

Habitat Restoration of Horse Rock Ridge ACEC/RNA: 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 photograph: Photo looking across Horse Rock Ridge. *Photo by Matt Schultz.*

SUGGESTED CITATION

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TABLE OF CONTENTS

| | |
|--|------------|
| PREFACE..... | II |
| ACKNOWLEDGMENTS..... | III |
| SUGGESTED CITATION..... | III |
| EXECUTIVE SUMMARY | 1 |
| INTRODUCTION | 1 |
| GOALS AND OBJECTIVES | 3 |
| 2017 COMPLETED MANAGEMENT ACTIONS | 3 |
| 2018 PROPOSED ACTIONS..... | 5 |
| REFERENCES..... | 6 |

TABLE OF FIGURES

| | |
|--|----------|
| Figure 1 Location of Horse Rock Ridge in context of the greater Willamette Valley | 2 |
| Figure 2 Mosaic of grassy balds and forests that make up Horse Rock Ridge | 2 |
| Figure 3 Before and after photos of small tree removal and limbing | 4 |
| Figure 4 Before and after photos of small tree removal and limbing | 4 |

TABLE OF TABLES

| | |
|--|----------|
| Table 1 2017 restoration activities..... | 3 |
| Table 2 Species collected for the Seeds of Success program at Horse Rock Ridge in 2017 | 5 |

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1. EXECUTIVE SUMMARY

Horse Rock Ridge (HRR) is a 378-acre (153-ha) Area of Critical Environmental Concern (ACEC) and Resource Natural Area (RNA) site owned and managed by the Bureau of Land Management (BLM), Northwest Oregon District, and located within the Upper Willamette Resource Area in Linn County, Oregon. The goals of this project are to increase existing native plant populations and diversity at this site and decrease invasive species populations. In 2017 restoration activities included mechanical removal of small patches of invasive species within the meadow and removal of small trees and limbing of larger trees within and along the meadow edges. Moving forward into 2018, we recommend meeting with new BLM staff to review the site restoration plan developed in 2010, in order to ensure the proposed actions are still appropriate. We then recommend moving forward with the next phase of proposed restoration actions, with the addition of tree removal and limbing and a more targeted approach to invasive species treatments.

2. INTRODUCTION

Horse Rock Ridge (HRR) is a 378-acre (153-ha) site owned and managed by the Bureau of Land Management (BLM) and located within the Upper Willamette Resource Area in Linn County, Oregon. The site is located in the Coburg Hills, on the divide between the Calapooia and Mohawk River drainages on the eastern edge of the Willamette Valley (Figure 1). HRR was designated an Area of Critical Environmental Concern (ACEC) and a Resource Natural Area (RNA) by the BLM in 1984 and 1995, respectively. These designations help protect rare examples of grassy balds (treeless areas) and forest mosaics in the western margins of the Cascade Mountains (Figure 2).

The Institute for Applied Ecology (IAE) has partnered with BLM's Northwest Oregon District at HRR since 2006. Initially, work focused on site assessment and mapping of native plant communities and exotic weeds. Later work included the writing of a restoration plan (Thorpe 2010), seed collection, growout and planting of native plants and seed, weed control, and monitoring of plant composition change through establishment of treated and controlled vegetation plots (Giles et al. 2014). This year, there were two site visits with now retired resource area botanist, Cheshire Mayrsohn, and Chicago Botanic Garden intern, Emily Erickson, to discuss the future direction of restoration activities and to identify tree encroachment priorities at the site. This report discusses restoration activities conducted in 2017 and proposed restoration actions for 2018.

