reed canarygrass, open water ditches or old slough channels, and scattered shrub-dominated uplands. A wetland delineation would be needed to accurately identify the areas of wetland and upland throughout the parcel.

The U.S. Forest Service is in the process of formulating mitigation strategies for this site area. Conceptual mitigation is proposed here without the benefit of that study. It is apparent that the trailer park portion of the site would need extensive preparation to remove the asphalt surface and modify the compacted sub-base that covers most of this area. This removal, disposal, and regrading would increase the cost of mitigation on this parcel substantially. The wetland complex portion of the site would appear to be more straightforward, with dike breaching/removal, and potential sub-channel modification/creation for fish habitat being the major tasks.

The resulting enhancement/restoration could potentially provide: increased habitat for salmonid fish as well as warm-water fish species, increased flood control, and enhanced wildlife habitat. Salmonid habitat within the mitigation site would depend in-part on the resulting configuration of the sub-channel system. Forested wetland habitat could potentially be established in areas of the modified trailer park.

As in the Sand Lake Estuary site, an accurate hydrologic study would need to be performed to assist in the size and placement of dike breaches or removal, and to predict the movement of water following this activity. Of primary concern would be the continued protection of the adjacent roadways from flooding. In addition, baseline biological and cultural studies would need to be performed on and off the site prior to dike breaching or removal.

Table 10 lists the potential mitigation credit available at the Salmon River site. Although exact acreage figures are not yet available and the site's current conditions have not been fully assessed, it appears that the Salmon River mitigation would result in approximately 7 hectares (17 acres) of mitigation credit.

Site Chosen

12 ATTACHMENT

"ESTABLISHMENT OF RENEKE CREEK RESEARCH NATURAL AREA AND SAND LAKE RESEARCH NATURAL AREA BY THE UNITED STATES FOREST SERVICE ON THE HEBO RANGER DISTRICT OF THE SIUSLAW NATIONAL FOREST"

SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Reneke Creek Research Natural Area

Siuslaw National Forest

Tillamook County, Oregon

The undersigned certify that all applicable land management planning and environmental analysis requirements have been met and that boundaries are clearly identified in accordance with FSM 4063.21, Mapping and Recordation and FSM 4063.41 5.e(3) in arriving at this recommendation.

Prepared by Dick Vander Schaaf Date 11/22/96
Dick Vander Schaaf, The Nature Conservancy

Recommended by Donald N. Gonzalez Date 11/8/96
Don Gonzalez, District Ranger,
Hebo Ranger District

Recommended by J. Furnish Date 11/18/96
James R. Furnish, Forest Supervisor,
Siuslaw National Forest

Concurrence of Thomas J. Mills Date 5/1/97
Thomas J. Mills, Director,
Pacific Northwest Research Station

ESTABLISHMENT RECORD FOR RENEKE CREEK RESEARCH NATURAL AREA WITHIN SIUSLAW NATIONAL FOREST TILLAMOOK COUNTY, OREGON

INTRODUCTION

Reneke Creek Research Natural Area (RNA) is in the coastal strip of Oregon and consists of a forested watershed with two matched perennial streams dominated by red alder (Alnus rubra)[1]. The red alder riparian zone is surrounded by mature Douglas-fir (Pseudotsuga menziesii), Sitka spruce (Picea sitchensis) and western hemlock (Tsuga heterophylla) forest with alder remaining prominent in many stands. Reneke Creek flows for 3/4 mile through the RNA.

Land Management Planning

Reneke Creek RNA was proposed as a candidate RNA by the Siuslaw National Forest to meet an unfilled natural area cell need for a red alder stand with two perennial streams (Oregon Natural Heritage Advisory Council 1993)[2]. It was included as a candidate RNA in the FEIS for the Siuslaw National Forest (USDA Forest Service 1990a), in the Forest Plan (USDA Forest Service 1990b) and in the Record of Decision (USDA Forest Service 1990c). Reneke Creek includes the following RNA cell needs (or elements) in the Oregon Coast Range Physiographic Province: Sitka spruce/salmonberry community; red alder stand with two perennial streams; first to third order stream system not on coastal headland, in Sitka Spruce zone with alder dominated tributaries.

OBJECTIVE

The objective of the Reneke Creek RNA is to preserve in an undisturbed (by humans) condition the red alder riparian community and associated adjacent forest and aquatic types of the RNA. The RNA will serve as a reference area for study, as a baseline area to identify long-term ecological changes, and as a monitoring area to determine effects of management techniques and practices applied to similar ecosystems.

JUSTIFICATION

Reneke Creek RNA was selected originally to meet an unfilled RNA cell need for matched perennial streams with red alder riparian communities. During field surveys of the site it was determined that the entire watershed of Reneke Creek contained important functional ecological values related to the red alder riparian zone. Inclusion of the forested watershed in the RNA allows for monitoring of the interactions of the watershed and its effects on the alder riparian zone. Succession of alder dominated riparian zones in a Sitka spruce forest is also an important

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[1] Nomenclature for vascular plants follows Hitchcock and Cronquist (1973).

[2] Author's names in parentheses refer to references cited.

research opportunity provided by this site. The matched creeks in the RNA allow for comparison studies related to nutrient cycling.

Reneke Creek RNA fills two unfilled natural area cell needs in the Coast Range Physiographic Province, as described in the Oregon Natural Heritage Plan (Oregon Natural Heritage Advisory Council, 1993). These cells are as follows:

Terrestrial Ecosystems
4. Sitka Spruce/salmonberry community.

Aquatic & Wetland Ecosystems
26. First to third order stream system not on coastal headland, in Sitka spruce zone with alder dominated tributaries.

PRINCIPAL DISTINGUISHING FEATURES

Reneke Creek RNA contains the following principal features:

1. Red alder riparian community. The Reneke Creek RNA contains a high quality example of a red alder riparian community. Of particular significance at Reneke Creek is the presence of two matched perennial streams, both of which have red alder dominated riparian communities. Studies of nutrient cycling and succession can readily be carried out in such a setting. The watersheds of both streams are protected in their entirety within the bounds of the RNA.

2. Sitka spruce forest types. The surrounding forest lies within the Sitka spruce zone (Franklin and Dyrness 1973). Sitka spruce, Douglas-fir, and western hemlock dominate the overstory, with understories of salal (Gaultheria shallon), salmonberry (Rubus spectabilis), and swordfern (Polystichum munitum). Red alder is prominent in two sub-drainages on southwest facing slopes. The forest is impressive in its mature age class (> 150 years) and has developed some attributes of an old growth ecosystem.

3. Reneke Creek drainage. Reneke Creek flows for three-quarters of a mile through the RNA. The stream and its tributaries are completely contained within the RNA, thus providing a natural laboratory for the study of aquatic communities in a small coastal stream. Anadromous fish runs are no longer present in the creek but a native cutthroat trout fishery still exists. The riparian zone is dominated by red alder along Reneke Creek as well as the its major tributaries.

LOCATION

Maps 1, 2, and 3 show the location of Reneke Creek RNA. The RNA is located in the Hebo Ranger District of the Siuslaw National Forest. The center of the RNA is at latitude 45° 15' 25" north and longitude 123° 56' 15" west. The 480 acre site lies within section 32, Township 3

South, Range 10 West and sections 5 and 6, Township 4 South, Range 10 West Willamette Meridian.

Boundary

Basis of bearing is astronomic north. Basis of elevation is mean sea level as shown on the USGS 7.5 minute topographic quadrangle map Sand Lake, Oreg. 1985.

Area

Total area for the Reneke Creek Research Natural Area is approximately 480 acres (194.3 hectares).

Elevations

Elevations range from 140 feet (43m) in the western portion of Reneke Creek to an unnamed summit near Miles Mountain at 1160 feet (354m) in the southeast corner of the RNA.

Access

The Reneke Creek RNA is at the northern end of the Siuslaw National Forest (Map 2) near the Sand Lake estuary. It is accessible from Sand Lake Road which runs from Pacific City, 5 miles south of the RNA, to Tillamook, 18 miles north of the RNA. Access to the upper reaches of the Reneke Creek drainage in the RNA is via Forest Service roads #1004 and #1134.

From Pacific City, Oregon proceed north on Sand Lake Road for 5 miles to the south end of the Sand Lake estuary. Reneke Creek flows into the estuary at this point. Private land lies between the county road and the RNA, restricting legal access. Approximately 1.5 miles beyond the Reneke Creek crossing, Forest Service Road #1004 enters the county road from the east. Follow this road to the junction of Forest Road #1134, approximately 1.5 miles. The RNA begins at the junction and lies to the west of Forest Road #1134 for 1.5 miles as the road heads south along the ridge which forms the eastern boundary of the RNA.

Maps

Reneke Creek RNA is located on the USGS 7.5 minute topographic quadrangle map, Sand Lake, Oreg. 1985. The Siuslaw National Forest Recreation Map, 1982, is useful for ownership and general access information, however, this map does not delineate the RNA boundaries.

Photos

The following aerial photos of the Reneke Creek RNA site are available in the Forest Supervisor's and District Ranger's offices:

1989 USDA 189: nos. 46,47
1989 USDA 189: nos. 223-226

AREA BY TYPES

Vegetation of the RNA has been surveyed and inventory plots have been established at the site. The following determination of cover types and habitat types and their estimated acreage have been made from the survey information derived from the inventory plots and from air photo interpretation. Within the Forested Plant Associations, it was not possible to determine how many acres were actually Sitka spruce/salmonberry-salal association versus Sitka spruce/swordfern association as the two associations are intermixed. The swordfern understory is considerably less prominent in the RNA. Map 4 depicts the locations of the natural communities described below; again, the two spruce associations are not differentiated on the map.

The most current information regarding the forested portion of the RNA is described in the plant association guide of Hemstrom et al (1986). The riparian plant community type is described in unpublished information developed and maintained by the Oregon Natural Heritage Program (1991a).

Vegetation Types

	Estimated Acres	Hectares
SAF Cover Types (Eyre 1980)		
225 Sitka spruce-western hemlock	480	194.3
Kuchler Types (Kuchler 1966)		
1 Spruce-cedar-hemlock forest (Picea-Thuja-Tsuga)	480	194.3
Forested Plant Associations (Hemstrom et al 1986)		
1) Sitka spruce/salmonberry-salal (Picea sitchensis/Rubus spectabilis-Gaultheria shallon)		
2) Sitka spruce/swordfern (Picea sitchensis/Polystichum munitum)	274	110.9
Riparian Community Types (Oregon Natural Heritage Program 1991a)		
3) Red alder/salmonberry (Alnus rubra/Rubus spectabilis)	206	83.4
Total	480	194.3

PHYSICAL AND CLIMATIC CONDITIONS

Physical Conditions

Reneke Creek RNA encompasses the entire upstream watershed of Reneke Creek, a small drainage that flows into the Sand Lake estuary. The stream and its tributaries flow through steep, dissected hills that are covered by a mix of mature forest vegetation and seral stands of red alder. Above the RNA a forest road running along a ridge line separates the natural area from commercial forest land that is dominated by second growth forest and recent clearcuts. The lowest reaches of the RNA are one mile from the Pacific Ocean which provides a spectacular backdrop to the site and is occasionally glimpsed through the dense vegetation.

Climatic Conditions

The Oregon coast climate is characterized by mild temperatures year round, with wet winters and dry summers. Reneke Creek RNA lies only 1 mile from the ocean and therefore has very typical coastal weather. Summer winds are predominantly from the northwest and are usually light to moderate. East winds may occur in the fall and spring, blowing at higher velocities and causing drying conditions that enhance the usually low fire hazard for the region. During the winter, storms come in from the southwest bringing driving rain and wind. The Sitka spruce forest is susceptible to windthrow during winter storm events.

The closest recording NOAA weather station is located in Tillamook, Oregon, 18 miles to the north of the RNA. Climatic conditions at Tillamook should be a good approximation for Reneke Creek RNA. The station receives an annual precipitation of 90.90 inches and the mean annual temperature is 50.3 degrees F. (NOAA 1989). Over 90% of the precipitation falls between October and March. Summer high temperatures rarely reach into the 80's, while winter lows only occasionally dip below freezing. The monthly climatic data for Tillamook, Oregon averaged over the past 75 years is listed below (National Oceanographic and Atmospheric Administration 1989).

Climatic Records for Tillamook, Oregon
Elevation 10 feet (3 m); 1910-1988
(NOAA 1989)

Month	Mean Temperature °F	Mean Temperature °C	Mean Precipitation inches	Mean Precipitation mm
January	42.2	5.7	14.87	377.70
February	44.6	7.0	10.11	256.79
March	44.6	7.0	10.43	264.92
April	47.5	8.6	6.13	155.70
May	51.7	10.9	4.03	102.36
June	55.6	13.1	3.04	77.22
July	58.2	14.6	1.29	32.77
August	58.8	14.9	2.00	50.80
September	57.6	14.2	3.73	94.74
October	52.8	11.5	7.64	194.06
November	46.9	8.3	12.52	318.01
December	43.7	6.5	15.07	382.78
Mean Annual	50.3	10.2		
Total Annual			90.90	2308.86

DESCRIPTION OF VALUES

Flora

The flora of Reneke Creek RNA is representative of the Oregon Coast forests and is relatively simple with few numbers of taxa present. The flora has not been systematically collected or studied other than those taxa encountered during the establishment of inventory plots. No state or federal threatened, endangered or sensitive plant species are known to occur within the RNA. Weak stemmed bluegrass (Poa laxiflora), a Watch List species of the Oregon Natural Heritage Program (1995), has been found just south of the RNA and may occur within the bounds of the designated area. Observations by Vander Schaaf (1992) have resulted in the following list of plants. The Habitat-types listed below refer to those noted previously on page 4. Species identifications were determined from Hitchcock and Cronquist (1973) and trees were determined from Little (1979).

Scientific name	Common name	Habitat 1	2	3
TREES				
Alnus rubra	red alder	X	X	X
Picea sitchensis	Sitka spruce	X	X	X
Pseudotsuga menziesii	Douglas-fir		X	
Thuja plicata	western redcedar	X	X	X
Tsuga heterophylla	western hemlock	X	X	X
SHRUBS AND SUBSHRUBS				
Acer circinatum	vine maple	X	X	
Gaultheria shallon	salal	X	X	
Menziesia ferruginea	fool's huckleberry	X	X	
Rubus spectabilis	salmonberry	X	X	X
Rubus ursinus	trailing blackberry	X	X	X
Sambucus sp.	elderberry	X	X	X
Vaccinium ovatum	evergreen huckleberry	X	X	
Vaccinium parviflorum	red huckleberry	X	X	X
FORBS				
Achillea millefolium	yarrow	X		
Blechnum spicant	deer fern	X	X	X
Disporum hookeri	Hooker fairy-bell	X	X	
Equisetum hymenale	horsetail	X	X	
Maianthemum dilatatum	false lily of the valley		X	
Montia sibirica	candyflower	X	X	
Oxalis oregana	Oregon oxalis	X		X
Polystichum munitum	sword fern	X	X	
Pteridium aquilinum	braken-fern	X	X	X
Trillium ovatum	wake robin	X	X	
Woodsia oregana	western woodsia	X	X	
GRAMINOIDS				
Festuca californica	California fescue	X	X	
Luzula parviflora	woodrush	X	X	

Reneke Creek RNA has several natural communities represented within its boundaries (Map 4). The dominant forest plant association is Sitka spruce/salmonberry-salal with small scattered occurrences of Sitka spruce/swordfern located within the dominant association. The swordfern association is typically indicative of deeper soils than the salmonberry-salal association (Hemstrom et al 1986). The map does not attempt to distinguish between the two Sitka spruce

associations because they are quite intermixed and the swordfern understory type is found in generally very small occurrences. Individual Sitka spruce in the forest may attain diameters in excess of 48 inches (121.9cm) with the associated western hemlock (Tsuga heterophylla) usually somewhat smaller in diameter. The stand apparently originated after a catastrophic fire in the mid 1800's.

The red alder/salmonberry community type occurs in narrow riparian zones along the creeks in the RNA and it covers large areas of steeply sloped terrain as well. Periodic disturbance maintains the alder/salmonberry community both along streams where flood events may remove trees and create new habitat as well on upland sites where landslide events can occur creating openings in the canopy. Red alder is seral to Sitka spruce and western hemlock in this region with the community typically being short-lived, lasting only 80-120 years. Throughout the red alder dominated zones in the RNA, spruce and hemlock seedlings and saplings are prominent indicating the successional nature of the red alder community type.

Fauna

Faunal species have not been systematically studied or inventoried in Reneke Creek RNA. The following terrestrial vertebrates are among those most likely to be found in the RNA (Oregon Natural Heritage Program 1991a):

Scientific name	Common name
Ambystomatidae	
Ambystoma gracile	Northwestern salamander
Ambystoma macrodactylum	Long-toed salamander
Plethodontidae	
Aneides ferreus	Clouded salamander
Ensatina eschscholtzii	Ensantina
Plethodon dunni	Dunn's salamander
Plethodon vehiculum	Western redback salamander
Salamandridae	
Taricha granulosa	Roughskin newt
Dicamptodontidae	
Dicamptodon ensatus	Pacific giant salamander
Rhyacotriton olympicus	Olympic salamander
Ascaphidae	
Ascaphus truei	Tailed frog

Bufonidae	
Bufo boreas	Western toad
Hylidae	
Hyla regilla	Pacific treefrog
Ranidae	
Rana aurora	Red-legged frog
Anatidae	
Aix sponsa	Wood duck
Cathartidae	
Cathartes aura	Turkey vulture
Accipitridae	
Accipiter striatus	Sharp-shinned hawk
Accipiter cooperii	Cooper's hawk
Accipiter gentilis	Northern goshawk
Buteo jamaicensis	Red-tailed hawk
Phasianidae	
Dendragapus obscurus sierrae	Blue or sooty grouse
Bonasa umbellus	Ruffed grouse
Callipepla californica	California quail
Oreortyx pictus	Mountain quail
Columbidae	
Columba fasciata	Band-tailed pigeon
Zenaida macroura	Mourning dove
Tytonidae	
Tyto alba	Barn owl
Strigidae	
Otus kennicottii	Western screech-owl
Bubo virginianus	Great horned owl
Glaucidium gnoma	Northern pygmy-owl
Strix occidentalis	Spotted owl
Asio flammeus	Short-eared owl
Aegolius acadicus	Northern saw-whet owl

Caprimulgidae

Chordeiles minor	Common nighthawk

Apodidae

Chaetura vauxi	Vaux's swift

Trochilidae

Calypte anna	Anna's hummingbird
Selasphorus rufus	Rufous hummingbird

Alcedinidae

Ceryle alcyon	Belted kingfisher

Picidae

Sphyrapicus ruber	Red-breasted sapsucker
Picoides pubescens	Downy woodpecker
Picoides villosus	Hairy woodpecker
Colaptes auratus	Northern flicker
Dryocopus pileatus	Pileated woodpecker

Tyrannidae

Contopus borealis	Olive-sided flycatcher
Contopus sordidulus	Western wood-pewee
Empidonax traillii	Willow flycatcher
Empidonax difficilis	Western flycatcher

Alaudidae

Eremophila alpestris	Horned lark

Hirundinidae

Progne subis	Purple martin
Tachycineta bicolor	Tree swallow
Tachycineta thalassina	Violet-green swallow
Stelgidopteryx serripennis	Northern rough-winged swallow
Hirundo pyrrhonota	Cliff swallow
Hirundo rustica	Barn swallow

Corvidae

Perisoreus canadensis	Gray jay
Cyanocitta stelleri	Steller's jay
Corvus brachyrhynchos	American crow
Corvus caurinus	Northwestern crow
Corvus corax	Common raven

Paridae

Parus atricapillus	Black-capped chickadee
Parus rufescens	Chestnut-backed chickadee

Aegithalidae

Psaltriparus minimus	Bushtit

Sittidae

Sitta canadensis	Red-breasted nuthatch

Certhiidae

Certhia americana	Brown creeper

Troglodytidae

Thryomanes bewickii atrestus	Warner valley bewick's wren
Troglodytes aedon	House wren
Troglodytes troglodytes	Winter wren
Cistothorus palustris	Marsh wren

Cinclidae

Cinclus mexicanus	American dipper

Muscicapidae

Regulus satrapa	Golden-crowned kinglet
Regulus calendula	Ruby-crowned kinglet
Sialia mexicana	Western bluebird
Catharus ustulatus	Swainson's thrush
Catharus guttatus	Hermit thrush
Turdus migratorius	American robin
Ixoreus naevius	Varied thrush
Chamaea fasciata	Wrentit

Motacillidae

Anthus rubescens	Water pipit

Bombycillidae

Bombycilla cedrorum	Cedar waxwing

Vireonidae

Vireo solitarius	Solitary vireo
Vireo huttoni	Hutton's vireo
Vireo gilvus	Warbling vireo

Emberizidae

Vermivora celata	Orange-crowned warbler
Dendroica petechia	Yellow warbler
Dendroica coronata	Yellow-rumped warbler
Dendroica nigrescens	Black-throated gray warbler
Dendroica townsendi	Townsend's warbler
Dendroica occidentalis	Hermit warbler
Oporornis tolmiei	Macgillivray's warbler
Geothlypis trichas	Common yellowthroat
Wilsonia pusilla	Wilson's warbler
Piranga ludoviciana	Western tanager
Pheucticus melanocephalus	Black-headed grosbeak
Passerina amoena	Lazuli bunting
Pipilo erythrophthalmus	Rufous-sided towhee
Spizella passerina	Chipping sparrow
Pooecetes gramineus	Vesper sparrow
Passerculus sandwichensis	Savannah sparrow
Passerella iliaca	Fox sparrow
Melospiza melodia	Song sparrow
Zonotrichia atricapilla	Golden-crowned sparrow
Zonotrichia leucophrys	White-crowned sparrow
Junco hyemalis	Dark-eyed junco
Agelaius phoeniceus	Red-winged blackbird
Sturnella neglecta	Western meadowlark
Molothrus ater	Brown-headed cowbird
Icterus galbula	Northern oriole

Fringillidae

Carpodacus purpureus	Purple finch
Carpodacus mexicanus	House finch
Loxia curvirostra	Red crossbill
Carduelis pinus	Pine siskin
Carduelis tristis	American goldfinch
Coccothraustes vespertinus	Evening grosbeak

Petromyzontidae

Lampetra ayresi	River lamprey
Lampetra pacifica	Pacific brook lamprey
Lampetra richardsoni	Western brook lamprey
Lampetra tridentata	Pacific lamprey

Salmonidae

Oncorhynchus clarki	Cutthroat trout
Oncorhynchus mykiss	Rainbow trout
Salvelinus malma	Dolly varden

Cyprinidae

Richardsonius balteatus	Redside shiner

Catostomidae

Catostomus macrocheilus	Largescale sucker

Gasterosteidae

Gasterosteus aculeatus	Threespine stickleback

Embiotocidae

Cymatogaster aggregata	Shiner perch

Cottidae

Clinocottus acuticeps	Sharpnose sculpin
Cottus aleuticus	Coast range sculpin
Cottus asper	Prickly sculpin
Cottus gulosus	Riffle sculpin
Cottus perplexus	Reticulate Sculpin
Cottus rhotheus	Torrent sculpin
Leptocottus armatus	Pacific staghorn sculpin

Soricidae

Sorex vagrans	Vagrant shrew
Sorex monticolus	Dusky shrew
Sorex pacificus	Pacific shrew
Sorex bendirii	Pacific water shrew
Sorex trowbridgii	Trowbridge's shrew

Talpidae

Neurotrichus gibbsii	Shrew-mole
Scapanus townsendii	Townsend's mole
Scapanus orarius	Coast mole

Verpertilionidae

Myotis lucifugus	Little brown myotis
Myotis yumanensis	Yuma myotis
Myotis evotis	Long-eared myotis
Myotis thysanodes	Fringed myotis
Myotis volans	Long-legged myotis
Myotis californicus	California myotis
Lasionycteris noctivagans	Silver-haired bat
Eptesicus fuscus	Big brown bat
Lasiurus cinereus	Hoary bat
Plecotus townsendii	Townsend's big-eared bat

Leporidae

Sylvilagus bachmani	Brush rabbit
Lepus americanus	Snowshoe hare

Aplondontiidae

Aplodontia rufa	Mountain beaver

Sciuridae

Tamias townsendii	Townsend's chipmunk
Spermophilus beecheyi	California ground squirrel
Sciurus griseus	Western gray squirrel
Tamiasciurus douglasii	Douglas' squirrel
Glaucomys sabrinus	Northern flying squirrel

Castoridae

Castor canadensis	Beaver

Muridae

Peromyscus maniculatus	Deer mouse
Neotoma fuscipes	Dusky-footed woodrat
Neotoma cinerea	Bushy-tailed woodrat
Clethrionomys californicus	Western red-backed vole
Arborimus albipes	White-footed vole
Arborimus longicaudus	Red tree vole
Microtus townsendii	Townsend's vole
Microtus longicaudus	Long-tailed vole
Microtus oregoni	Creeping vole
Ondatra zibethicus	Muskrat

Zapodidae

Zapus trinotatus	Pacific jumping mouse

Erethizontidae

Erethizon dorsatum	Porcupine

Canidae

Canis latrans	Coyote
Vulpes vulpes	Red fox
Urocyon cinereoargenteus	Gray fox

Ursidae

Ursus americanus	Black bear

Porcyonidae

Procyon lotor	Raccoon

Mustelidae

Martes americana	Marten
Mustela erminea	Ermine
Mustela frenata	Long-tailed weasel
Mustela vison	Mink
Gulo gulo	Wolverine
Spilogale gracilis	Western spotted skunk
Mephitis mephitis	Striped skunk
Lutra canadensis	River otter

Felidae

Felis concolor	Mountain lion
Felis rufus	Bobcat

Cervidae

Cervus elaphus	Elk
Odocoileus hemionus	Black-tailed deer

Anguidae

Elgaria coerulea	Northern alligator lizard

Iguanidae

Sceloporus occidentalis	Western fence lizard

Colubridae

Contia tenuis	Sharptail snake
Thamnophis ordinoides	Northwestern garter snake
Thamnophis sirtalis	Common garter snake

One of the species listed above, the marbled murrelet, is a federally listed Threatened Species. There has been a recent sighting of marbled murrelet from the upper end of the RNA in section 32. It is not known if the bird nests in the RNA.

Aquatic

Aquatic habitat types are represented on Reneke Creek and its tributaries, a perennial second order stream that flows for less than two miles before reaching the Sand Lake estuary. Approximately 2 miles of streams are located within the boundaries of the RNA. The shallow streams flow through steep dissected drainages and have narrow riparian zones that are dominated by red alder. The stream channels are narrow and flow over small boulders, cobbles, and gravels

Geology

The geology of the Coast Range had its beginnings in the Eocene when shallow inland seas began to be uplifted in the south (Baldwin 1964). In the northern Coast Range the Astoria formation, a thick formation of sandstone and shale, covers much of northwestern Oregon. The Astoria formation dates from the mid-Oligocene to mid-Miocene. Interfingered in the Astoria formation is Columbia River basalt which consists of a series of flows that covered nearly half of the state of Oregon and originated from a number of vents in the central portion of the state. Columbia River basalt grades into submarine basalts which date from the Eocene. The basalt has been more resistant to weathering than the sandstone and shales of the Astoria formation, thus soils have been primarily derived from the Astoria formation.

Soils

Soil mapping of the Hebo Ranger district was accomplished through a Forest Service contract in 1987 and 1988. That mapping included National Forest lands in Tillamook, Lincoln, Yamhill and Polk Counties. It supersedes all previous soil mapping of Siuslaw National Forest lands in the Hebo Ranger District including the Reneke Creek RNA.

There are three Soil Series found in the Reneke Creek RNA:

Salander - Deep, well drained soils developed in mixed colluvium from basaltic and fine sedimentary rocks - usually on or near headlands in the isomesic, or "fog" zone along the coast. Soil temperatures vary little through the year. Slopes range to 75 percent. Textures range from silt loam to silty clay loam. These soils occur at elevations up to 1400 feet. Salander soils are easily compacted by heavy equipment. Where saturated or undercut by construction, small slumps may occur. The native vegetation includes Douglas-fir, western hemlock, western redcedar, Sitka spruce, and a brushy understory including vine maple, evergreen huckleberry, salmonberry, and western swordfern.

Necanicum - Deep, well drained soils developed in colluvium from basaltic rocks on coastal headlands in the isomeric, or " fog " zone along the coast. Soil temperatures vary little throughout the year. Slopes range up to 90 percent. Textures are gravely to very gravely loam. These soils occur at elevations up to 1800 feet. Necanicum soils are not easily compacted. Small debris slides may occur where these soils occupy steep, concave slope positions. Native vegetation includes western hemlock, Sitka spruce, Douglas-fir, red alder, red huckleberry, salal and western swordfern.

Neotsu - moderately deep, well drained soils developed in colluvium from basaltic rocks on coastal headlands in the isomeric, or "fog" zone along the coast. Soil temperatures vary little throughout the year. Slopes range to 90 percent. Textures are loam to silt loam. these soils occur at elevations up to 1800 feet. Neotsu soils are moderately compactable with mechanized equipment. These soils are found on convex slopes and are rarely unstable. Native vegetation includes western hemlock, Douglas-fir,

Sitkaspruce, western redcedar, red alder, cascara, vine maple, salal , eve huckleberry, red huckleberry, and western swordfern.

Lands

Reneke Creek RNA lies to the east of Sand Lake estuary and the Sand Lake Recreation Area (Map 2), in the midst of commercial timberland. The RNA is unsigned and therefore could be susceptible to indiscriminate firewood cutting or timber theft.

Lands adjacent to the RNA are owned by the Forest Service (on the north, south and east) and by private individuals (on the west). Unless timber harvest trespass occurs none of these adjacent ownership's are likely to seriously affect the natural values of the RNA.

Cultural

There are no known cultural resources located within the Reneke Creek RNA. A complete cultural inventory of the site has not been conducted to date.

IMPACTS AND POSSIBLE CONFLICTS

Mineral Resources

There are no reported mining claims on Reneke Creek RNA. The area is proposed to be withdrawn from mineral entry upon establishment of the RNA.

Timber

The RNA is primarily surrounded by Siuslaw National Forest lands whose primary goal is to produce timber and maintain and/or enhance fish and wildlife habitats (USDA Forest Service 1990b). While timber harvest will not occur on the RNA there is a potential for impact to the RNA when timber is cut adjacent to the RNA. Windthrow is common in coastal forests and sites adjacent to harvest areas are particularly susceptible to this event. Harvest areas may also act as sites for invasions of introduced noxious weeds, such as scots broom (Cytisus scoparius), tansy ragwort (Senecio jacobaea), and bull thistle (Cirsium edule).

Watershed Values

Reneke Creek, which flows through the RNA, is a small watershed that is relatively intact. Watershed values are high, because of the intact nature of the drainage and the protection afforded by the RNA. The creek formerly supported an anadramous fishery.

Recreation Values

Reneke Creek RNA receives almost no recreation use. The site is not particularly inviting to the hiking public because it is densely forested and secluded by private lands along heavily traveled Three Capes Road. There are many game trails in the RNA which likely has some use during hunting season. Casual recreation use has not shown to impact the RNA to date. Recreational use should be discouraged and identification of the site as an RNA on maps or via signs should not be undertaken in order to not draw attention to the site.

Wildlife and Plant Values

There is one listed Threatened species potentially located within the RNA to date. Marbled murrelets have been sighted at the upper reaches of the site. One sensitive plant species, weak-stemmed bluegrass (*Poa laxiflora*), which has no federal status but remains on the Watch List maintained by the Oregon Natural Heritage Program (1995), has been found just south of the area.

Adjacent Private Lands

Private lands abut the RNA on the west, with a common border of approximately 1/2 mile (0.8 km).

MANAGEMENT PRESCRIPTION

Management and protection of Reneke Creek RNA will be directed toward maintaining natural ecological processes. No activities of man will be permitted that will disturb or modify ecological processes.

Reneke Creek RNA is included, along with other RNA's, in the Siuslaw National Forest Plan, as amended, in Management Area 13 (USDA Forest Service 1990b). Standards and guidelines for management are noted in the Forest Plan for the management area. Also applicable are the standards and guidelines for management of sensitive species relative to the marbled murrelets which have been found in the area.

Vegetation Management

Standards and guidelines for RNA's, Management Area 13, address vegetation management under several different headings (USDA Forest Service 1990b). The overall management direction for all RNA's is to preserve the naturally occurring physical and biological processes at the site.

Wildfire is a rare occurrence in these coastal ecosystems, therefore wildfire will be actively suppressed in all cases using suppression methods and equipment that will minimize disturbance to the special features of the area (USDA Forest Service 1990b). The desired condition of the red alder stand and surrounding Sitka spruce forest dictates that fires be aggressively suppressed.

Introduced species and weedy native species are also a concern at the RNA. Exotic species introductions are most likely to occur along the forest road that runs along the ridge that surrounds the upper reaches of the Reneke Creek watershed. Coastal forest ecosystems typically are less susceptible to weedy plant infestations that other ecosystems but this should not relieve managers from vigilance for exotic species.

Transportation Plan

No roads or trails are planned for the RNA.

Fences and Protective Barriers

Fences are not required at the RNA.

ADMINISTRATION RECORDS AND PROTECTION

Administration and protection of Reneke Creek RNA will be the responsibility of the Siuslaw National Forest. The District Ranger, Hebo Ranger District, has direct responsibility.

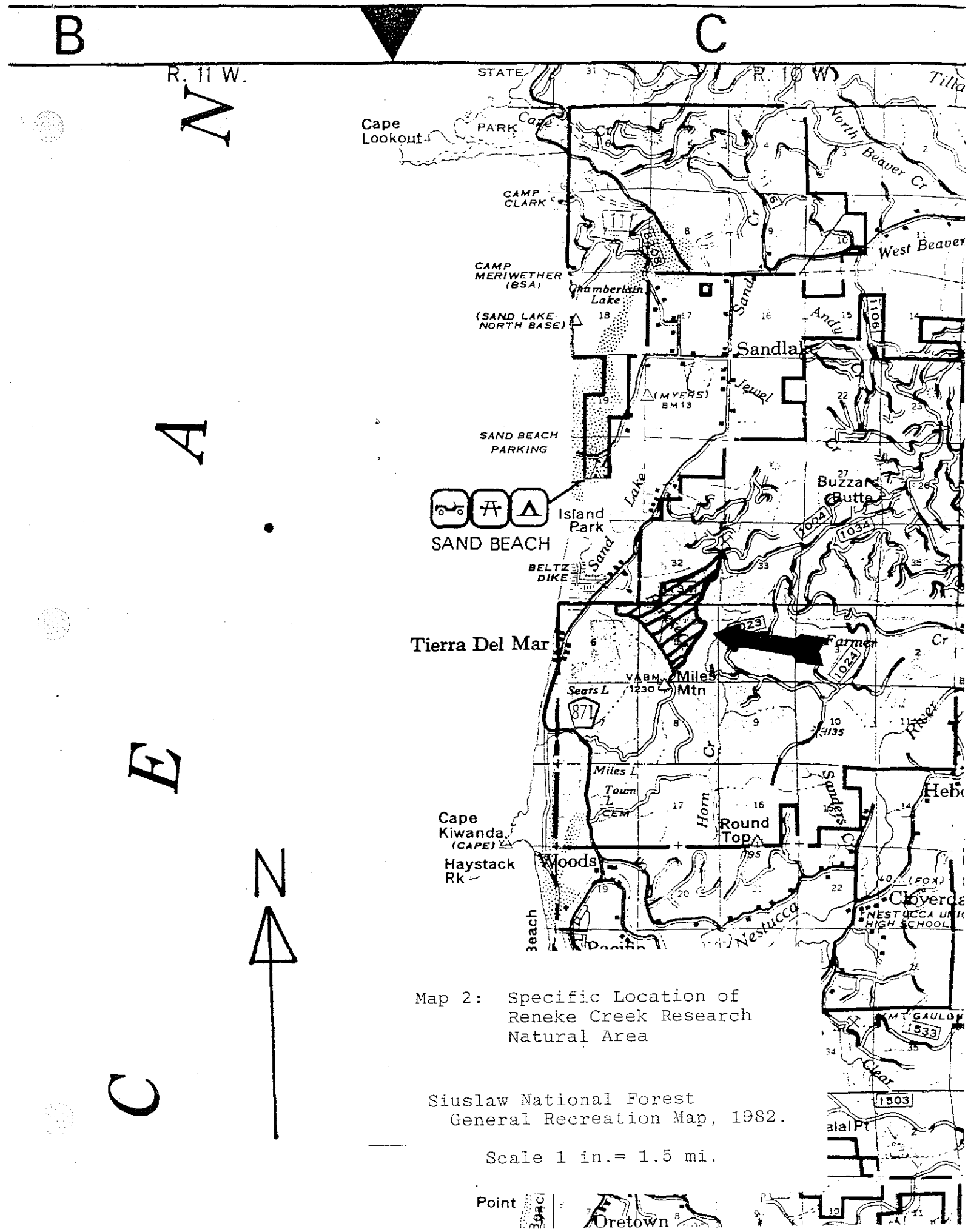
The Director of the Pacific Northwest Research Station will be responsible for any studies or research conducted in the area, and requests to conduct research in the RNA should be referred to her/him. The RNA Scientist in the Research Station is designated as the lead contact person for all such requests. The Director will evaluate research proposals and coordinate all studies and research in the area with the District Ranger. All plant and animal specimens collected in the course of research conducted in the area will be properly preserved and maintained within university or federal agency herbaria and museums, approved by the Pacific Northwest Research Station.

Records for the Reneke Creek RNA will be maintained in the following offices:

Regional Forester, Portland, Oregon
Forest Supervisor, Siuslaw National Forest, Corvallis, Oregon
District Ranger, Hebo Ranger District, Hebo, Oregon
Director, Pacific Northwest Research Station, Portland, Oregon
Forest Sciences Laboratory, Oregon State University, Corvallis, Oregon

Archiving

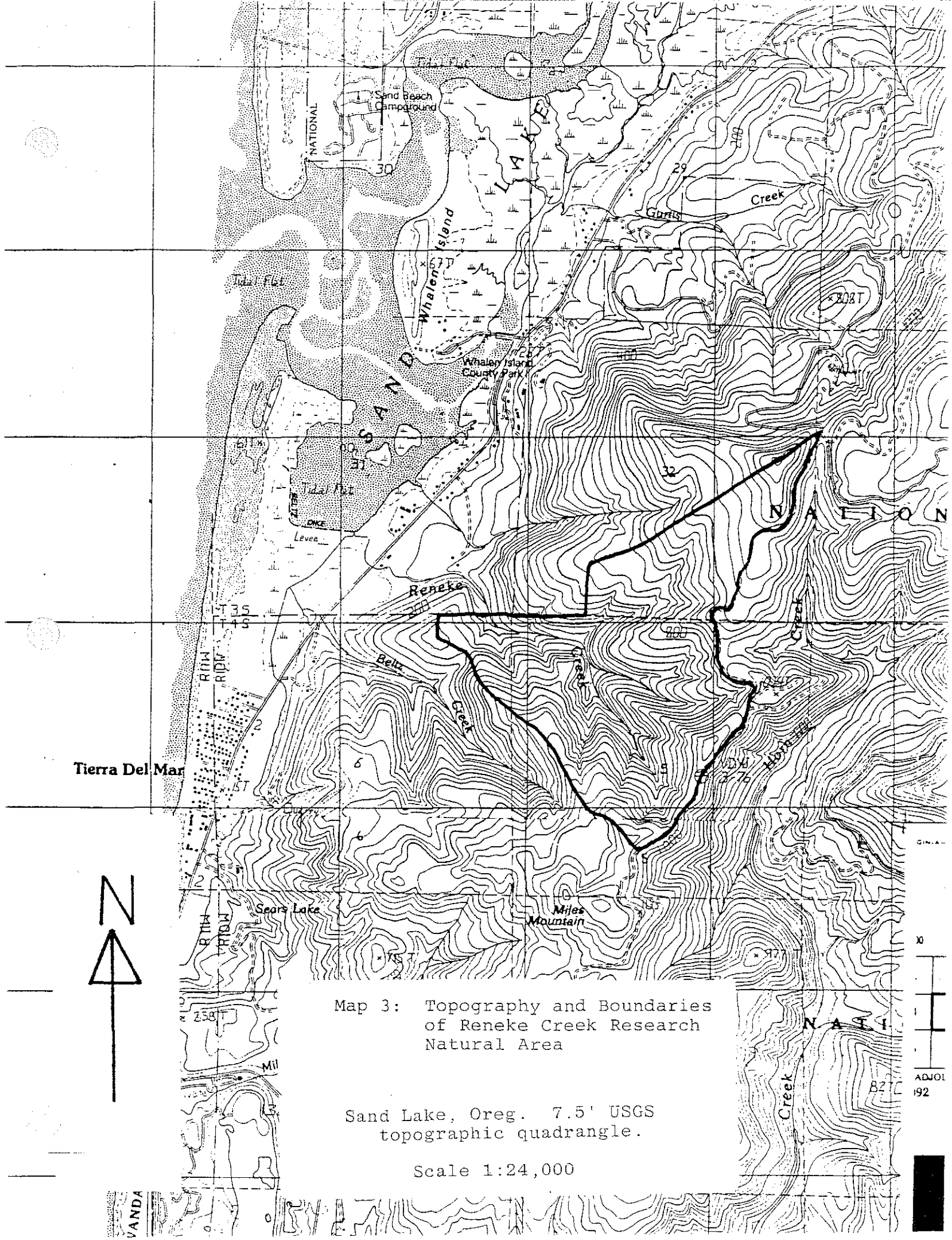
The Portland office of the Pacific Northwest Research Station will be responsible for maintaining the Reneke Creek RNA research data file and list of herbarium and species samples collected. The Forest Sciences Lab is establishing a data base for maintaining research data and lists of species for all RNA's in the region. Computerized files for the RNA will be maintained at the Forest Sciences Lab



Map 2: Specific Location of Reneke Creek Research Natural Area

Siuslaw National Forest General Recreation Map, 1982.

Scale 1 in.= 1.5 mi.


Sand Beach Campground
NATIONAL
LAKE
Whalen Island
Tidal Flat
Gurrs
Creek
Whalen Island County Park
SAND
Levee
Reneke
Creek
Belz
Tierra Del Mar
Sears Lake
Miles Mountain
N A T I O N
N
Map 3: Topography and Boundaries of Reneke Creek Research Natural Area
Sand Lake, Oreg. 7.5' USGS topographic quadrangle.
Scale 1:24,000

DECISION NOTICE / DESIGNATION ORDER
and
FINDING OF NO SIGNIFICANT IMPACT

Establishment of Sand Lake Research Natural Area

USDA - Forest Service
Siuslaw National Forest
Hebo Ranger District
Tillamook County, Oregon

By virtue of the authority delegated to me by the Chief of the Forest Service in Forest Service Manual Section 4063, I hereby establish the Sand Lake Research Natural Area (RNA). It shall be comprised of 241 acres of land in Tillamook County, Oregon, on the Hebo Ranger District of the Siuslaw National Forest, as described in the section of the Establishment Record entitled "Location."

The Sand Lake Research Natural Area was recommended for establishment in the Record of Decision for the Siuslaw National Forest Land and Resource Management Plan (Forest Plan), March 7, 1990, to provide a relatively undisturbed parabola dune system on the Oregon Coast. That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.41. Results of the Regional Forester's analysis are documented in the Forest Plan and accompanying Final Environmental Impact Statement which are available to the public.

The Regional Forester has reexamined the Sand Lake area to ensure that the environmental effects of establishing the area as a Research Natural Area (RNA) have not changed since 1990. This analysis is documented in the attached Environmental Assessment. Based on the analysis in the Environmental Assessment, it is my decision to adopt Alternative A, to establish Sand Lake as a Research Natural Area. Alternative A is selected because it provides long-term protection and recognition of a native unstabilized dune grassland and associated adjacent mature Sitka spruce and western hemlock forest. The Sand Lake RNA will be managed in compliance with all relevant laws, regulations and Forest Service Manual direction regarding RNAs, and in accordance with the management direction identified in the Forest Plan, pages IV-104 through IV-107.

The alternative considered was Alternative B, the "No Action" alternative, which would continue management of the Sand Lake area as a "proposed" RNA. Alternative B was not selected because it would only guarantee protection of the Sand Lake area for a short-term--10 years or less--until the Forest Plan is amended or revised.

Alternative B is consistent with the Forest Plan. The proposed action (Alternative A) is also consistent with the management direction, but it is not consistent with the land allocation for the Sand Lake area in the Forest Plan. The Siuslaw Forest Plan is hereby amended to change the allocation of the Sand Lake area from "proposed" to Established RNA. This is a non-significant amendment of the Forest Plan, because it is not significant in relation to the National Forest Management Act regulations {36 CFR 219], and is consistent with the long-term resource management goals and objectives of the Forest Plan [36 CFR 219.10(f)].

Based on the environmental analysis documented in the Environmental Assessment, it has been determined that the proposed action is not a major federal action that would significantly affect the quality of the human environment, therefore, an environmental impact statement is not needed. This determination is based on the following factors [40 CFR 1508.27]:

A. Context

Although this is an addition to the national system of RNAs, both short-term and long-term physical and biological effects are limited to the local area.

B. Intensity

1. There are no known effects on public health and safety.

2. No significant direct, indirect or cumulative impacts to the natural resources or other components of the human environment are anticipated.

3. Effects on the human environment are not uncertain, do not involve unique or unknown risks, and are not likely to be highly controversial.

4. There are no known effects on historic or cultural resources, park lands, prime farmlands, wetlands, or wild and scenic rivers. Effects of establishing the RNA are to protect the ecologically unique area. No signficant adverse effects are anticipated to any environmentally sensitive or critical area.

5. The action is not likely to establish a precedent for future actions with significant effects.

6. The proposed action will not adversely affect any federally listed or proposed endangered or threatened species or Regionally sensitive species of plants or animals or their critical habitats.

7. The proposed action is consistent with the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA,USDI 1994).

8. The proposed action is consistent with Federal, State and local laws and requirements for the protection of the environment.

Legal notice of this decision will appear in The Oregonian. The Forest Supervisor of the Siuslaw National Forest shall notify the public of this decision and mail a copy of the Decision Notice/Designation Order to all persons on the Siuslaw Forest Land and Resource Management Plan mailing list.

Implementation of this decision shall not occur within 7 days following publication of the legal notice of the decision in The Oregonian.

This decision is subject to appeal pursuant to 36 CFR 217. Any written Notice of Appeal of this decision must be fully consistent with 36 CFR 217.9 (Content of a Notice of Appeal) and must include the reasons for appeal. A written notice of appeal must be submitted to:

Chief, USDA Forest Service
14th and Independence Ave., S.W.
PO Box 96090
Washington, D.C. 20090-6090

within 45 days of the date of legal notice of this decision.

For further information, contact Cindy McCain, Siuslaw National Forest, P.O. Box 1148, Corvallis, Oregon, 97333, or by phone at (~~503~~ 541) 750-7000.

Regional Forester
NANCY GRAYBEAL (for)
Deputy Regional Forester

March 29, 1995
Date

See underlined comments w. wood

Research Natural Areas and Protecting Old-Growth Forests on Federal Lands in Western Oregon and Washington

Sarah Greene

Forestry Sciences Laboratory
Pacific Northwest Research Station
USDA Forest Service
Corvallis, Oregon 97331
(503) 757-4429

ABSTRACT: Research natural areas in the Pacific Northwest have played a role in protecting old-growth forest ecosystems since the establishment of the Metolius Research Natural Area in 1931. Recent concerns about remaining old growth have led to an attempt to define old growth and to determine the extent of old-growth acreage. Research natural areas are discussed in the context of the old-growth definition, how well they actually protect existing old growth, and whether they can continue to play a useful role. Suggestions for managing old-growth research natural areas include integrating them into the surrounding landscape, doing a better job of protecting edges, and having on-site natural area professionals deal with management.

INTRODUCTION

Research natural areas (RNA's) have played a role in protecting old-growth forest ecosystems on federal lands in the Pacific Northwest since the establishment of the Metolius Research Natural Area in 1931. During the 1970's the realization that old-growth forests in the Pacific Northwest were being depleted at an increasingly rapid rate and that few scientific data were available on their structure and function made the issue of old growth a national as well as a regional issue. Whether RNA's are continuing to play an important role in the protection of old growth and whether they are being managed to maintain viability of the old-growth ecosystems are important issues for resource managers and conservationists.

To look at these issues requires, first, an acceptable definition of old growth. Agreeing on a definition in a region with diverse land ownership and diverse forest types is difficult. Old growth in ponderosa pine (*Pinus ponderosa*) or lodgepole pine (*P. contorta*) forests differs considerably from old growth in Douglas-fir-western hemlock (*Pseudotsuga menziesii-Tsuga heterophylla*) forests. Determining how much old growth exists also depends on the definition. Calculating the extent of remaining old growth, even if a definition is formulated, is complicated by the use of differing mapping techniques, reliability of data, and projected land use as maturing forests acquire status as old growth.

Although I originally intended to review the status of old growth in RNA's throughout the Pacific Northwest, finding a uniform definition of old growth and determining the old-growth inventory was so difficult that I decided to focus on the RNA's that occur in five geographic provinces in western Oregon and Washington: Olympic Peninsula, Washington Cascades, Oregon Cascades, Siskiyou Mountains, and Oregon Coast Range (Dyrness et al. 1975). Most of the remaining old-growth forests and most of the U. S. Forest Service and Bureau of Land Management effort to define old growth, at least in the Pacific Northwest, occur in these geographic provinces.

Old growth as it relates to forest ecosystems in the Cascades is defined for this paper, followed by a discussion of differing federal agency old-growth definitions and projected inventory of old growth. Research natural areas will be viewed in the context of the definition, how well they actually protect existing old growth, and whether they can continue to play a useful role.

Identification of research natural areas in Oregon and Washington is based on a comprehensive list of ecosystems and organisms of critical scientific interest (Dyrness et al. 1975, Oregon Natural Heritage Advisory Council 1981, Washington Natural Heritage Program 1987). A systematic approach has been used to identify these ecosystems and organisms with major emphasis on representative types as opposed to unique types. Using scientific information from various relevant scientific disciplines as well as major academic institutions and land-managing agencies, efforts have been made to include within the RNA system all stages

of succession, different age classes, and as many aquatic and terrestrial communities as have been currently identified. Where possible, the terrestrial communities are described beyond the series level to plant community or habitat type.

DEFINITION OF OLD GROWTH

Quite simply, old-growth forests are those that have developed over a long period in the absence of stand-replacing catastrophic disturbances. This description, though simple, tells little about age, size of stand, structure, function, or species composition. The first significant attempt to define old-growth characteristics for the Douglas-fir region appeared in a publication in 1981 (Franklin et al. 1981). Since then, interim definitions for old-growth Douglas-fir and mixed-conifer forests have been developed (Old-Growth Definition Task Group 1986), and data are being gathered to form more objective characteristics. The stand characteristics in the interim definition include: (1) two or more tree species with a wide range in size and age, often including a long-lived seral dominant and shade-tolerant associate; (2) a deep multilayered canopy (except in the Siskiyous, where Douglas-fir should be emergent above an evergreen hardwood canopy); and (3) significant coarse woody debris, including snags and downed logs.

The interim definition lists sizes of trees, numbers of trees per acre, and tons of coarse woody debris per acre for each of the major forest series covered. The definition is based on minimal criteria rather than average values.

The interim definition does not include a minimum-size criterion because of inadequate knowledge of the patch size necessary to preserve these characteristics. Thirty-two ha (80 acres) is a commonly used patch size (Old-Growth Definition Task Group 1986) but, for reasons discussed further on, is probably much too small. The definitions also do not address species composition. The issue of which species depend on old growth for survival is unresolved. Much research is being done on this topic, but results and recommendations are not immediately available. Lastly, the definitions do not include all the different types of old growth at all the series-formation or plant-community levels. The definition also is applicable only to forests in western Oregon and Washington.

HOW MUCH OLD GROWTH REMAINS IN WESTERN OREGON AND WASHINGTON?

Old-growth forests are found mostly on federal land, in particular that in National Park Service, Bureau of Land Management (BLM), and U. S. Forest Service ownership. Most of the old growth is at higher elevations. Each of the agencies uses a different set of criteria for defining old growth; thus, information on acreage remaining is not always comparable or up-to-date. The National Park Service definition for old growth is stand age over 200 years (R. Hyra, pers. comm.). On this basis, 310,122 ha (766,311 acres) of old growth remain in North Cascades, Mt. Rainier, Olympic, and Crater Lake national parks. Information is not available on average patch size or degree of contiguity of these stands.

The BLM definition for old growth includes areas equal to or greater than 4 ha (10 acres) and trees greater than 200 years old (Spotted Owl Environmental Assessment 1987). Several 1983 district management plans defined old growth in terms similar to those of the Old-Growth Definition Task Group (1986), but the current figure uses the definition from the BLM Spotted Owl Environmental Assessment (1987). The BLM has five districts in western Oregon; BLM ownership in western Washington is so limited that it is not considered in this paper. In April 1987, 193,320 ha (477,694 acres) of unsold old growth remained, with a projected 173,348 ha (428,343 acres) remaining by 1990.

The definition used by the Pacific Northwest Region (R-6, Oregon and Washington) of the U. S. Forest Service includes most of the characteristics found in the Old-Growth Definition Task Group (1986) definition, though minimal criteria are different. Of interest is the statement that "optimum tract size will be related to the needs of dependent wildlife species, such as northern spotted owls or pileated woodpeckers, and the ability to insulate part of the stand from the edge effects in created openings."

There are eight national forests in western Oregon and Washington. The old-growth definitions that these forests use differ widely and do not follow necessarily the R-6 definition (United States Department of Agriculture 1984). Definitions range from forests 150 years old to forests that include many or all of the characteristics found in the Old-Growth Definition Task Group (1986) report. Minimum patch size for some forests is as small as 4 ha (10 acres).

The total old-growth U. S. Forest Service inventory, using these eight different definitions, is currently 1,354,420 ha (3,346,772 acres). At the end of the current ten-year planning cycle, old-growth inventory protected from future harvest in the eight national forests is projected to be 696,398 ha (1,720,799 acres) (or a reduction of 54 percent). This area includes old growth in wilderness areas, research natural areas, spotted owl habitat, and other set-aside areas.

Given the range of definitions, the current (summer 1987) total area of old growth for federal land in the five western Oregon and Washington geographic provinces is:

National Park Service	310,122 ha
Bureau of Land Management	193,320 ha
U. S. Forest Service	1,354,420 ha
Total	1,857,862 ha

The total figure represents 10 percent of the land ownership of the three agencies in Oregon and Washington. The figure also includes old growth in an unknown

number of forest fragments, patches that are too small for old growth to remain viable.

OLD GROWTH IN RESEARCH NATURAL AREAS

Total research natural area hectares in the three federal agencies is 0.5 percent of their Oregon and Washington land ownership. Thirty RNA's on federal agency lands in western Oregon and Washington have old-growth forest ecosystems. These RNA's include 6944 ha (17,159 acres) (including a 110-ha [275-acre] RNA on U. S. Fish and Wildlife Service land) of old growth as defined by the Old-Growth Definition Task Group (1986). The old-growth areas in these RNA's range from 24 ha (59 acres) to 1024 ha (2530 acres). Total RNA area in old growth is 0.3 percent of the 1,857,862 ha (4,590,777 acres) of federally-owned old growth. The percentage is extremely small, so small the area might seem to have little importance in protecting old growth, although the RNA's do include other important ecological features such as endemic plant species, lava flows, a variety of wetland communities, a subalpine lake, and entire stream drainages. RNA's, though, must be viewed as one of several preservation options. The question, then, is whether RNA's are doing an adequate job of protecting the old growth included within their boundaries.

WHAT IS PROTECTED IN RNA OLD-GROWTH ECOSYSTEMS?

Five issues will be discussed in this section: representation at the series level, species composition, size, protectability, and research potential. More complicated issues, for example measuring diversity, could be discussed, but these basic issues need to be covered first.

Series Level

A series is an aggregation of plant associations with the same climax dominant or dominants. It is a broad classification and does not adequately describe all of the possible plant associations that might exist. Because not all federal land in western Oregon and Washington has been classified to plant association, the thirty RNA's can be discussed best by series. Most of the series in the five geographic provinces are represented by at least one RNA with old-growth forests. The Siskiyou province is the one exception. Four of the seven series in the Siskiyous are not represented in an RNA. One series in each geographic province has only one RNA. For all plant associations in these series to be represented in one RNA is highly unlikely.

Plant and Animal Reliance on Old-Growth Ecosystems

Surprisingly little information is available on old-growth-dependent species. Many species of vertebrates make primary use of old-growth forests for breeding, forage, bedding, cover, or a combination of these uses. The spotted owl (*Strix occidentalis*), threatened in Oregon and Washington but not federally listed, is the best known old-growth-dependent species; no consensus has been reached on the number of hectares a nesting pair requires. Only ten of the RNA's are over 400 ha (988 acres), which is probably the minimum area necessary for a pair of spotted owls (Dixon and Juelson 1987). The western big-eared bat (*Plecotus townsendi*) is the only state candidate species in Oregon that is old-growth dependent. Research natural areas in Oregon seem to be adequate to protect this species. The Washington Department of Wildlife lists two amphibians, seven birds, and four mammals believed to depend on old growth for at least part of their habitat needs (T.E. Owens, pers. comm.). No RNA in Washington is known to protect the fisher (*Martes pennanti*); all RNA's are believed to protect the three other mammal species. No reliable data is available for the two amphibians, and one RNA is thought to provide habitat for three of the seven birds. None of the RNA's in either state is big enough — if standing alone — to protect large predators. Other old-growth-dependent species, for example the marten (*Martes americana*), may be present; however, not enough data are available to understand the relations of many animals to old-growth forests.

No state or federally listed plant species in the five geographic provinces is known to be old-growth-dependent at this time.

Size

All but two of the RNA's are larger than 32 ha (80 acres). They all far surpass the 4-ha (10-acre) minimum found in some of the definitions listed above. Where this 4-ha minimum originated is unclear, but it is a figure used commonly by the BLM and the U. S. Forest Service. Four-ha of old growth is not enough to protect old-growth-dependent species, nor is it large enough to maintain the structural and functional characteristics of old growth.

Protectability

The question of size prompts another question: Can the old growth in these RNA's maintain its integrity? One way to find out is to look at the boundaries of the areas and see how they interact with adjacent land or how management of adjacent land affects the boundaries. Clearcuts touch the boundaries of twenty of the thirty RNA's. Nine of these areas have clearcuts on two or more sides. These clearcuts are as old as twenty years and as recent as one year. More clearcuts adjacent to the RNA's are planned for the future. Ten of the areas have clearcuts that expose the natural area boundaries to winter storm winds, thus increasing the potential for blowdown. One RNA has a conifer nursery on the boundary that exposes it also to the ravages of winter winds. One clearcut trespassed into the RNA; this was not a deliberate attempt to cut illegal timber, but it does illustrate how vulnerable even protected areas are.

Attempts have been made to buffer more recently established RNA's to protect them from outside management activities. Little hard data are available on how to establish adequate buffers. Only one of the thirty RNA's has a buffer; it is 75 m (246 feet) wide and lies outside the RNA boundary. The buffer could be entered

for timber harvesting once adjacent clearcuts have regenerated. As management activities intensify around these areas, larger buffers would seem to be necessary, but like the core areas themselves, buffer lands are rapidly becoming scarce.

Roads are yet another product of land management that have detrimental effects on the integrity of RNA's. Sixteen RNA's have roads adjacent to their boundaries, while eight have roads along more than one side. Roads become vectors for introduced plant and animal pests; roads provide channels and canopy breaks that increase windthrow vulnerability. Roads that bisect steep slopes, such as those on three of the RNA's, can promote mass failure, erosion, and sedimentation in streams. Finally, roads make the areas more accessible to the public. While public use is not prohibited in RNA's, it can be if the use begins to compromise the values of the RNA. Unfortunately, once recreation patterns are established, they are difficult, if not impossible, to change.

Two of the thirty RNA's are included in recently established wilderness areas, though one of these is on the wilderness edge with a clearcut on the boundary. Two other RNA's are adjacent to wilderness and six, including the largest of the thirty, are within a national park. Presumably national parks and wilderness areas will provide extra protection to RNA's.

Land management practices are not the only events that create changes in RNA's. Two of the RNA's have been affected by the 1980 eruption of Mount St. Helens. Most natural catastrophic events are impossible to predict, and even if they were, protection measures, if desirable, are probably impossible. Nevertheless if a catastrophic event affects a natural area that is representative of a dwindling resource, it will be that much harder to replace.

