

Herbert Farm Restoration Summary 2016/17 – Web Version



9/19/2017

Report for the Willamette Wildlife Mitigation
Program, Oregon Department of Fish and Wildlife

Report prepared by Peter Moore
Institute for Applied Ecology



PREFACE

This report is the result of a Grant Agreement Number 210-16 between the Institute for Applied Ecology (IAE) and the Oregon Department of Fish and Wildlife. IAE is a non-profit organization whose mission is the conservation of native ecosystems through restoration, research and education. Our aim is to provide a service to public and private agencies and individuals by developing and communicating information on ecosystems, species, and effective management strategies and by conducting research, monitoring, and experiments. IAE offers educational opportunities through 3-4 month internships.



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Cover photograph: Wildflowers in restoration prairie, Hebert Farm, July 2016.

SUGGESTED CITATION

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Special Note: This report has been modified from its original format by removing maps and/or appendices that include information on the location of rare and sensitive species.

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REPORT FOR THE WILLAMETTE WILDLIFE MITIGATION PROGRAM,
OREGON DEPARTMENT OF FISH AND WILDLIFE

INTRODUCTION

The Willamette Valley spans 11,200 square miles and is home to some of Oregon’s most valuable wetland, riparian, and biological resources. Large tracts of prairies and riparian habitat have been developed for urban, agriculture, forestry and industry since European settlement in the ecoregion. Consequently, the small remnants that remain are isolated from each other and are impacted by invasive plant species.

Herbert Farm and Natural Area (HFNA), a 221 acre property south of Corvallis in Benton County (Figure 1), is owned by City of Corvallis (City) and has an Oregon Department of Fish and Wildlife (ODFW) conservation easement through the Willamette Wildlife Mitigation Program (WWMP) which is funded by the Bonneville Power Administration (BPA). Some areas in the southwest portion of the natural area have never been cultivated and retain diverse natural features, including upland prairie, oak savanna and forest plant communities (City of Corvallis 2011). Currently, approximately 82.5 acres of HFNA is in agricultural production and previously farmed areas are gradually being phased out and restored to native habitats.

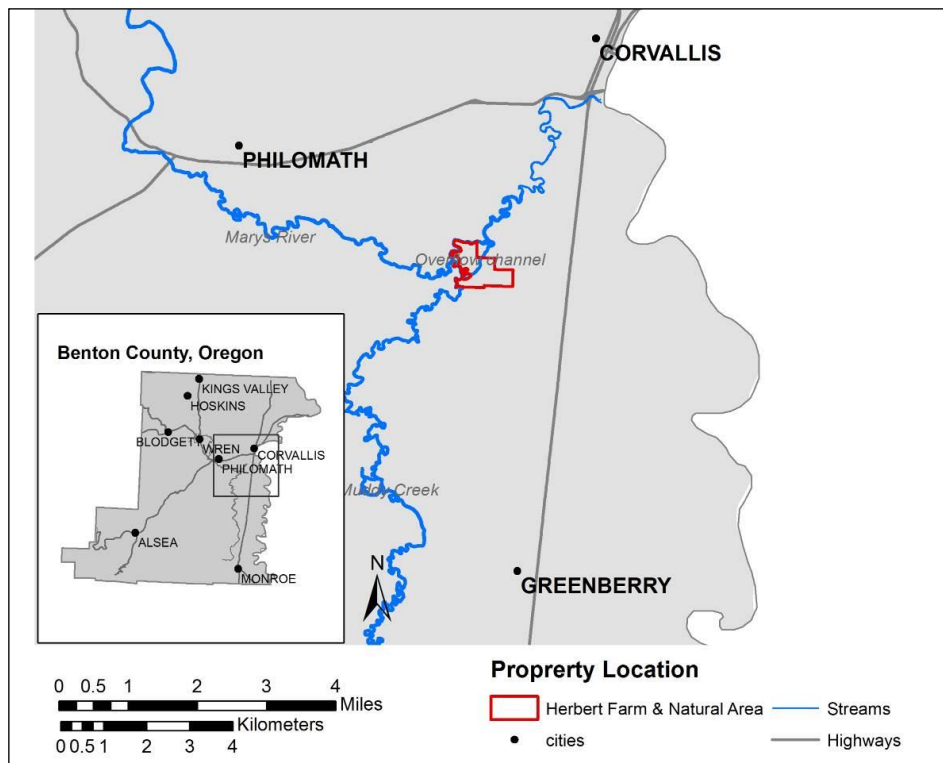


Figure 1. Herbert Farm and Natural Area location, southwest of Corvallis, Benton County, Oregon.

The City developed a Management Plan for HFNA to guide restoration and management of the site over a 10 year period (2011-2021, City of Corvallis 2011). Despite previous agricultural use, the property retains areas of high quality native prairie, savanna and riparian ecosystems. These outstanding ecological values provide or enhance recreational, educational, and cultural resources. The Management Plan provides an opportunity for the City to protect and expand rare species populations, and to manage and restore rare habitats of the Willamette Valley. The plan proposed to transition areas out of farming over the course of many years and restore them to native habitat while retaining other areas where sustainable management practices would provide ecological benefits.

With the guidance of the overall Management Plan, Institute for Applied Ecology (IAE), in collaboration with restoration partners, including the City, ODFW, the U.S. Fish and Wildlife Service (USFWS) has developed Habitat Restoration Plans (Menke et al. 2013, Moore 2017) for two phases of habitat restoration at the site. Phase I, restoring the 84 acre area west of Matt Creek (Figure 2) began in 2013. Phase II, working in the area to the east of Matt Creek (Figure 2) began in 2015.

