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2015-16 Annual Work Plan for the Yamhill County Habitat Conservation Plan for Fender's Blue Butterfly and Kincaid's Lupine



March 2015

BO# 14-568



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Work Plan Overview

Yamhill County (County) maintains the right-of-way easements along county roads for the purposes of public safety. Some of their road maintenance activities have the potential to affect Fender's blue butterfly (*Icaricia icarioides fenderi*), Kincaid's lupine (*Lupinus oregonus*) and their habitat as defined under the Endangered Species Act (ESA, 16 U.S.C.5131-1344, 87 Stat. 887). In March, 2014, the U.S. Fish and Wildlife Service (USFWS) issued an Incidental Take Permit (ITP) **TE10049B-0** pursuant to Section 10 (a)(1)(B) of the ESA. Activities covered by the ITP include County road and right-of-way maintenance activities. The ITP is conditional upon implementation of the Yamhill County Habitat Conservation Plan (HCP; Cardno ENTRIX 2013).

As set forth in the Section 7.1.4 of the HCP, the County shall develop and submit an annual work plan to USFWS and Oregon Department of Agriculture. This plan shall identify tasks to be accomplished, persons or organization responsible for implementation of task, and schedule and budgets for completion of tasks during the Fiscal Year 2015-2016 (July 1, 2015 through June 30, 2016) under the 30-year ITP issued to the County. Under the ITP, the County is responsible for a total of 6.96 acres of mitigation to offset potential effects to covered species/habitat. The County's mitigation actions will ultimately enhance 5.96 acres their Threatened and Endangered Species Special Maintenance Zones (T&E SMZ) and 1 acre at Deer Creek Park, a County owned park.

Spring 2015 Work Plan Goals

Work the County anticipates completing during spring 2015 (prior to the start of the 2015-16 fiscal year) include training, updating their utility permitting process, begin tall oatgrass eradication, and 2015 Fender's blue butterfly surveys (Table 1).

2015-16 Work Plan Goals

Work the County anticipates completing during the 2015-16 fiscal year include identification of individual(s) responsible for Kincaid's lupine monitoring, creating a Kincaid's lupine monitoring plan, monitoring of the covered species, and restoration actions in the T&E SMZ and Deer Creek Park (Table 1). Proposed restoration actions for the T&E SMZs and Deer Creek Park are provided in the Mitigation Plans (Appendix A); these plans were created during the Summer/Fall of 2014, in conjunction with species experts and HCP Implementation Team. Specifics on how the Mitigation Plan will be implemented over the course of this work plan are described below in 'Implementation of Mitigation Plans'.

Table 1: Work Plan Actions

| Action | Responsible Party | Schedule |
|--|-------------------|-----------------------|
| Roadside Crew HCP Training | County/USFWS | Spring 2015 |
| Create Permit Bluebook and append to permit application | County | Spring 2015 |
| Fender's blue butterfly monitoring at sites not covered by Section 6 Funding | County/Hammond | Spring 2015/16 |
| Identification of appropriate individual(s) to perform Kincaid's lupine monitoring beginning in 2016 | County/Wert | Fall 2015 |
| Create Kincaid's Lupine Monitoring Plan | County | Fall 2015 |
| Implementation of Mitigation Plans in T&E SMZs (see below) | County | Through June 30, 2016 |
| Implementation of Mitigation Plan at Deer Creek Park (see below) | County | Through June 30, 2016 |
| Kincaid's lupine monitoring | County/TBD | Spring 2016 |

Implementation of Mitigation Plans

Under this work plan the County will implement restoration and management actions in the T&E SMZs and Deer Creek Park towards their mitigation obligation. Actions detailed below were proposed by Dr. Hammond and USFWS and vetted by the HCP Implementation Committee. It is not anticipated that all actions described below would be complete during the duration of this work plan. The County intends to work through the suggested activities until they exhaust their budget. Tracking of habitat enhancement expenditures throughout the duration of this work plan will allow the County to better assess the amount of work they can complete, within budget, in subsequent years.

- To address the most immediate threats to the covered species and achieve the maximum amount of habitat enhancement work within their budget, the County proposes to focus on implementing certain restoration activity types across multiple T&E SMZs as opposed to completing all work in a single location. Prioritization of actions are described below:
 1. Knapweed eradication in ORA 3. This work has first priority to keep this local infestation from spreading beyond the area near the driveway to the Carol Hebert property. Spraying should be done in September or October, on both sides of the road. See Appendix A – ORA 3 for additional details.

2. Tall oatgrass eradication in ORA 1, ORA 2, ORA 3, ORA 5, ORA 6, ORA 7, and Tupper Road. This work has second priority for quickly improving habitat for lupines and butterflies. Eradication of grass in GVA 2 and Beaver Creek Road has lower priority and would be done in future years, perhaps starting in 2017 and 2018. All of Tupper Road and the local infestation north of the Carol Hebert driveway in ORA 3 would be treated in 2015. The larger infestations in ORA 1, ORA 2, ORA 5, ORA 6, and ORA 7 would be divided into four equal quadrants and 25% would be treated each year in 2015, 2016, 2017, and 2018. Because of the early season in 2015, the first spraying should be done in late March with a second spraying done in early April about 2-3 weeks later. See Appendix A - appropriate T&E SMZ for additional details.
3. Cut woody brush and small trees in late summer and fall. This work has third priority starting with ORA 1 and ORA 2 in 2015. GVA 1 and ORA 3 should be next if money is still available in 2015 or scheduled next year in 2016. See Appendix A - appropriate T&E SMZ for additional details.
4. Late season mowing in late summer or fall. This work has fourth priority, and is most important in areas with dense stands of tall oatgrass and braken fern including ORA 1, ORA 2, ORA 3, ORA 5, ORA 6, ORA 7, and Tupper Road. Once the oatgrass and braken fern are controlled yearly mowing may not be required. GVA 1, GVA 2, and Beaver Creek Road have lower priority for mowing if money is limited. See Appendix A - appropriate T&E SMZ for additional details.
5. Braken fern cutting and pulling. This work has fifth priority for funding. The areas to be treated in priority sequence are ORA 1, ORA 2, ORA 3, ORA 5, ORA 6, ORA 7, GVA 1, GVA 2, and Beaver Creek Road. Since fern infestations are often very local, this work may not take too much time for crews using hand weeders, although pulling fronds by hand from within patches of lupine or nectar flowers will take more time. This work should take place during early June after the fern fronds have grown up. Perhaps two or three of the above areas could be treated each year in 2015 to 2018. See Appendix A - appropriate T&E SMZ for additional details.
6. Additional clearing of brush and trees from some areas such as Tupper Road and Beaver Creek Road combined with additional seeding of bare ground with native plants on embankments such as in ORA 6 and Beaver Creek Road have been identified in the Yamhill County Mitigation Plans. Also, the control of the local infestation of everlasting sweet-pea in ORA 3 needs to be done in the future. All of this work has the lowest priority and could be done in future years such as 2017 and 2018.