Research Potential

Ecological and environmental research is one of the major objectives for establishing RNA's. As undisturbed examples of natural ecosystems, they serve as benchmarks for comparison with similar ecosystems influenced by man. As of 1986 there were more than 200 past and current research projects occurring, along with 500 related publications, on RNA's in Oregon and Washington (Greene et al. 1986). Eight of the thirty RNA's have served as research areas for studies on old growth: the role of coarse woody debris; vegetation classification of old-growth wildlife habitat; mammal and bird monitoring in old-growth wildlife habitat; and growth, yield, and mortality of old-growth forests, to name a few. Three of these RNA's are study sites for a regional U. S. Forest Service research project devoted to the study of old-growth forests.

DO RNA'S ADEQUATELY PROTECT OLD-GROWTH ECOSYSTEMS?

Federal agency definitions of old growth vary; each definition somewhat overlaps with others but with no uniformity. The problems of old-growth inventory are complicated but probably resolvable. Use of Geographic Information Systems and increased cooperation between land-managing agencies should produce a more accurate inventory. Nevertheless, old-growth acreage is dwindling (Dixon and Juelson 1987) and will continue to do so regardless of improvements in the inventory. Because old-growth acreage in RNA's is so small, RNA's can play only a partial role in protecting old growth — but that role is vital.

Establishing RNA's to be representative of series is not satisfactory. Because series are so broad, many plant associations are not included. Some of the missing series and plant associations probably can be found in wilderness areas or national parks; however, the missing series in the Siskiyous are unlikely to be found in these areas. Compounding this problem is the lack of adequate plant association guides (detailed classification of forest associations) for much of the federal land, so the present RNA system probably does not protect a full range of ecosystems.

Data on the dependence and relation of plant and animal species to old growth are inadequate. These kinds of data currently are being collected, but many of the studies are long-term and may be too late to be useful. RNA's in western Oregon and Washington can do little to protect large mammals and many birds because of their small size.

The generally small size of RNA's and their isolation are the greatest threats to protecting old growth in RNA's. Much recent work has focused on the size and design of nature preserves. Wilcove and May (1986) pose three different ways to deal with the design of nature preserves. First, the preserve should be big enough to begin with. Unfortunately, information on species, structure, and function often is lacking so that required size becomes obvious only in hindsight. Second, preexisting nature preserves should be linked. Linking is possible where RNA's occur in national parks or wilderness areas, but it is becoming increasingly difficult in multiple-use landscapes as more and more of the old growth and natural young growth landscape is clearcut. Third, adjacent lands should be managed in ways that are compatible with conservation goals. Management of adjacent lands offers the greatest hope for successful RNA management, but as the discussion of protectability shows, past and present management is not oriented in this direction.

Because the size of most RNA's is set, management of edges or buffer areas becomes essential. Work on edge effects, especially with birds, shows that a circular reserve of 100 ha (247 acres) will contain no true forest interior. Forest preserves need to be far larger to ensure long-term survival of these birds (Wilcove et al. 1986). Data from the tropics show that abrupt edges (other than natural ecotonal edges) can cause serious problems within reserves. Microclimatic changes in temperature, humidity, light, and wind affect plant species composition, seeding habits, and general edge integrity. Abrupt edges like clearcuts or roads may increase resources (e.g., more

light creating an advantageous microclimate), which could attract certain disadvantageous species (Lovejoy et al. 1986).

The thirty RNA's in the five geographic provinces of western Oregon and Washington apparently are not doing an adequate job of protecting old growth within their boundaries. Noss and Harris (1986) state that the natural area movement has been one of protecting climax remnants that have become isolated, small, and scattered in a hostile landscape. They argue that spatial-distribution characteristics must be considered in relation to the landscape setting. Natural areas, especially those that protect old growth and wide-ranging wildlife, must be integrated into the surrounding landscape, rather than separated from it by roads, clearcuts, developments, and other human modifications. Nearly half of the thirty RNA's were established before the mid-1960's. Many of the RNA's at the time of establishment were surrounded by intact natural stands that were part of a larger unmodified landscape. Few people guessed the extent of future timber harvesting, and fewer still were thinking in terms of landscape linkages. Clearly, the greatest threat to these RNA's was and is human influence from the outside. Herein lies the challenge to RNA management — a challenge that is not being met currently.

IDEAS FOR NEW MANAGEMENT STRATEGIES

A fresh perspective on the management of RNA's is needed in the Pacific Northwest. The most important perspective would be a shift in philosophy supporting management of RNA's as part of the total resource area, not as separate units. RNA's must be connected to adjacent intact stands so as not to isolate them. Adjacent stands do not need to be old growth, but at least should be mature or pole-sized forest. An entire edge of young growth or clearcut is not an acceptable edge. Corridors and buffers wide enough to protect species moving between different functional areas, wide enough to protect old growth from windthrow exacerbated by clearcutting, and wide enough to protect the RNA from the influence of roads and heavy public use can accomplish this linkage. In designing RNA's, managing boundaries along topographic features, rather than section lines, is best.

RNA's must be incorporated into long-range planning efforts where adjacent lands may be manipulated or changed. Essential to this approach is development of comprehensive Geographic Information Systems where RNA's can be displayed spatially as part of the total landscape pattern and resource management plan. Only then can functional connections be made with adjacent lands.

Roads, clearcuts, and human activities like nurseries next to RNA boundaries must be avoided. If timber removal cannot be avoided, uneven-age management, shelterwood, or partial cuttings are preferred. It would be best to phase cutting over a rotation, preferably longer than the normal managed rotation, so that entire boundaries are not exposed at one time. This way edges will not be abrupt, and a mosaic of tree sizes and structures will occur. Regeneration should be accomplished as soon as possible with a natural mix of species. Planting is preferable to natural regeneration if it will regenerate the areas faster; if possible uniform rows should be avoided. Effort is needed to protect high-risk windthrow areas from cutting.

Finally, agencies managing RNA's should have professionals on their staffs, people who are trained in natural area management. Stewardship of RNA's is as important as stewardship of wilderness areas, timber management areas, and wildlife areas. Cooperation of all resource specialties — including wildlife, timber, range, recreation, and watershed — is essential in RNA management.

CONCLUSIONS

Research natural areas play a useful role in protecting old-growth ecosystems; they are the only systematic attempt to preserve a scientific cross-section of all old-growth types. Their very existence, though tenuous, adds heterogeneity to an increasingly homogenous landscape. Finally, much of the research on old-growth characteristics has taken place on RNA's (Greene et al. 1986). Research natural areas are among the few places on federal lands where long-term research plots can be established and protected in perpetuity.

ACKNOWLEDGMENTS

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13 ATTACHMENT

"OREGON PARKS AND RECREATION DEPARTMENT'S HABITAT CONSERVATION PLAN FOR THE WESTERN SNOWY PLOVER LISTS THE BELTZ FARM DUNE, SPIT, AND SAND LAKE ESTUARY AS RESTORATION AREA"

Draft
Ocean Shores Management Plan

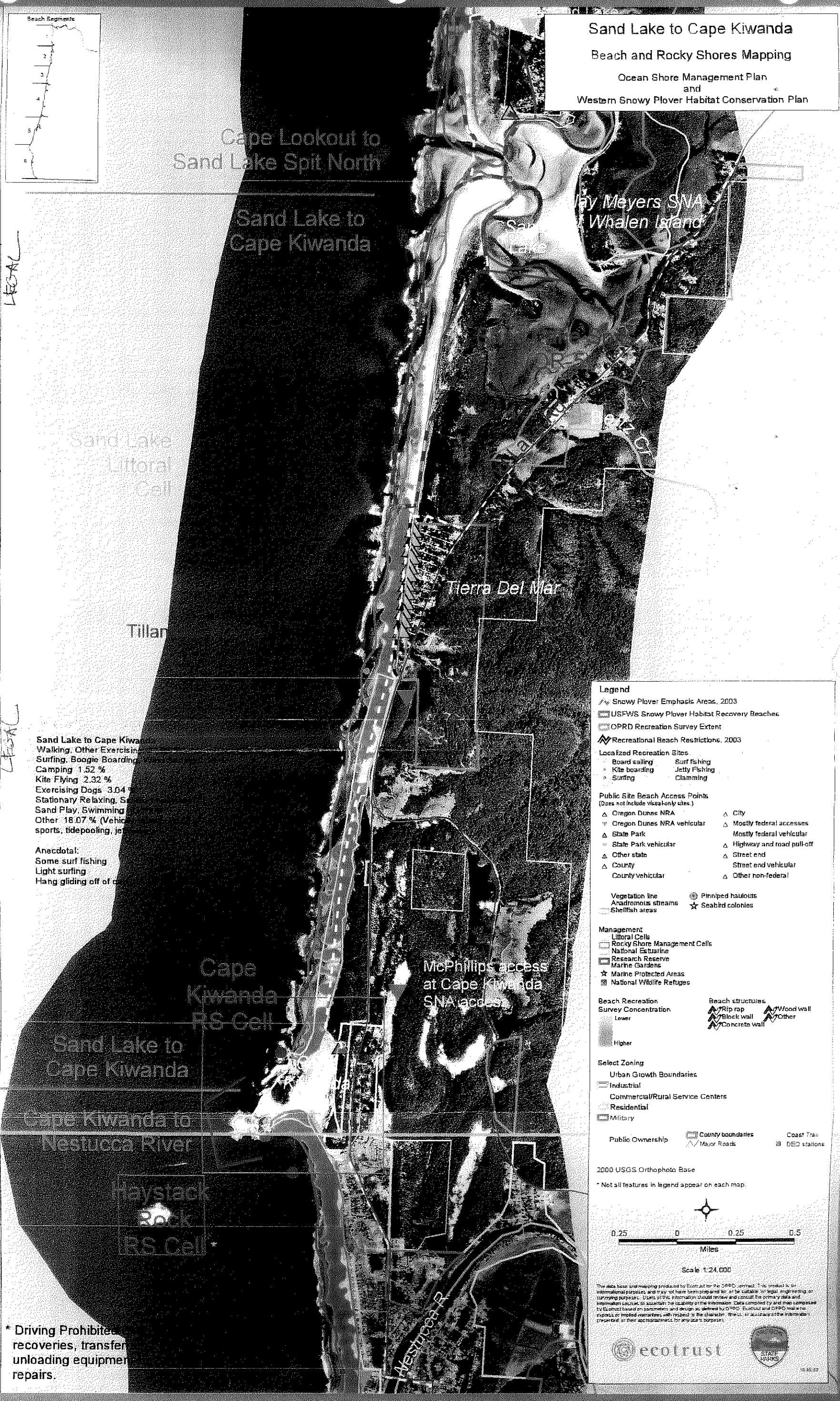
Beach by Beach Inventory and Analysis

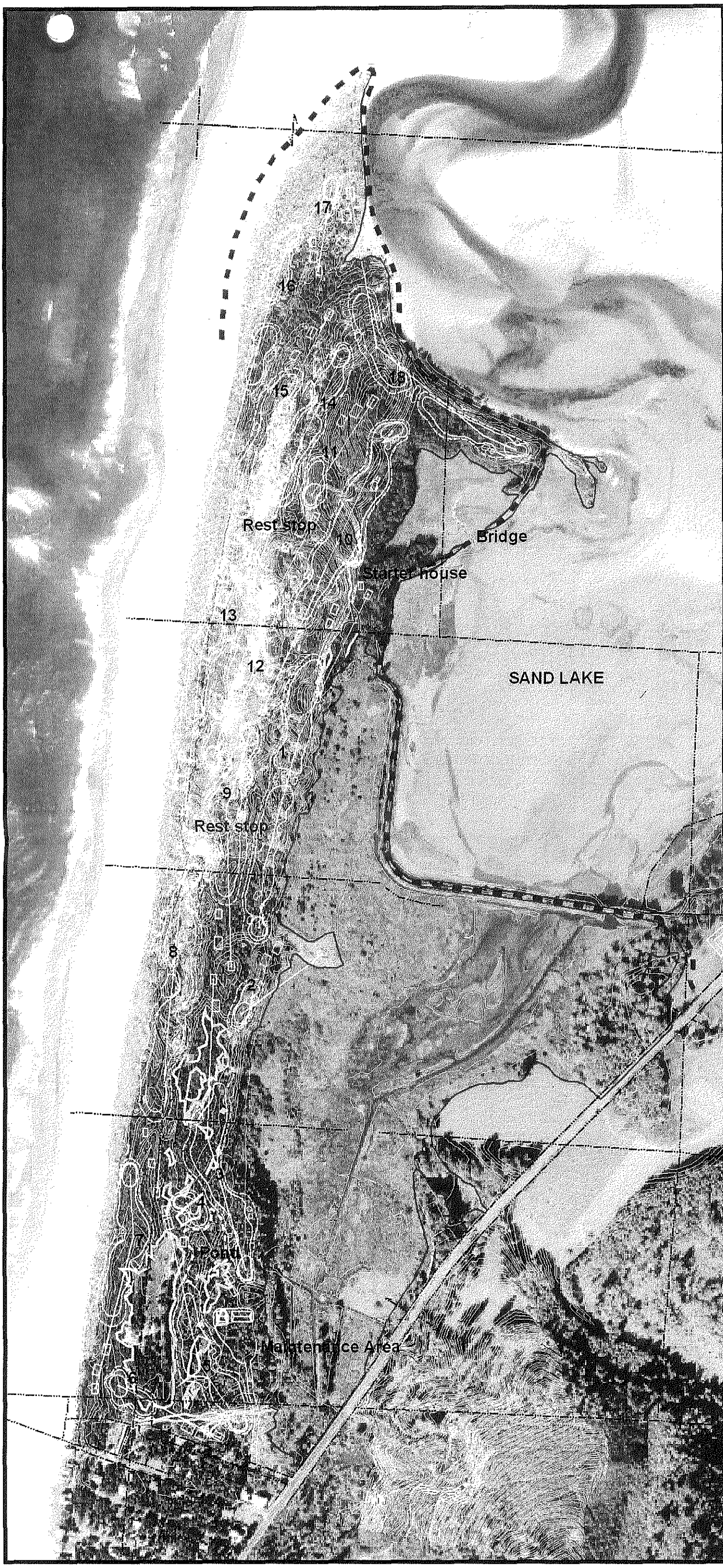
Oregon Parks and Recreation Department
January 2004

Sand Lake to Cape Kiwanda

Beach and Rocky Shores Mapping

Ocean Shore Management Plan
and
Western Snowy Plover Habitat Conservation Plan

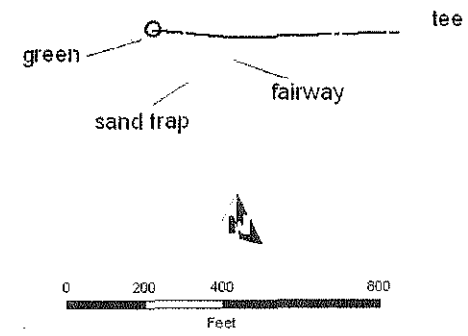




Key to Features

- estuary boundary
- fifty foot estuary boundary
- property boundary
- contours (2 ft int.)
- geologic hazard line
- public access
- surveyed wetlands

Golf Course and Facilities



Projection: Lambert Conformal Conic
Coordinate System: State Plane, OR North
Units: Feet
Datum NAD83
Spheroid: GRS 1980

Photo Source: SBG, 09/26/2000
Survey: OBEC Consulting Engineers, 2001

Fishman Environmental Services, LLC
CONSULTANTS IN ECOLOGY AND NATURAL RESOURCE MANAGEMENT

Pacific Gailes Project Site Plan July 2003

Proj.No.02046	
GIS: R.Gutierrez	07/25/2003

02046/gis/apr/figures_county/

02046/gis/apr/figures_agency/

Capacity:

- Level of peak use: Average number of people on peak season weekend day, 77.
- Perceived crowding: Level Two, Low Normal, unlikely to be a problem.
- Distribution of use: Dense along Cape Kiwanda north shore and adjacent to Tierra del Mar on peak days. Dispersed otherwise.
- Use is below capacity for crowding, but is at desired level on peak days.

Adjacent lands:

- Land uses: Currently undeveloped adjacent except for small Tierra del Mar residential neighborhood. Otherwise undeveloped private or public land. Private land at north end is planned for golf resort development and would greatly change the level of use on the beach there.
- Recreation lands/facilities: Cape Kiwanda State Park extends along the beach from the cape to Tierra del Mar. Day use beach access parking areas.
- Trails: Coast Trail runs along the beach from the north end of Tierra del Mar to the cape.
- Opportunities: Acquisition of the Beltz Farm at the north end could keep the use on that beach low and protect the habitat values there. This beach is slated for snowy plover recovery and could be negatively affected by resort development. Also, Sears Lake site, east of road, has potential for day use, beach access parking. County campground at Whalen Island has potential to be consolidated into OPRD ownership in future.
- Beach structures: Only along Tierra del Mar community.

Natural and Cultural Resources:

- Snowy Plover Recovery Area, USFWS draft Recovery Plan
- Cape Kiwanda Rocky Shore Cell
- Snowy Plover Emphasis Area, Habitat Conservation Plan, South Sand Lake
- Sand Creek is an anadromous fish stream and important estuarine habitat.
- Seabirds (primarily gulls) and shorebirds use the beach for foraging
- Confidential cultural resource potential.

Snowy plover management actions:

- 2003: None.
- Proposed: South Sand Lake Emphasis Area.

Issues heard about this beach: Concerns about impacts from proposed resort development at Beltz Farm. Other concerns about fireworks, jet ski and Sand Lake OHV noise, loss of sand Tierra del Mar. Concern about driving on beach occurring at north end.

The Draft Recovery Plan identified 19 recovery areas within Oregon for snowy plover recovery. These 19 recovery areas totaled approximately 130 miles of coastline, approximately 56% of the 230 miles of Oregon's sandy beaches. The emphasis areas total mileage is approximately 57 miles, approximately 25% of the sandy beaches. Table 8.1 is a listing of the 23 emphasis areas.

Table 8.1 Oregon Snowy Plover Emphasis Areas

Recovery Unit	Emphasis Area Site Name*	Land Ownership	Miles	County
OR-1	Columbia River South Jetty Spit	Army Corps of Engineers (ACOE); leased by OPRD	0.62	Clatsop
OR-1	Camp Rilea	Army National Guard	1.68	Clatsop
OR-1	Necanicum Spit	OPRD, City of Gearhart	0.74	Clatsop
OR--2	Nehalem Spit	OPRD	2.11	Tillamook
OR--3	Bayocean Spit	ACOE, Tillamook County	1.73	Tillamook
OR-4	Netarts Spit	OPRD	2.01	Tillamook
OR-5	Sand Lake Spit North	USFS, Tillamook County	0.58	Tillamook
OR-5	Sand Lake Spit South	Private	1.44	Tillamook
OR-6	Nestucca Spit	OPRD	1.90	Tillamook
OR-8	**Sutton/Baker Beach**	**Forest Service (USFS)**	**4.00**	**Lane**
OR-9	**Siltcoos**	**USFS**	**1.82**	**Lane**
OR-10	**Dunes Overlook/Tahkenitch**	**USFS**	**5.05**	**Douglas**
OR-10	Tahkenitch South	USFS	2.00	Douglas
OR - 11	North Umpqua River	USFS, Division of State Lands	3.00	Douglas
OR-12	**Tenmile estuary**	**USFS**	**4.20**	**Coos**
OR-13	**Coos Bay North Spit**	**Bureau of Land Management (BLM), ACOE**	**3.37**	**Coos**
OR-14	Bullards Beach	OPRD	2.19	Coos
OR-15	**Bandon State Natural Area**	**OPRD/Coos County/ Private**	**6.69**	**Coos**
OR-15	**New River to Floras Lake**	**BLM, Curry County/ Private**	**6.09**	**Coos, Curry**
OR-19	Sixes River	OPRD	0.83	Curry
OR-18	Elk River	Private	2.27	Curry
OR-16	Euchre River	Private	1.13	Curry
OR-17	Pistol River	OPRD	1.87	Curry
TOTAL			**57.32**	

Bold Emphasis Area are currently occupied by snowy plover

Section 15: Management Actions

A. Management Approach

There are approximately 230 miles of "sandy beach" along the Oregon Coast. A subcommittee of the Oregon Western Snowy Plover Working Team has identified twenty-three (23) current and potential areas for recovery of the Pacific coastal population of the western snowy plover. These areas are referred to as "emphasis areas". Eight of these emphasis areas are currently occupied nesting sites with the remaining 15 sites currently unoccupied. How the emphasis areas will be managed will be based upon whether they are occupied by snowy plovers or not. Occupied emphasis areas will have greater management than will unoccupied emphasis areas.

1. Occupied Emphasis Areas

Occupied emphasis areas are those areas where birds have nested within the past two years. If nesting should cease to occur for two years in a row, then the emphasis areas will be considered "unoccupied emphasis areas" and managed accordingly.

The eight "occupied" emphasis areas are:

- Necanicum
- Sutton/Baker Beach
- Siltcoos
- Dunes Overlook/Tahkenitch
- Tenmile
- Coos Bay North Spit
- Bandon
- New River/Floras Lake

2. Unoccupied Emphasis Areas: Future Breeding Sites

Unoccupied emphasis areas are those sites where snowy plover may have nested in the past, but not within the past two years. Once nesting occurs at these emphasis areas they will be considered "occupied emphasis areas" and managed accordingly.

In unoccupied areas, if at least two plovers are present and/or nest scraping is discovered, the site will be considered occupied and managed accordingly. If no nests are found by July 15th, then the emphasis area will be managed as unoccupied. If a nest is found, then the emphasis area will continue to be managed as an occupied area and will be recognized the next year as occupied.

These 15 unoccupied emphasis areas have been prioritized based on a number of factors. These factors include:

- Quality of exiting habitat or restoration potential
- Previous use of the areas by snowy plovers
- Ability of landowner to undertake management actions
- Location of sites – north coast emphasis

For Oregon Parks and Recreation Department owned emphasis areas, the department will prepare site management plans that will outline the management actions that Oregon Parks and Recreation Department will undertake within these unoccupied areas.
The department is dedicated to assisting in the recovery of the snowy plover and will make a concerted effort to implement the actions outlined in the site management plan. Site management plans will address the site's characteristics, current and historic plover use, management issues, and management actions the department will undertake, including staffing and an implementation schedule. The department will develop and finalize site management plans at least one year prior to the dates identified in Table 15.1. However, implementation of these plans will be conditional, and will depend upon requisite funding and staffing resources.

The HCP will use a phased approach to implement recreation use and permitting management actions. This approach is based on prioritizing unoccupied sites into three categories: high, medium and low.

High Priority sites are those that require:

- the least amount of habitat restoration or enhancement to create suitable habitat,
- are close to other occupied sites or will result in a more distributed population,
- were previously used by plovers,
- and/or where the landowner has shown a willingness to undertake management actions.

Medium Priority emphasis areas are those areas where:

- some restoration work is needed to make the site suitable for nesting snowy plover.
- HCP management actions proposed for Medium Priority emphasis areas will be evaluated by the department and the USFWS prior to 2011 to determine the suitability of these areas for snowy plover recovery.

Low Priority emphasis areas are those where:

- significant habitat restoration will be needed to create suitable habitat,
- more distant from currently occupied sites,
- where no or little previous use by plovers was documented,
- and/or where the landowner willingness to implementation actions is uncertain.

Prior to 2016, the department and USFWS will re-evaluate Low Priority emphasis areas to determine whether the HCP management actions for these areas are necessary or suitable for snowy plover recovery.

Table 15.1 Management Priority for Unoccupied Sites

Priority A	Priority B	Priority C
2005-2010	**2011-2015**	**2016-2020**
Columbia River South Jetty	Nehalem Spit	Camp Rilea
Bayocean Spit	Netarts Spit	North Umpqua
Nestucca Spit	Sand Lake North	Bullards
Elk River	Sand Lake South	Sixes River
Pistol River	Euchre Creek	
	Tahkenitch South	

Habitat Conservation Plan – Western Snowy Plover
Proposed Management Strategy

The Oregon Parks and Recreation Department is preparing a Habitat Conservation Plan, which will identify how the department intends to address impacts to the western snowy plover resulting from human use of the ocean shore. OPRD seeks to provide a balance between human uses on the ocean shore and plover conservation. To that end, OPRD has developed a tiered approach described below, whereby plover recovery will be focused in certain areas along the ocean shore.

Three Tiered Approach

1. Emphasis areas that are occupied by plovers
2. Emphasis areas that are not occupied by plovers
3. All other areas

recovery units "Sand Lake Spit - Bells Farm"

Under the "Tiered" process, the level of plover management implemented in the areas would vary, with Tier One have the highest intensity of management and Tier Three having virtually little management.

Emphasis Areas:
An "emphasis area" is an area located within one of the 19 recovery areas identified in the U.S. Fish and Wildlife Western Snowy Plover Pacific Coast Population Draft Recovery Plan. These areas may consist of the entire recovery area or may consist of one or more portions of the recovery unit. These areas also include beach areas that have the potential for recovery of the species. The sites will be prioritized with respect to recovery efforts undertaken at the sites. In certain circumstances, some of the recovery areas may not have any emphasis areas identified. These recovery areas would be managed as Tier Three sites. Only Tier One and Tier Two sites will be "emphasis" areas.

Management actions that would be implemented in a Tier One or Tier Two area will vary from site to site, whether managing for breeding or wintering plovers, and may be accomplished by OPRD and/or the landowner. OPRD will be preparing a matrix showing what management actions will be taken by the department at each of the Tier One and Tier Two emphasis areas.

TIER ONE

Tier One areas within OPRD ownership or management would receive the highest level of management activity by the department. The management activities at these sites will be site specific.

Tier One sites are those areas where plovers have occupied the site for the past two consecutive years or more. If plovers cease to use a Tier One area, then those sites will be managed as Tier Two sites, provided the criteria for decreasing the protection level are satisfied.

Potential Tier One Emphasis Areas:

Recovery Unit	Site Name	Land Ownership	County
OR-8	Sutton/Baker Beach	Forest Service (USFS)	Lane
OR- 9	Siltcoos estuary	USFS	Lane
OR- 10	Dunes Overlook	USFS	Douglas
OR- 10	Tahkenitch estuary	USFS	Douglas
OR- 12	TenMile estuary	USFS	Coos
OR- 13	Coos Bay North Spit	Bureau of Land Management (BLM)	Coos
OR- 15	Bandon State Natural Area	Oregon Parks and Recreation (OPRD)	Coos
OR - 15	New River to Floras Lake	BLM, Curry County	Coos, Curry

TIER TWO:

Tier Two areas are those areas that plovers do not occupy. Tier Two areas will receive a lower level of management activity, with emphasis placed on habitat restoration and presence/absence monitoring at focused locations and minimum level of protection identified for Tier Three areas.

If plovers begin to use a Tier Two area for breeding, then those sites will be managed as Tier One sites, provided the criteria for increasing the protection level are satisfied.

OPRD would restore habitat and conduct presence/absence monitoring only on its properties.

Potential Tier Two Emphasis Areas:

Recovery Unit	Site Name	Land Ownership	County
OR -1	Columbia River South Jetty Spit	Army Corps of Engineers (ACOE)	Clatsop
OR -1	Fort Stevens State Park	Oregon Parks and Recreation (OPRD)	Clatsop
OR - 1	Camp Rilea	Army National Guard	Clatsop
OR - 1	Necanicum Spit	OPRD, City of Gearhart	Clatsop
OR - 2	Nehalem Spit	OPRD	Tillamook
OR - 3	Bayocean Spit	ACOE, Tillamook County	Tillamook
OR - 4	Netarts Spit	OPRD	Tillamook
OR - 5	Sand Lake Spit	Private (Kelly Farm)	Tillamook
OR - 6	Nestucca Spit	OPRD	Tillamook
OR - 7	South Beach*	OPRD	Lincoln
OR - 8	North Jetty Siuslaw River	Division of State Lands (DSL)	Lane
OR - 11	Umpqua River North Jetty	Forest Service (FS), DSL	Douglas
OR - 14	Bullards Beach	OPRD	Coos
OR - 14	Bandon Golf Links	Private	Coos
OR - 19	Sixes River*	OPRD, Private	Curry
OR - 18	Elk River	Private	Curry
OR - 16	Euchre River	Private	Curry
OR - 17	Pistol River	OPRD	Curry

* These sites may be removed in the future

TIER THREE:

Tier Three areas would obtain the minimum level of protection necessary to protect nest sites, when discovered. This may include exclosing the nest and/or providing a minimal buffer around the nest to reduce the potential for human disturbance. Otherwise, no active management would occur in these areas.

Guiding Principles

The HCP will provide direction for OPRD to assist in the recovery of the snowy plover.

a. OPRD will assist with and contribute to the recovery of the Pacific coast population of the Western Snowy Plover. Such efforts will be accomplished through the support of Oregon Department of Fish and Wildlife and the state Endangered Species Act (ESA), as well the U.S. Fish and Wildlife Service and the federal Endangered Species Act. OPRD will work with the ODFW, USFWS and others towards the recovery goals in the Western Snowy Plover Pacific Coastal Draft Recovery Plan.

b. OPRD will seek to manage for snowy plover recovery in a manner that balances with providing for human use of the beach, such as recreation. This would include understanding and addressing the effects of plover management on other beach values.

c. Strive to mitigate the impacts on recreation use by configuration, location, and timing of beach restrictions based upon sound criteria.

d. OPRD will seek assurances from USFWS regarding future human use of the ocean shore through the completion of a Section 10 Habitat Conservation Plan.

e. When agreement is reached between OPRD and USFWS on the Habitat Conservation Plan, the parties will enter into an implementation agreement and USFWS will issue an incidental take permit. OPRD will then begin implementation of the HCP.

f. Emphasis areas will be established where snowy plover recovery efforts will be concentrated.

g. Management of human impacts on snowy plover resulting from human use on the ocean shore will be predicated upon a tiered system, with Tier One sites having the most intensive management, Tier Two sites having moderate and selected management, and Tier Three sites have no management for plovers, unless plovers begin nesting at these sites.

h. OPRD will protect & restore habitat in critical locations on OPRD property located in Tier One and Tier Two areas. Priority will be given to those sites where habitat alteration is feasible and sustainable.

i. OPRD will work with the other resource agencies to manage for predators to minimize impacts on plover breeding success and improve the survival of the snowy plover in Tier One sites.

j. OPRD will provide public outreach to increase support and understanding of the snowy plover and the need for recovery efforts, in cooperation with partners. In particular, OPRD will provide interpretive programs at its coastal parks.

k. OPRD will work with other resource management agencies on habitat alteration, predator management, snowy plover population monitoring, snowy plover research, and public outreach, where appropriate to achieve cost efficiencies

l. OPRD will develop strategies that compliment the habitat needs of other ocean shore wildlife (e.g., shorebirds, marine mammals, seabirds) in addition to snowy plover.

m. OPRD will use future research as one of the criteria for guiding adaptive management to achieve the desired outcome of recovery of the species.

Oregon Coast ESU, Steelhead Trout (*Oncorhynchus mykiss*) – Candidate for federal listing
The Oregon Coast ESU of steelhead trout is currently a candidate, but federal listing is not presently warranted. According to the Streamnet database, winter run steelhead have been identified in the lower 1.8 miles of Reneke Creek. Streamnet states that they use approximately 42 % of Reneke Creek for spawning and rearing, approximately 0.5 miles of the creek for rearing and migration and 0.5 miles for migration. Winter run steelhead are also known to be present in Sand Creek, a tributary to the Sand Lake Estuary and have been found to spawn in February and March (Braun 1998).

5.2 Herptile Species

Red-Legged Frog (*Rana aurora*) - Federal Species of Concern and State Sensitive Species
The red-legged frog is a state sensitive species of undetermined status. It inhabits wetlands and slow moving streams and breeds in seasonal ponds where it deposits large egg masses in January/February. Adults were observed in the forest adjacent to Beltz quarry pond and in the older forest west of the estuary (FU4). Egg masses were observed in the large interdunal wetland (Wetland E, 4.15 ac) in January and February 2003; the masses were attached primarily to slough sedge (*Carex Obnupta*) stems at a depth of 1.2 to 1.4 feet below the surface.

5.3 Bird Species

Marbled Murrelet (*Brachyramphus marmoratus*) - Federal and State Threatened
The marbled murrelet requires old growth coniferous forest for nesting. Mature forest patches on the project site are small and fragmented. No marbled murrelets have been observed on the project site and it is unlikely that they would inhabit the site due to forest fragmentation.

Northern Spotted Owl (*Strix occidentalis caurina*) - Federal and State Threatened
The northern spotted owl requires old growth coniferous forest greater than 1200 acres. Mature forest patches on the project site are small and fragmented. No spotted owls have been observed on the project site and it is unlikely that they would inhabit the site due to forest fragmentation.

Aleutian Canada goose (*Branta canadensis leucopareia*) - Federal Threatened, State Endangered
The Aleutian Canada goose winters in Oregon in pastures and grain fields along the coast. Potential wintering habitat occurs on the project site along Highway 101. The Aleutian Canada goose has not been observed on the project site.

Western Snowy Plover (*Charadrius alexandrinus nivosus*) - Federal and State Threatened
The western snowy plover nests on sand spits and deflation plains east of foredunes where vegetation cover is less than 25%. Historically it nested in the vicinity of the project area in the high beach habitat at the north end of the spit but has not been observed nesting there since 1986 according to the Oregon Natural Heritage Program data base. High beach and foredune habitats were surveyed for nesting plover during the summer of 2002 but none were observed. USFWS also surveyed the high beach habitat of the south spit in 2002 and 2003 during the months of April and May; no snowy plovers were detected during either survey (USFWS; Liz Kelley pers. com.). Potential nesting habitat is present in high beach areas adjacent to the northern extent of

the proposed golf course but these areas will not be impacted by the proposed project. Snowy plover have been observed during the winter in the ocean tidal area in the vicinity of the project site by local birders; this area will not be impacted by the proposed project.

Peregrine Falcon (*Falco peregrinus*) - State Endangered
The peregrine falcon nests in cliffs near open spaces. There is no nesting habitat on the project site. Peregrine potentially forage on waterfowl or other birds in the vicinity (estuary, beach) of the project area.

Bald Eagle (*Haliaettus leucocephalus*) - Federal and State Threatened
Bald eagle typically nest in old growth snags along the Oregon coast. Although it nests in the vicinity of the project area, its preferred nest habitat does not occur on site. Winter roosts are also not present on the project site. Bald eagle have been observed in the vicinity of the project area by local birders. They most likely forage in the estuary; bald eagle forage habitat will not be impacted by the proposed project.

5.4 Invertebrates

Oregon silverspot butterfly (*Speyeria zerene hippolyta*) - Federal Threatened
The Oregon silverspot butterfly inhabits coastal meadows. Larvae feed on the western blue violet and adults nectar on composites. No violets or silverspot butterfly were observed in the project area. A variety of composites are available for nectaring adults.

5.5 Plants

Pink Sandverbena (*Abronia umbellata* ssp *breviflora*) - Federal Species of Concern, State Endangered
Pink sandverbena inhabits soft sand above the high tide line and blooms during the summer. The high beach and fore dune habitats in the project area were searched during June and July for pink sandverbena; only yellow sand verbena was observed. Tidal habitat will not be impacted by the proposed project.

Salt-marsh Bird's-beak (*Cordylanthus maritimus* ssp *palustris*) - Federal Species of Concern, State Endangered
Salt-marsh bird's-beak inhabits salt marshes just above the high tide line and blooms during the summer. The salt marsh was searched for salt-marsh bird's beak during June and July but none were observed. No direct impacts to the salt-marsh are foreseen.

Tall Bugbane (*Cimicifuga elata*) - Federal Species of Concern, State Candidate
Tall bugbane occurs in moist, shady forests along streams. Potential habitat occurs along Reneke Creek and Beltz Creek in the project area; this habitat was surveyed during the summer but no plants were observed. Since both creeks have been disturbed in the past either by grazing or rechannelization on the project site, it is unlikely that a rare plant would be found.

TECHNICAL MEMORANDUM

Fishman Environmental Services, LLC

Date: July 21, 2003
To: Greg Hathaway – Davis Wright Tremaine LLP
From: Christie Galen, Senior Ecologist
Subject: Snowy Plover

Snowy Plover Background Information

The Pacific coast population of the western snowy plover, *Charadrius alexandrinus nivosus*, is federally listed as threatened (Federal Register 1993). On the Oregon coast snowy plover are found year-round in southern Oregon; the majority of breeding occurs south of Heceta Head. On the north coast summer sightings are more sporadic. Breeding was last documented in 1995 at Bayocean Spit, and in 2000 at the mouth of the Necanicum River (Marshall et al 2003). The last official record of breeding on Sand Lake Spit occurred in 1986 (Oregon Natural Heritage Program database); an incidental sighting occurred on the Sand Lake Spit in May 1995 (Marshall et al 2003); no snowy plover have been documented during the summer on Sand Lake Spit since that time.

According to the Draft Recovery Plan (USFWS 2001), population declines have been caused by habitat degradation of breeding habitat due to human disturbance (e.g. ORVs, domestic animals), urban development, and introduced beachgrass, and expanding predator populations (American Crows, Common Ravens, red fox, and striped skunks).

Habitat Requirements

On the Oregon coast, the western snowy plover nests on open sand areas along the upper beach below the foredune, unvegetated sand spits at mouths of small estuaries, in sandy overwash areas between large hummocks vegetated by beachgrass that typically occur at sites where the foredune has not yet developed, and on old dredge spoils that lie adjacent to the beach. Nests are a small depression in the sand, often occurring near a small object such as a dried-up piece of kelp, a small piece of driftwood, or near or within a sparse clump of beachgrass or saltgrass (Marshall et al 2003). In winter, snowy plovers are found on many of the beaches used for nesting as well as on beaches where they do not nest, and on estuarine sand and mud flats; the majority of the wintering population occurs in southern Oregon (Marshall et al 2003). Snowy plover forage for small insects (e.g. shore flies, rove beetles) associated with seaweed and other tidal debris found in the high tide wrackline (Marshall et al 2003).

Conservation

The Draft Recovery Plan for the coastal population of western snowy plover was released by the U.S. Fish and Wildlife Service in 2001. The primary goals of the recovery plan are to increase the

Attaining this goal will require a coordinated effort between state (e.g. Oregon Parks and Recreation Department) and federal agencies and private land owners to restore and maintain habitat, to further reduce the impacts of predation on nest loss and brood failure, and to ensure that human disturbance does not impact breeding plovers. The Oregon Parks and Recreation Department (OPRD) has direct jurisdiction, authority, and responsibility for management of snowy plover habitats in the State of Oregon, which owns not only to the mean high tide line, which is snowy plover foraging habitat, but also into the vegetation line, which is essentially the dry sand area used by snowy plovers for nesting (USFWS 2001). Since 1992, the Western Snowy Plover Working Team for Oregon has been meeting at least twice a year to coordinate plover recovery efforts. The Team consists of affected Federal and State agencies, conservation organizations, and user groups and has been instrumental in addressing monitoring needs, predator control, signage, exclosures, non-native vegetation removal, and public outreach and education (USFWS 2001).

OPRD is currently in the process of completing a large scale planning effort for Oregon's coastal beaches, a part of which will be a Habitat Conservation Plan (HCP) for snowy plover. The HCP will identify how OPRD will balance public use on the beaches with the protection and recovery of the snowy plover population. The HCP schedule currently calls for a draft plan for public review to be released in December 2003, with state and federal approval anticipated in mid-2004.

Pacific Gailes Golf Course

The proposed Pacific Gailes Golf Course is located on foredune habitat that is vegetated with beachgrass, dunegrass, and/or shorepine and does not provide nesting habitat for the snowy plover. Potential nesting habitat occurs in the high beach area below the foredune and above high tide, which is owned by the State of Oregon. Access to the high beach community occurs through the project site via numerous trails; including the dike trail, which shows signs of ORV use. Development of the Golf Course could help improve nesting habitat by preventing ORV access. Prevention of other increased human disturbances could include increasing public outreach and public education through signage.

There is no ORV use on dike!

One of the goals of the Recovery Plan for the western snowy plover is to have 4 breeding adults nesting on Sand Lake Spits, located north and south of Sand Lake Estuary. Local property owners, including Pacific Gailes Golf Course and Tierra Del Mar residents, could coordinate with the Western Snowy Plover Working Team to best assist in these recovery efforts for Beltz Spit.

References

Marshall, D.B., M.G. Hunter, and A. Contreras editors. 2003. Birds of Oregon: A General Reference. OSU Press. Corvallis, Oregon.

U.S. Fish and Wildlife Service. 2000. *Federally listed and proposed endangered and threatened species, candidate species and species of concern that may occur within the area of the proposed Sandlake Estuary Golf Course.* Ref. No. 1-7-00-SP-674. October 11, 2000.

November 10,2002

Oregon Parks and Recreation Department
1115 Commercial Street, NE, Suite 1
Salem, Oregon 97301-1002
Attn: Ms. Kathy Schutt and Michelle Michaud

My Comments & planner surveys

Subject: Snowy Plover Habitat-Beltz Farm Development

Dear Kathy and Michelle:

Thank you for all your information at the meeting in Tillamook on 10/29/02. Yes, Kathy, we do miss Sally and her expertise would help everyone.

My concern relates to the area north of Tierra Del Mar. The proposed area for an 18-hole Scottish-links golf course on the Beltz Farm has the physical and biological attributes that are essential to the conservation and restoration of the snowy plover. Critical habitat for this species is indicative of the Beltz Farm's dune and shoreline. Historically, the USFS states that the snowy plover nested in the loose unvegetated sand near the mouth of the Sand Lake estuary(see description by USFS Charles Severson on Beltz Farm). I personally observed and recorded a pair of snowy plover inhabiting the beach/dune area in 1993-1994 and sent this information to the USFWS during their comment period on their Coastal Barrier Resource Study.

Adverse effects in developing a private golf course could result in plover habitat loss.

1. Activities such as grading, spreading or beach leveling of the dune with machinery would destroy nesting, foraging and roosting habitat.
2. Using non-native vegetation(such as the golf greens) would remove habitat for shelter and beach nourishment.
3. Chemical releases from the fertilizers and pesticides used for the greens would adversely modify critical habitat by contamination of the snowy plover and/or their food sources.
4. Perching structures, such as lights, security systems, gates or fences could result in increased avian predators.
5. With the increase in the water level of the fresh and salt water marshes, due to the use of 450,000 gallons of water per day to water the golf greens, flooding could result in the areas needed for foraging.
6. Increased motorized vehicles on the beach is evident as those not wanting to walk the beach to view the golf course would use their automobile. Such is the case now and beach laws on times when vehicles can drive on the Tierra Del Mar beach are being broken repeatedly.

Special management considerations of this area are necessary to preserve this critical habitat for the snowy plover and the many other listed or proposed species that inhabit this coastal/dune estuary system. I believe the Parks Department must look at undeveloped area that can be saved. The best opportunities to conserve intact habitat and

restore ecosystems are found in larger, healthier, undeveloped areas---the larger the area, the healthier the habitat. The Beltz Farm as of yet, has had little or no human activity, thus its uniqueness has remained undisturbed.

OPRD must have a statewide effort that recognizes and rewards preservation in the same way that policies have for years, rewarded development. New Park lands need to be purchased, in order to preserve for future generations, the last remaining true "wilderness like" ecosystems. Possibly funds from Oregon's Measure 66, which devotes a portion of lottery proceeds for purchase of state parks could be used to save this ecologically, diverse, beautiful piece of land. Ultimately, it would be ideal if forces joined together (OPRD,USFS,ODFW,USFWS) to purchase the Beltz Farm in order to protect, restore, and enhance this unique coastal ecosystem. An interpretative center created for all to learn from should be the paramount management objective for this property. A private golf course, with so few Oregonians as members, is not the best option for the Beltz Farm.

For your data collection, I have enclosed the following:

1. Letter to Tillamook County Commissioners from the District Ranger of the USFS.
2. Beltz Farm description by the USFS.
3. Letter from ODFWS to USFS supporting acquisition of the Beltz Farm.
4. My letter to District Ranger supporting acquisiton of the Beltz Farm.
5. My letter to Regional Director of USFWS supporting Unit OR-08(Beltz Farm) and Whalen Island into their Coastal Barrier Resources System.
6. For your enjoyment, a recent article written in the coastal publication, Hipfish, titled "A Letter to Beltz Farm".

Please keep me informed as to future meetings and I would like to receive a copy of your draft plan due in February.

Thanks Much,

Lynda K. Steiner
9165 S.W. Elrose Court, Tigard, Oregon 97224 (mailing address)
5625 Jasmine Avenue, Tierra Del Mar
e-mail - lyndasteiner @aol.com
phone # 503-639-0951 or 503-965-6987

March 18, 2003

State Supervisor
Oregon Fish and Wildlife Office
US Fish and Wildlife Service
2600 S.E. 98th Avenue – Suite 100
Portland, Oregon 97266

Subject: Snowy Plover Habitat- Beltz Farm Development

Good Day State Supervisor:

Recently I attended two scoping meetings in Tillamook on the Oregon Ocean Shores Management Plan and Snowy Plover Habitat Conservation Plan. Enclosed are letters to Kathy Schutt and Michelle Michaud with OPRD and a letter to Fred Seavey with USFWS, Newport Field Office. I am very much interested in preserving snowy plover habitat identified as Recovery Unit OR-5 (Sand Lake Spit;also known as the Beltz Farm property). As you are aware, Seattle developers want to purchase the Beltz Farm area for an 18 hole golf course. Please read my letter dated November 10, 2002 to OPRD regarding my concerns about this development and what impact it will have not only on plover habitat but other species, both flora and fauna.

I would like very much to be involved with the whole process of restoring, monitoring, and protecting this particular area's plover habitat. I ask you also, if there is anything I can do that will help the USFWS? Could you contact me when the field team visits plover sites in Tillamook county? If there is someone else I need to contact for gaining this experience, please let me know.

Sincerely,

Lynda Steiner
5625 Jasmine Avenue – Tierra Del Mar
9165 S.W. Elrose Ct., Tigard, Oregon 97224 (mailing address)
phone – 503-965-6987 at Tierra Del Mar
503-639-0951 at Tigard
email – lyndasteiner@aol.com

P.S. LETS ALL TRY TO SAVE THE BELTZ FARM ECOSYSTEM! It truly is one of Oregon's last great places---if ever anyone would like a tour of the Beltz farm and its saltwater marsh, freshwater marsh and creeks(Beltz and Reneke), ponds, estuary, wetlands, forests, dike, dunes, spit and wildlife nesting, foraging, perching and flyway areas, let me know and I would be happy to guide you and anyone who is interested. What a great interpretive center this could and should be!

March 18, 2003

Fred Seavey
US Fish and Wildlife Service
2127 SE, OSU Drive
Newport, Oregon 97365

Subject: Snowy Plover Habitat-Beltz Farm Development

Dear Fred:

Thank you for all your information on the Snowy Plover Habitat Conservation Plan given in Tillamook on March 13, 2003. As mentioned, I am very much interested in the Tier Two Recovery Unit OR-5(Sand Lake Spit; also known as the Beltz Farm property). I have written to Kathy Schutt and Michelle Michaud with concerns relating to the proposed golf course development for the Beltz Farm and its impact on snowy plover habitat. You will find my letter to them and the attachments for data collection regarding this property. Possibly some of this information may help in your development of the Western Snowy Plover Pacific Coast Population Draft Recovery Plan. I would like nothing more than to see this species once again occupy this magnificent ecosystem of dunes, estuary, and wetlands which are crucial to providing future plover habitat. This winter, the spit has encountered several washovers which have not only flattened the sand structures but also removed much European beach grass. Many large logs have washed ashore, adding even more suitable nesting areas on the spit and around the estuary.

You mentioned plover monitoring will begin in April and continue through September. Is the Sand Lake Spit on your agenda? If not, can it be? If you recall, I asked you if you or someone with the monitoring team could contact me when the site schedule is known. Fred, I am very serious about helping all the agencies involved with scoping, restoring, monitoring, and protecting the Sand Lake site for the plover. What experience and education I gain while out with the monitoring team, I can apply to recording data for the Sand Lake Spit unit. Having a home in Tierra Del Mar gives me the ability to monitor frequently. In the past, I volunteered and participated with marbled murrelet and spotted owl crews. My interest in preserving Oregon's last great places and the wildlife that is threatened because of needless development is of utmost importance to me. The Beltz Farm area deserves better than what the golf course developers invision. We all must work to preserve this special place.

Please let me know when and where I can meet your plover team in Tillamook county. Also, let me know about future meetings and draft plans available for review. Great talking to you. Your expertise and your true compassion for what you do is refreshing.

Sincerely,

Lynda Steiner
5625 Jasmine Avenue – Tierra Del Mar

March 18, 2003

Oregon Parks and Recreation
1115 Commercial Street, NE, Suite 1
Salem, Oregon 97301-1002
Attn: Ms. Michelle Michaud

Subject: Snowy Plover Habitat – Beltz Farm Development

Dear Michelle:

It was nice meeting you on March 13, 2003 in Tillamook. Thank you for informing the group on OPRD's Western Snowy Plover Proposed Management Strategy. I was pleased to see that the Habitat Conservation Plan identifies the Sand Lake Spit (Recovery Unit OR-5 also known as the Beltz Farm property) as a Tier Two emphasis area. As noted in my letter to you and Kathy Schutt, dated November 10, 2002, this area has been recorded in the past as snowy plover habitat. I would like nothing more than to see this species once again occupy this magnificent ecosystem of dunes, estuary and wetlands that are crucial to plover restoration and habitat. This winter, the Spit has encountered several washovers which have not only flattened the sand structures but also removed much European beach grass. Many large logs have washed ashore, adding even more suitable nesting areas on the Spit and around the estuary.

I understand that state and federal agencies will begin monitoring historical locations beginning in April and continue through September. Is the Sand Lake Spit on your agenda? If not, can it be? As I mentioned to Fred Seavey at the meeting, I am very interested and serious about helping all agencies involved with scoping, restoring, monitoring, and protecting this particular site. Mr. Seavey said he will contact me when monitoring begins on the north coast units in Tillamook county. I would like to gain first hand experience and education as to what the plover experts undertake in each identified habitat. With knowledge that I gain, would it be possible for me to record my findings for the Sand Lake Spit? Having a home in Tierra Del Mar gives me the ability to monitor frequently. In the past, I have volunteered and participated with marbled murrelet and spotted owl crews. My interest in preserving Oregon's last great places and the wildlife that is threatened because of needless development is of utmost importance to me. The Beltz Farm area deserves better than what the golf course developers invision. We all must work to preserve this special place.

Please let me know when and where I can meet your plover team once the schedule for Tillamook county monitoring sites are known. Enclosed is a copy of my letter written to you last year. Also, please inform me on future meetings and the draft plan.

Sincerely,

Lynda Steiner - 5625 Jasmine Avenue – Tierra Del Mar
9165 S.W. Elrose Ct., Tigard, Oregon 97224 – mailing address

April 1, 2003

U.S. Fish and Wildlife Service
2127 SE, OSU Drive
Newport, Oregon 97365

Subject: Snowy Plover sites in Tillamook County

Dear Lynn:

I understand you are filling in for Liz Kelley. Liz set me up with David Nuzum from the Tillamook Office and we spent this morning looking for snowy plovers on the Sand Lake Spit. I wrote to Fred Seavey, after their public meeting in Tillamook, asking him if I could go out with biologists who will be monitoring the Tier One and Tier Two sites in Tillamook County and he passed my name on to Liz and she passed my name on to David. I have a place in Tierra Del Mar and I walk to the end always so I suggested I would be very much interested in seeing where the plovers may forage, nest, etc.. David will let me know when he is going out again and he suggested I contact you as I understand you will be getting the results of the biologists field monitoring. Would you please let me know if any plovers were sighted this week at another location within Tillamook County? I would very much like to go to that site again, with the biologist, so I can get first hand knowledge on the plovers so I will be more aware of what to look for on the Sand Lake Spit. My information is below.

Lynda Steiner
9165 S.W.Elrose Ct.
Tigard, Oregon 97224 beach: 5625 Jasmine Avenue, Tierra Del Mar(not mailing address)
503-639-0951(Tigard) 503-965-6987(Tierra Del Mar on weekends – I will be on vacation in Tierra Del Mar beginning next Monday, for 9 days.
Email – [illegible] (probably easier to communicate this way!)

Thanks very much. Looking forward to going out again and hope we locate some plovers!

Sincerely,

April 1, 2003

Hi David:

Just a note to say thank you for letting me tag along this morning, looking for snowy plovers on the Sand Lake Spit. Would you pass my name and information along to any of the other biologists visiting plover sites in Tillamook County? I would really like to see them in the areas they prefer to forage, nest, etc.. Also, please let me know when you plan to go out again, even if it is at another site.

I will be on vacation at the beach for 9 days beginning next Monday, so I will be looking for plovers every day! I usually walk twice a day so I am hoping I will spot those little birds. Here's my information to pass along or for your file also.

Lynda Steiner
9165 S.W.Elrose Ct.
Tigard, Oregon 97224
639-0951 or 965-6987(Tierra Del Mar on weekends usually)
email – lyndasteiner@aol.com

Also, if you have an email, please let me know and we can keep in touch that way if it is more convenient for you.

Thanks Again,

Subj: **plover surveys**
Date: 5/22/2003 4:48:05 PM Pacific Daylight Time
From: Liz_Kelly@r1.fws.gov
To: lyndasteiner@aol.com

David Nuzum will be surveying the Sand Lake spit during the first week of June for summer plover surveys. His # 503-842-2741. Please coordinate with him on the day you can survey with him. I hope you can survey.

Liz Kelly
US Fish & Wildlife Service
Newport Field Office
2127 SE OSU Drive
Newport, OR 97365
phone: (541) 867-4558
fax (541) 867-4551

---------- Headers ----------

Return-Path: <Liz_Kelly@r1.fws.gov>
Received: from rly-xh04.mx.aol.com (rly-xh04.mail.aol.com [172.20.115.233]) by air-xh01.mail.aol.com (v93.12) with ESMTP id MAILINXH14-91f3ecd61b51d4; Thu, 22 May 2003 19:48:05 -0400
Received: from fw0hub1.irm.r9.fws.gov (fw0hub1.irm.r9.fws.gov [164.159.176.242]) by rly-xh04.mx.aol.com (v93.12) with ESMTP id MAILRELAYINXH41-49d3ecd61a81ba; Thu, 22 May 2003 19:47:52 -0400
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X-Mailer: Lotus Notes Release 5.0.6a January 17, 2001
MIME-Version: 1.0
Subject: plover surveys
To: <lyndasteiner@aol.com>
Message-ID: <OF09434016.DE16F7D2-ON88256D2E.00825444@irm.r9.fws.gov>
From: Liz_Kelly@r1.fws.gov
Date: Thu, 22 May 2003 17:06:46 -0700
X-MIMETrack: Serialize by Router on FW0HUB1/FWS/DOI(Release 5.0.12 |February 13, 2003) at 05/22/2003 05:47:27 PM
Content-type: text/plain; charset=us-ascii

Subj: **Plover survey**
Date: 5/29/2003 2:17:23 PM Pacific Daylight Time
From: David.J.Nuzum@STATE.OR.US (David Nuzum)
To: lyndasteiner@aol.com

Hi Lynda,
Well, we've got all next week for a window survey. What day works best for you? Monday might be kind of tough because I'm leaving the office this afternoon and won't be back on Friday to check for possible replies... I'd say Tuesday through Friday are all good for me.

David Nuzum
Assistant Wildlife Biologist
North Coast Watershed District

---------- Headers ----------
Return-Path: <David.J.Nuzum@STATE.OR.US>
Received: from rly-xf04.mx.aol.com (rly-xf04.mail.aol.com [172.20.105.228]) by air-xf03.mail.aol.com (v93.12) with ESMTP id MAILINXF33-27b63ed678e3180; Thu, 29 May 2003 17:17:23 -0400
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with Novell_GroupWise; Thu, 29 May 2003 14:23:00 -0700
Message-Id: <sed617c4.091@coho.dfw.state.or.us>
X-Mailer: Novell GroupWise Internet Agent 5.5.7.1
Date: Thu, 29 May 2003 14:22:31 -0700
From: "David Nuzum" <David.J.Nuzum@STATE.OR.US>
To: <lyndasteiner@aol.com>
Subject: Plover survey
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: quoted-printable
Content-Disposition: inline

LETTERS

Continued from Page A4

eradicate the beach grass in a few small areas have proven beneficial to the birds.

Restricting human entry to nesting sites for several months a year, putting fences around nests and cages over nests to discourage predators, and removing or shooting predators have shown some promising results, though the species is still down to 89 pairs on the entire Oregon coast, as of last summer. A pair attempted to nest in Clatsop County last year for the first time in many years, giving me hope that this could occur again in our county.

Ms. Stellflug implies that snowy plover protection is the main reason for consideration of rezoning Bayocean Spit. I have been involved in the discussions about zoning on the spit since 1995, as have the Stellflugs. At that time there was an unsuccessful bid to rezone the spit from "recreation management" to "recreation natural." As far as I am concerned, the plovers were never a key issue in that discussion. She is correct in implying that the nesting areas would not be directly affected by rezoning, although a zone change that affected human use of the spit could affect disturbance at potential nest sites.

I was at the meeting she mentions on Oct. 29, because the newspaper article indicated it would be addressing the snowy plover. In fact, the meeting focused on surveys of human uses on Oregon beaches, potential areas of conflict ranging from jet skis to fire works to horses and cars on the beach. Snowy plover was discussed for less than 15 minutes out of two hours, and rezoning the spit to protect them was not discussed at all. The county commissioners were not in attendance, and as far as I could tell, it was just an informational meeting for state parks employees to interact with interested community members regarding beach use issues.

I am also on the task force Ms. Stellflug mentions. We have 15 representatives of various user groups appointed by the commissioners to work together and make recommendations about Bayocean spit, there has been a lot of positive interaction as we are starting to understand each other better.

It is important to note that the obstacles to building on the spit are formidable and mostly unrelated to zoning. Despite the landowners' successful campaign to leave the zoning unchanged in 1995, there still has been no building on the spit. It is also important to note that most of Ms. Stellflug's vision for the spit has little to do with private property rights and everything to do with use of public land.

While the sort of high-intensity uses she describes would undoubtedly please some people and bring some tourism to the county, it would destroy the thing that was most instrumental in my decision to move here 14 years ago, and could decrease other forms of tourism dramatically. I am field trip coordinator for a birding convention that will bring more than half a million dollars into Oregon's economy next June. It will feature snowy plover, among other species. Nature observation is overtaking many other outdoor activities in economic importance, and Tillamook has been losing market share to other areas such as Bandon and Ft. Stevens. The spit has tremendous economic value as it is, and this should only increase over time.

The contention that "wildlife will always come and go as it pleases, and their Creator will provide for them" seems to me a sad misunderstanding. The biblical mandate is to be stewards of creation, not to ignore our effects on it. To shirk that responsibility because we think the Creator will take care of creation is no more logical than to ignore landowners who feel oppressed because we think God is the God of the oppressed and He will take care of them.

I am happy to report that the members of the task force are working hard, respecting each other's viewpoints and doing their best to come up with recommendations that will be in the best interests of all the varied users of Bayocean Spit.

Craig Roberts
Netarts

High-intensity uses would destroy appe... of Bayocean Spit

The letter to the editor from Bonnie Stellflug, published Nov. 6, makes several statements that deserve careful consideration. Much of her information about the snowy plover is correct. It is not known to have nested in the county since 1995. It does nest irregularly in alkaline salt flat areas in southeastern Oregon when water levels are right for it.

It has declined dramatically on the Oregon coast in the last several decades, from a variety of causes. A major cause is the spread of invasive European beach grass planted to stabilize dunes. Encroaching vegetation provides cover for predators such as crows and raccoons. Plovers are subjected to increasing disturbance in nesting areas from people, horses and dogs. Efforts to

14 ATTACHMENT

"UNITED STATES FOREST SERVICE ATTEMPT TO PURCHASE THE BELTZ FARM FOR PROTECTION"

United States Department of Agriculture
Forest Service
Hebo Ranger District
P.O. Box 324
Hebo, OR 97122
503 392-3161

February 17, 1995

Tillamook County Commissioners
County Court House
Tillamook, Oregon 97141

Dear Commissioners:

Enclosed are six copies of correspondence regarding the 374 acre Beltz Creek Farm located adjacent to the Siuslaw National Forest near Sand Lake, Oregon.

The Forest Service believes this pristine estuary and the associated wetlands is a high priority for acquisition to the National Forest System.

We are very much encouraged by your support. If you need any other information regarding this proposed acquisition please call me at 503-392-3161.

Sincerely,

DONALD N. GONZALEZ
District Ranger

enclosure

DNG/cfs

Beltz Farm

The 374 acre Beltz Farm would make an ideal addition to the National Forest system. An earthen dam extends for approximately 1/2 miles between an existing wetland and the Pacific Ocean. A potential exists to remove this earthen dam and restoring upwards of 50 acres of the Sand Lake estuary. There is the potential of restoring a native run of Chum salmon in Reneke Creek by removing a tide gate which is located on this property.

