

Pioneer Butte Prairie Restoration



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2016 Annual Report

Report prepared by Matt Schultz
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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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The Pioneer Butte Prairie restoration project was initiated by Cindy McCain and Doug Glavich of the Siuslaw National Forest and revisited in 2013 by Marty Stein of the Siuslaw National Forest. We thank Marty Stein for sharing his knowledge of the site and his dedication to ecological restoration of National Forest lands.

Cover photograph: Photos by Matt Schultz

INTRODUCTION

The Pioneer Butte Prairie restoration project was initiated by Cindy McCain and Doug Glavich of the Siuslaw National Forest and revisited in 2013 by Marty Stein of the Siuslaw National Forest. The Institute for Applied Ecology (IAE) has conducted habitat restoration activities at Pioneer Butte Prairie, a one-acre meadow managed by the US Forest Service Siuslaw National Forest, from 2011 to 2016. Production of mid-elevation seed, for use in restoration at the site, has been a component of this project from 2014-2016.

Though IAE is not required to submit a formal annual report, this document provides a brief summary of restoration activities occurring in 2016.

Driving Directions

Pioneer Butte Prairie is a 30 minute drive west of Corvallis, Oregon. There is a locked gate which requires a USFS key, obtained from the Siuslaw National Forest. The gravel forest roads used to access the site make a high clearance vehicle useful, especially in winter conditions. Access in the spring and winter may be hampered by downed logs since this road is not heavily travelled.

To reach Pioneer Butte from Corvallis, begin by driving west on Philomath Blvd. At the junction of Hwy 20/34 take Hwy 20 for about 1.8 miles. Turn left on Woods Creek Rd and continue for 6.4 miles until you come to a road on the left with a locked orange gate. Unlock the gate with a USFS key and set your odometer to zero. At mile 1.6 bear left, at mile 2.2 bear right, at mile 2.6 park on the left at a pullout with a berm and a de-activated skid road. Cross the road and find the Pioneer Butte within the recently logged seven acre area (see Figure 2).

GPS coordinates

462073 E 4931756 N

Elevation

1,285 feet

PROJECT GOAL

The initial goal of this restoration project was to control of invasive false brome (*Brachypodium sylvaticum*) within Pioneer Butte Prairie and establish native vegetation on areas disturbed by weed removal activities. In 2015, the scope of work was expanded to target other problematic weedy species, including thistles (*Cirsium* spp.), foxglove (*Digitalis purpurea*), and oxeye daisy (*Leucanthemum vulgare*). Producing native seed sourced from mid-elevation sites has also been a focus on this project.

2016 PROJECT OVERVIEW

False brome is a highly invasive perennial grass capable of completely dominating a site and excluding native vegetation. Previous restoration work conducted by IAE at Pioneer Butte focused on removing false brome from the

interior of the prairie and establishing a weed-free perimeter around the prairie. In 2015, the scope of work expanded to include other problematic weedy species, such as thistles, foxglove, oxeye daisy, hairy cat's ear (*Hypochaeris radicata*), and tall oatgrass (*Arrhenatherum elatius*). In May 2016, Forest Service staff treated these species with herbicide.

Logging

In fall 2016, a seven acre area surrounding Pioneer Butte and several smaller areas was logged with a shelterwood cut (Figure 1). The larger trees were left standing while the smaller trees were harvested. This action greatly increased the open area and connected the existing smaller meadows but also created a large amount of soil disturbance.



Figure 1. Pioneer Butte after shelterwood cut.

The soil disturbance created by the recent logging will facilitate invasion by adventitious weeds. Although false brome was treated in the seven-acre area in 2015, it is likely that this species and other weeds will become problematic in disturbed areas.

In Spring, Scotch broom was hand-pulled from the small meadow between Pioneer Butte and the access road to the east. Only a few stems were found as this area had been covered in 2015 (Figure 2).

