

Sensitive Species Monitoring and Habitat Restoration of Lost Creek Meadow



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2015 Annual Report

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PREFACE

This report is the result of agreement L13AC00098-0029 between USDI Bureau of Land Management, Eugene District and Institute for Applied Ecology (IAE), Corvallis, Oregon. 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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ACKNOWLEDGMENTS

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Cover photographs: Lost Creek Meadow and *Sisyrinchium hitchcockii* (inset). Photos by Matt Blakeley-Smith, 20 April 2011.

SUGGESTED CITATION

Neill A. 2016. Habitat Restoration of Lost Creek Meadow. Institute for Applied Ecology, Corvallis, Oregon and USDI Bureau of Land Management, Eugene District.

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Sensitive Species Monitoring and Habitat Restoration of Lost Creek Meadow

REPORT SUBMITTED TO BUREAU OF LAND MANAGEMENT

1. PROJECT HISTORY

The Institute for Applied Ecology (IAE) began monitoring populations of Bureau Sensitive Species and their response to habitat restoration activities at several sites in 2005 (Blakeley-Smith and Kaye 2005). This report provides information on ongoing monitoring and habitat restoration activities at Lost Creek Meadow (formerly Eagles Rest) in 2015. Restoration activities at this meadow focus on improving and expanding habitat for a population of Hitchcock’s blue-eyed grass (*Sisyrinchium hitchcockii*), a federal species of concern. A census of Hitchcock’s blue-eyed grass is not conducted every year and was not performed in 2014 or 2015. Restoration efforts continue to focus on weed removal and prevention of woody plant encroachment and expansion of the existing meadow by mechanical removal trees and shrubs (see Appendices A and B).

2. PURPOSE, OBJECTIVES, AND RELEVANCE

The purpose of this project is to continue habitat restoration for native species diversity and maintenance of Hitchcock’s blue-eyed grass population, a federal species of concern, at Lost Creek Meadow on the Eugene District BLM. The objective of this project is to monitor the existing population of Hitchcock’s blue-eyed grass and maintain and expand the occupied habitat by removal of woody plants, augmentation of the native plant community, and hand weeding. This prairie has undergone extensive restoration work and is valuable prairie habitat within the Eugene District BLM.

3. ACTIVITIES

Restoration activities in 2015 focused on manual removal of Himalayan blackberry (*Rubus armeniacus*), resprouting Oregon ash (*Fraxinus latifolia*) and false brome (*Brachypodium sylvaticum*) from the open areas of Lost Creek Meadow (Table 1). The budget largely went to labor costs associated with brush cutting Himalayan blackberry and Oregon ash and hand pulling of Himalayan blackberry and false brome within and along the edges of the meadow by the IAE Habitat Restoration Technician (Table 2). Target weeds hand-pulled within the prairie were piled under trees surrounding the prairie.

Table 1. Restoration activities at Lost Creek Meadow during 2015.

Date	Task	Labor (hrs)
8/12/2015	Removed Himalayan blackberry and Oregon ash with brushcutter and hand pulled Himalayan blackberry and false brome	9.5
8/13/2015	Removed Himalayan blackberry and Oregon ash with brushcutter and hand pulled Himalayan blackberry and false brome	9.5

Table 2. Budget breakdown of restoration activities at Lost Creek Meadow during 2015.

Budget Item	Cost
Contracted Services	\$0.00
Supplies	\$180.94
Travel	\$177.31
Labor	\$1347.10
Admin	\$358.12
Total	\$2063.47

4. DISCUSSION

Ongoing restoration efforts to maintain and expand Lost Creek Meadow appear to have a positive effect on the Hitchcock’s blue-eyed grass population at the site. Although the Hitchcock’s blue-eyed grass population was not monitored in 2015, many individuals were observed and a high proportion of the plants were at various stages of flowering and pod formation. Annual brush cutting has reduced the abundance of Himalayan blackberry but has not eliminated the potential for this species to completely overrun this small meadow (Figure 1). Previous overstory and brush removal with the purpose of expanding the meadow have led to the identification of new Hitchcock’s blue-eyed grass individuals and created new areas for potential occupation. Previous efforts to hand-pull false brome at Lost Creek Meadow successfully reduced the abundance of this species. In 2015, identification and removal of false brome was done as needed. Although false brome in the meadow has been greatly reduced, encroachment of false brome from the surrounding forest continues to be a threat to the health of this meadow. With the success of past efforts to remove false brome, some focus was shifted to opportunistic removal of bull thistle (*Cirsium vulgare*) and teasel (*Dipsacus fullonum*).



Figure 1. Himalayan blackberry removal at Lost Creek Meadow (before (L) and after (R), Photos: A. Neill).

5. STEPS FORWARD

The ongoing goal for Lost Creek Meadow continues to be to actively restore regionally rare upland prairie habitat that will continue support a population of Hitchcock’s blue-eyed grass, a federal species of concern, by controlling priority invasive species and removal of overstory trees and shrubs to expand

the meadow. The results of periodic monitoring of Hitchcock's blue-eyed grass will continue to be a measure of the success of project goals.

