

## EXHIBIT C

### PROJECT COMPLETION REPORT

#### **(1) Narrative description of project**

This final report details work performed by the Institute for Applied Ecology (IAE) toward the goal of enhancing biodiversity and habitat value of prairies in the Willamette Valley, Oregon. In spring 2006 the Native Seed Network program (currently the Habitat Restoration program) of IAE was awarded grants from both the Natural Resources Conservation Service (NRCS) and the Oregon Watershed Enhancement Board to create high quality, diverse native plant communities with the potential to provide habitat for rare species. Other partners included The Nature Conservancy and the City of Eugene. As of November 23, 2009 the project has been completed.

#### **a. Background on the problem which generated the project**

*Regional Need for Prairie Restoration:* Willamette Valley wetlands and wet prairies are among the most endangered habitat types in the state of Oregon, and among the rarest of North American ecosystems (Noss et al. 1995). Merely one percent of the Willamette Valley is managed for conservation purposes and only a fraction of that is for wetland habitats (Floberg et al. 2004). The current lack of suitable prairie habitat has contributed to the decline of a vast number of rare and endangered plant and animal species. Twenty taxa in the Willamette Valley are listed under the federal Endangered Species Act and 155 more are imperiled. Of these 175 at-risk taxa, thirty-one occur in or use wetland prairie habitat for some portion of their lifecycle (Floberg et al. 2004). Oregon Governor Ted Kulongoski has declared that his number one environmental priority for the state of Oregon is to improve the Willamette River system, emphasizing improved wildlife habitat for at-risk species and restored historic wetlands and prairies, among other objectives (Kulongoski 2005). Prairie habitat within the Willamette Valley has been identified as a priority for restoration by the Oregon Conservation Strategy.

*Private Lands Programs Play a Critical Role – WRP and WREP:* Ninety-six percent of the Willamette Valley ecoregion is privately owned (Gregory et al. 2002). Consequently, over 97% of the estimated historic 768,000 acres of wet prairies have been converted to other uses, primarily agriculture. Restoration of farmed wetlands to wetland prairie, in particular, holds the greatest potential for restoration of winter waterbird habitat (Taft & Haig 2003). Wetland prairies in good condition, compared with other Willamette Valley habitat types, “provide the best reproductive habitat for 38 wildlife species, and are used regularly by at least an additional 54 breeding wildlife species” (Primozych & Bastasch 2004). Two private land programs are particularly critical in meeting conservation objectives for the region, the Wetland Reserve Program (WRP) and the Wetland Reserve Enhancement Program (WREP). WRP is a voluntary easement program administered by the NRCS offering private landowners the opportunity to protect, restore, and enhance wetlands, usually marginal farmland, on their property. WREP was initiated in 2006 to stimulate partnerships and improve and expand the delivery of WRP. Both programs have the objective of restoring and protecting the functions and values of wetlands in the agricultural landscape. Our project is the implementation of the Wetland Reserve Enhancement Program. Table 1 lists the WRP easement sites included in our WREP project.

**Table 1.** WRP easements included in the WREP. .

<b>WRP Site</b>	<b>County</b>	<b>Site Acres</b>	<b>Project Acres</b>	<b>Easement Type</b>
Gahr* removed	Yamhill	117	20	Permanent
Mud Slough	Polk	320	100	Permanent
Bessett	Polk	68	25	Permanent
Winter Creek	Polk	58	40	Permanent
Dhooghe	Polk	62	30	Permanent
Tyee	Benton	180	50	30 year
Dunn	Benton	200	30	30 year
Raindance Ranch	Benton	68	25	30 year
Mary's River	Benton	62	15	Permanent
Long Tom Ranch	Lane	300	100	Permanent
Kawonu Acres	Lane	210	100	Permanent
Helt	Lane	103	60	Permanent
<b>Totals</b>		1748	595	

*Essential Habitat for Wildlife:* The Willamette Valley is located in the Pacific Flyway, providing essential habitat for migrating and wintering waterfowl, shorebirds, neotropical migrants, and significant breeding duck populations. More than 30 species of ducks, geese, and swans, and a diverse assemblage of shorebirds and wading birds depend on these wetlands. The Willamette Valley Ecoregion is the primary wintering grounds for the majority of the entire population of dusky Canada geese (approximately 15,000 – 20,000) and cackling Canada geese (approximately 150,000). The area is also considered the most important wintering area within western Oregon for northern pintails and mallards, with concentrations as high as 40,000 and 60,000, respectively, for each species. Small numbers of lesser scaup and greater scaup also use the area during migration and wintering periods.