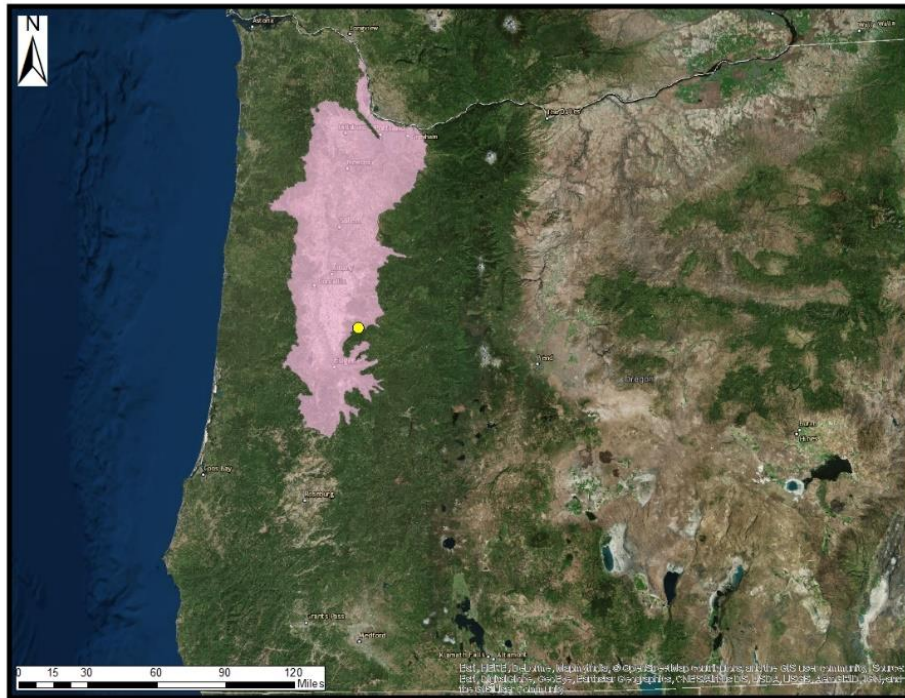


Figure 1. Location of Horse Rock Ridge (indicated by yellow point) in the context of the greater Willamette Valley.

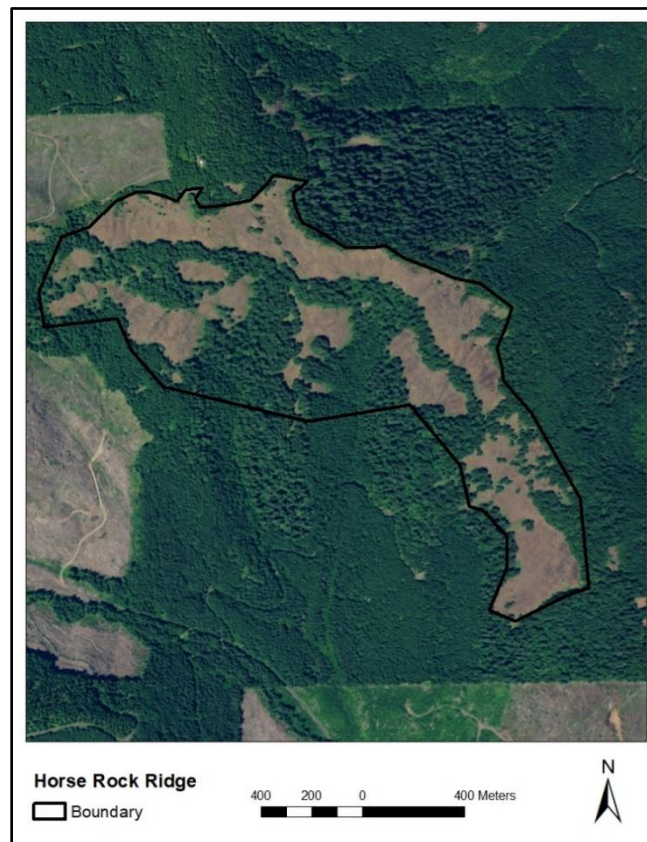


Figure 2. Mosaic of grassy balds and forests that make up Horse Rock Ridge.

3. GOALS AND OBJECTIVES

The goals of this project are to reduce the populations of non-native species, increase the amount and diversity of native species, and remove encroaching conifers from within the meadow and along the meadow/forest ecotone.

This project has five primary objectives:

- 1) Assess current habitat conditions;
- 2) Treat targeted non-native invasive species;
- 3) Remove encroaching woody species;
- 4) Collect native seed; and
- 5) Sow native seed in areas disturbed by restoration activities.