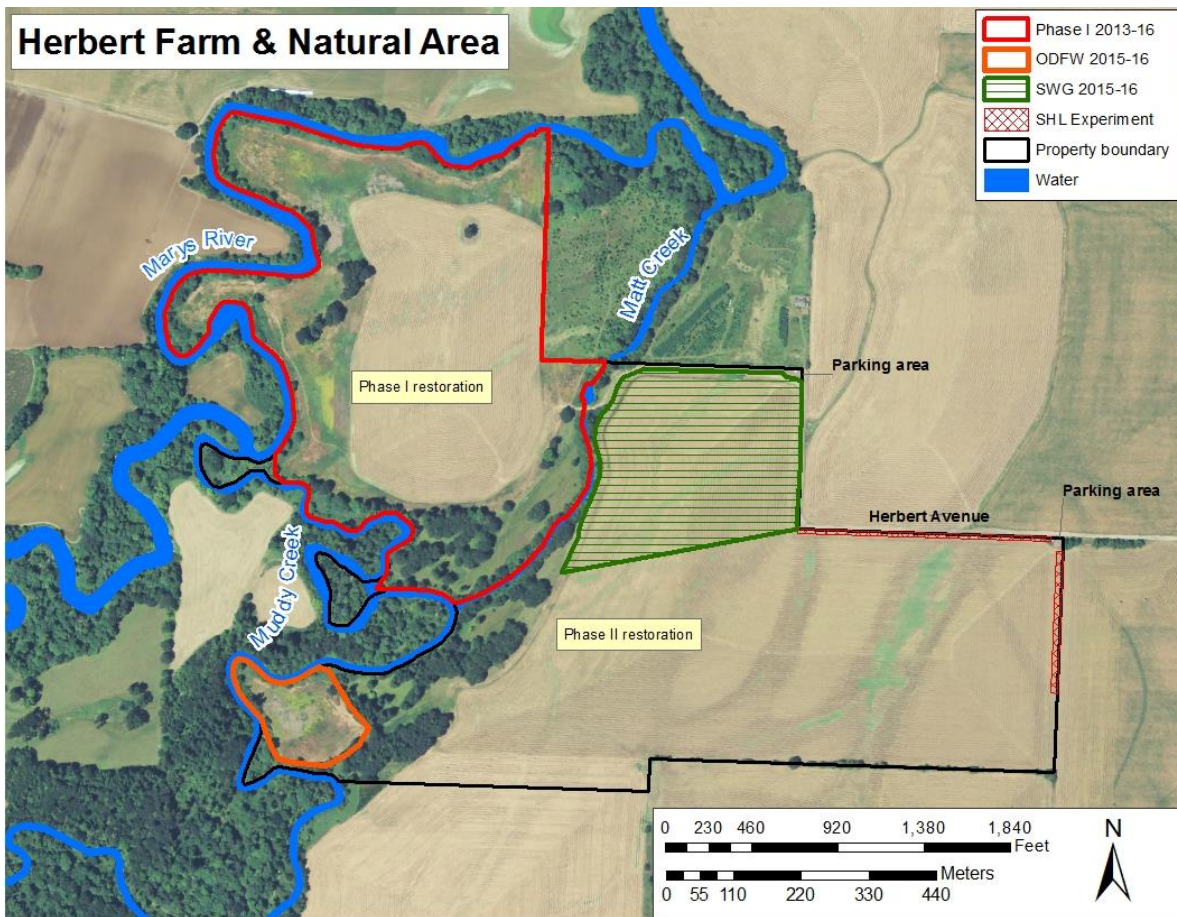


Figure 2. Phase I and II restoration areas of HFNA. Also shown are current restoration projects: Phase I projects (2013-16), and Phase II projects: ODFW (2015-16), State Wildlife Grant (SWG 2015-16), streaked horned lark experiment (SHL 2015-16).

Phase I restoration in areas west of Matt Creek began has been conducted and coordinated by IAE using operations and maintenance funding from the WWMP, the Plants for People project, funded by the Oregon Watershed Enhancement Board, and contributing in-kind efforts from partners in the project, including USFWS, ODFW and the City. Phase I restoration activities included two years of site preparation that were followed by two years of planting of prairie and riparian vegetation and ongoing weed control.

Phase II restoration in areas east of Matt Creek includes restoration funded by the WWMP, as well as a State Wildlife Grant (funded by USFWS) and an Endangered Species Conservation Recovery Implementation grant (funded by USFWS) to compare restoration treatments for creating streaked horned lark (*Eremophila alpestris strigata*) habitat. Additionally, the USFWS Partners for Fish and Wildlife Program constructed berms in 2016 to flood swales to create bare ground and sparse vegetation for streaked horned lark habitat.

REPORT OBJECTIVES

This report summarizes restoration work completed at HFNA which was supported with WWMP funds, and in-kind actions by partner agencies, from July 1, 2016 to June 30, 2017. Details of the other grants mentioned above are not given in the report but their actions are briefly summarized in the restoration schedules (Tables 1-2).

PROJECT SUMMARY FOR 2016/17

Work at HFNA in 2016/17 included vegetation management, seeding and planting, monitoring, and completion of a Restoration Plan for the Phase II area. The current habitat conditions are shown in Figure 3, and map codes provided for interpretation of tables and the text. The habitat restoration schedule at Herbert Farm is summarized in Tables 1-2.