*Restoration Advances Make it Possible:* Prairie habitat restoration is still in its infancy in western North America. As such, many of the basic requirements for successful restoration in the Willamette Valley are still under development. Early attempts at restoration have been generally unsuccessful due to a lack of knowledge, tools, resources, and adequate funding. In recent decades, researchers and land managers have made great improvements in restoration techniques to either rehabilitate degraded prairies or convert abandoned agricultural land back to native prairies. For instance, it is now generally accepted that maintaining native wetland prairies and habitat for rare wetland-dependent species requires active management and reintroduction of fire (Pendergrass et al. 1998, Wilson 1999). Prescribed burning has been demonstrated to increase the seeding success of some Willamette Valley species, particularly forbs (Clark & Wilson 2001).

However, burning alone is insufficient to increase species diversity (Wilson, 1999). In order to restore habitats with diverse native plant communities, seed must be added. Prior to initiating this project, a significant obstacle to restoring existing sites was the lack of availability of locally adapted native seed. There simply was not enough seed. The seed that was commercially available was of unreliable quality and expensive (\$80-\$100/pound or more). Sometimes the only source was from another state and ecoregion and

very likely maladapted for our area. Furthermore, the number of species available for restoration projects was very low and focused almost entirely on grasses. Conspicuously missing were native wildflowers (forbs) which play a crucial role in supporting the base of the prairie food web. Seeding a diversity of species has been successful in Willamette Valley wet prairie restorations in the West Eugene Wetlands (Wilson 2004). Given that WREP project sites encompassed several hundred acres and all sites lacked forb diversity, the program had a tremendous need for genetically diverse native seed from a variety of species. To address the seed demands of this project and provide a germplasm for future restoration projects in the valley, IAE created the Willamette Valley Seed Increase Program, a nationally recognized seed collection and increase program. The goal of this program was to develop a supply of ecologically appropriate, genetically diverse native plant material for restoration on prairie ecosystems in the Willamette Valley (see Ward et al, 2007).

In addition, we now benefit from advances made in availability of equipment designed for restoration and a wider selection of chemical treatment options. Also in our area, the farming community has extensive knowledge base regarding herbicide use and plant response to a variety of treatments. Many practitioners have recently integrated more agricultural techniques into their successful restoration projects. These tools are needed more than ever as remaining habitat is often heavily invaded by a number of noxious weeds and escaped agricultural plants. Restoration at the majority of WRP sites in the Willamette Valley occurred before many these restoration advances were available.

*Long Term Management Plans Needed:* One of the key objectives of the WREP project was the development of detailed restoration plans and the subsequent implementation of these plans. Many landowners were unfamiliar with the species growing on their property, felt paralyzed by the presence of endangered species, or did not have the tools or expertise to conduct restoration on their own. A detailed plan outlining each step was needed to successfully convert degraded agricultural fields into native prairies and protect and maintain habitat values. The NRCS and U.S. Fish and Wildlife Service provided a template for management planning at all WRP sites called the Wildlife Habitat Management and Conservation Plan (WHCMP). These plans were intended to be a comprehensive guide for land managers by detailing site information, wildlife values, habitat conservation goals, soils present, permits required, surveys conducted, monitoring, and maintenance. A WHCMP was needed for every WREP project site. IAE acted as a general contractor, coordinated with government agencies, private contractors, landowners, and volunteers to write and implement the restoration plans over the last three years.

