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BUREAU OF LAND MANAGEMENT
Prineville District Office
3050 NE Third St
Prineville, OR 97754
ENVIRONMENTAL ASSESSMENT
Brown Road, Razorback, and Hancock Complex Post-Fire Herbicide EA

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U.S. Department of the Interior
Bureau of Land Management
Prineville District
3050 NE Third Street, Prineville OR 97754

2012

This environmental assessment (EA) analyzes the environmental consequences of a proposed action and no action. If the impacts do not exceed those already analyzed in the 2010 Vegetation Treatments Using Herbicides on BLM Lands in Oregon Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), 1986 FEIS for the Two Rivers Resource Management Plan (RMP) and the 2000 FEIS for the John Day River Management Plan, the BLM may issue a Finding of No Significant Impact (FONSI). "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. The EA and FONSI may be followed by a decision record (with public appeal period) and implementation of the project.

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1.0 INTRODUCTION

1.1 Proposed Action

The BLM proposes to apply the herbicide imazapic by aerial and ground-based methods to populations of the noxious weed Medusahead rye (*Taeniatherum caput-medusae*), and the invasive non-native weeds cheatgrass (*Bromus tectorum*), and North Africa grass (*Ventenata dubia (Leers.) Coss)* on BLM administered lands affected by the Brown Road, Razorback, and Hancock Complex fires (Map 1, Appendix A). Ground based and aerial methods would be used to apply imazapic, at a rate of 0.0313 – 0.0469 pounds of active ingredient (a.i.) per acre per year. These timeframes and methods of application are based on Project Design Features (PDFs) discussed further in Chapter 2.

The proposed action is set within the context of a comprehensive post-fire emergency stabilization and rehabilitation plan. Actions that are already taking place in the project area are drill and aerial seeding of native and non-invasive perennial grasses and forbs; grazing rest and deferment; fence and sign replacement; camouflaging of cultural sites; and application of glyphosate, 2, 4-D, dicamba, and picloram to control Medusahead rye and broadleaf noxious weeds such as thistles. Glyphosate can be used to control Medusahead rye under the existing Prineville District Integrated Weed Management Plan (USDI 1994); however, it does not reduce the seedbank and is non-selective, thereby removing native shrubs and forbs needed to revegetate proposed treatment areas (USDI 2010). Cheatgrass and North Africa grass are invasive weeds that are not included on any county, state, or federal noxious weed list, and therefore could not be treated using glyphosate under the existing Prineville District Integrated Weed Management Plan (USDI 1994). This was due to a 1984 U.S. District Court injunction issued in Northwest Coalition for Alternatives to Pesticides, et al. v. Block, et al (Civ. No. 82-6273-E) which only allowed for the use of glyphosate, 2, 4-D, dicamba and picloram to control officially listed noxious weeds.

Due to the court injunction imazapic has not previously been approved for use by the Prineville BLM District, however, the Record of Decision (ROD) for the 2010 Vegetation Treatments Using Herbicides on BLM Lands in Oregon Programmatic Final Environmental Impact Statement (OR PFEIS) allows for the use of the herbicide by Oregon BLM Districts pending site-specific analysis. The OR PFEIS analyzed 14 herbicides for use west of the Cascades, and 17 herbicides available east of the Cascades, for a variety of vegetation management purposes. Site-specific analysis for the application of the herbicide imazapic to control post-fire populations of the noxious and invasive grasses Medusahead rye, cheatgrass, and North Africa grass in the Brown Road, Razorback, and Hancock Complex fires, is presented here.

1.2 Need for the Action

Post-wildfire conditions from the Brown Road, Razorback, and Hancock Complex present potential for noxious and invasive non-native annual grass expansion. Much of the land burned is at risk of becoming or is already infested with Medusahead rye (*Taeniatherum caput-medusae*), cheatgrass (*Bromus tectorum*) and North Africa grass (*Ventenata dubia (Leers.) Coss*). Wildfires increase the potential for the expansion of these weeds and the conversion of rangelands to permanent non-native invasive annual grasses (Quigley and Arbelbide 1997, Menakis et al 2003) which reduces suitable wildlife habitat (Bodurtha et al 1989) and increases the risk of additional fires (Evans 1967). Perennial grasslands and sagebrush steppe historically characterized vegetation found on BLM lands burned by these fires. Increased fire frequency in the presence of monocultures of cool season annual grasses reduces the percentage of composition of native vegetation and suitable forage availability for wildlife (Bodurtha et al 1989).

There is a need to control noxious and invasive non-native annual grasses with the herbicide imazapic to protect and/or rehabilitate native and desirable non-native perennial vegetation on BLM lands. Currently, under the 1994 Prineville District Integrated Weed Management Plan Decision Record, and as result of the1984 U.S. District Court injunction issued in Northwest Coalition for Alternatives to Pesticides, et al. v. Block, et al (Civ. No. 82-6273-E), the Prineville District only has four herbicides available for use in the treatment of noxious weeds: glyphosate, 2, 4-D, dicamba and picloram. Of the three different species of problematic annual grasses populating the project area, only Medusahead rye could be controlled using glyphosate. The application of glyphosate is limited to ground based application methods due to the broad spectrum of its effects (USDI 1994). The inaccessibility of portions of the project area, and restriction of glyphosate application to ground based application methods limits the Prineville BLM District's ability to control even Medusahead rye. Medusahead rye, cheatgrass and North Africa grass cannot be effectively treated using non-herbicide methods such as hand pulling or mowing given the spatial extent of infestation (USDI 2010) and limitations in access to proposed treatment areas via ground-based transportation. Cultural practices such as tilling are not possible due to lack of roads, topography and biological control agents are not approved for use by the BLM for the control of these species. Due to the limitations in the Prineville BLM District's currently approved methods to control noxious weeds and other invasive non-native annual grasses in the project area, there is a need to consider an alternative means of controlling them.

1.3 Purpose of the Action

The purpose of the project is to control noxious and invasive non-native annual grasses using imazapic on BLM lands within the areas burned by the Brown Road, Razorback, and Hancock Complex fires. The project is expected to move the area towards desired future conditions derived from current planning direction identified in the 1986 Two Rivers RMP, including but not limited to the following:

> "Provide forage to meet management objective numbers of the Oregon Department of Fish and Wildlife for deer and elk. Manage upland vegetation to achieve maximum wildlife habitat diversity. Manage all streams with fisheries or fisheries potential to achieve a good to excellent aquatic habitat condition." (ROD, Two Rivers RMP, p. 10)

The 2001 John Day River Management Plan, Two Rivers, John Day and Baker Resource RMP Amendments and applies specifically to the Wild & Scenic River Corridor of the John Day River within the Hancock Complex provides further guidance:

> "Control noxious weeds according to regional and local plans in conjunction with local weed control boards." (ROD, John Day River Management Plan, Two Rivers, John Day, and Baker RMP Amendments, p. x)

1.4 Scoping and issues for analysis

An issue is a point of disagreement, debate, or dispute with an action based on an anticipated effect. While many issues may be identified during scoping, only some are analyzed in the EA. The BLM analyzes issues in an EA when analysis is necessary to make a reasoned choice between alternatives, or where analysis is necessary to determine the significance of impacts. To warrant detailed analysis, the issue must also be within the scope of the analysis, be amenable to scientific analysis rather than conjecture, and not have already been decided by law, regulation, or previous decision. Significant effects are those that occur in several contexts (e.g., local and regional) and are intense (e.g., have impacts on public health or unique areas). For more information on significance, see pages 70 - 74 in the BLM NEPA Handbook H-1790-1 (USDI BLM 2008). The issues are addressed below. In many cases, input from the Confederated Tribes of the Warm Springs on issues led to the incorporation of project design features into the action alternatives.

