

Threatened and endangered species habitat restoration: 2017 Annual Report



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PREFACE

IAE is a non-profit organization whose mission is conservation of native ecosystems through restoration, research and education. IAE provides services to public and private agencies and individuals through development and communication of information on ecosystems, species, and effective management strategies. Restoration of habitats, with a concentration on rare and invasive species, is a primary focus. IAE conducts its work through partnerships with a diverse group of agencies, organizations and the private sector. IAE aims to link its community with native habitats through education and outreach.



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Cover photographs: Andrew Esterson planting milkweed at Oak Hill on November 6, 2017. Photo by Colin Sayre.

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1. EXECUTIVE SUMMARY

The West Eugene Wetlands (WEW), managed by the Bureau of Land Management, Northwest Oregon District (BLM), consist of 27 sites spanning approximately 1400 acres, and is located within and west of Eugene, OR. These sites provide habitat for five federally-listed threatened or endangered species and a number of Bureau sensitive species. The focus of work completed by the Institute for Applied Ecology (IAE) in 2017 was to perform habitat restoration that moved the WEW sites closer to meeting habitat quality benchmarks identified in the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010; Recovery Plan).

In 2017 habitat restoration was completed at 22 WEW sites. Actions were taken to reduce the abundance of problematic weeds such as tansy ragwort (*Senecio jacobaea*), Armenian blackberry (*Rubus armeniacus*), oxeye daisy (*Leucanthemum vulgare*), teasel (*Dipsacus fullonum*), Scotch broom (*Cytisus scoparius*) and non-native grasses. Weeds were removed by hand pulling, flame weeding and mastication. 18 sites were mowed to reduced thatch accumulation from non-native grasses. Milkweed (*Asclepias speciosa*) plugs were planted at Oak Hill (145 plugs), Speedway (196 plugs), and Turtle Swale (196 plugs). Together, these actions move sites within the WEW closer to meeting habitat quality targets identified in the Recovery Plan.

2. INTRODUCTION

In the Willamette Valley of Oregon, multiple plant species, one bird species, and two butterfly species are listed as threatened or endangered under the Endangered Species Act (ESA). A primary driver of the decline of these species is the loss of prairie habitat. A network of public and private partners seeks to recover these species through protection and restoration of prairie habitat, supporting the listed species populations so that they will be sustained into the future, and eventually be delisted under the ESA.

The BLM-managed portion of the WEW is located within and west of the City of Eugene, and consists of 27 sites spanning approximately 1400 acres (Figure 1). These sites provide habitat for five federally-listed threatened or endangered species and a number of Bureau sensitive species. According to the Final Environmental Impact Statement, "...it is not likely that recovery of these [listed] species can be achieved in this recovery zone without the BLM-administered lands in the West Eugene Wetlands" (USDI 2014).

Actions required to move a species from endangered to threatened, and from threatened to de-listed are identified by the USFWS in the Recovery Plan. The Recovery Plan sets benchmarks for rare species