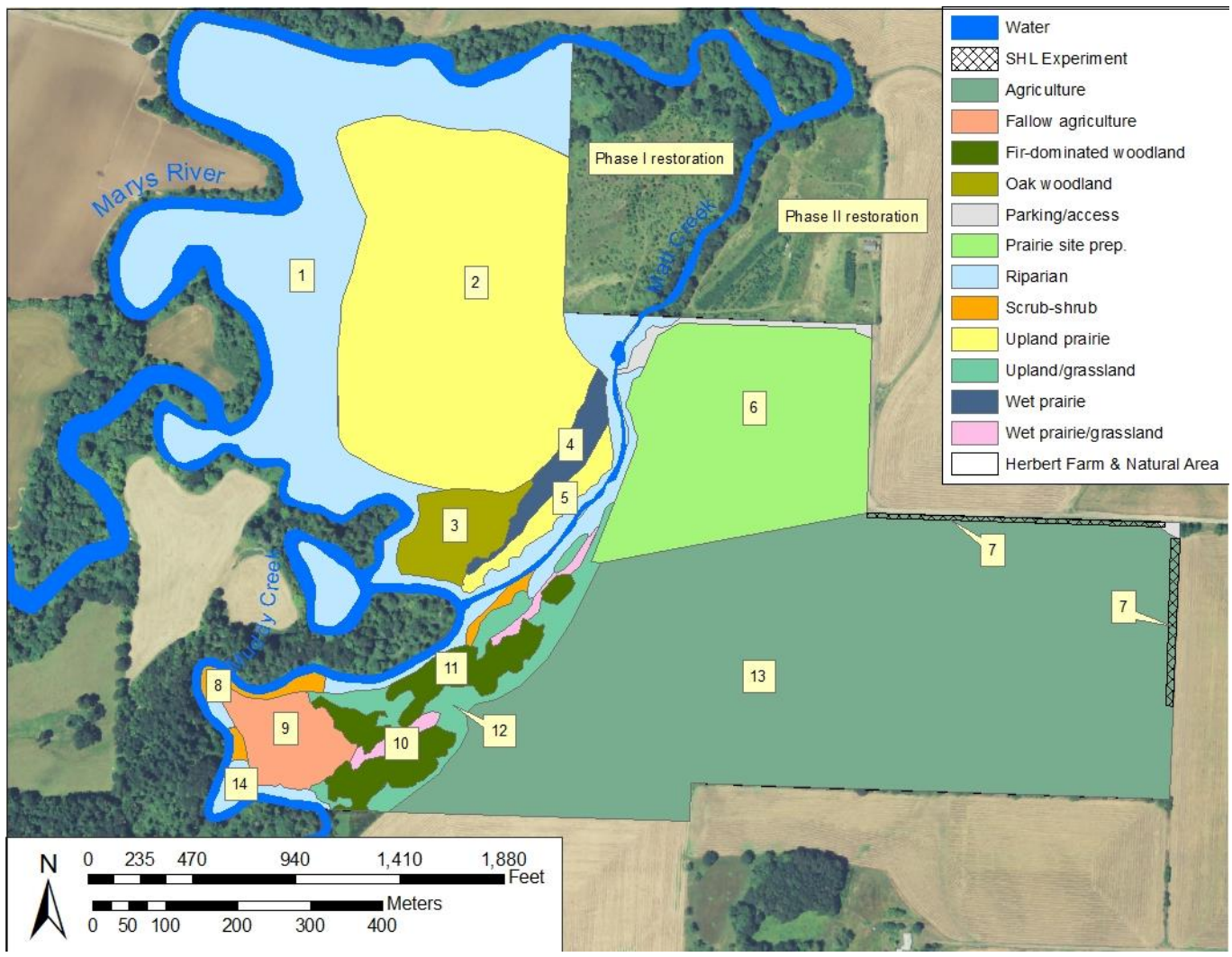


Figure 3. Current habitats at HFNA, with map codes for individual areas that are referred to in the tables and text.

Table 1. Restoration schedule in Phase I restoration areas in 2016/17, including map codes of restoration areas (see Figure 3).

Year		Riparian forest	Upland prairie + wet swales	Woodland	Wet prairie	Upland prairie
	Map code	1	2	3	4	5
	Acres	28	37	4	2	2
	Funder	ODFW	ODFW OWEB	ODFW	ODFW USFWS OWEB	ODFW OWEB
2016	July	Photopoints Spot spray	Photopoints ODFW: mow		Photopoints	Photopoints
	August	Spot spray	Spot spray	City: girdle trees	Spot spray	Spot spray
	September	ODFW: mow high density rows. Spot spray		City: mow	City: mow	City: mow City Fire Dept.: Prescribed burn
	October		Spot spray		Spot spray	Broadcast spray USFWS: drill seed
	November		USFWS: broadcast seed. Plant rushes		Plant plugs	Plant Peacock larkspur. Plant plugs
	December					
2017	January					
	February					
	March					
	April				Plant milkweed	Plant Kincaid's lupine plugs
	May	Spray riparian rows	Spot spray Monitor veg plots		Monitor veg plots	Monitor veg plots
	June	Hand mow high density rows, tractor & hand mow low density rows. Photopoints	Photopoints Spot spray		Photopoints Spot spray	Photopoints

Table 2. Restoration schedule in Phase II restoration areas in 2016/17, including map codes of restoration areas (Figure 3).