In Oregon Coastal Wetlands Joint Venture's Draft Strategic Plan for the Oregon Coast and Lower Columbia River (May 1993) it is specifically recommended that the existing wetlands behind the Beltz Dike be restored or enhanced. The Sand Lake estuary is one of only two major estuaries designated "natural" by the State of Oregon. The Beltz wetlands link the Reneke Creek Research Natural Area to the estuary. The Nature Conservancy maintains a reserve at the north end of Reneke Creek.

The estuary has potential for use by Aleutian Canada Goose, a federally theatened species. The Sand Lake area is heavily used by foraging bald eagles, a federally threatened species. It also has the potential for foraging by the federally endangered peregrine falcon. Historically the snowy plover, a federally threatened species, nested in the loose, unvegetated sand near the mouth of the Sand Lake estuary. Great blue herons, migrating shorebirds, and waterfowl also use this area.

The estuary, fresh water lake, upland forested area, fore dune, and over one mile of Pacific Ocean frontage make one this parcel a high priority to add to the National Forest system in terms of protecting wildlife habitat.

It is anticipated that protection of this unique coastal ecosystem would be the paramount overriding management objective. Recreational opportunities are anticipated to be walking and horse use of the approximate one mile of ocean frontage. Enjoying the associated scenic values along with observing the large numbers of native bird species are also certain to occur.

While the Forest Service has not completed a real estate appraisal it is believed that the value of the property may be as high as 3-4 million dollars.

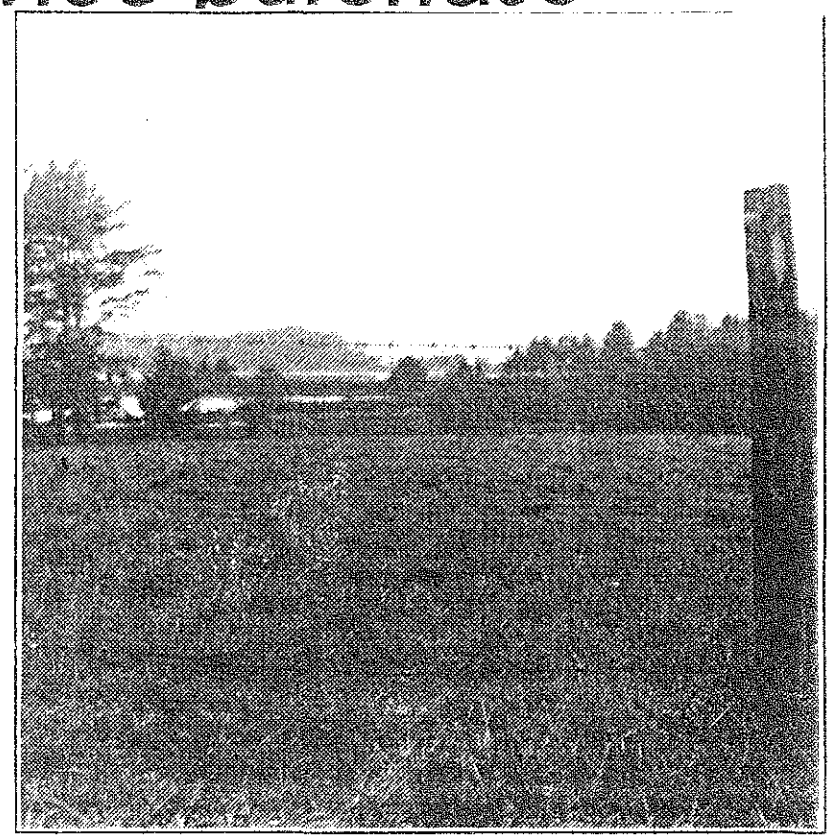
Forest Service contact is Charles Severson, Lands and Recreation Forester, Hebo Ranger District, Siuslaw National Forest, P.O. Box 324, Hebo, Oregon 97122. Telephone: 503-392-3161

Forest Service Information on Acquisition in 1995.

Old Beltz Farm proposed for Forest Service purchase

Treasure of wildlife, habitat, wetlands and estuary would be preserved as part of national system

by Carl Anderson
Headlight-Herald staff



H-H photo by Carl Anderson

This is a portion of the old Beltz Farm along Sand Lake Road, with estuary, dunes and shoreline in background, which is proposed for purchase by the U.S. Forest Service.

The owner of the old Beltz farm along Sand Lake Road, Frank Bastasch, has suggested the U.S. Forest Service purchase the 374-acre property in order to protect the area's estuary, wetlands, habitat and wildlife.

The Forest Service has assembled pertinent information about the area, along with letters of support from area residents, for review by Tillamook County Board of Commissioners and eventual presentation to the Oregon Congressional Delegation, according to Charlie Severson, USFS lands and recreation forester. Commissioners then will present appropriate recommendations during their upcoming trip to Washington, D.C., according to board chair Jerry Dove.

"So far it sounds good," Dove said.

The area is just north of Tierra Del Mar, with some property on the east side of Sand Lake Road, and an expansive area on the west side, covering a rich diversity of estuarine habitat. Severson said the property could be acquired either with an outright purchase or a land exchange, and an appraisal would be conducted. In either case, the procedure could take up to three years, he explained, and USFS would appreciate any support and information from interested parties. He added the matter would have to be established as a priority in the USFS's Northwest Region.

Severson said the farm "would make an ideal addition to the National Forest system." Following are highlights of an information sheet on the area compiled by Severson:

• Removal of an earthen dam extending about a half-mile between an existing wetland and the ocean would restore upwards of 50 acres of estuary.

• There is potential of restoring a native run of chum salmon in Reneke Creek by removing a tidegate on the property.

• The estuary is one of only two major estuaries designated "natural" by the State of Oregon.

• Wetlands on the property link the Reneke Creek Research Natural Area to the estuary.

• The estuary has potential for use by the Aleutian Canada Goose, which is federally listed as a threatened species; is heavily used by foraging bald eagles, also threatened; the snowy plover, also threatened, has nested there and could again with proper management; Great Blue herons, migrating shorebirds and waterfowl also use the area.

• Along with estuary, the area contains a freshwater lake, upland forested area, foredune, and more than one mile of ocean frontage, all of which are wildlife habitat.

• Recreation opportunities, like hiking and birdwatching, would be available.

Severson said preliminary estimates indicate the property is worth about $3-$4 million.

The Oregon Department of Fish and Wildlife supports acquisition of the property, according to Herman Biederbeck, ODFW district biologist. Biederbeck said he understands the property "'is currently being considered for development which could threaten a valuable portion" of the estuary. He said the area has an active heron rookery, a bald eagle nest, tidal flats, marsh, sand dunes and pine forest, Reneke and Beltz Creeks, and development would "reduce the effectiveness of the habitat..."

Following are excerpts of some letters of support from local citizens:

"Time is of essence for preservation and protection of one of Oregon's most beautiful and unique coastlines." – Lynda Steiner, Tierra Del Mar.

"This would be a wonderful opportunity to protect the wetlands..." – Dewey and Elaine Mallery, Sand Lake Road. The Mallerys also said logging and development already have done some damage in the area and further development would endanger what wildlife is left.

"There is a lot of wildlife in the area. Many times we have watched eagles circle the estuary and use the trees. In addition, the natural beauty of the area will enhance the Siuslaw National Forest." – Michael and Yvette St. John, Sand Lake Road.

Feb 22-28 1995 appeared in Headlight Herald

Jan. 11, 1994
Mr. Ron Erickson
U.S. Forest Service
P.O. Box 1148
Corvallis, Or. 97339

Dear Ron:

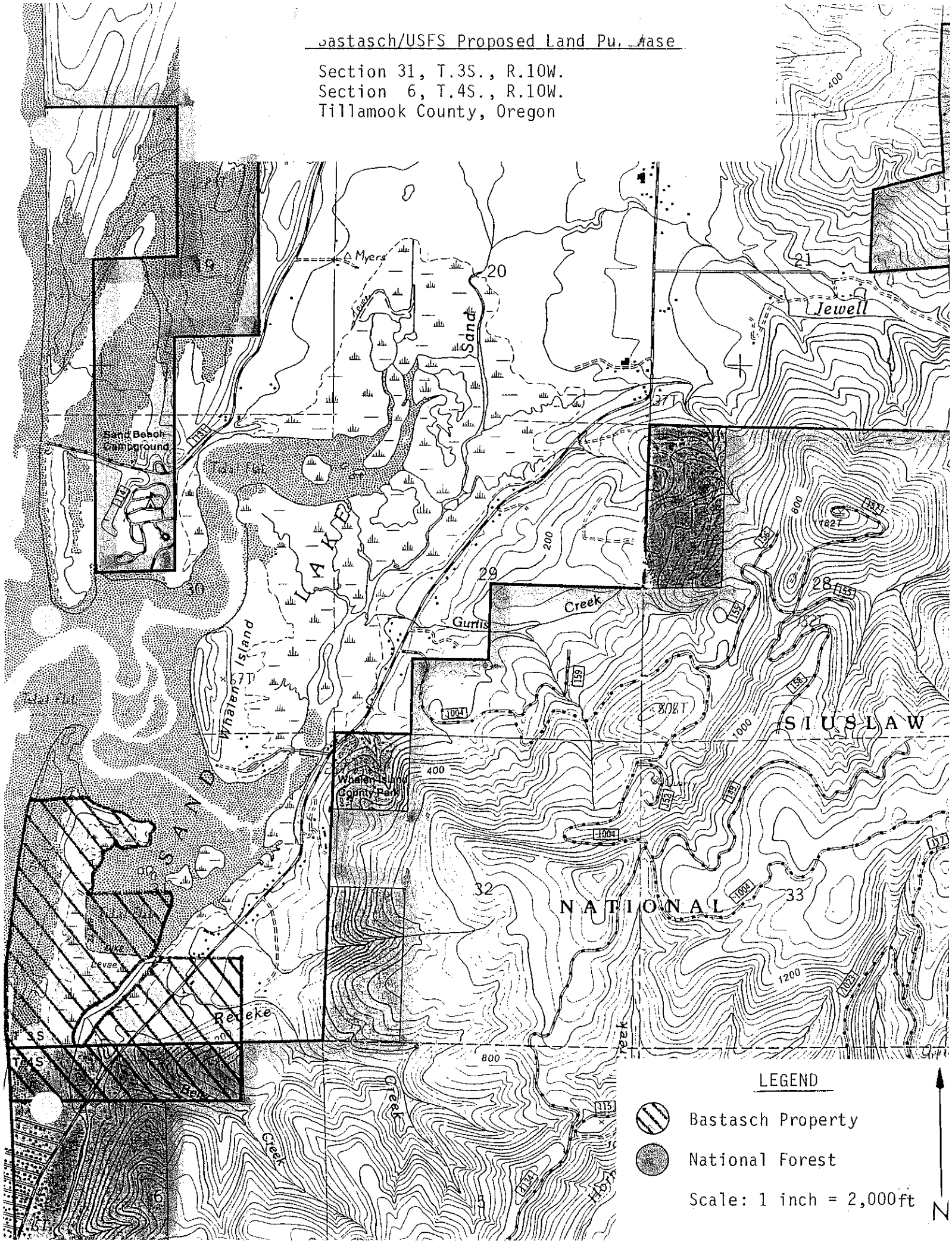
As per your conversation with my brother John Bastasich please find a legal description and 1979 Real Estate pamphlet on my land at Sand Lake, Oregon as well as a site description.

If you would like to see the property... it can be arranged through John. Bill and Peggy Howard live on the property at 26800 Sand Lake Road in a blue house. They can assist as well.

Best regards
Frank Bastasich

Bastasch/USFS Proposed Land Purchase

Section 31, T.3S., R.10W.
Section 6, T.4S., R.10W.
Tillamook County, Oregon



PRESENT USES

Currently the ocean frontage and Sandlake frontage is undeveloped. inland pasture land is rented for cattle production. Originally this was a dairy farm, known as the Beltz Farm.

IMPROVEMENTS

Caretaker's residence - a two level 1940 farm house has four bedrooms, two baths and is currently rented.

Dairy Barn - Used for hay storage, in need of repair.

Owner's vacation home - Two bedrooms, one bath, two level, excellent ocean view.

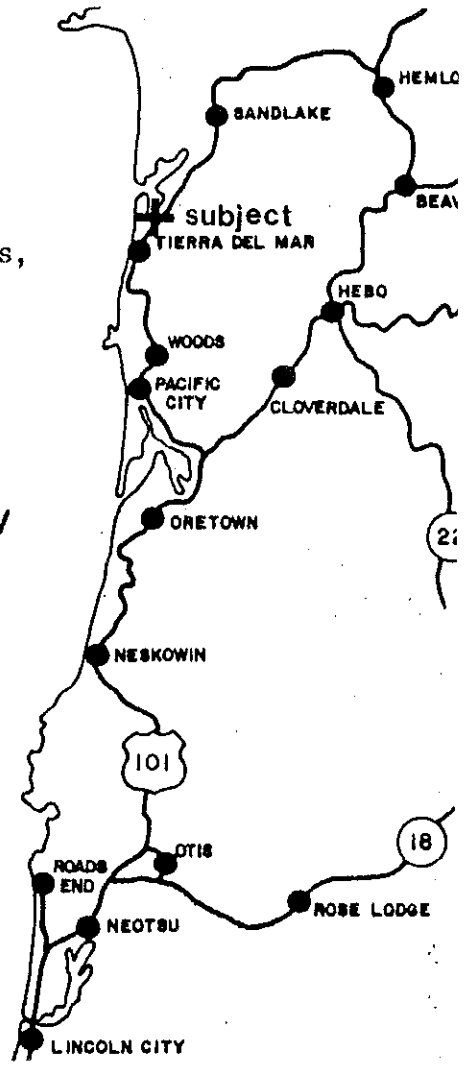
PACIFIC OCEAN

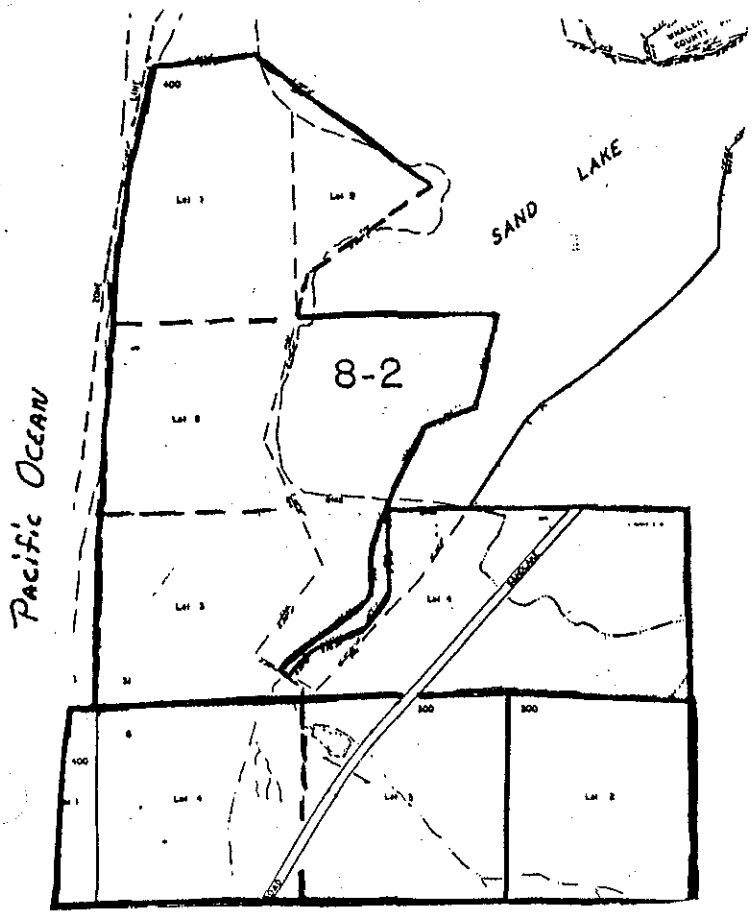
ZONING

Presently zoned Destination Resort. This would allow uses such as motels, restaurants, condos, golf courses, RV sites, commercial, or single family residences, etc. The ocean frontage is currently platted in 40 acre parcels.

PRICE AND TERMS

$2,500,000.00 for all 374 acres. Owner's may divide the property to suit buyer's needs. The property is free and clear; owner's would like 30% down, 11% for 10 years.





LOCATION

Sandlake, in Tillamook County. Three miles north of Pacific City, 23 miles north of Lincol City, or 90 miles southwest of Portland.

TAYLOR & ROYAT
Realty Co.

3891 N.W. Hwy 101 • Lincoln City, Oregon • 97367

COUNSELORS

John O. Perry
Sales Associate
(503)994-5349

Norma J. Thompson
Associate Broker
(503)996-3171

This information is from sources deemed reliable but is not guaranteed by the Broker. Property is subject to prior sale, price change, correction or withdrawal.

'479 REAL ESTATE HAND OUT

V IN OREGON BEACH FRONT ACRE

One of the last undeveloped large parcels on the Central Oregon Coast. This 374 acre parcel offers seclusion and pristine beauty. Bounded by Forest Service land on the East and North, this site consists of pasture, rolling sand dunes, pine and spruce forests, and fresh water creeks. There is over one mile of ocean frontage, (5,700 feet) and approximately 5,000 feet of Sandlake frontage. Most of this acreage has a panoramic ocean view from Cape Kiwanda to Cape Lookout.

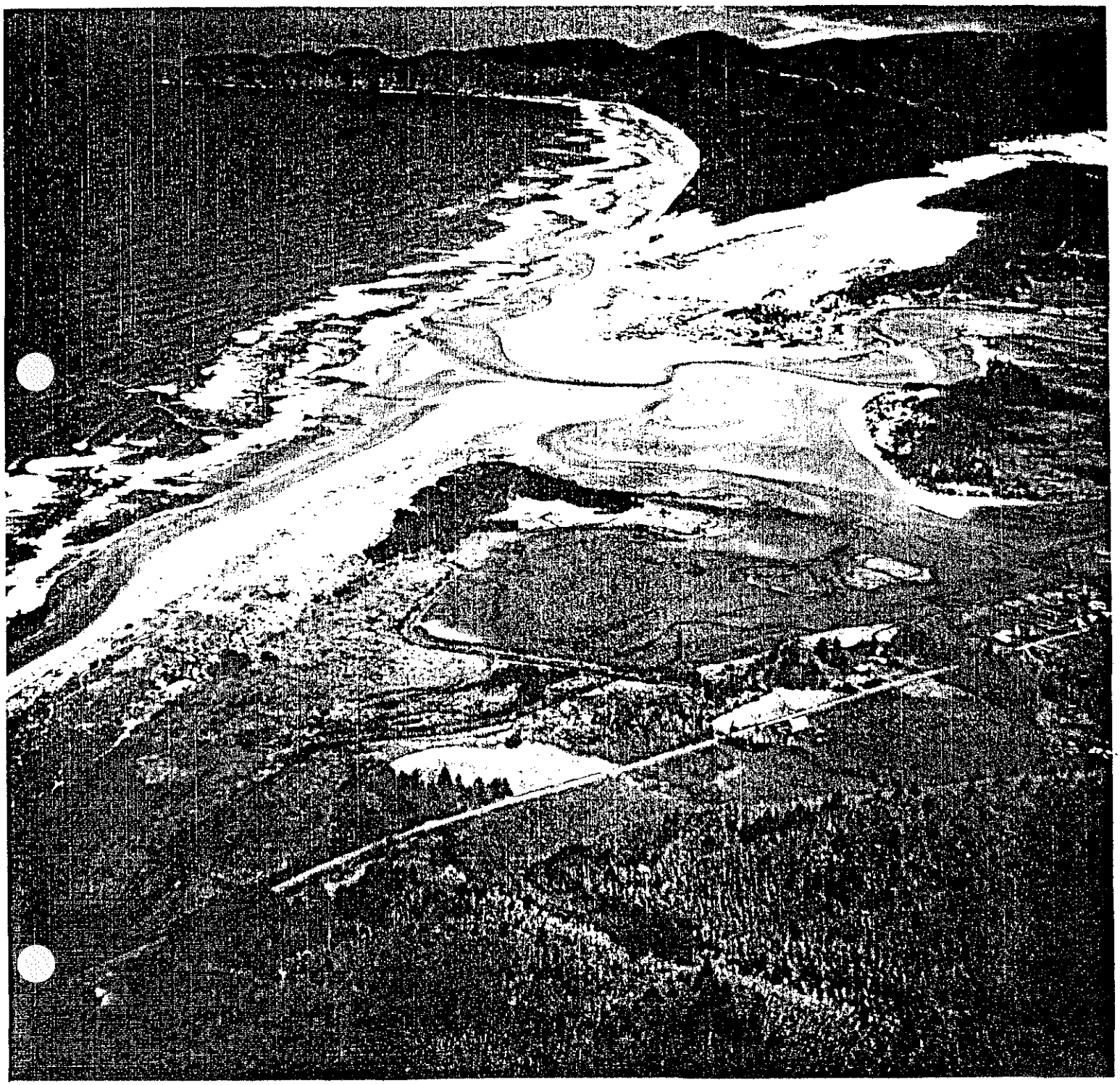


EXHIBIT "A"
ORDER NO. 640288

Lot 1, Section 1, Township 4 South, Range 11 West of the Willamette Meridian, in Tillamook County, Oregon. Lots 1,2,3,4, 9 and the Southwest quarter of Southeast quarter, Section 31, Township 3 South, Range 10 West of the Willamette Meridian. Lots 2, 3 and 4, Section 6, Township 4 South, Range 10 West of the Willamette Meridian. Tract No. 615, consisting of tide lands described to-wit: Beginning at the Northeast corner of Lot 2, Section 31, Township 3 South, Range 10 West of the Willamette Meridian, and being 40 chains North and 20 chains East of the Southwest corner of said Section 31 and running thence South 15º West 13.50 chains; thence South 23º East 14.00 chains; thence South 38º West 11.00 chains; thence South 57º East 5.50 chains; thence North 44 1/2º East 15.00 chains; thence North 41º East 9.00 chains; thence West 8.50 chains; thence South 5º West 8.00 chains; thence 35º West 4.35 chains; thence South 68º West 5.70 chains; thence South 41º West 3.23 chains; thence North 57º West 1.00 chains; thence North 53º East 11.80 chains; thence North 3º East 4.50 chains; thence North 19 and 2/10º East 7.00 chains; thence North 27 and 2/10º East 7.00 chains; thence North 61º East 5.50 chains; thence North 17º East 9.60 chains; thence West 20.00 chains to the place of beginning.

EXCEPTING THEREFROM all of that tract of land described in Book 234, page 824, Tillamook County Deed Records, lying Westerly of Sandlake County Road, Easterly of the Pacific Ocean and Southerly of the following described line; beginning at a railroad spike in the centerline of Sandlake County Road as travelled, said railroad spike being North 1365.38 feet and East 1149.50 feet from the Quarter corner on the West line Section 6, Township 4 South, Range 10 West, of the Willamette Meridian, said Quarter corner also being the Initial Point of Tierra Del Mar Beach Subdivision and is marked by a Brass Cap; thence West 565.70 feet to an iron rod; thence continuing West 823.80 feet to an iron rod; thence continuing West to the Pacific Ocean.

Oregon

DEPARTMENT OF
FISH AND
WILDLIFE

Tillamook District Office

February 11, 1995

Don Gonzales
District Ranger
Hebo Ranger District
Highway 22
Hebo, OR 97122

RE: Reneke Creek potential land acquisition.

The Oregon Dept. of Fish and Wildlife (ODFW) supports the acquisition of the 384 acre tract of tidal flats, marsh, sand dunes and pine forest near Reneke and Beltz Creeks. It is our understanding that the property is currently being considered for development which could threaten a valuable portion of the Sand Lake estuary. Within one mile of the tract are an active heron rookery and a bald eagle nest. Development on this tract would reduce the effectiveness of the habitat for nearly all wildlife species including eagles and herons. The portion of the tract near the ocean has potential habitat for the snowy plover, a threatened species under the Oregon Endangered Species Act, if certain management practices were put into place.

ODFW feels that acquisition of the Reneke Creek tract by the USFS would be a great benefit to the wildlife resources that use the property including those listed above. If I can help further with support for the property acquisition, please let me know.

Sincerely,

Herman Biederbeck

Herman Biederbeck
District Wildlife Biologist

cc Pesek
file

4909 Third Street
Tillamook, OR 97141
(503) 842-2741
FAX (503) 842-8385

charlie —

Oregon

NATURAL
HERITAGE
PROGRAM

February 17, 1995

DNG

Mr. Don Gonzalez, District Ranger
Hebo Ranger District
Siuslaw National Forest
Hebo, OR 97122

Dear Mr. Gonzalez:

The Oregon Natural Heritage Program supports the efforts of the Siuslaw National Forest to acquire the Bastasch property at the south end of the Sand Lake estuary, in Tillamook County. We have identified the estuary as an important site for protection because (1) its ecosystem is largely intact, (2) a number of important plants and plant communities occur there, and (3) several administratively protected research areas, as well as surrounding Forest Service ownership, are present in the immediate vicinity.

The Sand Lake estuary is one of the smaller estuaries on the coast of Oregon, and was never developed for commercial fishing or shipping because of its shallow waters. Surrounded by dairy and forest land, with limited housing development, the estuary retains its rural character. Its extensive salt marshes and mud flats are in excellent condition, with abundant wildlife and scenic beauty. Old-growth cedar swamp and peat bogs occur at the northern end of the estuary, and extensive sand dunes occur both north and south of the estuary.

The Forest Service has two research natural areas within 1-2 miles of Sand Lake, the Sandlake RNA and Reneke Creek RNA. The Nature Conservancy owns the Bradley Bog Preserve at the north end of Sand Lake. Published research on the peat bogs date from the 1930's to the 1970's, and studies by the Oregon Department of Fish and Wildlife have also documented resources of the intertidal areas.

Acquisition of the Bastasch property by the Forest Service would add important acreage for wetland and wildlife protection, and would help safeguard the estuary from further development pressures.

Sincerely,

John A. Christy
Wetlands Ecologist, ONHP
Herbarium Research Associate, Oregon State University

A COOPERATIVE PROJECT OF:

The Nature Conservancy

1205 NW 25th Ave.
Portland, Oregon 97210
(503) 229-5078
FAX (503) 228-3153

MAR 2 1995

Tillamook Bay National Estuary Project

P.O. Box 493 • 613 Commercial • Garibaldi, OR 97118
Phone (503) 322-2222 • Fax (503) 322-2261
email: postmast@ti13.oes.orst.edu

February 27, 1995

MEMORANDUM

REC'D
DR
RMA
SUP
RMA
LANDS
RECREATION
TIMBER RES
WILDLIFE
SOILS
FISHERIES

TO: Jerry Dove
Tillamook County Commissioner

FROM: Marilyn Sigman, TBNEP Project Director

SUBJECT: Sand Lake Estuary project

I was contacted by U.S. Forest Service staff concerning the possible purchase of the old Beltz farm along Sand Lake Road. I wanted to provide you some information about this estuary relative to Tillamook Bay for consideration in your decision as to whether or not to recommend that the purchase occur.

As one of the last two major Oregon estuaries designated "natural" by the State of Oregon, this area retains many of the fish and wildlife habitat values of estuaries which have typically been degraded or lost as Pacific coastal estuaries and their watersheds have been developed. In particular, many upper marsh areas have lost their tidal influence and, thus, salt marsh vegetation as a result of diking. Tidegates have interfered with access by salmon to their spawning and rearing areas. The area under consideration has a diversity of habitat types, including a freshwater lake, which is a relatively rare habitat along the North Coast.

Tillamook Bay National Estuary Project staff have begun inventorying potential wetland and estuary restoration areas in the Tillamook watershed and have found few diked wetland areas and tidegate-regulated areas which are currently not providing economic uses. Therefore, the transfer of land in Sand Lake Estuary would provide a restoration opportunity which is relatively rare in Tillamook County and which would provide habitat for Pacific Flyway waterfowl and shorebirds whose next stop-off point is likely Tillamook Bay. It would also provide an opportunity to protect additional habitat for bald eagles and snowy plovers, which are federally threatened and which have limited habitat in Tillamook Bay.

The addition of a federally-managed habitat area in close proximity to Tillamook County communities should also provide an added attraction for birdwatchers and hikers who contribute to the tourist economy. Transfer of this property into public ownership with its current habitat values and potential for enhancement would provide a positive benefit for the estuary values which are the focus of the TBNEP.

Oregon Wetlands Joint Venture

1637 Laurel Street
Lake Oswego, OR 97034-4755
(503) 697-3889 (phone)
(503) 697-3268 (fax)

MAR 1 1995
HEBO R.D.

February 27, 1995

Mr. Don Gonzalez
District Ranger
Hebo Ranger District
Box 324
Hebo, OR 97122

Dear Don:

I am writing to register the Joint Venture's support for Forest Service efforts to acquire the old Beltz Farm property at Sand Lake.

The Pacific Coast Joint Venture's Strategic Plan identifies Sand Lake as a priority target area for protection of wetland habitat values and specifically recommends restoration or enhancement of existing wetlands behind Beltz Dike.

Acquisition of this property by the Forest Service would help ensure long-term protection for this portion of the Sand Lake estuary and could open up opportunities for habitat improvements that would benefit a wide range of fish and wildlife.

Please keep me informed about your efforts. I'm sure Joint Venture partners would welcome the opportunity to work with the Forest Service on wetland restoration and enhancement at Sand Lake.

Sincerely,

BRUCE TAYLOR
Executive Director

HEBO R.D. REC'D		
DR	✓	
BMA		
SILV		
RMA		
LANDS	✓	
RECREATION		
TIMBER RES		
WILDLIFE		
SOILS		
FISHERIES		

c: Jerry Dove, Tillamook County Commissioners

Steering Committee

Defenders of Wildlife • Ducks Unlimited • National Audubon Society • Oregon Duck Hunters Association
Oregon Farm Bureau • Oregon Waterfowl and Wetlands Association
The Nature Conservancy • The Trust for Public Land

February 10, 1995

Siuslaw National Forest
Hebo Ranger District
Attn: Donald N. Gonzalez, District Ranger
Box 324
Hebo, Oregon 97122

Subject: Bastasch Parcel - T.3.S. R.10W., Section 31
T.4.S. R.10W., Section 6

Dear Mr. Gonzalez:

In today's atmosphere of pro-development along Oregon's Coast, I find it imperative that intact shoreline and estuary ecosystems be protected. I am quite familiar with the parcel mentioned above-also known as the Beltz Farm and the Sand Lake Estuary. Having property in Tierra Del Mar for 15 years has given me enough time to know this area's botany, biology and history. Fortunately, human activity has been minimal to this point, thus Sand Lake's uniqueness has remained undisturbed. However, I am afraid this sensitive shoreline area and the estuary behind this shoreline will not be protected from increasing demands for human development. Unfortunately, in the past, Tillamook County officials have advocated private development over long-term preservation of natural shorelines, lakes, estuaries, and stream corridors. This particular area, along with other identified coastal sites within Tillamook County, was rejected by the Tillamook Board of Commissioners for potential inclusion into the Coastal Barriers Resources System. I strongly support the attachment of this area to the Siuslaw National Forest so it may be preserved.

Identification of many threatened and endangered species have been documented- brown pelican, blue heron, snowy plover, marbled murrelets and bald eagles inhabit this area. Beltz Creek and Reneke Creek have remnant chum salmon. These creeks flow into a wetland used for nesting and foraging of waterfowl too numerous to name in this letter. Whalen Island, within the Sand Lake Estuary, is a functional coastal barrier that includes an aquatic habitat of wetlands, lagoons and tidal flats.

Thank you for this opportunity to give my support for the United States Forest Service acquiring this parcel. Time is of essence for preservation and protection of one of Oregon's most beautiful and unique coastlines.

Sincerely,

Lynda K. Steiner

Lynda K. Steiner
9165 S. W. Elrose Ct.
Tigard, Oregon 97224

Beach address: 5625 Jasmine Avenue
Tierra Del Mar

February 11, 1995
26255 Sandlake Road
Cloverdale, OR 97112
1-(503)-965-6514

Mr. Donald N. Gonzalez
District Ranger
U. S. Forest Service
Hebo Ranger District
P. O. Box 324
Hebo, OR 97122

Dear Mr. Gonzalez:

Subject: Bastasch Parcel T. 3. S. R. 10 W., Section 31
T. 4. S. R. 10 W., Section 6

As a concerned resident I would support the Forest Service to purchase the Bastasch parcel which borders the property of the Siuslaw National Forest for some of the following reasons.

I would like to see the Sandlake estuary preserved without further development of homesites, buildings, etc. Any excavation would certainly polute the estuary with sediments of dust & dirt.

Reneke Creek belongs to the U. S. Forest Services Research Natural Area and what happens down stream can impact the future runs of chum salmon know to exist in Reneke Creek. My neighbor, Stuwe Land & Timber Co., logged to the base of Reneke Creek doing damage to the stream and the wildlife environment. He was in violation of the rules and regulations and this could happen again with further development. Because I have lived here since high school (now being retired), it is so disappointing to me not to see the amount of egrets, blue heron, eagles, deer, elk and other species in the area. Today I'm lucky to see 2-4 blue heron on low tide where, before the logging was done, I would be unable to count the blue heron because they were so plentiful and active.

Sandlake is so unique. This would be a wonderful opportunity to protect the wetlands. We would be in favor of the U. S. Forest Service purchase the Bastasch land.

Sincerely,

Dewey and Elaine Mallery

Dewey and Elaine Mallery

Kenneth A. Poole, Ph.D.
Social Psychologist

Consultant and Counselor / Child and Adult Development

February 11, 1995

District Ranger Don N. Gonzalez
U.S. Forest Service,
P.O. Box 324
Hebo, Oregon 97122

Dear Ranger Gonzalez,

Apparently there is a possibility that the Siuslaw National Forest will incorporate the Sandlake Spit. Such an action would have our enthusiastic support. As a sanctuary for wildlife it would enhance the Oregon Islands National Wildlife Refuge and create one of the finest of such facilities on the Pacific Coast. As you are aware the already established dike with its hard surface trail to the spit lends itself not only to visitor viewing but also, could provide access for handicapped persons to experience the very beautiful aspects of this natural environment. We fervently hope that the possibility is realized.

Sincerely,

Kenneth & Jennifer Poole

Kenneth and Jennifer Poole

26505 Sandlake Road, Cloverdale, Oregon 97112-9642
(503) 965-4678

February 13, 1995

Mr. Don Gonzalez
District Ranger
U.S. Forest Service
Hebo Ranger District
P.O. Box 324
Hebo, OR 97122

Subject: Bastasch Parcel P.3.5 R. 10W Sec. 31; P.4.5 R. 10W Sec.6

Dear Mr. Gonzalez:

As property owners on Sand Lake, we support the purchase of the above parcel by the Forest Service. We have several reasons.

The Bastasch Parcel is in the area of Reneke Creek, which is a natural research area by the Forest Service. It is on a natural estuary and there are many nesting herons in the parcel. There is a lot of wildlife in the area. Many times we have watched eagles circle the estuary and use the trees. In addition, the natural beauty of the area will enhance the Siuslaw National Forest.

If you need any support or other testimony, please let us know.

Sincerely,

Michael St John
Yvette St John

Michael St. John
Yvette St. John

Mailing Address
2338 N.E. 18
Portland, OR 97212

26260 Sand Lake Road
Cloverdale, OR

15 ATTACHMENT

"UNITED STATES FISH AND WILDLIFE SERVICE'S DRAFT PACIFIC COASTAL BARRIER STUDY FOR THE UNITED STATES DEPARTMENT OF INTERIOR INCLUDED THE BELTZ FARM AND THE SAND LAKE ESTUARY AS A COASTAL BARRIER TO BE INCLUDED IN THE COASTAL BARRIER RESOURCE SYSTEM"

United States Department of the Interior

FISH AND WILDLIFE SERVICE
911 NE. 11th Avenue
Portland, Oregon 97232-4181

IN REPLY REFER TO:

DEC 1 1993

Dear Interested Party:

Under the provisions of section 6 of the Coastal Barrier Improvement Act of 1990, the Secretary of the Interior (Secretary) is required to provide to Congress a study which examines the need for protecting undeveloped coastal barriers along the Pacific Coast of the United States. The Secretary is also required to prepare maps identifying the boundaries of those undeveloped coastal barriers bordering the Pacific Ocean south of 49 degrees north latitude.

The enclosed copy of the December 17, 1993, Federal Register notice announces the availability of the Draft Pacific Coastal Barriers Study and accompanying draft maps of areas under consideration for inclusion in the Coastal Barrier Resources System. The notice also contains information pertaining to the purpose and process of this study, dates and locations of public information meetings for all affected states, and a request for public comment.

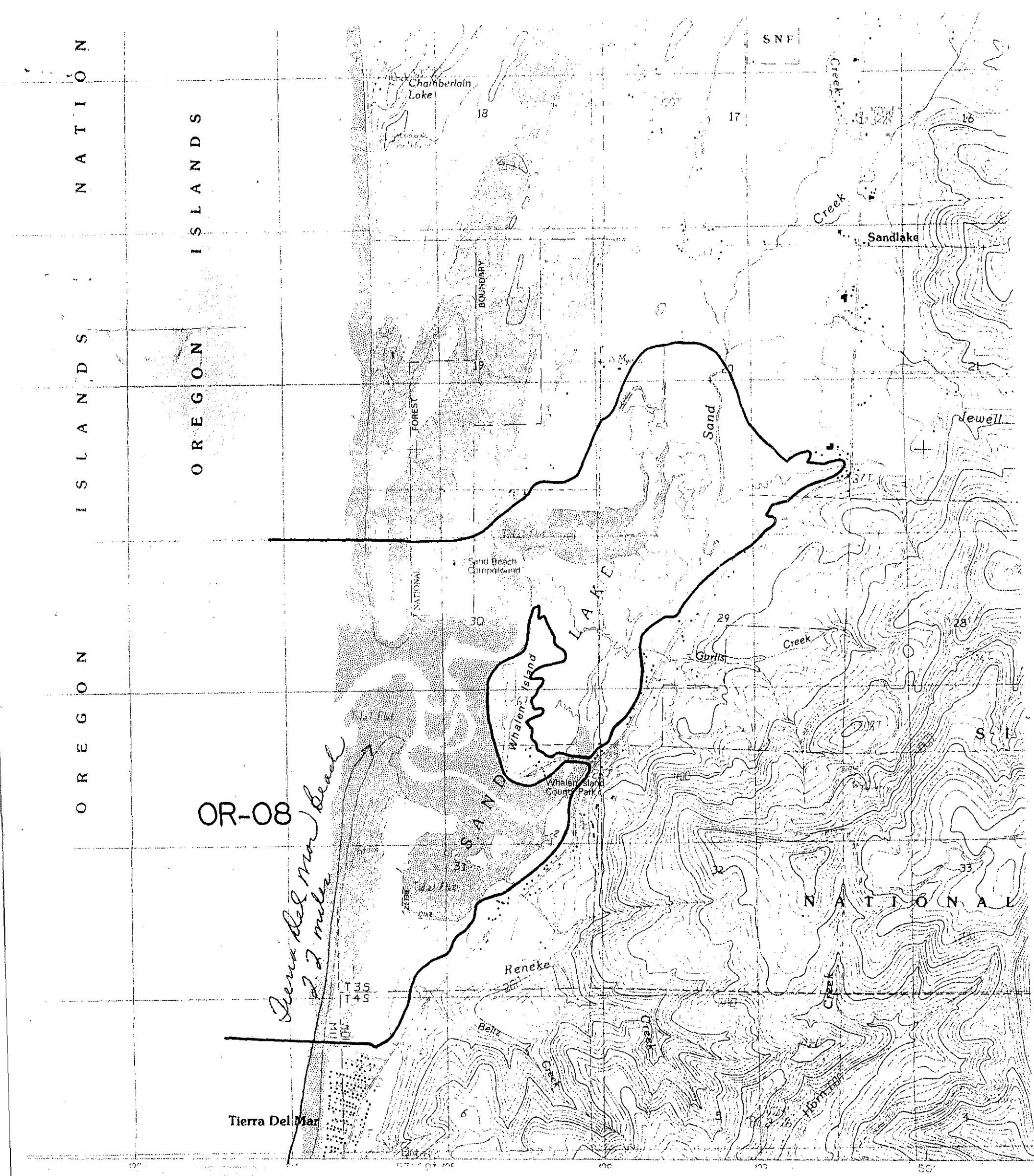
Comments or questions may be directed to:

Paula Levin
911 N.E. 11th. Avenue
Portland, Oregon 97232-4181

Sincerely,

Acting Regional Director

Enclosure



COASTAL BARRIER RESOURCES SYSTEM

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SAND LAKE, OREGON

QUADRANGLE

SCALE 1 24 000

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1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

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Appendix D. Potential Oregon Coastal Barrier Resources System Units.

County	Unit Number	Unit Name	Shoreline (miles)	Fastland[a] (acres)	Wetland[b] (acres)	Total Area (acres)
Clatsop	OR-01-91	Columbia R./Clatsop Spit	8.8	820	1,852	2,672
Clatsop	OR-02-91	Necanicum River	0.8	87	196	283
Clatsop	OR-03-91	Chapman Beach/Ecola Creek	0.3	16	15	31
Tillamook	OR-04-91	Nehalem Spit & Bay	2.5	430	2,208	2,638
Tillamook	OR-05-91	Manhattan Beach	0.5	20	5	25
Tillamook	OR-06-91	Bayocean Peninsula/ Tillamook Bay	4.4	821	8,634	9,455
Tillamook	OR-07-91	Netarts Spit & Bay	5.1	478	2,596	3,074
Tillamook	OR-08-91	Sand Lake Estuary	2.1	253	1,138	1,391
Tillamook	OR-09-91	Nestucca Spit & Bay	2.5	343	776	1,119
Tillamook	OR-10-91	Kiwanda Beach	1.3	117	80	197
Tillamook/ Lincoln	OR-11-91	Salmon River Estuary	0.6	92	197	289
Lincoln	OR-12-91	Salishan Spit/Siletz Bay	0.6	47	359	406
Lincoln	OR-13-91	South Beach	1.5	151	107	258
Lincoln	OR-14-91	Ona Beach/Beaver Creek	0.5	22	28	50
Lane	OR-15-91	Baker Beach	3.4	533	457	990
Lane	OR-16-91	Heceta Beach	0.7	94	67	161
Lane/ Douglas	OR-17-91	Oregon Dunes	18.6	1,917	1,934	3,851
Douglas	OR-18-91	North Spit/Umpqua R.	5.5	1,972	3,443	5,415
Coos	OR-19-91	North Spit & Coos Bay/Oregon Dunes	20.7	2,881	5,691	8,572
Coos	OR-20-91	Bullards Beach/Coquille River	4.5	711	988	1,699
Coos/Curry	OR-21-91	New River	13.2	1,124	1,306	2,430
Curry	OR-22-91	Sixes River	0.6	48	143	191
Curry	OR-23-91	Elk River	2.0	103	143	246
Curry	OR-24-91	Garrison Lake	0.8	62	131	193

Table A-3. Summary of general comments on 1991 draft coastal barrier maps for California, Hawaii, Oregon, and Washington.

State	Organization/Name	Comment
California	California Department of Boating and Waterways Sacramento, CA	Inclusion is an unnecessary procedure for protection
	California Department of Transportation Sacramento, CA	Delineation should be outside of existing highway right of way, may constrain future transportation options
	San Diego Association of Governments San Diego, CA	Keep options for federal funding; county level protection adequate
	Coast Alliance Washington, D.C.	Include California in System; expand to include additional undeveloped coastlines subject to hazards
	Association of Monterey Bay Area Governments Marina, CA	Request to be added to mailing list
Hawaii	Coast Alliance Washington, D.C.	Include Hawaii in System; expand to include additional undeveloped coastlines and coral reefs
Oregon	George & Rhonda Osterag Salem, OR	Include in System
	Columbia River Estuary Study Taskforce Astoria, OR	Concerned about need for and the implications of the program
	Port of Siuslaw Florence, OR	Unneeded restrictions
	City of Florence Florence, OR	Do not include Oregon coast; State and local regulations are adequate
	1000 Friends of Oregon Portland, OR	Support inclusion; expand to include entire undeveloped coastal ecosystem
	Board of Commissioners Tillamook, OR	Reject inclusion of Oregon coastal areas
	Coast Alliance Washington, D.C.	Include Oregon in System; expand to include additional undeveloped coastlines subject to hazards
	E. Zahn Port Ludlow, WA	Include Washington and Oregon in the System

Table A-3 (continued). Summary of general comments on 1991 draft coastal barrier maps for California, Hawaii, Oregon, and Washington.

State	Organization/Name	Comment
Washington	Senator Sid Snyder Long Beach, WA	Opposition; unnecessary and unwanted
	Milton R. Towne Westport, WA	Support inclusion in System
	Gene & Delores Karthauser Colbert's Sturgeon Farms Long Beach, WA	Support inclusion in System
	Kurt & Linda Reiber	Include Washington coast in System
	Bonnie B. Robbins Seattle, WA	Include fragile coastal areas
	Mrs. G. B. Cote Anacortes, WA	Include WA and OR in System
	Columbia River Estuary Study Taskforce Astoria, OR	Concerned about need for and the implications of the program
	Pacific County Commissioners South Bend, WA	Do not include WA nor Pacific County; unnecessary layer of regulation
	Marjorie Blodgett Washougal, WA	Include Washington in System
	Donna Abell Marysville, WA	Include Washington in System
	Sylvan W. Law Olympia, WA	Include Pacific Coast in System
	John L. Greenbaum West Lafayette, IN	Favor inclusion in System
	Bureau of Indian Affairs Portland, OR	Recognize Indian treaty rights; consult directly with tribes
	E. Zahn Port Ludlow, WA	Include WA and OR coastlines
	Coast Alliance Washington, D.C.	Include Washington in System, expand to include additional undeveloped coastlines subject to hazards
	Lummi Indian Business Council Bellingham, WA	Concerned about the process; Service to work directly with Tribal governments

PROPOSED RECOMMENDATIONS

Coastal barriers are unique landforms which provide protection for diverse aquatic habitats and natural resources and serve as the mainland's first line of defense against the impacts of severe coastal storms and erosion. Congress recognized the unique role coastal barriers play in providing these functions when it passed the Coastal Barrier Resources Act (CBRA) of 1982. The purpose of this Act was to minimize the loss of human life, wasteful expenditure of Federal revenues, and the damage to fish, wildlife, and other natural resources associated with development of coastal barriers. These objectives were accomplished by restricting future Federal expenditures and financial assistance which have the effect of encouraging development of coastal barriers, by establishing a Coastal Barrier Resources System, and by considering the means and measures by which the long-term conservation of the fish, wildlife, and other natural resources associated with coastal barriers may be achieved. Congress further endorsed the protection of coastal barriers, and signified that the System is providing valuable protection to coastal resources, with the passage of the Coastal Barrier Improvement Act (CBIA) of 1990. Although the CBRA only applied to barriers along the Atlantic and Gulf of Mexico Coasts, the CBIA allowed for the possible inclusion of Pacific coastal barriers in the System.

Although Pacific coastal barriers differ in form from their Atlantic and Gulf of Mexico counterparts, they are subject to similar development and population pressures and also provide important ecological functions. Pacific coastal barriers are also subject to a variety of coastal hazards unique to the Pacific. These hazards include volcanism, subduction zone earthquakes and tsunamis, El Nino Southern Oscillations, and storms of varying origin which impact the coastline along fronts of several hundred miles.

During recent decades, the Pacific coast has been subject to unprecedented human population growth and massive urban coastline development which has resulted in dramatic declines in its living resources and the large-scale loss and degradation of essential coastal and estuarine habitats. Development on coastal barriers can interfere with the natural movement of these sandy, unstable land masses resulting in erosion and loss of fish and wildlife habitat. Development can also destroy the barrier's ability to provide maximum protection to populated inland areas from natural coastal hazards such as tsunamis and severe storms. As a result of development on hazardous coastal barriers, the Federal government may ultimately pay millions of dollars to clear away storm debris and provide temporary food and shelter to residents displaced by the storms - expenditures not prohibited by the CBRA. Subsidization of development in these hazard prone areas may lead to additional loss of life during coastal storms, earthquakes, and other natural hazards.

Expansion of the existing System to include all the eligible Pacific coastal barriers could conservatively lead to direct savings to the Federal Government of between $603 million

to $708 million or more over a 20 year period. These potential savings represent Federal funds which might otherwise be spent under current Federal programs for the major capital costs of urban infrastructure, disaster relief, flood insurance subsidies, and shoreline protection associated with coastal barrier development (Miller and Stroup 1989). These costs only hint at the size of potential Federal subsidization if the coastal barriers were developed.

Although the CBRA has had an impact on discouraging development in some System units, development has and will continue to occur in some attractive, easily accessible units. A Government Accounting Office report on coastal barriers noted that development has occurred in some System units and development is likely to continue without stronger protective measures (U.S. Government Accounting Office 1992). While the availability of accessible coastal land is limited, populations of coastal areas are expected to increase by almost 60 percent nation-wide between the years 1960 and 2010 (National Oceanic and Atmospheric Administration 1990). This population increase will further spur market demand, providing an incentive for developers, owners, and investors to assume the risks associated with owning and building in these storm-prone areas. Stronger protective measures may be needed if further development is to be discouraged in hazardous areas.

Although many State and Federal regulations exist to prevent development in high hazard areas, State coastal zone management program assessments acknowledge that these regulations are not always followed and much of the decision-making is left to local jurisdictions. This results in a piecemeal approach to coastal protection leading to inadequate protection of coastal barriers from the impacts of development. Several Federal and State laws provide limited protection to coastal areas. However, none of the laws specifically provide coastal barrier protection. The State of California has noted that almost all development along the coastline will be exposed to erosion, bluff retreat, storm damage, wave run-up, tsunamis, earthquakes, landslides, or other hazards common to the California coast (California Coastal Commission 1992). This observation is particularly important given that the vast majority of the California coastline, as well as other Pacific coastlines, is eroding. A review of Oregon shoreline protection management suggests that sensitive shoreline areas are suffering from inadequate protection although beachfront protection and related land use policies are in place. Thus additional safeguards are needed to ensure the long-term viability of the coastal zone. Inclusion of Pacific coastal barriers in the System would encourage protection of these unique landforms and their associated aquatic habitats. States also suffer from budget cuts and inadequate resources to address many coastal problems further hampering their efforts to protect these unique and dynamic areas.

Public or private ownership of a coastal barrier unit should not determine its eligibility for inclusion into the System or the restrictions it will be subject to once included in the System. Several types of activities and lands are exempt from the restrictions of the

CBIA. Military activities essential for national security and Coast Guard operations are excepted from the requirements of the CBIA and most military and Coast Guard lands were not included in the System in the past. Otherwise protected areas were also exempted from all restrictions except for the prohibition on Federal flood insurance. After careful reevaluation, the Department of the Interior (DOI) has concluded that exempting public lands from all (or most) of the restrictions of the CBIA does not fulfill the purpose of the CBRA; namely to minimize loss of human life, reduce wasteful Federal expenditures, and protect fragile natural resources. Eligible coastal barriers on military or Coast Guard lands or in otherwise protected areas should become part of the System and subject to all the restrictions of the CBIA (National security activities and Coast Guard operations would still be excepted activities). Eliminating all, or most, of the restrictions on these lands does not adequately protect these landforms and associated aquatic habitats from degradation associated with development. Additionally, public ownership is not a guarantee of environmental protection and Federal monies could be used for wasteful and inappropriate purposes on these barriers if they are not included in the System. For example, military lands can be surplused and without the protection of the CBRA, there would be no disincentives or restrictions to development. Given that the majority of the coastal barriers identified on the Pacific coast are publicly owned, it is imperative that these areas be incorporated in the System in order to meet the purposes of the Act. Of the 107,728 acres eligible for inclusion in the System, only 4,854 acres (18 percent) are privately owned. This recommendation is a departure from the previous treatment of "otherwise protected areas" but the DOI believes it may be wise to reevaluate Atlantic, Great Lakes, and Gulf coast barriers to see if areas in public ownership should be added to the System.

Because of the important functions of Pacific coastal barriers and the current and future pressures placed on these landforms and their associated aquatic habitats, the DOI makes the following recommendation with regard to the inclusion of Pacific coastal barriers in the System.

> Recommendation: The DOI recommends that all undeveloped Pacific coastal barriers, regardless of ownership, be included in the System and subject to the specific exemptions in the CBIA. The DOI recommends that all potential units be incorporated into the System in order to meet the purposes of the CBIA; namely to minimize loss of human life, reduce wasteful Federal expenditure, and protect sensitive natural resources. The DOI also recommends that publicly owned units, which make up the majority of Pacific coastal barriers, also be included in the System and subject to all the restrictions on new Federal expenditures and financial assistance to ensure protection of these unique landforms and their associated aquatic habitats.

In addition to the above recommendation, the DOI also recommends that all requirements of the CBIA be extended to any new additions to the System. The DOI also notes that

neither the CBRA nor the CBIA provide guidance regarding the inclusion of Tribal lands in the System. Recognizing the sovereignty of the Native American nations, the DOI intends to coordinate with each of the affected Tribes to discuss the implications of the CBIA and to determine their interest in including Tribal lands in the System.

Pacific coastal barriers provide unique biological, cultural, and economic benefits to coastal States and the Nation. The barrier and its associated habitats are one ecological system, and the health and productivity of the entire system depends on the rational use of all the component parts. The inclusion of Pacific coastal barriers in the System would have a number of positive effects. Among these effects are decreased loss of human lives associated with development on hazardous coastal barriers and protection of fish and wildlife and other natural resources which are dependent on coastal barriers. Wasteful Federal expenditures in these dynamic coastal areas would also be reduced and State goals of wise coastal management would be promoted.

The Coastal Barrier Resources Act

Background

Coastal barriers are geologic features such as sand spits, barrier islands and accretion beaches. Built by wind and waves, barriers shelter landward areas and protect important aquatic habitats from direct wave attack. Because barriers are low-lying and consist primarily of sand and gravel, they are subject to both flooding and serious erosion.

Although barriers are attractive locations on which to build, they are also prone to natural hazards. Large sums of public funds are spent to protect and to rebuild communities built on coastal barriers. Development of coastal barriers has also resulted in the loss of large areas of valuable habitat for important fish and wildlife species.

Congress passed the Coastal Barrier Resources Act (CBRA) in 1982 in an effort to reduce the amount of Federal money spent to develop coastal barriers. The goals of the Act were to:

* minimize loss of human life;
* minimize wasteful expenditure of Federal revenues; and
* minimize the damage to fish, wildlife and other natural resources associated with coastal barriers.

The Laws and What They Do

The Coastal Barrier Resources Act prohibits the spending of Federal funds in ways that encourage development or modification of coastal barriers. The law does not affect activities carried out with private or other non-Federal funds and it only applies to mapped areas specifically designated by Congress. The law is intended to apply to coastal barriers or portions of barriers that are not currently developed.

The CBRA established the Coastal Barrier Resources System (System) which consists of undeveloped coastal barriers. The CBRA prohibits Federal expenditures or financial assistance for new development on undeveloped coastal barriers included in the System. These prohibitions include, but are not limited to, the following:

a) the construction or purchase of any structure, appurtenance, facility or related infrastructure;

b) The construction or purchase of any road, airport, boat landing facility, or other facility on, or bridge or causeway to, any System unit; and

c) The carrying out of any project to prevent the erosion of, or to otherwise stabilize, any inlet, shoreline, or inshore area, except that such assistance and expenditures may be made available on units...in cases where an emergency threatens life, land and property immediately adjacent to that unit.

The CBRA also prohibits new Federal flood insurance coverage for any new construction or substantial improvements of structures located on any coastal barrier within the System.

Exceptions to expenditure limitations approved by the appropriate Federal Office in consultation with the Secretary of the Interior are identified in the CBRA. These exceptions include:

1) Certain facilities necessary for the exploration, extraction and transportation of energy resources;

2) Maintenance or construction of improvements of existing Federal navigation channels and related structures, including the disposal of dredge materials....;

3) Maintenance, replacement, reconstruction, or repair, but not the expansion, of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger system.

4) Military activities essential to national security;

5) Construction, operation, maintenance, and rehabilitation of Coast Guard Facilities and access thereto;

6) Action or projects consistent with purposes of the Act:

   a) Projects for the study, management, protection, and enhancement of fish and wildlife resources and habitats;

   b) Establishment, operation and maintenance of air and water navigation aids and devices, and for access thereto;

   c) Projects under the Land and Water Conservation Fund Act of 1965 and the Coastal Zone Management Act of 1972;

   d) Scientific research;

   e) Assistance for emergency actions essential to the saving of lives and the protection of property and the public health and safety...and are limited to actions that are necessary to alleviate the emergency; and

   f) Nonstructural projects for shoreline stabilization that are designed to mimic, enhance, or restore a natural stabilization system.

The Coastal Barriers Improvement Act of 1990 (CBIA), which re-authorized the CBRA, directed the Secretary of the Department of the Interior to prepare a study which examines the need for protecting undeveloped coastal barriers along the Pacific coast of the United States and to prepare maps identifying the boundaries of those undeveloped coastal barriers bordering the Pacific Ocean south of 49 degrees north latitude. The Secretary delegated the authority for developing the study and maps to the U.S. Fish and Wildlife Service.

The Process

Following the completion of the Coastal Barriers Resources System (System) Inventory and Mapping Conventions, the U.S. Fish and Wildlife Service identified and mapped undeveloped Pacific coastal barriers. Draft maps were circulated for public review in the Summer of 1992 in order to determine their technical correctness. Following this public review, the U.S. Fish and Wildlife Service prepared a draft Pacific Coastal Barriers study and revised the draft maps.

On December 17, 1993, a Federal Register Notice announced the availability of the draft study and maps for review and comment for a 60-day period, ending on February 15, 1994. All political jurisdictions affected were notified. Following the close of the public comment period, all public comments will be forwarded to the appropriate State Governor.

The Regional Director of the U.S. Fish and Wildlife Service, in Portland, Oregon, has formally requested that each State Governor provide the Service with recommendations as to the inclusion of coastal barriers of their respective States in the System. State Governors will have until March 17, 1994, to review the draft study, draft maps, and public comments. The Department of the Interior will submit both the Departmental and Governors' recommendations to Congress in May 1994. Congress will then determine which Pacific coastal barriers, if any, will be included in the System.

January 31, 1994

REGIONAL DIRECTOR
U.S. Fish and Wildlife Service
911 N.E. 11th Avenue
Portland, Oregon 97232-4181

Good Day:

In today's atmosphere of pro-development along Oregon's coast, I find it imperative that all 28 sites identified for potential inclusion be approved and accepted into the Coastal Barriers Resources System.

In particular, I am quite familar with the ecosystem of Unit OR-08, the Sand Lake Estuary. Having property in Tierra Del Mar for 15 years has given me enough time to know this area's botany, biology, and history. Fortunately, human activity has been minimal to this point, thus Sand Lake's uniqueness has remained intact. However, I am afraid this sensitive shoreline area and the estuary behind this shoreline will not be protected from increasing demands for human development. Present local government(Board of Commissioners) rejects the inclusion of all Tillamook County coastal areas into the system, as noted in Table A-3, page 109 on the 1991 draft coastal barrier study. Unfortunately, Tillamook County officials advocate private development over long-term preservation of natural shorelines, lakes, estuaries, and stream corridors.

With intensive study of the flora and fauna of the Sand Lake Estuary and the private and federal lands abutting it, I have helped the U.S. Forest Service(Hebo District of the Siuslaw National Forest) in identifying and preserving habitat from clear-cut and rock quarry development, due to the identification of many threatened, endangered species indicative of this area. I have documented brown pelican, blue heron, and for the last 2 years, have recorded a pair of snowy plover inhabiting Tierra Del Mar beach, south of Sand Lake. Marbled murrelets, bald eagles are indicative of this area and have halted clear-cut in the Beltz Creek watershed. Reneke Creek(proposed Research Natural Area) is home to a small number of chum salmon. These creeks flow into a wetland used for nesting and foraging of waterfowl too numerous to name in this letter.

Unit OR-08 must be included into the Coastal Barrier Resources System with the addition of Whalen Island, which was excluded from official designation but meets the criteria set by the Department of the Interior. Whalen Island is a functional coastal barrier that includes an aquatic habitat of wetlands, lagoons, and tidal flats.

Thank you for letting me comment on this plan. Please consider expanding the inclusion of all undeveloped coastal barrier lands into the system. Time is of essence for preservation of Oregon's coastline and all its beauty and uniqueness.

Sincerely,

Lynda K. Steiner

Lynda K. Steiner
9165 S.W. Elrose Ct.
Tigard, Oregon 97224 Tierra Del Mar Address: 5625 Jasmine Avenue

CITY OF RANCHO PALOS VERDES

DEPARTMENT OF PLANNING, BUILDING AND CODE ENFORCEMENT

MAJOR PROJECT STATUS UPDATE

(Updated on August 12, 2003)

Major Projects Approved and/or Currently Under Construction

"Ocean Trails" Golf and Residential Development Project

Photos by RPV / Joel Rojas

When completed, the Ocean Trails project will consist of an 18 hole public golf course, a clubhouse, a maintenance facility, 4 affordable housing units, 75 single family residential lots, public parklands, pedestrian and bicycle trails, and native habitat preserves. The subject property is approximately 261 acres in size and is located between Palos Verdes Drive South and the Pacific Ocean, and between the Portuguese Bend Beach Club on the west and the

City's Shoreline Park property on the east. The main entrance to the site is at the intersection of Palos Verdes Drive South and Forrestal Drive/Ocean Trails Drive.