*Objectives:* Twelve (12) sites were identified for ecological enhancement through the Wetland Reserve Program (WRP) (Table 1), and partnerships were developed with private land owners. Selected sites had a potential for high quality wildlife habitat that was not being realized. Generally these WRP sites had functional wetland hydrology, but did not have desirable plant communities. Most were dominated by nonnative or invasive species and/or lacked native species diversity. In addition to enhancing watershed values and habitat for wildlife, this project was designed to create high quality, diverse native plant communities that have the potential to provide habitat for 7 federally threatened and endangered species, 2 candidate species, and 7 species of concern. The Willamette Valley Wetlands Reserve Enhancement Program (WREP) was developed to meet these goals through 3 major objectives:

1. Collect and increase the seed of native species, particularly forbs
2. Design and implement enhancement prescriptions
3. Develop Wildlife Habitat Management and Conservation Plans.

**b. Description of the work done, placing it in its larger watershed context**

We enhanced floodplain habitats – wetland prairie, upland prairie, riparian edge – at eleven WRP sites in the Willamette Valley, Oregon. The sites encompassed 600 acres located within a core complex of properties in the mid-Willamette Valley that are being managed for fish and wildlife habitat within the Muddy Creek, Marys River, Long Tom River, Rickreall Creek, and Luckiamute River drainages. Our enhancement activities replaced non-native and invasive species with a diverse assemblage of native forbs and grasses, reducing the quantity of weed seed that can invade watersheds. Partner and landowner reports as well as IAE site assessments indicate increased usage by waterfowl and other prairie wildlife species following enhancement work at several sites. In general, restoring natural communities supports a myriad of ecological and environmental processes in floodplain habitats. The accomplishments of the 3 WREP project objectives are detailed below.

Objective 1: Native Seed Procurement and Production: A wide reaching collection effort was necessary to capture maximum species diversity and genetic diversity to promote plant community resiliency and survival at project sites. We collected seed from 33 important native prairie species throughout the Willamette Valley. Selected species were key prairie matrix species, primarily forbs, suitable for large scale production. We collected from as many populations as possible within the Willamette Valley ecoregion over a three year period. Collection efforts resulted in 934 collection sites, totaling 626 pounds of seed (Table 2). Collected seeds were then distributed to local seed producers who planted 9.3 acres of production fields. Participating growers included Kenegy Family Farms, Oregon Wholesale Seed, Heritage Seedlings, Inc., Pacific Northwest Natives, and the Corvallis NRCS Plant Materials Center. In 2008, our production fields yielded 1,305 pounds of seed and 1,278 pounds of seed in 2009, the majority of which was replanted at WRP restoration sites throughout the Willamette Valley. All production fields were entered into the Oregon Seed Certification Service Pre-Variety Germplasm program. IAE spent approximately \$103,923 on seed acquisition for planting eleven WRP sites. Restoration and enhancement of these WRP sites would not have been possible without the seed yielded from the Willamette Valley Seed Increase Program. IAE published a journal article highlighting the seed increase program in the Native Plants Journal (see Ward et al, 2008). We had anticipated that these production fields could be sustained by seed producers after WREP ended and that this high quality diverse seed would be generally available for any restoration program in the Willamette Valley. Indeed, most of the seed producers participating in the Willamette Valley Seed Increase Program have elected to continue the production of these plant materials to sell on the open market.

**Table 2.** Native seed collected, increased, and harvested between 2006 and 2009 for the WREP.

<i>Latin name</i>	<i>Common name</i>	<i>Collection sites</i>	<i>Pounds collected</i>	<i>Acres planted</i>	<i>Pounds harvested 2008</i>	<i>Pounds harvested 2009</i>
<i>Achillea millefolium</i>	common yarrow	19	0.5	0.1		
<i>Allium ampletens</i>	narrowleaf onion	16	1.6			
<i>Asclepias speciosa</i>	showy milkweed	15	2.6	0.2		10
<i>Calochortus tolmiei</i>	Tolmie star-tulip	17	0.3			
<i>Camassia leichtlinii</i>	large camas	16	2.5			
<i>Camassia quamash</i>	small camas	10	1.9			
<i>Carex densa</i>	dense sedge	31	16.1	0.2	56	45
<i>Carex tumulicola</i>	splitawn sedge	2	0.2			
<i>Carex unilateralis</i>	one-sided sedge	41	28.1	0.4	20	90
<i>Danthonia californica</i>	California oatgrass	41	42.2	1.3	330	700
<i>Deschampsia</i>	tufted hairgrass	27	90.2			