Year		Streaked horned lark habitat experiment	Prairie restoration incl. SHLA habitat	Riparian restoration
	Map code	7	6	8, 9
	Acres	1	24	4.5
	Funder	USFWS	USFWS (SWG & Partners Program)	ODFW
2016	July	Photopoints Monitor larks	Spot spray City: mow	Spot spray
	August	Monitor larks	Broadcast spray Spot spray	Broadcast spray Spot spray
	September		Spot spray USFWS: construct berms	
	October	ODFW: disk Broadcast spray	Broadcast spray Spot spray USFWS: drill seed	Spot spray USFWS: Broadcast seed
	November	ODFW: disk	Plant plugs	
	December			
2017	January			
	February			Plant trees & shrubs
	March			
	April	Broadcast spray Mow Photopoints Monitor larks		
	May	Spot spray Mow Monitor larks	Broadcast spray Spot spray	Spray high density rows
	June	Photopoints Monitor larks	Photopoints Broadcast spray Spot spray	Hand mow rows Spot spray Photopoints

Vegetation management

IAE staff and subcontractors conducted broadcast and spot spray herbicide treatments, mowing, and hand weeding in prairie and riparian habitat at Herbert Farm. These actions helped manage broadleaf weeds and exotic or invasive pasture grasses in previously planted areas and for site preparation in new restoration areas. Partners, including ODFW and the City also conducted some treatments such as mowing (Tables 1-2). Additional staff time was spent assessing weed treatment needs, preparing treatment

schedules, preparing contracts, planning and ordering seed and plant materials, purchasing other supplies, installing and retrieving herbicide signs, marking and mapping treatment areas, and meeting contractors and partners to orient them to the site and discuss treatments.

Riparian Forest Restoration (Phase I: 28 acres, map code 1)

IAE staff spot sprayed thistles and other weeds with Stinger (clopyralid) and Rodeo (glyphosate), and dead-headed thistles over the entire 28 acre area over three days between July 19 and August 2, 2016 (Figure 4).

A further treatment of thistles by IAE staff was conducted during four days between August 24 and September 9, 2016, and this included spot spraying young thistles, particularly Canada thistle (*Cirsium arvense*), and removing the flowers and seed heads of older thistles.

ODFW mowed 18 acres of high density riparian planting rows with the City's five-foot wide tractor on 6-8 September 2016 to reduce competition from grasses and broadleaf weeds. This was the second mowing for the season, as IAE, ODFW and a contractor had mowed riparian rows in 21 acres during the spring. It was planned to conduct a second mow of 7 acres of low density riparian rows but this was not able to be scheduled by the City.

Line spraying of riparian rows with glyphosate to reduce grass and weed competition, and spot spraying of broadleaf weeds, was conducted by R. Franco Restoration on May 3, 2017. The same contractor conducted hand mowing of high density riparian and tractor mowing of low density riparian rows on June 12, 2017.



Figure 4. Left: Contractor from Habitat Restoration broadcasting herbicide (photo from June 2014; Middle: Stacy Moore and Andy Neill (IAE) spot spraying thistles, July 2016; Right: Contract crew from R. Franco Restoration hand mowing riparian rows, June 2017.

Upland prairie and wet swales (Phase I: 37 acres, map code 2)

ODFW mowed approximately 10-13 acres of the prairie in order to limit the potential for seeding of an infestation of stinking chamomile (*Anthemis cotula*) on July 19-20, 2016. This area was mainly in the north of the prairie where there has been a problem with other introduced weeds, such as prickly lettuce (*Lactuca serriola*) and sow thistle (*Sonchus sp.*).

IAE staff spot sprayed thistles with Stinger and Rodeo and collected thistle flower heads from approximately 10-13 acres of mowed prairie on August 24, 2016. A second spot spray treatment was conducted on October 11-12, 2016. The remainder of the prairie was too densely vegetated to effectively search for thistles.

Spot spraying for thistles with clopyralid was conducted by R. Franco Restoration on May 3, 2017 and for velvet grass (*Holcus lanatus*) with glyphosate on June 23, 2017.

Woodland (Phase I: 4 acres, map code 3)

City staff girdled Douglas-fir (*Pseudotsuga menziesii*) trees within the woodland to release Oregon white oaks (*Quercus garryana*) from competition. The City mowed the woodland understory in September 2016.

Wet prairie (Phase I: 2 acres, map code 4)

Limited spot spraying of reed canarygrass (*Phalaris arundinacea*) occurred around the edges of the prairie during treatments of adjacent areas in August and October 2016. The City mowed the prairie in September 2016. Further limited spot spraying of reed canarygrass occurred around the edges of the prairie during June 2017.

Upland prairie (Phase I: 2 acres, map code 5)

IAE staff spot sprayed seedling shrubs with Garlon 3A (triclopyr) on August 23, 2016. This was an attempt to limit the encroachment of shrubs on the prairie, and to improve the chances of the shrubs being killed during the prescribed burn by drying out the foliage.

Planning for a prescribed burn had started in early 2015, but turned out not to be feasible due to fire agency availability. Planning began again in 2016 and culminated in site visits by IAE, City Parks and Recreation and Corvallis Fire Department in early September 2016. A fire line was mowed by the City Parks and Recreation Department prior to the Fire Department conducting the burn on September 26, 2016. The burn was designed to reduce thatch and provide a seed bed for sowing native seed (Figure 5).

A contractor (Habitat Restoration LLC) broadcast the burned field with Rodeo on October 11, 2016 to target emerging introduced weeds and grasses after the burn and before drilling the area with native seed.



Figure 5. Left: Prescribed burn in 2 acre upland prairie at Herbert Farm, September 2016 (Photo: City of Corvallis); Right: USFWS seeding the burned prairie, October 2016.

Riparian restoration (Phase II: 4.5 acres, map codes 8, 9)

IAE staff spot sprayed thistles with Stinger and Rodeo on July 7, 2016 (Figure 4).