- Restoration actions proposed for Deer Creek Park, as identified by the species experts and the HCP Implementation Committee, are described in Appendix A – GVA 5.

2015-16 Work Plan Budget

Below is a tabulation of expected expenditures for the 2015-16 fiscal year by the County on activities under the HCP.

| Expenses | Cost |
|--|-----------------|
| Administration and Overhead | \$27,527 |
| T&E SMZ Crew Training | \$2,970 |
| Habitat Enhancement in T&E SMZs | \$2,995 |
| Habitat Enhancement at Deer Creek Park | \$1,450 |
| Surveys | \$11,155 |
| Total Expenses | \$45,997 |

APPENDIX A

Yamhill County Mitigation Plan for Fender's Blue Butterfly and Kincaid's Lupine

Yamhill County Mitigation Plans for Fender's Blue
Butterfly and Kincaid's Lupine

January 2015

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Introduction

Yamhill County Threatened and Endangered Species Special Maintenance Zone (T&E SMZ) Management and Restoration plans are based off of initial recommendations provided by Dr. Hammond in January 2014 and site visits by Rich Szlemp, Scott Black and Dr. Hammond on August 27, 2014 and October 30, 2014. In addition to the species experts, the HCP Implementation Committee and County road crew manager (Steve Kindel) were also present at the site visits. General habitat actions, identified by the "species experts", for each T&E SMZ are presented below.

General Notes:

Management actions described below are for those areas immediately surrounding known Fender's blue butterfly and Kincaid's lupine locations contained within the County's T&E SMZ's to focus on conserving and expanding existing habitat. Work described below would extend a minimum of 50 feet in each direction of known lupine patches to help maintain the patches, and then to create conditions that would facilitate expansion of those patches by addressing some vegetative and physical factors that currently restrict or impair reproduction and growth. These areas would be prime candidates for native plantings to supplement, or hasten the development of, good quality butterfly habitat.

The USFWS has agreed that management actions such as mowing and weeding in T&E SMZs outside of those identified in the Annual Workplan can occur so long as work occurs in accordance with the general management guidance in the management plans and within the approved timeframe. Should the County perform work that is outside the scope of what has been presented in the Annual Workplan, they are responsible for documenting and reporting to the Service when and where these actions occurred.

County should look into the USFWS Partners for Fish & Wildlife Program for assistance. Under this program they may not be able to get assistance with mitigation projects, but could get help for enhancement.

Asplundh has removed trees from GVA2 site without notifying the County. County will schedule an education session for utility crews to inform them of the procedures that need to be followed when working in T&E SMZs to avoid adverse impacts. The County will explore opportunities to work with utility companies engaged in powerline and communication line maintenance to also pursue beneficial actions, such as removing trees and/or shrubs that are shading nectar and larval host plants and also creating hazards for their infrastructure.

These restoration plans may be amended by Yamhill County after coordination with the Service, as effectiveness of the management actions is monitored, as habitat conditions change, as unexpected adverse impacts occur, or as new information becomes available that indicates better and more effective management approaches.

Site Specific Management and Restoration Recommendations

ORA 1 (Appendix F Sheet 2)

Site Overview

The county road right-of-way on this side of the road is very narrow and does not extend much past the ditch. This narrow habitat zone consists of native prairie with species such as Roemer's fescue, Oregon sunshine, Kincaid's lupine, and fern-leafed desert parsley. Invasive and non-native species and encroaching native species present at this site include tall oatgrass, bracken fern, Scotch broom and other woody brush (including poison oak) and trees.

Concepts

- Cut and remove invasive woody brush and small trees along the fence line, with particular emphasis on the Scotch broom.
- Spray stands of tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant- less effect to butterfly larva) in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spraying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in late June or early July. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- Late season mowing (late-summer/fall) for control of invasive species.
 - Once woody vegetation, tall oatgrass, and bracken fern have been removed from the site mowing may be required every three years.

ORA 2 (Appendix F Sheet 2)

Site Overview

The county road right-of-way extends 6-8 feet from the ditch to the fence line on private property. A diversity of native prairie species are found in the area including a large populations of Kincaid's lupine, which supports Fender's blue butterfly. Both tall oatgrass and bracken fern are present along portions of this area, together with invasive and native encroaching woody vegetation including small trees and brush such as Scotch broom and poison oak.

Concepts

- Cut and remove invasive woody brush and small trees with an emphasis on Scotch broom brush.
- Spray stands of tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant - less effect to butterfly larva) in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spaying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.
 - Tall oatgrass is overgrowing Kincaid's lupine at this site.
- Removal of bracken ferns would be accomplished using a hand weed-eater (no spraying) due to the proximity to native plants.
- Late season mowing (late-summer/fall) for control of invasive species.
 - Once woody vegetation, tall oatgrass, and bracken fern have been removed from the site mowing may only be required every three years.

ORA 3 (Appendix F Sheet 2)

Site Overview

The county road right-of-way extends from the ditch about 6-8 feet to the fence line on private property. This roadside strip is comprised of particularly high quality native prairie with a high diversity of native species including large populations of both Kincaid's lupine and Fender's blue butterfly. Other native prairie plants include Roemer's fescue, Oregon sunshine, fern-leafed desert parsley, wild strawberry rose checker-mallow, wild iris, field cluster-lily, yarrow, blue larkspur, and red columbine. A wide diversity of non-natives are also found in ORA-3 including infestations of exotic tall oatgrass, everlasting sweet-pea, meadow knapweed, native bracken fern, and woody trees and brush such as young oak trees and poison oak.