1.4.3 Consistency with other laws, regulations and policies

The proposed action would conform to the laws, executive orders, regulations, manual direction, and policies listed below.

- Executive Order 12372, Intergovernmental Review. Coordination and consultation is ongoing with affected Tribes, Federal, and local agencies.
- Executive Order 13112, Invasive Species. To prevent the introduction of invasive species and provide for their control, and to minimize the economic, ecological and human health impacts that invasive species cause.
- 2010 Vegetation Treatments Using Herbicides on BLM Lands in Oregon ROD.

- 2007 Vegetation Treatments Using Herbicides on BLM lands in 17 Western States ROD

- Clean Water Act. All proposed treatments are in compliance with this Act (33 U.S.C. 1251 - 1376; Chapter 758; P.L. 845, June 30, 1948; 62 Stat. 1155). Long-term effects are considered beneficial to water quality.

- BLM Manuals 6330 Management of BLM Wilderness Study Areas, 6320 Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process, 9015 Integrated Weed Management, 9220 Integrated Pest Management, 1112 Safety, 9011 Chemical Pest Control, 9012 Expenditure of Rangeland Insect and Pest Control Funds, and 9220 Integrated Pest Management

- BLM Handbooks H-1742-1 Burned Area Emergency Stabilization and Rehabilitation and H-9011-1 Chemical Pest Control

- Native American Consultation

  All tribes of federally recognized American Indians have off-reservation interests, and maintain an “inherently sovereign” status that requires that land managing agencies consult with tribes on a government-to-government basis over planned actions that may affect tribal interests. Tribal interests include: traditional cultural practices, ethnohabitats, sacred sites, certain plant and animal resources, and socio-economic opportunities.

2.0 ALTERNATIVES

This chapter describes a no action alternative and one action alternative. The alternatives are summarized in Table 2.1 below.

Table 2.1

Action	No Action Alternative		Proposed Action	
Noxious weeds and invasive treated with imazapic?	No		Yes	
Species treated with imazapic	None		Medusahead rye (*Taeniatherum caput-medusae*) cheatgrass (*Bromus tectorum*) North Africa grass (*Ventenata dubia (Leers.) Coss*))	
Aerial application of imazapic allowed?	No		Yes	
Projected Treatment Acres[1]	Year	Noxious Weeds and Non-Native Invasive Annuals Treated with Imazapic Within Project Area (Acres)	Year	Noxious Weeds and Non-Native Invasive Annuals Treated with Imazapic Within Project Area (Acres)
	2012	0	2012[2]	10,459

The number of acres treated annually under each alternative (2.1 and 2.2) would be based on the assumption that funding levels would be similar regardless of alternative. Acres treated annually would range from 0-10,459 (USDI 2010) depending on post-fire weed spread over ten years throughout the project area, funding, weather, and the effectiveness of imazapic treatments in removing existing populations of targeted noxious and non-native weeds.

2.1 No Action

Under the no action alternative, imazapic would not be applied to control noxious and invasive non-native annual grasses on BLM administered lands within the Brown Road, Razorback, and Hancock Complex fire areas.

2.2 Proposed Action

Under this alternative, the herbicide imazapic would be applied to populations of the noxious weed Medusahead rye (*Taeniatherum caput-medusae*), and the invasive non-native grasses

[1] Migration of weeds from untreated buffers into proposed treatment areas beyond 2017 is projected to result in 10-20 acres of maintenance treatment annually, given funding and appropriate environmental conditions.
[2] See Maps 2-4 in Appendix A for 2012 proposed treatment areas.

cheatgrass (*Bromus tectorum*), and North Africa grass (*Ventenata dubia (Leers.) Coss*) located within 32,714 acres of BLM administered lands affected by the Brown Road, Razorback, and Hancock Complex fires (Map 1, Appendix A). Ground based and aerial methods would be used to apply imazapic at a rate of 0.0313 – 0.0469 pounds of active ingredient (a.i.) per acre per year to on up to 10,459 acres within the 32,714 acre proposed project area.

Imazapic is an acetolactate synthase (ALS)-inhibitor, and is particularly effective against invasive annual grasses such as cheatgrass and Medusahead rye (USDI 2010). At the application rates proposed, it is selective for these grasses, leaving the perennial herbaceous species critical for restoration (USDI 2010). The BLM does not currently have other effective methods of treating these fire-prone invasive annual grasses in rangeland environments (USDI 2010).

While the first treatment areas and applications methods are described below, later treatment areas and application methods would be determined by annually monitoring the spread of populations of Medusahead rye, cheatgrass, and North Africa grass to determine treatment efficacy. Due to migration of weeds from untreated buffers into proposed treatment areas and dynamic environmental conditions in the rangeland environment affecting plant community composition, relying strictly on the current mapping of weed populations to design future treatments of imazapic in the treatment area would result in ineffective and inefficient treatments.

During the first year of implementation, aerial and ground-based application of imazapic would occur on 206 acres of BLM land in the Brown Road Fire (Map 2, Appendix A), 3,509 acres of BLM land in the Razorback Fire (Map 3, Appendix A), and 6,744 acres of BLM land in the Hancock Complex Fires (Map 4, Appendix A), focused in areas where aerial and drill seeding has been or will be implemented. Acres and locations of aerial ground-based treatments are identified on Maps 2-4 (Appendix A). Subsequent methods and applications within the proposed treatment area would be determined by results of implementation and effectiveness monitoring.

2.3 Alternatives Considered But Eliminated From Detailed Analysis

Alternatives considered but eliminated from detailed analysis include targeted grazing, biological control, and hand-pulling.

Targeted grazing was eliminated from detailed analysis because Medusahead rye has minimal forage value and is unpalatable to livestock (Blank et al 1992); North Africa grass has minimal forage value (Schenoist et al 2008); and the effectiveness of targeted grazing in controlling cheatgrass has not been definitively established (Emmerich et al 1996), is ineffective unless precipitation exceeds 14 inches annually (Sanders 1994) and is considered more appropriate to protection of existing perennial plants from fire than to rehabilitating perennial plant communities

post-fire (Mosley 1996). The proposed treatment area receives 5-15 inches of precipitation annually (USDI/USGS 2005), and less than 12 inches of annual precipitation renders targeted grazing ineffective as a stand-alone method of control for cheatgrass (Sanders 1994).

Research is currently underway to identify and evaluate biological control agents for Medusahead rye and cheatgrass; however, none are currently approved for use on BLM administered lands. No biological control is being researched or is known for the control of North Africa grass.