A contractor (Habitat Restoration LLC) broadcast three acres and spot sprayed one acre with Stinger and Rodeo, mainly to target thistles and reed canarygrass, on August 12, 2016. A second treatment with Rodeo

occurred on October 11, 2016. At that time old burn piles and the previously mowed riparian margin were spot sprayed with Renovate 3A (triclopyr) to target blackberries (*Rubus armeniacus*).

Line spraying of riparian rows with glyphosate to reduce grass and weed competition, and spot spraying of broadleaf weeds, was conducted by R. Franco Restoration on May 3, 2017. The same contractor conducted hand mowing of high density riparian rows on June 12, 2017. Follow-up spot spraying of broadleaf weeds occurred on June 23, 2017.

Seeding and Planting

In total, 235 pounds of native forbs and grasses were seeded at four areas with ODFW funds (Table 3). Additional seeding was conducted in the 24 acre Phase II restoration prairie as part of a State Wildlife Grant (SWG (Table 2, Figure 6). Additional plug, bulb and rush planting was conducted in the same 24 acre field and the Phase I prairies as part of the Plants for People project (funded by OWEB).

Upland prairie (Phase I: 2 acres, map code 5)

Seed was drilled by USFWS on October 12, 2016 (Figures 6-8) after the prescribed burn in late September. The diverse seed mix of 15 forb and 4 grass species included the threatened species, Kincaid's lupine (*Lupinus oregonus*) and golden paintbrush (*Castilleja levisecta*) (Table 3, Figure 8).

Approximately 294 Peacock larkspur (*Delphinium parvonaceum*) plugs were planted on November 3, 2016 (Figure 9).

342 Kincaid's lupine plugs were planted by IAE staff on April 4, 2017 (Figures 9-10).



Figure 6. Left: USFWS seeding the 2 acre burned prairie, October 2016; Middle: Grass seed in the drill hopper; Right: USFWS seeding the 24 acre restoration field in Phase II, October 2016.

Upland prairie and wet swales (Phase I: 37 acres, map code 2)

The 37 acre restoration prairie was broadcast with native forb seed and Roemer's fescue in fall 2014 and drilled with additional forb seed and native grasses in fall 2015. Seeded species established well in the south of the prairie, but poorly in the northern part of the prairie. Additional seeding was needed in 2016 to boost native plant establishment in the north part of the prairie. The early wet season in October left fields too wet for drilling with heavy equipment. Seeds were broadcast in the northern part of the prairie on November 15, 2016 after a period of drier weather (Figures 7, 11). Different mixes of forbs and grasses, sedges and rushes were used for 9 acres of upland prairie and 4 acres of wet swales in the northern area of the 37 acre prairie (Table 3, Figure 7).

Table 3. Seed mixes sown at restoration prairies (Phase I) and riparian restoration areas (Phase II) at Herbert Farm in 2016.

Species common name	Scientific name	Restoration area	Upland prairie	Upland prairie	Wet swales	Riparian restoration
		Map code	5	2	2	9
		Acres	2	9	4	4.5
		Growth Form	Pounds/ acre			
Common yarrow	<i>Achillea millefolium</i>	Forb	0.28	0.31	0.31	
Showy milkweed	<i>Asclepias speciosus</i>	Forb			0.12	
Large camas	<i>Camassia leichtlinii</i>	Forb	0.87	0.26	0.52	
Golden paintbrush	<i>Castilleja levisecta</i>	Forb	0.29			
Farewell to spring	<i>Clarkia amoena</i>	Forb	0.21	0.21	0.21	
Winecup clarkia	<i>Clarkia purpurea</i>	Forb		0.02		
Blue-eyed Mary	<i>Collinsia grandiflora</i>	Forb	0.19			
Grand collomia	<i>Collomia grandiflora</i>	Forb	0.72	1.07		
Eligant calicoflower	<i>Downingia elegans</i>	Forb			0.22	
Denseflower willowherb	<i>Epilobium densiflorum</i>	Forb			0.77	
Oregon sunshine	<i>Eriophyllum lanatum</i>	Forb	0.69	0.37	0.19	
Bluehead gilia	<i>Gilia capitata</i>	Forb		0.22		
Puget Sound gumweed	<i>Grindelia integrifolia</i>	Forb			0.68	
Toughleaf iris	<i>Iris tenax</i>	Forb	0.47	0.53		
Barestem biscuitroot	<i>Lomatium nudicaule</i>	Forb	0.55	0.28		
Oregon bird's foot trefoil	<i>Lotus unifoliatius</i>	Forb		0.50	0.50	
Kincaid's lupine	<i>Lupinus oregonus</i>	Forb	0.24			
Common madia	<i>Madia elegans</i>	Forb		0.20		
Oregon yampah	<i>Perideridia oregana</i>	Forb	0.05	0.02	0.05	
Fragrant popcornflower	<i>Plagiobothrys figuratus</i>	Forb			0.49	
Shortspur seablush	<i>Plectritis congesta</i>	Forb	0.03	0.03	0.17	
Slender cinquefoil	<i>Potentilla gracilis</i>	Forb	0.28	0.15	0.23	
Common selfheal	<i>Prunella vulgaris</i>	Forb	0.54	1.09	0.54	
Dwarf checkermallow	<i>Sidalcea virgata</i>	Forb	0.66	0.33		
Total forbs			6.05	5.60	5.01	
Spike bentgrass	<i>Agrostis exarata</i>	Grass			0.04	0.03
American sloughgrass	<i>Beckmannia syzigachne</i>	Grass				0.22
California brome	<i>Bromus carinatus</i>	Grass	1.01			
Alaska brome	<i>Bromus sitchensis</i>	Grass		1.23		2.45
Splitawn sedge	<i>Carex tumulicola</i>	Sedge				1.34
Lateral sedge	<i>Carex unilateralis</i>	sedge			0.40	0.08
California oatgrass	<i>Danthonia californica</i>	Grass	3.11	3.73	3.11	3.11
Tufted hairgrass	<i>Deschampsia cespitosa</i>	Grass			0.15	0.12
Blue wildrye	<i>Elymus glaucus</i>	Grass	0.80	0.54		3.63
Roemer's fescue	<i>Festuca roemerii</i>	Grass	0.87	1.05		0.87
Meadow barley	<i>Hordeum brachyantherum</i>	Grass			2.18	0.87
Poverty rush	<i>Juncus tenuis</i>	Rush			0.03	0.03
Total grasses			5.79	6.55	5.9	12.8
Total pounds per acre			11.8	12.2	10.9	12.8
Total pounds			24.9	109.4	43.6	57.4

