**SOUTH SLOUGH RESERVE MANAGEMENT COMMISSION**

**AGENDA**

South Slough National Estuarine Research Reserve
South Slough Interpretive Center
61907 Seven Devils Road - Charleston, Oregon

December 17, 2014

**141st REGULAR MEETING 1:00-4:00 P.M.**

**I. Call-to-Order**

**II. Introductions**

**III. Approval of the 140th regular meeting minutes**

**IV. Public Input***

**V. Old Business**

1. Update on Frederickson House and Shed

**VI. New Business**

1. Information concerning Reorganization of South Slough from Department of State Lands to another State Agency- request Commission's input
2. Management Plan Update
3. Teacher Training at South Slough

**VII. Presentations**

Rookery Bay NERR, Florida – Megan Joyce

**VIII. Information Reports**

1. Administration/Facilities
2. Education & NERRA Mtg.
3. Science & NERRA Mtg.

**IX. Adjourn**

*Limited to 5 minutes each unless arranged in advance of the meeting.

** This meeting is being held in a facility that is accessible for persons with disabilities. If you need some form of assistance to participate in this meeting due to a disability, please notify Pam Wilson at 541-888-5558 ext. 34 at least two working days prior to the meeting.

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**SOUTH SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE**

**MANAGEMENT COMMISSION**

South Slough Reserve Interpretive Center

Charleston, Oregon

Minutes of the 140th Regular Meeting

July 17, 2014

**Commission members present:**

| | |
|---|---|
| Mary Abrams, Chair | Toni Ann Brend |
| Nicole Jackson, Vice Chair | Bob Main |
| Kris Wall-*via conference call* | Trent Hatfield |
| Bob Cowen | Craig Young |

**South Slough NERR staff and others present:**

| | |
|---|---|
| Gary Cooper, Manager | Hannah McDonald |
| Craig Cornu | Bree Yednock |
| Tom Gaskill | Colleen Burch Johnson |
| Deborah Rudd | John Bragg |
| Kathy Andreasen | Don Smith |
| Adam DeMarzo | Jenni Schmitt |
| Lonne & Laura Mays, FOSS | Nate Damewood |

Kassie Rippee, Coquille Indian Tribe

Anne Niblett, Coquille Indian Tribe

Kylie McDermott, AmeriCorps

Pam Wilson

Ed Oswald

**The meeting was called to order at 1:05 p.m. by the Chair of the Commission, Mary Abrams.**

## INTRODUCTIONS

Everyone present at the meeting introduced themselves.

## APPROVAL OF THE MINUTES OF THE PREVIOUS MEETING

Chair Abrams asked for clarification on page 8 regarding the ODFW permits whether there were one or two permits involved. Mr. Cooper said he would contact Dr. Rumrill and adjust the minutes accordingly. **Chair Abrams asked if there was a motion to approve the minutes. Commissioner Brend moved to approve and Commissioner Young seconded. The minutes were approved with all in favor.**

## PUBLIC INPUT

Mr. Cooper asked if there were any comments from the public. There was no public input.

## OLD BUSINESS

### Qualman Oyster Farms Request

Mr. Cooper introduced a letter sent to Larry Qualman on behalf of the Management Commission and the response back from Mr. Qualman. In his correspondence, Mr. Qualman indicated that he would try culturing Manila clams on private property and he will not file an application for Manila clams aquaculture on plat 5.

The Commission discussed making a recommendation for possible future action in consideration of Dr. Rumrill's previous suggestion to err on the side of caution in regards to the introduction of Manila clams in the South Slough. Commissioner Cowen asked if the recommendation would just address Manila clams or cover all exotic aquaculture. Commissioner Jackson said that it may be premature to make a blanket statement at the present time, given that there may be new scientific evidence on exotic aquaculture in the future that would guide any recommendations. Commissioner Young noted that Pacific oysters are exotic.

**Commissioner Main moved to table the recommendation. Commissioner Young seconded and the motion passed with all in favor.**

## NEW BUSINESS

### New Staff Introductions

Gary Cooper formally introduced the new members of the staff: Bree Yednock as Lead Scientist; Hannah McDonald as Stewardship Coordinator; Ed Oswald as Chief Technologist; and Barbara Booth as SSNERR's new Procurement and Contracts Assistant. Mr. Cooper also introduced Coquille Tribal members, Anne Niblett and Kassie Rippee to the meeting participants.

### Update on Indian Point Land Acquisition

Mr. Cooper said that there was a new development in the past several weeks with the property. The Westbrook family, as owners indicated that they would like to sell the property to the Oregon Department of State Lands (DSL). Mr. Cooper has been working with the Department of Justice (DOJ) to come up with a purchase and sale agreement, and possibly negotiate a short sale for the land. Mr. Cooper added that

appraisers have been contacted and it might be possible to acquire the property in the first quarter of next year. Chair Abrams reminded that state limitation is for this biennium, which ends June 30, 2015.

**Service Award Presentation**

Staff recognition was given to Nate Damewood, SSNERR's Facilities Supervisor. Mr. Damewood was honored for his twenty years of service to the Reserve. He was hired in June 1994 and during his tenure he has been noted for being a creative, resourceful member of staff. Pam Wilson presented a certificate to Mr. Damewood and congratulated him on always "getting it done".

**SSNERR Advisory Group**

The Commission was asked if they should reactivate the South Slough Advisory Group during the public involvement phase of revising the South Slough Management Plan for 2015 – 2020. Commissioner Brend said an ad hoc advisory committee would be good. Commissioner Young said setting up an ad hoc committee when one is needed is currently working and he recommended maintaining the status quo in the matter. Commissioner Cowen said that in general, opinions resulting from a scientific advisory group are not particularly related to a goal and could be less biased, which is good. Commissioner Young offered a perspective that the last revision of the Management Plan took too much time and effort to write and there wasn't enough time to execute it – it was obsolete in many ways before it was finished.

Mr. Cooper responded to Commissioner Wall and noted that the Reserve's partners such as the County Commissioners and Tribes as well as NOAA staff will be reading over draft sections of the Management Plan starting in the fall. Mr. Cooper offered to send out some additional information on the bylaws to the Commission, noting that the Commission selects the members of the Advisory Group. He added that the Commission might want to address the item in their November meeting. Chair Abrams and Commissioner Jackson both agreed that this would be helpful.

Chair Abrams asked if the Commission would like to table the discussion for the next meeting in November. The members of the Commission all gave their consent to take up the matter at the next regular meeting.

**November Meeting Date Change**

It was brought to the attention of the Commission that the scheduled date of November 20 for the next regular meeting conflicts with the time for the annual five day NERRA/NERRS convention. Staff attendance at the NERRS annual meeting is obligatory. In consideration of this, Chair Abrams agreed to poll the Commission with several alternate dates for the next meeting.

**Future of the Fredrickson House and Barn**

Education coordinator, Tom Gaskill introduced the agenda item.

The topic was discussed by the South Slough Management Commission at the March 2014 meeting as a response to an earlier (July, 2010) presentation of issues concerning the safety and historic significance of the structure. Subsequent to the March 2014 Commission meeting, manager Gary Cooper received a letter from Brenda Meade, chairperson of the Coquille Indian Tribe identifying tribal interest in the location and barn structure and requesting involvement and consultation in any work being conducted at the site.

The Commission discussed the four alternatives for the structures presented by staff in the briefing: 1) No action; 2) Interpretive Plan; 3) Intentional demolition; and 4) Full restoration. Mr. Gaskill explained that the Interpretive Plan represents the staff's recommended and preferred alternative in that this alternative encompasses efforts to properly address the potential of the area and structures within the context of the overall mission and goals of the South Slough NERR while honoring the interests of community stakeholders in this important location within South Slough. The Interpretive Plan also acknowledges the historical significance of this area with an appropriate level of planning effort to honor the identified interests of the Coquille Indian Tribe in the barn and Wasson allotment.

Mr. Cooper said that Tom Gaskill accompanied him to a meeting with the Coquille Tribe the previous Friday, and at that meeting Mr. Cooper expressed that the Reserve would take no action on the matter of the Fredricksen structures without the consultation of the Tribe, and they would always have input.

Commissioner Young asked Mr. Gaskill for clarification on alternative #2, the Interpretive Plan. Kassie Rippee said that the Tribes do not want to see the structure removed and some interpretive signage would be good.

Mr. Gaskill, as the Reserve's Education Lead stated that he would prefer the status of the Fredricksen house and barn to be couched in the overall Interpretive Plan for the Reserve. Commissioner Jackson recommended securing the site first, protecting the structures and protecting people from the structures. Commissioner Young expressed concern that the Interpretive Plan, as suggested by staff, could lose the focus on the Fredricksen house. Mr. Gaskill replied that a contract would need to be written for the Interpretive Plan and the consultant hired would need to address the Fredricksen structures in the Interpretive Plan. Mr. Gaskill added that the Reserve has no resources at present to do this. Commissioner Young suggested that staff do the planning in-house, as opposed to hiring an outside expensive firm. Mr. Cooper said that staff is currently functioning at full capacity without adding more to the work load.

Chair Abrams said the issue at hand is the immediate risk to the property. She added that she expects the Reserve's Management Plan revision will include the need for a current and up-to-date Interpretive Plan which will include long-term consideration for the Fredricksen structures. She advised that, in the meantime, at a very minimum, for staff to put fencing around the structures and to then continue the conversation regarding them. Chair Abrams said that the Interpretive Plan does not address the short term needs and interests of the Tribes.

Commissioner Main said that action needs to be taken now, as the Fredricksen house and barn will not last another couple of years. He said that the Tribes have indicated that they certainly don't want the structures torn down, so they need to be repaired. He suggested that staff get some estimates from contractors on repairing the structures, and with that information apply for grants.

Chair Abrams asked the Tribal guests for input. They responded that the Tribe definitely wants to keep the buildings intact, and they would like to have input on the Interpretive Plan and on the exhibits. "We would like to tell more of our stories – it is the story of the land." "Our interest extends beyond the structures; for example, the Wasson allotment is also sacred ground to us – we don't want to attract tourists to it." Chair Abrams remarked that she would like to see the Tribes' interests recognized systematically in a plan. Commissioner Brend commented that the Coquille and Confederated Tribes do not want any disturbance to the ground as it is uncertain where the sacred areas are located on the Reserve.