While hand-pulling and mowing could be considered an effective means of controlling small localized populations of all three species if implemented during very specific windows of phenological development, it would be logistically impossible to cover the entire 32,714 acre proposed treatment area, much of which is inaccessible by ground-based means of transportation (Appendix A). Manual treatments of any kind are labor intensive and usually only practical on small areas (USDI 2010).

While these methods were given consideration, they were not analyzed in detail because they do not meet the project's purpose and need.

2.4 Conformance with land use plans

The proposed action is in conformance with the ***Two Rivers Resource Management Plan (1986):***

> "Provide forage to meet management objective numbers of the Oregon Department of Fish and Wildlife for deer and elk. Manage upland vegetation to achieve maximum wildlife habitat diversity. Manage all streams with fisheries or fisheries potential to achieve a good to excellent aquatic habitat condition." (p. 10)

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 Introduction

The affected environment describes the present condition and trend of issue-related elements of the human environment that may be affected by implementing the proposed action or an alternative. It describes past and ongoing actions that contribute to present conditions, and provides a baseline for analyzing cumulative effects.

The effects are the known and predicted effects from implementation of the actions, limited to the identified issues. Direct effects are those caused by the action and occurring at the same time and place. Indirect effects are those caused by the action but occurring later or in a different location. Cumulative effects result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The cumulative effects analysis includes other BLM actions, other Federal actions, and non-Federal (including private) actions. Reasonably foreseeable future actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends.

3.1.1 Tiering

This EA is tiered to and incorporates by reference the those portions of the 2010 Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS which are germane to this project and are summarized in this paragraph. The environmental effects to noxious weeds, invasive annual grasses, and native and non-invasive vegetation from the application of imazapic, were analyzed in the FEIS and ROD (USDI 2010 pgs. 57-81, 131-151). In summary, the Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS found that: Imazapic was determined to be the most effective method for controlling invasive annual grasses; possess no risk to terrestrial, aquatic, and special status plants from wind erosion, surface runoff, or off-site drift; and possess a low risk to terrestrial, aquatic, and special status plants from direct spray when applied at the proposed rate of 0.0313 – 0.0469 pounds of active ingredient (a.i.) per acre per year. The environmental effects to firefighter safety were not specifically analyzed in the Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS, however, the affected environment and environmental effects of treatment with imazapic on fuels and fire (USDI 2010 pgs. 273-282) are further analyzed in this EA.

3.1.2 Issues considered in detail

The following issues were raised by the tribes, or by BLM staff, and are considered in detail in this EA.

- **What would be the effects to native and non-invasive vegetation, and noxious and invasive annual grasses, from the application of imazapic?**

- **How would firefighter safety be affected by the alternatives?**

3.1.3 Issues considered but eliminated from detailed analysis

While a number of other issues were raised during the scoping period, not all of them warranted detailed analysis to make a reasoned choice between alternatives or to determine the significance of impacts. The following issues were considered but not analyzed due to a lack of associated potentially significant impacts.

What would be the effects of the application of imazapic to visual resources?
This issue was considered but eliminated because the existing condition of visual resources affected by wildfire will not be potentially worsened or impacted by the proposed application of imazapic.

How would the application of imazapic affect the sensitive species Tygh Valley milk vetch (*Astragalus tyghensis*)? This issue was considered but eliminated because imazapic would not be applied using fixed-wing aircraft within 300 feet or by ground-based application methods within 25 feet of Tygh Valley milk vetch (*Astragalus tyghensis*) populations as per the vegetation project design features (USDI 2010, Table 3.2).

What would be the effect of applying imazapic on biological soil crusts?
There is no research or evidence of potentially significant effects of the application of imazapic to microbial soil crusts (USDI 2010).[3] Annual grasslands generally have no biological soil crusts due to the frequency of fire (Belnap 2003, Hilty et al. 2004, Housman et al. 2006). The potentially significant benefits of restoring native and non-invasive vegetation and associated biological soil crusts, and potentially significant effects of application of imazapic to post-fire populations of biological soil crusts were considered but eliminated due to the degradation of imazapic is via microbial action, and a half-life in soil ranging from 31 to 233 days depending upon soil characteristics and environmental conditions (American Cyanamid 2000, Tu et al 2001).

What would be the effect of applying imazapic on domestic water sources?

[3] Various studies have been done on individual algae species present in soil crusts; however, only a handful of the studies focused on herbicides that the BLM is proposing, and of those, results were variable. Positive, neutral, and negative effects were attributed to 2,4-D; positive and negative effects were attributed to diuron and diquat; neutral and negative effects were attributed to picloram; negative effects were attributed to bromacil; and, positive effects were attributed to 2,4-D + picloram (Metting 1981). Metting cites several authors who caution against extrapolating this information to the field.

There would be no potentially significant effects to domestic water sources from the application of imazapic because there are no known municipal water sources within 15 miles of the project area, and imazapic would not be applied within 100 feet of domestic wells (USDI 2010, Table 2.2).

What would be the effect to riparian[4] vegetation from applying imazapic on riparian areas?

Imazapic would not be applied within 25 feet of riparian areas (USDI 2010), thus there would be no potentially significant effects to riparian vegetation (Table 3.2).

What would be the effect to non-target vegetation from the application of imazapic?

There would be no potentially significant effects to non-target vegetation from the application of imazapic at the proposed rate of 0.0313 – 0.0469 pounds of active ingredient per acre per year in the fall according to the manufacturer's label (BASF 2011). At these low rates, imazapic is selective for these grasses, leaving native and non-invasive perennial herbaceous species (USDI 2010).

How would the health of those that live near the proposed treatment areas be affected from coming into contact with imazapic?

There would be no potentially significant effects to human health of adjacent residents because imazapic treatment areas would not be open to public entry for 12 hours following the application of imazapic (USDI 2010). Furthermore, there would be no potentially significant effects to the human health of adjacent residents because imazapic would not be applied aerially:

- within a ¼ mile of human residences or
- when wind speeds are above 6 miles per hour

and would not be applied using ground-based methods:

- within 100 feet of private land and human residences (Table 3.2) or
- when wind speeds are above 10 miles per hour.

How would paleontological and cultural resources be affected by the application of imazapic?

There would not be any potentially significant effects to paleontological or cultural resources from the aerial application of imazapic and any discoveries of cultural or paleontological resources during the ground-based application of imazapic would cause the application to be temporarily relocated until an assessment was completed by a cultural specialist.

What would be the effect from application of imazapic on Tribal members gathering traditional cultural plants or root crops?

[4] A riparian community is characterized by certain types of vegetation, soils, hydrology, and fauna and requires free or unbound water or conditions more moist than normally found in the area.

As mutually agreed to in tribal consultation, maps of proposed treatment areas would be provided to the Confederated Tribes of the Warm Springs Reservation of Oregon, thereby preventing potentially significant effects to Tribal members gathering of traditional plants and root crops.

How would the application of imazapic affect anadromous fishes in the Deschutes and John Day Rivers?