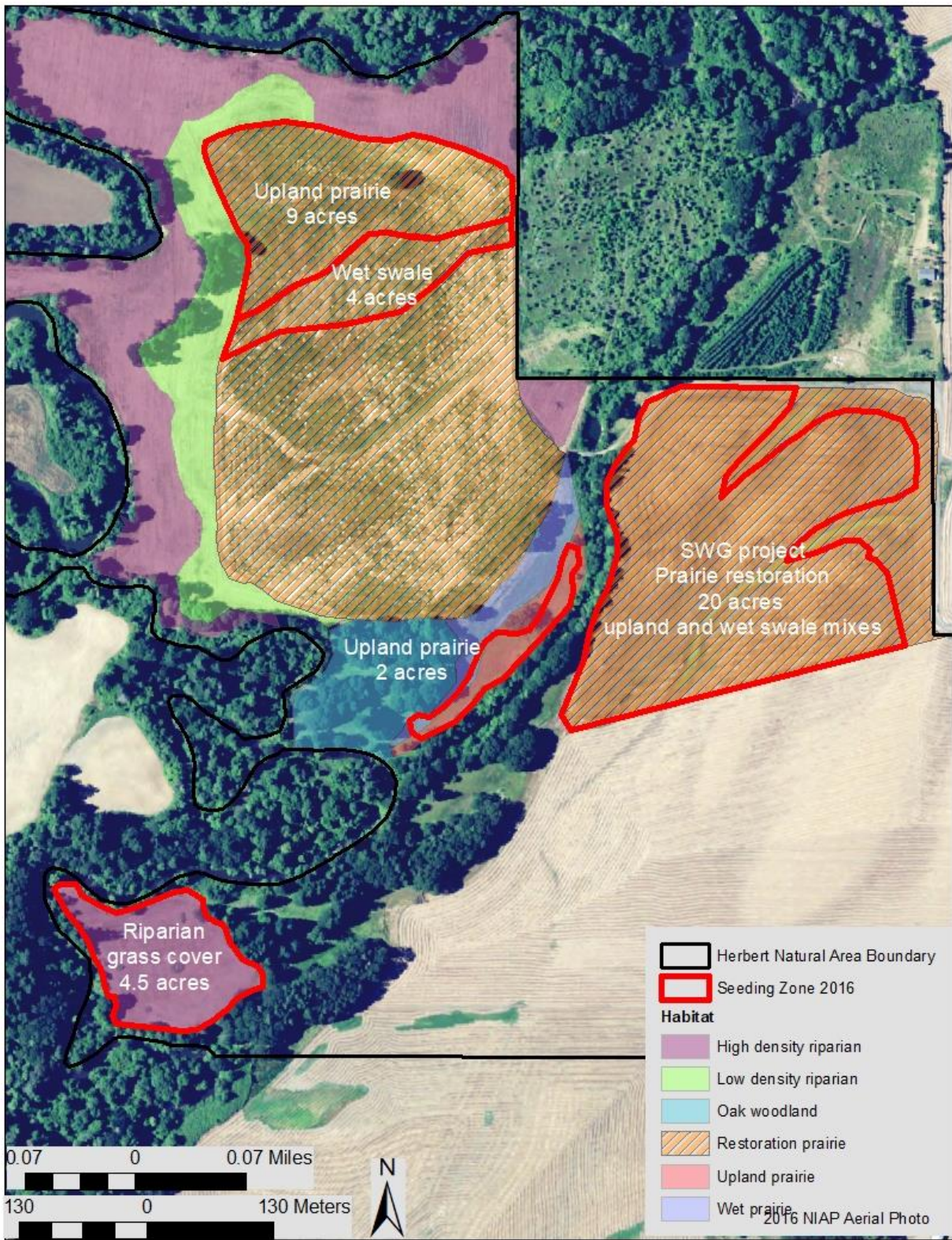


Figure 7. Areas seeded at Herbert Farm in fall 2016.

Figure 8. Areas seeded with threatened and endangered species at HFNA (**Figure has been removed from this web version of the report**)

Figure 9. Areas planted with plugs of threatened and endangered species at HFNA (**Figure has been removed from this web version of the report**)



Figure 10. IAE crew planting Kincaid's lupine, April 2017.

Riparian restoration (Phase II: 4.5 acres, map codes 8, 9)

Seed of native grasses, sedges and rushes was broadcast over the 4.5 acre area by USFWS on October 28, 2016 (Table 3, Figures 7, 11) to create ground cover for riparian tree plantings.



Figure 11. USFWS broadcast seeding Phase I and Phase II areas, November 2016.

Over 7,500 trees and shrubs were planted in the riparian restoration area (Phase II: 4.5 acres, map codes 8, 9) by a contractor crew (R. Franco Restoration) on February 1, 2017 (Figure 12, Table 4). This included 7125 stems of 20 species purchased from Sevenoaks Native Nursery and 500 willow cuttings supplied by Rosario Franco. Trees were planted in high density rows (6.5 feet apart with 4 foot spacing within the rows) and an approximate ratio of 3:1 shrubs and trees.