Gary Cooper said by looking over the minutes of past meetings, it can be concluded that the structures will demolish themselves by benign neglect. Commissioner Young said that an Interpretive Plan is not needed at present and it would be best to address the issue head on as Commissioner Main suggested. He added that it could be addressed in two separate motions.

Chair Abrams asked that Gary Cooper confer with the Tribes and flesh out a proposal taking into consideration the status of the entire area and not just the Fredricksen structures. She asked Commissioner Brend if she would be willing to help come up with some cost estimates for a grant proposal. Chair Abrams said she was concerned about liability. Commissioner Jackson commented that an attempt should be made to secure the property, and it would be the choice of the public if they wanted to trespass or not. Commissioner Brend said that a fence around the structures would be a risk because it is undetermined at present where the ground should not be disturbed. She said a planner from the Tribes recently looked at the buildings and advised that they need a structural engineer. Commissioner Brend said the Tribe has some beautiful cedar available and a portable sawmill. She indicated that the Confederated Tribes would likely also be able to assist.

Chair Abrams said that with the Commission's agreement the matter needs to be moved forward so the structures can be saved. Funds need to be secured so the buildings can be secured. Commissioner Main commented that in the recent past the Commission directed staff to put a roof on the Fredricksen house and that was not done. He suggested putting up surveillance cameras in lieu of a fence. The Tribes agreed that temporary fencing would be appropriate. Mr. Cooper said staff needs to secure the property with a fence and signage after he checks the Reserve's funds; and then, per Commissioner Main's suggestion, obtain cost estimates from contractors after which the Reserve can work with the Tribes.

Chair Abrams indicated she didn't want the Fredricksen house and barn left for another rainy season with no action taken on them. She said that she liked the idea of first temporarily securing the structures with a fence.

**Chair Abrams moved that with the concurrence of the Commission, staff should work with the Tribes on how to move forward with the Fredricksen house and barn to: 1) temporarily secure the facilities; 2) attempt to seek funding; and 3)**

**schedule a November field trip to the site. Chair Young seconded the motion. The motion passed with all in favor.**

Chair Main stated that the motion, to be effective, needed a specific end date for action. Commissioner Young interjected that tearing down the Fredericksen structures was not an option. The Commission agreed that the end of August 2014 was an acceptable deadline.

## PRESENTATION

Kylie McDermott, AmeriCorps UCAN volunteer at South Slough Reserve talked about the after school educational programs she worked on to deliver to Madison Elementary and Sunset Middle School students in the Empire district of Coos Bay. Kylie brought South Slough education to the K-7 students. The children participated in educational field trips and excursions, a continuation of the Estuary Explorers project for the year.

The Commission thanked Kylie for her valuable contributions to the local community and to the Reserve.

## ADJOURNMENT

Chair Abrams adjourned the meeting at 3:20 p.m.

**SOUTH SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE**

**MANAGEMENT COMMISSION**

**December 2, 2014**

**Update on status of the Fredrickson House & Barn**

**SUBJECT**

The Fredrickson house and barn are structures located in the south end of the South Slough National Estuarine Research Reserve near Hinch Lane and the Wasson Creek trail. The house, originally constructed in 1905 by the Fredrickson family, is currently in an extreme state of decay and continues to be vandalized presenting a potential hazard to visitors. The barn or shed, located across a gravel road from the Fredrickson house, is in a similar state of decay with many floorboards, much of the wall planking, and several roof shingles either missing or rotted.

**SUMMARY**

This topic was most recently discussed by the South Slough Management Commission at the July 17, 2014 meeting. South Slough staff was tasked, at that time, with 1) temporarily securing the facilities: 2) attempting to seek funding; and 3) scheduling a November field trip to the site.

The following activities have taken place since that meeting.

1) To the degree feasible, the Fredricksen house remains secured from public entry and no further removal of exterior boards is evident. Securing the shed structure from public access is not feasible without potentially disturbing any sub-surface historical artifacts that may be present in the area. At this time, no further damage is noted to the structure.

2) A funding proposal has been submitted by the Friends of South Slough and the South Slough NERR to the Coquille Tribal Community Fund seeking $19,635 to fund planning and collaboration with the tribe and

other interested parties in documenting the history of the site, developing an interpretive plan, and conducting an historical and architectural analysis to determine costs of any restoration and construction work indicated by the planning effort. If funded, this initial phase would then require additional fund raising of $35,500 to undertake the work.

An initial estimate of cost for reconstruction of the exterior of the Fredricksen house was verbally provided to Operations Manager, Pam Wilson by Larry Burroughs of DLB Construction in the amount of $70,400. This would include the following items: wood windows, doors, cedar siding, roof (materials similar to what was used when originally built), sheeting under the roof and siding, reinforcement of floor joists, ceiling joists, and piling, and repair of rotten framing.

If reconstruction of the interior of the house is to be included, the cost is estimated to be three times the exterior estimate.

3) Staff contacted the State Historic Preservation Office (SHPO) and discussed the project with Historic Preservation Specialist Jason Allen. After an initial conversation, Mr. Allen referred staff to Joy Sears, also of the SHPO to conduct a site visit and provide perspective on the state requirements and potential paths for addressing the site. After several scheduling attempts, a site visit was conducted on Wednesday, December 3rd and members of the Coquille Tribe including South Slough commissioner Toni Ann Brend and Denny Hockema, South Slough staff, and local builder Seth Lucas participated in the meeting with Ms. Sears.

During the course of the site visit, Ms. Sears described a possible process of "arrested decay" that is employed by Oregon State Parks for sites where historic buildings are in a degraded condition and require moderate work to stabilize the structure. This provides an opportunity for interpretation without undertaking a major restoration which is not warranted without a clear use plan for the structure. While this is one possible path for the structures, a more involved planning process is recommended before taking this approach.

At the conclusion of her visit, Ms. Sears explained that now that she is familiar with the site and project and will meet with Mr. Allen to recommend next steps for the project. Her on-site recommendation for a process parallels the approach proposed in the funding request presented to the Coquille Tribal Community Fund.

**STAFF RECOMMENDATION:**

The South Slough Management Commission should review the current actions of staff regarding this project and anticipate an update at the spring 2015 commission meeting regarding the status of funding requests in support of the proposed work.

Briefing Paper

SSNERR Commission Meeting

December 17, 2014

**Topic:** Transfer of State Partnership for South Slough from Department of State Lands (DSL) to another entity

The Department of State Lands (DSL) has been having some conversations on a number of fronts concerning the state partner assignment for the South Slough National Estuarine Research Reserve (SSNERR). DSL has been interested in such a transition because DSL, with their particular mission, is not able to provide solid programmatic input for the South Slough research or education work. In other words, DSL processes South Slough's administrative work, but does not serve any of the functions a true state partner could in terms of strategic research and educational support.

1. DSL believes that a university would be the best partner for the South Slough since both universities and National Estuarine Research Reserves (NERR) have missions of education and research. Currently seven of the 28 NERR's reside with University partners:

    - College of William and Mary – Institute of Marine Science - Chesapeake Bay, VA
    - Rutgers – Institute of Marine and Coastal Sciences - Jacques Cousteau
    - University of Texas – Marine Sciences Institute - Mission-Aransas
    - University of South Carolina – Institute for Marine and Coastal Sciences - North Inlet-Winyah
    - University of Wisconsin Extension- Lake Superior
    - San Francisco State University – San Francisco Bay
    - University of Alaska – Kachemak Bay

2. South Slough's stewardship mission will not change with a transition to a new partner. The South Slough would maintain partnerships and provide a bridge with any university, local interest groups and other land management entities (state and local).

3. Partnership of South Slough NERR and a University would:
    - provide competitive advantages for grants and leveraging of dollars
    - enhance long term monitoring, and delivery system for dissemination of information.
    - provide additional systems for delivering educational programs

- provide additional visibility of products and services for decision makers in resource management communities.
-provide additional science and research strategic measures for progress reporting
-provide additional national networks to enhance information transfer.

-provide additional public relations resources and benefits to the public

4. DSL held a meeting with the University of Oregon and Oregon State University on Friday November 14th to provide information on the role, responsibilities, and opportunities of being the state partner for the South Slough NERR, and answer any questions the Universities may have. The universities are reviewing options internally and intend to contact DSL before the end of the year with their thoughts.

**Staff update—Management plan development**

John Bragg

On Nov. 1 SSNERR submitted an outline of the revised management plan to NOAA for review and comment. The outline was approved and returned to SSNERR with comments from NOAA reviewers at the Office For Coastal Management.

In general, the reviewers were enthusiastic about the management priorities, goals, objectives and actions developed in the outline.

Three priority management issues were identified in the outline:

**#1: Characterize and communicate the current trends and likely future effects of climate change on Pacific Northwest coastal and estuarine ecosystems and communities.**

**#2—Apply a comprehensive and adaptive approach to habitat protection in the South Slough Reserve and managed lands.**

**#3—Monitor, research, manage, and communicate the impacts of existing and emerging invasive species within the Reserve and characterize potential threats from other locations within the Coos watershed.**

- Priority management issues generally reflect new developments, new information, and new ideas and solutions. Identification of priority issues in the management plan does not preclude other management issues that must be addressed, including emerging issues or adaptations of management actions to address changes in on-going projects and work.
- Bree Murphy, SSNERR's program advisor at NOAA, compiled the following comments by various NOAA reviewers [bracketed text is modified to correct spelling]:
- "First off, I have excerpted the section from the management plan guidance that highlights the required and optional elements of the management plan. It wasn't clear that you had included all the required elements of the plan. In particular, it was unclear where you were handling the **resource protection plan** and the **land acquisition plan**.
- "Although optional, I would highly encourage you to consider adding a restoration plan (since [invasive species management] and restoration is such a *substantial* amount of your NERR portfolio). If you don't want to include a restoration plan as a part of this management plan update process, [it] may be a good action to consider developing [one over] the next 5 years that directly supports your #2 priority management topic.
- "You have a robust list of objectives, I would encourage you to review them and consider how to tighten up to make them a bit more "SMART"(mainly thinking about the "measurable" piece). This will help insure your reserve will be able to have a sense if the objectives were achieved. … just

rewording so that you can more clearly know in 5 [years] if you have had success in meeting the management plan objectives."