<i>cespitosa</i>						
<i>Epilobium densiflorum</i>	spike willowherb	25	44.8	0.8	151	70
<i>Eriophyllum lanatum</i>	woolly sunflower	59	20.9	0.8	28	29
<i>Geranium oregonum</i>	Oregon geranium	12	0.1			
<i>Grindelia integrifolia</i>	Puget Sound gumweed	26	36.6	0.4	205	55
<i>Iris tenax</i>	toughleaf iris	12	0.4			
<i>Juncus tenuis</i>	poverty rush	43	21.2	0.3	3	15
<i>Lomatium nudicaule</i>	barestem biscuitroot	17	2.8	0.1	0	35
<i>Lotus unifoliolatus</i>	Spanish clover	55	94.1	0.4	62	
<i>Lupinus polyphyllus</i>	bigleaf lupine	20	31.1	0.2	130	38
<i>Microseris laciniata</i>	cut-leaved microseris	6	0.1			
<i>Mimulus tricolor</i>	tricolor monkeyflower	2	0.0			
<i>Potentilla glandulosa</i>	sticky cinquefoil	1	0.0			
<i>Potentilla gracilis</i>	slender cinquefoil	58	20.5	0.5	124	0
<i>Prunella vulgaris</i>	common selfheal	44	20.8	0.5	47	0
<i>Ranunculus occidentalis</i>	western buttercup	27	1.7	0.2	18	9
<i>Ranunculus orthorhynchus</i>	straight beak buttercup	25	23.7	0.4	30	19
<i>Saxifraga oregana</i>	Oregon saxifrage	21	4.7	0.8	2	8
<i>Sidalcea campestris</i>	meadow checkerbloom	72	66.8	1.2	85	125
<i>Sidalcea virgata</i>	rose checkermallow	47	1.1	0.3	8	20
<i>Sisyrinchium idahoense</i>	Idaho blue-eyed grass	8	0.2			
<i>Symphotrichum hallii</i>	Hall's aster	63	3.6	0.5	6	10
<i>Wyethia angustifolia</i>	mule's ears	56	44.9			
	<b>Totals</b>	<b>934</b>	<b>626.4</b>	<b>9.3</b>	<b>1305</b>	<b>1278</b>

**Objective 2: Implementation of Restoration Activities:** A major focus of the Wetland Reserve Enhancement Program was extensive on-the-ground restoration efforts. IAE implemented 169 restoration actions at the 11 sites, including extensive weed control, mowing, disking, burning, and seeding of all sites with a diverse mixture of native prairie species produced by our Willamette Valley Seed Increase Program.

Prior to implementation, the majority of sites were highly degraded wet prairies with unmet potential to support rare species of plants and wildlife. Baseline vegetation monitoring data is included with this report. Restoration activities included: rare plant surveys, vegetation monitoring, photopoints, NEPA consultation, herbicide applications, mowing, haying, raking, weed whacking, burn preparation, burning, seed bed preparation, seed drilling, seed broadcasting, seed acquisition, and plug planting. Successful implementation of these restoration actions required considerable coordination between NRCS District Conservationists, U.S. Fish and Wildlife Service (USFWS), landowners, the Confederated Tribes of the Grand Ronde, contractors, the general public, students, and other partners. IAE spent approximately \$118,598 on contractor services (Table 3). This figure does not include costs for restoration services performed by IAE staff, nor does it include contributions made by other agencies such as the U.S. Fish and Wildlife Service or the City of Corvallis.