4. 2017 MANAGEMENT ACTIONS

In 2017, management actions completed by IAE included non-native and woody species removal (Table 1). In February, IAE and BLM staff visited HRR to assess current site conditions and determine restoration actions to be taken that year. In April and June, oxeye daisy and foxglove were manually removed from small portions of the meadow. In December, IAE staff, Chicago Botanic Garden intern Emily Erickson, and retired BLM resource area botanist Cheshire Mayrsohn revisited the site to identify trees targeted for removal or limbing. IAE returned several days later to remove small trees and limb larger trees within and along the northern portion of the meadow starting from where the trail enters the main meadow complex and along the north edge of the trail (Figures 3 and 4).

Table 1. 2017 restoration activities conducted by Institute for Applied Ecology (IAE) at Horse Rock Ridge.

| Date | Task |
|------------|--|
| 02/17/2017 | Site assessment visit with Matt Schultz (IAE), Cheshire Mayrsohn (BLM), and Emily Erickson (BLM) |
| 04/04/2017 | Hand pulling of oxeye daisy and fox glove |
| 06/08/2017 | Hand pulling of oxeye daisy and fox glove |
| 12/21/2017 | Site visit to identify trees targeted for removal or limbing |
| 12/26/2017 | Removal of small trees and limbing of large trees within and along meadow edge |



Figure 3. Looking west at the small meadow opening at end of trail at Horse Rock Ridge. Photo shows meadow before small tree removal and limbing of larger trees (left) and after (right).



Figure 4. Looking north-west at trail and northern edge of largest meadow opening at Horse Rock Ridge. Photo shows before small tree removal and limbing of larger trees (left) and after (right).

Additionally, between July and August of 2017, native seed was collected for the BLM's Seeds of Success Program (Table 2)

Table 2. Native plant species collected for the Seeds of Success program at Horse Rock Ridge in 2017.

| Scientific Name | Common Name | Collection Date(s) |
|-----------------------------|------------------|--|
| <i>Daucus pusillus</i> | rattlesnake weed | 7/18/2017; 7/27/2017; 8/7/2017; 8/15/2017 |
| <i>Elymus glaucus</i> | blue wildrye | 7/18/2017; 7/27/2017; 8/7/2017; 8/15/2017 |
| <i>Eriogonum nudum</i> | naked buckwheat | 7/27/2017; 8/7/2017; 8/15/2017 |
| <i>Festuca roemerii</i> | Roemer's fescue | 7/18/2017; 7/27/2017; 8/7/2017; 8/15/2017 |
| <i>Koeleria macrantha</i> | June grass | 7/27/2017; 8/7/2017; 8/15/2017 |
| <i>Lomatium utriculatum</i> | bladder parsnip | 7/18/2017; 8/7/2017 |
| <i>Madia gracilis</i> | grassy tarweed | 7/18/2017; 7/27/2017; 8/7/2017; 8/15/2017 |

5. 2018 MANAGEMENT RECOMMENDATIONS

Given the original date of the Horse Rock Ridge management plan (finished in 2010) and the recent retirement of BLM resource area botanist Cheshire Mayrsohn, there is a need to reassess the restoration goals and proposed actions laid out in the 2010 management plan, and adjust them to reflect current site conditions and updated BLM priorities. Site assessment, monitoring, and plant community mapping at this site has been extensive. This past work provides solid data that will inform future management decisions and will enable development and implementation of targeted, strategic restoration actions over the next several years.

The following management tasks are recommended in 2018:

- Review 2010 site management plan and reassess management goals and objectives with BLM staff;
- Resurvey vegetation plots installed in 2008 to assess current conditions, if IAE and BLM staff determine this to be useful/necessary;
- Prioritize and remove invasive species;
- Girdle or remove encroaching trees and shrubs from meadows (specifically meadows on the SE portion of the mosaic and along the northern edge of the meadow);
- Collect native seed at site for direct sowing, seed amplification and/or propagation of plugs/bulbs;
- Grow native plants from collected seed for 2019 augmentation efforts;
- Mow dense patches of non-native grasses prior to seed set in order to prevent an increase in the non-native seed bank at the site;
- Flame weed patches of non-native annual grasses (particularly medusa-head); and
- Sow newly exposed areas with a native grass and forb seed mix if available.

6. REFERENCES

- Giles-Johnson, D. E. L., M. A. Bahm, and E. C. Gray. 2014. Horse Rock Ridge assessment, seed collection, and restoration 2014. Institute for Applied Ecology, Corvallis, Oregon and USDI Bureau of Land Management, Eugene District. v + 28 pp.
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