- Make sure to consider how your three 312 Performance measures are being woven into the objectives/actions (see attached for a refresher). The only one I really struggled to see the place was the Education performance measure (Strategy: Maintain capacity to offer more formal education programs for preK – 20 learners through the use of volunteers and student interns that address ecological functions, values, and services so that Oregon citizens are able to make informed decisions that affect estuaries and coastal communities. Measure: number of contact hours achieved annually through formal education programs) While you mention teacher audiences in several places, I don't see specific/explicit mention of your K-12 program in objectives or actions....please be more explicit. Also would like to see a stronger mention of the volunteer program in your objectives. Specifically, any objectives/actions related to making sure that you have education volunteers/interns to support this performance measure?

- Other objectives/actions missing include mention of the development of a Sentinel Site plan. With such a strong focus on climate through your first priority topic, and repeated mention of the Sentinel Site program...I was surprised to not see the development of a sentinel site plan as an action.

Commissioners may contact John anytime with questions about the plan's development.

1. **#1: Characterize and communicate the current trends and likely future effects of climate change on Pacific Northwest coastal and estuarine ecosystems and communities.**
2. **#2—Apply a comprehensive and adaptive approach to habitat protection in the South Slough Reserve and managed lands.**
3. **Priority #3—Monitor, research, manage, and communicate the impacts of existing and emerging invasive species within the Reserve and characterize potential threats from other locations within the Coos Watershed.**
4. **#1: Characterize and communicate the current trends and likely future effects of climate change on Pacific Northwest coastal and estuarine ecosystems and communities.**
5. **#2—Apply a comprehensive and adaptive approach to habitat protection in the South Slough Reserve and managed lands.**
6. **Priority #3—Monitor, research, manage, and communicate the impacts of existing and emerging invasive species within the Reserve and characterize potential threats from other locations within the Coos Watershed.**

**Administrative/Facilities Report**

Administrative

Attached are the state budget reports for the 2013-15 biennium through October 2014. The federal budget for FY14 is dedicated to salaries with some travel to the annual meeting.

Kylie McDermott completed her AmeriCorps United Communities Science Outreach Specialist assignment in August. Isabella Kharrazi completed her AmeriCorps Interpretive Outreach Specialist assignment in August, also.

The latest personnel change we have had is our newest AmeriCorps Volunteer joined us in August. Megan Joyce will continue the work of the previous Science Outreach Specialist through the AmeriCorps United Communities program. Megan will continue work with local elementary and middle school students through the Estuary Explorers after-school program. This program has advanced South Slough's mission by supporting improved science and math education with real world applications.

Barbara Booth ended her temporary employment as Procurement and Contracts Assistant on November 19, 2014. Interviews have been completed and a permanent Procurement and Contracts Assistant will start soon.

Facilities

The Hidden Creek boardwalk is in currently in the middle of being repaired. After 22 years of being near and in the marsh, nature has taken its toll. Cedar was purchased in July and October. We used a local inmate crew for 5 days to help with the repair of the boardwalk along with other trail maintenance work. The remainder of the repair will be done this winter with inmate crews. The boardwalk remained open to the public during the repair period.

The Big Cedar handicap trail was refurbished with rock scalps to once again be an even surface. The second half of the trail was completed with inmates at the same time as the boardwalk reconstruction.

Storm damage to the ceiling in the IC kitchen has been repaired. At the time the repair was happening, it was determined that there had been some water damage at Spruce Ranch in one of the bathrooms and the contractor was able to do that repair for a minimal charge at the same time as the kitchen.

Currently there is an opportunity to apply for a NOAA construction grant which is due January 15, 2015. This grant would allow for the remodel of the ECOS facility to reorient the garage and create additional office space above it. The plans were completed by Aron Faegre earlier this year. We will be working with OIMB to get cost estimates for the remodel in order to determine the amount to request from the grant as well as the match amount.

**SSNERR Education Program update**
June 15 through November 28, 2014

The summer and early autumn are some of the busiest months for South Slough education staff. Capacity in the delivery of programming was enhanced this year through the combined efforts of several AmeriCorps members, interns, and summer seasonal staff supported by program fees through the Friends of South Slough.

The resulting level of activity increased the successful promotion, planning, and support for a full slate of interpretive activities, festival participation, teacher training, summer science camps, and coordination of a regional conference. Additionally, a robust schedule of fall classes used South Slough's facilities, trails, and off-site support to provide introductory and advanced studies for pre-school to college age students.

Funding for the reserve's education program through the Friends of South Slough came in the form of a grant from the Wild Rivers Coast Alliance and provided enhanced support for a variety of activities. This included the purchase of useful equipment to deliver interpretive programs such as Crabbing Around, Explore the Shore, and Creature Feature and support of seasonal internships and AmeriCorps members.

South Slough also celebrated the 40th anniversary of the establishment of the reserve this past summer with a variety of events including a Facebook campaign and an event attended by over 100 people. Education staff supported these activities reaching out to the local community and engaging interested individuals from throughout the region.

**Professional meetings**

Education staff participated in a variety of professional meetings and played a primary role in hosting the Northwest Aquatic and Marine Educators annual conference held in Bandon. Education Specialist Joy Tally and educator Jenna Kulluson coordinated the event through work with committee members from through the Pacific Northwest region to bring together over 100 formal and informal educators for a week of training, field experiences and networking. Several presentations highlighting South Slough's educational activities and resources were offered along with a field trip to the reserve.

In early November, the Oregon Environmental Literacy Council met at the conclusion of three days of work focused on implementation of the 2010 plan. As an advisory body to the host institution, the Oregon State University Extension Service, the council is working to establish best practices incorporating the North American Association of Environmental Education standards. Education Specialist, Joy Tally, attended a one day professional training to learn how to implement these standards with educators along the Oregon coast. Joy also presented the results of a regional workshop held in the spring for the south coast designed to support establishment of a toolkit for classroom educators.

Also in November, Education Program Lead, Tom Gaskill participated in the annual NERRS meeting held at the National Conservation Training Center in Shepardstown, West Virginia. Work at this meeting focused on several initiatives within the NERRS education community including support for the system-wide Teachers on the Estuary program (TOTE), review of performance measure data, discussion of community education programs and standards, and the use of innovative technology in support of education activities. Presentations by the new NERRS Science Collaborative staff, the NOAA Bay Watershed Education and Training program and NOAA Office of Education staff, and the executive director of the National Estuarine Research Reserve Association provided insight and potential future funding opportunities.

The 2015 Coastal and Estuarine Research Federation conference will be held in Portland, Oregon and South Slough was solicited to participate in a joint session proposal highlighting our work on the Blue Carbon/Bringing Wetlands to Market project. The proposal was accepted and Education Lead Tom Gaskill will be co-presenting with fellow NERRS education coordinator Sarah Nuss as part of a session titled: Casting the Net Widely: Expanding the Reach of Broader Impacts.

**Education Program Totals**

For the 5 month period from June 15th to November 26th, 2014, an overall total of 123 educational activities were conducted for 3443 participants. 320 contact hours and 260 hours of preparation were recorded. These totals include all types of education, interpretation, training and outreach.

Including visitors to the South Slough Interpretive Center, a combined total of 5758 individuals learned about estuaries and coastal watersheds through South Slough educational programs and interpretive facilities during this period from mid-June to late November of this year. This level of activity and participation is consistent with recent years for this period of time.

**Visitation and Visitor Services**

Independent of education programs, 2315 people visited the interpretive center from mid-June through late November, 2014 accounting for an average of 21 visitors per day. The visitation for the same period in 2013 is comparable with an average of 20 visitors per day.

The period covered by this report spanned 113 days when the South Slough Interpretive Center was open to the public. The building was closed to the public on Saturday, September 27th to allow staff to focus effort on an outreach event at the Coos Bay Boardwalk honoring National Estuaries Day. Typical public hours for the building remain 10am – 4:30pm, Tuesday through Saturday, throughout the year.

**Formal Education & Training**

A total of 50 formal education programs were offered for 1213 participants during the period from mid-June to late November, 2014. A total of 165 contact hours and 132 hours of preparation time were recorded. Programs were mostly offered on-site at the reserve for students while teacher training occurred at several different locations including schools and partner sites.

Of these programs, 2 were offered for pre-school, 16 were delivered for elementary level classes, 5 for middle school classes, 6 for high school classes, 8 for college level classes, and 13 for teachers. This data will be submitted as a part of the required performance indicators included in the National Estuarine Research Reserve's performance measures database.

13 teacher professional development workshops were held. Teacher training activities included several different day-long Stewardship School workshops held in Myrtle Point, Florence, Tillamook, and Bandon. In addition, events were held at the Hatfield Marine Science Center and the CoastaLearning Symposium in Newport, and the Northwest Aquatic and Marine Educators conference in Bandon.

*Stewardship Schools Program Teacher Professional Development*

The Stewardship Schools Program is supported by the Oregon Natural Resources Program (ONREP). ONREP provides professional development training for facilitators to execute teacher professional development workshops. The Stewardship Schools Program focuses on multi-year relationships with schools and/or school districts to incorporate natural resource education across the curriculum. The desired outcome is for teachers to engage their students in active learning about their environment both inside and outside the classroom.

Joy Tally, South Slough Education Specialist, has been working with ONREP and the Stewardship Schools Program since November 2012. After 6 months of multi-day trainings with a cohort of facilitators, Joy and Elissa Wells from OSU Coos County Extension began working with Myrtle Crest Elementary in Myrtle Point in June 2013. This is an initial 3 year commitment with approximately 5 workshops per school year ranging in length between 1 hour to full day workshops with 18 teachers and school support staff.