There would not be any potentially significant effects to anadromous fishes in the Deschutes and John Day Rivers from the application of imazapic because proposed treatment areas are more than 1,500 feet from T&E fish streams per National Marine Fisheries Service (NMFS) terms and conditions (USDI 2010).

How would raptors be affected by the application of imazapic?

There would not be any potentially significant effects to raptors because wildlife PDFs (Chapter 2) would eliminate potentially significant effects of aerial and ground-based equipment to nesting, roosting, and brood rearing raptors and eagles.

What would be the effect to Wilderness Study Areas (WSAs) and Lands with Wilderness Character (LWCs) from the application of imazapic?

The Minimum Requirements Decision Guide would be used to comply with BLM manual guidance on land use planning and management in WSA s and LWCs, and cross-country vehicle travel would not occur in WSAs, thus there would not be any potentially significant effects to WSAs or LWCs from the application of imazapic.

How would hunters and recreationists in or near proposed treatment areas be affected by the application of imazapic?

Entry into proposed treatment areas would be prohibited for 12 hours following treatment (BASF 2011), thereby preventing potentially significant effects to hunters and recreationists from the application of imazapic. The Oregon Department of Fish and Wildlife (ODFW), currently registered and previously registered boaters, and BLM-authorized hunting outfitter guides would be notified and provided maps of proposed treatment areas in advance, and extensive outreach via postings at recreations sites, kiosks, and on the internet would provide notification to hunters and recreationists of the dates, times, and locations of proposed treatments. These notifications, along with limiting application of imazapic to ground-based methods within 1500 ft. of developed recreation sites, would ensure that there would be no potentially significant effects to recreationists and hunters from the application of imazapic.

What would be the effects of livestock grazing on native and non-invasive vegetation following the application of imazapic?

There would not be any potentially significant effects to native and desirable non-native vegetation from grazing following the application of imazapic because pastures located within

proposed treatment areas would be rested and/or deferred from livestock grazing during and after the proposed treatments unless the BLM determined that reintroducing livestock grazing would not result in negative impacts to rehabilitation of native and non-invasive vegetation within the treatment areas. Allotments, pastures, affected acres, animal unit months (AUM's), and seasons of use are identified in Table 3.1.

Table 3.1 BLM Allotments and Pastures Located Within Proposed Treatment Area

Allotment	Pasture	Acres	AUM's	Season of Use
Big Muddy	Upper Warehouses	4300	29	3/1 -2/28
Big Muddy	Lower Warehouses	3100	80	3/1 -2/28
Big Muddy	Main Camp	1900	21	3/1 -2/28
Big Muddy	Holding	2200	4	3/1 -2/28
Big Muddy	Wagner Mountain	7100	223	3/1 -2/28
Black Rock	Cove Pasture	322	22	4/1 - 10/30
Cherry Creek	A	88	24	3/1 - 2/28
Catherine Maurer	River Pasture	1217	43	11/15 - 4/1
Catherine Maurer	Evans Place Pasture	1557	83	11/15 - 4/1
Catherine Maurer	Lakes Pasture	2024	97	11/15 - 4/1
Corral Canyon	Corral Canyon Pasture	1340	47	11/1 - 6/1
Spud		474	40	10/1 - 6/1
Rattray	Horse Mtn. Pasture	266	24	12/6 - 2/15
Rattray	Campbell Place Pasture	788	92	11/1 - 6/1
Rattray	Cason Canyon Pasture	541	42	6/15 - 2/28
Rattray	Armstrong Pasture	56	116	11/1 -6/1
SID SEALE	Beef Hollow Pasture	987	171	3/1 - 2/28
Criterion	Breaks	336	114	1/1 - 6/1
Criterion	Deer	108	36	1/1 - 6/1
Criterion	Post Office	1	0	1/1 - 6/1
Criterion	West Shipping	60	20	1/1 - 6/1
Criterion	Corral	27	9	1/1 - 6/1
Criterion	Devils Canyon	31	10	1/1 - 6/1
Criterion	El Toro	160	54	1/1 - 6/1
Criterion	Pond	571	193	1/1 - 6/1
Criterion	Bun	0	0	1/1 - 6/1
Criterion	Two Springs	1111	376	1/1 - 6/1
Criterion	Stag	560	190	1/1 - 6/1
Criterion		15	5	1/1 - 6/1
Green Valley Farms		87	50	11/1 - 5/1
Kaskela Ranch		120	81	3/1 - 2/28
Two Springs		13	27	3/1 - 2/28
Webb WL		243	242	4/1 - 2/28

3.1.1 Project Design Features

All treatments would include the following proposed design features (PDFs) which impose timing restrictions and buffers (Table 3.2), in addition to mitigation measures (MMs) and standard operating procedures (SOPs) outlined in the Vegetation Treatments Using Herbicides on BLM Lands in Oregon Record of Decision (Appendix B).

Paleontological and Cultural Resources PDFs

- Any new discoveries of cultural or paleontological resources by applicators briefed on basic identification during the application of imazapic would cause the application to be temporarily relocated until an assessment of the cultural or paleontological resources was performed by a cultural specialist.
- Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSR) would be provided with maps of treatment locations and application dates. Access to treatment areas would not change due to proposed herbicide treatment.

Wildlife PDFs

- No ground-based motorized vehicles, aircraft or equipment disturbance would be allowed within ½ mile line of sight or ¼ mile non-line of sight of Bald Eagle nests from January 1st to August 31st.
- No ground-based motorized vehicles, aircraft or equipment disturbance would be allowed within ½ mile line of sight or ¼ mile non-line of sight of Golden Eagle nests from February 1st to August 31st.
- No ground-based motorized vehicles, aircraft, or equipment disturbance would be allowed within ¼ mile of Bald Eagle roosts from November 1st to April 30th.
- No ground-based motorized vehicles, aircraft or equipment disturbance would be allowed within ¾ mile of Peregrine Falcons nests from February 1st thru August 31st.
- No ground-based motorized vehicles, aircraft, or equipment would be allowed within ½ mile line of sight or ¼ mile non-line of sight of any raptor nest February 1st through August 1st

Water PDFs

- No treatment would occur within a 100 feet of wells.

Human Health and Safety PDFs

- Treatment areas would not be open to public entry for 12 hours following application of imazapic.

- Imazapic would not be applied within ¼ mile of human residences aerially or within 100 feet by ground based methods.
- Imazapic would not be applied aerially at wind speeds greater than 6 miles per hour or by ground-based methods at wind speeds greater than 10 miles per hour.

Range PDFs

- After treatments, livestock grazing would not be permitted the remainder of the calendar year and through the growing season of the next year, unless the BLM determines that reintroducing livestock grazing would not result in negative impacts to native and desirable non-native perennial grasses within treatment areas, in which case grazing may be allowed to re-commence.
- Livestock grazing in treated pastures located within the project area may be deferred for a maximum of two years following treatment if the BLM determines that grazing treated pastures would result in negative impacts to rehabilitation of native and desirable non-native perennial grasses within treatment area(s).

Vegetation PDFs

- Imazapic would not be applied within 25 feet of riparian areas or identified populations of threatened, endangered, or sensitive (TES) plants (USDI 2010).
- Imazapic would only be applied by ground-based application methods within 100 feet of riparian areas, and only by helicopter or ground-based methods within 300 feet of identified populations of TES plants (USDI 2010).