While most of the golf course has been completed, the project suffered from a major landslide on June 2, 1999 that destroyed a major portion of the 18th golf hole. The developer has obtained approval from the City of Rancho Palos Verdes and the California Coastal Commission for a landslide repair plan. Repair of the landslide, which includes re-building the 18th hole, completing Ocean Trails Park and completing various public trails through the landslide area, is currently underway. Rough grading has been completed and now they're working on the final contour grading. At this time, it is expected that the full 18-hole golf course will open in March 2004. In the interim, 15 holes of the golf course are open for public use and the public trails that traverse the landslide area have been closed for public safety.

In addition to the landslide work noted above, the developer has graded the building pads for the 75 residential lots that are located on both ends of the project site. Of these 75 lots, 36 have been approved through Final Map No. 50667 and therefore may be sold. Additionally, restaurants, the pro shop and the banquet facilities are currently open at the Clubhouse. The entire project is owned and is being developed by Donald Trump Properties. They have offices located on-site.

Currently, Ocean Trails is working on the re-construction of Palos Verdes Drive South in the vicinity of the project, the construction of the Maintenance Building and 4 on-site affordable housing units, and a number of improvements to the golf course. The proposed golf course improvements include the addition and relocation of golf course tees and the addition of water features approved by the City Council on May 20, 2003. Ocean Trails also plans on making some future clubhouse modifications, including the addition of a day spa and more restaurant space. The clubhouse modifications, along with a review of the Water Control Plan for Tract No. 50667 and future geologic peer review agreements, will be considered by the City Council at a public hearing on August 19, 2003. Furthermore, Ocean Trails also proposes to replace some residential lots (on the west side of the project) with a driving range some time in the future. This change will need to be reviewed by the City Council at a future public hearing.

Click here to view a text view about the current construction efforts at the Ocean Trails project:
Click here to view scheduling update about the current construction efforts at the Ocean Trails project:

The City's project planner overseeing the Ocean Trails project is Deputy Planning Director, Greg Pfost. He may be contacted at (310) 544-5228. Ocean Trails may be contacted at (310) 265-5525.

If you would like to be placed on an "interested parties" list to receive any future public hearing notices related to the Ocean Trails project via e-mail, you may subscribe by joining the list server group here.

Long Point Hotel and Golf Course Project

Bi-Monthly Construction Update

Ocean Trails Golf Club Development

June 18, 2003

Construction Completion Schedule

See attached update.

Landslide Repair

MSE wall is completed. Fine grading is expected to complete in four weeks.

Golf Course

Shaping for hole 9, 12, 18 and 1 tees will begin when landslide backfill is complete. These holes are expected to be complete in September.

Driving Range

We have made submittals to the CA Coastal Commission, CA Fish and Game, and US Fish and Wildlife for approval. We are also preparing to submit a revised tract map, geology report and application to change the conditional use permit. We are optimistically projecting an early November start date for this work. A more realistic start date will be projected once more progress is made for this scope of work.

PVD Phase I & II Street Improvements

This area has been delayed approximately 2 months due to difficulties in getting existing streets lights and associated power lines removed by the local electrical carrier, SoCal Edison. Dean Allison helped finally resolve this. The current revised completion for this work is now in early November.

Affordable Housing

The affordable housing buildings are complete. Site utilities are currently being installed. This work should be complete some time in the next 3 months.

Maintenance Facility

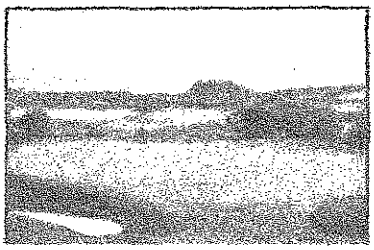
The maintenance facility building is approximately 2/3 complete. We are currently installing the overhead rough piping and ductwork. The building should be complete some time in the next 3 months.

LOVE BMWs?

October, 2002

DON OF A NEW ERA

Real estate mogul Donald Trump plunges into the regional golf scene with the purchase of Ocean Trails



Billionaire real estate developer Donald Trump says when he's finished with Ocean Trails "it will be the finest golf course in California."

The arrival of Donald Trump onto the Southern California golf landscape is a story of obvious significance. His announcement in August that he had purchased Ocean Trails Golf Club, the much praised, if equally troubled, Rancho Palos Verdes golf course that stretches along two miles of pristine Pacific Ocean coastline, is a hot topic around clubhouses and office water-coolers. Trump's name, his billions, his reputation and his ambition -- "In one year from the time I close this deal it will be the finest course in California, without a doubt," he told this magazine -- provide a hearty splash of color to the often drab world of golf course ownership and management. But Trump's acquisition of Ocean Trails is merely the latest in a long series of fascinating chapters involving the golf course and the land it sits -- sometimes unsteadily -- upon. The story of Ocean Trails is a rich, complex saga involving landslides, bankruptcies, farmers, environmentalists, attorneys, judges and a stunning stretch of coastline that ranks among the most beautiful on the West Coast.

The land -- and, make no mistake, it is the land that plays the major role in this story -- has long been a contentious battleground pitting environmentalists versus developers, businessmen versus bureaucrats, politicians versus property owners, even brother versus brother. It is a tale whose reverberations have been felt far beyond its small, if spectacular, setting. Questions

BLAZING A TRAIL

TRUMP Q&A

Trump's golf course portfolio continues to grow

Donald Trump lists playing golf as one of his top comeback tips

Planning tourname charity ev Check out course tou services di

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- LPGA
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- Golf Cabl
Access

over the land's use helped galvanize the state's nascent environmental movement, helped spark the slow growth movement and even helped lead to changes in how cities are incorporated.

Ocean Trails is now Donald Trump's course. The force of his will, his experience and his money will dictate its future. But another name has long defined its past and lies at the heart of its turbulent history: Zuckerman. Fifty years ago, Edward Zuckerman bought 150 acres of farmland on steep bluffs overlooking the Pacific Ocean. His love of golf sparked a dream of turning that land into a golf course. That dream was inherited by his two sons, brothers who today find their personal relationship severed and their personal finances deeply wounded after years of litigation, delays, cost overruns, promises broken and one huge dream deferred and then, finally, abandoned.

"I have lots of regrets, I regret I did it in the first place," says Ken Zuckerman, who, with his brother, Bob, guided Ocean Trails through its arduous development stage, troubled construction and near-glorious birth only to have everything disappear through a combination of natural and financial forces. "I'd be better off not having done it at all□cbut I am proud of what we built. It's a beautiful golf course and something that was incredibly difficult to get done. I don't know if anyone else would have had the patience or the personality or whatever it took to see it finished."

in his book The Art of the Comeback. So it's no surprise that playing golf played a major role in keeping his wits about him in 1990 when he faced the ominous specter of financial ruin. But Trump rebounded bigger than before, climbing back on top of the development mountain, and while he's still primarily in the business of building big buildings, golf course development has become a high-profile part of his portfolio.

His pending purchase of Ocean Trails Golf Club in Rancho Palos Verdes brings Trump's golf properties to four. He also owns Trump International Golf Club, in Palm Beach, Florida, and Trump National, a course located 30 miles north of Manhattan. Both ultra-exclusive private clubs sold out their memberships quickly, even though just getting in the door cost in excess of $300,000. Trump increased his golf course holdings to four as this magazine went to press, announcing the purchase of the 520-acre Lamington Farm Club in Bedminster, N.J., a property that once belonged to automaker John DeLorean.

The story of Ocean Trails is inextricably linked to the land of the Palos Verdes Peninsula. Home to native Americans for centuries, the land was mostly undeveloped until 1924, when its first homes were built. Those early residents moved to the peninsula with a purpose: to preserve the rugged, coastal beauty of the bluffs and canyons in order to prevent Los Angeles sprawl from infecting their peninsula. That idea solidified over the decades. Today, the Palos Verdes Peninsula has the longest stretch of undeveloped coastal land in metropolitan Southern California. That insistence on open space has affected every step of Ocean Trails' journey.

In the 1920s, Great Lakes Carbon, a mining firm and the peninsula's largest landowner, abandoned its costly quest to extract a superfine clay from the earth. The company started Palos Verdes Properties, which soon began dividing the peninsula into large parcels.

One of those parcels, a 150-acre garbanzo bean farm that had been tilled by a Japanese family since the turn of the century, was purchased by Edward Zuckerman, a successful Los Angeles lawyer turned real estate developer in the years following World War II.

"He was a lawyer who worked all kinds of cases and began representing land developers and builders and saw they were making more money than him so he started investing in land," Ken Zuckerman said of his father, who also developed extensively in Inglewood,

Churm Publishing Golf Group's Managing Editor Joel Beers talked to Trump, a 5-handicapper who has been golfing since he attended the University of Pennsylvania's Wharton School, and picked his brain about his new Pacific Coast property. (And, yes, he has played Ocean Trails, shooting par, and, plans on building a home for himself near the course). Trump's answers were compiled from notes taken during the half-hour phone interview.

Why Ocean Trails?

"Over the years I've admired the property. I think it's one of the finest pieces of property in the United States. I think, locationally, it's better than Pebble Beach. The weather's better and it's on the ocean, while Pebble's on the (San Francisco) Bay. That makes a big difference.

Besides being located on the coast, how does Ocean Trails differ from Trump National, which was also an existing course that you rebuilt?

With Trump National I took over an existing course that was not a very good one, bought

Burbank and the San Fernando Valley.

"We estimate he built 40,000 homes through his career," Ken Zuckerman said. "But it was all in Los Angeles County. He always wanted to keep his projects close to home because he never wanted to move too far from Brentwood Country Club."

Golf, which would play a huge role in the lives of his sons, was Edward Zuckerman's passion. He was a founding member of Brentwood Country Club. He was the first Jewish person to receive an open invitation to play the Los Angeles Country Club, a formidable step in a time of open discrimination. And, as president of the Southern California Golf Association, he played a key part in the successful drive to pass Proposition 6 in the 1960 general election, which helped save private golf clubs by allowing them to be taxed on their recreational use value rather than open space value.

Edward Zuckerman's earliest long-range plan for the 150 acres included a golf course. "I think he (foresaw) golf there from the earliest days," Ken Zuckerman said. "But he wasn't wasn't in a big hurry to develop the property."

By the late '60s, however, the elder Zuckerman was ready to build a multi-use development that included a golf course. It was all legal within the county's relatively relaxed zoning regulations.

But not everyone liked the 50 acres around it and demolished everything and built a brand-new layout. But Ocean Trails already has many spectacular holes, it doesn't need to be rebuilt. Pete Dye has designed potentially an incredible course. My job is to take a really good course and make it great. By adding some length and widening some holes they can go from good to top of the line. I think the course is already magnificent and with some remodeling and changes done by Pete Dye it will be the finest in California.

Along with finishing construction of the 18th hole, what specific examples can you give on how you will renovate the course?

The first hole is probably the weakest hole on the course. I hit a driver and sand wedge (onto the green). Behind that first hole is a (planned) maintenance facility that is yet to be built. It's about 150 yards in length from the back of the first green to the back of that facility so I'm thinking of putting it underground, which would expand the hole more than 100 yards,

idea.

"My father and other owners of coastal property were all planning developments and that was the impetus of one of the earliest stop growth movements in the state called Save Our Coastline," Ken Zuckerman said. "They fought to delay my father and other developer's plans to develop coastal property."

The crowning battle was waged in court. Previous to 1973, votes on incorporating as a city in California were restricted to property owners and "it was weighted toward how much land you owned," Ken Zuckerman said. "So every time there was an attempt to incorporate, the landowners would band together and defeat the incorporation."

A suit brought against the state of California alleging that the state's incorporation process violated the U.S. Constitution's one-man one-vote premise was upheld in 1973. Residents moved swiftly, voting to incorporate as Rancho Palos Verdes.

The new city immediately put a moratorium on all coastal development and drew up far more stringent zoning guidelines, effectively killing Zuckerman's proposal.

But the Zuckermans held on to the land, and to their dream.

"It was the crown jewel of my father's property acquisition," Ken Zuckerman said. "We'd go down there and have picnics, it was a piece of property that we all got to know."

turning into a really good first hole.

You haven't released the purchase price of the golf course or housing lots. But how much do you plan on spending in renovating Ocean Trails?

I'm going to put a lot of money in, I'll probably spend $25 million including $2 to $ 3 million on the clubhouse, which is really terrific but it has the potential of being a fabulous facility...I'm also going to remove 11 proposed housing lots in order to build a great driving range. It will be the world's most expensive driving range. I'm prepared to do that.

With Ocean Trails, you'll own four courses. How important is golf course development to your business?

"I understand golf and I know how to shape land, I've been doing it a long time. But though I like golf and I do well in the business and my courses have done well and are already being recognized as great courses it's not the main part of my business. I build big buildings, I'm the largest developer in

(Indeed, Ken Zuckerman was so enamored of the land that it played a role in his engineering studies at Cal Tech. His specialty? Investigating landslides, an ironic twist in light of what would happen years later).

The golf course idea lay dormant for nearly 10 years until Barry Hon, an Orange County developer, acquired a large part of Rancho Palos Verdes coastline from Palos Verdes Properties, including a 100-acre parcel just east of the Zuckerman property.

Hon wanted a luxury hotel and a championship golf course, but he needed the Zuckerman's land. After a few years of political squabbles, the two sides partnered up, shelving the hotel idea.

The original 1989 Hon-Zuckerman proposal combined Zuckerman's 150 acres and Hon's 100 acres as well as an adjoining 20 acres in a 270-acre plan that included a championship golf course and approximately 125 housing lots. (Over time, that number was whittled away to the current 75). The estimated cost: $95 million.

In Rancho Palos Verdes, Ocean Trails was built on land owned by the Zuckermans, including Ken.

From the start, no one wanted just another golf course. Pete Dye, New York. So I build courses for fun and aesthetic pleasure.

Your courses are known for being very tough. The top names on the LPGA complained last year that Trump International was unduly harsh, with only two players posting scores below par. Do you think your reputation for owning tough golf courses is deserved and will you make Ocean Trails harder?

I'm known for building great golf courses like I'm known for building great buildings. Usually a great golf course isn't easy. Greatness doesn't come with easiness.

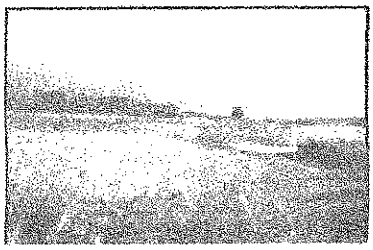
Both Trump National and Trump International are ultra-exclusive private courses. Will Ocean Trails stay public?

I'm not sure but we could follow the Pebble Beach formula and make it a very high-quality public course. Because of the quality of the course and the quality of the location it would have to be very high-end, it could be the highest-end (public course in the country).

a Hon associate, who was generating a great deal of excitement in the golf course industry for his ability to design challenging golf layouts that preserved the existing environmental layout, was quickly brought on board.

After four years of study and hearings, The Hon-Zuckerman proposal was rejected in 1993 by the California Coastal Commission due in large part, Ken Zuckerman said, to a misperception that it did not include enough public access, such as hiking trails.

The project, facing formidable environmental challenges, including the muscle of the Sierra Club, was losing the public relations battle. Any development seen as anti-environment in the highly sensitive Palos Verdes Peninsula was doomed for failure. So Ken Zuckerman got semantic.



The story of Ocean Trails has been a complex one.

"I knew we had to get the unequivocal message out that we would have lots of coastal access and I came up with the idea of calling the project Ocean Trails," he said. "It was done for political correctness. Every time someone said the name of (the proposed golf course) they'd be reminded of the ocean and trails. A lot of people, including Mr. Hon and

You're an avid golfer who credits the game as a key to battling back from adversity. What is it about the game that you like so much?

"I think it's the beauty of the atmosphere and the camaraderie of the game. I play all sports but with golf you really get to know the other person. Plus it's handicapped, it's not like tennis. It's the best handicapped sport there is. If I'm a low handicapper and I'm playing with a 25-handicap we still compete. No other sport is like that.

Donald Trump doesn't do anything low key. You've named both of your present golf courses after yourself. Will Ocean Trails someday bear your name as well?

"I haven't given it much thought but it's a proven fact that both Trump National and Trump International are recognized as being great courses, and they've sold out (their memberships) so anything is possible.

If Donald Trump were any golf club what would he be?

"That' an interesting

other members of my family, didn't like the name, but I convinced them. Over a period of years the name took on a life of its own and people grew to sort of like it."

The retooled proposal received approval on April 15, 1994. But there were still more legal challenges and other hurdles to be cleared, battles that became so time-consuming and complicated that the other owners, including Hon and other Zuckerman family members, wanted out of the project. Bob and Ken Zuckerman formed a limited partnership but needed $45 million to buy out their partners. They scrambled around to find financing, ultimately acquiring a $56 million loan from Credit Suisse First Boston in December 1997.

In January 1998, groundbreaking began. That's when things get really complicated. Unable to find another lender to pay off the original loan and provide enough funds to continue construction, the Zuckermans were "forced" to take out a larger, higher interest loan with Credit Suisse, Ken Zuckerman said. With interest and penalties, the loan now amounted to $100.4 million.

With permanent financing finally in place, construction continued. In the spring of 1999, nine holes were finished. The Michael Douglas Celebrity Golf Tournament held a nationally televised tournament on March 20. An opening date was set for July 2. As Ken Zuckerman wrote on a weekly journal on the Ocean Trails' website, it was as if the whole world was waiting for the golf course to open.

And then, the world moved. On the morning of June 2, some 17 acres, or 3 1/2 million cubic yards, of earth beneath the 18th fairway moved toward the ocean. It didn't slide into the Pacific but it did move 50 feet over and dropped down 10 feet. (To reconstruct the 18th hole, all that earth had to be stockpiled on two other holes which is why Ocean Trails is currently a 15-hole course.)

The landslide was the subject of many rumors and a long

question...Well, I'd guess it's be a driver but that's not really the ballgame. The whole deal is in that last putt. So I'd say I'm a combination driver and putter."

You've said you will be getting personally involved in Ocean Trails' development in January. What will will the course look like a year from that date.

"I think in one year from the time I close this deal it will be the finest course in California, without a doubt.

- JOEL BEERS

investigation. The conventional wisdom is that a leak in a main county sewage line allowed water to settle into a porous clay layer, which destabilized an ancient landslide, causing the landslide. (There is much speculation about what caused that leak, with some believing it may have been damaged in the original grading of the course.)

Whatever the reason, the landslide ruined the chance to open an 18-hole golf course and severely impacted the Zuckermans financially. They were facing a large pay down date on the principal of their loan in September 1999. That money was to come from proceeds of a deal with a home developer to sell 18 residential lots at $850,000 each. The bank approved the deal but, after the landslide, "those buyers were scared off," Zuckerman said.

Another deal that would have actually increased the sale of each lot to $950,000, was killed by the bank, Ken Zuckerman said. "They had the power to decide what deal we could accept and they didn't like the price we negotiated. They thought it was too low. But they'd approved a deal before the slide that was $100,000 less per lot."

Today, Ken Zuckerman is convinced that Credit Suisse was working with one objective in mind: "They wanted to kill us off and take our property." (Credit Suisse declined comment on Zuckerman's charges.)

Unable to make their loan payment in September, the Zuckermans got more bad news in October: the bank filed default, beginning the foreclosure process. The Zuckerman limited partnership filed for bankruptcy on November 1, 1999.

But even then, facing foreclosure, seeking Chapter 11 protection and faced with a severely damaged course, the Zuckermans would not let go of their dream.

"At that point we thought we could still convince the bankruptcy court to (let us retain ownership) if we could sell those 18 lots," Ken Zuckerman said.

In the fall of 2000, the Zuckermans received approval to open as a 15-hole course and, by the end of that year, received the necessary permits to begin to repair the 18th hole. They estimated it would take $15 to $20 million to fix the hole, which would make it the costliest hole in the world.

But construction on the 18th hole dragged on as the Zuckermans frantically tried to put together a reorganization plan in order to keep ownership of the course. They began hoping for a fiscal angel to descend who would buy in as a partner and give them enough cash to pay off the bank and

turn the page on this morass of legal and financial problems.

That's when Donald Trump first entered the picture. He says he heard about Ocean Trails because of the publicity the course had received across the country and ended up touring the site in March 2001.

"He knew a lot about the golf course," Ken Zuckerman said. "We proceeded to negotiate a term sheet with him but my brother was not willing to accept."

Squabbling between the brothers grew progressively worse. In the fall of 2001 Ken Zuckerman went over his brother's head and tried to force a deal with Lowe Enterprises, but his brother rejected it, sending the situation into arbitration.

Meanwhile, the landslide repair was months behind schedule and the general partnership was running out of cash. Ken Zuckerman decided in January, 2002, to shut down all repairs repairs in order to preserve whatever funds they still possessed. That all became irrelevant later in the month when the bankruptcy court ruled in favor of Credit Suisse's reorganization plan.

"The court had been very patient with us for two years but frankly they were losing patience with us," Ken Zuckerman said. "They knew my brother and I were fighting and we'd claimed that the course was going to be finished the summer before. A year later, we still weren't finished. It wasn't exactly the strongest position for us to be in."

In February 2002, the court appointed a trustee. Ken Zuckerman, saying he saw "the handwriting on the wall," went along with the bank's reorganization plan. His brother "took the opposite tact and he's still very angry at me to this day," he said.

Credit Suisse hired the Douglas Wilson Companies, a San Diego-based consulting firm, as the interim property manager, in April. A few days after, Ken Zuckerman removed his last possessions from his office.

Construction on the 18th hole resumed and the course didn't make major news until August 19 when Trump walked in during a Monday staff meeting at 2 p.m. and announced that he'd purchased the golf course.

Trump has big plans for the course and expects to spend approximately $25 million, lengthening and toughening the course, building a driving range and sprucing up the already awesome clubhouse. Early projections are that the new 18th hole will open in late June.

Trump said he is aware of the tumultuous history of the course but that its pristine setting along the coast (Ocean Trails is the only ocean side course in all of Los Angeles county and offers ocean views from each hole) makes it a challenge worth accepting.

"This is a course that's been tied up in turmoil for a number of years and I'm aware of all the problems they've had and that sewage leak, which caused havoc, but my job is to take an existing good course and make it truly great," he said.

As far as the Zuckermans, brother no longer speaks to brother. Bob Zuckerman is appealing the bankruptcy decision and is suing his brother.

Even with all its problems, and with only 15 holes open for play, Ocean Trails is a highly acclaimed golf course. The views, the Dye design, the 38,000-square-foot clubhouse, the Peninsula Grille and Cafe Pacific restaurants, all point to an already impressive property. (And, ironically, the long battle over preserving the land has resulted in greater public access and a habitat restoration more authentic than at any time since the late 1800s, when the land became farmland. That includes the planting of 125,000 native plants. As it turned out, Ocean Trails "was a very positive thing for the community," said William Ailor, president of the Palos Verdes Peninsula Land Conservancy. "It was an example of the process working.")

Ken Zuckerman still believes in the course. But it is hard for him to look at Ocean Trails these days and not see a giant sucking hole that drained $150 million.

"Everybody made money on this thing except my brother and I," Ken Zuckerman said. "That's one thing I learned about bankruptcy. For the consultants and attorneys it's a real cash cow but for the principals it's just a huge hole in the ground. And the pun is intended."

In September, Zuckerman visited the course for the first time since April.

"It still looks pretty much the same as when I left," Ken Zuckerman said. "Everyone who saw me came up to me, hugged or kissed or shook my hand. They wished me well, it was a good experience."

But it was bittersweet. Today, Zuckerman looks on the past 10 years of his life with more regret than joy.

It's been all-consuming and frustrating, very depressing," he said. "I spent essentially 10 years of my life working to make

this project my legacy, to create something for my family and for my children and we came so close. In the spring of 1999 it seemed like we'd achieved our goals. We had people ready to buy our lots and we were planning on opening and then it all slid away."

Ken Zuckerman will never have the golf course he worked on so long and so intensely. His family has nothing to do with it, or the land, any longer. And the only solace he can take is that he helped create something that someone else found worthy to buy.

"I'm sorry that we didn't do a deal (with Trump) the first time around, but we obviously exposed him to the property. He bought it for one reason only and that's to make it the best course and I wish him the best. I hope he does that. And I do feel sort of proud that I built something that Donald Trump wanted to buy. Not everyone can say that."

A HISTORY OF THE OCEAN TRAILS GOLF CLUB

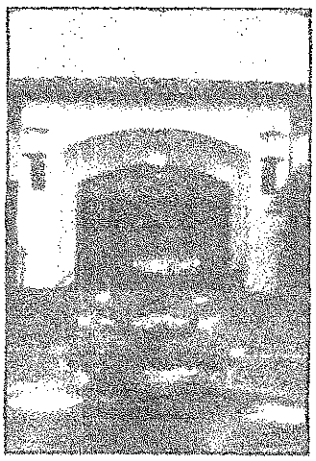
1953*: Edward Zuckerman buys 150 acres on the Palos Verdes Peninsula in unincorporated Los Angeles County.

1973: Zuckerman's proposed development derailed by community opposition.

1989: Land developer Barry Hon allies with Zuckerman family to build a golf course with residential housing.

1993: Proposal denied by California Coastal Commission on grounds that it does not afford enough coastal access.

April 15, 1994: Retooled proposal of golf course, now called Ocean Trails, approved.



Pete Dye with Ken Zuckerman (above); the club entrance.

December, 1997: Bob and Ken Zuckerman buy out other partners and form

Ocean Trails L.P.

January 1998: Groundbreaking on Ocean Trails Golf Club begins.

February 28, 1999: Nine holes completed.

March 20, 1999: Celebrity Golf Tournament introduces Ocean Trails to nationally televised audience. July 2 opening date for finished 18-hole course is set.

June 2, 1999: Landslide demolishes 18th hole.

September 1999: Credit Suisse First Boston initiates foreclosure proceedings.

November 1, 1999: Ocean Trails L.P. filed for bankruptcy protection under Chapter 11. Zuckermans and bank begin forming separate reorganization plans.

July 2000: Approval received to open Ocean Trails as a 15-hole golf course.

October 2000: Work finally begins on restoring the 18th hole. Enormous underground retaining wall is installed to prevent further slides.

November, 2000: Course opens to the public as "best 15 holes in golf."

March, 2001: Donald Trump visits the property. Negotiations for Trump to buy in as a general partner fall through.

January 2002: Work on restoring the 18th hole stopped for lack of funds.

February 2002: Bankruptcy court appoints trustee.

April 30, 2002: Bankruptcy Court approves bank's reorganization plan, effectively ending the Zuckerman's role.

May 6: 2002: Douglas Wilson Partners brought in as management company. Construction on the 18th hole hole begins.

August 19: Donald Trump informs staff that he's purchased Ocean Trails Golf Club and surrounding

residential lots.

July, 2003:*Ocean Trails opens as full-fledged 18-hole golf course.

*Estimated

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16 ATTACHMENT

"QUARRY PROPOSAL ON SANDLAKE ROAD DENIED BY THE TILLAMOOK DEPARTMENT OF COMMUNITY DEVELOPMENT AFTER LOCALS FILE THEIR OPPOSITION"

Sandlake quarry proposal stirs debate

by Tim Sills, H-H staff

Stuwe Land & Timber, owners of several acres of forest property just north of Tierra del Mar, has applied for a permit to mine an upland quarry on property east of Sand Lake County Road. Representatives of the Sisters, Ore., company met with approximately 20 residents of the immediate area on Saturday, April 10, to discuss the proposed quarry's impact on the environment.

According to longtime resident, Lewis E. Wilkinson, neighbors are unanimously opposed to the idea.

"The quarry would be back up in the hills enough that dust and noise probably wouldn't be a factor," says Wilkinson, who attended Saturday's meeting. "One of the Stuwe brothers also said that when they did blasting they would use a new type of explosive that was less severe – that wouldn't shake the ground as much.

"But the big obstacle was they could give us no guarantees about wildlife protection. In fact, the Stuwes disagreed with us about whether their logging of the property had already affected wildlife."

Wilkinson said he observed a dramatic reduction in area bird populations since the Stuwe property was logged last year. Several people attending the meeting agreed that great blue herons had abandoned wetlands in the lower logged-off area. Small ground animals, deer and elk were also mentioned as victims of last year's clear cut.

"Another problem is the issue of Sand Lake Road," Wilkinson added. "It's in bad shape now and you can imagine what loaded gravel trucks would do to it.

"The Stuwes told us that the county planning department strongly indiated a quarry was needed here, but I think the neighbors don't agree with that."

Vic Affolter of the department of community development agrees that aggregate sites are "heavy-duty 'NIMBY' issues ('not in my back yard').

"The larger picture here is, given the prohibition on removal from streams, we're going to have to identify some usable aggregate sites upland," Affolter says.

But Eugene Kimber, another in attendance at the meeting, says he currently operates a quarry three miles north of the proposed site.

"There's no shortage of available rock here," claims Kimber. "My pit has been open since the 1940s, and there's probably a million yards of rock left in it. The whole mountain (Kimber's 80-acre site) is rock."

He says yet another quarry, four miles south of the Stuwe site proposal, in Woods, is also active.

"It doesn't make a lot of sense to me," Kimber adds. "The forest service has cut back on their road construction, which was the main source of my contracts for a long time. There's a need for rock down here, but it's not a big need. Just small contracts."

Stuwe did not return calls for comment.

The permit is scheduled for public hearing May 13, 7:30 p.m., in the Tillamook County Courthouse.

4-14-93 Headlight-Herald

Mineral, aggregate sites now in planning process

by Lorena Dye, H-H staff

Finding and extracting mineral and aggregate resources may be the land use issue of the decade, according to Vic Affolter, director of the Tillamook County Department of Community Development (DCD). If it is, Tillamook County will be ready. The Tillamook County Planning Commission approved a plan to amend the comprehensive plan to help protect those local resources at a public hearing June 24.

Minerals include metallic, industrial, and energy resources like silver, copper, lead, coal or natural gas. Aggregate resources include rock, gravel and sand that are used in construction.

"If we can't protect these sites as we find them, we may not be able to get at them when we need them," Affolter said. He noted that the best candidates for such sites are in areas not yet targeted for residential development.

"We want to find sites where there isn't so much development now, and overlay this zone, so when people come to develop they understand clearly that it may be mined and there may be impacts, such as noise, dust, or traffic," Affolter said.

The amendment establishes the importance of local sites where these resources are available and defines an overlay zone to protect the sites for use in the future. It also includes regulations to comply with new state legislation dealing with the mining of such resources.

The overlay zone includes the area where the resource is found and can be taken out; as well as the route to take it out, and the adjoining areas that may be affected by the process of retrieving the resource — such as loud or continuous noise, dust, or heavy or constant traffic.

"There is merit in a planning process that identifies and protects significant aggregate sites and resolves conflicts in advance of needed use," the proposed amendment said. "Without a protection program applied to enough sites to meet future resource needs it could be increasingly difficult and costly for public agencies or private operators to provide needed aggregate products."

In an interview, Affolter said the need for such an amendment became apparent as development demands expanded in the county.

"We want to identify sites in advance so they'll be available when needed, for public and private use," he said.

He said the amendment does not zone any sites by itself; it is a tool to use to add a zone overlay to another zone in the future. The overlay adds new provisions and restrictions to the existing zone, and protects the site so that future development is done with knowledge of the potential restrictions and impact of the use of the resource site. It is possible that an overlay zone will restrict residential development, but it does not automatically restrict it.

The Official Oregon Trail Sesquicentennial Wagon Train...

Wagon train carries Averills to Pocatello via original trail

by Sally Ousley, H-H staff

Scott and Jacalyn Averill have spent a little over a week on the Oregon Trail now. They have experienced everything from an Indian raid to ghost towns and this is just the beginning.

They left Montpelier, Idaho June 29 and traveled through Soda Springs and to Bancroft in the next couple of days. There they met a motorhome and felt like they are really living in style. Scott said the ride has been bumpy, but everything is going well.

At Chesterfield, Wagon Master Jerry Schubert broke a board between the two axles of the wagon and spent most of the day fixing it. Averill said he had to go back to Montpelier to get supplies needed for the repair.

At Willow Grove, the wagon train came upon a ghost town that Averill said was very interesting. They visited with a [illegible] whose great-great grandfather had homesteaded near the ghost town.

The train climbed to an altitude of what Averill estimated between 8,000-9,000 feet and ran into some cold weather. He said it was very cold and they felt miserable. "I think I really felt what the pioneers must have felt," he said.

He said he thought this was the best part of the trip so far because they were on some of the actual Oregon Trail. The Indian reservation had given the train special permission to go across the reservation there and said they would never let anyone else cross again. The Indians escorted the wagons through the reservation. He added even though it was so cold, the countryside was beautiful.

Arriving at Fort Hall July 4, the wagons experienced fireworks for the holiday. They arrived in Pocatello, Idaho to what Averill train has logged 150 miles so far.

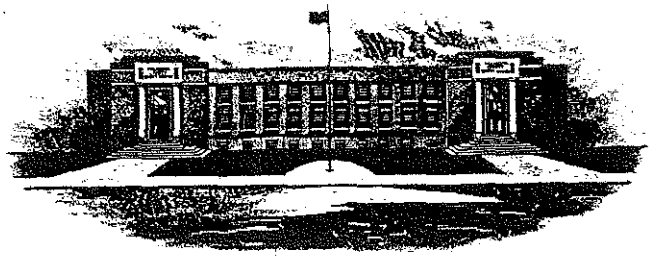
Averill said the weather has been good so far, with a little rain at night. "I feel fortunate to be here," he said. "I'm trying to imagine how the pioneers felt, especially with the cold weather. It's hard to imagine having just a fire to warm yourself by."

Tillamook is getting a lot of exposure, Averill said. "Whenever I mention we're from Tillamook, everyone always thinks of cheese."

The Averills have not received any mail from home and are looking forward to hearing from hometown folks. People can write to: Scott and Jacalyn Averill, c/o Wagon Train Staff, Metropolitan Events, 208 N.W. Couch St., Suite 222, Portland, OR 97209. The next mail pick-up for the wagon train is July 17. Mail for that date should be in Portland by July 12.

(Editor's note: Look for weekly

PARTMENT OF
MMUNITY DEVELOPMENT
c Affolter, Director



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TILLAMOOK COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT

NOTICE TO MORTGAGEE, LIENHOLDER, VENDOR OR SELLER: ORS 215 REQUIRES THAT IF YOU RECEIVE THIS NOTICE, IT MUST BE PROMPTLY FORWARDED TO THE PURCHASER

April 7, 1993

Notice is hereby given that a public hearing will be held by the Tillamook County Planning Commission at 7:30 p.m. in the Circuit Courtroom of the Tillamook County Courthouse on Thursday, May 13, 1993, for the purpose of considering the following: CONDITIONAL USE REQUEST:

CU-93-15 to allow, develop and mine an upland aggregate quarry site on a Forest (F) zoned parcel. The parcel is located east of Sandlake County Road just north of Tierra del Mar. The proposed quarry is on Tax Lot 5600 of Section 32, Township 3 South, Range 10 West of the Willamette Meridian; Tillamook County, Oregon. Access to the quarry will be from Sandlake Road and through Tax Lot 502 of Section 31, Township 3 South, Range 10 West of the Willamette Meridian; Tillamook County, Oregon. Stuwe Land and Timber Company, owner and applicant.

Notice of public hearing, a map of the request area, and applicable criteria and a general explanation of the requirements for submission of testimony and the procedures for conduct of hearings are being mailed to all property owners within 250 feet of the exterior boundary of the subject property at least 20 days prior to the hearing.

Statements will be heard at the hearing. Written statements may be submitted to the Department of Community Development, 201 Laurel Avenue, Tillamook County, Oregon 97141, prior to the date of the hearing. Please contact the Department as soon as possible if you wish to have your comments included in the staff report that will be presented to the Planning Commission.

Failure of an issue to be raised in a hearing, in person or by letter, or failure to provide sufficient specificity to afford the decision maker an opportunity to respond to the issue precludes appeal to LUBA on that issue.

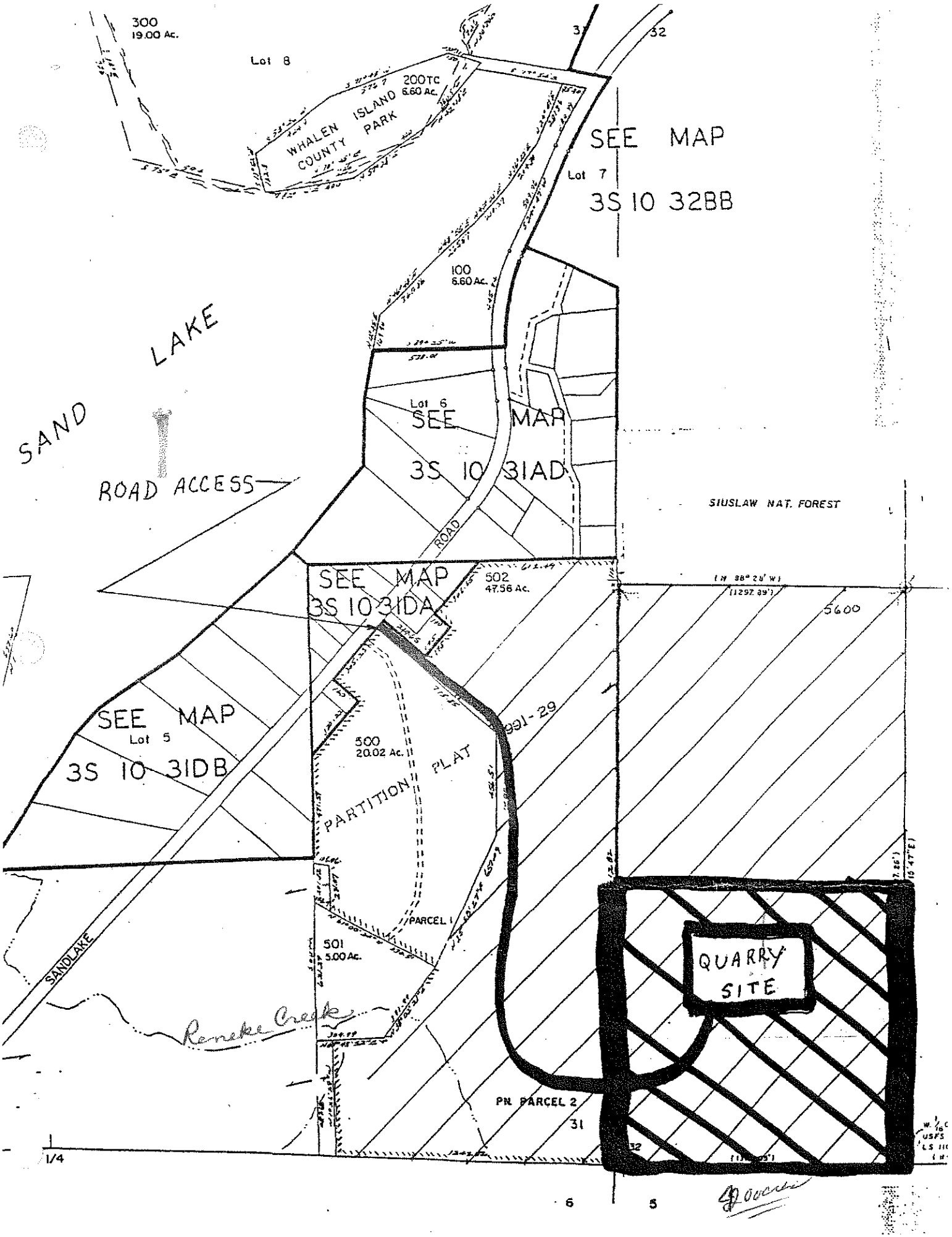
The Circuit Courtroom is handicapped accessible. If special accommodations are needed for persons with hearing, visual, or manual impairments who wish to participate in the hearing, please contact 842-3403 at least 24 hours prior to the hearing in order that appropriate communications assistance can be arranged.

A copy of the application and all documents and evidence relied upon by the applicant are available for inspection at no cost and will be provided at reasonable cost (25¢ per page). A copy of the Staff Report will be available for inspection at no cost at least seven days prior to the hearing and will also be provided at reasonable cost (25¢ per page).

If you need additional information, call 842-3408 and ask for Tom Ascher.

Tom Ascher

Tom Ascher
Coastal Resource Planner


300
19.00 Ac.
Lot 8
200TC
6.60 Ac.
WHALEN ISLAND COUNTY PARK
SEE MAP
Lot 7
3S 10 32BB
100
6.60 Ac.
SAND LAKE
Lot 6
SEE MAP
3S 10 31AD
ROAD ACCESS
ROAD
SIUSLAW NAT. FOREST
SEE MAP
3S 10 31DA
502
47.56 Ac.
5600
SEE MAP
Lot 5
3S 10 31DB
500
20.02 Ac.
PARTITION PLAT
991-29
PARCEL 1
501
5.00 Ac.
SANDLAKE
Renske Creek
QUARRY SITE
PN PARCEL 2
31
32
1/4
6
5

CONDITIONAL USE REVIEW CRITERIA

A conditional use shall be granted if the applicant demonstrates that all of the following applicable criteria are satisfied:

(1) The use is listed as a conditional use in the underlying zone; or in an applicable overlying zone.

(2) The use is consistent with the applicable goals and policies of the comprehensive plan;

(3) The parcel is suitable for the proposed use considering its size, shape, location, topography, existence of improvements and natural features;

(4) The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or prevents the use of surrounding properties for the permitted uses listed in the underlying zone;

(5) The proposed use will not have a detrimental effect on existing solar energy systems, wind energy conversion systems or wind mills; and

(6) The proposed use is timely, considering the adequacy of public facilities and services existing or planned for the area affected by the use.

April 23, 1993

Siuslaw National Forest
Hebo Ranger District
Hebo, Oregon 97122

GOOD DAY TO THOSE IN ATTENDANCE:

As property owners in Tierra Del Mar and the Sandlake area, we are very concerned about the adverse effects our forest(the Siuslaw) will encounter if a permit is granted by Tillamook County to allow the development and mining of an upland aggregate quarry located on Sandlake Road, Tax Lot 5600, Section 32, T.3S., R.10W.. If the permit is granted, we see a conflict with other resource objectives of the surrounding forest.

Please address the following questions and concerns:

I Reneke Creek Research Natural Area (MA 13)

1. Logging has already disturbed Reneke Creek downstream. Erosion from steep slope clear-cut is evident. The boundary is now showing windthrow and blowdown. An upland quarry will have further adverse effects to:

   a. Water quality of the creek if waste water is not properly discharged. Remnant chum salmon and cut-throat trout use Reneke Creek and its waters flow into a fresh water marsh.

   b. Wildlife species indicative of this RNA will be impacted.

II YR-1 (Map taken from Proposed Determination of Critical Habitat for the Northern Spotted Owl)

1. Logging has taken away habitat. A quarry will result in increased loss of habitat due to noise from blasting, rock crushing and truck traffic.

III Bald Eagle Habitat (MA 4)

1. Forest Plan designates Section 32, T.3S., R.10W., as protection and enhancement for bald eagle habitat. A quarry site so close to this area will impact this area and will discourage eagles from perching, roosting and nest building.

IV Marbled Murrelets

1. Kim Nelson's research detected murrelets along F.S Road 1134 in 3 separate transects. Impact of noise will deter potential present and future nesting sites.

2. Adjacent Beltz Creek is already set aside as a murrelet potential nest site, thus this area will also be impacted.

V Other Wildlife Species

1. Blue Heron - nest site presently disturbed (logging).

2. Water Fowl (those using Sandlake estuary and the lake itself. Brown Pelican use Sandlake every year.

3. Deer, Elk, other species indicative of the area.

VI Visual Quality of This Area

1. Three Capes Scenic Road is classified as a Sensitive Level 1 road (F.S. Plan). Logging has presently destroyed the scenic value of this particular stretch along Sandlake Road. Increased development and truck traffic coming down from the quarry onto Sandlake Road is not compatible with scenic objectives.

VII Quarry Site on Forest Land Near Proposed Quarry

1. Is this quarry active?

2. How much and what kind of rock is present?

3. This quarry would appear to be more compatible with resource objectives compared to the proposed quarry site.

Forest resources are directly and indirectly affected by the amount of development and extraction of mineral resources. Disturbance and destruction of vegetation, soil removal and erosion, sedimentation, increased turbidity of water, destruction of wildlife and fish habitat, reduction in visual quality and recreation are just a few adverse effects which we feel will take place if this quarry is permitted.

We urge you to keep the integrity of this unique area in tact by joing with us to oppose this proposed quarry site. The future of our forests and the many values they give us must come first!!

Thank You.

Sincerely,

Lynda K. Steiner

Lynda K. Steiner
9165 S.W. Elrose Ct.
Tigard, Oregon 97224
phone 639-0951

Beach - 5625 Jasmine Avenue
Tierra Del Mar
phone 965-6987

United States
Department of
Agriculture

Willamette
National
Forest

211 East 7th Avenue
Eugene, OR 97401
(PO Box 10607 97440)

Reply To: 4060 RNA

Date: April 26, 1993

Subject: Potential impacts of zoning change to Reneke Creek proposed RNA

To: Don Gonzalez, Hebo District Ranger

From: Cindy McCain, Ecologist, RNA coordinator for Siuslaw N.F.

I would like to respond to the proposed zoning change which would allow development and mining of an upland aggregate quarry site on the Stuwe Land and Timber Company holding adjacent to the proposed Reneke Creek Research Natural Area.

After describing the objectives of the Reneke Creek RNA, I will discuss potential impacts of a rock quarry on the area.

The Siuslaw National Forest is currently completing the RNA establishment record and boundary determination for the Reneke Creek RNA. The area is proposed as a candidate RNA to represent two ecosystem types within the state and national natural area network: Oregon Coast Range red alder stand with two perennial streams and a first to third order stream system in the Sitka Spruce zone with alder dominated tributaries. The objective of the RNA is to preserve its riparian and aquatic types as well as the forested watershed for determining ecosystem characteristics and processes and to serve as a monitoring area to gauge effects of management techniques and practices applied to similar ecosystems.

How riparian and aquatic conditions affect fish habitat (for Reneke, primarily cutthroat trout and salmon habitat) and the role that fish play in the system are major questions that research in the RNA would address. Clearly, riparian and aquatic conditions in Reneke Creek are very important in meeting the objectives of the RNA.

Cursory review of the information submitted in the March 3 Tillamook County Department of Community Development notice indicates that establishing a rock quarry on Tax Lot 502 (T3S,R10W,Sec.31) represents an irretrievable commitment of resources affecting the lower main stem of Reneke Creek and its associated anadramous fish habitat.

Development of a rock quarry and associated continued use and maintenance of the access road within the watershed containing the RNA have the potential to impact the riparian area and stream through continued sediment imputs and higher risk of landslides. Further, it is possible that a quarry would disturb

non-riparian-dependent wildlife use and habitat which are part of the natural ecosystem. While affects associated with road-building and logging may have impacted the lowest portion of the watershed, recovery of a natural condition in the upland, along the creek, and within the channel may be delayed or may never return to natural ranges with continual disturbance and traffic-related effects.

While these concerns apply to the lower portion of the main stem of Reneke Creek within the boundaries indicated in the Siuslaw LRMP, they also indicate that extending some degree of natural area management to the entire watershed is a desirable objective. We may consider partnerships or changes in Forest boundaries to prevent further impacts to the watershed as well as to evaluate stream rehabilitation needs in Reneke Creek.

In summary, I believe that development and use of a quarry adjacent to the Reneke Creek RNA could threaten the objectives for which the RNA was proposed.

United States Department of Agriculture
Forest Service
Hebo Ranger District
P.O. Box 324
Hebo, OR 97122
503 392-3161

1560

April 27, 1993

Department of Community Development
201 Laurel Avenue
Tillamook, OR 97141

Mr. Affolter,

This letter is in response to the request for a conditional use permit for a rock quarry by Stuwe Land and Timber Company at T.3 S., R.10 W., Sec. 32, SWSW.

Adjacent to the proposed site is Reneke Creek. The entire National Forest portion of Reneke Creek drainage has been proposed as a Research Natural Area (RNA). As such, the drainage would be set aside from many forest practices and studied to see how the natural processes of ecosystem changes compare to similar areas that have been manipulated. Please see the attached letter from Cindy McCain, the Forest RNA Coordinator.

The proposed development of a quarry would have a high potential to impact the proposed RNA; quarry and road sediment could enter Reneke Creek and the drilling/blasting/hauling of materials could displace wildlife.

Based on all of the information presented to me, I oppose the issuance of a conditional use permit for the rock quarry.

DONALD N. GONZALEZ
District Ranger

dng

United States Department of Agriculture
Forest Service
Hebo Ranger District
P.O. Box 324
Hebo, OR 97122
503 392-3161

1500

April 28, 1993

Lynda K. Steiner
9165 SW Elrose Ct.
Tigard, OR 97224

Dear Lynda,

Thank you for your follow-up letter. I am not aware of the logging/quarry meeting you mentioned, but I'm sure I will receive the information presented.

Yesterday the advisory committee to the Department of Community Development, (DCD), which consists of a representative of the Oregon Department of Forestry, Bureau of Land Management, the Small Woodland Owners Association, Timber Mills Association, as well as the Forest Service. I presented a letter to the group that voiced my opposition to the quarry as it is proposed (see the attached letter). My biggest concern is the chance of sediment entering Reneke Creek.

The committee said that normally the development of a quarry on forested land is compatible with the zoning standards. The committee was also concerned with the potential for sedimentation, and recommended denial of the conditional use permit as it was presented. If the applicant can show how his operation will not cause sedimentation and be assured that it will not happen, then the committee would reverse its opinion.

Before I left the meeting, I gave a copy of your letter to the Vic Affolter, the director of the DCD.

If you have any other concerns or comments about the management of Reneke Creek, please let me know. You are welcome to come into the office and talk with me anytime you like.

I will make sure that your name is still on the mailing list for forest decisions and meetings.

DONALD N. GONZALEZ
District Ranger

dng

Mr. & Mrs. Dewey Mallery
26255 Sandlake Road
Cloverdale, Oregon 97112
965-6514

April 16, 1993

Department of Community Development
201 Laurel Avenue
Tillamook, OR 97141

Mr. Chairman, Ladies and Gentlemen of the Commission:

This letter is to oppose the conditional use of a rock quarry on Tax Lot 5600 of Section 32, Township 3 South, Range 10 West of the Willamette Meridian, Tillamook County, Oregon. My property abuts south of the access to the proposed rock pit.

Sandlake has been set aside as an estuary, recreational usage, and forestry area and a rock pit is not consistent with the intent and purpose of the Oregon Forest Practices Act.

The logging has already affected the small game animals, deer and elk on my property. Currently, there is very little wildlife left on my property. I have also observed a reduction in the bird population since the property was logged last year.

The gravel trucks will greatly increase the noise level at my home because they will be using jake brakes coming down hill to gain access to the Sandlake road. Sandlake road will not tolerate extra use by 50,000 pound rock trucks. Please note the deplorable condition of the road at present. Many pot holes and failed grades show throughout from the Sandlake Road Junction of 101 to Pacific City. We do not need to add to a condition that is intolerable at this time.

Any time there is an operation of this size, mechanics and oilers will be working all hours of the night just as the loggers did last year. It seemed like they were pounding and welding all night long during the logging of July through October of 1992.

There is NO shortage of available rock in this area. Kimber's rock quarry has been open since 1940 and they have a million yards plus of rock available. There is also another quarry 4 miles south in the Woods area that is active with a million yards plus available. When the Oregon Department of Transportation decides to upgrade highway 101 they will most likely designate an on the job rock site for the improvement. The demand for rock in this area can be easily met with the existing quarries now and in the future.

Whenever blasting is done shock waves will impact the surrounding homes. Sometimes cracked foundations and blockage of aquifers can occur. I am also concerned about the proposed quarry's impact on the creek that crosses through my property and any possible violation of my water rights.

Please join me and vote no to this proposed rock pit. It makes no economic sense and will certainly adversely affect the area. The rock quarry is not needed and will negatively impact Sandlake recreation area for years to come.

Sincerely,

Dewey Mallery
Elaine Mallery

Tillamook County Planning Commission
201 Laurel Avenue
Tillamook, OR 97141
(503) 842-3408

Example of Petition signed by local residents

WE, THE UNDERSIGNED, AS PROPERTY OWNERS AND CONCERNED CITIZENS OF SANDLAKE AND TIERRA DEL MAR COMMUNITIES, OPPOSE THE PROPOSED DEVELOPMENT AND MINING OF AN UPLAND AGGREGATE QUARRY SITE LOCATED EAST OF SANDLAKE COUNTY ROAD JUST NORTH OF TIERRA DEL MAR, TAX LOT 5600 OF SECTION 32, T. 3 S., R. 10 W.

Some major reasons against the proposed quarry are as follows:

1. Sandlake and surrounding forest lands are inhabited by many endangered wildlife species and their habitat could seriously be impacted by a quarry.

2. Area road conditions are awful now and cannot support future hauling of heavy loads of rock.

3. More truck traffic on Sandlake road will increase the danger for bikers and vacationers with children enjoying the area.

4. The dust, noise and traffic from such an operation will interfere with Sandlake being a protected estuary. Sandlake-Tierra del Mar areas are recreation and residential properties. Property values will decrease with a quarry present.

5. We have adequate quarries in south Tillamook County; therefore, another is unnecessary.

6. Other Comments_____

_____

_____

_____

Signature:_____

Print Name:_____

Address:_____

_____

April 27, 1993

Department of Community Development
201 Laurel Avenue
Tillamook, Oregon 97141

Mr. Chairman, Ladies and Gentlemen of the Commission:

By this letter, the Tierra Del Mar Community Association, representing property owners in Tierra Del Mar, strongly oppose the proposed development and mining of an upland aggregate quarry site located east of Sandlake Road just north of Tierra Del Mar, Tax Lot 5600, Section 32, T.3S., R.10W..

Reasons for opposition are as follows:

1- The dust, noise, and increased truck traffic will have an adverse effect on the Sandlake-Tierra Del Mar area. Sandlake Road presently is in poor condition, thus heavy rock/gravel trucks will further erode its condition. Increased truck traffic on Sandlake Road will increase danger for bikers and vacationers with children enjoying the area.

2- Wildlife species indicative of the area will be adversely impacted. Forest lands surrounding the proposed quarry site are preserved for threatened and endangered species such as the bald eagle, the northern spotted owl, the marbled murrelet. Sandlake estuary is home to the endangered brown pelican, blue heron and other significant water fowl species. Noise from blasting, rock crushing and truck traffic will put their present habitats in jeopardy.

3- Water quality of Reneke Creek may be at risk due to soil removal and erosion from surface water runoff. Reneke Creek flows into a fresh water marsh. Remnant chum salmon and cut-throat trout will further decline in numbers if water quality deteriorates.

4- Scenic quality of the area has currently been adversely impacted by the poor job of clear-cut and burn on the proposed site for the quarry. The aesthetic beauty of the area will further be degraded by viewing quarry equipment and rock/gravel trucks going up and coming down from the quarry site.

We, as a community, urge you to oppose the permit for development of this quarry so we may insure maintaining the unique, biological, visual, and recreational qualities this area portrays.

Sincerely,

Jim Spring

Jim Spring
President of the Tierra Del Mar Community Association

munity Association
P.O. Box 344
ific City, OR 97135

July 12, 1993

Mr. Vic Affolter, Director
Department of Community Development
201 Laurel Avenue
Tillamook, OR 97141

Dear Mr. Affolter:

It was with great interest that I read the Headlight-Herald of July 7 reporting on your presentation to the Tillamook Chamber of Commerce. I could not agree more with you about the need for community consensus in making decisions about development. Indeed, it is very important for the people to be involved as much a possible in setting priorities for the long term to decide the county's future.

I note that below that article is another one wherein you discuss the need for an amendment and an overlay zone to identify future mineral and aggregate sites. I hope you intend to involve the community and gain consensus on proposed sites and overlay zoning proposals.

I recently was involved in a proposed gravel site across from my home on Sandlake Road. Only a very small number of people were notified about the proposal. In my own case, it was my neighboring property owner who lives in *Idaho* who phoned me about the proposed gravel pit. It would have been more logical if someone in Tillamook County planning had notified me and others about the proposal, since it has an impact of "... noise, dust, and traffic." as you are quoted in saying about mining. Any overlay proposal should have input from all the people involved, not just the miners and the planning department. It sometimes seems that the community development department has the perception that homeowners are whiners and complainers saying "not in my back yard" instead of people with legitimate concerns which need to be considered. I hope the amendment spoken of and any overlay proposals are not a back door way to get a gravel pit in against strong neighborhood and environmental concerns.

I trust that you plan to send out as much information about any overlays and amendments on any mining or aggregate sites before they are decided on to the widest number of people. That is the way to get the consensus you so eloquently spoke about to the chamber. Thank you and compliments on your speech.

Sincerely,

Michael St. John
26260 Sandlake Road
Cloverdale

Mailing address:
2338 NE 18
Portland, OR 97212

c: Jerry Dove, County Commissioner

July 28, 1993

Tillamook County
Department of Community Development
Attn: Vic Affolter, Director
201 Laurel Avenue
Tillamook, Oregon 97141

Dear Mr. Affolter:

In amending your departments comprehensive plan on aggregate resources in Tillamook County, **public input** should be included before such a plan is implemented. Will there be an opportunity for residents of Tillamook County to comment on and be part of the final decision in locating quarry sites and determining the overlay zones?

Development of aggregate sites must not conflict with residential development(present or future), special wildlife habitat areas, or water quality. In my opinion, the land issue of the decade is **water quality and quantity**. Our rivers, estuaries, lakes, streams, creeks, secondary tributaries, spring water and underground aquifers must be protected from environmental damage from quarry sites, road building and clear-cuts. Before a quarry site is protected for future development, an environmental impact statement should be a necessary part of the decision. Will your department include environmental analysis of those sites considered?

Please inform me on this process of amendment to aggregate resources. I would like to be notified on site considerations, overlay zones, and rules and regulations for development of an aggregate site.

Environmental quality of our county greatly depends on those of us making decisions today. Let's make the right ones!

Sincerely,

Lynda K. Steiner
9165 S.W. Elrose Ct.
Tigard, Oregon 97224 Tierra Del Mar Address: 5625 Jasmine Avenue

17 ATTACHMENT

"TIERRA DEL MAR BEACH CLOSURE TO MOTORIZED VEHICLES GRANTED BY THE DEPARTMENT OF TRANSPORTATION PARKS AND RECREATION DIVISION AFTER LOCALS FILE PETITIONS"

April 19, 1989

Dear Tierra Del Mar Property Owner:

The State of Oregon will hold a hearing on April 29, 1989 at 10:00 am in the Tierra Del Mar Community Hall on Bilyeu Avenue in Tierra Del Mar. The hearing will be conducted by Mr. Pete Bond, Ocean Shores Coordinator, Oregon State Parks Division, and Ms. Sallie Jacobsen, Regional Coordinator. The reason for the hearing is to take oral and written testimony to determine if the beach at Tierra Del Mar should be closed to motor vehicle traffic for the entire year. Currently, the beach is closed from May 1 through September 30.

The hearing was called for when 26 people signed a petition asking the state to close the beach year-round. Previously, the Tierra Del Mar Community Association had polled its membership and, with 52% returning questionnaires, the response was 2 to 1 in favor of year-round closure.

The concerns of some of our residents are: (1)safety on the beach from automobiles, motorcycles and 3-wheelers; (2) dune damage caused by 3-wheelers, and (3) loss of logs essential for dune build-up to wood cutters. Other residents felt that existing state laws were sufficient to control traffic.

We have been advised that the State of Oregon will seriously consider the wishes of the community if it has a strong opinion. In order to give the state a true feeling of our community, we are asking that you return the enclosed petition to the TDMCA by April 28. These petitions will be presented as a block representing the vote of our community. Your response is most important. Thank you.

Sincerely,

Jim Spring

Jim Spring,
Chairman, Tierra Del Mar
Community Association

Agreed 4/20/89

May 22, 1989

Dear Tierra Del Mar Community Association Member:

The Annual Meeting of our Association will be at 1:00 pm on Saturday, May 27, 1989 in the TDMCA Hall. The agenda for this meeting will include the following:

ELECTION OF OFFICERS

To be elected for a two-year term: Vice-Chairman, Secretary, Member-at-Large. The Chairman and Treasurer have one year remaining on a two-year term. Please note that only paid-up members are eligible to vote. The $10.00 yearly dues become due on May 27, 1989, the date of the Annual Meeting. The dues may be mailed in or paid at the door. Proxies may be given by a member to any person to represent such member at meetings of the Association. Proxies shall be given in writing and signed by such member, and shall be filed with the Board of Directors.