There has been a significant reduction of overstory trees at Lost Creek Meadow, however, there is potential for further expansion of the meadow. Additional cutting or girdling of Douglas-fir and Oregon ash within and surrounding the meadow will expand the perimeter and potential habitat for Hitchcock's blue-eyed grass. Without the use of herbicides to control Himalayan blackberry and resprouting trees, manual removal by hand and with motorized tools should continue annually. Flame weeding in winter or early spring could reduce the abundance of resprouting shrubs, trees, false brome, and other non-desirable plants. However, the elevated fire risk associated with the surrounding forest and private lands could prevent flame weeding from being a viable management option at Lost Creek Meadow.

Although manual removal of Himalayan blackberry roots is possible, soil disturbance associated with this treatment could greatly harm Hitchcock's blue-eyed grass since the roots of each species likely occupy the same areas of the meadow. Cutting Himalayan blackberry in October and wiping the cut stems with herbicide could be an effective way of reducing underground growth structures. This targeted approach could effectively kill Himalayan blackberry and minimize the effects of herbicide on Hitchcock's blue-eyed grass near the treated areas.

False brome continues to be a major concern at this site even though the weed has (largely) been removed from the meadow. There are larger patches of false brome in the surrounding forest understory that are likely to spread and compete directly with Hitchcock's blue-eyed grass if left unchecked. The most effective control measure for this species is herbicide. However, without the use of herbicides, hand pulling of false brome within the meadow should continue as needed. As control of false brome within the meadow continues to be successful, efforts to remove false brome should be expanded to include the surrounding forest. Additionally, weed species targeted for removal efforts should be expanded to include bull thistle and teasel that are both present in small numbers at Lost Creek Meadow.

The potential of expanding Lost Creek Meadow by connecting it to a neighboring meadow to the east was evaluated in 2014 (Banner, G. and B. Axt. 2015). In addition to the removal of a large number of trees, this option would require a significant amount of effort and resources to control a variety of invasive species, which include Himalayan blackberry, Scotch broom, oxeye daisy, and false brome, both within the adjacent meadow and between the meadows.

Oxeye daisy (*Leucanthemum vulgare*) is problematic for native species' establishment. Oxeye daisy can densely occupy an area and compete for resources preventing the growth and establishment of native plants. Without the use of herbicides it will be difficult to control.

Finally, all weed control efforts should be followed-up with immediate seeding of native species. Prairie seed is typically short lived in the seed bank, so when trees are removed there is very poor natural re-vegetation. Native species should be seeded to preempt the likely alternative outcome of invasive species colonization.

APPENDIX A

AERIAL PHOTO OF LOST CREEK MEADOW AND PLANTING MAP

Lost Creek Meadow (formerly Eagles Rest)



APPENDIX B

ACTIVITIES CONDUCTED AT LOST CREEK MEADOW ACEC

2005

- Site survey and weed assessment.
- Hitchcock's blue-eyed grass (*Sisyrinchium hitchcockii*) monitoring.
- Hitchcock's blue-eyed grass seeds collected and sent to Berry Botanical Garden for long term storage.

2006

- No activities

2007

- No activities

2008

- Site assessment and Hitchcock's blue-eyed grass monitoring with C. Mayrsohn.
- Collected seed of Hitchcock's blue-eyed grass.

2009 (Start of restoration activities at Lost Creek)

- Began growing Hitchcock's blue-eyed grass from seed collected in 2008.
- Felled ~30 trees to expand the perimeter of the meadow.
- Used brushcutter to remove Himalayan blackberry and other shrubs from the perimeter of the meadow.

2010

- Hitchcock's blue-eyed grass monitoring.
- Collected seed of Hitchcock's blue-eyed grass.
- Removed ~20 trees to expand the perimeter of the meadow.

2011

- Site assessment and coordination.
- Collected seed of Hitchcock's blue-eyed grass.
- Planted 10 Hitchcock's blue-eyed grass plants grown from seed collected in 2008.
- Used brushcutter to remove Himalayan blackberry and pulled false brome (Walama Restoration).

2012

- Site assessment and coordination.
- Girdled Douglas-fir on east side of meadow ~20 feet in the woods.
- Hitchcock's blue-eyed grass monitoring.
- Collected seed of Hitchcock's blue-eyed grass.
- Used brushcutter to remove Himalayan blackberry.

2013

- Seeding of bare areas created in 2012 with SOS seed collections.
- Site assessment and coordination.
- Hand pulling of false brome and thistle.
- Monitoring of Hitchcock's blue-eyed grass.
- Used brushcutter to remove Himalayan blackberry, English hawthorn, and Oregon ash.

2014

- Site assessment and coordination.
- Mapped extent of Hitchcock's blue-eyed grass population with GPS.
- Used brushcutter to remove Himalayan blackberry and Oregon ash and fruit tree stump resprouts.
- Hand pulled false brome.
- Consolidated slash piles.

2015

- Site assessment and coordination.
- Hand pulled false brome.
- Used brushcutter to remove Himalayan blackberry and Oregon ash resprouts.

2016 (planned)

- Site assessment and coordination.
- Used brushcutter to remove Himalayan blackberry and Oregon ash and fruit tree stump resprouts.
- Hand pulling of false brome, teasel, and bull thistle.
- Census of Hitchcock's blue-eyed grass population in the meadow.

REFERENCES

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