Table 3. Expenditures for each WRP site. Estimates include seed acquisition and contractor costs (i.e., mowing, burning, and herbicide applications).	
<i>Site</i>	<i>Cost</i>
Bessett	\$10,254.70
Dhooghe	\$7,603.45
Dunn	\$7,616.94
Helt	\$30,694.21
Kawonu	\$13,920.93
Long Tom	\$48,443.45
Marys River	\$22,981.83
Mud Slough	\$25,302.56
Raindance	\$13,668.24
Tyee	\$18,427.99
Wintercreek	\$23,606.37
<b>Grand Total</b>	<b>\$222,520.68</b>

*Objective 3: Wildlife Habitat Management and Conservation Plans (WHCMP):* IAE completed Wildlife Habitat Management and Conservation Plans for each of the eleven sites (included with this report). In addition to providing baseline site and habitat information, IAE summarized all restoration activities and associated costs, dates of implementation, and suggested maintenance schedules. Annual maintenance is stressed in these reports due to the high risk of these sites reverting back to degraded systems. Also, restoration experts recognize that annual maintenance is far more cost effective than corrective restoration and has fewer environmental impacts.

**c. Description and explanation of any changes to the original proposal**

The NRCS District Conservationist in Yamhill County elected to remove the Gahr site from the program in 2007. IAE produced a plan for the site, but landowner objectives changed prior to implementation. Funds were reallocated to the remaining eleven sites.

**d. Promotion**

IAE developed and delivered 15 multimedia presentations during the course of our WREP grant. We produced brochures that were distributed at conferences, gave several presentations to partners and members of the restoration community, public tours, and published an article on our innovative seed program in a journal with a national audience (see Ward et al, 2008). Specific outreach by IAE staff:

Matt Blakely-Smith

- Willamette Valley Wetland Restoration. 2009. Conservation Leaders’ Group Meeting. Oregon Department of Fish and Wildlife.
- Wetland Restoration in the Willamette Valley. 2009. Benton County Soil and Water Conservation District.
- Herbicides as a Restoration Tool. 2008. Presentation to the Field Operations Group West Eugene Wetlands.

Matt Blakeley-Smith and Melanie Gisler

- Wetland Reserve Enhancement Program. 2009. Natural Resources Conservation Service, Tangent, OR.

- Wetland Reserve Enhancement Program. 2008. Natural Resources Conservation Service, Tangent, OR.
- Willamette Valley Prairie Restoration – Challenges and Solutions. 2007. Pacific Northwest Native Plants Conference, Eugene, OR.

Melanie Gisler

- OWEB Projects: Wetland Reserve Enhancement Program and Nelson’s checkermallow Recovery. 2008. Oregon Watershed Enhancement Board Conference, Eugene, OR.
- Mud Slough WRP 2007. Restoration Tour for OWEB.
- Mud Slough WRP 2009. Public Tour. Restoration and Nelson’s checkermallow.
- Tyee WRP 2009. Public Tour. Restoration and Nelson’s checkermallow.

Kimiora Ward

- Willamette Valley Seed Increase Program: An ecoregion-based approach to developing genetically diverse germplasm. 2007. Pacific Northwest Native Plants Conference, Eugene, OR.
- The Willamette Valley Seed Increase Program: developing genetically diverse germplasm using an ecoregion approach. 2007. Wildflower Research Symposium, Florida.

Rob Fiegenger

- Willamette Valley Seed Increase Program. 2006. Intermountain Native Plant Summit, Boise, ID.
- Willamette Valley Seed Increase Program. 2007. Society for Ecological Restoration NW, Yakima, WA.
- Willamette Valley Seed Increase Program. 2007. OR/WA BLM Botany Meeting, Corvallis, OR.

**e (and f). Lessons learned recommendations for more effective implementation**

*Proactive Restoration:* There is a widely held misconception that if we “let mother nature take her course” native habitats will return on their own. Instead, these habitats harbor introduced species and the longer they are left fallow the more difficult they are to restore as weeds become deeply entrenched. Sites that have remained fallow require a substantial investment in weed control and can delay native plantings for multiple years as recalcitrant weeds severely threaten project success. It would be much more economical to continue farming a field until it is ready for restoration, since the act of farming keeps weeds at a manageable level. Related to this issue is that of annual maintenance. Prairies degrade quickly if they are not mowed or burned every other year. The common saying: “it is cheaper to maintain things than it is to fix them” applies to prairie habitat as well. The cost of conducting annual maintenance is much cheaper in the long-run than restoring sites after they have been abandoned for many years.