DUES

As noted above, the yearly dues become due on May 27, 1989, the date of the Annual Meeting. To remove any confusion, all monies received prior to this date of May 22, 1989, are for 1988-89 dues. Our dues run from May to May, the dates of our Annual Meetings.

HIGHWAY LIGHTS

The money to operate the highway lights has been donated for years by residents of our community. The cost of the lights has more than doubled in recent years, and collecting these donations has become more difficult. Last year we asked for donations when we mailed dues statements. Enclosed is a statement for the 1989-90 dues and a voluntary contribution of $5.00 for the highway lights. Your generosity is appreciated.

BEACH CLOSURE

Approximately 80 people attended the April 29, 1989 meeting held by the Oregon State Parks Division at the TDMCA Hall. Our Association presented Mr. Pete Bond, Ocean Shores Coordinator, with 195 petitions for closure year round, and 47 petitions for maintaining the existing policy. Mr. Bond stated that the State will make a decision around June 1.

BINGO

Bingo will start up this Saturday, May 27 at 7:00 p.m. in the TDMCA Hall. Fifteen Saturday nights of fun are scheduled this year. Why not plan to make this a family fun night.

FLEA MARKET AND BAKE SALE

This event will be Saturday, August 5 between 9:00 a.m. and 4:30 p.m. at the TDMCA Hall. Tables will rent for $5.00 each. Reservations should be made early. Food items are needed for the Bake Sale. For further information, please contact Anne Turner (965-6609) or Phyllis Horn (965-6589) for Flea Market, and Kathy King (965-6334) for Bake Sale.

NEIL GOLDSCHMIDT
GOVERNOR

Department of Transportation
PARKS AND RECREATION DIVISION
525 TRADE STREET SE, SALEM, OREGON 97310 PHONE (503) 378-6305

August 30, 1989

Jim Spring
PO Box 245
Pacific City, OR 97135

Dear Jim:

Following a thorough evaluation of the testimony and our own investigation of the proposed closure of the ocean beach to vehicles at Tierra Del Mar, we have concluded a partial closure is warranted during the winter months when the beach is open to motorized traffic.

Our recommendation to the Oregon Transportation Commission will be to permanently close the beach to motorized vehicles during legal holidays from 12:01 a.m. to 12:00 midnight on the subject holidays and on weekends from 12:01 a.m. Saturday mornings to 12:00 midnight Sunday evenings from October 1 to April 30 and to keep in affect the full-time closure from May 1 to September 30. Vehicles would be allowed during the week days from October 1 to April 30. The ban would affect the beach from the Sears Lake outlet north to the mouth of Sand Lake.

Thank you for your patience on this matter and if you would pass on the word to other petitioners and interested parties your cooperation will be greatly appreciated.

Please contact me at 378-5012 if you would like to discuss this further.

Very truly yours,

Peter D. Bond
Beach and Trails Coordinator

PDB:jn
TWO.LTR

cc: John Lilly
Darald Walker

March 1, 1993

Region 2 Planner
Parks & Recreation Department
30600 East 3rd
Tillamook, Oregon 97141

Good Day:

As a resident of Tierra Del Mar, I have been very concerned regarding the unauthorized vehicles driving on the Tierra Del Mar Beach. At present, we have rules permitting vehicles on the beach during designated times of the year per Mr. Peter Bond's decision made a few years ago. However, Tierra Del Mar property owners must continuously call the sheriff for there is a definite problem with people not obeying the rules for driving on this beach. Weekends bring Tierra Del Mar familys to the beach and it has become hazardous to let our children play without constant supervision as vehicles drive too fast and much too close to where children and adults are playing or walking. When the sheriff is called, the unauthorized vehicle is rarely apprehended or fined. I realize this part of Tillamook County does not have close police protection but when possible, when rules are broken, we should have and do pay for this protection.

I hate to think a child or an adult will be seriously injured or die before anything will be done regarding this matter. There are other areas near by which are specifically designated for driving on the sand.

Please add my letter to the other letters regarding a hearing on closing the Tierra Del Mar beach north of the McPhillips entrance to all motorized vehicles for the duration of every day of each year.

Thank You.

Sincerely,

Lynda K. Steiner
5625 Jasmine Avenue
Tierra Del Mar Beach

Mailing address: 9165 S.W. Elrose Ct.
Tigard, Oregon 97224
phone - 639-0951(Tigard)
965-6987(Tierra Del Mar)

Oregon

DEPARTMENT OF
PARKS AND
RECREATION

REGION 2 OFFICE

March 9,1993

Ms Lynda K. Steiner
9165 S.W. Elrose Ct.
Tigard, Oregon 97224

Dear Ms Steiner,

Thank you for letter dated March 1, 1993, regarding vehicle access to Tierra del Mar beach.

We are aware of the problems that are being experienced on Tierra del Mar beach and are in the process of replacing the existing beach access sign.

The new sign, we trust, will better clarify the vehicle access restrictions to prospective user's ie vehicles are prohibited from driving on the beach from May 1 to Sept. 30 and all weekends and holidays.

Your request to close the beach permanently to vehicles cannot be taken any further until such time as we receive similar requests from 20 or more from landowners or residents (ORS 390.668).

Your letter will be placed on file pending the further receipt of similar letters.

Thank you for bringing this matter to our attention.

Herb Stichel

Herb Stichel
Region 2 Coordinator
Region 2 Office

3600 E Third Street
Tillamook, OR 97141
(503) 842-5501
FAX (503) 842-7767

73410-802

Oregon

PARKS AND
RECREATION
DEPARTMENT

South Beach State Park

May 24, 1995

To: Tierra Del Mar Petitioners

Re: **Upcoming Public Hearing**

A public hearing regarding the use of motor vehicles on a section of beach will be held near the coastal community of Tierra Del Mar on Wednesday June 7, at 7:00 pm. The hearing will be located at the Sand Lake Grange Hall, approximately 4 miles north of Tierra Del Mar, in Tillamook County.

You are one of thirty-six residents and property owners from Tierra Del Mar that have petitioned the Oregon Parks and Recreation Department for the closure. As you know, the beach is currently open to street-legal motor vehicles from October 1 to April 30, except for legal holidays and weekends. The area of beach that is subject to the requested closure extends from the northern boundary of Cape Kiwanda State Park northerly to the Sand Lake outlet, and is 2.2 miles long.

The purpose of the hearing is to obtain public testimony and factual information on the citizen request to close the beach at Tierra Del Mar to motor vehicles year-round. Any interested person may attend and make a verbal or written statement. For those unable to attend the hearing, written testimony may be sent by mail postmarked no later than June 21, 1995.

For additional information contact:

Steve Williams
Coastal Land Use Coordinator
Oregon Parks and Recreation Department
5580 S. Coast Highway
South Beach, OR 97366
(503) 867-3340

5580 S. Coast Highway
South Beach, OR 97366
(503) 867-7451
FAX (503) 867-3254

June 8, 1995

Oregon Parks & Recreation Department
Coastal Land Use Coordinator
Attn: Steve Williams
5580 South Coast Highway
South Beach, Oregon 97366

Subject: Closure of Tierra Del Mar beach to motor vehicles year-round.

Dear Mr. Williams:

It was a pleasure meeting and talking to you by phone on June 6, 1995, regarding Tierra Del Mar beach.

In the past, and presently, I have strongly supported closing this stretch of beach year-round to unauthorized vehicles. Rules and regulations permitting vehicles on the beach during designated times of the year have been vastly disobeyed, putting at risk children, adults, and preservation of beach habitat for wildlife. Unfortunately, police protection rarely responds when called upon to enforce current regulations.

Listed below are two categories of concern which I will address--- Human Issues and Wildlife and Habitat Issues.

Human Issues

1. Safety for children and adults are put in jeopardy when vehicles drive too fast and too close to where they are playing and walking.
2. With current development across from the Thousand Trails area and Pacific City, along with future development, we can only expect to see more people and thus more vehicles on Tierra Del Mar beach. I believe it is imperative that we close the beach now before we are faced with a larger problem later in trying to enforce rules and regulations.
3. Numerous areas open to vehicles are in close proximity to Tierra Del Mar beach, therefore, closing this beach will not limit recreational driving on the beach to those concerned about this activity.
4. Special permits can be obtained for handicapped persons, or for other activities which require driving on the beach, thus there are exceptions currently in place.
5. Oceanfront homes in Tierra Del Mar consistently have been broken into over the years as they are easily viewed from the beach which could help in determining if the home is occupied or unoccupied before such a break-in takes place. Limiting vehicles may also limit this type of lawlessness.
6. As a prolific walker to the Sand Lake area via Tierra Del Mar beach north, at all times of the year, but particularly in winter when there are few people visiting the area, I do feel vulnerable to violence because of vehicles permitted on this stretch of beach. Over the past 15 years, I have encountered several incidents I did not feel com-

fortable with involving men in vehicles. This is a concern of many women in Tierra Del Mar and some refuse to walk alone. I will never refuse because walking alone on the beach is a joy in my life. If this closure is permitted, that joy will be enhanced as I, and many others will worry much less about confrontations with people in vehicles.

Wildlife and Habitat Issues

Over the past several years, much attention has been given to the intact shoreline and estuary ecosystem exhibited by the 2.2 miles of beachfront(known as the Beltz Farm) and the Sand Lake area north of Tierra Del Mar. I am supporting every effort in preserving this area for wildlife habitat. Currently, there are two governmental entities which have acknowledged this area for its natural state and are interested in protecting it from future human development.

1. Under the United States Fish and Wildlife Service, the Coastal Barrier Improvement Act of 1990 included this area north of Tierra Del Mar as Unit OR-08 to be protected and accepted into the Coastal Barrier Resource System. Please see my letter dated 1/31/94 to the Regional Director of the USFWS and a copy of the map showing Unit OR-08.
2. Currently, the United States Forest Service, Hebo Ranger District, places the Beltz Farm on its high priority list for adding it to the National Forest System, making it possible to preserve and protect this coastal ecosystem. Please see District Ranger Don Gonzalez's letter, description of the Beltz Farm, maps, and my letter dated 2/10/95 supporting preservation of this area.
3. The abundance of wildlife which is often observed is a rare site. bald eagles, herons, pelicans, along with shoreline and estuary plant life set this area apart from many other coastal ecosystems. If this beach and the Sand Lake estuary is protected, the reintroduction of the snowy plover may become a reality, which I have already volunteered to become involved with. Closure of the Tierra Del Mar beach to vehicles no doubt will become an issue if this area is included in either system, particularly if the snowy plover is reintroduced to the loose, unvegetated sand near the mouth of the Sand Lake esturay. At this point, it is in the best interest for everyone to close the beach to vehicles so this issue will not have to be addressed when enforcing habitat for plant and wildlife species.

Mr. Williams, thank you for this opportunity to comment. I hope you find the time to walk this beach so you may acknowledge and enjoy first hand the beauty, the wildlife, and the natural state Tierra Del Mar beach portrays. Vehicles detract and destruct! Let us keep this area safe for all species. I ask you to close this beach for it is, without a doubt, the RIGHT thing to do.

Sincerely,

Lynda K. Steiner
9165 S. W. Elrose CT.
Tigard, Oregon 97224

Beach address:
5625 Jasmine Avenue
Tierra Del Mar

Oregon

PARKS AND
RECREATION
DEPARTMENT

South Beach State Park

July 28, 1995

TO: INTERESTED PARTIES

RE: Oregon Parks and Recreation Commission to Review Request for Vehicle Closure at Tierra Del Mar

A final decision on whether or not to further restrict vehicle use on the subject beach at Tierra Del Mar will be made by the Oregon Parks and Recreation Commission at its August 9th meeting in Coos Bay. The meeting will be held at the Red Lion Inn, starting at 1:15 p.m. A tentative agenda for the meeting is included with this letter.

The Commission has been provided with a staff report which summarizes the ~~public testimony~~ received during the previous comment period. The report also evaluates the concerns listed in Oregon's "Ocean Shore Vehicle Use Zones Policy" and provides staff recommendations.

Individuals interested in attending the meeting and/or addressing the Commission on this particular agenda item must contact the Commission Assistant **as early as possible.** For further information, see enclosed "Policy for Public Involvement".

Sincerely,

Steve Williams

Steve Williams
Coastal Land use Coordinator

enclosures (2)

5580 S. Coast Highway
South Beach, OR 97366
(503) 867-7451
FAX (503) 867-3254

DRAFT
SUBJECT TO REVISION

Oregon Parks and Recreation Commission

MEETING AGENDA

Wednesday, August 9, 1995
Red Lion Inn, Coos Bay, Oregon
1213 North Bayshore Drive, Coos Bay, Oregon 97420 (503)267-4141

1:15 p.m. Commission Workshop - USFS and BLM requests for beach closures to protect the Western Snowy Plover

2:30 p.m. Chairman's Report, Brian Booth
1) Introductions
2) Consent Calendar
-Minutes of June 22, 1995
-Approve two Scenic Waterway Exceptions
-Request to go to rulemaking regarding:
a) Alcoholic Beverages at Dabney and Bald Peak
b) Require permits for hang gliding, parachuting, hot-air ballooning and parasailing
3) Recent Activities
4) Other matters

2:40 p.m. Public Comment
This time is reserved for public comment to the Commission regarding issues not listed on this agenda. Individual time for comment is limited to 5 minutes to ensure all speakers time to address the Commission.

2:50 p.m. Director's Report, Bob Meinen (* Indicates Update / No Action Items)
1) Ocean Shores Recreation Area - Requested Closures *
2) Land & Water Conservation Fund Grants *
3) Recreational Trails Plan *
4) Deschutes River Boater Pass *
5) Ft. Stevens Master Plan *
6) Oregon State Parks Trust *
7) Other

3:10 p.m. Tierra Del Mar Petition to Restrict Vehicle Use

3:25 p.m. Approval of Three Park Name Changes

3:40 p.m. Approval of Five Park Classification Changes

3:50 p.m. Other matters

3:55 p.m. Adjourn regular meeting

4:00 p.m. Executive Session pursuant to ORS 192.660(1)(e)

Sent to "Other" Commissioners

August 2, 1995

Oregon Parks and Recreation Commission
Attn: Sara Vickerman
1637 Laurel Street
Lake Oswego, Oregon 97034

RE: Oregon Parks and Recreation Comission to Review Request for Vehicle Closure at Tierra Del Mar

Dear Commissioner Vickerman:

Good Day!! I received notice on August 1, 1995, from Steve Williams regarding the commission meeting to be held on August 9, 1995, in Coos Bay. Unfortunately, I will be on vacation and will not be able to address you personally regarding the closure of Tierra Del Mar beach.

May I go on record in strongly supporting closure of this section of coastal beach. Attached you will find my correspondence to various agencies and individuals stating the reasons why I am very much concerned about the future use of this area.

To be brief, and to summarize, I find it imperative that Tierra Del Mar beach be closed to vehicles year-round so we can insure preservation and protection of this unique shoreline, estuary, and all the wildlife indicative of this ecosystem. This beach has strong support for future preservation from the United States Fish and Wildlife Service as they have included this area in their Coastal Barrier Resource System(see attached map). The Oregon Department of Fish and Wildlife along with the United States Forest Service(Hebo Ranger District) believes this pristine area warrants a high priority for acquisition to the National Forest System(see map of Beltz Farm, which encompasses 2.2 miles of Tierra Del Mar beach north to Sand Lake estuary).

There has been much public testimony representing human needs and desires for keeping this beach open. I find it necessary to represent a voice for the wildlife and the ecosystem which must be considered for protection and preservation for their future existence, not ours.

Please join me in recognizing the importance of preserving this wonderful, natural habitat from human selfishness and destruction.

Sincerely,

Lynda K. Steiner
9165 S. W. Elrose Ct.
Tigard, Oregon 97224
639-0951

Tierra Del Mar address
5625 Jasmine Avenue
Tierra Del Mar
965-6987

P.S. May I be informed on your decision? Thank You!!

Oregon

PARKS AND
RECREATION
DEPARTMENT

South Beach State Park

August 11, 1995

Lynda Steiner
9165 SW Elrose Ct.
Tigard, OR 97224

RE: Commission Review of Petition to Ban Vehicles on Beach at Tierra Del Mar

Dear Ms. Steiner,

Current restrictions regarding motorized vehicles on the beach at Tierra Del Mar will continue following a 3-3 split vote at Wednesday's Parks and Recreation Commission meeting.

This fall, OPRD staff will work to improve the vehicle signs to increase an awareness of the need for safe driving on the beach. We are also investigating ways to provide an increased level of vehicle enforcement on the beach.

Your input into this matter was appreciated. If you have any additional questions or concerns, please feel free to call me at my South Beach office.

Sincerely,

Steve Williams
Coastal Land Use Coordinator

5580 S. Coast Highway
South Beach, OR 97366
(503) 867-7451
FAX (503) 867-3254

18 ATTACHMENT

"COMMUNITY WINS APPEAL AGAINST THE UNITED STATES FOREST SERVICE PROPOSAL TO CLEAR-CUT IN THE BELTZ CREEK WATERSHED"

1

Sent to water users notifying us of proposed timber sale

TIERRA DEL MAR WATER COMPANY
P.O. BOX 58
PACIFIC CITY, OREGON 97135
(503) 285-7165

January 20, 1989

Dear Customer:

There is some important information you should know concerning the drinking water supply for our community of Tierra Del Mar.

The source of our water is Beltz Creek located just north of Roma Ave. and east of Sandlake Road. The land which forms the Watershed is Old Growth Spruce and Alder forest land which lies entirely within the bounds of the Siuslaw National Forest.

The U.S. Forest Service is the final planning stages of a timber sale which will cause approximately 35% of our watershed to be logged by CLEAR CUTTING.

We have reviewed timber sale data compiled by the U.S.F.S. for the Watershed on the east side of the ridge east of Tierra Del Mar. This Watershed provides part of the water supply for Pacific City. In this Watershed no previous timber sale has exceeded 3.5% of the total Watershed area, nor is one planned on Forest Service land which exceeds 6.0% of the Total Watershed area. Additionally, the total Watershed area to have undergone logging within a given ten year period is not planned to exceed 18%.

The contemplated timber sale in the Beltz Creek Watershed dramatically exceeds both the single cut and total cut percentages mentioned above.

We have little reason to doubt that, if completed, this timber sale will seriously damage the source water quality for a number of years and greatly increase the cost of delivering high quality drinking water to the community.

WHAT CAN YOU DO?

Write a letter to the Hebo District Forest Ranger, Mr. E.F. Oram; P.O. Box 324, Hebo, Oregon 97122, expressing your concern about the potential damage to a part of the environment vitally important to your well-being.

The time to act is NOW. This plan for this timber sale is scheduled for completion in about two weeks.

If you need additional information please call or write to me.

Sincerely,

Buck Miller

NORTHWEST FORESTS: DAY OF RECKONING

Watershed logging ignites fight over clean rivers

By KATHIE DURBIN
of The Oregonian staff

TIERRA DEL MAR — Beltz Creek flows through an old coastal conifer forest with some enormous Sitka spruce trees. The water that supplies this quiet, coastal town is drawn from a pool reached by a shaded streamside path. Gravity carries it to a holding tank just outside town.

The filtration system is an ordinary screen wrapped around an intake pipe in a pool upstream. Once a day, a caretaker climbs the path along Beltz Creek and brushes the silt away from the screen with a long-handled broom.

People like it that way — cool water, fresh from the river, untreated with chemicals except the small amount of chlorine that the state requires.

But residents of this quiet, close-knit community are incensed over plans to log in the small forested w[illegible]shed that supplies their drink-in[illegible]ter.

They're worried that logging will silt up the stream and force the small private water company that owns the system to build an expensive filtration plant.

In an effort to halt the logging, they wrote to their local district ranger, the chief of the Forest Service, their senators and congressmen, the governor and President Bush.

More than 100 property owners signed an appeal of a 251-acre timber sale, asking the Forest Service to drop the 30-acre unit in Beltz Creek. When nothing worked, they appealed the Siuslaw National Forest's new 10-year plan.

Their appeal, now in the hands of government attorneys, seeks to add the entire Beltz Creek watershed to an adjacent natural research area to protect it from logging permanently.

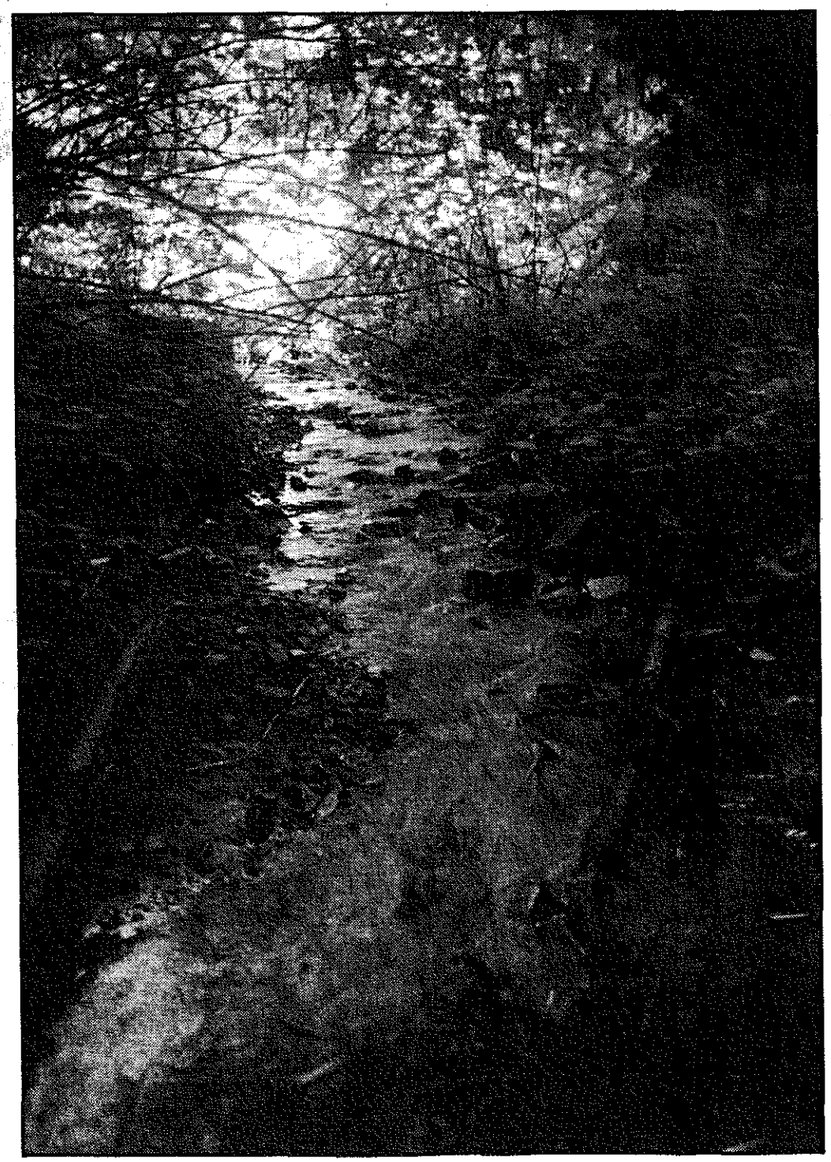
"We have no other source of water," said Ray Steyaert at a recent community meeting. "That forest up there belongs to everybody, and they should listen to everybody, not just the timber industry."

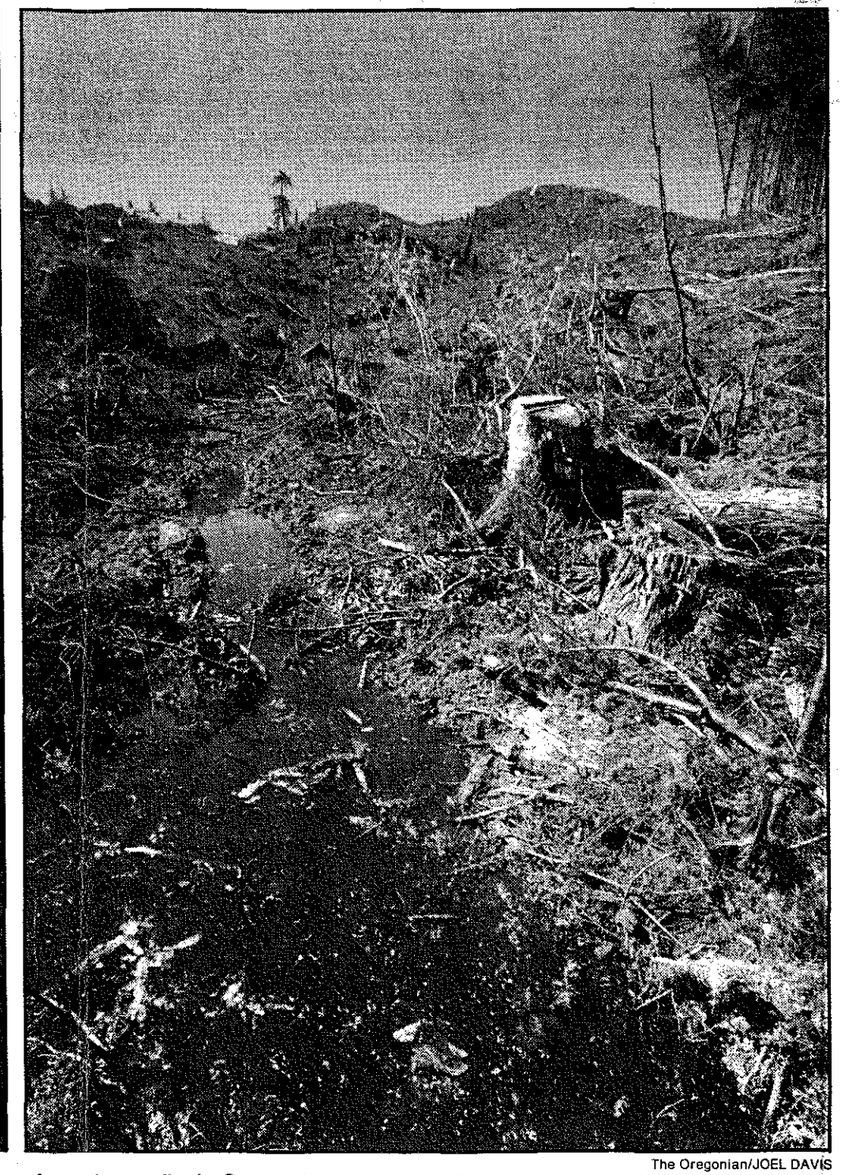
But Wayne Patterson, head silviculturist for the Hebo Ranger Distr[illegible]ays another river drainage in th[illegible]orth Coast Range will pay the price if the agency stays out of the Beltz Creek watershed.

"We'd have to go somewhere else on the district to get the volume," he said.

□

The dispute over Tierra del Mar's water is a small exam-





The Oregonian/JOEL DAVIS

Left: Beltz Creek flows through Sitka spruce in the Siuslaw National Forest. Right: Clear-cut logging killed this stream near Tillamook. Three state agencies share responsibility for water quality in Oregon, but none deals directly with logging's impact on drinking water.

the national forest system said the forests should be managed "for the purpose of securing favorable condition of water flow" as well as to supply timber for a fast-growing nation.

But critics say the Forest Service too often has emphasized timber at the expense of clean water.

to the state Department of Environmental Quality.

The DEQ employs only four people statewide to monitor upper watersheds where siltation from logging and road-building is most apparent. Such monitoring must occur before anyone can begin to

plaints that logging has caused or threatened to cause erosion on private lands, has ordered the state Department of Natural Resources to take a harder line to prevent damage to watersheds.

The board designated 29 river drainages across the state for

Mar than one 30-acre clear-cut, says Lynda Steiner, a Tigard housewife with a biology degree and a beach house at Tierra del Mar who has led the "Save Beltz Creek Watershed" campaign.

"Once they build this (logging) road and have a plan, every 10 years

BELTZ CREEK

Residents of this small town on the north Oregon Coast have appealed the new Siuslaw National Forest plan to halt logging in the Beltz Creek watershed, which supplies their

path. Gravity carries it to a holding tank just outside town.

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"We'd have to go somewhere else on the district to get the volume," he said.

□

The dispute over Tierra del Mar's water is a small example of a growing conflict throughout the Northwest between the public's need for drinking water and the timber industry's appetite for trees.

Congress wants the Forest Service to supply both.

Nearly 3 million residents of Oregon and Washington draw their drinking water from streams that begin in the mountains of national forests.

In all, the Forest Service manages 2'' watersheds covering nearly 4 ...n acres. Those river systems provide drinking water for most of the region's cities and towns as well as resorts and campgrounds. The Mount Hood National Forest alone provides water to 54 communities, from Portland to The Dalles.

The 1897 Organic Act establishing the national forest system said the forests should be managed "for the purpose of securing favorable condition of water flow" as well as to supply timber for a fast-growing nation.

But critics say the Forest Service too often has emphasized timber at the expense of clean water.

"I don't feel intuitively that the Forest Service manages the forests well for water, certainly not as well as they do for timber," said Buck Miller, owner of the Tierra del Mar water system.

In Oregon, a convoluted regulatory system muddies the waters further. At least three state agencies share responsibility for water quality, but none deals directly with logging's impact on drinking water.

"It's byzantine and it's totally ineffective," said Bob Doppelt, president of the Oregon Rivers Council. "It's almost feudal in that everyone has their own piece and it prevents an integrated way of dealing with the problems."

The U.S. Environmental Protection Agency has delegated enforcement of the federal Clean Water Act to the state Department of Environmental Quality.

The DEQ employs only four people statewide to monitor upper watersheds where siltation from logging and road-building is most apparent. Such monitoring must occur before anyone can begin to correct the problem, said Roger Wood, a DEQ water quality specialist.

The Oregon Health Division, which monitors drinking water only after it is treated and filtered, passes along complaints about murky water caused by logging to the Oregon Department of Forestry, which enforces the Forest Practices Act.

But the Forestry Department employs no hydrologists and defers to the DEQ on water quality issues.

"To know whether you're on a downward trend, you need some sort of a reference point. That's what's lacking," the DEQ's Wood said. "This is an area of water quality protection that really hasn't been rassled to the ground yet."

In Washington, the state Forest Practices Board, besieged by complaints that logging has caused or threatened to cause erosion on private lands, has ordered the state Department of Natural Resources to take a harder line to prevent damage to watersheds.

The board designated 29 river drainages across the state for greater scrutiny and said the department should demand from the applicants for logging permits that their activities not degrade water and other natural resources.

□

The 30-acre patch of Sitka spruce forest at issue near Tierra del Mar is a small part of the timber program in the Siuslaw National Forest, one of the nation's most productive forests. The proposed sale would yield an estimated 1.6 million board feet of mature saw timber — about 4 percent of the timber the Hebo district typically sells annually from land in the North Coast Range.

Several mills from Willamina to Tillamook depend on timber from the Hebo district.

But more is at stake to Tierra del Mar than one 30-acre clear-cut, says Lynda Steiner, a Tigard housewife with a biology degree and a beach house at Tierra del Mar who has led the "Save Beltz Creek Watershed" campaign.

"Once they build this (logging) road and have a plan, every 10 years they'll go in and cut 30 acres," Steiner said.

The Forest Service acknowledged in an environmental assessment that logging would increase the sediment load in Beltz Creek, especially after heavy rainstorms.

Trees along the stream buffer strip blown down by wind also could cause short-term sedimentation, the report said.

However, the Forest Service says it will control sedimentation by leaving 100-foot buffers on both sides of Beltz Creek. The agency also agreed to move logging from the creek where Tierra del Mar gets its water now to another tributary designated as the town's back-up watershed.

Please turn to WATERSHEDS, Page A15

The Oregonian/JOEL DAVIS

Left: Beltz Creek flows through Sitka spruce in the Siuslaw National Forest. Right: Clear-cut logging killed this stream near Tillamook. Three state agencies share responsibility for water quality in Oregon, but none deals directly with logging's impact on drinking water.

BELTZ CREEK

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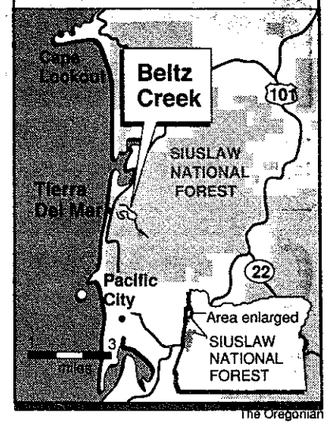
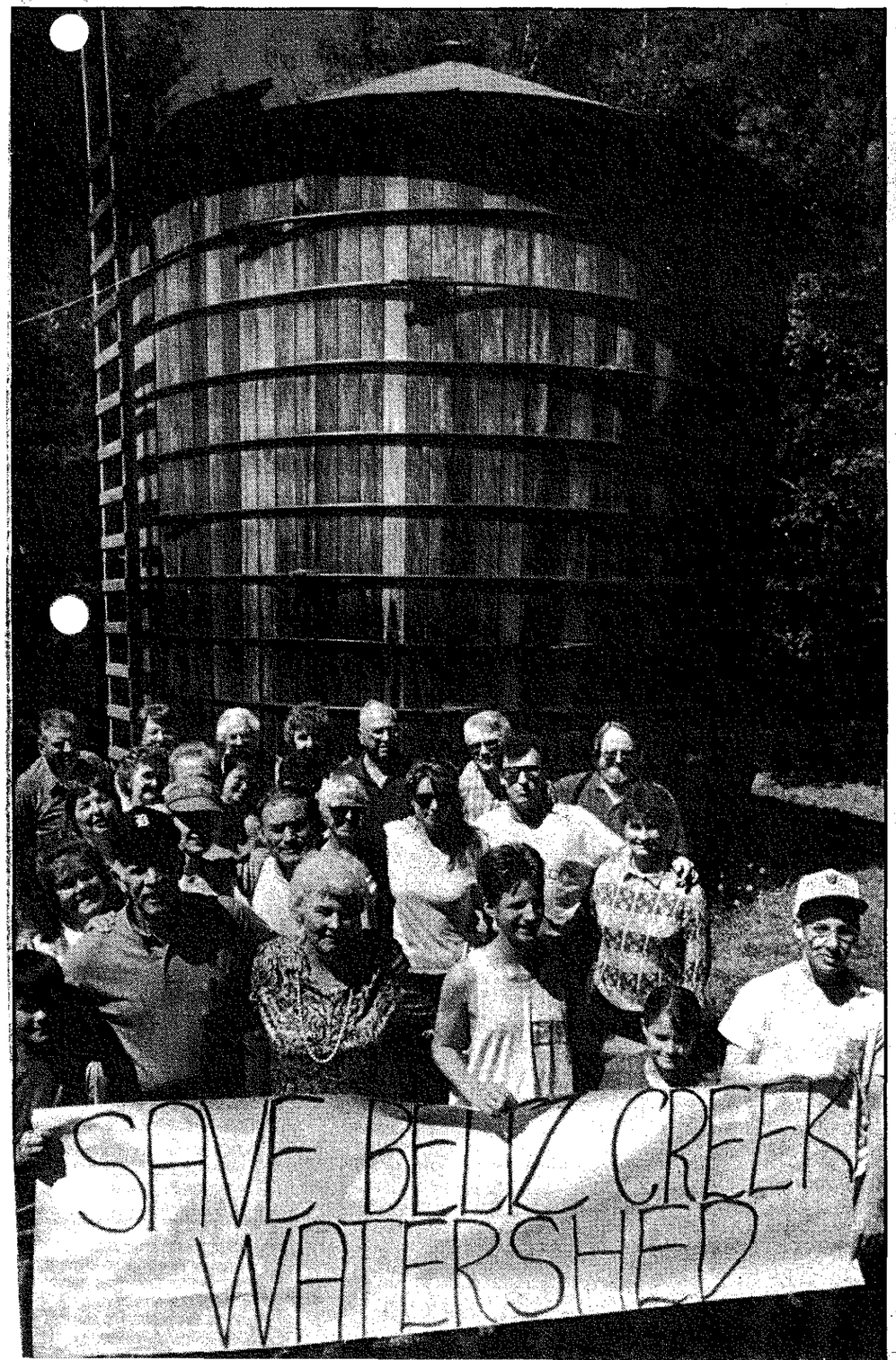


The Oregonian



Watersheds: Logging continues near Bull Run

■ Continued from Page A14

Miller, the Portland contractor who owns the water system, says he worries that logging in the watershed may affect the quantity as well as the quality of Tierra del Mar's water.

But Patterson said the Siuslaw National Forest cannot stay out of community watersheds and still meet its timber sales targets.

"In the national forests, most of the watersheds are scheduled for harvest," he said. "Very few are off-limits, unless there are unstable soils."

Some residents believe the old Sitka spruce in the hills above their town is worth saving for its own sake. Little old-growth Sitka spruce remains on Oregon's north coast.

But Patterson said the forests in Beltz Creek are not considered special enough to warrant protection in a natural research area or other reserve.

"It's not that it isn't a wonderful stand," he said. "It's a very interesting area but it's similar to a lot of others along the coast."

□

Oregon's longest-running battle over logging and water quality involves the Bull Run Reserve, the source of Portland's drinking water. President Benjamin Harrison set aside the 106-square-mile Bull Run watershed in 1892 to provide for "the continued production of pure, clear, raw, potable water for the city of Portland."

For the next 60 years, the forests surrounded Bull Run Lake and the Bull Run River were managed as wilderness. But in 1952 the Mount Hood National Forest said it wanted to begin selling timber in the watershed, arguing that a network of logging roads would help control wildfires. Large-scale commercial logging began in 1958.

Dr. Joseph Miller, whose property adjoined the Bull Run, sued the Forest Service in 1973 to halt logging in the Bull Run. U.S. District Judge James Burns ruled in favor of Miller in 1976, but in 1977 Sen. Mark O. Hatfield, R-Ore., and former Rep. Robert Duncan, D-Ore., won passage of a law that legalized logging in the watershed as long as water quality was protected.

COMING UP

■ **SUNDAY:** The Northwest timber industry is running out of places to cut and the fault is mostly its own. Now the whole region is reaping the consquences.

■ **MONDAY:** Overcutting by private timber owners has left a legacy of log shortages, mill closures and rising log prices.

■ **TUESDAY:** Sales of public timber hit record levels in the late 1980s as the forest products industry, the Reagan administration and key Northwest lawmakers forced delays in new forest plans that called for reducing the cut.

■ **TODAY: Since logging began in the region more than a century ago, the Northwest's waterways have been filling with a fine silt that kills off salmon and trout runs.**

■ **THURSDAY:** It's the pattern of logging as well as the rate that threatens the northern spotted owl and other wildlife.

■ **FRIDAY:** The so-called New Forestry has professional foresters divided over how forests should be managed in the future.

"It's not that it isn't a wonderful area . . . but it's similar to a lot of others along the coast."

— Wayne Patterson, Hebo Ranger District

in its third year, will remove 64 million board feet of timber.

The forest also continues to offer regular timber sales in a congressionally designated buffer section outside the Bull Run watershed.

Opponents, including Gresham-based Citizens Interested in Bull Run, argue that logging in the buffer removes its value as a buffer. Last week, the group filed suit in U.S. District Court to halt a timber sale in the Little Sandy River watershed, which flows through the buffer area.

Frank Gearhart, the group's president, said the sale threatens the quality of a stream that may someday be needed to help supply Portland's drinking water.

But Bruce McCammon, a Forest Service hydrologist, says extensive monitoring on the Bull Run shows that Portland's water is as clean today as it was a century ago.

"Overall, there are no dramatic trends, no significant, practical and reduced stream flows.

New research shows that most river drainages need 30 years to repair themselves after major disturbances such as logging or insect infestations, but McCammon said that only a few forests use the information in planning timber sales.

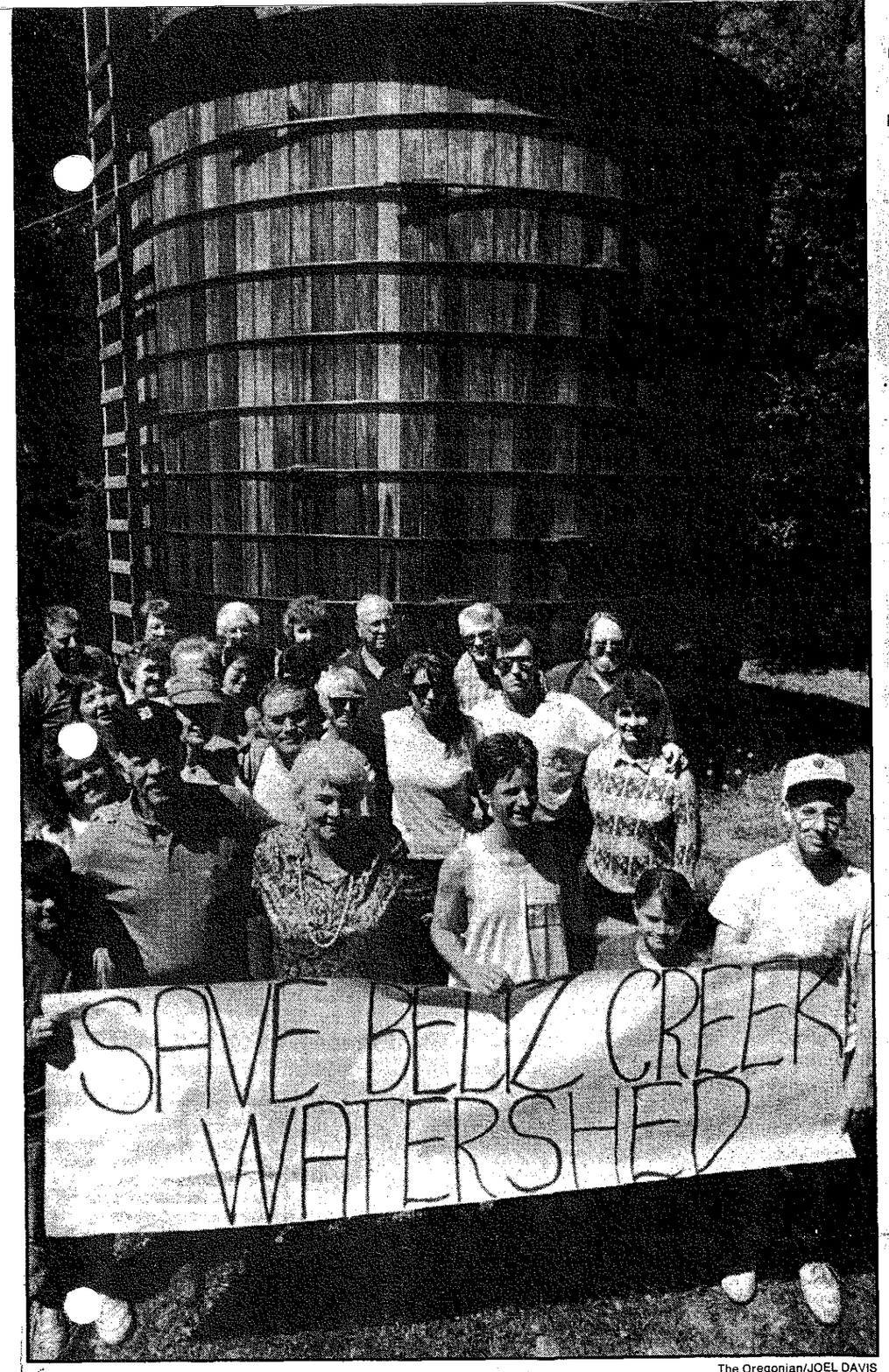
The Forest Service is free to build roads and sell timber in city watersheds as long as it follows "best management practices" required by the federal Clean Water Act — leaving buffers of trees along streams, minimizing soil erosion when logs are removed and constructing water bars on logging roads to divert runoff.

Formal agreements with most of the major cities of the Northwest detail what kinds of activities will be allowed in their watersheds. Cities may veto the use of dust-controlling chemicals, restrict public access, require special techniques to reduce sedimentation from road-building and logging — or, in some cases, block individual timber sales.

"We try to tailor the concerns to individual communities," said Jerry Swank, who is in charge of water quality issues on Oregon and Washington national forests.

But Swank concedes that increased stream monitoring is overdue. He hopes a recent budget increase will help change that.

"There's been a need there for a long time, but there haven't always been the dollars," Swank said. "The



The Oregonian/JOEL DAVIS

Tierra del Mar residents gather in front of the coastal community's water tank. Residents oppose proposed logging in the Beltz Creek watershed that supplies their drinking water.

continues near Bull Run

■ **Continued from Page A14**

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Several scientific studies have shown that roads and clear-cuts dramatically increase the risk of blowndown timber during high winds.

Nevertheless, in 1987 the Forest Service approved a controversial plan to build more roads and salvage timber within the Bull Run watershed that was leveled by a devastating December 1983 windstorm. The salvage operation, now in its third year, will remove 64 million board feet of timber.

The forest also continues to offer regular timber sales in a congressionally designated buffer section outside the Bull Run watershed.

Opponents, including Gresham-based Citizens Interested in Bull Run, argue that logging in the buffer removes its value as a buffer. Last week, the group filed suit in U.S. District Court to halt a timber sale in the Little Sandy River watershed, which flows through the buffer area.

Frank Gearhart, the group's president, said the sale threatens the quality of a stream that may someday be needed to help supply Portland's drinking water.

But Bruce McCammon, a Forest Service hydrologist, says extensive monitoring on the Bull Run shows that Portland's water is as clean today as it was a century ago.

"Overall, there are no dramatic trends, no significant, practical effects on water quality," McCammon said. "The level of protection now is much greater. We have helicopter logging next to sites that were tractor-logged in the 1950s."

Officials of the Mt. Baker-Snoqualmie, Willamette and Mount Hood forests all have concerns about the cumulative effects of logging on watersheds, such as elevated water temperature, degraded water quality and reduced stream flows.

New research shows that most river drainages need 30 years to repair themselves after major disturbances such as logging or insect infestations, but McCammon said that only a few forests use the information in planning timber sales.

The Forest Service is free to build roads and sell timber in city watersheds as long as it follows "best management practices" required by the federal Clean Water Act — leaving buffers of trees along streams, minimizing soil erosion when logs are removed and constructing water bars on logging roads to divert runoff.

Formal agreements with most of the major cities of the Northwest detail what kinds of activities will be allowed in their watersheds. Cities may veto the use of dust-controlling chemicals, restrict public access, require special techniques to reduce sedimentation from road-building and logging — or, in some cases, block individual timber sales.

"We try to tailor the concerns to individual communities," said Jerry Swank, who is in charge of water quality issues on Oregon and Washington national forests.

But Swank concedes that increased stream monitoring is overdue. He hopes a recent budget increase will help change that.

"There's been a need there for a long time, but there haven't always been the dollars," Swank said. "The public is becoming more concerned and that response is reflected in the budget."

For Kari Steinke, who has a vacation home in Tierra del Mar, the issue is simple.

"When you live in Tucson, Arizona, you know the quality of water," she says. "It's wonderful to have good water. I don't take it for granted." •

COMING UP

■ **SUNDAY:** The Northwest timber industry is running out of places to cut and the fault is mostly its own. Now the whole region is reaping the consquences.

■ **MONDAY:** Overcutting by private timber owners has left a legacy of log shortages, mill closures and rising log prices.

■ **TUESDAY:** Sales of public timber hit record levels in the late 1980s as the forest products industry, the Reagan administration and key Northwest lawmakers forced delays in new forest plans that called for reducing the cut.

■ **TODAY: Since logging began in the region more than a century ago, the Northwest's waterways have been filling with a fine silt that kills off salmon and trout runs.**

■ **THURSDAY:** It's the pattern of logging as well as the rate that threatens the northern spotted owl and other wildlife.

■ **FRIDAY:** The so-called New Forestry has professional foresters divided over how forests should be managed in the future.

"It's not that it isn't a wonderful area . . . but it's similar to a lot of others along the coast."

— Wayne Patterson, Hebo Ranger District

May 26, 1990

F. Dale Robertson, Chief
USDA Forest Service
P.O. Box 96090
Washington, D.C., 20090-6090

NOTICE OF APPEAL

Appellants hereby give notice pursuant to 36 CFR 217.9 that they appeal the Record of Decision, Land and Resource Management Plan and the Final Environmental Impact Statement for the Siuslaw National Forest. The deciding officer was John F. Butruille, Regional Forester for the Pacific Northwest Region of the USDA Forest Service. Date of decision was March 7, 1990.

By this letter, appellants specifically appeal only that part of the Siuslaw Forest Plan and its FEIS which allocates the Beltz Creek Watershed(located in the Miles-Reneke Sub-basin, 059F, on the Hebo District, Sec.6, T.4S., R.10W., Willamette Meridian, Tillamook County,Oregon) to Management Area #15. Appellants feel the Siuslaw Forest Plan and FEIS does not adequately consider or recognize the unique biological and ecological characteristics indicative of this 326 acre mature/old growth sitka spruce watershed. During the Forest Planning process, this area should have been evaluated for other management alternatives. Appellants are concerned property owners from the Tierra Del Mar community and greatly appreciate Beltz Creek Watershed which provides not only pristine water, but also magnificant flora and fauna. Tierra Del Mar property owners will experience an irreversible loss of the many uses exclusive to this area if it remains in the present Management Area #15.

PROPOSAL

Appellants propose the Beltz Creek Watershed be protected from present and future plans for sale, harvest, and road building. We propose that the Beltz Creek Watershed, as specified in the Siuslaw Forest Plan as Management Area #15 be reevaluated and designated as a Research Natural Area, Management Area #13 of the Siuslaw Forest Plan.

STATEMENT OF REASONS

1. The Siuslaw Forest Plan and the FEIS recommends Reneke Creek (480 acres) be included as a Research Natural Area. The Beltz Creek Watershed's uniqueness and likeness to the adjacent Reneke Creek is evident by aerial photos and documented on ground surveys. The preservation of Reneke Creek and its viability as a long-term Research Natural Area greatly depends on how forest management on adjacent lands affects its boundaries. In order to maintain and enhance the integrity of Reneke Creek as a Research Natural Area and for the protection of Beltz Creek Watershed, the Siuslaw

Management direction should include both areas as a combined Research Natural Area.

2. Watersheds are not excluded from Research Natural Areas. Beltz Creek is the last remaining unlogged watershed on the Hebo District that provides high quality water to the Tierra Del Mar community. Preservation of Beltz Creek as it now exists could serve as a baseline and reference standard for scientific study of the impact timber harvest and site preparation creates on other logged watersheds within the Siuslaw National Forest. This type of research would be in conjunction with the research of Reneke Creek's and Beltz Creek's shared ecosystem.

3. Reneke Creek and Beltz Creek drain into a freshwater marsh behind Beltz Dike. This freshwater marsh is recognized by the Oregon State Department of Fish and Wildlife as a unique habitat in this area for a wide variety of birds and animals. A small population of cutthroat trout and chum salmon use the lower portions of Beltz Creek. Present and future timber harvest within Beltz Creek Watershed could result in lower streamflows due to erosion, turbidity, and reduced fog drip. The present high quality and quantity of water flowing from Reneke Creek and Beltz Creek is necessary in assuring the existence of this freshwater marsh and the species dependent upon it.

4. The lack of low elevation mature and old growth sitka spruce stands on the Siuslaw National Forest give the Reneke Creek/Beltz Creek area significant biological and ecological importance as diversity is greatest at lower elevations. Forty percent more species of amphibians, reptiles, and mammals are found at 1000' above sea level than at 4000'. Sensitive species such as the bald eagle, pileated woodpecker, marbled murrelet, and the red legged frog, just to mention a few, are well documented within the Reneke Creek/Beltz Creek area. Research biologist, Sarah Greene(article in the National Areas Journal, vol.8 (1), 1988) suggests Natural Areas which protect old growth and wide-ranging wildlife must be integrated into the surrounding landscape rather than separated from it by clear-cuts, roads, developments, and other human modifications. The Research Natural Areas which contain mature or old growth forests constitute only a minuscule fraction of the westside forests. Many RNA's are too small for ecosystem processes within them to operate as they should. The mature sitka spruce of Beltz Creek, if protected, will not only keep Reneke Creek from becoming isolated, but in time, will provide an intact replacement stand of old growth, which is quickly disappearing.

5. If the Beltz Creek Watershed is destined to logging patches of 30 acres of less every 10 years as the Siuslaw Forest Plan dictates, ecosystem fragmentation is evident. By the time 30 to 50 percent of the Beltz Creek drainage has been cut, there will be virtually no interior forest environment left and plant and animal species will decline. Those sensitive species previously mentioned that are found in the Reneke Creek/Beltz Creek area will not benefit from patchwork cutting. Beltz Creek Watershed has an existing pattern of natural blowdown due to the predominance of spruce and hemlock and shallow soils. The January, 1990, storms with winds of over 80mph left additional blowdown in the Beltz Creek Watershed.

It is expected that clear-cut will cause continuous blowdown. A clear-cut or young growth next to Reneke RNA will not be an acceptable edge for protecting species movement and the area's forests from windthrow. Findings by Jerry Franklin on the 1983 windstorm that ravaged forests of the Bull Run Watershed indicated that 81 percent of the 2,200 acres of blowdown were adjacent to clear-cuts or roads! Reneke Creek and Beltz Creek should be connected as one RNA to insure a healthy forest interior which will provide scientific research on watershed quality and plant and animal diversity.

6. Diversity of food resources present in Beltz Creek will be eliminated if clear-cut remains as the prescribed management direction for this area. Elimination of a dependable food supply will lower species diversity. Clear-cut brings with it new types of vegetation and new species. Maintaining the richness of the Reneke Creek/Beltz Creek ecosystem depends on the stability of the present food supply and the relationship the area's species have to it.

7. Clear-cut and road building currently designated for the Beltz Creek Watershed may increase ignition sources, spread noxious weeds, insect pests, and diseases. The mature forest now present in Beltz Creek is least flammable and susceptible to insect and disease invasion as opposed to what it will become once clear-cut begins. The transformed area to young tree plantations will create an increased risk of wildfire, pest and disease outbreaks. Eliminating the present biological diversity found in the Beltz Creek area will eliminate the natural regulatory mechanisms that have sustained this ecosystem through millennia of storms, fires, insect and disease outbreaks. Reneke Creek RNA will face a greater risk of these atrocities if the Beltz Creek Watershed is managed for timber harvest.

8. The aesthetic quality that Reneke Creek and Beltz Creek give the area is magnificant. Whether one is walking on the beach of Tierra Del Mar, picnicing in Sandlake, or driving toward the area on Three Capes Scenic Road, the forests to the east and the ocean to the west portray the beauty of nature. We, as a community, see this beauty and it gives our lives a sense of peace. The transformation of a wonderful diversified forest into a tree plantation will change the area forever.

CONCLUSION

Based upon review of the Siuslaw Land and Resource Management Plan and the Final Environmental Impact Statement, appeallants feel the present allocation of the Beltz Creek Watershed within the Hebo District, to Management Area #15, will result in irreversible, adverse effects on the unique biological and ecological characteristics indicative of this area. Adjacent Reneke Creek Research Natural Area will be put at risk as a long-term viable area for scientific study if the Beltz Creek Watershed remains in its present management direction.

Appellants request withdrawal of the Beltz Creek Watershed from Management Area #15 of the Siuslaw Land and Resource Management Plan. Appellants request the Beltz Creek Watershed area be reevaluated and allocated to Management Area #13 of the Siuslaw Land

and Resource Management Plan. Implementation of this management direction would not only protect from timber harvest the last remaining unlogged watershed on the Hebo District which supplies pristine water to the Tierra Del Mar community, but would also assure present and future opportunities for significant scientific research on the natural ecosystem of the Reneke Creek/Beltz Creek area.

This concludes our appeal.

Sincerely,

Lynda K. Steiner / Al Steiner

Lynda K. & Al Steiner, 9165 S. W. Elrose Ct., Tigard, Oregon 97224

* Kathleen Simpson Myron

Kathleen Simpson Myron, 158 S.W. 11th Ave., Canby, Oregon 97013

* Raymond J. Barrett

Raymond J. Barrett, P. O. Box 263, Pacific City, Oregon 97135

* Darlene C. Barrett

Darlene C. Barrett, P. O. Box 263, Pacific City, Oregon 97135

* John C. Peterson

John C. Peterson, 3618 S. E. 168th Ave., Camas, Washington 98607

* Evelyn Van der Veen

Evelyn VanderVeen, 5265 S.W. 166th Ave., Beaverton, Oregon 97007

* Clarice H. Maxwell Stuart Maxwell

Clarice H. & Stuart Maxwell, 2316 3rd Ave., Tillamook, Oregon 97141

* Evelyn Gruhlke

Evelyn Gruhlke, 9583 S.E. 42nd St., Milwaukie, Oregon 97222

* Stanley D. Vanden Veen

Stanley D. VanderVeen, 5265 S.W. 166th Ave., Beaverton, Oregon 97007

Oregon Trout

P.O. Box 19540 • Portland, Oregon • 97219 • (503) 246-7870

May 29, 1990

Reviewing Officer
F. Dale Robertson, Chief
U.S.D.A. Forest Service
P.O. Box 96090
Washington, D.C. 20090–6090

Siuslaw National Forest Land and Resource Management Plan and Final Environmental Impact Statement
Beltz Creek Watershed (Miles–Reneke Sub–basin, 059F, the Hebo District, Sec. 6, T. 4S., R. 10W., Willamette Meridian, Tillamook County, Oregon)

Dear Mr. Robertson:

This letter is a formal statement of concerns and objections regarding the Siuslaw Plan and Final EIS.

Oregon Trout is a state–wide non–profit conservation organization focused on advocacy for Oregon's wild fish and their habitats. Our 1500–plus members work as volunteers to protect, preserve, and enhance those fish and habitats. The family of one of our at–large directors, the Morrice Simpson family, has owned and used land in Tierra Del Mar since the late 1940s. The family has supported the Lynda K. Steiner appeal (copy of support letter attached). Oregon Trout's comments are based on the personal experiences and observations of the Simpson family and director Kathleen Simpson Myron who have hiked, fished, hunted, and photographed the Tierra Del Mar area during the past forty–some years.

Water Quality and Habitat Concerns

Oregon Trout anticipates the following negative impacts will result from the planned clear–cut and road building in the Beltz Creek watershed:

1). Current boggy ground surrounding the headwaters of the north branch of the unnamed tributary of Beltz Creek located within the planned thirty–acre clear–cut will dry out and cease to function as the "sponge" it now is.

2). Windthrow of forest trees left standing around the clear–cut and roaded area will occur, as it has in the past when the Cape Kiwanda road was built, when the Thousand Trails campground was developed, and when the logging was done just across from Thousand Trails above Sears Lake.

3). Soils on the denuded clear–cut site will lose stability and move downslope as they have elsewhere in the area with the removal of the thick coastal forest vegetation.

4). Sedimentation in the streams of the Beltz Creek watershed, and possibly in the freshwater marsh fed by Beltz and Reneke creeks will occur due to vegetation removal, bare ground response to weather, road–building activities, and logging activity in the headwater area. During high flows, the movement of sediments may be great enough to reach the Sand Lake Estuary, negatively affecting that unique natural estuary's values.

5). Water volume will be lost, especially during late summer months, and during drier water years due to vegetation loss and soil alteration and loss.

6). Overstream cover will be lost due to minimal "leave trees" marked to be left in the riparian buffer zone (8/100 linear feet of stream).

7). Water temperatures will no longer be moderated by the thick vegetation currently protecting the watershed. Summer water temperatures will increase due to lack of overstream cover and decreased water volume. Winter water temperatures will decrease due to exposure to the weather.

8). Water quality will decrease for both human consumption and fish habitat due to the above negative impacts resulting from clear–cutting in the watershed and road building. Throughout the past forty–some years turbidity in water flowing from interior domestic faucets increases in conjunction with severe storm events. Removal of the protective watershed vegetation will increase this effect and most likely result in unacceptably high turbidity during even modest storm events.

9). Fish habitat for spawning steelhead in the headwater tributaries will be lost for many fish generations, as will spawning grounds for the remnant chum salmon. Habitat loss will be the direct result of increased water turbidity, loss of water volume, increased water temperature, sediment–deposition on spawning gravels, etc.

10). A watershed which currently provides habitat for a great diversity of plant and animal life and which offers a multitude of recreation opportunities will be negatively altered for generations of people, plants and animals. Some of the species affected will be the native huckleberry/salal/kinnickinnick plant communities including Indian pipe, American bald eagle, varied thrushes, chestnut–backed chickadees, ruby–crowned kinglets, black bear, deer and elk. Bald eagles have been observed nesting in the forest east of the highway near Sand Lake.

Questions Challenging Information in the Plan and EIS

1). According to Buck Miller, Tierra Del Mar Water Company, only 110 acres of public land exist above the approved auxiliary water intake on the unnamed tributary of Beltz Creek. The Siuslaw Plan limits "clearcut harvest acres to less than 15% of any municipal watershed within any 10–year period." (IV–54, FW–131) Does clear–cutting thirty acres in the Beltz Creek municipal watershed not exceed this limitation?