Concepts

- Knapweed eradication – Given the size of the infestation a broad-spectrum herbicide would be applied using boom-type equipment in September or October after the fall rains begin and the lupine is dormant.
- Everlasting sweet-pea covers a large area along the road next to Hebert house. Broadcast spray with a broad-spectrum herbicide using boom-type equipment in late summer/early fall (after August 15).
- Spray tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. The entire site is to be treated at once.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in late June or early July. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- Large trees, including oaks, and smaller woody brush such as poison oak cover much of the site and are shading the lupine. The trees should be cut and removed and the brush should be cut with brushing equipment in late summer and fall between August 15 and October 15 after the lupine has become dormant. The stumps of larger trees and bushes should be topically treated with the herbicide Garlon to kill the roots and prevent re-sprouting.
- Late season mowing (late-summer/fall) for control of invasive species.
 - Once woody vegetation, tall oatgrass, and bracken fern have been removed from the site mowing may only be required every three years.

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ORA 5 (Appendix F Sheet 3)

Site Overview

The county road right-of-way extends about 4-6 feet from the ditch to the property fence line. Kincaid's lupine is found along three different sections of the road. North of the road junction with Moores Valley Road, several patches of lupine are found along a narrow strip of roadside adjacent to private property on the east side of the road. As of the 2013 field season, no invasive grass, bracken fern, or woody brush and trees were impacting these lupine patches.

South of the road junction with Moores Valley Road, extensive areas of Kincaid's lupine are present on both the east and west sides of the road adjacent to private property, extending south for about one half mile. Near the top of the small hill, relatively pristine native prairie is found in the road right-of-way on the west side, including such plants as Roemer's fescue, Oregon sunshine, wild strawberry, blue larkspur, and rose checker-mallow. The largest number of Fender's blue butterflies is found along this portion of the road as well as dense stands of tall oatgrass.

Concepts

- Lupine would be removed from the road prism in July, when the plants are beginning to dry out and Fender's blue butterfly are no longer flying, and transplanted in the adjacent no impact zone of the right-of-way. The following year, the site would be graded by May 1 to the bottom of the ditch line.
- Spray stands of tall oatgrass twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant - less effect to butterfly larva) in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spaying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in late June or early July. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- Seed bare soil on the steeper road embankments within the no impact zone in the fall with a native prairie plant mixture, including nectar plants for Fender's blue butterfly. Plants could include Roemer's fescue, California brome (*Bromus carinatus*), native bent grass, rose checker-mallow (*Sidalcea virgata*), Oregon geranium (*Geranium oregonum*), Oregon sunshine (*Eriophyllum lanatum*), wild iris (*Iris tenax*), white forget-me-not (*Oxyptantha intermedia*), narrowleaf onion (*Allium amplexans*), and cats-ears (*Calochortus tolmiei*).
- Seed bare soil in the impact zone with a native seed mixture comprised of Roemer's fescue, California brome (*Bromus carinatus*), and native bent grass in the fall. .
- Late season mowing (late-summer/fall) for control of invasive species.
 - Once tall oatgrass and bracken fern have been removed from the site mowing may only be required every three years.

ORA 6 (Appendix F Sheet 3)

Site Overview

Kincaid's lupine patches are found along two widely disjunct portions of the road about one mile apart. The first habitat (Site A) area is found on both the north and south sides of the road from the junction with Old Moore's Valley Road eastward for about a quarter mile. Native prairie with Roemer's fescue, wild strawberry, Oregon sunshine, and other plants occur in a relatively narrow road right-of-way that extends from the ditch to the fence line with private property for a width of about 3-4 feet. Large numbers of Fender's blue butterflies were found in this narrow habitat area during the 2012-2013 field seasons. At the present time, this section of the road is relatively free of bracken fern, woody brush or trees, but some localized patches of tall oatgrass are present.

The second habitat (Site B) area for Kincaid's lupine and Fender's blue butterfly in ORA-6 is found on the north side of the road along a high embankment about one mile east of the road junction with Old Moore's Valley Road. This area once supported large population of Fender's blue butterfly. However, most of the habitat adjacent to private property has become overgrown with young conifer trees in a tree farm, and the lupine habitat along the county road right-of-way has become overgrown with dense stands of tall oatgrass. As result, few or no Fender's blue butterflies were seen along this section of the road during the 2012-2013 field seasons. At the present time, Kincaid's lupine patches along the embankment are overgrown with both tall oatgrass and dense woody brush thickets of snowberry.

Concepts Site A

- Spray stands of tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant - less effect to butterfly larva) in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spaying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.
- Late season mowing (late-summer/fall) for control of invasive species.
 - Once tall oatgrass have been removed from the site mowing may only be required every three years.
- Lupine will be removed from the road prism in July, when the plants are beginning to dry out and Fender's blue butterfly are no longer flying, and transplanted in the adjacent no impact zone of the right-of-way. The following year, the site will be graded by May 1 to the bottom of the ditch line.

Concepts Site B

- Spray stands of tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant - less effect to butterfly larva) in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spaying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.

- Broad-spectrum herbicide would be sprayed between Augusts 15 and October 15, after the lupine is dormant, to remove snowberry brush. After the brush is dead, it would be removed with brushing equipment and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
- Seed bare soil on the steeper road embankments within the no impact zone in the fall with a native prairie plant mixture, including nectar plants for Fender's blue butterfly. Plants could include Roemer's fescue, California brome (*Bromus carinatus*), native bent grass, rose checker-mallow (*Sidalcea virgata*), Oregon geranium (*Geranium oregonum*), Oregon sunshine (*Eriophyllum lanatum*), wild iris (*Iris tenax*), white forget-me-not (*Oxyptantha intermedia*), narrowleaf onion (*Allium amplexans*), and cats-ears (*Calochortus tolmiei*).
- Seed bare soil in the impact zone with a native seed mixture comprised of Roemer's fescue, California brome (*Bromus carinatus*), and native bent grass in the fall.
- Late season mowing (late-summer/fall) for control of invasive species.
 - Once tall oatgrass and brush have been removed from the site mowing may only be required every three years.