*Size Matters:* Ecological theory holds that larger parcels of land tend to harbor greater biodiversity and therefore have greater conservation value than smaller parcels. This lesson is relevant to restoration projects, since the relationship between acres restored to cost per acre is not linear. Small parcels are substantially more expensive to restore than larger areas due to the expense of moving equipment and people between sites, the need for specialty equipment, overall efficiency in equipment operation, and volume discounts on materials.

*Trees should come last (if at all):* We found that most restoration sites have large portions of the property planted to trees. Premature tree planting greatly complicates the entire prairie restoration process and consequently increases the project cost. Trees are obstacles that need to be avoided when mowing, spraying, burning, and seeding. This slows down equipment operators, results in ineffective weed control and native plant establishment, and reduces the area available for prairie restoration. Prairies area an

endangered habitat so careful consideration should be given to tree planting projects that convert a threatened resource (prairies) into a different habitat class (forest).

*Hydrological Connectivity and Weed Dispersal:* While some wetlands are fed solely by rainwater, other wetlands process floodwaters from adjacent creeks and rivers. Often times the sites that are hydrologically connected are more prone to invasion by introduced species since the flood waters transport seed from a very large area. All things being equal, the likelihood of success for establishing native species is greater on an isolated wetland versus a wetland prone to flooding.

*Wildcards and Realistic Timelines:* Prairie restoration involves a number of uncertainties such as equipment failures, wildlife damage, flooding, freezing, etc. Timelines for prairie restoration are therefore difficult to generate since each site has unique challenges and conditions. For example, an untimely rain event flooded one of our recently planted sites and required replanting the next year. In two and a half years IAE has been able to dramatically improve the habitat quality of prairies in the WREP program with noticeable increases in wildlife populations. Nonetheless, two years is insufficient time to fully restore a degraded prairie. Many of the WREP sites will benefit from continued weed control, native wildflower additions, brush removal, and burning.

*Outreach:* From the people side, we learned about the importance of involving neighbors in the planning process prior to starting restoration projects on public lands. For example, at Marys River Natural Park many of the neighbors were supportive of habitat restoration in theory, but were unable to differentiate between native species and invasive species. This was challenging since some neighbors wanted to protect introduced species such as blackberries, eastern cottontail rabbits, and ring-necked pheasant. Our grant did not include funds for public outreach and education. Future projects should capitalize on the public's interest in the natural world, provide opportunities to increase local knowledge of Oregon's unique natural heritage and the threats posed by introduced species.

## **References:**

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# Tyee WRP, Benton Co.