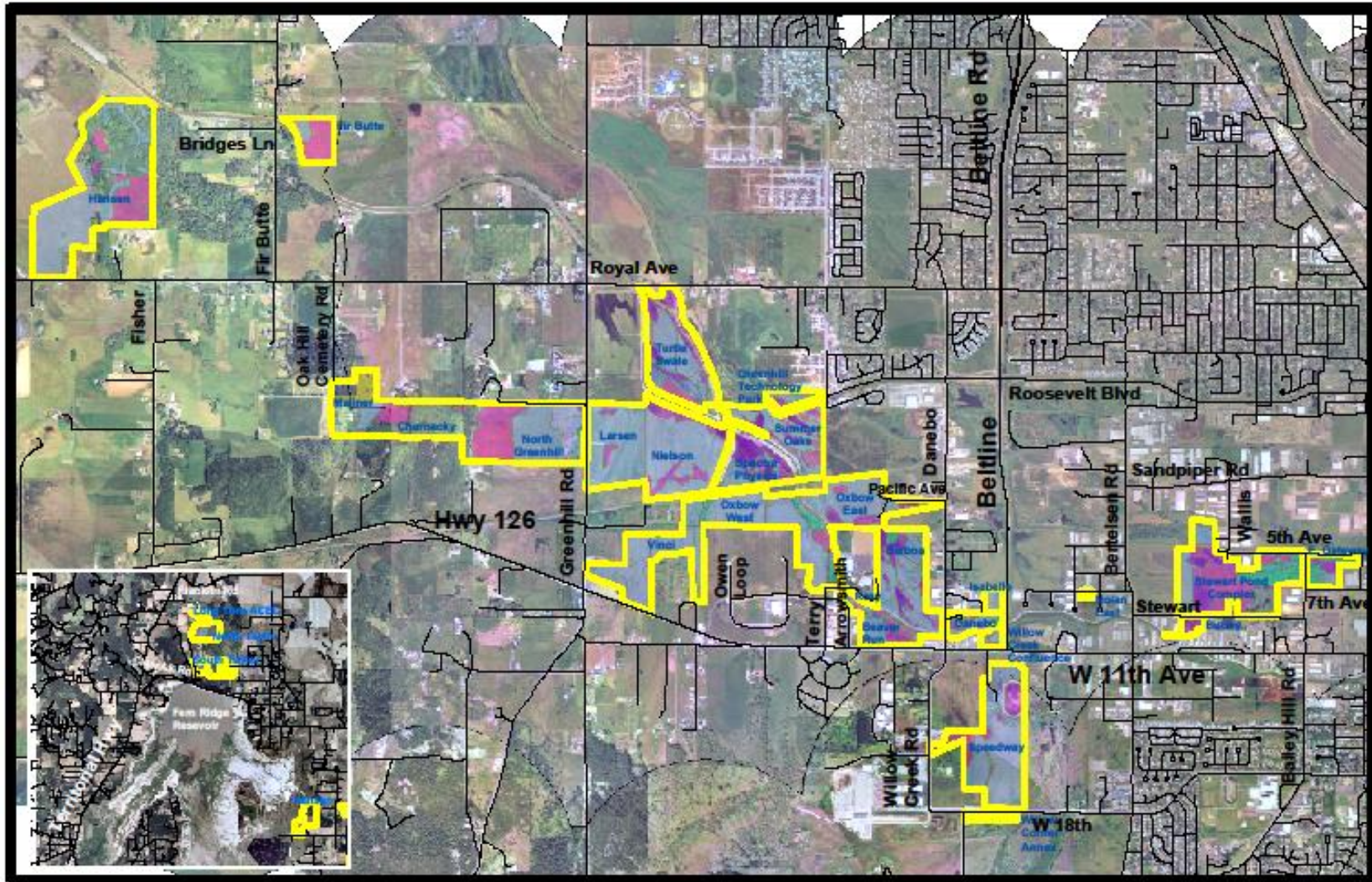


Figure 1. Map of West Eugene Wetlands sites administered by the BLM

population size, population trends, number of populations and habitat quality. Populations of these species must meet these benchmarks in each recovery zone in order to downlist and/or delist the species.

To meet habitat quality recovery goals at sites supporting listed species, the BLM began partnering with IAE in 2011. Since then, habitat restoration actions completed by IAE have included hand weeding, flame weeding, grubbing, tree limbing/felling, mowing, seeding, planting and prescribed burn preparation. IAE will continue to work with the BLM to meet recovery goals in 2018 and the foreseeable future.

3. GOALS AND OBJECTIVES

The goals of this project are to restore and enhance prairie habitat at the WEW. Actions are intended to promote the recovery of four listed plant species and one listed butterfly species: Bradshaw's lomatium (*Lomatium bradshawii*), Willamette daisy (*Erigeron decumbens*), Kincaid's lupine (*Lupinus oreganus*), golden paintbrush (*Castilleja levisecta*) and Fender's blue butterfly (*Icaricia icarioides fenderi*). Other rare plants, such as shaggy horkelia (*Horkelia congesta* ssp. *congesta*) and white-topped aster (*Sericocarpus rigidus*) are also expected to benefit from these restoration actions. Specific habitat quality targets identified in the Recovery Plan include:

- **Cover of native vegetation:** Sites with populations of target species should have 50 percent or more relative cover of natives.
- **Cover of woody vegetation:** For each site, woody vegetation should make up no more than 15 percent of the absolute vegetative cover, and woody species of management concern will make up no more than five percent (unless the site is savanna habitat, in which case the upper limit would be approximately 25 percent woody vegetation).
- **Prairie diversity:** For each site, native prairie species richness must exceed 10 species (measured in 25-m² plots), of which seven or more must be forbs and one must be a bunch grass.
- **Non-native vegetation:** At each site, no single non-native plant will have more than 50 percent cover. Non-natives of particular concern will have no greater than 5 percent cover

4. 2017/2018 RESTORATION ACTIONS

To help meet USFWS habitat recovery goals, management actions were completed at 22 WEW sites in 2017 (Table 1). Tasks were completed by IAE and BLM staff, the Looking Glass youth crew, and contractors. Table 2 identifies actions completed in 2017 and suggested actions for 2018. For 2018, it is anticipated that the use of herbicides will be permitted, therefore, proposed actions include herbicides. If herbicides are not permitted in 2018 then alternative weed removal methods will be used.