ORA 7 (Appendix F Sheet 2)

Site Overview

ORA-7 is comprised mostly of county roadside habitat on the north and south sides of Hacker Road extending about a half mile east from the road junction with Turner Creek Road. It also includes a very small section of Tupper Road at the junction with Turner Creek Road. The county road right-of-way along Hacker Road extends from the ditch about 5-8 feet to the adjacent private properties. A rich high quality native prairie is found in this right-of-way including large patches of Kincaid's lupine that support a relatively large population of Fender's blue butterflies. Other native prairie plants include Roemer's fescue grass, California oatgrass, wild blue rye, camas lily, field cluster-lily, harvest cluster-lily, wild strawberry, graceful cinquefoil, rose checker-mallow, summer Clarkia, barestem desert parsley, Oregon sunshine, and yarrow. As of the 2013 field season, much of the road right-of-way is overgrown with small trees, woody brush, dense stands of Himalayan blackberry, dense stands of tall oatgrass, and extensive patches of bracken fern. Much of the Kincaid's lupine is presently overgrown with this woody brush, trees, and tall grass or fern.

The entire ORA 7 site will be managed using the below recommendations. The area that is actively managed by the County is the first five feet, from the shoulder of the road to the back of the ditch. The remaining 15 feet, from the back of the ditch to the end of the right-of-way, will be managed in the same manner and counted towards the County's mitigation requirement under the Incidental Take Permit (ITP).

Concepts

- Missing SMZ sign will be replaced.
- Mow entire area during the fall when lupine are dormant and larva are in diapause. A tractor mower can be used for the steep upper slope. It is understood that the mower will have to drive in the SMZ to accomplish this. USFWS requests that air wheels be used on the mower to reduce soil compaction.
- Spray stands of tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant - less effect to butterfly larva) in late March through April, when it is possible to ID lupine plants. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spraying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.
 - Tall oatgrass is overgrowing Kincaid's lupine at this site.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in late June or early July. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- The trees should be cut and removed and the brush should be cut with brushing equipment in late summer and fall between August 15 and October 15 after the lupine has become dormant. The stumps of larger trees and bushes should be topically treated with the herbicide Garlon to kill the roots and prevent re-sprouting.
- Himalayan blackberry is extensive at the site and should be broadcast sprayed with a broad-spectrum herbicide (MSM or Escort) using boom-type equipment after native vegetation has become dormant, between August 15 and October 15. After the blackberry is dead, it would be

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removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.

- Areas left bare from blackberry removal would be examined the following growing seasons to identify what the seed bed is and, if necessary, planted in the fall.
 - Bare areas in the no impact zone would be seeded with a native prairie plant mixture, including nectar plants for Fender's blue butterfly. Plants could include Roemer's fescue, California brome (*Bromus carinatus*), native bent grass, rose checker-mallow (*Sidalcea virgata*), Oregon geranium (*Geranium oregonum*), Oregon sunshine (*Eriophyllum lanatum*), wild iris (*Iris tenax*), white forget-me-not (*Oxyptantha intermedia*), narrowleaf onion (*Allium amplexans*), and cats-ears (*Calochortus tolmiei*).
 - Bare areas in the impact zone would be seeded with a native seed mixture comprised of Roemer's fescue, California brome (*Bromus carinatus*), and native bent grass.
- Late season mowing (late-summer/fall) and brushing for control of invasive species.
 - Once woody vegetation, tall oatgrass, blackberry, and bracken fern have been removed from the site mowing may only be required every three years.

Tupper Road (Appendix F Sheet 2)

Site Overview

The Tupper Road site is located at the junction with Turner Creek Road. This site is a Kincaid's lupine only site, *no Fender's blue butterflies have been observed here*. Much of the Kincaid's lupine is presently overgrown with tall oatgrass. There are some trees present.

Concepts

- Mow entire area during the fall when lupine are dormant. A tractor mower can be used for the steep upper slope. It is understood that the mower will have to drive in the SMZ to accomplish this. USFWS requests that air wheels be used on the mower to reduce soil compaction.
- Spray entire site with Post (two applications), at once, as no butterflies occur here and therefore would not be affected by the herbicide.
- Along the north side of Tupper Road near the road junction with Turner Creek Road, patches of Kincaid's lupine are completely overgrown with dense stands of tall oatgrass and some small woody bushes. No Fender's blue butterflies were present during the 2012-2013 field seasons. This section of the road should be mowed with brushing equipment between August 15 and October 15 after the lupine has become dormant. The following spring, the tall oatgrass should be sprayed twice about two weeks apart with a grass-specific herbicide from late March through April.
- Due to the high concentration of tall oatgrass it is likely the ground will be left mostly bare after herbicide treatment. Areas left bare from would be examined the following growing seasons to identify what the seed bed is and, if necessary, planted in the fall
 - Bare areas in the no impact zone would be seeded with a native prairie plant mixture, including nectar plants for Fender's blue butterfly. Plants could include Roemer's fescue, California brome (*Bromus carinatus*), native bent grass, rose checker-mallow (*Sidalcea virgata*), Oregon geranium (*Geranium oregonum*), Oregon sunshine (*Eriophyllum lanatum*), wild iris (*Iris tenax*), white forget-me-not (*Oxyptanthe intermedia*), narrowleaf onion (*Allium amplexans*), and cats-ears (*Calochortus tolmiei*).
 - Bare areas in the impact zone would be seeded with a native seed mixture comprised of Roemer's fescue, California brome (*Bromus carinatus*), and native bent grass
- Remove, or reduce shading from apple and Douglas fir trees that occur in the right-of-way, do not remove oak trees. Prior to tree removal contact landowner and discuss options (limbing vs. total removal).

GVA 1 (Appendix F Sheet 11)

Site Overview

GVA-1 is comprised of the county road right-of-way on the east side of Gopher Valley Road from the road junction of Dupee Valley Road north about a quarter mile. Except at the road junction, this roadside extends from the ditch about 2-4 feet to the fence line on the adjacent private property. At the road junction with Dupee Valley Road native prairie extends from the ditch about 10-30 feet to the fence line. Large patches of Kincaid's lupine are found throughout this area and large numbers of Fender's blue butterflies have occupied this habitat in the past. This particular area is a good site for mitigation. Other native plants in this area include Roemer's fescue, California oatgrass, wild strawberry, Oregon sunshine, wild iris, graceful cinquefoil, and mariposa lily. Conifer trees and woody brush have overgrown most of this habitat at the road junction over the past 10 years. While the lupine is continuing to persist under the trees, very few Fender's blue butterflies have been seen at this site over the past few years because of the tree shading. There are also dense patches of bracken fern that are overgrowing the lupine patches.