Wilderness Study Area PDFs

- A minimum requirements analysis would be completed in WSAs that would have imazapic applied in them prior to the application of imazapic in the WSA.
- Cross-country vehicle travel would not occur in WSAs.

Recreation PDFs

- ODFW, currently registered and previously registered boaters, and BLM-authorized hunter outfitter guides would be notified in advance, and provided maps, of proposed treatment areas.
- Public notifications of treatment locations, dates, and times would be posted at the following locations:
    - Maupin Visitor Center,
    - Mecca Flat, Trout Creek, South Junction, Clarno and Mecca Flat recreation sites,
    - Warm Springs, Harphum Flat, & Clarno boat launches,
    - Developed trailheads at North and South Criterion,

- And on the Lower Deschutes river access road kiosk downriver from the river's junction with State Highway 216.
- Public notifications of treatment locations, dates, and times would be posted online at http://johndayboaterpermit.com/ and https://www.boaterpass.com/index.cfm.
  Only ground-based application would be allowed within 1500 feet of developed recreation sites on the Brown Road Fire

Table 3.2 Buffer Distances for Application of Imazapic[5] (USDI 2010)

Buffer Distance (feet) from Aquatic Threatened, Endangered, and Sensitive Terrestrial Plants	
Ground[6]	**25**
Aerial[5]	**300**
Buffer Distance (feet) from Threatened, Endangered, and Sensitive Aquatic Plants	
Ground[3]	**25**
Aerial[7]	**100**
Minimum Buffer Distance (feet) from Riparian Areas[8]	
Ground[3]	**25**
Aerial[5]	**100**
Minimum Buffer Distance (feet) from Private Residences	
Ground[3]	**100**
Aerial[5]	**¼ mile**

3.2 Noxious Weeds, Invasive Annual Grasses, and Native and Non-Invasive Vegetation

3.2.1 Affected Environment

The analysis area for vegetation is all BLM managed lands burned by the Brown Road, Razorback, and Hancock Complex fires of 2011, totaling 36,523 acres. Invasive annual grass infestations were determined using the existing vegetation layer from Landfire Refresh 2008 v. 1.1.0.BLM administered lands within the project areas are classified as being infested with 11,718 acres of noxious and invasive annual grasses spreading at an annual rate of 12 percent per year (USDI BLM 2010).[9] At this rate, all 36,523 acres will be infested[10] with noxious weeds and invasive annual grasses in seven years.

[5] At an application rate of 0.0313 – 0.0469 pounds of active ingredient (a.i.) per acre per year of imazapic, equivalent to 4-6 ounces per acre per year of Plateau (USDI 2010, BASF 2011)
[6] Includes high and low boom, 50 and 20 inches above the ground, respectively, as well as ATV, vehicle, and backpack application methods.
[7] Aerial application includes fixed and rotor-wing aircraft
[8] No buffers are required for either special status or non-special status fish and aquatic invertebrates, but these buffers apply by default as they apply to riparian areas.
[9] This rate of spread only accounts the noxious weed Medusahead rye, comprising the majority of the invasive annual grass component in the proposed treatment area, but can be applied to cheatgrass and North Africa grass as all three are cool-season annual grasses with similar spread rates.
[10] "Infested" means anything from a single individual to monocultures of noxious weeds, so the 11,718 acres is gross acres. Radke and Davis' (2000) examination of 21 noxious weeds in Oregon (all ownerships) suggested a gross to net ratio of about 5:1. Adverse effects to various resources described within this Chapter usually vary by the level of

Table 3.3 shows the existing vegetation types in the area that would be directly affected by the Proposed Action, as well as the entire analysis area for vegetation (vegetation analysis area). The vegetation analysis area's acres are larger than the Proposed Action's acres because the vegetation analysis area is accounting for the indirect effects, as well as the direct effects, of the Proposed Action.

Table 3.3 Vegetation in the Affected Environment

Existing Vegetation Type (EVT)[11]	Vegetation Analysis Area (2012 Acres)[12]	Proposed Action (2012 Acres)
Inter-Mountain Basins Big Sagebrush Shrubland and Steppe	13,788	12566
Columbia Plateau Steppe, Grassland and Scabland Shrubland	7,361	6596
Introduced Upland Vegetation-Annual Grassland	11,718	10,459[13]
Acres of other vegetation (each totaling less than 3% of veg. composition)	3,656	3,093
Total	36,523	32,714

Invasive plants (or weeds), including the annual grasses cheatgrass and North Africa grass, are non-native aggressive species with the potential to cause significant damage to native ecosystems and/or cause significant economic losses. Invasive plants successfully compete with native plants for light, water, soil nutrients, and space, resulting in their dominance of the plant community and the displacement of native plants and the fauna that depend on them. Invasive plants can cause profound changes to native ecosystems including changes in seral progression, habitat, nutrient cycling, water availability, soil qualities, soil productivity, and fire regimes. Ecological damage from extensive weed infestations is often permanent (Dewey 1995).

Noxious weeds, including the annual grass Medusahead rye, are a subset of invasive plants that are County, State, or Federally Listed as injurious to public health, agriculture, recreation, wildlife, or any public or private property. Noxious weeds are regulated by State and Federal laws, such as the Federal Noxious Weed Act of 1974, the Oregon noxious weed quarantine administrative rule (OAR 603-052-1200), and the Oregon Weed Control statutes (ORS 569.175 to 569.195). The quarantine rule prohibits import, transport, propagation, or sale of State listed noxious weeds and plants on the Federal Noxious Weed List (7 C.F.R. 360.200) because they are detrimental to agriculture, natural resources, and/or public health. These, destroy range and

infestation. Nevertheless, adverse effects are *proportional* to the acres expected to become infested under each alternative.

[11] 90% of EVT's in the project area are represented here

[12] Includes acres within buffers that cannot be treated under the proposed action

[13] Reflects untreated buffers that cannot be treated due to PDFs.

pasture lands, and threaten native plant communities by capitalizing on soil moisture early in the year before native plants become active, thus giving them a competitive advantage. The weed control statutes declare noxious weeds "to be a public nuisance and shall be detected, controlled and, where feasible, eradicated on all lands in this state" (ORS 569.180). Designating additional noxious weeds is a continuous process. The number of noxious weeds listed by the State of Oregon increased 40 percent between 1991 and 2001. Ecological damage from extensive noxious weed infestations is often permanent (Dewey 1995).

Medusahead rye is a winter annual that has invaded and replaced dense stands of cheatgrass, particularly in response to fire (Harper, 1992 and Meyer, 1999) over large areas in California, Idaho, Oregon, and Washington during the past 40 years (Young and Evans 1977). It increases under frequent fires at the expense of native species

Cheatgrass is a winter annual that dominates approximately 5 million acres BLM administered lands in Oregon (USDI BLM 2010). Infestations of cheatgrass have increased dramatically within the last 20 years (Mosley et al 1999), and show signs of continuing on a successional trajectory toward permanent conversion to annual grassland in the absence of restorative management.