Table 1. West Eugene Wetlands sites with prairie habitat restoration work completed in 2017.

Site Name	
Balboa	Oak Hill
Beaver Run	Oxbow East
Danebo	Oxbow West
Eastern Gateway	Rosy
Fir Butte	South Taylor
Greenhill	Spectra Physics
Hansen	Speedway
Isabelle	Steward Pond
Nielson	Turtle Swale
North Taylor	Vinci
Nolan East	Willow Corner Annex

Table 2. Prairie habitat restoration actions completed at the West Eugene Wetlands in 2017 and suggested actions for 2018.

Site	2017 Completed Actions	2018 Suggested Actions
Balboa	<ul style="list-style-type: none"> Removed tansy ragwort and teasel Cleared blackberry from trail 	<ul style="list-style-type: none"> Treat woody species in Willamette daisy plots with herbicide Conduct cut-stump treatments on woody species throughout site, especially female ash trees
Beaver Run	<ul style="list-style-type: none"> Mowed by contractors 	<ul style="list-style-type: none"> Mow
Danebo	<ul style="list-style-type: none"> Removed blackberry, ash, and rose around trail Limbed larger trees to prevent homeless use Trimmed ash trees Removed tansy ragwort and teasel Mowed by contractors 	<ul style="list-style-type: none"> Pull Scotch broom Conduct cut-stump treatment on female ash trees

Site	2017 Completed Actions	2018 Suggested Actions
Eastern Gateway	<ul style="list-style-type: none"> • Mowed by contractors 	<ul style="list-style-type: none"> • Mow
Fir Butte	<ul style="list-style-type: none"> • Removed oxeye daisy and meadow knapweed • Removed blackberry and tall oatgrass from weed barrier on nectar islands • Pinned down weed barrier and burned holes for nectar island planting • Mowed tall oatgrass with string trimmer • Mowed by contractors • Prescribed burn • Herbicide application on experimental plots 	<ul style="list-style-type: none"> • Spring herbicide application on experimental plots • Weed nectar island • Monitor for and remove meadow knapweed • Mow tall oatgrass • Replace northern fence • Prescribed burn • Glyphosate application after burn • Seed burned area • Treat woody species with herbicide • Establish new nectar island
Greenhill	<ul style="list-style-type: none"> • Removed oxeye daisy from northern boundary • Mowed around weed barrier • Masticated by contractors in ash swale 	<ul style="list-style-type: none"> • Treat woody species in ash grove with herbicide • Conduct cut-stump treatments on woody species in and near ash grove • Treat blackberry near rare species plots in wet prairie • Spot-spray reed canarygrass where it is emerging from edges of weed fabric
Hansen	<ul style="list-style-type: none"> • Removed meadow knapweed • Pulled weeds from weed barrier and plugged holes • Performed regular maintenance on weed barrier • Mowed by contractors 	<ul style="list-style-type: none"> • Hand-pull or spot-spray meadow knapweed • Mow edge of Kincaid's lupine plot • Weed Kincaid's lupine plot • Weed around <i>Lathyrus holochlorus</i> populations

Site	2017 Completed Actions	2018 Suggested Actions
Isabelle	<ul style="list-style-type: none"> • Removed Scotch broom and tansy ragwort • Removed weeds from weed barrier and plugged holes • Used string trimmer to remove weeds from perimeter of weed barrier • Mowed by contractors 	<ul style="list-style-type: none"> • Mow or spray tall oatgrass before seed set • Mow edge of Kincaid's lupine plot • Weed Kincaid's lupine plot • Grub blackberries • Pull Scotch broom
Long Tom ACEC		<ul style="list-style-type: none"> • Grub blackberry or spot-spray with herbicide • Continue fence maintenance • Treat tall oatgrass with herbicide
Nielson	<ul style="list-style-type: none"> • Partially mowed by contractors 	<ul style="list-style-type: none"> • Mow
North Taylor	<ul style="list-style-type: none"> • Partially masticated by contractors 	<ul style="list-style-type: none"> • Treat shining geranium • Remove/masticate woody plants • Conduct fence repair
Nolan East	<ul style="list-style-type: none"> • Partially mowed by contractors 	<ul style="list-style-type: none"> • Mow
Oak Hill	<ul style="list-style-type: none"> • Mowed/masticated by contractors • Planted milkweed 	<ul style="list-style-type: none"> • Remove or girdle remaining large fir trees and pile slash • Prescribed burh • Spray with glyphosate after burn • Seed after burn
Oxbow East	<ul style="list-style-type: none"> • Mowed by contractors 	<ul style="list-style-type: none"> • Mow
Oxbow West	<ul style="list-style-type: none"> • Perimeter mowed by contractors 	<ul style="list-style-type: none"> • Treat woody species in Willamette daisy plots with herbicide. • Conduct cut-stump treatments on woody species throughout site, especially on female ash trees. • Remove Scotch broom.
Rosy	<ul style="list-style-type: none"> • Mowed by contractors 	<ul style="list-style-type: none"> • Mow
South Taylor	<ul style="list-style-type: none"> • Removed Scotch broom 	<ul style="list-style-type: none"> • Remove Scotch broom. • Spot-spray reed canarygrass in wet prairie.