North of the road junction with Dupee Valley Road, a narrow zone of Kincaid's lupine is found along about 2-3 feet of the roadside on a steep embankment between the ditch and the fence line. Although the lupine is persisting in this area, all of this area has been overgrown with dense stands of woody brush for many years, and no Fender's blue butterflies have been observed using these overgrown lupine plants.

Concepts

- Trees and woody brush would be cut and removed up to the fence line between August 15 and October 15 after the lupine has become dormant. The stumps of larger trees and bushes should be topically treated with the herbicide Garlon to kill the roots and prevent re-sprouting.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in late June or early July. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- Late season mowing (late-summer/fall) and brushing for control of invasive species.
 - Once woody vegetation and bracken fern have been removed from the site mowing may only be required every three years.
- County would clear the intersection for road sight distance following the avoidance and minimization measures identified in the HCP (Section 6).

GVA 2 (Appendix F Sheet 11)

Site Overview

GVA-2 is comprised of both county roadside habitat on both the east and west sides of Gopher Valley Road and the adjacent prairie habitat on the Yamhill Oaks Preserve of The Nature Conservancy. The roadside habitat extends for about a quarter mile along this section of the road, and includes relatively high quality native prairie in a strip about 3-10 feet wide from the ditch to the fence line. Large patches of Kincaid's lupine are present in this strip that support large numbers of Fender's blue butterflies. Other native plants include tall desert parsley, cream-colored pea, American vetch, toad-flax, mariposa lily, Oregon sunshine, wild iris, Roemer's fescue, California oatgrass, graceful cinquefoil, wild strawberry, and rose checkermallow. While most of the habitat is in pretty good condition as of the 2013 field season, there are patches of woody brush, exotic tall oatgrass, and bracken fern. Most of the woody brush such as snowberry and poison oak is located along a relatively steep embankment on the east side of the road.

Concepts

- Install T&E SMZ sign on Agee Lane
- Woody brush would be removed with brushing equipment between August 15 and October 15 and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
- Small trees would be cut and removed between August 15 and October 15 and stumps would be treated with the herbicide to kill the roots and prevent re-sprouting.
- Spray stands of tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant - less effect to butterfly larva) in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spaying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in late June or early July. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- Late season mowing (late-summer/fall) and brushing for control of invasive species.
 - Once woody vegetation, tall oatgrass and bracken fern have been removed from the site mowing may only be required every three years.

January 2015

Beaver Creek Road (Appendix F Sheet 11)

Site Overview

Kincaid's lupine habitat exists along the upper portion of Beaver Creek Road south of Deer Creek County Park extending westward for about a half mile. As of the 2013 field season Fender's blue butterflies have not been found in this habitat, however, they should be able to colonize it as butterflies expand in future years from nearby Deer Creek park.

A strip of native prairie is found along the county road right-of-way on the south side of the road at the east end of the habitat area (Site A). This habitat extends from the ditch to the fence line on the adjacent private property for 3-4 feet. In addition to the lupine patches, other native plants include gumweed, Canada goldenrod, white aster, wild strawberry, camas lily, and Roemer's fescue. The area along the fence line on the east side of the habitat contains small trees and bushes that are shading the lupine patches, some stands of Himalayan blackberry, and patches of both tall oatgrass and bracken fern.

At the west end of Beaver Creek Road (Site B), very large patches of Kincaid's lupine are found along a steep embankment on the north side of the road, extending from the ditch for about 20-30 feet to the fence line. A high quality native prairie community is found in this strip that includes a wide diversity of native plants. In addition to the lupine, other species include Roemer's fescue, wild strawberry, Oregon sunshine, mariposa lily, prairie morning glory, rose checker-mallow, and yarrow. The site contains small trees and bushes that are shading the lupine patches, some stands of Himalayan blackberry, and patches of both tall oatgrass and bracken fern. This area, once renovated, could provide good Kincaid's lupine habitat.

Concepts Site A

- Woody brush would be removed with brushing equipment between August 15 and October 15 and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
- Remove shade trees from south side of road between August 15 and October 15, treat stumps with the Garlon to kill the roots and prevent re-sprouting.
- Himalayan blackberry, snowberry and poison oak should be sprayed with a broad-spectrum herbicide between August 15 and October 15. After the blackberry is dead, it would be removed with brushing equipment and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
- Areas left bare from blackberry removal would be examined the following growing seasons to identify what the seed bed is and, if necessary, planted in the fall.
 - Bare areas in the no impact zone would be seeded with a native prairie plant mixture, including nectar plants for Fender's blue butterfly. Plants could include Roemer's fescue, California brome (*Bromus carinatus*), native bent grass, rose checker-mallow (*Sidalcea virgata*), Oregon geranium (*Geranium oregonum*), Oregon sunshine (*Eriophyllum lanatum*), wild iris (*Iris tenax*), white forget-me-not (*Oxyptantha intermedia*), narrowleaf onion (*Allium amplexans*), and cats-ears (*Calochortus tolmiei*).
 - Bare areas in the impact zone would be seeded with a native seed mixture comprised of Roemer's fescue, California brome (*Bromus carinatus*), and native bent grass

- Spray stands of tall oatgrass stands twice, two weeks apart, with a grass-specific herbicide (Newfilm is the preferred surfactant - less effect to butterfly larva) in late March through April. Due to the threat posed by the tall oatgrass to the lupine and butterfly, all areas at the site that are overgrown with oatgrass, including those areas containing lupine, will be sprayed. To reduce effect to Fender's blue butterfly the area containing lupine will be identified, marked, divided into quadrants and 25% of the area will be sprayed per year. First year spaying will focus on the lowest quality habitat. USFWS will visit the site prior to spraying to approve the location.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in June. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- Late season mowing (late-summer/fall) and brushing for control of invasive species.
 - Once woody vegetation, blackberry, tall oatgrass, and bracken fern have been removed from the site mowing may only be required every three years.