Stewardship Schools workshops focus on introducing teachers to natural resources curriculum, resources and community partners while also aligning the whole school curriculum to focus on using natural resources as a context for learning. Through this process, Myrtle Crest has decided to focus on water with each grade level focus on a different habitat of water. For example, kindergarten is focusing on puddles, while 5$^{th}$ grade is focusing on estuaries.

This relationship has already led to an increase in contacts between Myrtle Crest and South Slough. Myrtle Crest 5$^{th}$ grades had previously visited South Slough for the

Treasures program, but in recent years after teacher retirements had discontinued coming. The 5th grade now plans 2 to 3 field trips to South Slough each year. South Slough also hosted a full day Myrtle Crest workshop in June 2014. Other grades have been using South Slough and other community partners as a resource. This is also increasing South Slough's contact with other community partners working in Coos County.

*Oregon Coast Education Program (OCEP)*

OCEP represents a partnership of coastal education institutions working to advance the use of best practices in field and classroom-based education to incorporate meaningful watershed education experiences for students. Through teacher professional development workshops and activities, participating schools receive support and funding to facilitate coastal education activities with their students. Institutions participating include South Slough NERR, the Oregon Coast Aquarium, the Hatfield Marine Science Center, Portland State University, the High Desert Museum and the Oregon Institute of Marine Biology. Funding for OCEP is provided through the NOAA Bay Watershed Education and Training (B-WET) program.

During the summer of 2014, two professional development trainings were held in Newport and Charleston for a total of 24 educators in grades 3-12. At the Charleston workshop, South Slough Lead Scientist Bree Yednock presented a summary of Oyster research in South Slough while former OCEP teacher Kevin Cellura shared ways in which he has incorporated research on oysters he conducted while working at the reserve into his classroom. The OCEP workshops combine field-based experiences with training on the use of modules and resources to support enhanced meaningful watershed education for students.

These teachers will continue to work with OCEP coordinators throughout the school year implementing Coastal Education Plans in the classroom and field that incorporate techniques and activities from OCEP. In early 2015, OCEP will host 4 community workshops on Saturdays in Portland, Bend, Coos Bay, and the Rogue Valley that will focus on storm water pathways in local communities, integration of Next Generation Science Standards in meaningful field activities. These workshops provide an opportunity for OCEP teachers to bring in partner teachers who didn't participate in summer workshops. Coastal Science Conversations, a series of web-based presentations designed to enhance teacher understanding of current research, will continue in Spring of 2015 to provide additional contact hours and content training to OCEP educators.

South Slough submitted a funding proposal for the B-WET 2015 grant cycle to be awarded August 1, 2015. If successful, the $60,000 proposal will support another year of multi-day workshops and 8 follow up community workshops, including funding for two part-time program coordinators and program evaluator.

Additional potential sources of funding under consideration include the Gray Family Fund of the Oregon Community Foundation and the US Environmental Protection Agency's – Environmental Education Model Grants program. The development of proposals for these funding sources will be designed to enhance South Slough's

teacher training capacity. Additionally, implementation of the NERRS Teachers on the Estuary program is anticipated to provide support for a workshop during the summer of 2015 that will focus on the Estuaries 101 curriculum and highlighting reserve science.

While the reserve has been successful in soliciting project-based support through partnerships, the level of funding available has not allowed the establishment of a full-time position to maintain and support this work. Results of the Oregon Coastal Education Market Analysis and Needs Assessment Study (2012) indicate a strong potential niche for the reserve in delivery of teacher professional development opportunities leveraging the site-based science and field experiences available at South Slough.

Meaningful work with the Oregon Coast Science, Technology, Engineering, and Math (STEM) Hub and correlation of curriculum with Next Generation Science Standards will require a consistent and substantial investment. As the reserve moves forward with this work, a dedicated effort to coordinate teacher training activities and support is needed.

*Estuary Explorers and AmeriCorps*

In the spring of 2014, South Slough initiated an afterschool program for students at Madison Elementary and Sunset schools in the Empire area of Coos Bay. The Estuary Explorers program began at the reserve several years ago as an effort to enhance student understanding of estuaries and their watersheds through structured, inquiry-based activities held at South Slough on Saturdays. In 2013, Estuary Explorers was offered on Friday afternoons to provide opportunities for students after Coos Bay schools modified their schedule to accommodate budget cuts.

The afterschool program was developed to enhance learning through hands-on, field-based activities near the school by bringing activities, resources, and science to the campus. Supported by AmeriCorps members, this approach to the program was piloted last school year and is now being offered in several multi-week blocks to local schools. AmeriCorps member, Megan Joyce is working with volunteers to offer the programs for three different grade bands, K-2, 3-4, and 5-7. In addition to the after school program, a monthly visit to South Slough is offered for students and their families on a Friday at the culmination of the program. Saturday activities are also advertised for Estuary Explorers participation in order to increase attendance and strengthen the connection between the reserve and the community. In the winter and spring of 2015, Estuary Explorers will be expanded to Blossom Gulch, Millicoma, and Lighthouse schools.

## Community Education, Interpretive & Outreach Activities

Interpretive programs continue to be offered for a diverse public audience of children, adults, and families. A total of 61 interpretive programs were offered and 816 people attended activities ranging from guided walks to workshops. 93 hours of contact and 89 hours of preparation were recorded. Community education activities accounted for 1 activity and an additional 10 participants. 2 contact hours and 2 hours of

preparation time were recorded. 11 outreach events reached 1404 people and required 37 hours of preparation. A total of 60 hours of contact time was recorded for these events. This data is being provided to NOAA as part of the performance measures reporting requirements on a semi-annual basis.

Interpretive activities during the summer included participation in numerous festivals where temporary exhibits and hands-on activities were used to engage attendees and build awareness of the mission and programs of the reserve. Collectively, the impact of the festival participation reaches a large number of individuals and is an important component of the overall outreach efforts of the reserve. Volunteer assistance supports the substantial effort of staff involved in successfully offering these types of activities. Evaluation of the overall South Slough outreach effort will be conducted in the coming year to determine the most effective strategy for sustaining participation.

*South Slough Summer Science Camps*

Summer 2014 was one of the busiest yet for the Reserve, as the reserve hosted six, four day science camps for children of all ages. Named after life cycles of the Dungeness crab, each week of the camps is designed to engage students with activities appropriate to their age level. Campers explore communities of the estuary, uplands, marshes, tide-flats and the open water channel through a variety of active learning exercises in addition to paddling CHMOOSH-the big canoe, painting estuary-themed t-shirts, playing games and finishing the week off with ice cream. The Friends of South Slough provided fiscal support and individuals donated to the education fund to support staff and supplies for camp to keep costs low for participating families and providing scholarships to those who wouldn't have been able to attend otherwise.

## Public Involvement

Volunteers/Internships

From June through October 2014 SSNERR volunteers logged in 2,426 hours valued at $54,706.3. The hourly breakdown included: 1,489 education, 540.75 research/stewardship, 389.75 administration, 6.5 other volunteer hours.

During the spring and summer of 2014, the South Slough Reserve implemented the first year of the work experience internship program. The Friends of South Slough Reserve, Inc. supported two AmeriCorps interns in 2012 and 2013 to develop and test the program. In 2014, the reserve Public Involvement Coordinator inherited oversight and implementation of the program. Reserve staff has provided mentorship this past spring for several internships including: Trails/Forestry, Aquaria/Living Exhibits, high-school age Blue Water Task Force and a Field Assistant/Education Outreach position. Position descriptions are developed by mentoring staff in consultation with the Public Involvement Coordinator and an interview is conducted to determine the most appropriate placement.

During the summer of 2014, South Slough hosted multiple internships including the following positions: Trails/Forestry, two Environmental Educators, a Native Oyster

Effectiveness Monitoring & Outreach intern, two Field Assistant/Educators and Forestry/GIS survey internships. Most of the above were awarded $400 stipends from a grant provided through the Jubitz Family Foundation to the Friends of South Slough.

In November, the Friends received notice that they have been awarded a multi-year proposal from the Oregon Community Foundation to support multiple internships with stipends to support the pre-professional experiences offered by the reserve.

Recruitment for these internships occurs on the South Slough web site and Facebook page, by word of mouth, in the reserve's newsletter, fliers around town, with local community colleges and State universities and institutional partners. In the future a wider recruitment to the local community, Tribal Governments and various populations should allow for a more competitive application process.

While the first year of implementing the program was a success and many of the interns stated that the funds allowed for their travel costs to and from the site and other needs during the 6-8 week time period, the Friends of South Slough hope to raise additional funds to provide larger stipend awards allowing for full summer positions and some internships at the graduate level. Other proposed changes for 2015 include a broader recruitment, consistent start and end dates for each season to streamline the orientation, a mid-term and exit evaluation process and a written exit interview from each intern before completing the program. A database will be maintained and updated with contact information to track future progress.

Friends of South Slough (FOSS)Board of Directors

The FOSS Board purchased and installed new software to update their bookstore and accounting procedures. Laura and Lonne Mays worked with South Slough Information systems Technologist Ed Oswald to troubleshoot internet connectivity issues. Once Laura and Lonne felt they had a good grasp on operating the new software they created a printed tutorial for staff and volunteers and conducted a live training for the FOSS board on October 27.

FOSS successfully submitted final reports for the two grants received last year, Western Rivers Coast Alliance (WRCA) used to support education programming and supplies, and the Jubitz Family Foundation in support of SSNERR Internships. Recently, FOSS received news that year one of a three year proposal for a total of $14,700 dispersed in three year increments. Year one, $6,700, year two, $4,850 and year three, $3,150. The overall budget for the project is $24, 900 so FOSS will be using some of the funds to create marketing materials to solicit corporate donors to sponsor internships as well as write more grants and conduct some additional fundraisers.

Outreach

SSNERR Education Staff, FOSS and SSNERR Volunteers/Interns participated in several outreach events this summer/fall. The Coos Bay Farmer's Market, Clamboree,

several service club presentations with new SSNERR Manager Gary Cooper, Salmon Celebration and canoe races, Oregon Shorebird Festival, Passport to Charleston, Stand up for the Bay on Estuaries Day, Octoberfish and a SOLV clean up in Charleston.