2). An on–the–ground inspection of the unnamed tributary to Beltz Creek revealed approximately eight conifers marked "W" at the sale boundary along the creek. Additional trees similarly marked are located around the periphery of the sale area. No such marked trees were observed located along the north branch of the unnamed tributary. Do FW–089 Buffer Width limitations (eight conifers at least per 100 feet of stream reach) not apply to the entire stream length? (IF– 49)

3). How does clear–cutting a boggy coastal wooded wetland comply with state and federal wetland preservation statutes, regulations and policies?

4). Why is the Beltz Creek watershed, including all branches of unnamed tributaries, designated management area 15 for timber production rather than management area 13 (Research Natural Areas) for protection of physical and biological units as is the adjacent Reneke Creek watershed?

5). Why is the Beltz Creek watershed, including all branches of unnamed tributaries, not designated management area 5 (Special Interest Areas) for protecting areas with special scenic and other special characteristics (sole municipal water source)?

6). With a stable, good-quality coastal municipal water source/watershed a desirable element of Oregon's tourist industry, why is the Forest Service insisting on clear-cutting the headwaters of this system in spite of local and public opposition?

Summary

Increased water turbidity, temperature, siltation; loss of fish and wildlife habitat and water volume; decreased species diversity; and loss of the sole functioning water source for Tierra Del Mar are not acceptable "trade-offs" for the few dollars the clear-cut may bring to the national coffers. Human residents, as well as resident wildlife and plants, and anadromous fish have the right to expect that their current water quality and source will not be jeopardized by any planned Forest Service activity. The anticipated long-term negative impacts are in no way offset by the questionable projected short-term benefits.

For the above-stated reasons, it is Oregon Trout's opinion that the Siuslaw National Forest Plan and Final Environmental Impact Statement, Standards and Guidelines will not assure water quality.

Sincerely,

Kathleen Simpson Myron
Director, At-Large

158 SW 11th Avenue
Canby, OR 97013

Ph: 503 266-1263

pc: Bill Bakke, Executive Director, Oregon Trout
John Butruille, Regional Forester, USDA Forest Service
Mike Anderson, The Wilderness Society

Encl: Simpson Letter

American Fisheries Society

Oregon Chapter
P.O. Box 722
Corvallis, Oregon 97339

November 26, 1990

Dale Unger, Reviewing Officer
U.S.D.A. Forest Service
P.O. Box 96090
Washington, D.C. 20090-6090

Siuslaw National Forest Land and Resource Management Plan and Final Environmental Impact Statement
Beltz Creek Watershed (Miles-Reneke Subbasin, 059F, Hebo District, Sec.6, T.4S, R.10W, Willamette Meridian, Tillamook County, Oregon)

Dear Mr. Unger:

The Oregon Chapter of the American Fisheries Society (representing more than 400 fisheries and aquatic science professionals) has become aware of concerns about the Beltz Creek watershed in the northern part of the Siuslaw National Forest through the Linda K. Steiner appeal. Our Natural Production Committee has previously commented to the forest supervisor about the need for protecting largely undisturbed watersheds for baseline or control streams. We believe such watersheds are important to provide scientific benchmarks for study of the cumulative effects of forest management. Because the effects of intensive forest management are widespread throughout western Oregon, the relatively few undisturbed watersheds are an increasingly valuable resource that is needed to understand the characteristics of healthy stream ecosystems to which native fish communities have adapted. Efforts to restore or enhance altered stream ecosystems will undoubtedly increase in the future. The knowledge of how to best accomplish this will come from research conducted in these undisturbed watersheds.

The use of a Research Natural Area as a baseline or control stream loses some of its effectiveness if it becomes isolated from adjacent watersheds through intensive forest management or other land use practices. Smaller RNAs are more susceptible to this habitat fragmentation than larger RNAs. For these reasons, we feel the Siuslaw Forest Plan and the Final EIS should have included the Beltz Creek watershed (326 acres) with the adjacent Reneke Creek RNA (480 acres). We feel this combined RNA would provide a more representative and less fragmented control for studies of the effects of forest management on watersheds in the northern part of the Siuslaw Forest and would allow the Forest Service to better monitor the effects of implementing the Forest Management Plan.

We also consider protection of Beltz Creek to be one step in an intensifying effort to slow the rapid decline of aquatic biodiversity that is occurring throughout western Oregon. Chum salmon, cutthroat trout, and steelhead are

believed to use Beltz Creek. A review of the status of Pacific Northwest stocks determined that chum salmon in this area of the Oregon coast are at a moderate risk of extinction (Nehlsen et al. 1990). The distribution and abundance of chum salmon has been greatly reduced from historic levels on the Oregon coast and remnant populations are vital to preserve the species. Distribution and abundance of cutthroat trout has greatly declined in the past 15-20 years and limited data indicate continued decline is occurring (Nehlsen et al. 1990). A major factor listed in these declines is destruction and modification of habitat. Studies have demonstrated that cutthroat trout, steelhead, and chum salmon can decline following timber harvest in a watershed (Moring and Lantz 1974; Hartman 1987; Scrivner 1987; Schwartz in preparation). Other studies have shown that logging may reduce diversity and stability of stream habitat and cause changes in species and age composition of fish in the streams (Bisson and Sedell 1982; Reeves in preparation). Diversity of habitat can also be reduced by natural events such as fire and insect outbreaks, and by climatic events such as floods, drought, ocean conditions, and global climate change. These possibilities require that the Forest Service adopt a long-term approach to preserving sufficient habitat diversity to insure continued biological diversity on our national forests.

Clearly, our knowledge of forest ecosystems is limited and the only way to increase our knowledge is by continued study of the few undisturbed ecosystems that remain. We are just now beginning to see the relatively short-term effects of widescale, man-made changes to the landscape from past forest management. Long-term effects to biological diversity of the forest are not known. It is imperative to preserve habitat diversity on our national forests because of the uncertainty of the long-term effects of intensive forest management. The Beltz Creek watershed is an example of mature/old growth Sitka spruce forest and is an important component in habitat diversity on this portion of the Oregon coast. Much of the land in the northern part of the Siuslaw National Forest and along the coast to the north of the Forest has been intensively harvested on public and private land.

In summary, our organization supports the Steiner appeal and recommends that the Beltz Creek watershed be designated Management Area 13 (RNA) and combined with Reneke Creek as a joint RNA. A combined Reneke-Beltz Creek RNA would allow comparative studies by maintaining two relatively undisturbed watersheds with similar characteristics. Because the area in and around the northern part of the Siuslaw National Forest has been intensively harvested on public and private land in the past, designation of the undisturbed Beltz Creek watershed to an RNA would help sustain some habitat diversity in this part of the forest. Beltz Creek offers an excellent opportunity for the Forest Service to deomonstrate its renewed commitment to aquatic biodiversity in the region.

Sincerely,

Dan Bottom

Dan Bottom, President

Distribution: Linda Steiner
Wendy Herrett, Forest Supervisor
Ed Oram, District Ranger, Hebo
Sen. Mark Hatfield
Sen. Bob Packwood
Rep. Les AuCoin
Gail Achterman, Governor's office
Nancy MacHugh, ODFW, HCD
Paul Brouha, AFS
Fred Swanson, RNA Coordinator, PNW Research Sta.

REFERENCES

Bisson, P.A., and J.R. Sedell. 1982. Salmonid populations in streams in clearcut vs. old growth forests of western Washington. Pages 121-129 in W.R. Meehan, T.R. Merrell, and T.A. Hanley, editors. Fish and wildlife relationships in old growth forests. American Institute of Fisheries Research Biologists.

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Moring, J.R., and R.L. Lantz. 1975. The Alsea watershed study: effects of logging on the aquatic resources of three headwater streams of the Alsea River, Oregon. Oregon Department of Fish and Wildlife, Fish Research Report 9, Portland.

Nehlsen, W., J.E. Williams, and J.A. Lichatowich. 1990. Pacific salmon at the crossroads: stocks at risk from California, Oregon, Idaho and Washington. Draft manuscript to be submitted to Fisheries (American Fisheries Society).

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Schwartz, J. Influence of geomorphology and land use in distribution and abundance of salmonids in a coastal Oregon basin. Master's thesis (in preparation). Oregon State University.

Scrivner, J.C. 1987. A summary of the population responses of chum salmon to logging in Carnation Creek between 1970 and 1986. Pages 150-159 in T.W. Chamberlin, editor. Proceedings of the workshop: applying 15 years of Carnation Creek results. Carnation Creek Steering Committee, Pacific Biological Station, Nanaimo, British Columbia.

9/20/90

Oregon Department Of Fish & Wildlife
Attn: Mr. Dan Bottom
850 S.W. 15th Street
Corvallis, Oregon 97333

Dear Dan:

Just a letter to update you on our plight to save Beltz Creek Watershed from clear-cut next year! If you recall, I wrote you on July 24, 1990, asking for support of this area from the American Fisheries Society as I know you have commented on protective designation of a northern watershed that remains in an undisturbed condition. As you know, our appeal is asking for preservation of the Beltz Creek Watershed as a baseline or control study area to be attached to the adjacent Reneke Creek RNA.

I know you were planning meetings in September to discuss present and future recommendations regarding watersheds. Have those meetings taken place and was the Beltz Creek area discussed?

I have some good news since filing our appeal. Because of Kim Nelson's research on the marbled murrelet this summer, she recommended to the Hebo Ranger the Beltz Creek area be set aside for further study as murrelets were heard and seen in the 30 acre unit to be sold for clear-cut within the Miles Roundtop Timber Sale. The unit has been withdrawn from the sale for now but it does not guarantee preservation forever!!! We could be appealing again next year if our appeal of the Siuslaw Forest Plan is rejected. So for now, we have some time for more research!!!!!

Again, I am asking for your support in helping us win our appeal. Please let me know what the Society thinks of considering the Beltz Creek area as a research area. Can a letter to the Reviewing Officer(David Unger) for Chief Dale Robertson be sent in support of our appeal?

I am anxiously waiting to hear from you when you have any news. We in Tierra Del Mar truly appreciate your consideration of this area.

Sincerely,

Lynda

Lynda K. Steiner
9165 S. W. Elrose Ct.
Tigard, Oregon 97224 phone 639-0951

P.S. For your information, article which appeared in the Oregonian about our fight to save the Beltz Creek Watershed from clear-cut.

OREGON COOPERATIVE
WILDLIFE RESEARCH UNIT

OREGON
STATE
UNIVERSITY

Department of
Fisheries and Wildlife

Nash Hall 104
Corvallis, Oregon
97331-3803

Telephone
503-737-4531

Fax
503-737-3590

23 September 1991

Lynda Steiner
9165 SW Elrose Ct.
Tigard, OR 97224

Dear Lynda:

Thank you for your letter dated 28 August. My crew had a successful summer monitoring murrelets. We located 5 nests and found more than 25 new occupied areas on the Siuslaw National Forest!!!

In response to your question about the Beltz Creek Watershed, it should not be harvested in the foreseeable future and perhaps never. Although the area was not included in the Spotted Owl HCA or Critical Habitat Plans, the area was marked as significant by the Congressional Late Successional Forest Committee and the Siuslaw is not harvesting any murrelet occupied sites at present (once a site is designated an occupied or potential nest site it will always be one). The Forest Service is currently conferencing with the Fish and Wildlife Service on all 1991 sales and sales under contract that have murrelets in them. The biological evaluation for the Beltz Creek area should include a statement about "will adversely affect murrelet populations if logged". The Fish and Wildlife Service will probably not allow them to cut these occupied areas.

However, I suggest that you write a letter to the Fish and Wildlife Service at the address below about the importance of the Beltz Creek area to murrelets. That will help move them towards a "jeopardy" decision and prevent cutting in the area in the short term. Write to: Gary Miller, U.S. Fish and Wildlife Service, Portland Field Station, 2600 SE 98th Ave, Suite 100, Portland, OR, 97266.

I appreciate your interest in murrelets and am glad you accompanied Petra in the field. I will be in touch.

Sincerely,

S. Kim Nelson

S. Kim Nelson

COOPERATORS: Oregon Department of Fish and Wildlife, Oregon State University, U.S. Fish and Wildlife Service and Wildlife Management Institute

United States Department of Agriculture
Forest Service
Hebo Ranger District
P.O. Box 324
Hebo, OR 97122
503 392-3161

2430
September 12, 1990

Ms. Lynda K. Steiner
9165 S. W. Elrose Court
Tigard, OR 97224

Dear Ms. Steiner:

The Miles Roundtop Timber Sale (Proposed) was surveyed for Threatened, Endangered and Sensitive Species during the spring and summer of 1990. Results of that survey indicate use of the area within the Tierra del Mar watershed (Beltz Creek) by marbled murrelets.

This letter is to notify you about a change in implementation of the Miles Roundtop Sale. We are still planning to sell Miles Roundtop in December, 1990, however, that sale proposal will not include the road construction to, nor the harvest of Unit 27A within Beltz Creek watershed.

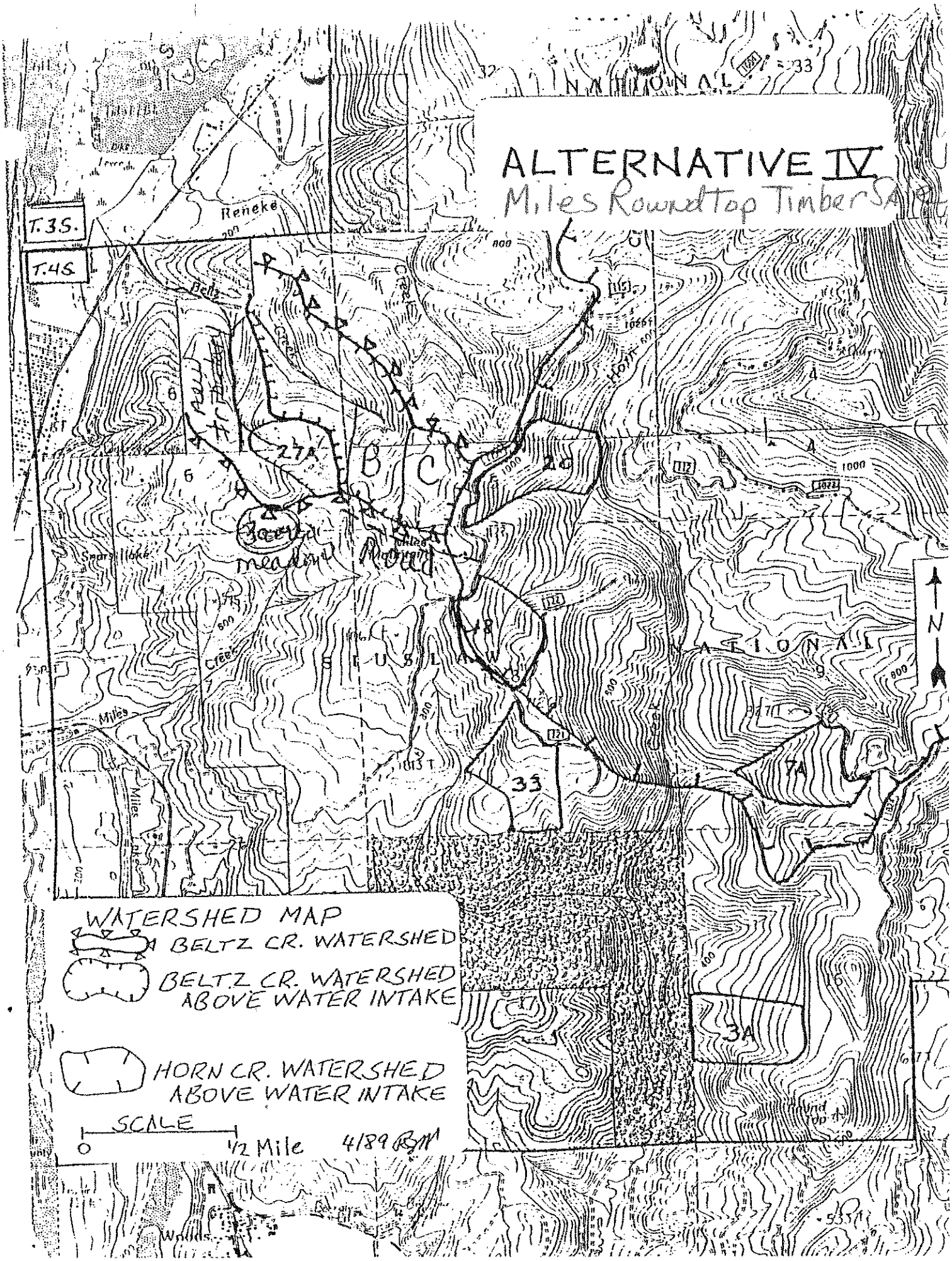
Monitoring will be on-going in this area on a seasonal basis to determine if the murrelets are continuing to use the area. When Regional Guidelines are developed for this species, we will review the situation in that light and then decide whether it is appropriate to offer Unit 27A and associated road construction in a future sale proposal. You will be notified of any change in current plans. We appreciate your interest and concern for management of the Siuslaw National Forest, particularly the Hebo Ranger District, and look forward to seeing you again.

Please contact me if you need additional information.

Sincerely,

E. F. Oram

E. F. ORAM
District Ranger


ALTERNATIVE IV
Miles Rowed Top Timber Sale
T.3S.
T.4S.
Reneke
Beltz
Creek
Miles
Meadow
Road
Smary Lake
Miles Creek
Miles Creek
Horn Creek
NATIONAL
SIUSLAW
NATIONAL
27A
B
C
2a
4
4
6
6
18
8
9
33
7A
3A
N
WATERSHED MAP
BELTZ CR. WATERSHED
BELTZ CR. WATERSHED ABOVE WATER INTAKE
HORN CR. WATERSHED ABOVE WATER INTAKE
SCALE
0
1/2 Mile
4/89

19 ATTACHMENT

"ESTABLISHMENT OF THE NATURE CONSERVANCY'S BRADLEY BOG PRESERVE IN SAND LAKE"

Subj: **FW: Sand Lake area property**
Date: 11/19/2003 9:39:21 AM Pacific Standard Time
From: eprior@tnc.org (Eve Prior)
Reply-to: eprior@tnc.org
To: lyndasteiner@aol.com

Dear Lynda,

Jana Setzler passed on to me your inquiry re TNC's preserves in the vicinity of Sand Lake.

TNC's Bradley Bog Preserve is comprised of 48 acres and has been in TNC ownership since 1987. It is located in the SWSW quarter of Sec. 17 in T3S, R10W, Tillamook County north of Sand Lake. It is a north coast sphagnum-dominated bog and includes one of Oregon's best remaining examples of young dune forest with densely vegetated coastal wetland-plant communities. The preserve harbors what is probably the northernmost population of California pitcher plant (Darlingtonia californica). Conifers, including shore pine and western red cedar are intermixed throughout the preserve with coastal shrubs including wax myrtle (Myrica californica) and cascara (Rhammus purshiana).

20 ATTACHMENT

"SCIENTIFIC REPORTS ON OREGON'S ESTUARIES, WETLANDS, MARINE ECOSYSTEMS AND COASTAL EROSION"

3.3 Summary and Current Status of Oregon's Estuarine Ecosystems

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Report Card

Available evidence on the health of Oregon's estuaries is mixed. Some estuarine indicators demonstrate the significant adverse effects of past and present human activities; conversely, others show the positive impact of recent protective measures. Other indicators suggest continued threats and risks to estuaries, or raise concerns about long-term, cumulative effects of change. Limited data availability for most indicators makes for high scientific uncertainty and underscores the need for more focused research and regular monitoring.

- Historic loss of tidal wetlands is high, but restoration of diked former wetlands is reversing loss trends, increasing habitat availability and the functionality of estuaries for juvenile salmon and other estuary-dependent species.
- Estuarine habitats are well protected from some potential disturbances like dredging, filling, and other major physical alterations.
- Aquatic nuisance species are already well established in most Oregon estuaries; new arrivals and potential introductions pose unknown threats to native species and estuarine ecosystem function generally.
- Freshwater inflow to estuaries is below historic levels, particularly during summer months, based on appropriated withdrawals. The ecological impacts of these changes are not known, but projected growth in coastal population and water use suggest the need for research to determine impacts and the need for minimum estuary inflows.
- Water quality is insufficiently monitored to draw conclusions about the condition and risks associated with increasing point source and runoff pollution introductions that can be expected as population grows.
- Principal threats to estuaries today are continued physical alterations, mostly shoreline modifications for upland development and dredging for navigation projects; invasions of aquatic nuisance species; excessive sediment and runoff pollution from local and watershed sources, and other pressures associated with population and tourism growth.

Indicators

1. Change in area of estuarine habitats (acres and percent).
   - 1a—Change in overall estuary area
   - 1b—Change in area of estuarine tidal marsh and swamp habitat.
   - 1c—Change in area of eelgrass beds.
2. Area of estuarine habitats protected (acres and percent).
3. Aquatic nuisance species (occurrence and extent).
4. Freshwater inflow (flow rate and timing).
5. Estuarine water quality trends.

Introduction

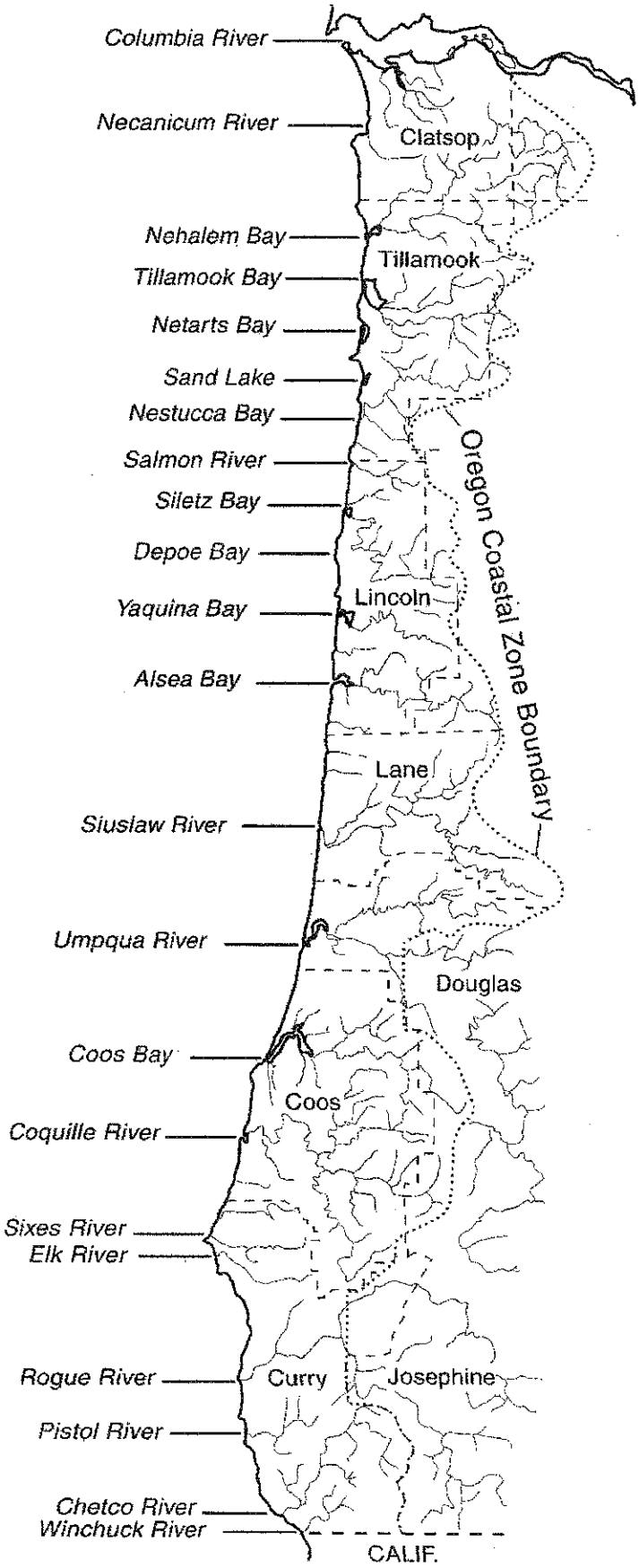
Oregon's twenty-two estuaries (**Figure 3.3-1**) are ecological transition zones, integrating features of the watersheds they drain with those of the marine environment. Physical characteristics strongly influence the structure, functions, and capacity of estuaries to provide valued ecosystem goods and services. Some of these physical characteristics are similar for most estuaries along the coast—the amount of precipitation, solar heat input, and tide levels at river mouths, for example. Other characteristics, such as the estuary size and shape, watershed area, geology, land use, and river gradient make for variety among Oregon estuaries. Regional ocean conditions also strongly influence Oregon estuaries. For example, ocean upwelling or storm events can change water properties in estuaries throughout the region within just one or two tidal cycles (Hickey, 1999).

Estuaries are biological "hot spots" along the coast. They are permanent or temporary home to a wide variety of organisms—some of marine origin, others from upstream, and some unique to the mixing zone. Biological productivity in this mixing zone is especially high, fueled by an abundance of food and tidal energy. Estuarine habitats—marshes, eelgrass beds, mudflats and tidal channels (see: Figure 13, "Estuary Habitats" in *SOER Statewide Summary*)—serve important roles in the life cycles of marine and anadromous species like crab, salmon, herring, migratory waterfowl, shorebirds, and hundreds of less well-known species.

Because estuaries experience great variability in temperature, salinity, tides, and river flow, estuarine ecosystems and the organisms found there are highly naturally resilient to disturbance. However, the cumulative effects of human alterations such as filling, diking, dredging, and wood removal; the introduction of non-indigenous species; and excessive waste disposal have reduced the functional capacity and natural resiliency of these ecosystems.

Humans have been attracted to estuaries for millennia. Native peoples built their villages along their sheltered shores, harvested the abundant salmon, oysters, and other fish and shellfish, and used them for local transportation and trading. Early white settlement of the coast also centered on estuaries, with early cities at Astoria, Newport, Reedsport, and Coos Bay (then Marshfield). White settlers were attracted to estuaries by transportation convenience, and access to seemingly inexhaustible natural resources. Coastal rivers were used to transport logs down to estuaries for storage, processing at local mills, or shipment to distant markets. The 20th century saw growth of existing and new settlements; improvements in ports and navigation; industrial and commercial development; and commercial and recreational exploitation of salmon, oysters, and other living resources. In recent years, residential and recre-

Figure 3.3-1. Oregon's principal estuaries and coastal watersheds.



ational development have replaced industry along some estuary shorelines, bringing with it demands for more shoreline public access and amenities.

Today, a variety of local, state, and federal laws, regulations, and programs are in place to govern the actions of a diverse group of public and private estuary and shoreline users. Subtidal and intertidal lands and natural resources in estuaries are mostly state owned and managed, although there is some federal ownership of wildlife refuges and recreation areas, and concurrent federal regulatory jurisdiction over some uses and activities. A significant fraction of estuarine lands are in private ownership—mostly tidal marshes and swamps above the mean high tide level, and tidelands that were sold off by the state early in the 20th century. Land along estuary shorelines is almost exclusively in private ownership and control, although local governments are required by land use laws to give preference to water-dependent shoreline uses.

Definition and indicators of estuarine ecosystem health

From the ecological perspective, estuaries are healthy when they provide for sustained biological productivity and essential ecological processes, and the maintenance of biotic communities, native species, and genetic and demographic diversity. From a more human-centered perspective, healthy estuarine ecosystems provide sustainable yields of fish, shellfish, wildlife, and host of less visible species they depend upon. Estuaries provide sustainable flows of other valued ecosystem goods and services, such as clean water, and flood and erosion mitigation as well. Yet another way of evaluating estuarine health is to ask whether or not the public and private

Table 3.3-1. Estuarine ecosystem health indicators: type, frame of reference, significance, and principal data sources.

Indicator and Type[1]	Reference Condition	Significance	Data Sources
1 – Change in area of estuarine habitats (acres & percent) 1a—estuary-wide 1b—marsh/swamp 1c—eelgrass Type 1 & 2	Pre-Euro-American settlement area	Directly measures structural integrity and habitat diversity; indirectly measures functional integrity	Thomas, 1983 Boule and Bierly, 1987 Cortright et al., 1987 Simenstad and Feist, 1996 Hoffnagel et al., 1976 Steve Rumrill, pers. com. 1999 Kathy Taylor, pers. com. 1999 Good, 1999 ODSL, 1972 USEPA, 1998
2 – Area of estuarine habitats protected (acres & percent) Type 3	Habitat area in 1977 when estuary plans were initiated	Measures outcomes of policies to protect remaining estuarine habitat and species	Cortright et al., 1987 Fishman Environmental Associates,1987 Good et al., 1998 Good, 1999
3 - Aquatic nuisance species (occurrence & extent) Type 1 & 2	Pre-Euro-American settlement native species (none)	Measures health of estuarine biological communities	Carlton and Geller, 1993 Paul Heimowitz, pers. com. 1999 John Chapman, pers. com. 1999 Steve Rumrill, pers. com. 1999
4 – Freshwater inflow (flow rate and timing) Type 1 & 2	Estimated pre-Euro-American settlement flow	Measures the integrity of estuarine mixing processes	Bastasch, 1998 Quigley et al., 1999
5 – Estuarine water quality trends Type 2 & 3	State water quality standards	Measures physical, biological, and chemical integrity of estuarine waters	NOAA, 1998 Skelton, 1999 (DEQ data) Greg McMurray, pers. com., 1999

[1] Indicator Type 1: Ecosystem structure- and function-based; Type 2: Ecosystem goods- and services-based; Type 3: Environmental policy-based

decisions with potential to affect ecosystem health are consistent with local, state, and national policy and with principles of sustainability.

Each of these perspectives is useful in selecting meaningful indicators. However, choosing indicators is complicated by an incomplete knowledge of how estuaries function and what is most important. High natural variability in climatic and oceanographic conditions influencing estuaries and the lack of good baseline data and regular monitoring of estuarine conditions and changes present additional challenges. Nevertheless, much can be gained by compiling, organizing, and analyzing the data that are available.

Five indicators of estuarine ecosystem health were selected for this report (Table 3.3-1). The choice of indicators was based on their *significance* as measures of ecosystem health or condition, their *sensitivity* to environmental change, and the *availability of sufficient data* to draw conclusions about the direction of change. Three of the indicators are measures of physical or biological structure and function. Each of these can also be directly or indirectly related to significant attributes that the public values—clean water, and high quality habitat for fish, crab, clams, and wildlife, for example. Two indicators measure the on-the-ground outcome of environmental policies designed to protect these valuable ecosystems and resources.

Current conditions and trends

Indicator 1: Change in area of estuarine habitats (acres and percent). Most Oregon estuaries have been significantly altered historically, mostly through the diking and draining of estuarine marshes in the early to mid-1900s for pasture and other agricultural use. Filling of intertidal lands for urban and port development up through the late 1960s further reduced the area of estuaries, as ports grew and navigation channels were deepened to support that growth. At the time, these changes stimulated economic growth and there was little concern or appreciation for the ecological damage being done. Not until the 1960s did growing public concern over these practices lead to new laws that dramatically reduced filling and prohibited new diking. In recent years, preliminary evidence suggests that restoration of tidal wetlands has begun to reverse loss trends. Implementation of salmon and watershed recovery plans will likely accelerate this trend.

Current conditions and trends in habitat examined here include (a) change in overall estuary area, (b) change in tidal marsh-swamp area (the most altered of estuarine habitat types),

Table 3.3-2. Change in total area and area of tidal wetlands (tidal marshes and swamps) for Oregon's 17 largest estuaries, due to filling and diking that occurred from about 1870 to 1970.

Estuary	Actual 1970 Area (acres)[1]		Diked or Filled Tidal Wetland[2]	Estimated 1870 Area (acres)[3]		Percent Change (1870-1970)	
	Tidal Wetland	Total Estuary		Tidal Wetland	Total Estuary	Tidal Wetland	Total Estuary
Columbia	16,150	119,220	30,050	46,200	149,270	-65%	-20%
Necanicum	132	451	15	147	466	-10%	-3%
Nehalem	524	2,749	1,571	2,095	4,320	-75%	-36%
Tillamook	884	9,216	3,274	4,158	12,490	-79%	-26%
Netarts	228	2,743	16	244	2,759	-7%	-1%
* Sand Lake	462	897	9	471	906	-2%	-1%
Nestucca	205	1,176	2,160	2,365	3,336	-91%	-65%
Salmon	238	438	313	551	751	-57%	-42%
Siletz	274	1,461	401	675	1,862	-59%	-22%
Yaquina	621	4,349	1,493	2,114	5,842	-71%	-26%
Alsea	460	2,516	665	1,125	3,181	-59%	-21%
Siuslaw	746	3,060	1,256	2,002	4,316	-63%	-29%
Umpqua	1,201	6,544	1,218	2,419	7,762	-50%	-16%
Coos Bay	1,727	3,348	3,360	5,087	16,708	-66%	-20%
Coquille	276	1,082	4,600	4,876	5,682	-94%	-81%
Rogue	44	880	30	74	910	-41%	-3%
Chetco	4	171	5	9	176	-56%	-3%
TOTAL	24,176		50,436	74,612		-68%	-24%

* basically unchanged thus "natural" designation

Data Sources:

[1] Cortright et al., 1987; Thomas, 1983

[2] Filled lands (Oregon Division of State Lands, 1972); Diked lands (Thomas, 1983; Boule and Bierly, 1987; and unpublished data compiled by Cziesla, O'Keefe, Gupta, and Good, 1999).

[3] 1870 area estimates were derived by adding area of diked and filled land to 1970 area estimates.

and (c) change in eelgrass area. Change in the area of other habitats, such as tide flats, and change in habitat characteristics, such as modified versus natural shoreline, or the length of tidal creeks, are also useful measures, but data for these are not available.

Indicator 1a—Change in overall estuary area. Pre-settlement estuary area compared to present-day area provides a first-order measure of change in the structural and functional integrity of estuarine ecosystems, as well as their capacity to provide valued ecosystem goods and services. The combined area of Oregon's estuaries prior to major alterations (~1870) is estimated to be about 221,000 acres, as compared to about 160,000 acres in 1970—a 24 percent reduction in size (**Table 3.3-2**). Among individual estuaries, loss of area ranges from 81 percent to less than one percent. Since 1970, very little additional estuarine habitat has been lost, owing to strong protective measures put in place (see Indicator 2). In fact, loss trends have actually reversed in recent years, as diked tidal marshes are restored to tidal action.

Indicator 1b—Change in area of estuarine tidal marsh and swamp habitat. The area of tidal marsh and swamp habitat today as compared to pre-settlement times is a more revealing indicator of estuarine ecosystem change than overall change in estuary area. Because they are along the edges of estuaries at the higher tidal elevations, forested swamps and emergent marshes were the most easily altered estuarine habitat—some were filled, but most were diked for agricultural use. Between 1870 and 1970, combined losses of these estuarine habitats totaled more than 50,000 acres for all estuaries combined, or 68 percent of original acreage. Within individual estuaries, losses ranged from 94 percent to two percent.

The former estuarine marshes that were diked are of special interest because they are relatively easy to restore, as compared to lands that were filled and developed. Restoration of these areas is attractive for several reasons. First, they have very high primary productivity and the grasses and sedges that grow there serve as a primary source of detritus, the foundation of the estuarine food web. They also serve directly as habitat for many fish, shellfish, invertebrates, birds, and other wildlife. The status of these estuarine habitats has received increased attention in recent years with the decline of Pacific salmon and listing of certain stocks under the Endangered Species Act. Coastal watershed councils are identifying opportunities for restoration of former or degraded wetlands and implementing projects, spurred on by a growing appreciation of the important functions that estuaries serve in salmonid life cycles. Most of these sites are former marshes that were diked but no longer serve agricultural uses. Some of this restoration is planned and carefully monitored. Other restoration is inadvertent, as dikes or tide gates fail, allowing the ebb and flood of the tide to passively reclaim estuarine habitat.

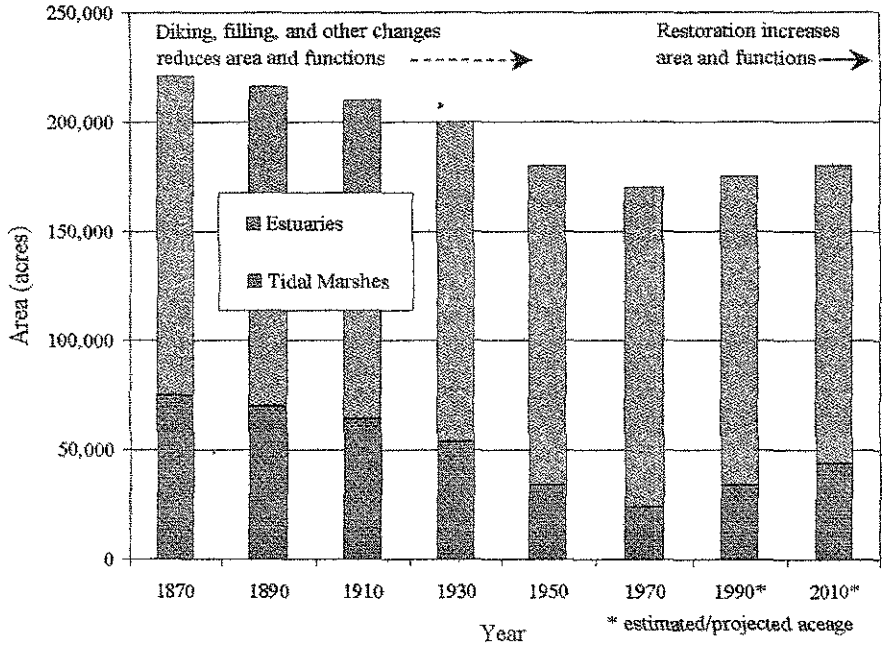
Good data on restored habitat are available for only a few Oregon estuaries. In the Salmon River estuary, the U.S. Forest Service has restored 300 acres of salt marsh as part of a whole-estuary restoration plan and scientists have been monitoring restoration progress for more than 20 years (Robert Frenkel, pers. com., 1999). In the South Slough of Coos Bay, approximately 200 acres of salt and freshwater tidal marshes are being restored as part of an experiment in ecological restoration by National Estuarine Research Reserve scientists (Steve Rumrill, pers. com., 1999). In the Columbia River estuary, somewhat less than 1,000 acres of formerly diked tidal marsh has been restored (Kathy Taylor, pers. com., 1999). In Siletz and Nestucca Bays, and the Coquille estuary, the US Fish and Wildlife Service has restored hundreds of acres of diked salt marsh to tidal flow as part of an effort to improve habitat in the National Wildlife Refuges. Finally, a recent aerial reconnaissance survey of all Oregon estuaries identified 49 probable formerly diked sites that had been breached, but acreage was not included for most sites (Simenstad and Feist, 1996).

Historical habitat loss combined with estimates and projections of habitat restoration conceptually illustrate historic, recent, and projected change in estuarine habitat (**Figure 3,3-2**). Projections are based on the increasing emphasis being given to estuarine restoration and the very low habitat loss experienced in recent years (see Indicator 2).

Indicator 1c—Change in area of eelgrass beds. Native eelgrass beds (Zostera marina) are found along the lower fringes of tidal flats and the shallow subtidal slopes they border. Eelgrass serves a number of important ecosystem functions in estuaries, providing spawning substrate for Pacific herring, a direct food source for migrating black brant geese, an indirect food source for detritus feeders, hiding and feeding areas for young salmon, crab, and many other species, and stabilization for the channels they border (**Figure 3.3-3**). Because the size and density of eelgrass beds vary naturally by as much as 50 percent from one year to the next, long-term trends are a more important indicator of estuarine health than yearly fluctuations. In an inventory conducted in the mid-1970s, eelgrass beds were found to be about 18 percent of total estuarine area, excluding the Columbia, where the estuarine ecosystem is dominated by freshwater inflow and eelgrass beds are rare (Bottom et al. 1979). More systematic monitoring is just getting underway in several estuaries and should provide a basis for understanding natural variability and the effects of human stressors, such as sedimentation, nutrients, and nuisance species (USEPA, 1998).

Indicator 2: Area of estuarine habitats protected (acres and percent). Although a significant fraction of Oregon's estuarine lands have been converted to other uses and some of the remaining areas degraded by pollutants, nuisance species invasions, and navigation improvement projects,

Figure 3.3-2. Estimated change in the overall area of Oregon estuaries and area of tidal marshes (including tidal swamps), 1870-2010. Data for 1870 and 1970 are from Table 2; values for other dates are estimated to illustrate how losses might have occurred and how recent and projected restoration may be reversing historic trends (adapted from Good, 1999).

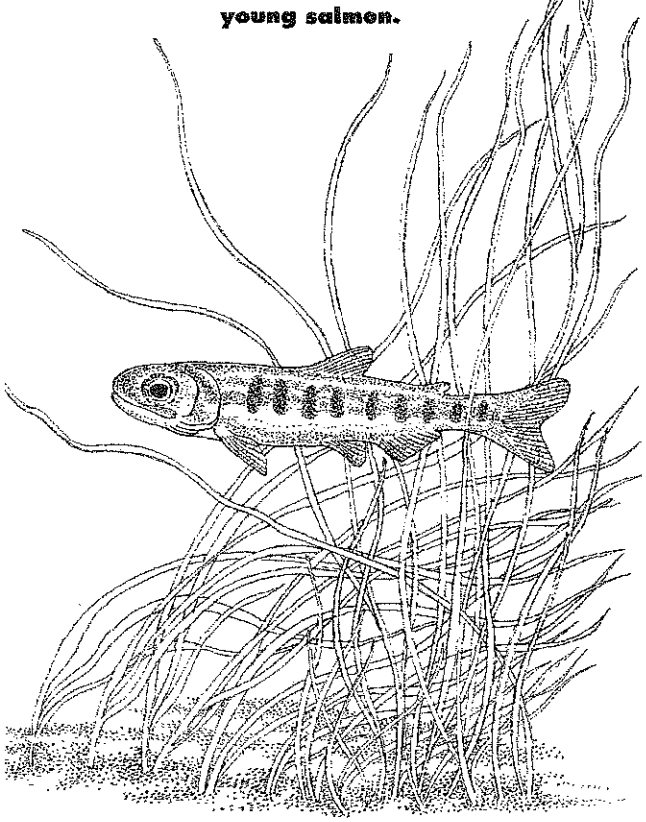


most of the original habitat that existed in the mid-19th century is relatively intact today. Protecting these habitats and the flow of societal goods and services they provide has been a high priority in Oregon for the last three decades. A number of strategies and tools have been used to protect estuaries—land and water use planning and zoning, regulation of physical alterations and waste disposal, and public acquisition and conservation-based land management are among the most important. Most of these approaches do not exclude all uses and activities, but rather are "special management" areas or zones, with some uses and activities excluded or limited to protect important habitat and species. Protected areas can also serve other functions, for example, as relatively undisturbed "controls" for habitat restoration projects and other scientific studies. They also provide hedges against the uncertainty associated with most resource management decisions.

Local coastal plans developed in the 1970s and 1980s following state planning laws resulted in strong zoning protection for estuaries. Ninety-eight percent of estuarine wetlands and 89 percent of subtidal areas were zoned for protection as either *Natural* or *Conservation* management units (**Figure 3.3-4**). Despite this protective zoning, the portions of estuaries that have been set aside for development have proved more than sufficient to meet demands (Good et al. 1998).

Plans alone provide little protection unless there are effective regulatory mechanisms to implement them. In Oregon, local governments regulate estuary and shoreland uses—port docks, restaurants, marinas, and so on. Activities like dredging, fill-

Figure 3.3-3. Eelgrass beds, tidal creeks, and marshes are good hiding and feeding areas for young salmon.



(Sharon Torvik drawing, courtesy of South Slough National Estuarine Research Reserve)

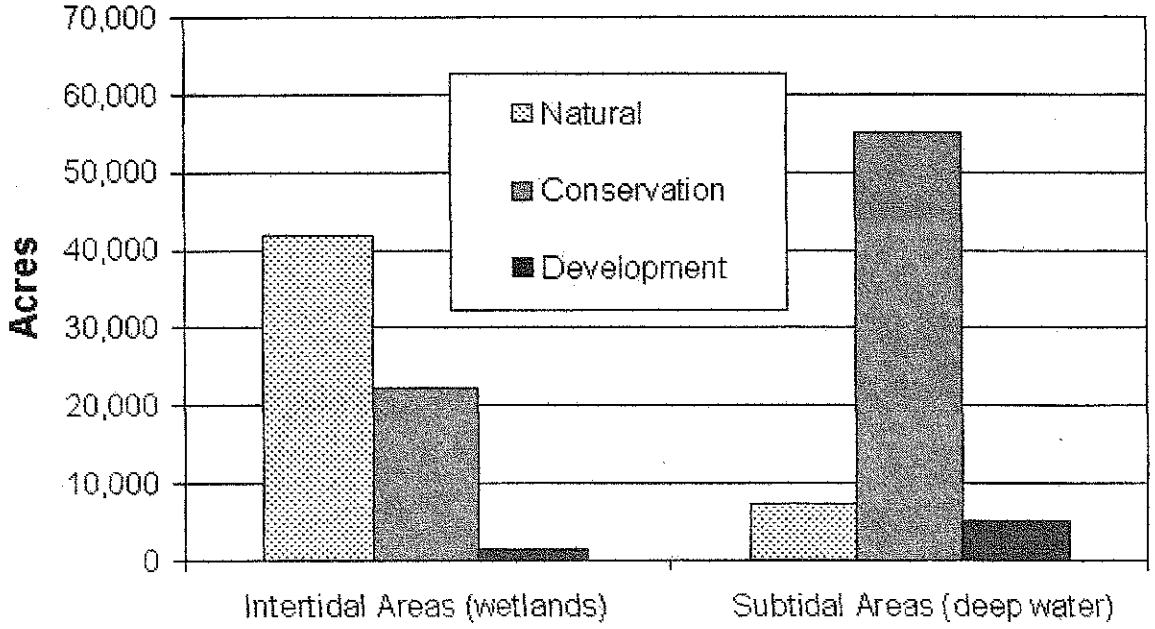
ing, and in-water building, on the other hand, are regulated by the Division of State Lands (DSL) and the US Army Corps of Engineers (Corps). Criteria for issuing permits in estuaries are stringent: proposed uses must be water-dependent; a public need must be served; there must be no alternative upland site that could accomplish the same purpose; and unavoidable impacts must be minimized and compensated for by habitat mitigation. Between 1971 and 1987, just 19 acres of estuarine intertidal habitat was filled (0.03 percent of the 1970 base) (Fishman Environmental Services, 1987). About five acres of habitat were restored or created to compensate for part of that loss. Dredging between 1971 and 1987 involved about 111 acres of estuary area, mostly subtidal areas for navigation channel maintenance. Although data have not been compiled by the state since 1987, it is estimated that filling and dredging acreage have continued to decline since then.

Public acquisition and management for conservation is another important protection strategy for Oregon's tidal wetlands. More than 10,000 acres of tidal wetlands in the Columbia River estuary are managed as wildlife refuges by the US Fish and Wildlife Service. Three additional refuges in the Nestucca, Siletz, and Coquille estuaries protect additional wetlands. The South Slough National Estuarine Research Reserve in Coos Bay is protected for research, education and conservation, and includes 1,310 acres of estuarine habitats and 3,460 acres of upland forests—4,770 acres in all. Private conservation groups such as the Trust for Public Lands, The Nature Conservancy, and local land trusts also hold some estuarine wetlands for conservation management.

Indicator 3: Aquatic nuisance species (occurrence and extent). Some non-indigenous species found in estuaries are highly valued commercial or recreational species—the Japanese oyster (*Crassostrea gigas*), striped bass (*Roccus saxatilis*), and eastern softshell clam (*Mya arenaria*) are examples. Other introduced species, however, are recognized as serious threats to the integrity of estuarine ecosystems, such as the European green crab (*Carcinus maenus*). First found on the west coast in 1989 in San Francisco Bay, green crab were discovered in Coos Bay in 1996, and later in Yaquina and Tillamook Bays. Voracious predators, green crab feed on mussels, oysters, other crabs, shrimp, small fish, and a variety of other organisms, creating potential impacts on local fisheries through direct predation and indirect competition for prey resources. Oregon biologists are also on constant lookout for the Chinese mitten crab (*Eriocheir sinensis*), a species that has become well-established in the San Francisco Bay and Delta region, causing significant damage there as they burrow into dikes.

Introduced species are estimated to make up significant components of Oregon's estuarine flora and fauna today. At least 30 percent of benthic organisms in Yaquina Bay are estimated to be introduced species (John Chapman, pers. com., 1999). In the Columbia, an introduced Japanese clam (*Corbicula manilensis*) dominates tidal flats, while introduced zooplank-

Figure 3.3-4. Combined zoning acreage for intertidal and subtidal habitats in 22 Oregon estuaries.



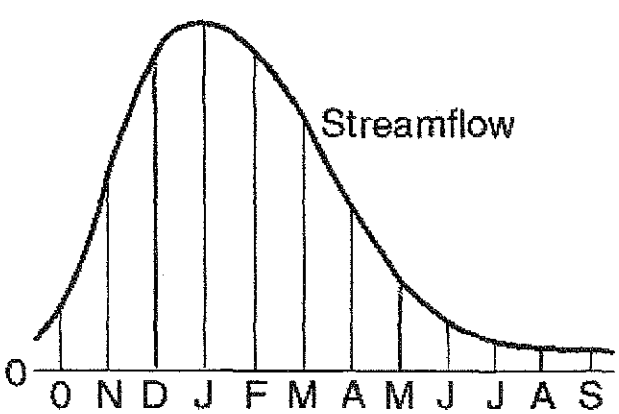
(Data from the *Oregon Estuary Plan Book*, Cortright et. al., 1987)

ton (e.g., the copepod *Pseudodiaptomus inopinus*) make up a significant component of water column species. Scientists sampling ballast water from 159 ships visiting Coos Bay between 1986 and 1991 found 367 species of invading organisms that were ultimately pumped into the bay. All marine trophic levels are represented—carnivores, herbivores, omnivores, deposit and filter feeders, scavengers, parasites, and primary producers. Increasing international trade makes ballast water introduction of non-native species a global problem.

Among invasive plants, Atlantic smooth cordgrass (*Spartina alterniflora*) is considered a major ecological threat to Oregon's estuaries. Native to east coast, *Spartina* was inadvertently introduced into Willapa Bay early in the 20th century along with eastern oysters. The east coast oysters never thrived, but *Spartina* got a foothold, is expanding rapidly today, and has spread to other Washington estuaries (Kathleen Sayce, pers. com., 1998). *Spartina* was also introduced into the Siuslaw estuary, but active efforts to eradicate it there have apparently been successful. Once established, *Spartina* can spread rapidly, invading tide flats, displacing algae beds and mudflat dwellers like oysters, clams, worms, shrimp, and other benthos. In the worst case, a *Spartina* invasion could fundamentally alter estuarine habitat structure and diversity, species assemblages, and ecological processes and functions, although these ecosystem-level effects have not been validated. A hybrid relative, *Spartina anglica*, is also a significant threat, having invaded northern Puget Sound wetlands (Simenstad, pers.com., 2000).

Indicator 4: Freshwater inflow (flow rate and timing). Estuarine ecosystem health is in part dependent on maintaining freshwater inflow within the range of natural variability. The mixing of this fresh water with marine waters from offshore creates the characteristic salinity regime for estuarine plants and animals that makes estuaries so productive. Freshwater entering an estuary may also help dilute pollution and promotes the flushing of wastes out of the system.

Figure 3.3-5. Coastal watershed stream flows typically follow seasonal rainfall patterns.



Coastal watersheds deliver relatively large quantities of water to streams and rivers compared to other areas in Oregon. Coastal basins produce 33.7 percent of Oregon's average annual discharge of water on 8.3 percent of the land in Oregon (Bastasch, 1998). However, because there is no snow pack in the Coast Range, streamflow tends to follow seasonal precipitation patterns (**Figure 3.3-5**). Freshwater inflows may still be within historic ranges during parts of the year, but summer low flows are much less than historic levels, due to consumptive water use by municipal and other users of rivers or streams flowing into an estuary. For example, consumptive water use in the Coquille basin is nearly 80 percent of the total flow available in late summer; in the Necanicum, a smaller north coast watershed, consumptive water use is nearly 60 percent of the total available (Quigley, et al., 1999, based on Oregon Water Resources Department, Water Availability Report System data).

Many coastal communities now experience water shortages during summers—their peak demand period. As coastal population and tourism grow, more and more water will be withdrawn from coastal rivers for municipal and other consumptive uses. The ecological consequences of gradually reducing freshwater inflow to estuaries are not known and little studied. Estuarine salinity zones would be expected to migrate up the estuary over time, in turn stressing and gradually changing the distribution of plants and animals, as well as optimum locations for oyster farming and other uses. Freshwater intakes in the upper estuary may also become brackish as salt water migrates farther upstream.

Indicator 5: Estuarine water quality trends. Water quality in estuaries and nearshore waters is strongly influenced by high natural variability in climate and ocean conditions. At a single estuary sampling site, for example, salinity, temperature, dissolved oxygen (DO), turbidity, pH, nutrients, and other measures may vary greatly from season to season, from week to week, and from high water to low water during a given day. Longer term climatic patterns like interannual El Niños and La Niñas also affect water quality measurements. Finally, the characteristics of an estuary—its size, shape, tidal volume, freshwater inflow, flushing rate, and biogeochemical cycling, as well as drainage basin geology, soils, and vegetative cover—also strongly influen

Water quality measurements in estuaries and nearshore waters reflect the combination of highly variable natural background conditions and human-caused pollution. Most pollution entering Oregon estuaries and nearshore coastal waters comes from upstream sources or direct inputs. Point sources such as municipal sewage, food processing wastes, pulp and paper mill wastes, and other industrial discharges are important sources in urbanized estuaries. However, runoff pollu-

tion such as dairy and other animal waste, leaky septic systems in rural areas, urban storm runoff, and sediment from streamside erosion, construction sites, and logging operations are also important, and especially difficult to detect and control. Other pollution comes from offshore marine sources—spilled oil and marine debris are two examples that affect both the open coast and estuaries.

Data for assessing water quality in Oregon's marine and estuarine environment are sparse. For example, NOAA's National Estuarine Eutrophication Survey found that 10 of 12 Oregon estuaries surveyed could not be assessed because data were lacking (NOAA 1998). Despite this, the study suggested that Oregon estuaries—having large tidal prisms that promote good flushing—had only low to moderate susceptibility to eutrophication, although the trend was probably toward worsening conditions.

Skelton (1999) examined water quality data available from the Department of Environmental Quality for nine estuaries. For all nine estuaries, temperature and dissolved oxygen tend to track expected seasonal patterns—warm with low dissolved oxygen (DO) in late summer (approaching anoxic conditions for some, such as Coos Bay), cold and higher DO in winter. Estuaries surrounded by significant agricultural land uses—Tillamook Bay and the Coquille, for example—have relatively high to moderate fecal coliform concentrations, although other estuaries exhibited occasional high levels following periods of high runoff. Generally, nutrient levels seem to be low and decreasing over time in estuaries classified for management as *Natural* or *Conservation* systems, but increasing in those managed as *Development* estuaries. Given the limited data available, these interpretations must be viewed with caution.

Strengths, threats, and information needs

Awareness of the importance of estuaries from the ecological and human use perspectives has grown dramatically in the past three decades in Oregon, providing cause for optimism about the future of estuarine ecosystem health. Important environmental policy initiatives have been implemented, providing long-term, secure protection from alterations for most estuarine marshes, flats, and seagrass and algae beds. Efforts to control point sources of municipal and industrial pollution have been relatively successful, and policies and programs to control runoff pollution have been strengthened. Projects completed recently for the National Estuary Program in Tillamook Bay and the Lower Columbia River are another institutional strength, providing the coordination and clear guidance needed for continued water quality and habitat improvement in those systems.

Habitat change trends have also reversed, with the large losses experienced up through the 1960s being replaced by modest gains in habitat in recent years as dikes have been breached to restore salt marshes. However, to adequately quantify these trends, more complete data are needed on recent regulatory losses and gains, and on nonregulatory restoration of salt marshes and other estuarine habitats.

Salmon recovery efforts have further raised awareness about the importance of estuaries, through more focused assessment, planning, on-the-ground habitat restoration projects, and monitoring. Recent monitoring has demonstrated that juvenile salmon and many other species are using restored areas in Coos Bay, the Salmon River estuary, and other locations. However, additional monitoring is needed to better understand the full range of ecosystem functions, goods, and services that restored estuarine habitat (and undisturbed control areas) provide. Such data are important in setting priorities for the use of limited watershed restoration funds.

Increasing coastal population, new development, and the growth of tourism could, if not controlled, overwhelm the positive steps that have been taken in recent decades to protect and restore Oregon estuaries. Point source and runoff pollution from watersheds, shoreline land uses, and oil spills continue to threaten the quality of estuarine waters. New introductions of non-indigenous species also pose serious threats to the biological integrity of estuaries. Uncertainty about the estuarine impacts of increasing water withdrawals in coastal and Columbia basins also pose risks, as does the ecological uncertainty surrounding Columbia River channel deepening. There are numerous specific examples of these threats.

Eelgrass beds, for example, are at risk from three major large-scale ecological stressors on Oregon estuaries: sedimentation, nutrients, and introduced nuisance species. Sedimentation and nutrient load to Oregon estuaries are increasing due to land-use practices and human population growth, reducing water quality and placing eelgrass beds at risk. Increased nutrients may also stimulate algae blooms which can smother and uproot eelgrass. Non-indigenous nuisance species also pose a threat to eelgrass habitat in Oregon estuaries, particularly *Spartina*, which can invade and displace eelgrass in at least part of its tidal range (NOAA, 1998). Separately or in combination, these threats could shift the competitive advantage from eelgrass to other species that provide less functional value (USEPA, 1998).

There are many pathways for introductions of aquatic nuisance species, but the most significant source and threat today is from ballast water discharged by ships calling at Oregon ports from locations throughout the world. Frequent disturbance of existing habitat by natural events like seasonal flooding, storm waves, and erosion, and human activities like dredging, create new substrate that can be colonized rapidly by these and other opportunistic species. Construction of floating docks, piling systems, bulkheads, revetments, and jetties provide additional substrates that are vulnerable to invasion

by introduced species. Some invasions may be gradual, displacing native species from their natural habitats over years or decades. Human-induced stress and disturbance may further increase the vulnerability of natural habitats to the establishment and spread of invasive species. Although the effects of invasions by non-native species are not well understood, it is generally acknowledged that such invasions may be widespread and of sufficient magnitude to precipitate profound ecological changes in estuarine and nearshore marine communities (Carlton and Geller, 1993).

Despite limited data availability on changes in freshwater inflow to estuaries, it was selected as an indicator of estuarine ecosystem health because of its vital importance in the maintenance of characteristic estuarine plant and animal communities. To determine if minimum stream flows are needed for estuaries, more information is needed about how flows have changed over the past 150 years and what impacts those changes have caused. Estimates of historic flow levels and timing prior to major watershed alterations and withdrawals are needed. Such data are available for the Columbia (David Jay, pers. com., 2000), but not for coastal basins. Once estimated, these flows need to be compared to recent data, present withdrawals, projections of future water needs for municipal and other uses, and instream water needs for maintaining healthy salmon and other aquatic resources. Studies are also needed to analyze the effects and degree of effects that upstream water withdrawal has on Oregon estuaries. With these data, the risk of decreased freshwater inflow can be estimated and strategies developed to maintain freshwater inflow at the minimum levels for ecological health.

There is a significant lack of information about the current condition of estuarine ecosystems in Oregon, especially in contrast to original historical conditions. Individual and cumulative effects of land uses on Oregon's estuarine ecosystems have not been quantified or critically evaluated. Water quality in most Oregon estuaries is poorly understood because of limited monitoring. This poses uncertain risks to consumers of fish and shellfish harvested in bays, as well as to oyster and other shellfish farmers. The new Environmental Monitoring and Assessment Program (EMAP) for estuaries provides an opportunity to more fully understand estuarine water quality and related indicators (Greg McMurray, pers. com., 1999). The EMAP assessment includes sampling of physical, chemical and biological indicators in three habitats—water column, sediments, and sediment surface—but will not sample all estuaries.

Projections and conclusions

The outlook for estuarine ecosystem health in Oregon depends on many factors. Among the more important are population growth, demand for fresh water, growth of tourism, efforts to control pollution and prevent the introduction of aquatic nuisance species, the integrity of estuary zoning plans, and initiatives to restore and enhance estuarine habitats and coastal watersheds. Without a robust, systematic approach to data collection, monitoring, and research, Oregon will be unable to develop meaningful, effective strategies and practices to maintain or restore estuarine ecosystem health in the face of any one or a combination of these factors.