Concepts Site B

- **North Side of Road**
 - Remove shade trees from south side of road between August 15 and October 15, treat stumps with the Garlon to kill the roots and prevent re-sprouting.
 - Woody brush would be removed with brushing equipment between August 15 and October 15 and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
 - Himalayan blackberry, snowberry and poison oak should be sprayed with a broad-spectrum herbicide between August 15 and October 15. After the blackberry is dead, it would be removed with brushing equipment and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
 - Areas left bare from blackberry removal would be examined the following growing seasons to identify what the seed bed is and, if necessary, planted in the fall.
 - Bare areas in the no impact zone would be seeded with a native prairie plant mixture, including nectar plants for Fender's blue butterfly. Plants could include Roemer's fescue, California brome (*Bromus carinatus*), native bent grass, rose checker-mallow (*Sidalcea virgata*), Oregon geranium (*Geranium oregonum*), Oregon sunshine (*Eriophyllum lanatum*), wild iris (*Iris tenax*), white forget-me-not (*Oxyptantha intermedia*), narrowleaf onion (*Allium amplexans*), and cats-ears (*Calochortus tolmiei*).
 - Bare areas in the impact zone would be seeded with a native seed mixture comprised of Roemer's fescue, California brome (*Bromus carinatus*), and native bent grass
 - For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in June. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- **South Side of Road**
 - Late season mowing (late-summer/fall) and brushing for control of invasive species.

GVA 5 (Deer Creek Park) (Appendix F Sheet 11)

Site Overview

While most of the park consists of low wetland and forest habitat near the creek, a small area of native prairie with Kincaid's lupine is found on a low hill at the southwest end of the park adjacent to the fence line. This prairie has a rich diversity of native plants including large patches of Kincaid's lupine. Other species include Roemer's fescue, camas lily, mariposa lily, red columbine, cream-colored pea, America vetch, wild strawberry, rose checker-mallow, white aster, Oregon sunshine, and mules' ear. This area of native prairie covers about 1 acre. An additional 2 acres could be improved and restored by planting Kincaid's lupine and other native prairie species. Habitat enhancement and restoration of about 1 acre would be used for mitigation purposes as described in the HCP. In recent years, the Kincaid's lupine has been observed to be spreading naturally over larger areas of habitat, both from underground growth of rhizomes and from some apparent natural seeding. Even though only small numbers of Fender's blue butterflies have occupied GVA-5 in the past, there is excellent potential for greatly increasing the size of the butterfly population at this site in the future if Kincaid's lupine is encouraged to spread over another one to two acres of potential habitat through ongoing management.

Along the fence line trees and brush are shading lupine, in addition there are patches of Scotch broom brush, Himalayan blackberry, and bracken fern. Tall oatgrass is not present at this site, but considerable exotic tall fescue grass is severely degrading portions of the habitat as of the 2013 field season.

Concepts

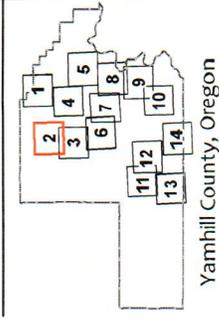
- Woody brush, including Scotch broom brush, would be removed with brushing equipment between August 15 and October 15 and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
- Remove trees on upper knoll along fence line between August 15 and October 15 and stumps would be treated with the herbicide Garlon to kill the roots and prevent re-sprouting.
- Girdle or top large Fir between August 15 and October 15, coordinate with adjacent property owners.
- Himalayan blackberry should be sprayed with a broad-spectrum herbicide in September or October. After the blackberry is dead, it would be removed with brushing equipment and removed from the site in a manner that would cause the least amount of disturbance to the protected habitat. The brush would be disposed of at a permitted dumpsite.
- Spray stands of exotic tall fescue grass, including lower slope, with a broad-spectrum herbicide in September or October after the native vegetation has become dormant. In addition, any green grass evident in the fall or winter should be sprayed during warm sunny days in December and January.
 - Areas left bare from blackberry and tall fescue grass removal would be examined the following growing seasons to identify what the seed bed is and, if necessary, planted with a native prairie plant mixture, including nectar plants for Fender's blue butterfly. Plants could include Roemer's fescue, California brome (*Bromus carinatus*), native bent grass, rose checker-mallow (*Sidalcea virgata*), Oregon geranium (*Geranium oregonum*), Oregon sunshine (*Eriophyllum lanatum*), wild iris (*Iris tenax*), white forget-me-not (*Oxyptantha intermedia*), narrowleaf onion (*Allium amplexans*), and cats-ears (*Calochortus tolmiei*).

- Kincaid's lupine should be planted using seeds, not plants. Ideally would collect seeds from lupine present at this site and use for seeding new area.
- For removal of bracken ferns, crews would hand pull fern fronds from patches of Kincaid's lupine in late June or early July. Bracken fern greater than two feet from lupine clumps would be removed using a hand weed-eater during the same timeframe.
- Late season mowing (late-summer/fall) and brushing for control of invasive species.
 - Work with Yamhill County Parks for site mowing.
 - Once woody vegetation, blackberry, tall fescue grass, and bracken fern have been removed from the site mowing may only be required every three years.