Additionally, since June marked the Reserves 40th year of designation, a celebration representing a year of promotion and planning by Reserve staff & FOSS was held. A 40 day Facebook campaign highlighting Reserve programs, history and fun science facts was used to build momentum for the event. The day began at our Estuarine and Coastal Science Lab (ECOS) housed on the Oregon Institute of Marine Biology (OIMB) campus. Invited guests (Reserve partners, Tribal governments, emeritus staff and Friends members) participated in a behind the scenes tour given by the science team. Following the lab presentation, participants were shuttled to the Oregon International Port of Coos Bay (Port) Distant Water Fleet Facility. There, David Koch, Port CEO shared about the joint effort with the Reserve and the Port to build the paddle launch at that location, then native canoes from the Confederated Tribe of Coos, Lower Umpqua and Siuslaw Indians (CTCLUSI), Coquille Tribe, Younker family and Native-style South Slough Clipper Canoe launched for a 5 mile journey down the South Slough to the Hinch Road paddle launch.

As an add-on to this event, Congressman DeFazio paid a special visit to the Reserve on Thursday, August 14th. The tour began at South Slough Reserve Interpretive Center with a brief discussion of South Slough NERR's program and partners, and brief tour. They drove to

Hinch Road Bridge/Winchester Tidelands Restoration Project sites where they continued on a walking tour of Dalton Creek and Kunz Marsh tidal wetland restoration sites (including large wood placement in Winchester Creek) and discussion of the role tidal wetlands play in supporting salmon, Dungeness crabs and other species' life histories.

This was followed by a fish seine in Winchester Creek eelgrass bed and discussion of the diverse forms of biota found in upper estuarine tidal channels (including juvenile salmonids and Dungeness crabs), and the role eelgrass beds play in supporting salmon, Dungeness crabs and other species' life histories. The seining activities were observed by a small group of teachers associated with a NOAA-funded Bay Watershed Education and Training Program teacher training workshop being hosted by the South Slough NERR.

**Coastal Training Program**

## Coastal Training Program

**PNW Climate Conference.** Throughout the summer the Coastal Training Program coordinator assisted in the planning and organization of the Pacific Northwest Climate Science Conference held in Seattle in September. The annual conference attracts more than 250 researchers and practitioners from around the region to discuss scientific results, challenges, and solutions related

to the impacts of climate on people, natural resources, and infrastructure in the Pacific Northwest, and is the region's premier opportunity for a cross-disciplinary exchange of knowledge and ideas about regional climate, climate impacts, and climate adaptation science and practice.

The conference also provides a forum for presenting emerging policy and management goals, objectives, and information needs related to regional climate impacts and adaptation. Conference participants include policy- and decision-makers, resource managers, and scientists from academia, public agencies, sovereign tribal nations, non-governmental organizations, and the private sector. Emphasis is on talks that are comprehensible to a wide audience on topics of broad interest.

**Pacific Marine and Estuarine Fish Habitat Partnership.** The coordinator serves on the executive committee of the Pacific Marine and Estuarine Fish Habitat Partnership (PMEP), is vice chair of the organization, and member of the steering committee. Throughout the year PMEP has been conducting a West Coast-wide assessment of estuarine habitat available for 15 representative fish species that depend on estuaries during at least a portion of their juvenile lives. The study, which is entering its second year, is unique in its scope, and relies of the willingness of more than 100 researchers and dozens of fisheries management and scientific agencies and organizations to provide data about specific fishes and their habitat, including the Tijuana River, Elkhorn Slough, San Francisco, and Padilla Bay reserves. The data being acquired is also contributing to two other nationally-significant fish habitat studies that are in progress, including one of recreationally important fishes, sponsored by the National Fish Habitat Board, and a study sponsored by NOAA of the habitat requirements of several species of so-called forage fish in the nearshore Pacific Ocean.

In 2014 the CTP coordinator assisted PMEP in planning activities to celebrate successful habitat restoration projects that have benefitted from funding provided by PMEP; reviewed PMEP publications, web materials and reports to ensure accuracy, readability and usefulness; contributed to position statements, policy briefs, reports, and public information describing or otherwise supporting the objectives of the National Fish Habitat Partnership program.

Through PMEP, the CTP coordinator finds opportunities to extend scientific information, technical assistance and occasionally training to a wide range of estuarine organizations and decision-makers throughout the lower Columbia biogeographic region. Since PMEP is a coast-wide organization whose geographic that includes the waters of four national estuarine research reserves besides South Slough, the coordinator keep these reserves apprised of the activities of PMEP during regular quarterly meetings with coastal training program coordinators from all five West Coast reserves. (The meetings include NOAA regional representatives.)

**Coastal blue carbon.** The CTP coordinator continues to engage with Oregon regional decision makers on coastal blue carbon (carbon sequestration in estuarine marshes). Throughout 2014, the Reserve has continued to engage scientists from throughout the region on coastal blue carbon, as carbon sequestration by estuarine marshes has come to be called. On Dec. 9, 2014, wetland scientists representing agencies and organizations managing habitat restoration in Oregon’s estuaries will meet in Portland to discuss blue carbon science and to consider and adopt an action plan and framework to be used to guide initial, on-the-ground trials of the carbon sequestration

potential of Oregon's salt marshes. In planning for the Dec. 9 workshop, the Reserve's coastal training coordinator has worked closely with Craig Cornu, coordinator of monitoring programs, to engage the audience and define relevant issues.

**NERRS committee assignments wind down.** The NERRS Strategic Committee advises reserve managers on long-range strategies, initiatives, and programmatic changes. The committee includes representatives of the research, education, stewardship and coastal training sectors. The CTP coordinator in December completes his third year on the committee as coastal training sector representative—an unprecedented achievement for a position that is normally a two-year assignment. The extended term resulted from NOAA's desire to retain committee memberships throughout the merger of NOAA's offices of coastal resource management, the NOAA coastal program, and the NOAA Coastal Services Center within the new Office For Coastal Management. The coordinator is also ending a three-year term as coastal training sector representative on the SWMP Data Management Committee.

**Lower Rogue River estuary restoration and management.** The coordinator continues to work with decision makers in the Curry County city of Gold Beach, where interested residents are assisting in the development of an estuarine restoration master plan for the Rogue River estuary, including a presentation for students of an estuarine ecology class in August (at the Reserve) that included 18 participants, and a presentation about estuarine ecology and physiology in October at the Curry County Public Library that attracted 28 participants.

**NERRS-NERRA annual meeting.** The CTP coordinator traveled to Shepherdstown, WV., Nov. 17-21 to participate in the NERRS-NERRA annual business meeting.

**An apology.** The CTP coordinator unfortunately was unable to participate in the celebration of the Reserve's 40$^{th}$ anniversary, having previously committed the month of September to a vacation in South Africa. The commission should stay tuned for an invitation to attend a presentation of photographs, including exciting pictures of Very Large Animals, in the near future!

**Management planning.** CTP coordinator John Bragg is assisting the Commission and staff to revise the Reserve's management plan. In September staff completed an assessment of priority management issues and proposed a preliminary set of goals, objectives and actions to address those issues. These were presented in November, in outline form, to NOAA for preliminary review and comments before staff engages in final preparation of the plan, which must be completed by June, 2015.

The priorities for management contained in the plan, which when approved in 2015 will remain in effect through 2020, include: 1) Characterize and communicate the current trends and likely future effects of climate change on Pacific Northwest coastal and estuarine ecosystems and communities; 2) apply a comprehensive and adaptive approach to habitat protection in the South Slough Reserve and managed lands, and 3) monitor, research, manage, and communicate the impacts of existing and emerging invasive species within the Reserve and characterize potential threats from other locations within the Coos watershed. John is available to answer questions about the plan revision anytime at 541.888.5558 ext. 29 or at john.bragg@state.or.us.

**SCIENCE PROGRAM UPDATE**

**July - December 2014**

## MONITORING

### NERRS System-Wide Monitoring Program (SWMP)

Ali Helms (Estuarine Monitoring Coordinator) and Adam DeMarzo (Monitoring Technician) continued to operate the water quality, weather and nutrient components of SWMP.

SWMP Data: We completed monthly field and lab work associated with the water quality, weather, and nutrient long-term monitoring stations. We completed monthly and quarterly data submissions to the NERRS SWMP Centralized Data Management Office (CDMO) on time and are working on annual water quality, weather, and nutrient data submissions for 2014 due in March, April, and May 2015, respectively. Data submissions include data that have undergone several levels of quality assurance and control procedures, metadata development, calibration and field logs, and inventory. System-Wide Monitoring Program data for the South Slough Reserve and all other Reserves are accessible online here: http://cdmo.baruch.sc.edu.

Estuary pH Monitoring: We acquired two new water quality instruments to make measurements related to the carbon dynamics of the South Slough estuary to understand the rising pH (less acidic) trends detected by the YSI 6600 SWMP dataloggers. With additional data years available and analyzed, there is a change in the pattern of long-term pH data. The trend originally indicated slightly rising pH levels (less acidic) from 1995-2010 and now the trend shows decreasing pH levels (more acidic) from 2011-2013; overall the annual mean and median linear regressions still show an increase in pH with interannual and seasonal variability between years. The two sensors will make additional continuous carbon measurements of the partial pressure of carbon dioxide gas ($pCO_2$) and pH. $pCO_2$ is one of four carbon cycle measurements (pH, Dissolved Inorganic Carbon (DIC), and Total Alkalinity (TA)) that helps to understand ocean acidification processes. $pCO_2$ can provide information on community respiration, biological productivity, gas exchange, calcification, and import/export or cycling of carbon in a system. One of the sensors is a Sami $pCO_2$ sensor from Sunburst Sensors that will measure the partial pressure of carbon dioxide in the estuary waters. We will add monthly collections of discrete Dissolved Inorganic Carbon (DIC) and discrete *p*CO2 water grab samples to check the validity of the continuous $pCO_2$ measurements. We will work with Burke Hales Lab at Oregon State University in Corvallis, OR to analyze

these samples. The second sensor, the SeapHOx water quality sampling instrument is a more robust pH sensor built for ocean deployment. The SeapHOx, made by Scripps Institute of Oceanography/Todd Martz measures high resolution pH and also includes oxygen and temperature/conductivity sensors. We will deploy the SeapHOx next to the YSI sonde and *p*CO2 sensor at one of the marine dominated SWMP stations (Valino Island or Charleston Bridge). Currently, science staff are working on building deployment tubes to house the sensors, programming sensors for deployment, and protocols and equipment for calibration water grab samples. Deployments will begin in Dec 2014.