North Africa grass is a winter annual that germinates in the fall just after cheatgrass, and is found throughout the northeastern and northwestern United States (Schenoist et al 2008). It is becoming a species of concern, particularly as it competes with perennial grasses and forbs, in addition to having little to no value as forage for either livestock or wildlife (Schenoist et al 2008) due to silica content comparable to Medusahead (Prather and Steele 2009). Where wildfires or prescribed fires have burned in Oregon, North Africa grass populations have flourished (Brummer, 2008; Mafera, 2008). In Idaho, fire suppressed North Africa grass initially, but tended to stimulate annual weedy bromes (like cheatgrass) and left an opening for more North Africa grass the following year (Lass & Prather, 2007).

Medusahead rye, cheatgrass, and North Africa grass all have characteristics that enhance their competitive advantage at the expense of native and other desirable non-native vegetation, particularly in the absence of disease, herbivory, pathogens, and insects that would otherwise control them in their native environments. Their structure and development is such that they increase post-fire, use more moisture, provide less soil protection, alter soil chemistry, produce prolific seed with efficient mechanisms of dispersal, reproduce annually, and are less palatable to wild horses and livestock than native perennial grasses (USDA 2005). Infestations of Medusahead rye, cheatgrass, and North Africa grass begin mostly on disturbed sites, such as roadsides, firebreaks or burned areas, where they grow, seed, and dry early in the summer, resulting in flashy fuels that can burn much more frequently than native sagebrush steppe species resulting in reduced survival of native species. The seeds generally survive temperatures typically produced by wildfire, so the ecosystem is rapidly converted from a

perennial bunchgrass/forb/shrub community relatively resistant to fire, to a monoculture of unpalatable annual grasses that burn regularly (USDI BLM 2010).

Native and non-invasive vegetation within the project area was calculated using data from Landfire Refresh 2008 v. 1.1.0. Of the existing vegetation within the proposed project area, 68 percent was identified as native and non-invasive vegetation, 57 percent of which is categorized as Inter-Mountain Basins Big Sagebrush Shrubland, Inter-Mountain Basins Big Sagebrush Steppe, Columbia Plateau Steppe and Grassland, and Columbia Plateau Scabland Shrubland.

3.2.2 Environmental Effects

The effects analysis assumes that the loss of native plants would be proportional to the acres projected to become infested with Medusahead rye, cheatgrass, and North Africa grass.

3.2.2.1 No Action

Under the No Action alternative, assuming an expansion rate of 12 percent (USDI 2010) affecting 11,718 acres of annual grasses (Table 3.1), 100 percent of all BLM lands in the vegetation analysis area are projected to be infested with Medusahead rye, cheatgrass, and North Africa grass within 10 years. This would result in the conversion of existing populations of native or non-invasive vegetation left in the vegetation analysis area to noxious weeds and invasive annual grasses.

3.2.2.2 Proposed Action

Treatment of the 10,459 acres of current weed populations within the proposed action would begin in the fall of 2012 and would be assumed to be 80% effective. Subsequent applications would be determined by results of implementation and effectiveness monitoring, but would not exceed 32,714 acres of application per year. New weed spread or populations that were missed or not treated in one year would be treated in subsequent years if treatment was evaluated as being at least 80% effective. By 2019, treatments under this alternative would result in 34,133 acres of native and desirable non-native vegetation. Untreated buffers consisting of 2,390 acres of invasive annual grasses would continue to spread at a rate of 12 percent per year.

Effects of the application of imazapic to noxious weeds, invasive annual grasses, and native and non-invasive vegetation were analyzed in the 2010 OR FEIS (USDI 2010 pgs. 57-81, 131-151). Risks to non-target vegetation from the application of imazapic were determined to be low from direct spraying. No risk was determined to be associated with surface runoff, wind erosion, and off-site drift. Imazapic was determined to be the most effective method of control for invasive annual grasses such as Medusahead rye and cheatgrass (USDI 2010).

Table 3.4 Vegetation Composition for Each Alternative in 2019[14]

Existing Vegetation Type	No Action	Proposed Action
Inter-Mountain Basins Big Sagebrush Shrubland and Steppe (acres)	0	14,024
Columbia Plateau Steppe, Grassland and Scabland Shrubland (acres)	0	16,453
Introduced Upland Vegetation-Annual Grassland (acres)	36,523	2,390
Acres of other vegetation (each totaling less than 3% of veg. composition)	0	3,656
Total	**36,523**	**36,523**

3.3 Firefighter Safety

3.3.1 Affected Environment

The condition and type of vegetation, considered as a fuel, influences fire frequency, size, and firefighter exposure to risk. Expansion of annual grasses has dramatically changed fire regimes and plant communities over vast areas of western rangelands by creating an environment where, relative to native plant communities found in sagebrush steppe, fires ignite more easily, exhibit higher rates of spread, cover larger spatial extents, and occur more frequently (Young and Evans 1978, Knapp 1998). Because the annual grass/wildfire cycle is driven by positive feedback, these areas are also likely to experience larger and more frequent fires in the future. Recurrent fires enhance annual grass dominance because native perennial species generally cannot persist under the influence of historically uncharacteristic frequent fire. Native plant communities are thereby converted to nonnative annual grasslands. Trends in injuries resulting from firefighter exposure to hazards and risks inherent to suppression activities follow increases in fire size and frequency (Britton 2010).

Although fatalities have not been found to correlate directly to exposure or number of acres burned over a ten-year average (USDI, USDA. 2010), firefighter exposure measured in person-days (equivalent to a 13-hour day for analysis purposes) has been found to be predictive of injury occurrence (Britton 2010). Statistical analysis of injuries on extended attack fires from 2003-2007 indicates that on average, an injury occurs for every 9,848 person-hours of exposure on the fireline (Britton 2010).

3.3.2 Environmental Effects

3.3.2.1 No Action Alternative

Under the No Action alternative, an increase in the average rate of firefighter injury would follow shortened fire return intervals and increases in fire size associated with the expansion of annual

[14] Assuming annual treatment of all weed populations excluding untreated buffers

invasive grasses. Fire return intervals in annual grasses average three to five years (Peters and Bunting 1994, Whisenant 1990), with a median four year return interval used for analysis purposes (Table 3.5).

An average of 12 percent annual expansion rate is assumed for noxious weeds (USDI BLM 2010) and is applied to invasive annual grasses for comparison purposes. Since 32 percent of the pre-fire proposed treatment area is dominated by invasive annual grasses, at the rate of 12 percent expansion per year, they would expand to occupy the entire treatment area within nine years assuming the sites were susceptible and no effective treatments were conducted. Additional fires in this time period or other factors could increase the rate of spread.
Acres burned annually, based on existing populations of annual grasses, a four year fire return interval, and a 12 percent expansion rate in the absence of treatment, would increase by 4,363 acres within 10 years. As a result, the total annual hours of exposure fighting fire would increase by 5,322 hours over 10 years (Table 3.5). Given an average rate of one injury per 9,484 hours of exposure, the average number of injuries would be expected to increase by 325 percent within 10 years (Table 3.5).