Figure 12. A crew from R. Franco Restoration planting trees and shrubs at Herbert Farm, February 2017.

Table 4. Riparian trees and shrubs planted in the 4.5 acre Phase II riparian restoration area in February 2017.

Common name	Scientific name	Number
bigleaf maple	<i>Acer macrophyllum</i>	500
white alder	<i>Alnus rhombifolia</i>	0
red alder	<i>Alnus rubra</i>	100
serviceberry	<i>Amelanchier alnifolia</i>	1000
Redosier dogwood	<i>Cornus sericea occidentalis</i>	375
Oregon ash	<i>Fraxinus latifolia</i>	375
ocean spray	<i>Holodiscus discolor</i>	0
Oregon grape	<i>Mahonia aquifolium</i>	375
Indian plum	<i>Oemleria cerasiformis</i>	0
Pacific ninebark	<i>Physocarpus capitatus</i>	600
black cottonwood	<i>Populus trichocarpa</i>	250
Oregon white oak	<i>Quercus garryana</i>	375
casara	<i>Rhamnus purshiana</i>	375
Nootka rose	<i>Rosa nutkana</i>	375
Pacific willow	<i>Salix lucida lassianra</i>	500
Scouler willow	<i>Salix scouleriana</i>	625
Sitka willow	<i>Salix sitchensis</i>	0
red elderberry	<i>Sambucus racemosa/cerulea</i>	500
Douglas spiraea	<i>Spiraea douglasii</i>	1000
snowberry	<i>Symphoricarpos albus</i>	300
	Total	7625

Monitoring

Data from the weed mapping, rare plant and riparian vegetation monitoring which occurred in May-June 2016 was analyzed during 2016/17 and a report was completed on March 29, 2017 (Moore et al. 2017). This monitoring showed that, overall, invasive plant cover is declining in Phase I areas. Restoration work has been particularly effective in reducing blackberry and reed canarygrass cover, but Canada thistle remains problematic. Riparian tree and shrub establishment is progressing. Rare plant populations are growing as a result of habitat improvements and active augmentation.

Prairie vegetation monitoring was conducted in June 2017 by IAE and City of Corvallis as part of Benton County Habitat Conservation Plan effectiveness monitoring requirements (Benton County 2010).

Informal monitoring of invasive plants and restoration outcomes was completed on a regular basis. Example photographs of restored areas in Phase I are shown in Figure 13. Prairie vegetation was particularly showy in the southern part of the restored prairie in 2016/17 and riparian trees and shrubs started to become more established during the third growing season.



Figure 13. Left: Common madia in restored upland prairie, July 2016; Middle: Oregon sunshine in restored upland prairie, May 2016; Right: riparian trees and shrubs becoming well established in high density planting rows, June 2017.

Counts of riparian trees and shrubs

A subsample of trees and shrubs that were planted in March 2015 and inter-planted in February 2016 were counted on 17 non-random transects in August and November 2016 for an index of overall survival. Results are summarized in Table 5. Fewer trees and shrubs died in 2016, compared to the drought year of 2015, resulting in an improvement in the number of live stems present in November (Table 5).

Table 5. Counts of trees and shrubs in riparian planting areas at Herbert Farm

Date	Live stems counted (subsample) per planting density category		Comment
	Low density	High density	
March 2015	264	691	Original number trees and shrubs planted
November 2015	145	263	Number survived first growing season
November 2016	156	429	Total counted from two combined cohorts *

*Approximately 25% additional trees were inter-planted in February 2016

Photo points

The 12 photo points in Phase I areas (Table 6, Figure 14) of Herbert Farm were photographed in July 2016 and June 2017. Photographs were taken in 3-4 different directions at each point, and where possible, they have been repeated at similar times of year, as well as differing times, to reflect key stages of restoration since 2013. Two new photo points (number 12 and 13, Figure 14) were added in a new riparian restoration area. Sample photographs are shown in Figure 15 and 16 and Moore et al. (2017). A full set of photos and their mapped locations are on file at IAE, and available upon request.