Real-Time Data: As a participant in the US Integrated Coastal Ocean Observing System (ICOOS)/Northwest Association of Networked Ocean Observing System (NANOOS), we operate telemetry systems at all four of the core SWMP water quality stations and the weather station to provide real-time data available at www.nerrsdata.org.

Data Management: The CDMO, an eight member team dedicated to data management activities associated with NERRS SWMP, made available a new release of the Data Export System with enhanced graphing capabilities. They released the first SWMP Mobile Real-Time Data Application with data available on smartphones or tablets for any real-time SWMP station regardless of the operating system www.nerrsdata.org/mobile.

Secondary SWMP station data hosting has been approved by the SWMP Guidance Committee and the Data Management Committee. Reserves can now upload raw data from secondary SWMP stations and run through preliminary quality assurance/quality control (QA/QC) procedures and the CDMO will provide web services if the station is telemetered. In order for a water quality, weather, or nutrient station to be approved for secondary SWMP status, data must be collected for one year at the station and it must be run entirely by NERRS staff. We will have several water quality stations eligible next year for secondary SWMP status as part of the Partnership for Coastal Watersheds inventory project.

**Weather Station Relocation**

We are in the process of identifying a new location for our weather station, currently located on the campus of the Oregon Institute of Marine Biology (OIMB). The OIMB is installing a 140 foot wind turbine approximately 80 feet from our weather station, which is expected to interfere with data collection of ambient weather conditions. Monitoring Technician, Adam DeMarzo, is working with the SWMP Oversight and Data Management Committees to find a new location that meets the required

specifications for a NOAA weather station. Given the space constraints on the OIMB campus, it is likely the station will have to be moved off the OIMB campus and be re-classified as a new weather station.

**Other Monitoring Projects**

Bacteria Monitoring: We continued monthly monitoring of fecal indicator bacteria at the SWMP nutrient monitoring stations. The bacteria data are of interest to the Partnership for Coastal Watersheds project, Oregon Department of Environmental Quality (DEQ) for Total Maximum Daily Load (TMDL) standards and to Oregon Department of Agriculture (DOA) as they conduct commercial and recreational shellfish bacteria assessments. Volunteers from the Surfrider Foundation continued to use the ECOS (Estuarine and Coastal Ocean Sciences) lab for their monthly monitoring of fecal indicator bacteria at local beaches.

SeagrassNet Monitoring: Science staff completed quarterly eelgrass sampling at Valino Island on 7/16/14 and 10/8/14 using the SeagrassNet sampling protocol. SeagrassNet is an international monitoring program established to document the status and health of seagrasses. Preliminary data analysis from 2004-2010 at our Oregon monitoring site (Valino) showed eelgrass spatial cover and density were increasing slightly.

Zostera Experimental Network (ZEN):

Science staff are working with Annaliese Hettinger with plans to help establish a Zostera Experimental Network (ZEN; zenscience.org) site in Coos Bay. This program would complement the current eelgrass monitoring efforts at Valino Island and provide new information as the ZEN program focus is experimental research on species-eelgrass interactions primarily invertebrate interactions, grazing and predation pressure on native eelgrass.

Northwest Association of Networked Ocean Observing Systems (NANOOS):

South Slough is a participant in a partnership project that provides real-time water quality data for shellfish growers in Oregon, Washington, and Alaska. http://nvs.nanoos.org/ShellfishGrowers.

Quarterly progress reports for NANOOS were submitted on time. FY2014 NANOOS funds have been spent to upgrade SWMP equipment, primarily for purchasing sondes to upgrade from the 6600 V2 to the EXO model. Yellow Springs Instruments (YSI), the NERRS supplier for water quality instruments, will still support the 6600s; however, they will no longer be manufacturing the older version of sonde. EXO

sondes use a different technology than the 6600 model and require their own set of sensors. They use smart port technology (sensors can be exchanged among any of the sensor ports and will still be recognized) whereas the 6600s had separate port for each sensor and a separate wiper for individual sensors, blue tooth wireless communication, a central wiper for biofouling and a new software communication program KOR. We are working on installation of a sixth water quality station near the mouth of Coos Bay located near Coast Guard Beach/OIMB Boathouse.

We partner with one of the local tribes, Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) to provide telemetry equipment for their North Spit BLM Boat Launch sonde station in lower Coos Bay. The data were recently made available to end users through the NANOOS Visualization System (http://nvs.nanoos.org/Explorer?action=oiw:fixed_platform:NERRS_SOSNSWQ) by working with Emilio Mayorga (Data Management, Communications, and User products for NANOOS). Over the summer, he developed Python code and utilized common software libraries to ingest water quality data from HADS and display through NVS.

Sentinel Sites Monitoring

Each summer staff use real-time kinematic (RTK) GPS surveying equipment that comes to us from NOAA ERD (shared by the National Estuarine Research Reserve System) to complete tasks that will ultimately enable us to determine the elevation of the water level sensors on SSNERR's System-Wide Monitoring Program water quality sondes. This year we were assisted by Mark Armstrong, Oregon's National Geodetic Survey (NGS) state advisor, who introduced us to survey equipment that simplifies surveying because it uses cell phone technology to access a network of permanent GPS base stations (Oregon Geodetic Network) to collect elevation data. Mark helped us troubleshoot and collect elevation data at a "problem" benchmark we have around the corner of our Valino Island SWMP station. We are now ready to use digital leveling instruments (also made available by NOAA ERD) to establish the elevation of SSNERR's Winchester, Valino Island and Charleston SWMP stations for the Sentinel Sites project.

The sentinel sites project pairs the long term water quality and water level data collected at SWMP sites with data quantifying other controlling factors including marsh elevation change, vertical accretion, soil salinity, and groundwater level dynamics to help interpret long term changes in target biological communities (at present, wetland emergent marsh and eelgrass beds). Funding for this project is sporadic, so apart from baseline biological community data collected in 2010 (the last time funding was available), the only fieldwork that takes place for this project is related to establishing the vertical control infrastructure needed to establish precise elevations for the water level sensors at each SWMP

station (we want to use those stations to help track localized changes in mean sea level that may influence changes in biological communities).

## RESEARCH

### Native Oyster Monitoring

Erik Larsen worked as the Native Oyster Monitoring Intern to complete a monitoring project on the growth, survival, and recruitment of native oysters in SSNERR. The oysters were originally outplanted near Younker Point in 2009 as part of a NERRS Science Collaborative funded project, but later moved to sites near Valino Island and Long Island Point after it was determined the oysters were being buried by sediment. This monitoring project was the first systematic assessment of the native oysters after being transplanted to their present locations in 2012. Reference sites with healthy native oysters were identified in Isthmus Slough near Coos Bay and used for comparison.

Erik was provided a stipend from the Friends of South Slough for this work and recruited assistance from two additional FOSS research interns (Sawyer Watson and Ian Rodger), one volunteer (Eric Dean), and AmeriCorps volunteer Megan Joyce to complete the project.

Erik compiled the results of the project into a final report and submitted a poster describing the project to the NERRS annual meeting. The poster abstract is included below:

Assessing Olympia Oyster, *Ostrea lurida*, Restoration Efforts in South Slough (Coos Bay, Oregon)

Erik Larsen, Bree K. Yednock, Steven S. Rumrill

In an effort to re-introduce the once abundant native Olympia oyster (*Ostrea lurida*) to the South Slough estuary, the South Slough National Estuarine Research Reserve outplanted seed oysters at two locations in the Reserve. Oyster cultch consisted of hatchery-reared *O. lurida* juveniles growing on non-native Pacific oyster (*Crassostrea gigas*) shells. In 2014, the growth, density, and survivorship of oysters were

assessed at the two restoration sites and compared to two reference sites in nearby Isthmus Slough where native oysters are well established. Data collection followed NOAA's standardized procedure for monitoring the demographic and geographic characteristics of oyster restoration beds. Results indicate oysters at the restoration sites are significantly larger than oysters at the reference sites, but both density and survivorship at the restoration sites are lower that the reference sites. Survivorship and density does not appear to be correlated with bed elevation. The presence of a single age cohort at the restoration beds, compared to multiple age cohorts at the reference sites, suggests the restoration sites may be recruitment limited. Data on the geographic location and dimensions of each oyster bed were also collected to establish a baseline for future monitoring.

**NERRS Science Collaborative Native Oyster Transfer Project**

Kerstin Wasson (Research Coordinator at Elkhorn Slough NERR), Matt Ferner (Research Coordinator at San Francisco Bay NERR), Jeff Crooks (Research Coordinator at Tijuana River NERR), and Alicia Helms (South Slough NERR) are working on a collaborative project *Transferring native oyster restoration recommendations from central California to Oregon and southern California*. The goal for this project is to customize products prepared for central California native oyster end-users for end-users in Oregon and Southern California. In October the team completed a guidance document entitled *A Guide to Olympia Oyster Restoration and Conservation*, along with an Excel-based tool to quantify the restoration and conservation potential of a site based on the environmental conditions and existing oyster population parameters. They identified chlorophyll a, hard substrate, and warm water temperatures as important factors that favor oyster population sustainability. The team is currently soliciting and compiling feedback on the guidance document and site evaluation tool from a list of potential end-users in Oregon (provided by SSNERR staff).

**Graduate Research Fellowship**

NOAA / Office for Coastal Management has provided up to three years of financial support for NERR Graduate Research Fellowship (GRF) grants awarded to graduate students who conduct their thesis work within a NERR. The current South Slough NERR GRF is Matthew Gray (Ph.D. candidate, Oregon State University) who has completed his fellowship as of Sept 2014. There are no additional NERR funds to support new GRFs due to limitations of the federal budget and thus the NERRS program cut the GRF program from its budget in 2012.