Site Maps

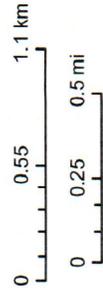
Appendix F
Sheet 2

Special
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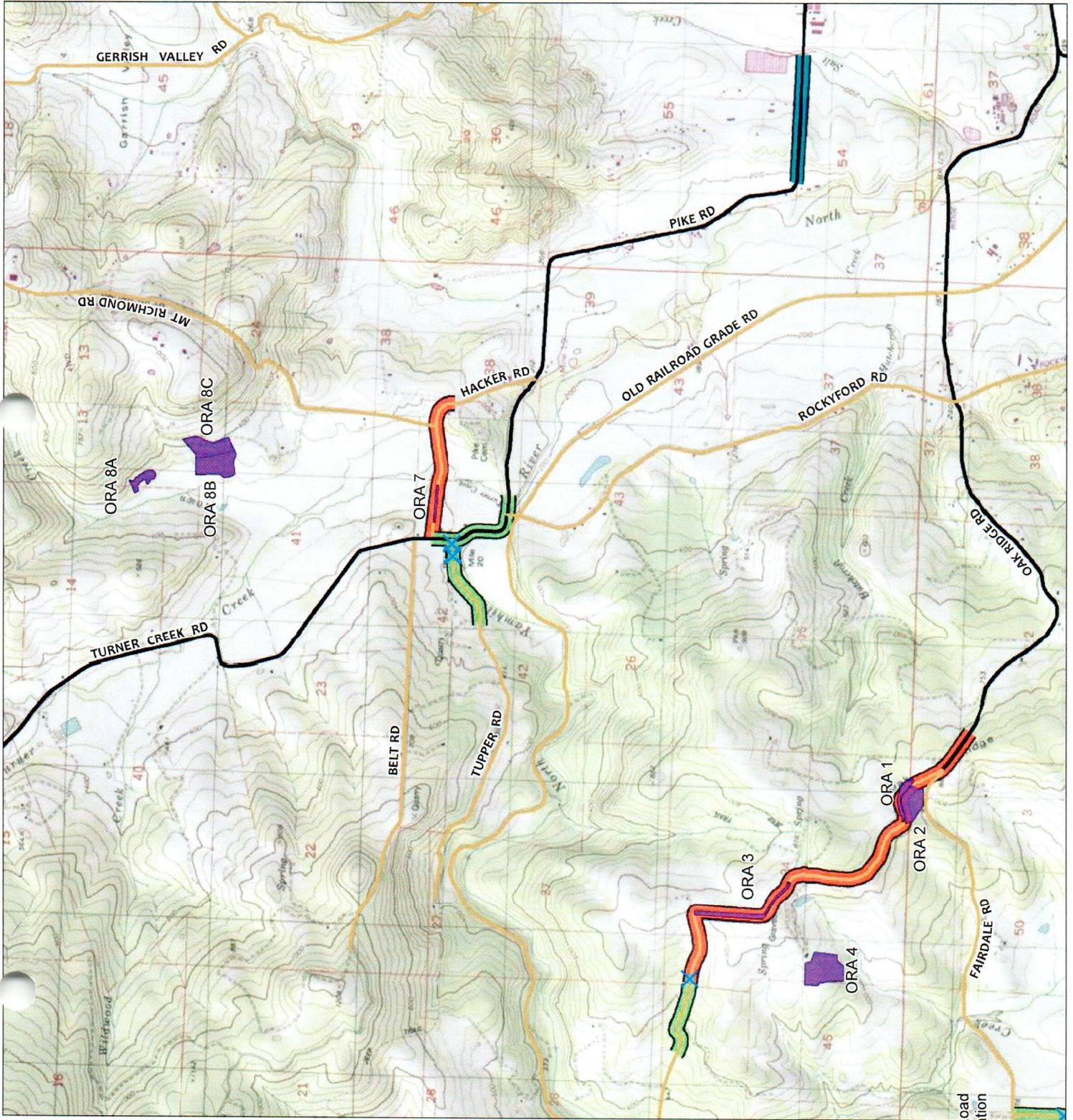


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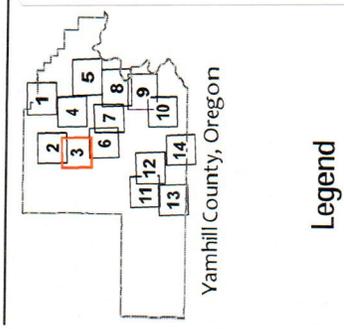
-  Surveyed Kincaid's Lupine Locations
-  Known Kincaid's Lupine Site
-  Known Fender's Blue Butterfly Sites
-  T & E Special Maintenance Zone Roads (established)
-  T & E Special Maintenance Zone Roads (new)
-  Vineyard Special Maintenance Zone Roads
-  County Roads
-  County Gravel Road
-  County Paved Road



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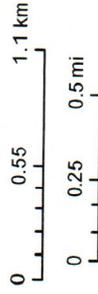