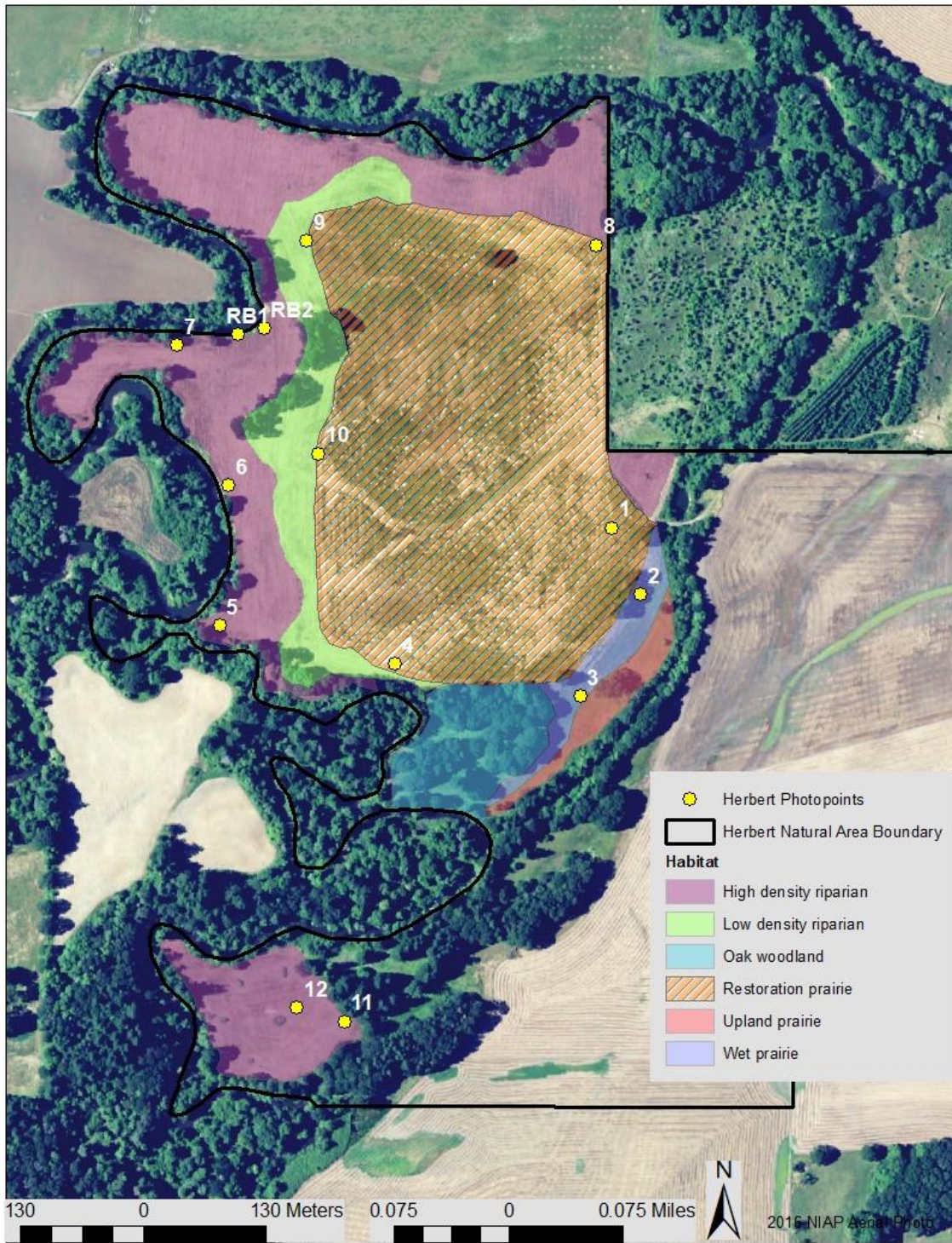


Figure 14. Photopoint locations at Herbert Farm

Table 6. Photo point coordinates (projection is UTM WGS 1984; Figure 14) and direction of one to four photographs taken at each point (photos a-d).

Photopoint number	Latitude	Longitude	Direction of photo (degrees)			
			a	b	c	d
1	44.521444	-123.295944	186	284	346	84
2	44.520806	-123.295556	210	26	158	
3	44.519833	-123.296361	28	217	300	
4	44.520139	-123.298833	296	12	100	260
5	44.5205	-123.301167	24	75	105	190
6	44.521833	-123.301056	320	17	84	150
7	44.523167	-123.30175	90	120	165	240
8	44.524139	-123.296167	180	225	285	326
9	44.524167	-123.300028	200	320	25	95
10	44.522139	-123.299861	346	335	15	80
RB1	44.523278	-123.300944	55			
RB2	44.523333	-123.300583	282	27	140	175
11	44.516727	-123.299486	220	266	314	
12	44.516859	-123.300122	0	90	180	270



Figure 15. Progression of upland prairie restoration at Herbert Farm, shown at Photopoint 1. Left: Ryegrass field prior to restoration starting, April 24, 2013; Middle: after two years of herbicide treatment, April 21, 2015; Right: After second year of seeding native forbs and grasses, showing abundant common madia, yarrow, farewell to spring and grand collomia, July 1, 2016.



Figure 16. Progression of riparian tree and shrub restoration at Herbert Farm, shown at Photopoint 7, Left: fallow grassland after one year of site preparation, April 15, 2014; Middle: After second year of planting riparian trees and shrubs, July 1, 2016; Right: June 5, 2017.

Phase II Restoration Plan Completion

The Phase II restoration plan for Herbert Farm was redrafted during 2016, circulated to partners for review and finalized in January 2017.

OUTREACH

ODFW conducted a live Facetime interview of Tom Kaye and Andy Neill (IAE) at Herbert Farm on 8/2/2016. Several posts were made on the IAE Facebook page during the year. A news article was posted on the IAE webpage “Plants for People – bringing traditional ecological knowledge to restoration” (November 2016) described a planting event at Herbert Farm. A presentation was made to the Willamette Valley Restoration Workshop (January 2017), entitled “On the horns of a dilemma – can we create streaked horned lark habitat in a Willamette Valley restoration area.” IAE hosted a restoration tour of Herbert Farm in April 2017 for the Marys Peak Group of the Sierra Club.

CONCLUSIONS

Overall, invasive plant cover, particularly of blackberry and reed canarygrass, is declining in Phase I areas of Herbert Farm. Continued work is needed to maintain the progress achieved during these initial restoration efforts, prevent infestations of new invasive species, and continue reducing existing invasive species cover.

Prairie vegetation and riparian tree and shrub establishment is progressing well.

Rare plant populations are growing due to habitat improvements and active augmentation.

Restoration work in the Phase I and Phase II areas of Herbert Farm will continue, as described in the overall Management Plan and the respective restoration plans for each area.

A key to the overall success at Herbert Farm has been the collaboration between IAE, the City, ODFW and USFWS, with each agency contributing important on-the-ground actions and project support.

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