Oregon's permanent coastal population was about 350,000 in 1999, with numbers doubling or tripling during peak tourist season. Statewide, Oregon's population is expected to swell from 3.2 million in 2000 to 4.6 million in 2020, with 80 percent of the growth in the Willamette Valley. Many Oregonians living in the Willamette Valley will be part-time coastal residents or at least regular visitors. The permanent coastal population is also likely to grow as more retirees move to the coast. Given this projected growth and other trends, the next 20 to 50 years are likely to result in significant changes in Oregon estuaries. Recent trends suggest the following:

- Estuaries will continue to support a diversity of uses and activities valued by society, including deep-water shipping (Coos Bay, Yaquina Bay, and the Columbia River estuary), home ports for fishing fleets, recreational fishing and marinas, charter fishing, sailing, aquaculture (oysters, clams, and mussels), waterfowl hunting, birding, and other nature activities.
- The strong habitat protection provided by estuary zoning plans likely will prevent significant new dredging or filling for development, except for the Columbia, where planned navigation improvements pose uncertain threats to ecosystem health.
- Population and tourism growth, and resulting increased water withdrawal from streams will reduce freshwater inflow to estuaries, reducing flushing capacity for wastes, changing habitat types and distribution, and posing other unknown risks to these ecosystems.
- Fish and shellfish resources may decline due to increased harvest pressure, particularly from recreational users, or because of declining water quality.
- Understanding of the impacts of runoff pollution will increase, as will the ability to pinpoint sources and provide control technologies. Political considerations and costs will determine whether problems persist, increase, or are reduced.

- The adverse impacts of introduced species will become better known as scientists continue to study their distribution, spread, and ecological interactions, but the ability to prevent or limit introductions will remain limited.
- Estuarine habitat area will continue to expand as former marsh areas are restored or revert to salt marsh on their own. This trend may lead to improved ecosystem health and increase the supply of fish and wildlife habitat, offsetting other losses.
- Competition for limited shoreline and estuarine surface area likely will increase, with residential developers, marinas, tourist businesses, and recreational users challenging traditional users such as ports, fish processors, oyster farmers, and commercial clammers.
- Natural resource industries that use the estuary, despite decline in recent decades, still will be important economically and culturally.
- Urban shoreline changes will affect ecosystem health by increasing the awareness of and need for ecosystem protection and restoration; it will also create pressure for expanding urban growth boundaries along natural shorelines.

What data are available and how complete are they?

Data sources used in preparing this report are listed in the reference section, with citations for specific indicators listed in Table 3.3-1 and throughout the text. Specific caveats about data quality and interpretation are also included in the text. Generally, quantitative data for indicators were sparse or nonexistent, and data interpretation vis-à-vis estuarine ecosystem health is based on the local knowledge and professional judgment of the scientists who contributed to or reviewed the report. As such, overall confidence in the findings is at best moderate. Nevertheless, this assessment is a good first approximation of estuarine ecosystem health. The significant progress that has been made in protecting and restoring Oregon's small but important estuaries is cause for hope. However, the lack of good data for key indicators suggests the need to develop a better understanding of historic and ongoing change, as well as ways to measure that change.

Finally, there may be better indicators than those used here for tracking estuarine ecosystem health and sorting out natural versus human-caused change. Thus, this report should be viewed as a beginning effort to characterize ecosystem health and suggest causal factors for observed trends. It also presents a challenge to the estuarine research and management community: good indicators of ecological health need to be identified, monitoring programs to track changes need to be improved, and mechanisms need to be established for using the findings to improve decision-making processes and land management.

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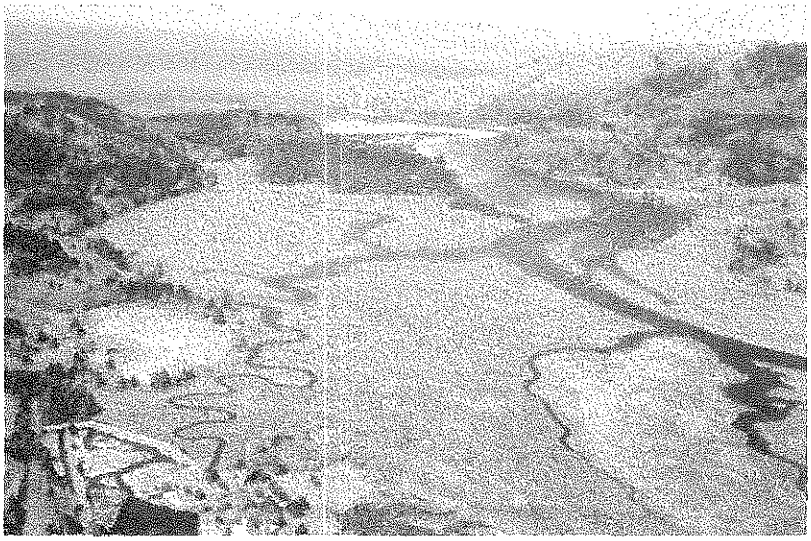
Sea Grant Oregon

Coastal Ecosystems

Salmon research examines estuary role



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THE LAST DECADE HAS SEEN ever-growing public and professional concern over the extinction of wild salmon in the Pacific Northwest. The "salmon crisis"—with all its biological, economic, and ecological significance—has arguably been the most pressing environmental issue in the region, and there has been no lack of urgent questions worthy of scientific research. And yet Oregon Sea Grant has been highly selective about funding research projects relating directly to salmon restoration. There are two main reasons.

First, other very well-funded and appropriate parties—state, regional, and federal agencies with specific salmon mandates—have already been allocating hundreds of millions of dollars to salmon-related research. Their funds dwarf any modest amount that Sea Grant could provide by itself. Secondly, Sea Grant determined, by talking with both citizens and with specialists involved with the problem daily, that there was another large and unmet need that the program could well serve—for public outreach, education, and credible information about the salmon problem. So that is where the program has invested most of its efforts.

Meanwhile, Sea Grant has directed research attention and funding to important niches that others were overlooking. One example is described here.

Nearly all the attention in salmon restoration science and practice has focused on the watersheds where salmon live during their early development and to which they return to spawn. Watersheds are composed of a number of ecosystems from the ridge crest to the sea, but most of the salmon-related research has focused on inland elements away from the shore, on the uplands and on the exclusively freshwater parts of the rivers. Estuaries—where salmon species acclimate to the saltwater environment—have generally been neglected. Sea Grant's project on Oregon's Salmon River—a regional project involving Washington Sea Grant—addresses the need for better ecological understanding of these vital environments.

Intertidal marshes are the focus of the Salmon River estuary research, which began in 1998. Although such marshes are natural to the Oregon coast, as much as 80 percent of them have been lost since the mid-1800s, mostly a result of diking. Breaching the dikes to restore tidal inundation represents one of the few viable options for large-scale restoration of estuary habitat. Although such projects are often promoted as a method of salmon recovery, the role of estuary marshes in the life histories and production of juvenile salmon in Oregon has not been known.

The removal of three dikes on the Salmon River in 1978, 1987, and 1996 has provided Sea Grant researchers a series of restoration "experiments" in successive stages of recovery. Specifically, the project is evaluating wetlands of different ages after dike removal to determine rates of marsh recovery and the effects of marsh and channel succession on estuary rearing of salmon species. The results will be used to develop restoration guidelines that will have region-wide application.

Other regional parties have seen the potential value, have contributed to the project, and are now extending its value with multidisciplinary efforts. These efforts and the cooperators are:

- aerial photography and GIS analysis of physical habitat conditions (U.S. Forest Service—USFS)
- analysis of marsh vegetation and channel changes (USFS and supplemental Sea Grant funding)
- application of new microprobe techniques for analysis of salmon otoliths (Washington Department of Fish and Wildlife)
- pilot testing of methods for evaluating the importance of large wood to juvenile salmon (Siletz Tribe)
- marking and assessment of fish movements throughout the system (Oregon Department of Fish and Wildlife)

As of summer 2000, the research project—led by Dan Bottom (National Marine Fisheries Service), Kim Jones (Oregon Department of Fish and Wildlife), and Charles Simenstad (University of Washington)—is very much still a work in progress. But some initial results have prompted some intriguing insights as well as direction for further and current investigations.

The researchers have found that marsh habitats are consistently used by juvenile coho and chinook salmon from April through June. Differences in their relative use by salmon may depend on marsh location in the estuary, the age of the channels under recovery, channel size, and morphology. Estuarine marshes may be more important to juvenile coho salmon than is recognized by conventional generalizations about their freshwater life histories.

An additional preliminary finding has implications for a key factor in salmon recovery—the use of hatcheries.

The researchers have rarely found chinook and coho salmon smolts from the Salmon River Fish Hatchery in restored marsh habitats. The researchers hypothesize that the use of particular marsh settings by salmon is directly linked to the life histories of the downstream migrants. One unintended effect of hatchery breeding programs may be a reduction in the diversity of life histories that naturally occurred in a salmon run.

For example, managers at the Salmon River hatchery have tried to choose brood stock throughout the natural spawning run. However, the peak spawning period for coho salmon has shifted at least one month earlier, and the duration of the spawning season is now much shorter than it was before the hatchery began operations in the mid-1970s. This shift in time of spawning, in turn, may directly affect when coho salmon emerge from the gravel and the various times and sizes at which they enter the estuary. Researchers at Salmon River are investigating whether the hatchery has reduced the diversity of juvenile rearing behavior. Such a reduction could restrict the productive capacity of the estuary for salmon independent of the total amount or quality of habitat that is available.

The researchers hypothesize that the potential benefits of estuarine marsh restoration to the Salmon River ecosystem may not be fully realized due to effects of the hatchery program. They plan to test this idea with continuing Sea Grant support.

Are observed patterns of estuary habitat use by salmon tied to specific spawning and rearing habitats upriver? The answers will help salmon restoration efforts to develop a true whole-watershed perspective—one that finally takes the estuary into account.

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OREGON STATE
University

July 2000

3.4 Summary of Current Status and Health of Oregon's Freshwater Wetlands

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Report Card

Freshwater wetland health varies by ecoregion, with urbanized and agricultural regions exhibiting the most wetland losses and degradation of wetland condition. Although data on freshwater wetland health are very limited, most indicators point toward declining health. However, there are also some positive trends in recent years.

- Oregon has lost an estimated 38 percent of its original wetlands. In the Willamette Valley, approximately 57 percent of wetlands have been lost, and a recent study shows that the valley continues to lose more than 500 acres per year. The Klamath Basin has lost an estimated 75 percent of original wetlands, primarily due to government-sponsored conversion to agricultural production.
- Statewide, 29 percent of native wetland plant communities identified to date are ranked as "imperiled." Only a few have been studied in detail, like the Willamette Valley wet prairie (99 percent lost) and the Agate Desert vernal pools (more than 40 percent gone and what's left highly degraded).
- Twenty-four percent of wetland-dependent amphibians are ranked as imperiled.
- Extensive modification of rivers and streams has reduced wetland area and complexity and altered wetland types and functions.
- Water quality standards for wetlands have not been established, but wetland water quality condition and trends may roughly parallel stream condition.
- Existing regulatory programs have slowed wetland loss substantially but are not sufficient in themselves to halt the loss of wetland acreage and functions.
- New wetland restoration incentive programs are helping to reverse wetland loss trends and improve wetland ecosystem health, particularly in agricultural regions.
- Principal threats to wetland ecosystem health today include continued pressure to convert wetlands to other economic uses, and the cumulative impacts from human activities—such as pollution, sedimentation, and invasion of nuisance species—on wetland condition.

Indicators

Wetland ecosystems are healthy when:

1. The area and spatial distribution of wetlands within ecoregions and within watersheds are maintained, not at historical levels in all regions, but at a level that can sustain existing key functions and services
2. Objectives and standards of state policies and regulatory programs are being met
3. Area and spatial distribution of basic wetland types appropriate to the ecoregion are maintained
4. Native plant and animal community abundance, quality, and diversity are maintained
5. They are physically connected (not fragmented) to functionally related aquatic resources, such as rivers and their flood plains, and to high quality upland habitats
6. Hydrologic characteristics, including quantity, quality and timing, are within the historical range of variability for regional types and are sufficient to sustain the wetland resource and dependent processes over the long term.

Introduction

Freshwater wetlands are a highly diverse resource that reflect the extreme physical and biological variability of the state. Although all wetlands share many basic features, their ecological functions—and thus the services they provide—differ markedly between regions and between landscapes. For example, Willamette River floodplain sloughs temporarily store flood waters, reducing peak flows downstream. The vast Klamath Basin marshes—dubbed the "Everglades of the West"—support millions of migratory waterfowl. Cascade Mountain bogs are home to rare or peculiar plants like the carnivorous sundew. And streamside wetlands in the Coast Range provide food and shelter to threatened juvenile salmon and trout.

This great diversity of wetland types and the variety of functions they perform make it difficult to generalize about wetland resource health. No one indicator provides a suitable or sufficient measure of health for all wetlands. However, wetland area is a basic indicator that can be used to track wetland extent and trends. How much of the state's original wetlands remain? What are current loss rates? Are there disproportionate losses in some regions? These area measures are important because, to a great extent, the health of wetlands in Oregon is dependent on maintaining the remaining wetlands, a goal embodied in state and federal "no-net-loss of wetlands" policies.

However, area measures alone cannot adequately address overall wetland health. Other measures are needed—the health of native wetland plant and animal communities; the extent to which wetlands have been cut off from one another and from streams, lakes and other aquatic resources; and the degree to which water is available to sustain wetlands. These and similar "condition" indicators are needed to more fully understand the ecological health of Oregon's wetlands today and their capacity to provide valued goods and services well into the future.

What do we know about wetland resource health in Oregon today? Historical information indicates that, in highly developed urban or agricultural regions in particular, wetlands have been drastically and often irreversibly altered. Dams, levees and diversions on major rivers and their tributaries have changed hydrologic characteristics at the most fundamental landscape levels. Cities and roads have eliminated or fragmented wetland systems. Government sponsored projects have cleared and drained vast areas of former wetlands for conversion to agricultural crops. In these regions, few naturally functioning wetlands remain to serve as reference sites for evaluating current resource health. For these reasons, maintaining wetlands within a "historical" range of variability may be a reasonable measure of resource health, but is an unachievable goal. Instead, the goal is to maintain existing wetlands or increase wetland area and functions through restoration.

Definition and indicators of a healthy wetland resource

Wetland health is evaluated by assessing wetland condition and the degree to which wetlands perform certain functions. A wetland in good condition is better able to function to its potential capacity. Wetland function and condition are important to us because of the valued goods and services that wetlands provide. Most people are familiar with the importance of wetlands for waterfowl, fish and other wetland-dependent species, yet many other functions are equally important.

For example, a watershed with an intact wetland system that provides for water storage reduces winter flooding and sustains summer stream flows. Wetlands in good condition also improve water quality by recycling nitrogen and phosphorus and filtering sediments and other pollutants—in fact, wetlands are constructed specifically for this purpose. When these services are lost in the landscape, they are extremely expensive to replace. For example, a study in Washington state valued wetlands in one basin at $36,000-$51,000 per acre for flood control alone (Leschine et al., 1997).

The indicators selected to assess wetland ecosystem health are described in **Table 3.4-1** and were based on three related criteria—their significance as a measure of ecosystem health, their sensitivity for detecting change, and data availability (currently available or feasible).

Current conditions and trends

Indicator 1: Change in wetland area and spatial distribution

Until better methods to assess wetland functions and condition are developed and applied statewide, wetland areal extent and distribution will continue to be an important surrogate measure of wetland resource health. Present data sources include historical wetland loss estimates, regional studies of recent (last one to two decades) status and trends, and reviews of permitted wetland losses and gains.

In considering wetland change, it is important to distinguish between "historical" wetland extent, which establishes the context, and "current" trends. An estimated 38 percent of Oregon's historical wetlands have been lost (Dahl, 1990). Regional historical loss data are not widely available, but data for the Willamette Valley suggest a loss of approximately 57 percent of historical wetlands (Christy et al., 1998), and wetland loss in the Klamath Basin (Oregon/California) is estimated at 75 percent of original wetlands (Akins, 1970). Data on modern wetland trends show continued, gradual losses. A recent study of wetland change in the Willamette Valley shows a loss of approximately 546 acres per year.

Indicator 2: Change in wetland area due to permitted activity

Regulatory programs are a key public policy mechanism to provide protection for the wetland resource while allowing for necessary wetland alteration (Good et al., 1998). In addition to federal and state regulatory programs, the federal government and the state have adopted "no net loss of wetlands" policies and goals. Permit program outcome evaluation provides a measure of how many wetland alterations are "captured" by the permit program and how well permitted wetland losses are offset by wetland gains from compensatory mitigation.

Regulatory program evaluations indicate that small wetland losses occur through the permit process (Kentula et al., 1992; Shaich and Franklin, 1995). Losses are attributed primarily to insufficient or inadequate compensatory mitigation (wetland replacement) for permitted wetland fills. Not all wetland

Table 3.4-1. Freshwater wetland ecosystem health indicators, significance, reference condition, and data sources

Indicator and Type[1]	Significance	Reference Condition	Data Sources
1 – Change in wetland area and spatial distribution (acres/percent) Type 1 & 2	Directly measures net loss or gain of wetland acreage and indirectly measures loss or gain of wetland functions and associated goods and services	1. Pre-Euro-American settlement (~1850) as measure of historical condition 2. Modern change baseline approximately 1985-1990	Akins, 1970 Dahl, 1990 Fretwell et al., 1996 Borgias & Patterson, 1999 Christy et al., 1998 Daggett et al., 1999
2 – Permitted change in wetland area (acres/percent) Type 3	Measures outcomes of policies and programs that regulate wetland impacts	1985 (Current state & federal regulatory programs in place)	Kentula et al., 1992 Shaich & Franklin, 1995 Steve Morrow, pers. com., 1999
3 – Change in diversity and distribution of wetland types Type 1	Directly measures change in types of wetlands and indirectly measures change in structure and functions	1. Pre-Euro-American settlement 2. Mid-1980s (date of National Wetlands Inventory)	Christy et al., 1998 Daggett et al., 1998 Gwin et al., 1999 National Wetlands Inventory (NWI)
4 – Changes in native wetland plant and animal assemblages Type 1	Measures structural integrity, habitat diversity, and ecosystem stress	1. Pre-Euro-American settlement species & assemblages 2. Date community first identified and described with published data	Christy & Titus, 1997 Christy et al., 1998 Ed Alverson, pers. com., 1999 Borgias & Patterson, 1999
5 – Degree of connectivity with other aquatic resources & upland habitats Type 1 & 2	Indirect measure of aquatic ecosystem function and wetland habitat condition	1. Pre-Euro-American settlement 2. 1980s (NWI data)	National Wetlands Inventory Land Use/Land Cover mapping
6 – Changes in hydrologic characteristics Type 1 & 2	Measures change in hydrologic functions that control related wetland condition, functions & services	1. Pre-Euro-American settlement 2. Modern change baseline approx. 1985	Akins, 1970 USDA, 1977 Benner & Sedell, 1994 Fretwell, 1996 Adamus, 1998 Gwin et al., 1999 NWI

[1] Indicator Type:
1: Ecosystem structure- and function-based
2: Ecosystem goods- and services-based
3: Environmental policy-based

changes (losses or gains) are reflected in permit records because they were too small to meet the permit requirement threshold, were not subject to permit requirements, or were never permitted (Shaich, 2000).

Indicator 3: Change in diversity and distribution of basic wetland types

The diversity and areal extent of basic wetland types (such as forested, wet prairie, marsh, riverine, slope, isolated, etc.) that are appropriate to the ecoregion provide an indirect measure of wetland ecosystem health. Data sources include maps of historical wetland types in the region, regional status and trends studies, land cover/land use change analysis, and permit program outcome evaluation.

Wetlands are often classified by type based upon their landscape setting, water dynamics, and dominant vegetation. These different characteristics result in process differences. Human alteration often changes these basic characteristics, with a general observed trend of "simplification" of diverse ecosystems into more homogenous ones (Benner and Sedell, 1994). For example, many "riverine" wetlands—those directly connected to rivers—have been changed into "isolated" wetlands by road construction or levees, and many forested and prairie wetlands have been changed into farmed wetlands (Christy et al., 1998). An effort is underway in Oregon to classify wetlands by hydrogeomorphic type and relate these classes to specific functions (Adamus, 1998).

Indicator 4: Changes in assemblages of native wetland plants and animals

Changes in native wetland plant and animal communities appropriate for the wetland types in the ecoregion and the proportion of invasive, exotic species indicate the level of ecosystem stress. Data sources include sample-based field assessments correlated to reference sites, plant assemblage diversity surveys, and changes in rarity rankings.

The status of native wetland communities and wetland-dependent species varies considerably by region. As would be expected, urban and agricultural areas have been subject to the most loss of native communities and species. For example, Atlas Figure 19 shows the estimated historical extent of Willamette Valley wet prairie (Christy et al., 1998). Less than 1 percent remains today, too little to show up on the map (Christy, pers. com., 1999). The Oregon Natural Heritage Program (ONHP) has identified 518 wetland plant communities. Of these, 151 (29%) are ranked as imperiled (Christy and Titus, 1997). In the Willamette Valley, 32 of the 72 plant communities (44%) are ranked as imperiled. Some Oregon plant communities may be naturally rare, but ONHP estimates that approximately 90 percent of imperiled plant communities are imperiled due to human activities. Similarly, 24 percent of wetland-dependent amphibians are listed as imperiled.

Indicator 5: Degree of physical connectivity between wetlands and related aquatic resources, and between wetlands and upland habitats

Many of the wetland ecosystem services Oregonians value—such as water quality improvement and fish and wildlife habitat—require a physical connection between wetlands and associated aquatic resources like streams, riparian areas, and estuaries. Similarly, the availability of high quality upland habitat adjacent to wetlands is important for many species. Assessment data includes maps, reports, and observations of the extent to which wetlands are fragmented by dikes, levees, development, and similar features, and the extent to which uplands surrounding major wetland areas are "natural" rather than built, farmed, or logged.

Data on "connectivity" are not directly available, but National Wetlands Inventory maps and other sources indicate that may miles of rivers and streams have been disconnected from their floodplains and wetlands by levees, diversions, and road construction. This fragmentation alters the functions of these aquatic ecosystems. Data on the degree to which important wetlands are connected to high quality upland habitats are not available. However, studies to evaluate connectivity in priority regions could be readily conducted.

Indicator 6: Changes in hydrologic characteristics

Hydrology characteristics of wetlands include water quantity, duration and periodicity of flooding or saturation, and water quality. Hydrologic characteristics that depart from the normal range of variability indicate stress and probable impairment of the wetland's ability to provide ecosystem goods and services. Data sources to assess this indicator include maps, reports and physical evidence of drainage or diking for agricultural production, urban development patterns, hydrologic characteristics of mitigation or restoration sites compared to "naturally" occurring wetlands, and direct measurement of selected hydrologic characteristics of altered sites compared to "least disturbed" reference sites.

Hydrologic characteristics of wetlands are influenced by a multitude of factors including the stream alterations noted above, dams and diversions, agricultural drainage, groundwater or surface water withdrawals, urbanization, and pollutants (Akins, 1970; Fretwell, 1996; USDA, 1977). The extent of these alterations suggest an overall "drying out" of wetlands in agricultural or semi-arid regions, with a corresponding decline in function and increased risk. These and other activities have also changed basic wetland types in highly altered regions, for example from river-associated to isolated wetlands. Gwin et al. (1999) found that wetlands created or restored for compensatory mitigation typically have very different hydrologic characteristics than the filled wetlands they are supposed to replace. Wetland water quality trends may parallel those for streams, but water quality standards for wetlands have not

yet been established and water quality is difficult to measure, due in part to the highly variable and seasonal surface water characteristics of most wetland types.

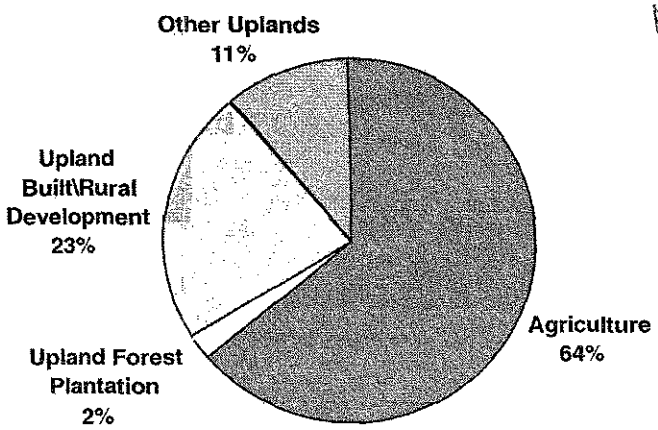
Threats, strengths, and examples

Wetland resource health can be adversely affected either directly or indirectly by human activities. Activities such as filling, draining and discharge of pollutants directly eliminate or degrade wetlands. Activities such as groundwater withdrawals or poor upland land management indirectly degrade adjacent wetlands. In highly altered regions such as the Willamette Valley or Coastal lowlands, the types, distribution, and functions of wetland ecosystems are far different than they were historically, which increases risk and also constrains management and restoration options. In addition, it is important to recognize that activities that cause wetland loss and degradation are sometimes indirectly promoted through public policies and programs intended to achieve other social or economic goals, such as economic development, increased density requirements within urban growth boundaries, waterfowl management, or protection of farmland (some of which is wetland).

Regulations and policies aimed at maintaining Oregon's wetland resource base have significantly reduced, but not prevented, wetland loss. A recent study of wetland change in the Willamette Valley ecoregion found that between 1982 and 1994, wetland loss continued to occur at an average rate of 546 acres per year (Daggett et al., 1998). A total of 6,877 acres of wetland were converted to upland land uses, representing 2.5 percent of the 1982 wetland acreage in the valley (**Figure 3.4-1**).

Although wetland condition was not directly evaluated, changes between wetland types provide indirect information about wetland degradation. For example, conversion of forested wetland to farmed or other emergent types (2,200 acres) indicates a loss of structurally complex wetland habitat, including riparian habitat. The study also revealed wetland gains, mostly from abandoned or intentionally restored agricultural land. However, losses continue to outpace gains by about three to one.

Figure 3.4-1. Causes of net wetland loss to Willamette Valley upland, 1982 to 1994.



Because impacts and trends vary considerably among regions, a similar study has been initiated for the Coast Range ecoregion. The results of this study should be available in 2002.

Threats to wetlands vary greatly by ecoregion and dominant land uses. For example, in the Great Basin ecoregion, major risks include poor grazing management and invasive species, whereas in the Willamette Valley ecoregion the major risks include fill for development, increased agricultural drainage, fragmentation, and pollution from urban and agricultural runoff.

Current threats to wetland health include:

- Loss due to unregulated (no permit required) or unpermitted (violation) urban and rural development (Shaich, 2000)
- Loss or degradation due to agricultural expansion or improved drainage on existing fields (USFWS, 1997; Morlan and Peters, 1999)
- Loss or degradation due to surface water diversion, groundwater withdrawal, ditching streams, and stormwater systems designed to move water quickly off the landscape (Boggess and Woods, this report; Oregon Division of State Lands, 1989)
- Grazing activities that damage vegetation and degrade streams, which lowers water tables, thereby drying streams and adjacent riverine wetlands (Kauffmann et al., 1985)
- Eutrophication due to nitrogen or phosphorus loading from agricultural or urban runoff and insufficient wastewater treatment (Adamus, 1998)
- Degradation by contaminants such as heavy metals, pesticides, oil and other pollutants and by sediment overloads from poor management of adjacent uplands
- Invasive, non-native plant and animal species that replace native species (Arnold and Anthony, this report)
- Fragmentation of wetlands into smaller, isolated units that become more vulnerable to eradication; fragmentation also impedes wildlife movements between habitat types and the smaller wetlands cannot support wildlife species that require large habitat units (Gibbs, 1993).

A number of wetland resource strengths can also be identified. Wetlands tend to be highly resilient, absorbing a considerable amount of abuse while still providing valued services. Also, wetlands that are degraded from a wildlife habitat standpoint, for example, may still provide a high level of flood storage. Many degraded wetlands can be restored to highly functional, if not historical, condition with minimal cost. In addition, degraded wetlands are often "self-restoring" if the actions that cause chronic degradation—such as cultivation, levees, or pollutants—are removed or minimized.

Since the late 1970s, many public policies, regulations and programs—and numerous private programs—have focused on protecting and restoring wetlands. Examples include:

- State Removal-Fill Law—requires permit for wetland alterations and compensatory mitigation for permitted wetland impacts
- Sections 404 & 401 of the federal Water Pollution Control Act—similar provisions to above law and water quality standards for receiving waters
- State and federal policies setting goal of "no-net-loss" of the wetland resource
- Statewide Land Use Planning Program—cities and counties must develop protection programs for wetland resources under Goals 5 and 17
- Acquisition of important wetland sites by land trusts and public land management agencies
- Substantial increase in public funding for voluntary wetland/aquatic system restoration

The city of Eugene provides the most prominent example of successful wetland planning by a local government in Oregon. When the city discovered that much of the industrial-zoned land in West Eugene was wetland, the city embarked on developing a Wetland Conservation Plan (WCP). WCPs are an optional approach to Goal 5 wetland protection programs—more difficult to develop but with a larger "payoff" in terms of both resource protection and development certainty.

The West Eugene Wetland Plan was adopted in 1992 and approved by the state in 1994. Plan elements include a detailed wetlands inventory and function and value assessment; plan goals; designation of wetlands for protection, restoration or development; a mitigation bank program; and an acquisition program for priority wetlands (City of Eugene and Lane Council of Governments, 1992).

The plan accomplished several wetland protection goals, including land use designations and zoning provisions that provide an additional level of protection, and public acquisition of more than 2,200 acres of wetlands and adjacent uplands from willing sellers. The plan also provided advantages for developers and the business community through plan designation of specific wetlands or portions of wetlands for development, state and federal plan approval which speeds permitting for development parcels, and a mitigation bank program operated by the city, which provides an alternative for developers to meet compensatory mitigation needs in a timely, relatively hassle-free, manner.

As was envisioned in the goals, the plan has facilitated a co-evolution of economic growth and wetland preservation in the West Eugene area (Lane Council of Governments, 1999).

Significant ant numbers of acres of drained or diked wetlands are being restored throughout the state. For example, the Klamath Basin in the East Cascades ecoregion has been subjected to massive drainage activity dating back to the Swampland Act in 1860 (Fretwell et al., 1996). During the past fifty years, approximately 30,000 acres of wetlands adjacent to Upper Klamath Lake have been diked and drained. At the same time, water quality in the lake has declined and two indigenous fish species—the Lost River and shortnose suckers—have been listed as endangered.

In response to these concerns, a local citizens group proposed federal acquisition of drained wetlands for the purpose of wetland restoration. Congress appropriated $2.4 million for the Bureau of Land Management to purchase the 3,200 acre Wood River Ranch property. Numerous partner groups helped to develop a resource management plan and fund restoration work.

Restoration was begun in 1996. Habitat restoration will include 1,600 acres of seasonal wetland, 1,200 acres of permanent marsh, and more than six miles of meandering stream channel habitat. In addition, 1.7 miles of the lower Wood River channel will be restored along with 25 acres of adjacent floodplain wetland (Wedge Watkins, pers..com., 1999).

Projections and conclusions

Data are not available for making accurate projections for wetland resource health but are sufficient to conclude that risks outweigh strengths. The best available data, from the Willamette Valley study, indicate that wetland losses will continue, though at much slower rates than estimated historical loss rates. Public awareness of wetland functions and services, and resultant policies and laws aimed at wetland protection and management, have slowed the rate of wetland loss. There are limited reliable data, however, on wetland health trends.

Certain trends can be expected to continue, even though the rates and resource health impacts cannot be accurately predicted. Continued population growth and economic development inevitably increase risk to wetland resource health. Direct losses of wetlands and degradation of wetland health will continue to occur. Wetlands most at risk will be the "drier" wetland types and those in urbanizing areas because they will be under the most pressure for conversion to other uses. Cumulative impacts—the accumulation of many individual actions that combined degrade wetlands—can be expected to increase, particularly in the most populated and rapidly-growing regions of the state like the Willamette Valley, Umpqua and Rogue River Valleys, and the Coast.

Unpredictable factors that could substantially affect wetlands include:

- Climatic fluctuations—wetlands are transitional between uplands and aquatic sites and even small changes in

groundwater levels can dramatically affect wetland persistence and health.

- Agricultural practices—changes in practices, economic conditions, or environmental policies and regulations can increase or decrease manipulation of agriculturally managed wetlands.
- Economic conditions—commercial, industrial and residential development is directly related to general economic trends.
- Public/political will to support or improve wetland protection laws and programs and to adequately fund local wetland planning and wetland resource acquisition and restoration.

Without changes in the current wetland management regime, data and trends indicate that wetland ecosystem health will continue to deteriorate. Wetland regulations alone are not sufficient for protecting wetland functions and services. Regulations are not comprehensive, it is difficult to address cumulative impacts or multiple objectives through a regulatory program, and the burden falls unevenly on wetland landowners. Wetland planning in urban areas has the potential to resolve many wetland use conflicts and protect important wetland resources through appropriate zoning and land use regulations. For it to work well, financial and technical assistance is crucial.

Wetland protection through acquisition or restrictive covenant and wetland restoration by private and public entities are also crucial and such programs have grown dramatically in the last decade. Most of the funding has been provided by federal programs. Challenges include using public funding for aquatic resource restoration strategically to ensure that landscape-scale functions and processes are restored and projects are sustainable over the long term. Effective restoration is needed not only to "hold the line" on wetland resource loss but to restore some of the state's original wetland resource base (Good & Sawyer, 1998). A "net gain goal" of wetland area by 2020 would help to move the state in that direction.

What data are available and how complete are they?

Estimates of historical wetland loss in Oregon are approximate and drawn from a variety of sources (Akins, 1970; Oregon Division of State Lands, 1989; Dahl, 1990). The Willamette Valley study of recent wetland change has a relatively high level of reliability (Bernert et al., 1999). The estimate of former extent of Willamette Valley wet prairie was derived from 1850s era General Land Office Survey notes correlated with topography and soils data (Christy et al., 1998). The Oregon Natural Heritage Program database containing wetland plant community and wetland-dependent species data is based largely upon field data but reflects uneven levels of investigation in different regions and for different groups of species (Christy and Titus, 1997). Studies of particular wetland types can provide data that are relatively complete and reliable, such as the evaluation of the extent and condition of Agate Desert vernal pools (Borgias and Patterson, 1999).

Priority information needs

The primary need is to develop and support a program for measuring and monitoring wetland ecosystem health. Pilot studies are underway in the Willamette Valley that will provide reference site data on the condition and functions of important regional wetland types. Additional studies in priority regions would add considerably to our knowledge of wetland resource health. High priority data needs include:

- National Wetlands Inventory (NWI) maps digitized statewide
- Additional Local Wetlands Inventories (more detailed than NWI) within urban areas
- Oregon Hydrogeomorphic Wetland/Riparian Assessment Project expanded beyond Willamette Valley ecoregion pilot study
- Sampling (at reference sites) of biological indicators of wetland health
- Comprehensive sampling and published description of wetland plant communities to complete the statewide wetland community classification
- Digital county soil survey data (soil series level) statewide
- Land Use/Land Cover mapping at regular intervals
- Wetland status and trends studies for additional ecoregions

Although Oregon's wetlands comprise only a small fraction of the state's land base, the ecosystem goods and services they deliver have disproportionately high value. Historical losses of wetlands due to urbanization and resource development have been huge and, despite recent protective measures, losses continue, albeit at much lower rates than historically. As Oregon's population and economy continue to grow, additional wetland conversion is inevitable. Protection remains vital, but restoration of former or degraded wetlands will also be needed to maintain or increase the valuable services these ecosystems provide.

Acknowledgments

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3.2 Summary of Current Status and Health of Oregon's Marine Ecosystems

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Report Card

Trends for some indicators illustrate the significant adverse effects that human activities can have on marine ecosystems; conversely, other indicators demonstrate that strong protection can lead to species and habitat recovery. Concerns about possible long-term cumulative effects on ecosystems and resources are raised by other indicators, but also illustrate the high scientific uncertainty associated with limited data availability and predictive ability.

- Some stocks of groundfish are overfished, requiring strong management measures to promote recovery, a process that may take a decade or more of reduced fishing pressure and habitat protection. As a result, the segment of the industry dependent on groundfish is in an economic crisis with little hope of quick recovery.
- Bottom trawling is intense in some offshore areas, but possible adverse impacts on marine habitats and species are uncertain and need to be investigated.
- Marine mammal populations are healthy due to effective species and nearshore habitat protection measures, as well as plentiful food supply.
- Rocky shores are protected from some potential disturbances, but offshore rocky reef habitats that may be important as fish refugia or rearing areas have no special protection; the need for such measures should be reexamined.
- Data on the recurrence and severity of harmful algal blooms is inconclusive, but the potential risks to human health associated with toxins that cause shellfish poisoning in humans make it important to monitor this threat.
- Shoreline armoring after episodes of coastal erosion is increasing along parts of the coast, cutting off the supply of new sand to many beaches; if this trend persists, and sea level continues to rise as expected, some ocean beaches will gradually narrow and be lost to wildlife and recreation use.

Indicators

1. Exploited fish and shellfish stocks (condition and landing trends).
2. Bottom habitat degradation (trawl areas and intensity).
3. Marine mammals (pinniped population trends).
4. Kelp forests (location, area, and biomass).
5. Marine protected areas (number and area).
6. Harmful algal blooms and toxic shellfish (recurrence and severity).
7. Shoreline armoring and beach loss (armored miles and trends).

Introduction

Oregon's coastal ocean is part of the larger ecological transition zone known as the Northern California Current Large Marine Ecoregion, an area strongly influenced by both subarctic waters of the Gulf of Alaska and the warmer, subtropical waters off California. Fueled by intense upwelling during summer months, this transition zone is highly productive and rich in natural resources. Familiar exploited species in the region include salmon, crab, shrimp, groundfish, and tuna, along with a complex assemblage of lesser-known organisms adapted to a variety of water column, rocky substrate, and soft bottom habitats. The many thousands of species that make up this assemblage—from microscopic plankton to harbor seals—are intricately linked to one another through the marine food web, and to natural variations in climate and ocean conditions.

People have harvested the ocean's seemingly inexhaustible living resources for thousands of years. Commercial fisheries are still the most visible and important ocean industry for Oregon, whether measured in numbers or pounds of fish caught, dollar value for commercial catches at the dock, or in personal income generated in fishing communities. Fishery resources harvested commercially in local waters are diverse in terms of the numbers of species taken, areas fished, and the type of gear used. Although still one of the mainstays of the coastal economy, the fishing industry has been plagued with problems in recent years, ranging from poor ocean conditions for food production, to declining stocks and catches, and too many fishing boats.

Recreational fishing from private boats and passenger-carrying charter boats is also a significant contributor to the coastal economy in many communities. In the past, salmon were the prime recreational fishing targets, mostly in nearshore waters, but salmon closures and endangered species listings have led to increased emphasis on rockfish, ling cod, halibut, and tuna. Tourist-oriented sightseeing trips focusing on whales, marine mammals, and birds are also an increasingly important ocean charter activity.

As with fishing, marine transportation has been an important use of the ocean for thousands of years, as nations of the world established and expanded trade, and exercised military might to establish far-flung empires. Today, marine transportation is still a very important use of coastal waters. Several thousand ships and barges each year transit along the Oregon coast, calling on coastal and Columbia River ports, delivering cargo, and moving export cargo to distant destinations.

Oil and gas, marine mineral, and kelp resources are also found along the Oregon coast and offshore, but exploitation of these resources has not proved to be economic or has been precluded by state or federal action.

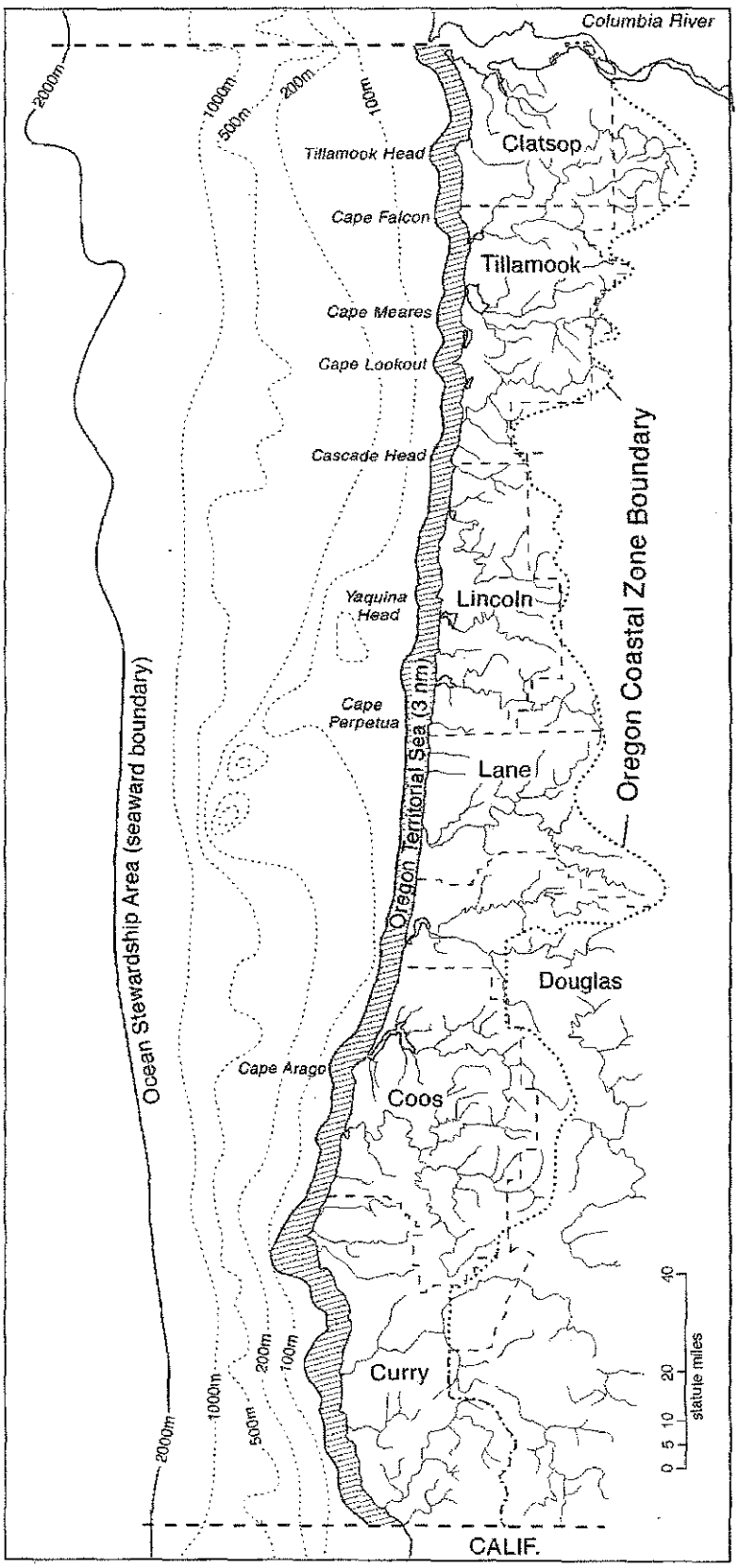
Ocean resource use is governed through a complex framework of international agreements, the U.S. Constitution, federal and state laws, agency rules and regulations, and numerous judicial decisions. The State of Oregon has jurisdiction over natural resources within the territorial sea, which extends three nautical miles seaward of the shore and encompasses more than 1,100 square miles. The federal government retains control over navigation, commerce, pollution, and national security in this nearshore zone and beyond. From three to 200 nautical miles offshore—an area known as the Exclusive Economic Zone (EEZ)—resources are under exclusive federal ownership and jurisdiction, although federal resource managers are required to consult with Oregon on decisions that affect the state's coastal zone. Federal resource management in the EEZ is fragmented, with separate, poorly coordinated regimes for oil and gas, fisheries, marine mammals, navigation and transportation, and pollution control. In contrast, state-level management in Oregon is relatively well integrated, due to farsighted ocean policy adopted in 1977 as part of the Oregon Coastal Management Program (OCMP), ocean planning legislation passed in 1987, development of the Oregon Ocean Plan in 1990, establishment of an Ocean Policy Advisory Council in 1991, and preparation of a Territorial Sea Management Plan in 1994. In the Ocean Plan, Oregon identified an Ocean Stewardship Area (**Figure 3.2-1**), extending from the coast to the edge of the continental margin at 6,000 feet depth. It is within this area that Oregon has "staked out" its interest in marine ecosystem and resource management. This claim is given force by federal consistency provisions of the 1972 Coastal Zone Management Act, which give states with approved coastal management programs a strong say in offshore activities.

Definition and indicators of marine ecosystem health

Marine ecosystems are healthy when they provide for sustained biological productivity and essential ecological processes, and the maintenance of biotic communities, native species, and genetic and demographic diversity. From a more human-centered perspective, healthy oceans provide sustainable yields of fish, shellfish, wildlife, and many other species they depend upon; as well as sustainable flows of other valued goods and services, such as marine recreation, and pollution assimilation. Still another way of viewing marine ecosystem health is from the policy perspective: are public and private decisions that have potential to affect that health consistent with state and national law and standards?

The use of indicators to evaluate marine ecosystem health has its limitations. First, these dynamic ecosystems exhibit great natural variability at multiple space and time scales. This variability, and our limited (but growing) understanding of it, make it difficult to define indicators of ecosystem health that

Figure 3.2-1. Oregon's coastal ocean, showing the territorial sea (shoreline to three nautical miles) and the Oregon "Ocean Stewardship Area" (shoreline to the 2000-meter depth contour).



discriminate between natural and anthropogenic responses to stressors. For example, to what extent can we attribute fishery declines to natural variability in ocean productivity in response to climate shifts as opposed to fishing pressure or habitat damage? These and similar questions are subjects of ongoing, often lively, debate. The lack of good baseline data for some indicators and infrequent monitoring of ocean conditions present additional challenges. Despite these and other limitations, much can be learned from compiling, organizing, and analyzing the data that are available.

The choice of indicators was based on their *significance* as measures of ecosystem health or condition, their *sensitivity* to environmental change, and the *availability of sufficient data* to at least speculate about the direction of change. Seven indicators of marine ecosystem health were selected that fit these criteria (Table 3.2-1). Although they might not be ideal measures, collectively the indicators provide insights about the health of Oregon's nearshore ocean ecosystems. Six of the indicators measure aspects of physical or biological structure and function. Five are directly or indirectly related to goods and services society values—plentiful fish and shellfish resources or beach recreation are examples. Four of the indicators also measure the outcomes of environmental policies designed to protect marine ecosystems and resources.

Current conditions and trends

Indicator 1: Exploited fish and shellfish stocks (condition and landing trends). Most marine fish stocks are distributed in federal waters and are managed by the Pacific Fishery Management Council and the National Marine Fisheries Service. Currently, several species of commercially and recreationally important groundfish are overfished and several other stocks are below target levels of spawning stock biomass (Figure 3.2-2). The condition of many other species is unknown because a formal stock assessment has not been conducted.

Landing data for major species groups vary significantly over time (Figure 3.2-3), although these variations do not necessarily

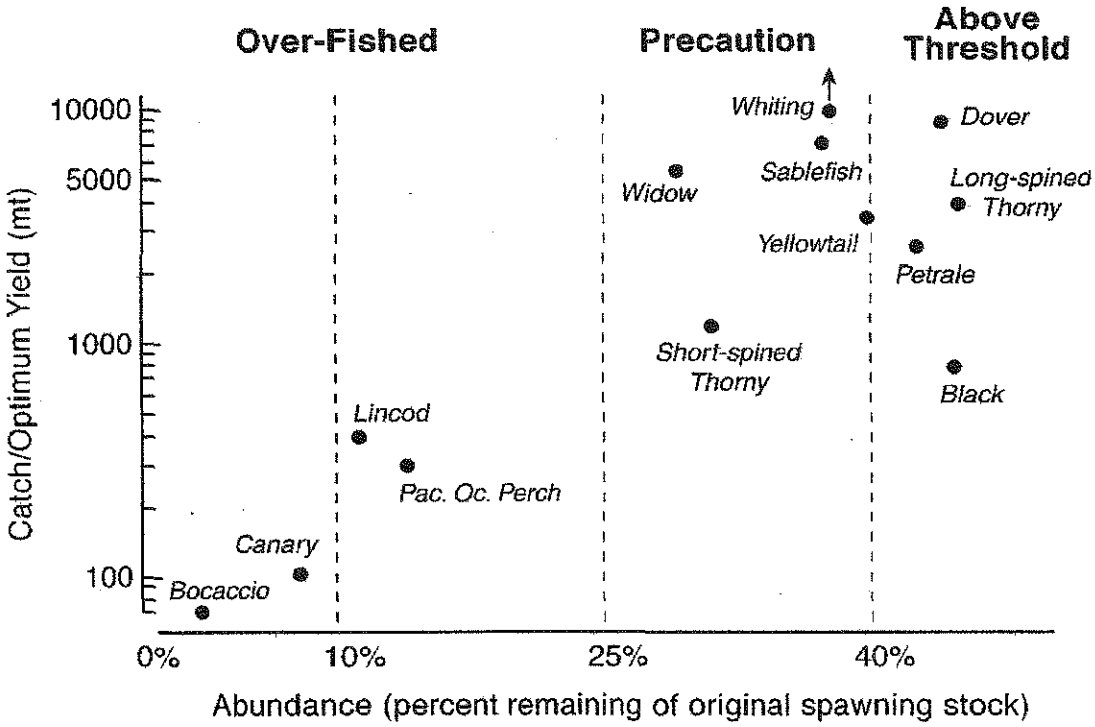
Table 3.2-1. Marine ecosystem health indicators: type, frame of reference, significance, and data sources.

Indicator and Type[1]	Reference Condition	Significance	Data Sources
1 – Exploited fish and shellfish stocks (condition and landing trends) Type 1, 2, & 3	Original spawning stock estimates	Illustrates combined effects of natural and human stressors; measures success in managing harvests of food fish	ODFW, 1999 PFMC, 1999 Steve Berkeley, pers. com. 1999 Hal Weeks, pers. com. 1999
2 – Bottom habitat degradation (trawl area and intensity) Type 1	Pre-fishing conditions (no habitat alteration)	Shows areas trawled, not actual impacts; does serve as basis for designing future studies of issue	Engel and Kvitek, 1998 Freidlander, et al., 1998 Waldo Wakefield & Allison Bailey, pers. com., 1999
3 – Marine mammals (pinniped population trends) Type 1 & 3	Pre-Euro-American settlement native species	Measures health of species populations and habitat and food conditions	Brown, 1997 Robin Brown, pers. com., 1999
4 – Kelp forests (location, area, and biomass) Type 1 & 2	1954 kelp survey as baseline	Keystone species for nearshore rocky reefs; change in biomass and area indicate change in carrying capacity for nearshore environment	Waldron, 1955 Ecoscan, 1991 ODSL, 1993 ODFW, 1998
5 – Marine protected areas (number and area) Type 2 & 3	No protection	Shows degree of protection provided to critical marine habitats and marine biodiversity	OPAC, 1994 ODFW, 1998 O'Keefe, 1999.
6 – Harmful algal blooms (HABs) and toxic shellfish (recurrence and severity) Type 1 & 2	Natural regime for HABs	Indicator of changing ocean conditions, and of human health risk	Michelle Wood, pers. com., 1999 Chris Czeisla, pers. com., 1999
7 – Shoreline armoring (armored miles and trends) Type 1, 2, & 3	Natural, unarmored shoreline	Public beach encroachment and potential loss of sand supply, threatening recreational beaches	CNHPWG, 1994 Good, 1994

[1] Indicator Type 1: Ecosystem structure- and function-based; Type 2: Ecosystem goods- and services-based; Type 3: Environmental policy-based

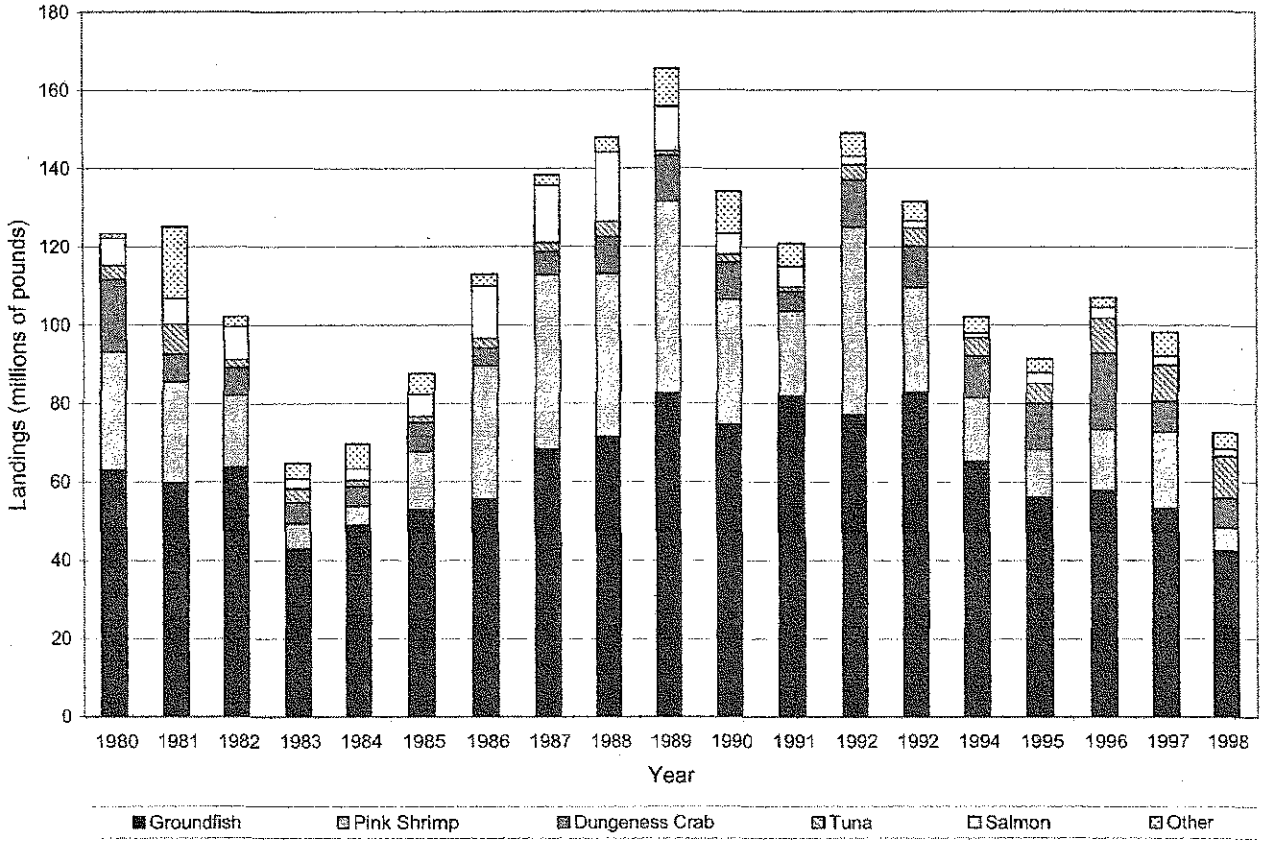
reflect the health of the marine ecosystem. Many factors affect landings including ocean conditions, long term biological cycles, market conditions, and harvest restrictions. Increased landings of albacore tuna reflect elimination of the high seas drift net fishery, warmer ocean temperatures closer to shore, and increased fishing effort as other stocks of fish have declined. Albacore tuna are distributed and fished throughout the entire Pacific Ocean basin, so landings in Oregon probably have little impact on overall stock condition. Recent pink shrimp landings are about one-third the landings in the 1980s, reflecting both the impacts of the fishery and a low period in the production cycle of this species. Dungeness crab landings vary by a factor of four or more over the time period (Figure 3.2-3), but this variation probably reflects natural production cycles more than the impact of fishing or marine environmental health, although these factors cannot be dismissed out of hand. Whiting landings, not shown in Figure 3.2-3, have increased dramatically after a concerted effort was made to develop a market for this species (primarily used for surimi). Whiting now dominates Oregon landings, with 158 million pounds landed in 1998, or more than double the rest of marine fisheries combined. Groundfish, the most important of which are sablefish, rockfishes, flat fishes, and ling cod, have shown a decreasing trend over time, re-

Figure 3.2-2. Status of assessed groundfish stocks based on the Pacific Fishery Management Council harvest policy, showing overfished status for four stocks, and precautionary status for five stocks.



(PFMC, 1999)

Figure 3.2-3. Oregon commercial fishery landings, excluding Pacific whiting, 1980-1998.



(ODFW, 1999)

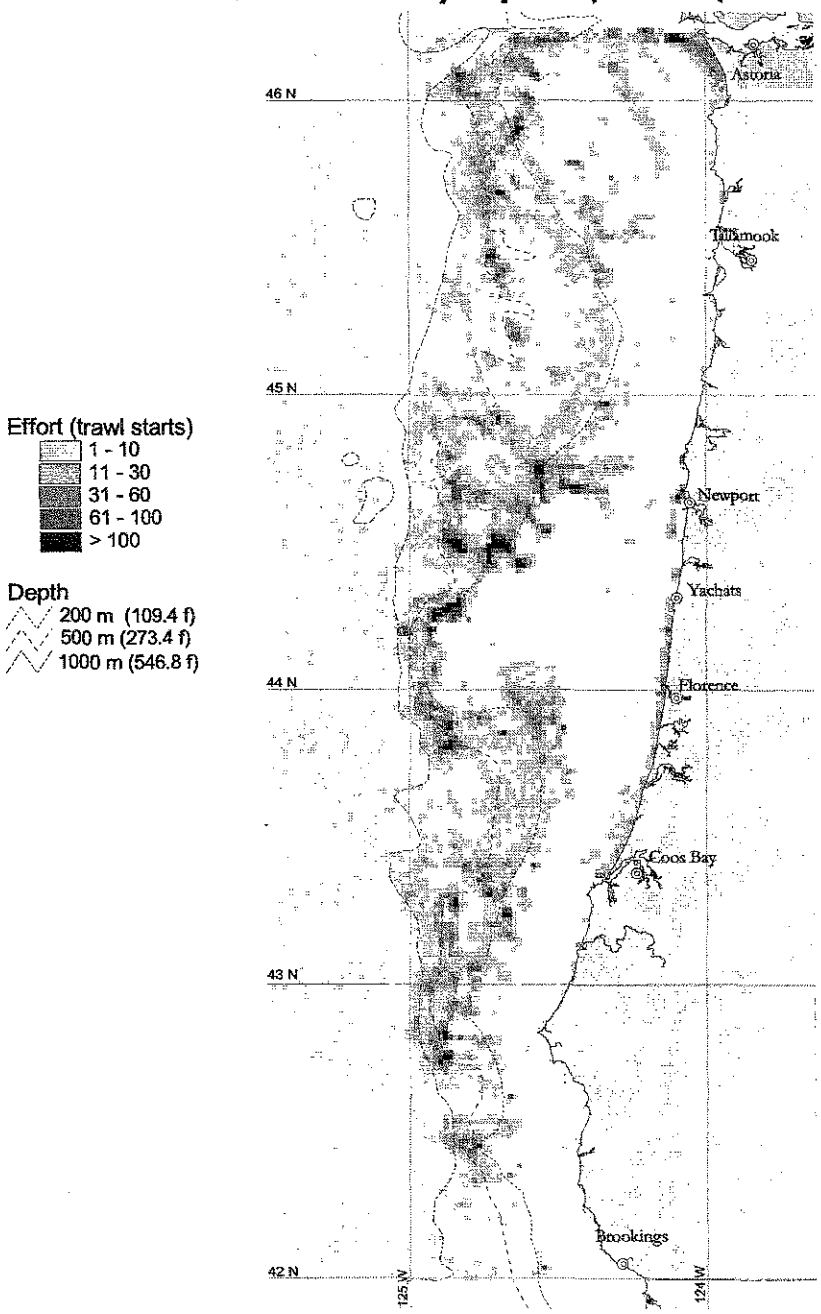
flecting declining stock sizes due to fishing and much-reduced harvest quotas implemented to prevent further declines. Although total marine fishery landings remain high due to the very large volume of Pacific whiting, the decline in other marine fisheries, especially several of the groundfish species, suggests that some parts of marine ecosystems are distorted and not functioning well.

Indicator 2: Bottom habitat degradation (trawl areas and intensity). Over the past two decades, concern has increased over the effects of fishing gear on marine bottom habitats. Although no studies have been conducted in Oregon waters, recent work off California (Engel and Kvitek, 1998; Freidlander et al., 1998) and studies from other regions suggest that mobile fishing gear (1) decreases structural diversity of the seafloor; (2) stirs up sediments, potentially altering biogeochemical cycles; and (3) reduces biodiversity while enhancing abundance of opportunistic species.