**Special
Maintenance Zones**

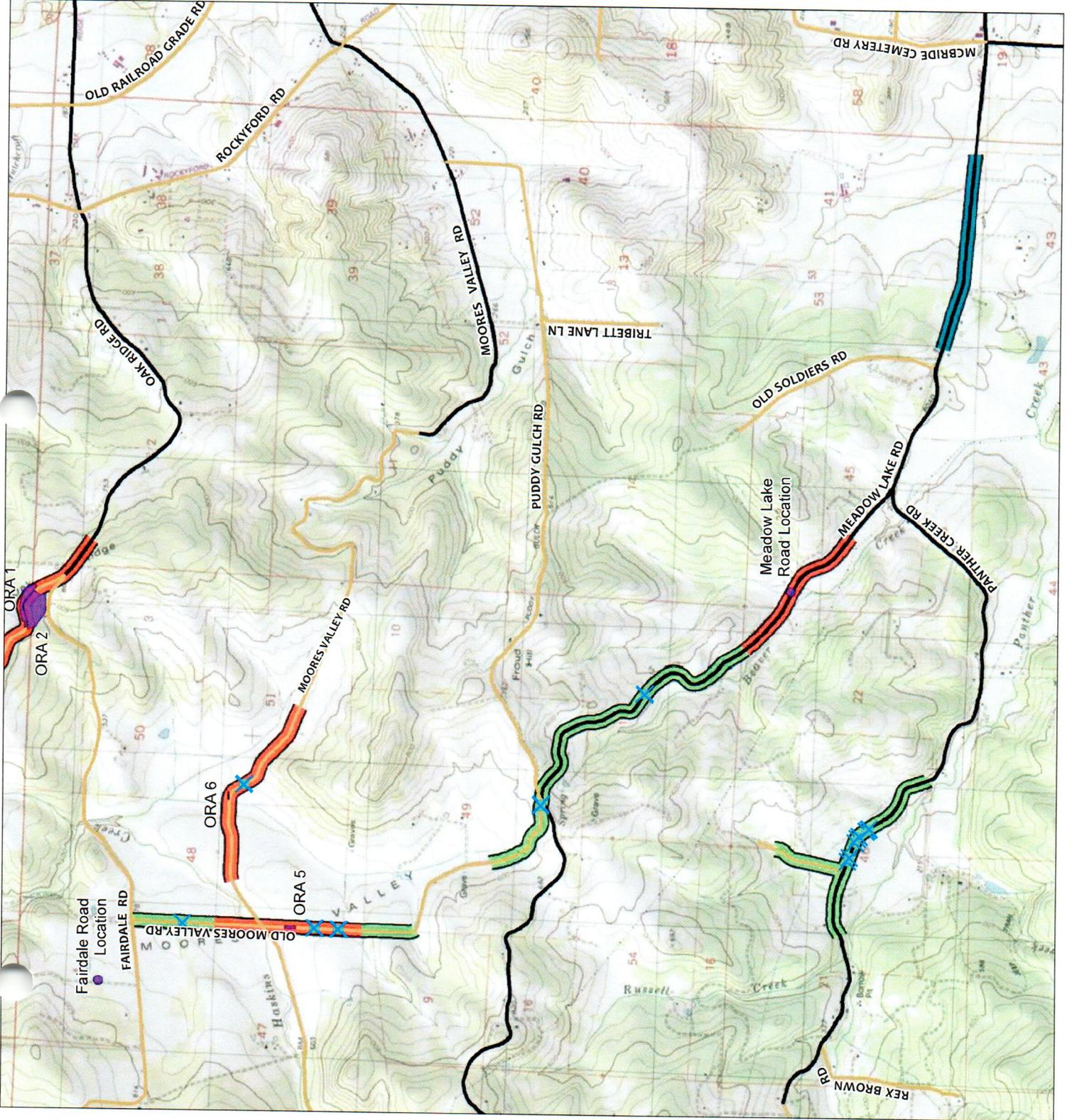


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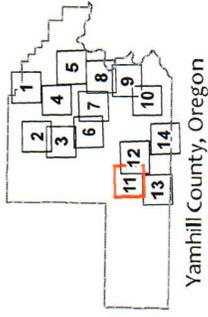
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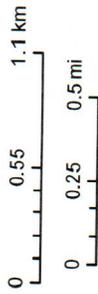


Special Maintenance Zones

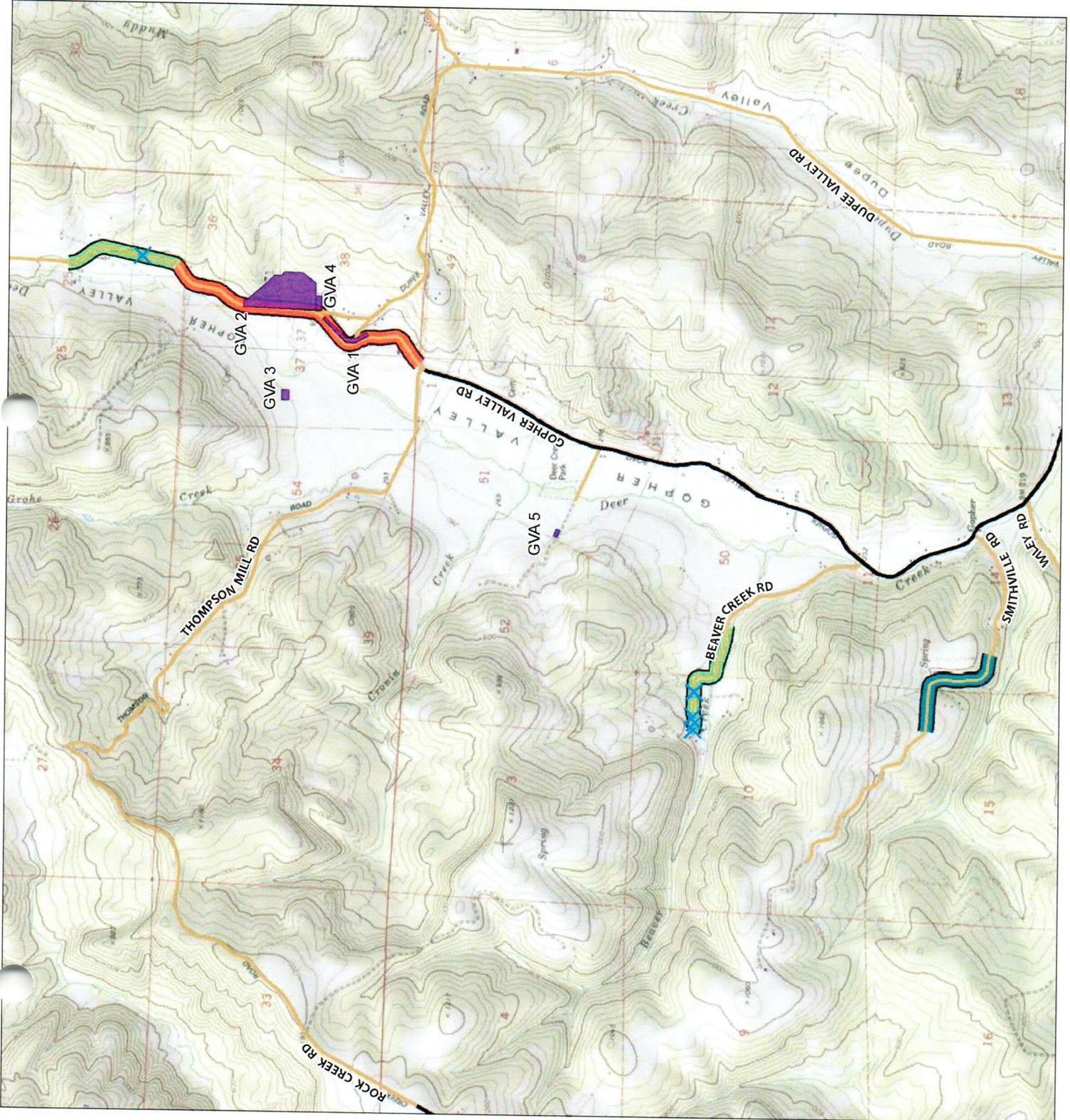


Legend

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-  T & E Special Maintenance Zone Roads (new)
-  Vineyard Special Maintenance Zone Roads
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-  County Paved Road



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