Matthew Gray has been conducting field and laboratory experiments evaluating the feeding physiology of the native Olympia oyster (*O. lurida*) and the introduced Pacific oyster (*Crassostrea gigas).* In the past 6 months, he continued data analysis for the project and completed his final report for the NERRS supported portion of his thesis submitted to NOAA on 9/5/14. His results included applications to restoration and ecosystem services of the Olympia oyster as well as modeling filtration services. He plans to defend his thesis in Spring 2015. Matt is also contributing results from his work and knowledge about Olympia oysters for the NERRS Science Collaborative Transfer Project (see Native Oyster update above.)

**USGS Climate Change Project**

The science team completed field surveys from June-October to map eelgrass presence, absence, and percent coverage at 80 locations in South Slough. The locations were chosen by the USGS based on model predictions of eelgrass presence/absence made from a LiDAR generated map of the Slough. The surveys were done for a collaborative project with USGS and EPA, administered through the US Geological Survey Western Fisheries Research Center - *Predicting Climate Change Threats to Key Estuarine Habitats*. The overall project goals are to develop baseline data, models, and tools to improve predictions regarding the impacts of regional climate change on Pacific Northwest estuaries.

**Fish Assemblages of South Slough and Coos Estuary**

The science team submitted a grant proposal to the Pacific Marine and Estuarine Fish Habitat Partnership (PMEP) to assess temporal and spatial patterns of fish assemblages in South Slough and the Coos estuary. The project would involve seining and fyke net sampling at several locations in South Slough that were sampled in previous studies in the 1980s and 1990s. In addition, the project will examine long-term changes in fish assemblages in the greater Coos estuary by analyzing trawl data collected by the Oregon Department of Fish and Wildlife since the early 1970s and include sampling at three locations in the upper Coos estuary. The proposal was written with Rebecca Flitcroft from the Pacific Northwest Research Center (US Forest Service and Oregon State University), who is listed as a partner on the project.

**Partner Projects**

Partnership for Coastal Watersheds (PCW)

As previously reported, the second phase of the PCW continues to move forward, mainly now in the form of the Coos Estuary Inventory Project and the Coos Estuary Monitoring Tools Project. The Coos Estuary Inventory Project is guided by a subcommittee that now includes representatives of the Coos County Planning Department, City of Coos Bay, South Coast Development Corporation, Stuntzner Engineering (Planning), Department of Land Conservation and Development, Southwest Oregon Community College, Sterling Media Northwest, and the Coquille Indian Tribe. The Coos Estuary Monitoring Tools Project is guided by an ad-hoc group of technical advisors from state and federal agencies, local tribes, and academic institutions.

Project highlights:

- Project coordinator and assistant coordinator, Craig Cornu and Jenni Schmitt (SSNERR), continue to work with SSNERR staff (Colleen Burch Johnson and Erik Larsen) to complete the environmental chapters of the Inventory. We've completed five of 13 chapters to draft or final stage (chapters are final once they've been reviewed by technical experts/data sources) and are nearing completion on three additional chapter drafts. Other SSNERR staff members, including Lead Scientist, Bree Yednock, Estuarine Monitoring Coordinator, Ali Helms, and Stewardship Coordinator, Hannah McDonald, are contributing to the development of Inventory chapters.

- Coos Watershed Association's Jon Souder has completed several chapters of the Inventory's socioeconomic status and trends section.

- SSNERR staff (Colleen Burch Johnson) has begun to incorporate into its Inventory maps Oregon's new estuarine habitat classification system, the Coastal and Marine Ecological Classification Standard (CMECS), recently applied to Oregon's estuaries by the Department of Land Conservation and Development (DLCD). Since Coos county will be using this new habitat classification system in its revision of the Coos Bay Estuary Management Plan, our Inventory will need to link status and trends information of the Coos estuary's environmental attributes (e.g., clams and oysters, fish and shellfish, water quality, invasive species…etc.) to the revised habitat classes described for the estuary. DLCD is providing SSNERR staff with modest support to accomplish this task.

- University of Oregon's Dave Sutherland continues to develop a circulation model for the Coos estuary and SSNERR staff continues to provide field data to help refine (or "validate") the model (continuous data including water temperature, salinity, depth, current speed, current direction…etc.). With the encouragement of Dr. Sutherland, we have begun to collect questions from SSNERR and other researchers and Bay Area decision makers and community members that the circulation model can be used to address. For example, "Where are native oyster larvae spawned in the recently restored South Slough beds likely to disperse?", "How are various commercial shipping channel dredging proposals likely to affect tidal currents and seasonal water quality conditions in the estuary?", "How are climate-related rising sea levels and

increased intensity and frequency of winter storms likely to affect erosion at the mouth of the estuary?" University of Oregon modelers can create multiple model scenarios that address the issues raised by each question to help researchers or community members understand the likely outcomes associated with their questions.

- As previously mentioned, SSNERR staff is already summarizing physical water quality data coming from the newly established SWMP stations in Coos estuary (at McCullough Bridge, Catching Slough, Isthmus Slough and upper Coos River) for the Coos Estuary Inventory Project. These data have already contributed to the Inventory's recently completed draft Water Quality chapter which is currently under review. The data from these stations have been collected following strict SWMP protocols for three months and will become official SWMP stations (data to be permanently managed along with data from SSNERR's South Slough SWMP stations by the NERRS Centralized Data Management Office) after another nine months of adhering to those standards.

## Northwest Climate Science Center-USGS Sea-level rise project

South Slough Reserve continues to be a partner in the Northwest Climate Science Center (NWCSC) Sea-Level Rise Project - *Marshes to mudflats: climate change effects along a latitudinal gradient in the Pacific Northwest* - led by John Takekawa, USGS Western Ecological Research Center, Vallejo, CA. The project objectives are to: (1) measure morphological and ecological characteristics (e.g., elevation, tidal range, vegetation) along transects crossing the habitat continuum of tidal marsh, intertidal mudflat, and subtidal shoals; (2) model vulnerability of these nearshore habitats and dependent avian indicator species to projected climate change effects; and (3) examine spatial variability of these projected changes along the latitudinal gradient of the Oregon and Washington coasts. Coos Bay is one of eight study sites. South Slough NERR staff (Cornu) assists the project by downloading water level and conductivity loggers at two locations near Bull Island in the upper portion of the Coos estuary. We download and re-launch the loggers during low tide, and send data, photos and field notes to USGS about every four months. The most recent download was October 2014.

### Visiting Researchers

Fiona Thomas-Nash and Jeremy Henderson from Oregon State University carried out eelgrass field research in August for a project associated with the Zostera Experimental Network (ZEN). With the help of Lead Scientist, Bree Yednock, they also completed a series of grazing experiments in Craig Young's lab at the Oregon Institute of Marine Biology (OIMB).

Bree Yednock has been working with Matthew Morris and Sean Rogers at the University of Calgary to plan field sampling of threespine stickleback in South Slough in the spring of 2015.

The project will involve collecting fish in Oregon and California and housing live fish in aquaria at the OIMB prior to disease-free certification testing (required for live transport of fish to Canada for further experimental work). Yednock has been assisting with logistics and permitting requirements for this project.

## STEWARDSHIP

Invasive Species Monitoring and Control:

We are beginning to actively build an invasive species monitoring and control program for the SSNERR. Invasive species removal projects were hosted on four occasions in the last quarter. The Oregon Youth Conservation Corps removed invasive reed canary grass in the Wasson drainage, The Coquille Tribe's Kilkich Youth Corps participated in a Cotoneaster removal event, a University of Oregon sustainability student group also participated in removing Cotoneaster, and SSNERR staff partnered with Coos Watershed Association staff to remove Purple Loosestrife in Barview, a source location for invasive species moving into South Slough. In addition, we are now actively involved with the Gorse Action Group, a regional partnership between Coos and Curry county organizations collaborating to map and control gorse along the southwestern Oregon coast. Mapping of gorse within and surrounding SSNERR managed lands will begin this winter. Invasive species mapping on the newly acquired Indian Point parcels is beginning this winter as well.

Restoration:

Two restoration projects are beginning to take shape for habitat within and surrounding SSNERR. In October, a grant proposal was submitted to the Oregon Watershed Enhancement Board (OWEB) to improve Coho spawning habitat along Winchester Creek. The project is a partnership between the Coos County Forestry Department and SSNERR. About 260 linear feet of the west fork of Winchester Creek will be restored using in-stream root wad placement and gravel inputs. Riparian plantings, road grading, and ditch reliefs will be used to reduce sediment inputs into the creek. Another OWEB grant was submitted in October as well, requesting funding for a Wasson Creek Watershed Restoration Plan. The technical assistance grant will allow for the development of a ridge-top to estuary restoration design in the Wasson Creek drainage to improve upland, aquatic, and marsh habitats. The technical assistance proposal is a partnership between Coos Watershed Association, the Coquille Indian Tribe, and SSNERR. Oregon Department of Forestry, the OSU extension, and the Nature Conservancy will be involved in the restoration planning as well. The SSNERR science team also contributed to an OWEB Focused Investment Priority solicitation of input and proposed a concentration on upland and riparian restoration in the coastal ecoregion of Oregon. This priority proposal, entitled *Upland/Riparian Restoration in the Coastal Ecoregion*, was one of 42 proposal and can be found here:

http://www.oregon.gov/OWEB/Pages/FIP-Proposed-Priorities.aspx

Land Acquisition:

On October 20th, the properties at Indian Point were purchased at auction, completing a long awaited component of the South Slough Shorelands Acquisition project. The lands were acquired using US Fish and Wildlife funds awarded through the Coastal Wetlands Conservation Grant Program. The parcels consist of 236.19 acres of estuarine shore-lands including estuarine wetlands, forested uplands and forested freshwater wetlands. The parcels are located on the northeastern side of the South Slough watershed. As part of the project, 332.22 acres of state-owned tidally influenced coastal wetlands are being provided as match and will be designated as conservation lands once the appraisal is complete in early 2015. The purchase of the Indian Point parcels and the completion of this project will ensure protection in perpetuity of the ecological structure and functions of a very important area of tidelands in the Coos estuary and will strengthen the chances for successful restoration of resident (and historically resident) stocks of anadromous fishes, native oysters, and other flora and fauna. The parcels include a sizeable population of the endangered Western bog lily (*Lilium occidentale).* The SSNERR is providing follow-up compliance to the US Fish and Wildlife Service (i.e. a Notice of Federal Participation, a Section 7 Biological Evaluation, etc.) and the grant project should be closed out in the first part of 2015.