Table 3.5
No Action

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Noxious Weeds and Non-native Invasive Annual Grasses Burned (Acres)[15]	2,929	3,281	3,675	4,116	4,610	5,163	5,782	6,476	7,253	8,124	9,099
Exposure in Noxious Weeds and Non-native Invasive Annual Grasses (Hours)[16]	1,638	1,835	2,055	2,301	3,437	4,311	5,389	6,035	6,759	7,571	8,479
Native and Non-Invasive Vegetation Burned (Acres)[17]	965	909	846	775	696	608	508	397	273	134	0
Exposure in Native and Non-Invasive Vegetation (Hours)	741	468	468	442	442	416	195	182	169	130	0
Total Acres Burned Annually	**3,894**	**4,190**	**4,520**	**4,891**	**5,306**	**5,770**	**6,291**	**6,874**	**7,526**	**8,257**	**9,076**
Total Annual Exposure (Hours)	**2,379**	**2,303**	**2,523**	**2,743**	**3,879**	**4,727**	**5,584**	**6,217**	**6,928**	**7,701**	**8,479**
Average Number of Injuries	**.24**	**.23**	**.26**	**.28**	**.39**	**.48**	**.57**	**.63**	**.70**	**.78**	**.86**

3.3.2.2 Proposed Action

Under the proposed action, the proposed treatment area would move the project area toward historic pre-settlement fire regimes (Table 3.6), thereby reducing fire size frequency, and firefighter exposure.

[15] Calculated from Landfire data (Rapid Refresh 2008) at 12% expansion rate (Veg PEIS October 2010), assuming a 4-year fire return interval
[16] Assuming 13 hours/day of exposure, multiplied by average number of personnel and duration relative to fire size.
[17] Assuming 25-year fire return interval

By managing and controlling noxious and invasive annual grasses, given the projected efficacy of 80 percent (USDI BLM 2010), the average acreage burned annually would be reduced by 9,867 acres (Table 3.6), thereby reducing annual firefighter exposure by 6,336 hours, or approximately 82 percent. The rate of injury would thereby be reduced by 178 percent in two years and then stay at the lowered level for at least 10 years.

Table 3.6
Proposed Action

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Noxious Weeds and Non-native Invasive Annual Grasses Burned (Acres)[18]	10,774	2,425	772	458	414	424	447	473	502	532	564
Exposure in Noxious Weeds and Non-native Invasive Annual Grasses (Hours)[19]	117	78	78	78	78	78	78	78	78	78	78
Native and Non-Invasive Vegetation Burned (Acres)[20]	965	1,297	1,360	1,370	1,369	1,366	1,362	1,309	1,309	1,309	1,309
Exposure in Native and Non-Invasive Vegetation (Hours)	975	975	975	975	975	975	975	975	975	975	975
Total Area Burned Annually (Acres)	**11,739**	**3,722**	**2,132**	**1,829**	**1,783**	**1,791**	**1,809**	**1,782**	**1,810**	**1,840**	**1,872**
Total Annual Exposure (Hours)[21]	**6,006**	**1,898**	**1,339**	**1,261**	**1,261**	**1,261**	**1,261**	**1,222**	**1,248**	**1,248**	**1,248**
Rate of Injury	**.63**	**.20**	**.14**	**.13**	**.13**	**.13**	**.13**	**.12**	**.13**	**.13**	**.13**

3.4 Cumulative Effects

A description of the current state of the environment inherently includes the effects of past actions and serves as a more accurate and useful starting point for a cumulative effects analysis, than attempting to establish such a starting point by “adding” up the described effects of individual past actions. The importance of “past actions” is to set the context for understanding the incremental effects of the proposed action. This context is determined by combining the current conditions with available information on the expected effects of other present and reasonably foreseeable future actions.

The cumulative effects of grazing and spraying on adjacent private lands is not anticipated to contribute to cumulative effects due to proposed 100 ft. no treatment buffers along private land boundaries. Infestation of proposed treatment areas is predicted to occur due to spread from

[18] Calculated from Landfire data (Rapid Refresh 2008) at 6% expansion rate (Veg PEIS October 2010) from untreated buffers into treatment areas, assuming a 4-year fire return interval.
[19] Assuming 13 hours/day of exposure, multiplied by average number of personnel and duration relative to fire size.
[20] Assuming 25-year fire return interval
[21] Increases in acres of noxious weeds and non-native invasive annual grasses burned in 2020 and beyond, and associated increase in firefighter exposure hours, represent expansion from untreated buffer areas

untreated buffers into the proposed treatment area, regardless of whether treatments on private lands occur.

3.5 Summary of effects

The following table summarizes effects over the 10-year period of analysis.

Table 3.5 Summary of Effects

Issue or Concern	No Action Alternative	Proposed Action Alternative
Vegetation		
Percent Composition of Noxious Weeds and Invasive Annual Grasses in Proposed Project Area	100 percent	6.5 percent
Percent Composition of Native and Desirable Non-native Vegetation	0 percent	93.5 percent
Firefighter Safety		
Firefighter Safety (Rate of Injury)	325 percent **increase** in rate of firefighter injury	178 percent **decrease** in rate of firefighter injury

4.0 PUBLIC AND OTHER INVOLVEMENT

4.1 Tribes, individuals, organizations, or agencies consulted

The BLM first requested input on this project in December, 2011, when it mailed scoping letters to the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) and Burns Paiute Tribe, and in January 2012 when it mailed a scoping letter to the Confederated Tribes of the Umatilla.