Although we do not have local data on the effects of fishing gear on bottom habitat, we do know how often different areas are fished. Examination of fisher log book data on bottom trawl starts on one square nautical mile grid cells for a ten-year period shows that fishing pressure is fairly evenly spread out along the coast (Figure 3.2-4) (Wakefield and Bailey, National Marine Fisheries Service, unpublished data, 1999). There are concentrations of bottom trawling near the 200 m to 500 m depth contours off Newport, Yachats, Florence, and south of Coos Bay, and few areas inside the 1000 meter contour that have not been trawled. Year-to-year analysis of these data show that trawl starts actually decreased about 15 percent from the early to late 1990s, and that the number of trawl starts in deep water (below 700 meters) increased dramatically in late 1980s, but has since leveled off. The number of trawl starts is now about equally divided among depth zones.

In examining the summaries of trawl start data, it is important to recognize that a map of the distribution of bottom trawl starts for specific blocks of time does not translate directly into a map of adverse impacts of mobile fishing gear on bottom habitats off Oregon. Although trawls do make contact with the bottom, we do not know to what extent this has a negative impact on the physical habitat or the biota. Further, distribution of trawl starts may not reflect impact on the bottom because some habitats and areas are no doubt more sensitive to trawling

Figure 3.2-4. Bottom trawl fishing effort off the Oregon coast, as indicated by number of trawl starts for 1-minute latitude cells for a ten-year period (1988-97).



Fishing Data: Oregon Department of Fish and Wildlife Trawl Logbooks
Bathymetry Data: General Bathymetric Chart of the Oceans (GEBCO)
Data Compilation and Cartography: Alison Bailey, NOAA, NMFS, Northwest Fisheries Science Center

than other areas. The fact that the same areas continue to be trawled and continue to produce fish suggests that trawling may not damage the habitat. The uncertainty in these data illustrates the critical need for more thorough investigation of the impacts of mobile fishing gear on different types of bottom habitat off Oregon.

Indicator 3: Marine mammals (pinniped population trends). Populations of harbor seals and the endangered Steller sea lions, both of which breed and pup along the Oregon coast, have risen dramatically in the past 25 years to what may be near historic abundance levels (Brown, 1997). Since passage of the Marine Mammal Protection Act in 1972, harbor seal numbers in Oregon have increased from about 2,500 to nearly 10,000. Populations of Steller sea lions, listed as a *threatened* species from California to Southeast Alaska, and as *endangered* west of the Gulf of Alaska, have declined significantly since the mid-1960s throughout most of its range. The exception is southern Oregon, where numbers have steadily increased from about 2,000 animals in the late 1970s to over 4,000 currently. Over the past dozen years, northern elephant seals have also begun to appear, bearing their young at Shell Island near Cape Arago, the most northerly known pupping site for this species. California sea lions do not breed north of San Francisco, but large numbers of male sea lions move northward into Oregon, Washington and British Columbia in the late summer following the breeding season. The four-fold increase of animals passing through Oregon reflects increased breeding population numbers in California.

In contrast to these successes is the story of the sea otter, a keystone species extirpated from the coast of Oregon in the 1800s. An attempt to reestablish sea otters in Oregon in the 1970s was unsuccessful.

Indicator 4: Kelp forests (location, area, and biomass). Rocky subtidal regions along the central and southern Oregon coast provide superb habitat for forests of bull kelp (*Nereocystis luetkeana*). Oregon's kelp forests serve an important role in the provision of habitat and food for diverse and productive communities. Among them are seabirds, shorebirds, marine mammals that rest and feed in the surface raft of floating kelp bulbs and fronds, mid-water communities of rockfish, perch, invertebrates, and epiphytes that inhabit the kelp forest canopy, and benthic communities composed of bottom fish, sea urchins, sea stars and understory algae. The ecological value of Oregon's kelp forests as a complex three-dimensional aquatic habitat for marine organisms extends far beyond the modest commercial value of harvestable kelp.

A sequential series of aerial surveys conducted at three offshore reefs indicate that the Orford Reef kelp forest is consistently larger than the beds located at Rogue Reef and Cape Blanco, and that annual variability in the overall size of the kelp canopy is considerable (Table 3.2-2). Detailed surveys of kelp canopies by ODFW at five offshore reefs (Cape Blanco, Orford Reef, Redfish Rocks, Humbug Mountain, and Rogue Reef) demonstrated that interannual differences in kelp biomass are dependent upon yearly changes in the spatial extent of kelp canopies and variation in the density of individual kelp plants. Consequently, estimates of the spatial extent (surface area) of kelp forests alone are not a good indicator of the annual biomass (weight) of the kelp plants (ODFW 1998).

Experimental commercial leases for kelp harvest have proved inconclusive about the effects of harvesting bull kelp. Significant questions remain regarding the ecological impacts of sustainable harvests and late-seasonal thinning on the quality of surface habitat, rates of recovery and growth, and the structural arrays of stipes and fronds that support kelp forest communities.

Indicator 5: Marine protected areas (number and area). The designation of protected areas is an important tool for preserving marine ecosystems, habitats, and biodiversity. Most protected areas in Oregon are small, do not exclude all uses and activities, and are not designed to protect ecosystems or biodiversity. Rather, they are special management areas, with some limitations designed to protect critical habitat and species. Protected areas, if large enough, can serve as buffers against management misjudgments in multiple-use areas, for example, by providing refugia for reproducing populations of exploited fish species. In some cases protected areas might even increase take levels of exploited species outside the protected area by safeguarding spawning areas and maintaining a natural size and age population distribution.

Many rocky intertidal areas along the coast are "protected" by virtue of their isolation and lack of access. Others are easily accessed and threatened by overuse, prompting their des-

Table 3.2-2. Area estimates for three Oregon bull kelp forests in hectares (ha[1])

Kelp forest location	1990 ha	1996 ha	1997 ha	1998 ha	1999 ha
Cape Blanco	101	33	112	102	283
Orford Reef	313	66	159	145	670
Rogue Reef	78	67	29	52	304

[1] One hectare equals 2.47 acres

(ODFW, 1998; David Fox, pers. com., 2000)

ignation as Marine Gardens. These include Haystack Rock in Cannon Beach, Cape Kiwanda, Otter Rock, Yaquina Head, Yachats, Cape Perpetua, and Harris Beach. The taking of invertebrates—mussels, clams, and such—is prohibited in these areas. In other less-protected areas, there are limits on the take of food invertebrates, and interpretive signs discourage the collection of tidepool animals such as sea stars (Oregon Territorial Sea Management Plan, 1994).

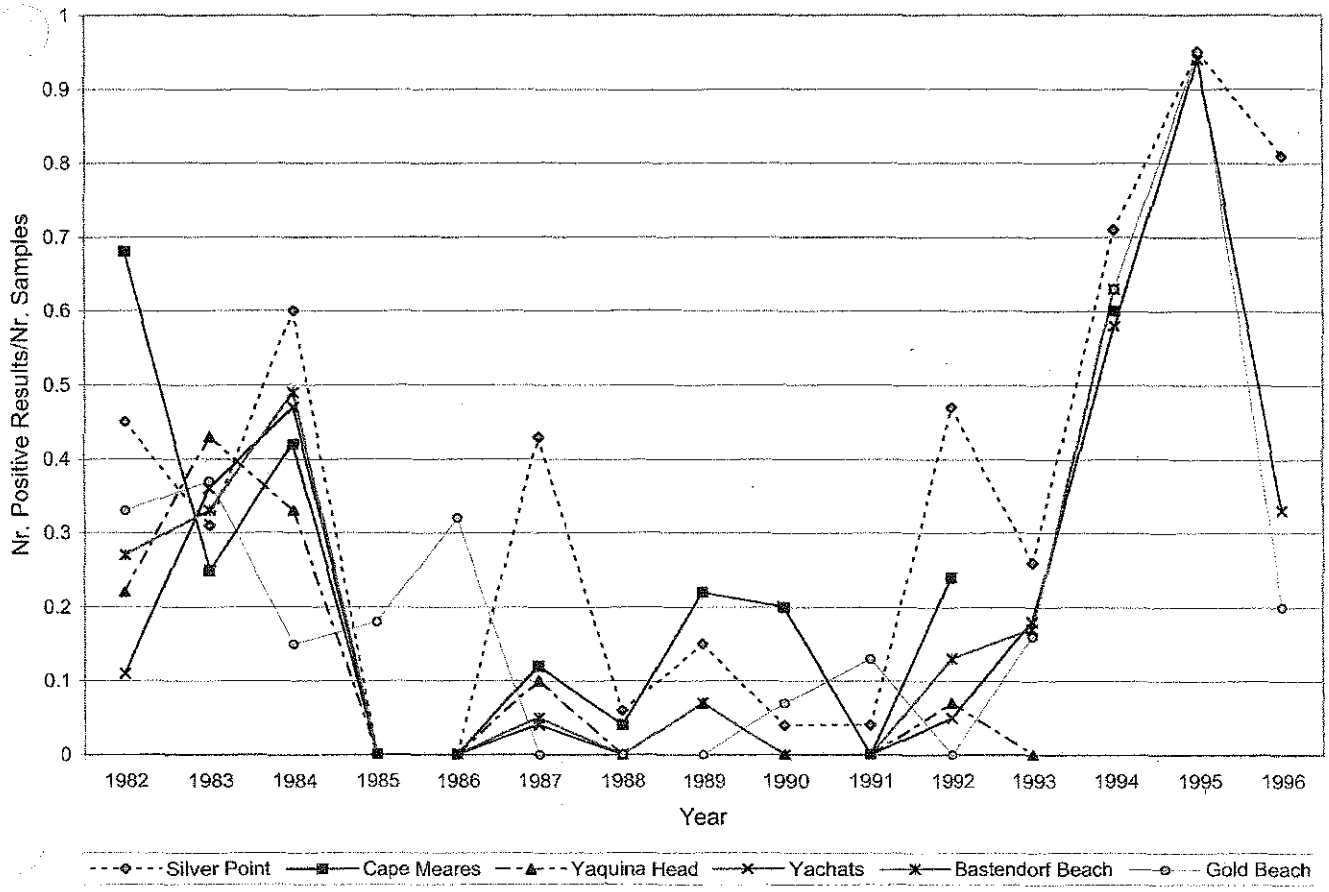
The offshore rocky islands that provide valuable bird nesting habitat and marine mammal breeding grounds, are well protected by Three Arch Rocks and the Oregon Islands National Wildlife Refuges. The more than 1,400 rocks, reefs, and islands in the Oregon Territorial Sea are included in these refuges. Currently, however, neither shallow- nor deep-water marine habitats are designated as protected areas. Although marine sanctuaries and reserves have been proposed in the past, primarily to protect spawning and rearing areas for bottom fish, none have been established, due in part to fishing industry opposition.

Indicator 6: Harmful algal blooms and toxic shellfish (recurrence and severity). Molluscan shellfish—clams, mussels, and the like—are particularly good indicators of marine water quality. These filter-feeding organisms accumulate particles from the water column in their tissue and thus serve as sentinels for the presence of toxins or other pollutants. Often these toxins or pollutants occur in the water because particular species of algae or plankton have reached unusually high concentrations and become harmful algal blooms or HABs. Because the population dynamics of the planktonic food sources for shellfish are governed by ocean conditions, it is clear that HABs and shellfish toxicity are linked to the processes that govern the productivity of the coastal ocean.

One toxin of special interest is saxitoxin, which is responsible for Paralytic Shellfish Poisoning (PSP). PSP appears first in shellfish on the open coast and may then spread to adjacent estuaries. PSP shows considerable year-to-year variability in the frequency, intensity, and duration of toxic events (**Figure** 3.2-5). Another toxin, domoic acid, is also responsible for shellfish-related illness, but incidence data are sparse.

Indicator 7: Shoreline armoring and beach loss (ar-

Figure 3.2-5. Saxitoxin at six sites along the Oregon coast over a 15-year period, showing the highly variable frequency, intensity, and duration of toxic events.



(Woods, unpublished data, 1999)

mored miles and trends). Oregon's beaches as we know them today have been in their proximate location for about the last 6000 years, when sea level stabilized after the last glacial period. During the relatively rapid rise in sea level, the coast retreated, and easily eroded dunes and marine terraces cut back more rapidly than the older, erosion-resistant rocks that form headlands today. These headlands divide the coast into a dozen separate pocket beach segments or "littoral cells". Each of these littoral cells is more or less isolated from the others, with relatively independent sources and sinks of beach sand.

Although large, infrequent earthquakes no doubt have dramatic physical impacts on Oregon's coastlines, the main physical processes that shape the coast today are large, storm-generated waves, high water levels, and strong nearshore currents that cut into and lower beaches, erode dunes, and undermine bluffs. Erosion at the base of bluffs in turn leads to slumping or major slides in geologically unstable areas. Erosion of dunes and bluffs and the redistribution of the eroded sand within littoral cells are natural processes that help maintain the physical integrity or size of beaches.

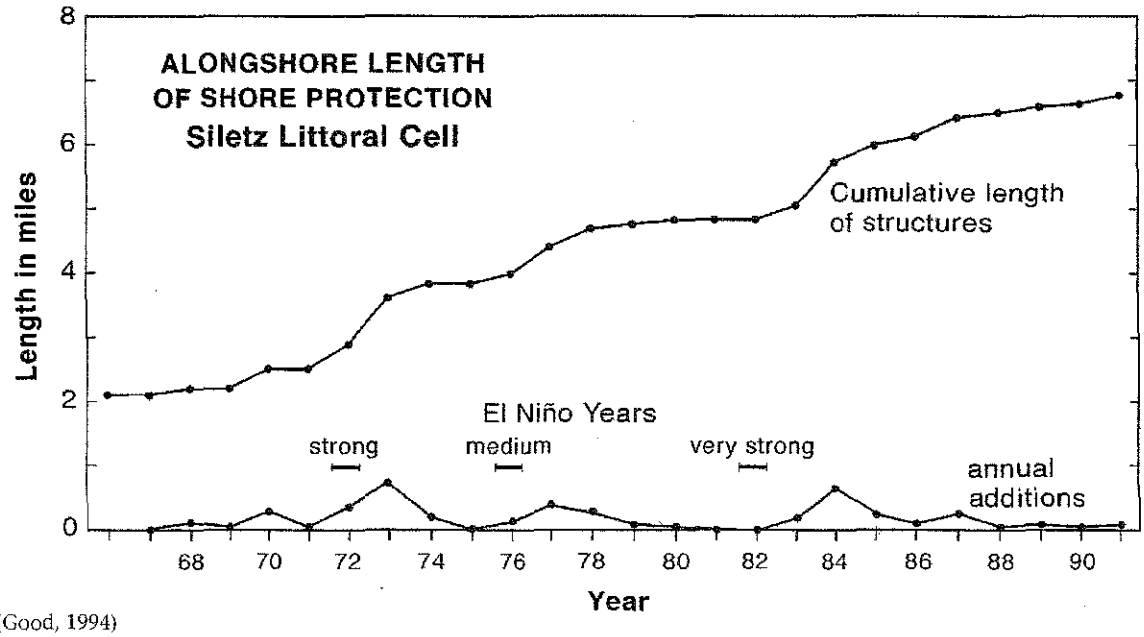
When the coast was sparsely populated, coastal erosion and landslides were viewed as natural events—something to be avoided when building on coastal lands. But as coastal lands were developed more extensively, particularly along ocean-front beaches, erosion and sliding were reclassified as "natural hazards"—something to be controlled in order to protect property. In recent times, that control has involved the construction of large rock walls called "riprap revetments" that extend along and out onto the public beach. Many miles of riprap revetments have been built along the Oregon coast in recent decades and the pace of new construction is steady and probably increasing (Good, 1994).

Oregon Parks and Recreation Department, the state agency that regulates shoreline armoring and other beach construction, has issued nearly 500 permits since 1967, when the Oregon Beach Law established the regulatory program to protect public access and prevent private encroachment on public beaches. Data on shoreline armoring is not available for the entire coast, but a case study of the Siletz littoral cell in north Lincoln County found that at the present rate of armoring, the entire cell would be hardened by 2030 (**Figure 3.2-6**; Good, 1994).

Strengths, threats, and information needs

The deteriorating condition of a number of marine fish stocks is cause for concern about the overall health of Oregon's marine ecosystem. Coastal coho salmon and some stocks of steelhead and sea run cutthroat trout are listed as threatened under the Endangered Species Act. The health of these stocks is affected by natural variability in ocean conditions, as well as a host of other factors—fishing pressure, mortality at dams, poor habitat conditions in estuaries and watersheds, and more. Although not a reflection of marine ecosystem health, the condition of these stocks nevertheless affects the ability of the marine ecosystem to provide the goods and services people

Figure 3.2-6. Cumulative and year-to-year length of shore protection structures constructed in the Siletz littoral cell (<1967-1991), showing periodic El Niños and post-El Niño surges of shore protection structure construction.



(Good, 1994)

expect. For other species, such as rockfish, declines are most likely due to overfishing as well as underestimates of population size and reproduction rates. The most significant risk to condition of fish stocks is our very limited understanding of the complex interactions of natural and human-caused changes in stock health. Furthermore, we understand very little about species and habitat associations and needs, and recruitment and rearing requirements of species and species complexes.

Federal law mandates that the regional fishery management councils that manage fisheries in federal waters to manage for the maximum sustained yield as reduced by relevant social, economic or ecological factors. Attempting to determine a maximum sustainable yield in a dynamic and changing ocean environment with an inadequate research base is a continuing problem. In practice, many stocks around the nation have declined as a result of overfishing. In part this resulted from ecological ignorance, in part from ineffective management measures, and in part from intense political pressure from fishers and others who have a financial interest in maintaining harvest levels. Recent management measures have turned attention to the recovery of West Coast salmon stocks (particularly coho salmon) and rebuilding of several groundfish stocks. These measures will require careful monitoring and evaluation for perhaps a decade or more—at least long enough to allow salmon habitat to recover, and to permit the rebuilding of slow growing rockfish species. Sustainable fisheries, and the economic benefits they provide to fishermen and to coastal communities, are dependent on healthy stocks of fish and the ecosystems that produce them. However, moving toward sustainability is a socially and economically painful process, as shown by the present "crisis" in the groundfish industry.

Additional research on fish stocks and impacts of fishing gear is needed to achieve sustainable fisheries, including (1) increased data collection on species for which stock assessments have not been conducted due to lack of data; (2) habitat-specific distribution and associations of all rockfish and other groundfish species; (3) life history characteristics and basic biology of all the commercial groundfish species to obtain better understanding of the ecology of these diverse communities; (4) sources and sinks for groundfish larvae and spatial patterns of recruitment to allow scientists to evaluate the potential of marine reserves as management tools; (5) studies on food and habitat requirements of all life history stages of the principal groundfish species to allow us to shift from single species to ecosystem management; (6) data on the impacts of bottom trawls and other mobile fishing gear on benthic invertebrate communities; (7) studies of the physical damage done by bottom trawls on different types of bottom habitat; (8) other biological and chemical impacts of bottom trawls on habitat.

The dramatic resurgence in marine pinniped numbers and expansion of the range of some species since implementation of the 1972 Marine Mammal Protection Act and protection of offshore rock and island breeding habitat suggest that strong management measures have clearly offset the effects of natural variability and human-caused stressors—oil spills, marine debris, other pollution, and direct harassment. Increased numbers and expanded ranges (e.g., the northern elephant seal) also testify to the abundance of food sources and the overall health of the nearshore marine ecosystem.

Oregon's kelp forests are a dynamic and ecologically important site-based marine resource located on submerged rocks and reefs administered under the Oregon Territorial Sea Plan (1994). The kelp beds are subject to the requirements of Oregon Statewide Planning Goal 19 (ORS 197.180), and consequently, bull kelp forests and their associated subtidal marine habitats and communities must be managed for the sustained yield of renewable resources. Oregon's marine and coastal resource managers currently lack sufficient scientific information to characterize annual variability in the location and spatial extent of kelp forests, and to understand the functional role served by kelp forests in the dynamics of nearshore marine fish, mammals, and invertebrate communities. Additional descriptive information and results from controlled field experiments are needed to assist the next generation of coastal resource managers with sound decisions. Examples of needed research include (1) annual aerial and water-based surveys of the location, spatial extent, plant density, and overall biomass of representative kelp forests in southern and central Oregon, (2) comprehensive descriptions of habitat use of kelp forests by communities of seabirds, shorebirds, marine mammals, fish, and invertebrates, (3) empirical studies to gain increased understanding of the dynamics and interactions among members of plant and animal communities that inhabit kelp beds, and (4) annual estimates and future predictions of commercial and recreational use of kelp forests and their associated nearshore subtidal rocky reefs .

Oregon's marine protected areas have not substantially changed in size or degree of protection in recent years. With increasing human population, coastal development, and recreation use of marine environments, more protection may be needed, particularly for unprotected nearshore reef ecosystems threatened by overfishing, habitat alteration, oil spills, and dredged material disposal. Difficulties in establishing protected areas in the ocean result from the dynamic, fluid, nature of the habitat and the hesitancy to unnecessarily restrict take of exploitable species, although protection of spawning and nursery areas might actually increase overall take. Political acceptance of increased protection is also a major issue.

The seven Marine Garden designations for sensitive rocky intertidal areas provide some protection to these habitats. However, extensive tourist visitation can damage fragile tidepool organisms and some sites are in danger of being loved to death. Pollution from outside the gardens is also a threat, as demonstrated by the wreck of the New Carissa in winter 1999.

Oregon's rocky islands are protected as part of the National Wildlife Refuge system. Protection, however, only extends down to the mean high water line. A 500-foot buffer zone around the rocks and islands is closed during summer to protect breeding birds and stellar sea lions, affording some protection to subtidal habitat and species as well.

Analysis of limited data on historical trends in the appearance of saxitoxin and domoic acid in estuarine shellfish, seems to follow the earlier appearance of the toxins in mussels or razor clams on the open exposed coast adjacent to the mouths of the estuaries. Given the current state of knowledge regarding the sources and population dynamics of the harmful algal bloom species responsible for Amnesiac Shellfish Poisoning (ASP) and Paralytic Shellfish Poisoning (PSP), it is difficult to assess the future risks to estuarine shellfish from these sources. Algae or plankton producing saxitoxin (toxin in PSP) are known to form resting stages which, in other regions of the world, serve as "seed stocks" to initiate toxic blooms. In Oregon there is no data on where these seed stocks may be located. Enhanced spatial and temporal shellfish monitoring would greatly enhance the ability to assess risks and threats.

Construction of revetments and seawalls along ocean beaches can have a number of adverse effects, blocking public access to or along the beach and worsening erosion on unprotected adjacent property. In the long term, however, it is the gradual cutting off of natural sand replenishment processes that may be the most significant effect these structures have on Oregon beaches (Good 1994). Shoreline areas most at risk are the north and central Oregon coast areas from Cannon Beach to Yachats. These are areas where beachfront lands are mostly in private ownership, where erosion has been most severe in recent decades, and where relative sea level has been on the rise during most of the 20th century. Global sea level rise is expected to accelerate as the 21st century wears on, moving the high water line ever landward. These factors, combined with diminished sand supply associated with shoreline armoring, threaten the health and physical integrity of one of Oregon's important natural resources—its ocean beaches.

Policy statements in the Oregon Beach Law and Oregon's land use program would seem to provide for public beach resources and promote avoidance of natural hazards along adjacent uplands. In practice, however, local comprehensive plans do not really advance hazard avoidance. Instead, development decisions directly or indirectly promote shoreline armoring by allowing variances to setback requirements that put buildings and infrastructure in harms way (CNHPWG 1994).

Projections and conclusions

- Some groundfish stocks are likely to continue at depressed levels unless strict management controls continue to be applied. Recovery of these long-lived species may take a decade or more of reduced fishing pressure and habitat protection. As a result, the segment of the industry dependent on groundfish is in an economic crisis with little hope of quick recovery.
- Although only limited data exist on the impact of fishing on bottom habitat, high levels of fishing effort with bottom trawls and other fishing gear may be adversely affecting the productivity of the habitat that supports bottom fishes. If so, the carrying capacity of the habitat may be degraded and rebuilding stocks to previous levels may not be feasible or may take much longer than expected.
- Recent weather patterns may be signaling a major decadal climatic shift toward wetter, cooler conditions, and ocean conditions that are more favorable to salmon survival. If so, coho stocks may recover to 1970s levels, allowing resumed fishing. However, unless there is a significant improvement in the health of spawning and rearing habitat, the strength of stock recovery may be weak. This will place coho stocks at even greater risk of extinction when the next unfavorable climatic shift occurs.
- Increased commercial and recreational fishing pressure on nearshore subtidal rocky reef areas for rockfish, lingcod, greenling is primarily the result of the collapse and subsequent closure of the coho salmon fishery. Increased fishing pressure on these nearshore reef species is likely to continue, reducing the size and age structure of these populations and placing them at risk.
- Oregon's nearshore reefs are also sites for expansion of emerging commercial resource uses, including kelp harvest, the live-fish fishery, expansion of the open-access hook-and-line fishery, and the in-situ propagation and enhancement of sea urchins, abalone, and other mariculture species.
- Nearshore reef areas are also a popular destination for recreational boaters, and the kelp forests and rocky subtidal habitats face increased and diversified use by recreational and commercial SCUBA divers.
- Marine mammal populations will stay healthy, barring unforeseen problems with stocks or food availability. Species and habitat protection measures over the past three decades have been very effective.
- Data on the recurrence and severity of harmful algal blooms is inconclusive, but the potential risks to human

health associated with poisonous shellfish toxins warrant monitoring of this indicator to better assess their threat.

- Assuming that present oceanfront development and shoreline armoring practices persist, beachfront property along privately owned shorelines will be increasingly armored as the 21st century wears on. As episodes of erosion increase in frequency and severity, and affect more property, pressure will mount to lift the prohibition on armoring for post-1977 development. As armoring gradually shuts off natural sand replenishment processes, some beaches will gradually narrow and cease to function as viable recreational resources.

What data are available and how complete are they?

A wide variety of data sources were used in preparing this marine ecosystem health status report, as reflected in the reference section and citations in Table 1 and the text. Confidence in the data for some indicators is high (e.g., marine mammals, fish landings, some stock assessments). For other indicators (e.g., shoreline armoring, kelp, harmful algal blooms), confidence was moderate to low, owing to limited data from geographic case studies or incomplete time series. There are no Oregon-specific data on the impacts on bottom habitat by mobile fishing gear; however, high-confidence data on bottom trawl starts does provide a partial basis for designing needed research. Despite limited data, this latter issue is so important that it warrants indicator status. In all cases, the interpretation of data with respect to marine ecosystem health is based in part on the professional judgment of those scientists who contributed to or reviewed the report. Specific caveats about data quality and interpretation are included in context.

There may be better indicators than those used here for monitoring marine ecosystem health and sorting out natural versus human-caused change. Thus, this report should be viewed as a beginning effort to characterize ecosystem health and suggest causal factors for observed trends. It also presents a challenge the marine science and resource management community—we must identify the best possible indicators of marine ecosystem health, improve monitoring programs to track these indicators, and use the findings to improve decision-making processes and marine resource management.

Acknowledgments

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Report to the
Oregon Department of Land Conservation
and Development
Salem, Oregon

El Niño and La Niña — Erosion Impacts along the Oregon Coast

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INTRODUCTION

During the past twenty-five years we have come to recognize the importance of El Niño and La Niña to a wide range of global environmental conditions. Included are processes important to beach and property erosion along the West Coast of the United States, and specifically along the shores of Oregon where the erosion has been dramatic. The importance of El Niño to coastal erosion became evident during the extreme 1982-83 event, when near catastrophic erosion in Southern California attracted the attention of the news media; no less significant was the occurrence of erosion in Northern California and in the Pacific Northwest. The importance of El Niño to erosion was reaffirmed during the winter of 1997-98, with a near repeat of the processes and impacts.

Erosion continued along the Oregon coast during the winter of 1998-99, but now under La Niña conditions. It is recognized that there is a continuum between El Niño and La Niña processes, with those respective events representing the extreme opposites. Most years are intermediate or "normal". In terms of the processes important to coastal erosion, during an El Niño the most significant factors are elevated mean water levels that cause measured tides to be much higher than predicted, and the more southerly paths of storm systems so they mainly cross the shore of Southern California. In contrast, during a La Niña the mean water levels are closer to normal and storm systems pass directly over the Northwest, increasing wave energy levels. So there tends to be a difference in the dominant processes important to coastal erosion during El Niño versus La Niña years. This was demonstrated by the respective winters of 1997-98 and 1998-99.

The objective of this report is to document the erosion that occurred along the Oregon coast during the El Niño winter of 1997-98 and La Niña winter of 1998-99. The causative processes are investigated, including analyses of the measured tides and storm waves. Data for those processes are used in models that have been developed to evaluate extreme total water levels during storms and the resulting property erosion (Shih et al., 1994; Ruggiero et al., 1996, 1997; Ruggiero, 1997; Komar et al., 1999; Ruggiero et al., in review). The erosion that has occurred during these past two winters provides the first major test of the usefulness of the models in predicting potentially extreme erosion, employed in the establishment of set-back lines so that developments can remain safe from erosion.

SUMMARY

Extensive beach and dune erosion occurred along the Oregon coast during the El Niño winter of 1997-98, followed by additional impacts from the La Niña storms of 1998-99. Analyses have been completed of the El Niño and La Niña processes that are important to erosion along the coast, including a detailed documentation of the wave conditions and mean water levels that affect the elevations of tides. It is found that generally there is a reversal in the relative importance of these processes during the El Niño versus La Niña events. In an El Niño most important are elevated water levels along the Oregon coast produced by sea-level "waves" originating at the equator, plus the more local effects of warmer offshore water temperatures and strong northward-flowing ocean currents. When the 1997-98 El Niño reached its maximum development, the monthly-averaged water level was raised by 70 cm, elevating the predicted tides by that amount. In contrast, during the La Niña winter of 1998-99, the monthly mean water levels were close to normal, some 20 to 30 cm lower than during the El Niño. There also were noteworthy differences in wave energy levels between the two years, caused by the southerly shift of storm systems during the El Niño so that they crossed the coast of Southern California, while in the La Niña they passed more directly over the Oregon coast. A major storm struck the Oregon coast on March 2-4, 1999 during the La Niña, generating a deep-water significant wave height of 14 meters, far in excess of the previously estimated 10-meter height expected from the 100-year storm event. Due to the strong winds of this storm, it generated a significant storm surge, elevating on average the water level by 70 cm.

Detailed analyses have been undertaken of the largest storm events that occurred during the El Niño and La Niña winters. This involved calculations of the runup of the waves on beaches, which when added to the measured tides yields the total elevation achieved by the water during the height of the storm. Of significance, the largest waves of the March 2-4, 1999 storm reached the coast at a time of low tide, reducing the erosional impact of that storm. The highest water levels achieved during the major storms were 4 to 5 meters NGVD 1929, depending on the slope of the beach which in part controls the level of wave runup. Had the high waves of the March 1999 storm occurred at a time of high tide, the water elevation could have reached 6 to 7 m NGVD29, producing considerably more beach and dune erosion.

Of importance to the occurrence of erosion is that the total water level achieved by the tide plus the wave runup exceeds the elevation of the top of the beach where it meets the base of foredunes or sea cliffs. The analyses confirm that the major storms during both the El Niño and La Niña were sufficiently severe to account for the observed erosion. The unusual erosion that occurred during the El Niño and La Niña winters provided the opportunity to test a geometric model developed to estimate the potential dune retreat during the most extreme storm conditions, a model that can be used to establish setback lines for safer development. Analyses to test the model were undertaken at specific sites along the Oregon coast that had experienced foredune erosion. This included surveying beach and dune profiles, permitting a direct documentation of the resulting erosional retreat of the foredunes and a comparison with that predicted by the geometric model. The results showed good agreement between the calculated total water levels reached by the tides and waves during the major storms, and the elevation of the toe of the eroded dunes, confirming a fundamental assumption made in the model. Where comparisons were possible, the measured horizontal dune retreat agreed reasonably well with that predicted by the geometric model, supporting its use to establish setback distances.

SUMMARY

Homes and other properties backing beaches are threatened by erosion during extreme events, when the runup of large storm waves on the beach is superimposed on exceptionally high tides. The objective of this report is to examine the potentially extreme waves and tides that can be expected along the Pacific Northwest coast, ranging over times spans of 25 to 100 years. Reassessments of these processes are needed in that during recent winters the Northwest coast has experienced both extreme waves and tides. In particular, during the 1998-99 La Niña, four storms generated deep-water significant wave heights that exceeded 10 meters, what had been projected in 1996 to represent the 100-year extreme event. During a storm on 2-4 March 1999, significant wave heights reached 14 meters, and measured tides were 1.75 meters higher than predicted, mainly due to the associated storm surge.

This report begins with a re-analysis of the Northwest wave climate, the objective being to provide up-dated projections of the most extreme storm wave heights and periods. Analyses of wave data derived from four ocean buoys off the Northwest coast, installed by the National Data Buoy Center of NOAA, indicate that the revised 100-year deep-water significant wave height should be on the order of 16 meters. However, the projection of future extreme-wave conditions is uncertain due to the discovery that during the past 25 years of buoy measurements, wave heights off the Northwest coast have progressively increased; for example, the buoy offshore from Washington documents a rate of increase of 0.168 m/yr for the largest storm waves of the year, representing an increase in wave heights by 4.2 meters in 25 years. In that the climate factors which produced this increase have not been clearly identified, it is not possible at present to predict whether this increase will continue and thereby affect the projections of the 25- through 100-year extreme wave heights.

Improvements in the predictions of extreme tides also have been accomplished through analyses of measured water levels that occurred during the major storms of the 1997-98 El Niño and 1998-99 La Niña. As in previous El Niños, it was found that the monthly mean water levels were raised by 50 to 60 cm due to warmer ocean water temperatures and strong ocean currents. Analyses of the individual storms demonstrated that the accompanying storm surges commonly elevated water levels by an additional 50 to 70 cm during the one to two days duration of the storm, while the extreme March 1999 storm generated a storm surge of 150 cm, which raised the measured tide by 175 cm above the predicted tide due to the superposition of the storm surge above the monthly-mean water level.

This report ends with a discussion of how these multiple processes can be combined in applications to evaluate potential water levels on beaches, to obtain predictions of the 25- to 100-year maximum levels achieved by the water due the superposition of the runup of storm waves on top of exceptionally high tides. This is explored through analyses of three scenarios: (1) A normal (non-El Niño) winter, with the occurrence of a 100-year storm; (2) An El Niño winter characterized by high monthly-mean water levels that enhance the tides, but with the probability of reduced storms; and (3) A "worst case" situation when a major storm occurs during an El Niño when there are elevated tides. Scenario #1 predicts a total water level of 7.3 meters NGVD29, mainly due to the high wave runup of the 100-year storm and the generation of a 1.75-meter storm surge. In contrast, the El Niño scenario #2 yields a total water elevation of 5.9 meters NGVD29, less than scenario # 1 because the elevated monthly mean water levels and measured tides of an El Niño are not as

great as the wave runup and storm surge contributions of a 100-year storm in scenario #1. This contrast demonstrates that beach and property erosion during an El Niño are not particularly caused by extreme total water levels, but are due more to "hot spot" erosion north of headlands and tidal inlets caused by the northward transport of beach sand within the littoral cells. Although the occurrence of a near 100-year storm is less likely during an El Niño year due to the more southerly tracks of the storm systems, such an event cannot be entirely ruled out, and the "worst case" scenario #3 represents that condition. However, the total water level of scenario #3 is only about 30 cm higher than scenario #1. In spite of that small difference, management planning for scenarios #1 and #3 differ in that #3 includes the hot-spot erosion impacts associated with an El Niño as well as the extreme wave runup and storm surge of a major storm, the factors important to scenario #1. All three scenarios predict the potential of significantly greater erosion impacts along the Northwest coast than were assessed in 1996, prior to the major 1997-98 El Niño and 1998-99 La Niña winters.

In order to improve predictions of extreme events on the Northwest coast that may lead to major erosion impacts, a better understanding is required of how the climate regime over the North Pacific controls the strengths of storms and the waves they generate. Only with such an understanding can we predict whether the increases in wave heights and periods that have occurred during the past 25 years will increase during the next 25 to 100 years, and fully establish how factors such as the occurrence of an El Niño or La Niña govern the wave conditions during any particular year.

PATTERNS OF EROSION DURING THE 1997-98 EL NIÑO AND 1998-99 LA NIÑA

The preceding sections of this report have focused on the processes of El Niño and La Niña that play an important role in causing beach and property erosion along the Oregon coast. We now turn to the resulting impacts, the erosion that occurred during the 1997-98 El Niño and in the following winter during the 1998-99 La Niña. The impacts at a number of sites will be examined, providing typical examples of the erosion rather than attempting to present a comprehensive review of the coast-wide impacts.

From the above review of the processes, it can be anticipated that there will be contrasting patterns of erosion during the El Niño and La Niña winters. During an El Niño the increased sea levels, enhancing the elevations reached by tides, combine with the runup of storm waves to produce some degree of erosion along the full length of the coast. But of particular importance is the northward longshore movement of beach sand within the littoral cells during an El Niño, caused by the more southerly paths of storms. This northward shift of sand during the El Niño winter results in erosional "hot spots" as diagrammed in Figure 8, areas where the erosion is greatest. Specifically, hot-spot erosion can be expected to the immediate north of headlands, contrasting with the tendency for sand accumulation to the south sides of headlands. On inlets with jetties, the headland effect in miniature can be expected, with the occurrence of some erosion to the north of the jetties. Inlets without jetties tend to migrate toward the north, "pushed" in that direction by the northward longshore transport of sand on the beach by the El Niño waves. As will be seen below, most of the erosion that occurred along the Oregon coast during the 1997-98 El Niño conforms with this hot spot pattern.

Example of "hot spot"

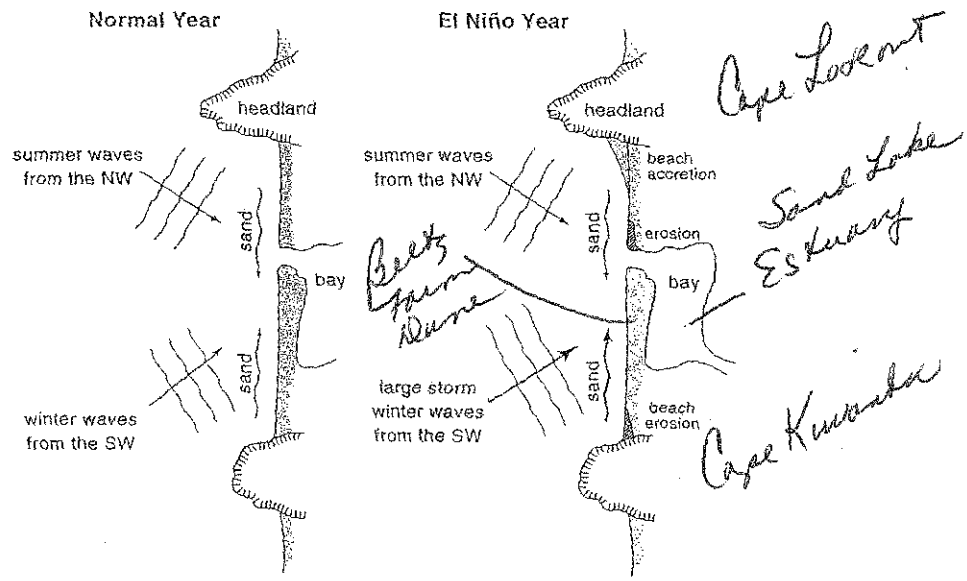

Figure 8: The patterns of seasonal longshore sand transport within the littoral cells of the Oregon coast, contrasting with the Normal pattern that occurs during an El Niño. In an El Niño, the unusual northward movement of sand results in erosional "hot spots" as diagrammed.

DISCUSSION OF RESULTS AND POTENTIAL EROSION

The analyses of the three scenarios presented in Table 3 differ considerably from the results, had similar analyses been undertaken in 1996. At that time the 100-year projected extreme deep-water wave height was about 10 meters. There was a high level of uncertainty in that projection due to the shortness of records of wave measurements. But the largest change in the 10- through 100-year wave projections has resulted from the unprecedented number of major storms during the winters of 1997-98 and 1998-99, with a total of five storms having exceeded the earlier projection of 10 meters for the 100-year event. Analyses presented here, Table 1, indicate that the 100-year storm should generate deep-water significant wave heights on the order of 16 to 17 meters, with the further projection that we can routinely expect 10-meter waves, approximately every 5 years. It is uncertain what change in climate has brought about this recent increase in storm-wave heights. It is clear that for the past 25 years there has been a progressive increase in wave heights and periods along the PNW coast (Allan and Komar, 2000, in press). The climate factors responsible for this progressive increase have not been determined, and without such an identification it is not possible to predict whether this trend will continue in the future. If it does, the extreme waves in the future will be even greater that the projected values given in Table 1, the result of an analysis procedure that assumes the wave climate is static, with no long-term trend.

The other major change in Table 3, compared with similar estimates made in the past, involves the level of enhancement of the tide by the occurrence of a storm surge. As of 1996, analyses of storm surges had indicated they would typically raise the water level by 15 to 30 cm, and during a severe storm might raise it by 50 cm. This view changed when the storm of 2-4 March 1999 raised the measured tide above the predicted tide by about 1.75 meters as measured by the Toke Point tide gauge in Willapa Bay. In the analyses presented in this report, it is suggested that about 1.5 meters of this actually represented the storm surge, the balance in the water-level increase having been produced by the monthly-mean water level. This occurrence is 1-meter higher than the 50-cm elevation previously projected for an extreme storm surge.

In that both the increased wave heights and storm surge elevations are associated with the occurrence of major storm events, the revisions in Table 3 compared with estimates in 1996 clearly reflect the increased storm intensities that have occurred in recent years. Scenarios #1 and #2 clearly reflect that experience. Scenario #1 is basically for the occurrence of what is now projected to be the 100-year storm event. In calculating the component factors, we have adopted something of a "worst case" situation wherein the storm and its generated waves and surge strike the coast at a time of high tides. However, in all scenarios we used an average for the predicted higher-high tides, rather than using the greater elevation of a Spring Tide. So in that sense the scenarios do not represent worst-case events. The monthly-mean water levels (*MM*) entered into scenarios #1 and #2 have been well documented by measurements, Figure 2, and do not represent particularly extreme values based on past experience. The wave runup (*R*) is a reasonable estimate except that its calculation is based on a wave period $T = 20$ seconds. An examination of the largest storms, those that were used to project the extreme wave heights, demonstrated that a number of them had periods up to 20 seconds, whereas others had periods as low as 12 seconds. In that the calculation of *R*, equation (1), is very sensitive to the wave period, being directly proportional to *T*, whether the storm has a period of 20 or 12 seconds will result in a substantial difference in the level of the wave runup. In that we used a value of 20 seconds in developing the scenarios in Table 3, we again have based the assessment on a worst-case condition.

The results for the total water levels in Table 3 suggest that in terms of the resulting coastal erosion, an El Niño climate event should have less impact on the coast than a "normal" or La Niña winter. This finding appears to conflict with our experience that significant erosion occurs along the coasts of Oregon and Washington during an El Niño (Komar, 1986, 1997, 1998a; Kaminsky et al., 1998). However, most of the El Niño related erosion is not necessarily the result of extreme storms and water levels, the factors analyzed in Table 3, but is due instead to the shift in the wave directions to a more southwesterly quadrant, producing a northward movement of beach sand within the littoral cells between headlands. During both the 1982-83 and 1997-98 El Niños, it was observed that the most severe beach and property erosion occurred in "hot spot" zones north of headlands and north of migrating tidal inlets, produced by the northward movement of beach sand. Those occurrences of erosion demonstrate the fact that there are other factors and processes important to the problem that it is not simply due to extreme levels of tides and wave runup as analyzed in Table 3. However, during a normal or La Niña winter, when the storms come more directly across the Northwest coast,

the northward movement of sand as occurs during an El Niño is not an important factors in the erosion, so the total water level of scenario #1, governed mainly by the occurrence of a major storm, is likely to dominate the resulting erosion, which will also tend to develop along the full length of the littoral cell, rather than being localized in "hot spot" areas as during an El Niño. This coast-wide pattern of erosion was illustrated by that which occurred along the Northwest during the 2-4 March 1999 storm, even though the calculated maximum total water levels reached to only 4 to 5 meters NGVD29, because the storm struck the coast at a time of relatively modest predicted tides (Komar et al., 1999).

Normally one attempts to quantitatively estimate the probability of the occurrence of a natural event; in the present application, the probabilities of the calculated total water levels for the three scenarios in Table 3. It should be recognized that although we tend to express the probability, for example, as the "100-year event", that event actually represents the 1-in-100 probability of occurrence during any one year (in other words, a 1% chance of occurrence in any given year). It is difficult evaluate this probability when one is considering the joint occurrences of multiple processes, each of which has its own probability of occurrence. To make such an analysis, we might separate the processes that control the mean water levels — measured tides — from the runup of the storm waves. If these two components were completely independent in their occurrences, then one might couple the 2-year water level with the 50-year wave runup occurrence to arrive at a 100-year combined event (alternately, we could use 10-year combinations). But as we have seen, an important part of the measured tide is the storm surge, which occurs at the time of the enhanced wave generation and runup, so a division between measured tides and wave generation cannot be considered as independent processes. A more rational division is between the predicted tides plus the monthly-mean water levels as affected by water temperatures and offshore currents, versus the storm-occurrence processes of wave generation (runup) and the storm surge. To a degree such a division was made in scenarios #1 and #2, where #1 represents the 100-year storm while the combination of predicted tide and monthly mean water level is a 1-year assessment. In the opposite direction, scenario #2 represents an El Niño winter when the water levels are close to a 100-year occurrence, while the storm wave heights are more moderate and of frequent occurrence.

The selections of conditions for scenarios #1 and #2 were based on the desire to have the combined results sum to a total water level that has an approximate 1-in-100 probability of occurrence. However, in that those specific climate regimes do not occur every year, the probabilities are lower. In that most years are "normal", those years combined with the occurrences of La Niñas to give scenario #1 have close to a 1-in-1 probability, so the total water level calculated in Table 3 for scenario #1 can be taken as having close to a 1-in-100 probability. In that strong El Niños are infrequent, the projected water level in Table 3 for scenario #2 has a low probability, much less than 1-in-100, but this is perhaps irrelevant since most of the erosion during an El Niño has the "hot spot" pattern associated with the northward movement of beach sand within the littoral cells, rather than being caused by total water levels.

The greatest potential impact to the Northwest coast would come from scenario #3 in Table 3, which in effect combines the major impacts of an El Niño (including the northward movement of beach sand), and the occurrence of a 100-year storm as analyzed for scenario #1. Although storm systems do tend to be displaced toward the south during an El Niño, so we might expect some reduction in wave-energy levels as hypothesized by Seymour (1996), the possibility cannot be ruled out entirely that sometime in the future we will experience a 100-year storm event during an El Niño year. Considering the degree to which our ideas and assessments of the processes have changed during the past few years due to the occurrence of much stronger storms, we should hesitate to rule out the possibility of scenario #3.

In terms of total water levels, Table 3, the difference between scenarios #1 and #3 only amount to 30 cm. However, management planning for scenarios #1 and #3 is different in that #3 includes the hot-spot erosion impacts as well as the most extreme wave runup and total water levels. Thus, there would be the coast-wide erosion inherent in the major storm scenario #1, with a localized hot-spot erosion produced by the northward transport of sediment within the littoral cells, characteristic of an El Niño. To a degree, the erosion experienced during the winter of 1998-99 demonstrates the potential impacts in that the Northwest beaches had not fully recovered from the 1997-98 El Niño, when they were further eroded by the series of major storms of the 1998-99 La Niña. However, the potential impacts of scenario #3 would be still greater than that recent experience, due to the significantly higher total water level of scenario #3 than occurred during the winters of 1997-98 and 1998-99.

SUMMARY OF CONCLUSIONS AND DISCUSSION

The El Niño of 1997-98 and La Niña in 1998-99 combined to produce extensive beach and dune erosion along the Oregon coast. Analyses have been completed of the processes that were important in causing the erosion, including a detailed documentation of the wave conditions and mean water levels that affected the elevations of high tides. Specific conclusions derived from those analyses include:

- When the El Niño reached its maximum development during the winter of 1997-98, the monthly-averaged water level was raised by 70 cm, elevating the predicted tides;
- During the La Niña winter of 1998-99, the monthly mean water levels were close to normal, some 20 to 30 cm lower than during the El Niño;
- Monthly averaged wave heights measured off the Oregon coast were about 1 meter lower during the El Niño compared with the La Niña winter.

These general patterns conform with those found during previous El Niño and La Niña events. There is a general reversal in the relative importance of these processes during El Niño versus La Niña occurrences. In an El Niño most important to coastal erosion are elevated water levels along the Oregon coast produced by sea-level "waves" originating at the equator, plus the more local effects of warmer offshore water temperatures and strong northward-flowing ocean currents. The differences in wave energy levels are caused by the southerly shift of storm systems during the El Niño so that they cross the coast of Southern California, while in the La Niña they pass more directly over the Oregon coast.

Detailed analyses were undertaken of the largest storms that occurred during the 1997-98 El Niño and 1998-99 La Niña. It was found that:

- Although wave-energy levels were lower on average during the El Niño compared with the La Niña, a major storm did occur on November 19-20, 1997 which generated a deep-water significant wave height of 10 meters;
- The November 1997 storm occurred close to a time of neap tides, so the total water level of the tide plus the runup of the waves on beaches was moderate, reducing the erosional impact of this storm;
- The largest storms of the La Niña winter occurred on February 5-7, 1999 and March 2-4, 1999, with the latter generating a deep-water significant wave height of 14 meters, considerably exceeding the estimated 100-year storm;
- The largest waves of the March 1999 storm reached the coast at a time of low tide, reducing the erosional impact;
- The strong winds of the November 1997 and March 1999 storms generated significant storm surges, respectively elevating the water levels by 60 and 70 cm;
- Calculations of the runup of the waves on beaches, added to the measured tides, yields the total elevation achieved by the water during the major storm — the results showed that total water levels reached 4 to 5 meters NGVD 1929, depending on the slope of the beach.

Had the high waves of the March 1999 storm occurred at a time of high tide rather than at low tide, the water elevation would have reached 6 to 7 m NGVD29, producing considerably

more beach and dune erosion. The exceptional wave conditions during the 1998-99 La Niña were something of a surprise in that both storms exceeded the projected 100-year event. It will be necessary to revise this projected extreme condition, so that it includes the occurrence of the La Niña storms. The previous estimate of the 100-year significant wave height was based on wave measurements collected during decades dominated by El Niño events, while climatologists predict that the next 25 years should be dominated by La Niña. If so, this may mean that the Oregon coast is entering a period with more extreme storms, and perhaps greater impacts from coastal erosion.

Erosion impacts along the Oregon coast during the 1997-98 El Niño and 1998-99 La Niña followed the expected patterns. Specifically:

- The greatest erosion during the El Niño was centered in "hot-spot" areas north of headlands and along the north shores of tidal inlets that are free to migrate, produced by the northward transport of sand along the beaches within the littoral cells;
- Erosion during the La Niña was more coast wide, occurring along the central stretches of littoral cells, areas that had not been impacted during the El Niño;
- La Niña erosion continued in the hot-spot areas of El Niño erosion, since the beaches in those areas had not recovered from the El Niño impacts and therefore provided reduced buffer protection from the renewed attack by La Niña storms.

The unusual erosion that occurred during the El Niño and La Niña winters provided the opportunity to test a geometric model that had been developed to estimate the potential dune retreat during the most extreme storm conditions (Komar et al., 1999). Analyses to test the model were undertaken at specific sites that had experienced foredune erosion, analyses which included the collection of beach and dune profiles that permitted a direct documentation of the resulting erosional retreat of the foredunes and a comparison with that predicted by the geometric model. The results of this test showed;

- Good agreement between the calculated total water levels reached by the tides and waves during the major storms, and the elevation of the toe of the eroded dunes, confirming a fundamental assumption made in the geometric model;
- Where comparisons were possible, the measured horizontal dune retreat agreed reasonably well with that predicted by the geometric model.

Although the number of sites included in this test of the geometric model was limited, the resulting confirmation is encouraging. The model appears to yield reasonable predictions of the extent of dune erosion during extreme storm events, predictions that can be used to establish setback distances so that homes and other structures will remain beyond the reach of the erosion impacts.

It was expected that the geometric model would provide an assessment of the maximum possible dune erosion, generally an over-estimate of that likely to actually occur (Komar et al., 1999). The model assumes an instantaneous erosional response of the dunes to the wave attack, whereas the reality of the process is more complex and would result in a delay in the erosion behind the causative processes. The agreement found in this study between the predicted erosion from the geometric model and that actually experienced in the form of dune retreat at the test sites likely resulted from the fact that the erosion is a cumulative process, taking place throughout the winter. With the major La Niña storms having occurred in February and March 1999, near the end of the winter, the beach would already have been cut back, reducing its capacity to act as buffer protection for the foredunes. The measured dune erosion represents the combined attack of the February and March 1999 storms, both of which produced total water levels (tides plus wave runup) on

the order of 4 to 5 meters NGVD29. The combined duration of wave attack at those levels extended to 5 to 10 hours, apparently sufficient to cut back the dunes to those levels. Therefore, the dune erosion projected by the geometric model involved the cumulative impact of erosion throughout the El Niño and La Niña winters, culminating in the exceptional storms in February and March 1999.

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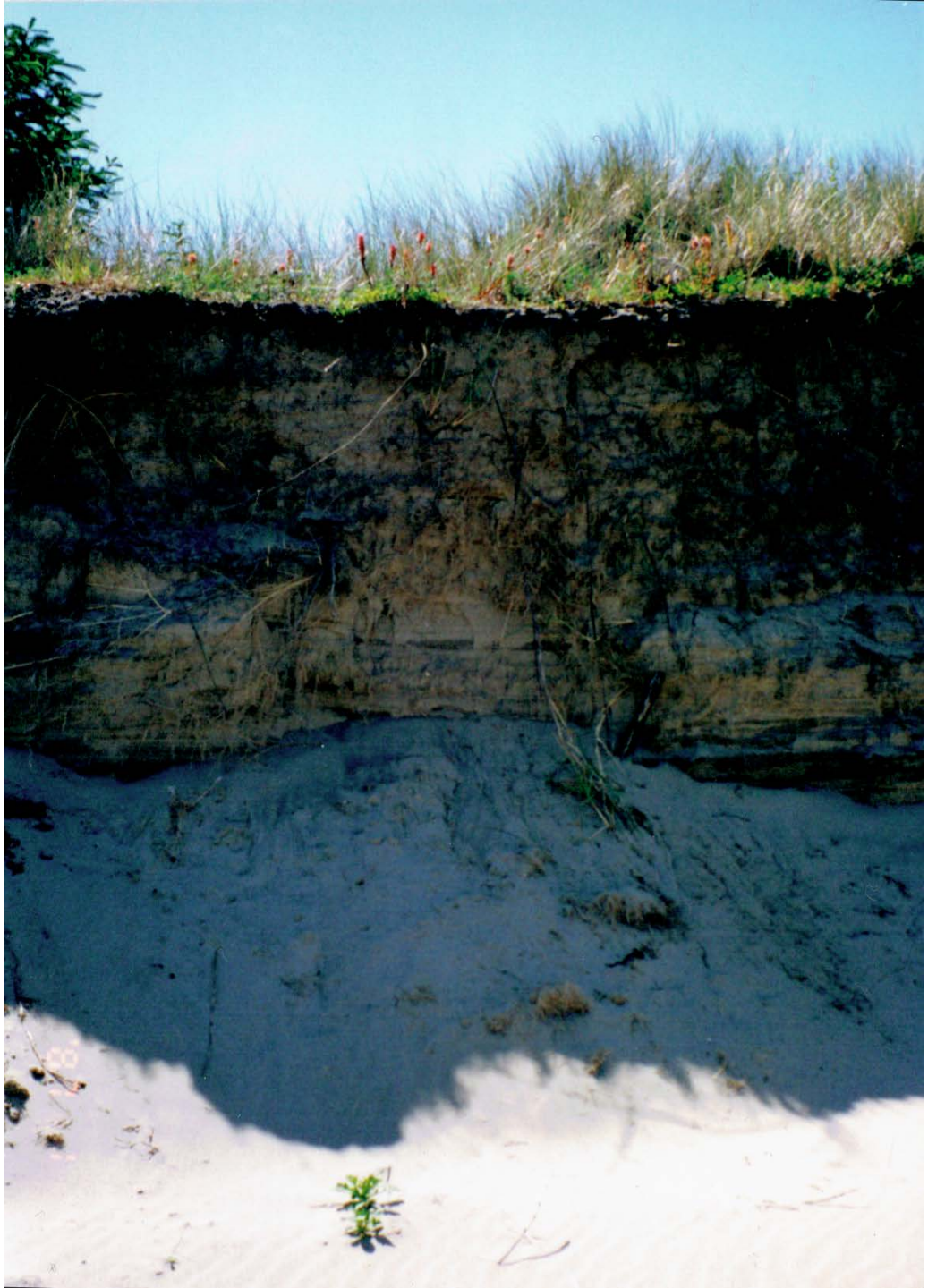
Erosion 1984-2009

6 2'98

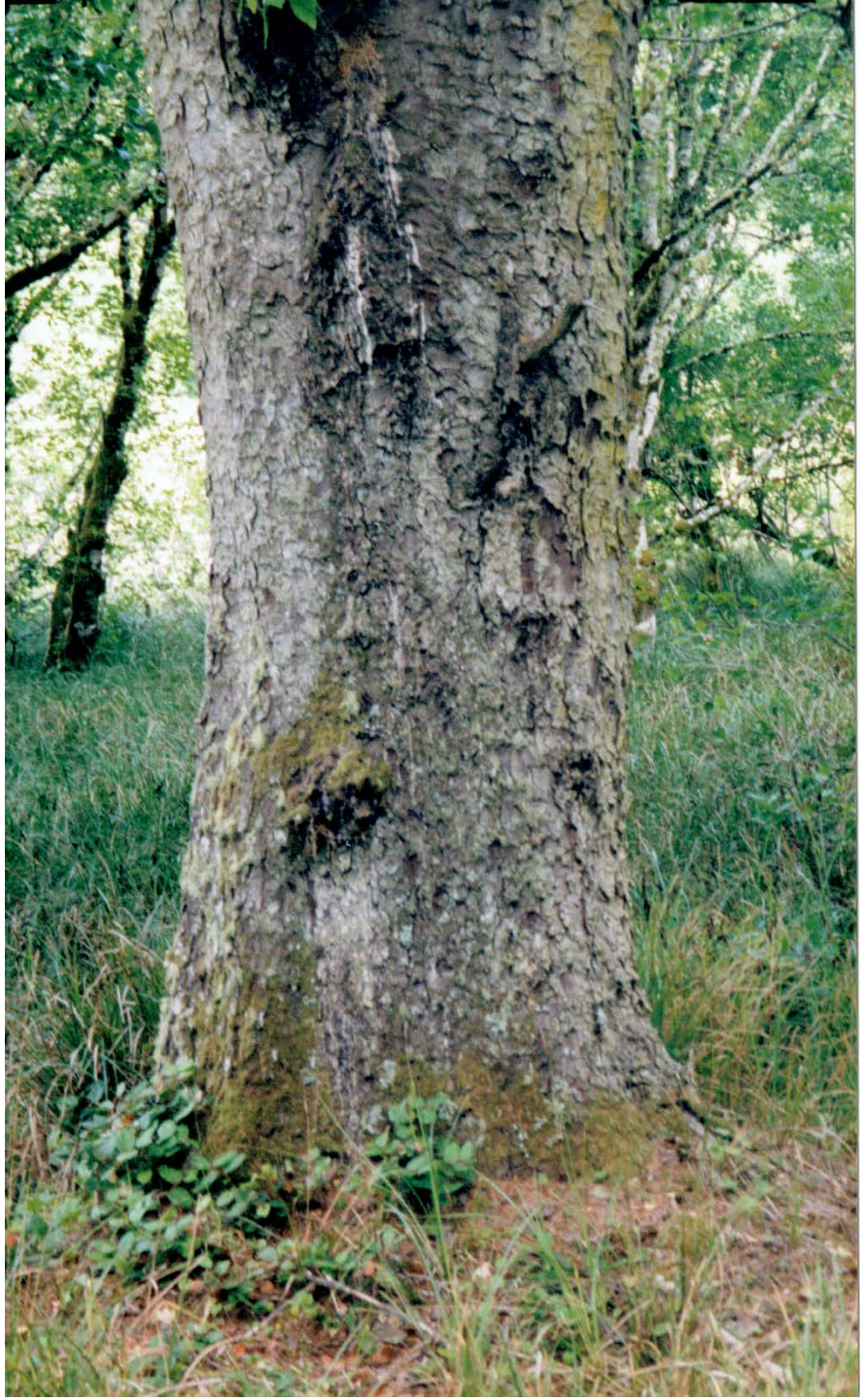
Various 2002-2006

Various 2012-2104

Indian Paintbrush



Orchids



Wildlife