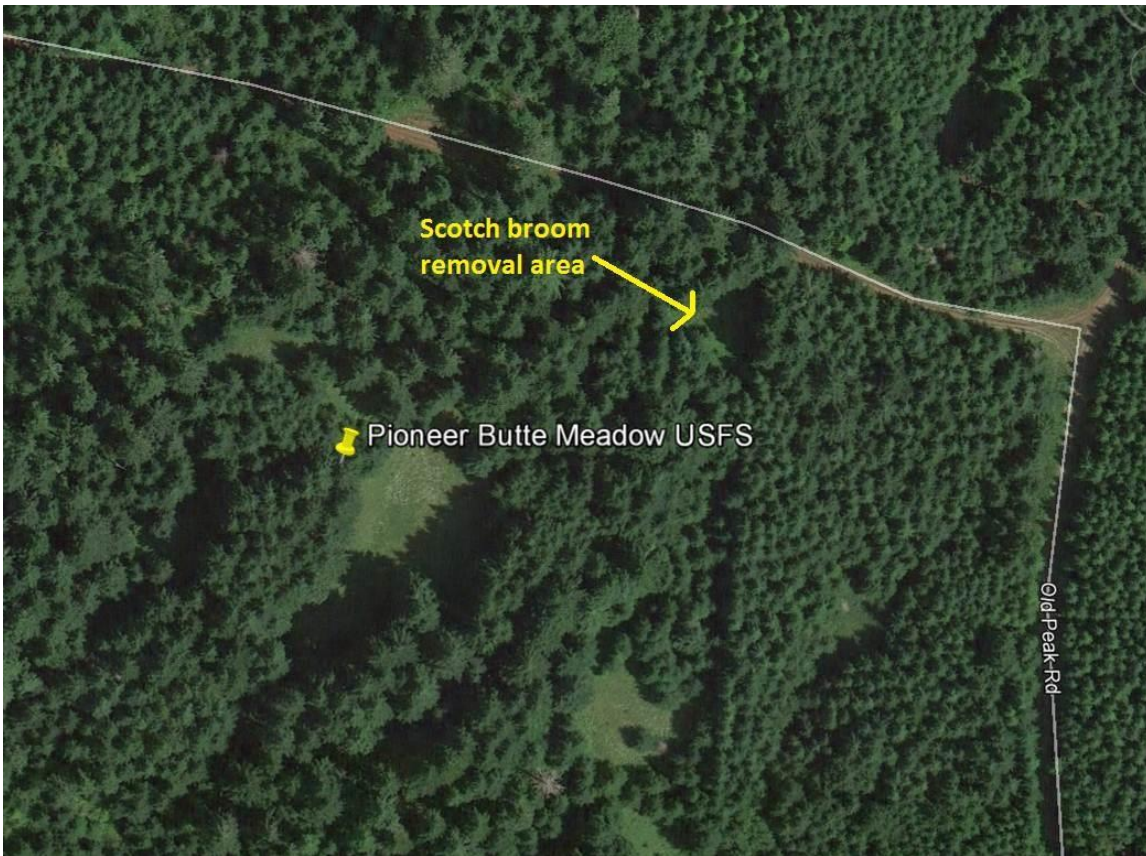


Figure 2. Aerial photo of Pioneer Butte Meadow and vicinity pre-logging, showing the nearby clearing from which Scotch broom (a few stems) was removed in April 2016.

Post-logging, 30 bulbs of Olympic onion (*Allium crenulatum*) were planted at the top of the meadow.

Mid-Elevation Seed Production

A lack of appropriate seed has been identified as a problem in restoring mid-elevation sites in the Coast Range. To remedy this, in 2014, IAE collected seed from various mid-elevation sites in the Coast Range and production beds were established for five species commonly used in restorations (for details of the collection sites, see the 2014 annual report). The raised beds are located at the Forest Science Laboratory (FSL) at Oregon State University (OSU) in Corvallis. IAE staff maintained the beds through the year, harvested and cleaned the seed (Table 1). Farewell to spring (*Clarkia purpurea*) is a native annual forb and was not reseeded in 2016. Narrowleaf mule's ear (*Wyethia angustifolia*) was co-planted with Oregon sunshine (*Eriophyllum lanatum*) and did not produce seed in 2016.

Table 1. Seed harvested from production beds at the Forest Science Labs at OSU in 2016.

Species name	Common name	Seed produced (g)	Used	Seed remaining
<i>Eriophyllum lanatum</i>	Oregon sunshine	425 g		425 g
<i>Prunella vulgaris ssp. lanceolata</i>	lance self-heal	500 g		500 g
<i>Achillea millefolium</i>	common yarrow	300 g (well-cleaned)		300 g
<i>Achillea millefolium</i>	common yarrow	300 g (with lots of chaff)		300 g--
<i>Clarkia purpurea</i>	farewell to spring	None produced		
<i>Wyethia angustifolia</i>	narrowleaf mule's ear	None produced		

MANAGEMENT RECOMMENDATIONS

With the recent logging effort, the major management focus at the Pioneer Butte will be controlling a flush of weeds expected to establish after disturbance. Following weed control that creates bare soil, native seed should be spread into these disturbed areas. Seed is available from the 2015 and 2016 harvest from the FSL beds and earlier seed collected by IAE staff in 2014 (Table 2).

Native seed production from perennial beds at the FSL should also be continued to ensure an adequate supply of appropriate native seed.

Table 2 Native seed available for use in Pioneer Butte restoration.

Species name	Common name	Source	Year collected	Quantity of seed available
<i>Iris tenax</i>	toughleaf Iris	Pioneer Butte	2014	7 g
<i>Achillea millefolium</i>	common yarrow	Mary's Peak	2014	2.4 g
<i>Achillea millefolium</i>	common yarrow	Twin Prairie	2014	1.6 g
<i>Achillea millefolium</i>	common yarrow	FSL	2015	137.8
<i>Achillea millefolium</i>	common yarrow	FSL	2016	600 g
<i>Lomatium utriculatum</i>	common lomatium	Mary's Peak	2014	29.6 g
<i>Eriophyllum lanatum</i>	Oregon sunshine	Mary's Peak	2014	16.5g
<i>Eriophyllum lanatum</i>	Oregon sunshine	FSL	2015	105 g
<i>Eriophyllum lanatum</i>	Oregon sunshine	FSL	2016	425 g
<i>Prunella vulgaris ssp. lanceolata</i>	lance seaf-heal	FSL	2015	150.6
<i>Prunella vulgaris ssp. lanceolata</i>	lance self-heal	FSL	2016	500 g
<i>Wyethia angustifolia</i>	narrowleaf mule's ear	Twin Prairie	2014	4.5 g
<i>Clarkia purpurea</i>	farewell to spring	FSL	2015	387.9 g

NEXT STEPS

In 2017, IAE expects to outplant 175 *Lupinus albicaulis* (sicklekeel lupine) plugs at Pioneer Butte and seed the meadow and surrounding areas with seed produced at the FSL beds over 2015 and 2016. If resources are available, the seed production beds at the FSL will be harvested and weed control at Pioneer Butte will continue.

REFERENCES

Shriro, Ted. 2014. Pioneer Butte Prairie Restoration. Annual Report to the United State Forest Service. Institute for Applied Ecology, Corvallis, OR. 6 pages.