Site	2017 Completed Actions	2018 Suggested Actions
Spectra Physics	<ul style="list-style-type: none"> Mowed by Contractors 	<ul style="list-style-type: none"> Remove Scotch broom. Mow
Speedway	<ul style="list-style-type: none"> Removed Scotch broom along creek Removed tansy ragwort and teasel throughout site Planted milkweed plugs 	<ul style="list-style-type: none"> Remove Scotch broom in rare species areas Spot-spray woody species in rare species areas Remove teasel
Stewart Pond	<ul style="list-style-type: none"> Mowed/masticated by contractors Bird blind removed Woody species clipped by Stewart Rd. Seeded with <i>Grindelia sp.</i> 	<ul style="list-style-type: none"> Mow Monitor for false brome and treat with herbicide if found
Turtle Swale	<ul style="list-style-type: none"> Removed blackberry and other weeds from shade cloth Upland area mowed by contractors Installed logs near channel for Western pond turtle habitat Planted milkweed plugs 	<ul style="list-style-type: none"> Mow edge of Kincaid's lupine plot Weed Kincaid's lupine plot
Vinci	<ul style="list-style-type: none"> Removed Scotch broom Perimeter mowed by contractors 	<ul style="list-style-type: none"> Girdle or conduct cut-stump treatment of remaining female ash trees Pull Scotch broom Weed Willamette daisy plot Mow edge of Willamette daisy plot Treat woody species in rare species areas
Willow Corner Annex	<ul style="list-style-type: none"> Mowed by contractors 	<ul style="list-style-type: none"> Check site and remove woody plants that cannot be mowed Girdle remaining female ash trees Flame weed or pull shining geranium Grub blackberry
Willow Corner Confluence		<ul style="list-style-type: none"> Remove Scotch broom, if found

5. RESTORATION PHOTOS

Figures 2-5 show some of the restoration actions that took place in 2017.



Figure 2. Looking Glass youth crew removing Scotch broom at South Taylor (left). Piled Scotch broom after Looking Glass Youth Crew performed removal actions (right).



Figure 3. Looking Glass youth crew removing Scotch broom at Speedway



Figure 4. Colin Sayre (BLM) removing blackberry at Fir Butte.



Figure 5. Blackberry patch at Oak Hill after mastication.

6. CONCLUSIONS

Restoration actions completed in 2017 moved 22 sites in the WEW closer to Recovery Plan habitat quality benchmarks by reducing woody species cover, removing invasive species and limiting non-native species encroachment into rare species habitat. In many cases, habitat restoration is critical not only to maintain existing rare species populations, but also to prepare sites such as Hansen, Turtle Swale, Greenhill, Oak Hill, Balboa, and Speedway for future rare species population augmentations or introductions.

To date, habitat restoration work on BLM lands at the WEW has occurred without the use of herbicides, a common tool in habitat restoration. Work to control woody or invasive species has been limited to manual and mechanical means (e.g., cutting, mowing, shade cloth). As many non-native species resprout and rapidly regrow after cutting and mowing (e.g. woody shrubs), or grow out from under shade cloth (e.g. reed canarygrass), regular re-treatment or further deployment of shade cloth (e.g., Greenhill) has been or will be required.

Herbicides are expected to be approved for use in restoration across the WEW by spring 2018. The ability to use carefully targeted herbicide applications should increase the effectiveness and longevity of future woody and invasive species removal treatments by inhibiting regrowth. With this new tool available, the main change in this project will be the targeted use of herbicide in specific circumstances, such as wiping cut stems and stumps with herbicide after shrub and tree removal. Limited spot-spraying of herbicide might occur in high quality areas, such as to control reed canarygrass at Oxbow West and Greenhill. All use of herbicide will be in accordance with the Resource Management Plan approved in 2015 (USDI 2014) and the USFWS Biological Opinion for the West Eugene Wetlands, Eugene District, Bureau of Land Management (USFWS 2015).

7. REFERENCES

- USFWS (U.S. Fish and Wildlife Service). 2010. Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington. U.S. Fish and Wildlife Service, Portland, Oregon. xi + 241 pp.
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