Photopoint 1A Pretreatment  
2007



Photopoint 1A Post-treatment  
2007



Photopoint 1A Post seeding  
2009



Photopoint 2B Pretreatment  
2007



Photopoint 2B Post-treatment  
2008



Photopoint 2B Post seeding  
2009



# Tye WRP, Benton Co.

## Opportunistic photos

Monitoring vegetation response to seeding  
2008



## Feature photos

Popcorn flower post-treatment  
2008



# Raindance WRP, Benton Co.

Photopoint 1B Pretreatment  
2007



Photopoint 1B Post-treatment  
2007



Photopoint 1B Post seeding  
2009



Photopoint 2C Pretreatment  
2007



Photopoint 2C Post-treatment  
2008



Photopoint 2C Post seeding  
2009



# Raindance Ranch WRP, Benton Co.

## Opportunistic photos

Plug planting  
2009



Outreach and stewardship  
2007



## Feature photos

Post seeding (*Clarkia amoena*)  
2009



Wildlife Use  
2009



# Mud Slough WRP, Polk Co.

Photopoint 3B Pretreatment  
2006



Photopoint 3B Post-treatment  
2007



Photopoint 3B Post-treatment  
2008



Photopoint 5A Pretreatment  
2006



Photopoint 5A Post-treatment  
2007



Photopoint 5A Post-treatment  
2008



# Mud Slough WRP, Polk Co.

## Opportunistic photos

Prescribed burn, wet prairie  
2006



Seed drilling, wet prairie  
2006



Target seeding vernal pool  
2006



## Feature photos

Wet prairie, post burn  
2006



Vernal pool, post seeding  
2007



Vernal pool, post seeding  
2009



# Marys River Natural Park WRP, Benton Co.

Photopoint 1C Pretreatment  
2007



Photopoint 1C Post-treatment  
2007



Photopoint 1C Post seeding  
2009



Photopoint 3A Pretreatment  
2007



Photopoint 3A Post-treatment  
2008



Photopoint Post seeding  
2009



# Marys River Natural Park WRP, Benton Co.

## Opportunistic photos

Prescribed burn, wet prairie  
2007



Local School Volunteer Work Party  
2009



Baseline monitoring  
2007



## Feature photos

Wet prairie  
Post burn 2007



Tricolored monkey flower  
Post Treatment 2008



Wet prairie  
Post Flood 2007



# Kawanu Acres WRP, Lane Co.

Photopoint 3A Pretreatment  
2007



Photopoint 3A Post-treatment  
2007



Photopoint 3A Post seeding  
2009



Photopoint 3B Pretreatment  
2007



Photopoint 3B Post-treatment  
2008



Photopoint 3B Post seeding  
2009



# Kawanu Acres WRP, Lane Co.

## Opportunistic photo

Hay pile following hay treatment  
2007



Wildlife use (geese)  
2007



## Feature photos

Popcorn flower in fire-line  
2008



# Helt WRP, Lane Co.

Photopoint 1C Pretreatment  
2007



Photopoint 1C Post-treatment  
2007



**Opportunistic photo**

Prescribed fire 2007



Photopoint 2C Pretreatment  
2007



Photopoint 2C Post-treatment  
2008



**Feature photo**

Buttercup post-burn



# Long Tom Ranch WRP, Lane Co.

Photopoint 1B Pretreatment  
2007



Photopoint 1B Post-treatment  
2007



Photopoint 1B Post seeding  
2009



Photopoint 2B Pretreatment  
2007



Photopoint 2B Post-treatment  
2008



Photopoint 2B Post seeding  
2009



# Long Tom Ranch WRP, Lane Co.

## Opportunistic photos

Seed drilling wet prairie  
2008



Site evaluation  
Spring 2008



Prescribed fire  
2007



## Feature photos

Post-burn  
2007



Wildlife use (geese)  
2009



Popcorn flower post-seeding  
2009



# Dunn WRP, Benton Co.

Photopoint 2B Pretreatment  
2007



Photopoint 2B Post-treatment  
2007



Photopoint 2B Post seeding  
2009



Photopoint 3A Pretreatment  
2007



Photopoint 3A Post-treatment  
2008



Photopoint 3A Post seeding  
2009



# Dunn WRP, Benton Co.

## Opportunistic photos

Planting forbs into “diversity islands”  
2007



Herbicide spraying  
2008



Site planning  
with partners and landowner  
2009



## Feature photos

Drill rows – forb seed into native  
grasses, upland prairie  
2009



Diversity Island post planting –  
good establishment of woolly  
sunflower 2008



Establishment of planted Meadow  
checkermallow and buttercup  
2008



# Winter Creek WRP, Polk Co.

Photopoint 1C Pretreatment  
2007



Photopoint 1C Post-treatment  
2008



Photopoint 1C Post seeding  
2009



Photopoint 4B Pretreatment  
2007



Photopoint 4B Post-treatment  
2008



Photopoint 4B Post seeding  
2009



# Winter Creek WRP, Polk Co.

## Opportunistic photo

Herbicide spraying over protected Nelson's checkermallow plants  
2007



## Feature photo

Nelson's checkermallow survival post spray (Selective exclusion of Nelson's plants)  
2008



# Dhooghe WRP, Polk Co.

Photopoint Post tilling  
2007



Photopoint Post seeding  
2008



**Opportunistic photo**

Single track drill - Seed Nursery



Photopoint Post tilling  
2007



Photopoint Post seeding  
2008



**Feature photo**

Nelson's checkermallow preserved



# Bessett WRP, Polk Co.

Photopoint 4C Pretreatment  
2007



Photopoint 4C Post-treatment  
2008



**Opportunistic photo**

Prescribed fire 2007



Photopoint Pretreatment  
2007



Photopoint Post-treatment  
2008



**Feature photo**

Winter hydrology post fire 2007