The wetland parcels near Pony Slough, donated to the SSNERR via the Troutman Partnership, are not yet approved by the State Land Board. The process for the acquisition has gone through agency compliance steps, but the State Land Board has requested that SSNERR provide an outline of the value these parcels will provide to the Reserve. We believe that the acquisition will be approved in early to mid-2015.

Port Orford Cedar Project:

Monitoring of *P. lateralis* resistant Port Orford cedar saplings was completed in September for the 2014 season. Dr. Richard Sniezko and geneticist Jennifer Christie made a site visit in July to collect data on the saplings in the US Forest Service (USFS) sites along Hinch Road. SSNERR staff assisted with data collection and hosted a tour of these sites and the 2013 restoration sites on Salal Road. Oregon Department of Forestry and the OSU extension were in attendance. SSNERR staff made a second site visit to the USFS sites in October to assess any new mortality that may have occurred during the late summer. No new mortality was observed and monitoring will continue in 2015. The nearly 1,000 saplings in the 2013 restoration sites near Salal Road were also measured for growth and assessed for mortality through September. The stewardship program, with interns Sawyer Watson and Samuel Schrager, collected the remaining tree data following the spring efforts of intern John Ortega. The 2014

data was summarized and compared to the 2013 data, and results indicate a low mortality rate (<10%) at this time.

Western Bog Lily monitoring:

In August, USFWS program manager, Madeleine Vander-Heyden, SSNER staff and a botanist, made a site visit to the Indian Point parcels to assess the endangered Western bog lily population. The team determined that the population is very sizable and will benefit immensely from restoration efforts that encourage the establishment of habitat, including the plant's access to light. We will be working with the USFWS, Oregon State Parks, and the Coos Watershed Association to increase the Western bog lily population at various sites in and near the SSNERR.

**OTHER SCIENCE PROGRAM ACTIVITIES, including cross-sector cooperation**

Management Plan & Disaster Response and Preparedness Plan:

In October of 2014, a contractor was secured to begin completing the NOAA designed disaster response and preparedness plan. SSNERR staff is working to coordinate completion of the plan. The first draft will be reviewed in December and in early 2015 a local stakeholder meeting will take place. The plan is slated to be finalized by spring of 2015. The contractor is funded with additional NOAA operations grant funding.

SSNERR staff is also working on management plan development. A draft outline was submitted to NOAA in October and approved. The staff is making progress on identifying priorities, goals, objectives and actions that will be implemented over the next management plan period (5 years).

Coastal Blue Carbon: The development of a Pacific Northwest Coastal Blue Carbon Working Group is being organized by the Coordinator of Monitoring Programs (Cornu) and the Coastal Training Program coordinator (Bragg) and is beginning to take shape. Cornu is convening Pacific Northwest biophysical researchers on December 9, 2014 in Portland, OR to decide on a coordinated approach to coastal blue carbon research (quantifying carbon budgets/sequestration potential for Pacific Northwest tidal wetland types). The first coastal blue carbon research project proposals will likely be developed in response to a NERRS Science Collaborative RFP expected to be issued in January 2015. The stewardship coordinator (McDonald) attended the Blue Carbon training at the NERRS annual meeting in West Virginia and will attend the regional meeting in Portland on December 9$^{th}$.

Coquille Tribe MOU:

SSNERR management and staff are currently working with the Coquille Indian Tribe to establish a formal Cooperative Agreement or Memorandum of Understanding. A draft of the cooperative agreement has been created and discussions will continue into 2015 to determine how to frame a resilient partnership.

GIS and Monitoring Interns:

The science team is currently working with two GIS interns, Max Beeken and Ava Petley, to contribute to Inventory GIS mapping projects and to map the Indian Point acquisition, including invasive species. We are hoping to bring on an additional intern to participate in water quality monitoring for the proposed Winchester Creek restoration project. Monitoring for this project is slated to begin this winter and interns have already been interviewed.

**NERRS Committees and Projects**

SWMP Guidance Committee

The SWMP Guidance Committee (Marie Bundy, Dwight Trueblood, Willy Reay, Ed Buskey, Matt Ferner, Sandra Erdle, Ali Helms) held periodic conference calls to discuss \ reserve recapitalization timeframe and costs to inform the value of SWMP and prioritization of Sentinel Sites, Vegetation Monitoring, and Habitat Mapping.

**Meetings / Presentations / Trainings**

South Slough NERR Coordinator of Monitoring Programs, Craig Cornu:

July 2014 – November 2014- Participated in multiple Coos Estuary Inventory Project stakeholder meetings.

July 2014 – November 2014- Participated with Coos Watershed Association's Jon Souder in several meetings organized by one of the Coos Estuary Inventory Project stakeholders, Jon Barton, with representatives of the Coos Bay city council and the South Coast Development Council to enlist additional participation on the Inventory committee to ensure a diversity of local perspectives are represented on the committee.

August 2014- Led a Coos Watershed Association coastal habitats program focused on tidal wetlands conservation and restoration at the SSNERR (Dalton Creek Marsh restoration project; Anderson Creek restoration project.

August 2014- Participated in SSNERR staff field presentations for U.S. Representative Peter DeFazio during his visit to the SSNERR.

October 2014- Delivered, with Don Ivy, Coquille Indian Tribe Chief and chair of the Coos Estuary Inventory Project committee, a presentation about the Inventory project at the Oregon Coastal Planners meeting held in Florence, OR.

December 2014- Delivered, with Coos Watershed Association's Jon Souder, a presentation about the community benefits of the Coos Estuary Inventory Project at the Coos Bay Chamber of Commerce's Wednesday Business Connection meeting- held at the Mill Casino, North Bend, OR.

South Slough NERR Estuarine Monitoring Coordinator, Ali Helms

July-October 2014 – Maternity Leave

November 2014 – SWMP Data Analysis Training utilizing R programming

December 2014 – R statistical training online through Coursera

South Slough NERR Lead Scientist/Research Coordinator, Bree Yednock

July 2014 – Attended a training on the Basics of Supervision in Salem at the Cascade Employers Association.

August 2014 – Coordinated and led a tour of the ECOS lab for the 40th Anniversary Celebration to highlight research projects at SSNERR.

August 2014 – Delivered presentation on native oyster restoration efforts at SSNERR to teachers participating in the Oregon Coastal Education Program (OCEP) teacher training workshop.

August 2014 – Assisted with site visit by US Representative DeFazio, described research projects and needs at the reserve, and co-coordinated seining activity.

August 2014 – Attended the OWEB Focused Investment Priorities meeting for the Coastal Ecoregion in Tillamook, OR (organized by the Tillamook Estuary Partnership). Wrote and submitted a priority proposal to OWEB with Hannah McDonald in October.

August 2014 – Attended a GIS training at SSNERR delivered by Randy Sounhein, GIS Coordinator at the Oregon Department of State Lands.

September 2014 through December 2014 – Attended the Leadership Coos course the second Tuesday of every month. This is an ongoing course that ends in May 2015.

September 2014 – Presented at and attended the NERRS Research Coordinator Annual 3-day Webinar meetings.

September 2014 – Attended the 3-day NERRS GIS in Research Webinars.

October 2014 – Attended a multi-day Grant Training Workshop at Portland State University and submitted a grant proposal to the Partnership for Marine and Estuarine Fish Habitat Partnership (PMEP) using materials developed during the workshop.

October 2014 – Attended the Oregon Department of State Lands New Employee Training (remotely via WebEx).

October 2014 – Attended the State of the Coast meeting in Florence, OR. Participated as a judge for the student poster presentation session.

October 2014 – Delivered a seminar for the OIMB Fall Seminar Series.

November 2014 – Delivered a presentation on SSNERR to the local Rotary Chapter Luncheon with Hannah McDonald and Gary Cooper.

November 2014 – Attended the NERRS annual meeting, which included the following highlights:

- Participated in SWMP Data Analysis Training (in R).
- Presented a poster on SSNERR oyster restoration efforts.
- Delivered an oral presentation on research at SSNERR.
- Joined the *Bivalve* and *SWMP Data Analysis with R* working groups.

South Slough NERR Stewardship Coordinator, Hannah McDonald

August 2014 – Met with the Nature Conservancy to discuss and tour upland restoration projects in the Ellsworth Creek Coastal Forest Preserve.

August 2014 – Met with the Oregon Department of Forestry and Coast Range Forest Watch to tour the Winchester Creek timber sale, adjacent to the SSNERR.

September 2014 – Attended the Central Coast GIS User Group's GIS Symposium and training day in Newport, Oregon.

September 2014 – Met with the Coquille Indian Tribe to discuss partnership opportunities, to tour the tribally managed uplands, and to begin cultural planning work for future restoration in the Wasson Creek watershed.

October 2014 – Attended field training for mapping protocol with the Gorse Action Group.

October 2014 –Attended a multi-day Grant Training Workshop at Portland State University. The science team staff and public outreach coordinator who attended submitted four separate grant proposals after the workshop.

October 2014 – Met with the Oregon Department of Forestry to tour the Wasson Creek drainage and discuss potential restoration prescriptions.

October 2014 – Attended a cross-agency conservation group meeting in Bandon, organized by the Coos/Curry Natural Resource Conservation Service.

November 2014 – Attended the Blue Carbon training at the NERRS annual meeting in West Virginia.

November 2014 – Presented on the planning for the Wasson Creek Watershed Restoration Project at the NERRS annual meeting.