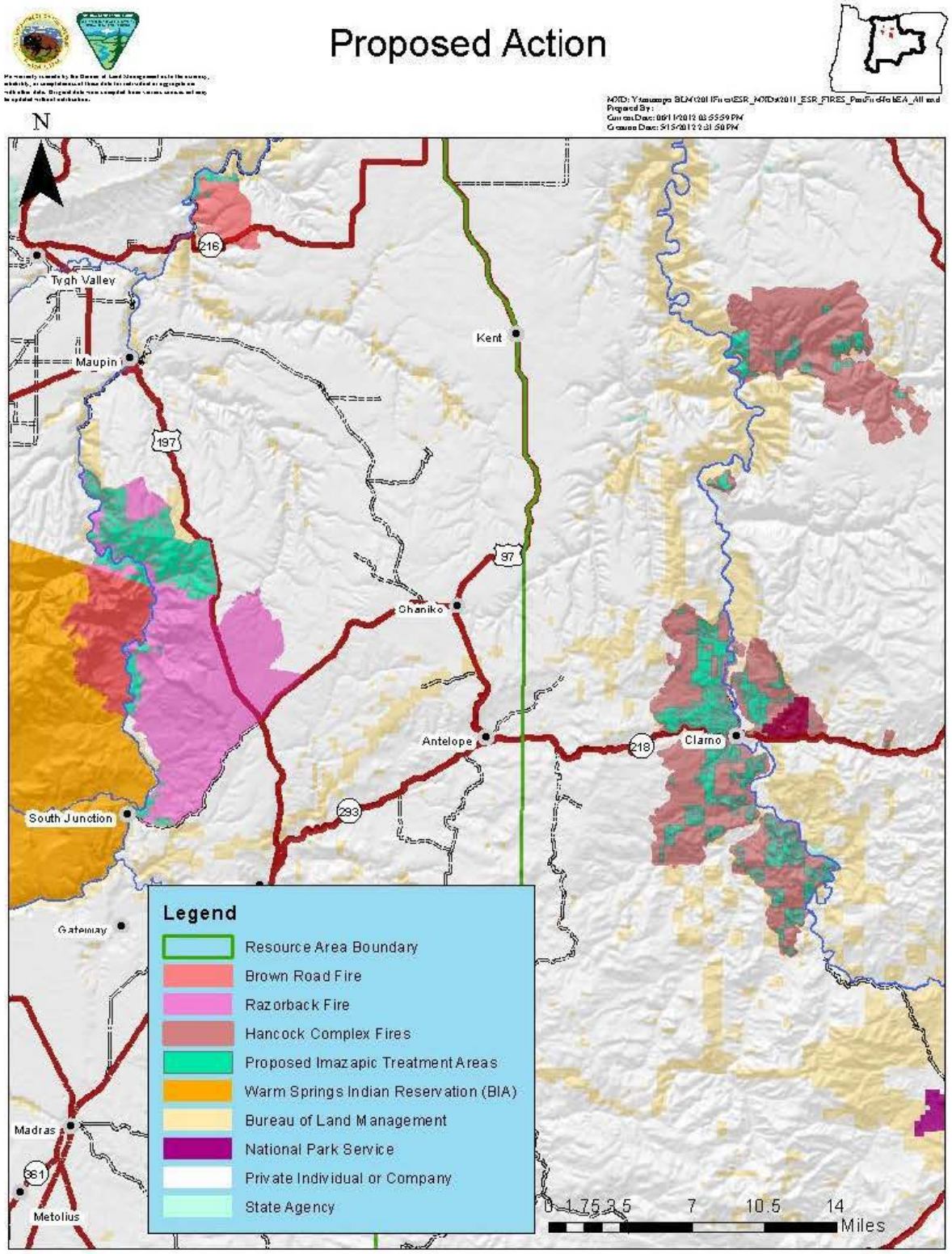
Response was received from the CTWSRO. The CTWSRO support post-fire weed management, but were concerned with timing and residual effects of the herbicide treatment, particularly in areas where traditional cultural plants may occur. Information was exchanged on the herbicide, seed list and results of weed free analysis. The BLM hosted a field trip in April 2012 with CTWSRO range and cultural specialists. A second field trip occurred in June to look at treatment areas using imazapic for control of Medusahead rye on the Reservation. Concerns were addressed by agreeing to provide herbicide treatment maps to the CTWSRO.

4.2 Preparers and reviewers

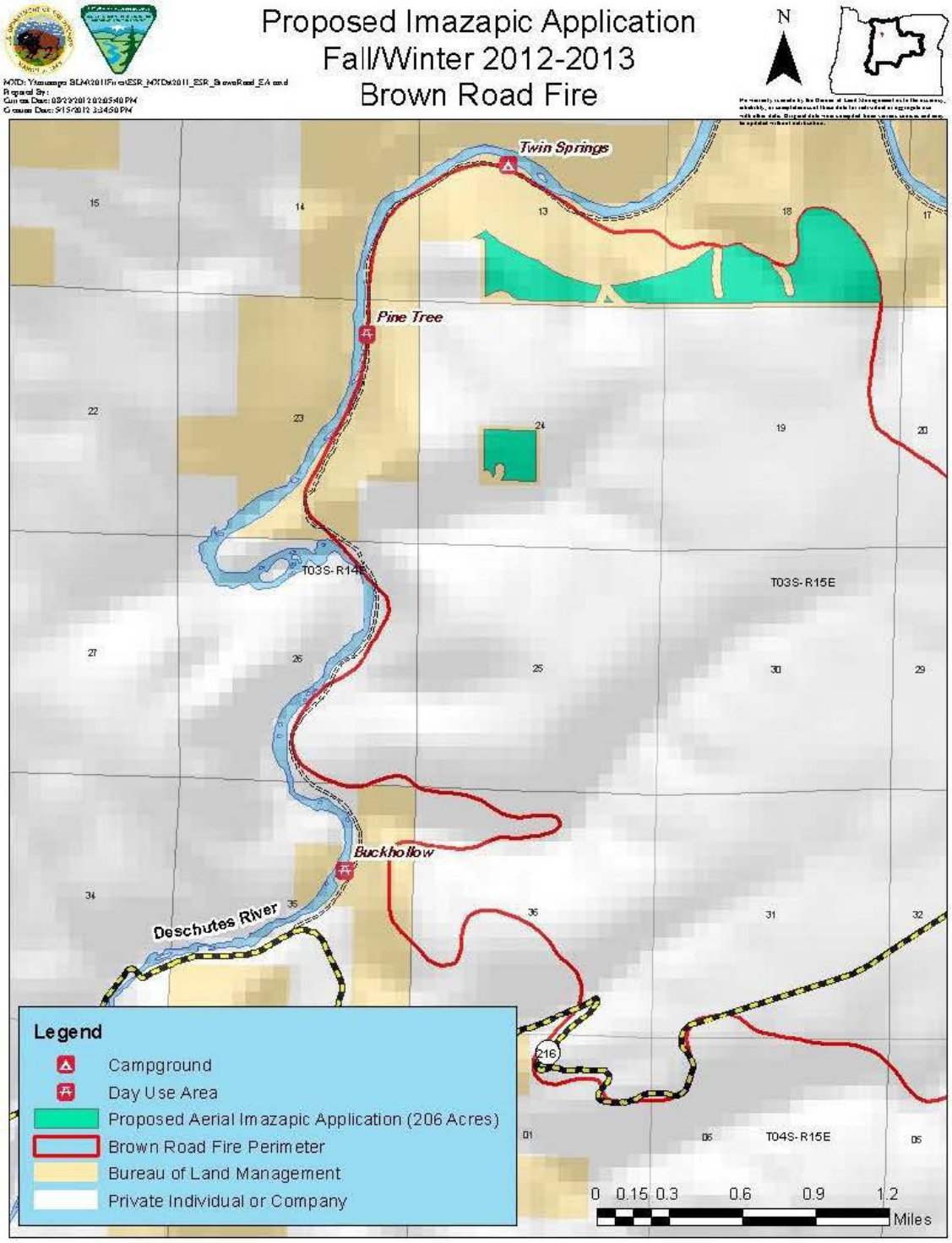
Name	Title or resource represented
Amanda Stamper	Interdisciplinary Team Leader, Writer, Editor, Fire, Fuels, and Geographic Information Systems (GIS)
Matt Shaffer	Environmental Coordinator
Sarah Canham and Kristy Swartz	Botany and Weeds
Rick Demmer	Wildlife
Jimmy Eisner	Fisheries
Justin Rodgers	Range
Theresa Holtzapple	Heritage
Richard Pastor	Hydrology
Gavin Hoban	Recreation
Molly Galbraith	Range
Craig Obermiller	Range

APPENDIX A – MAPS

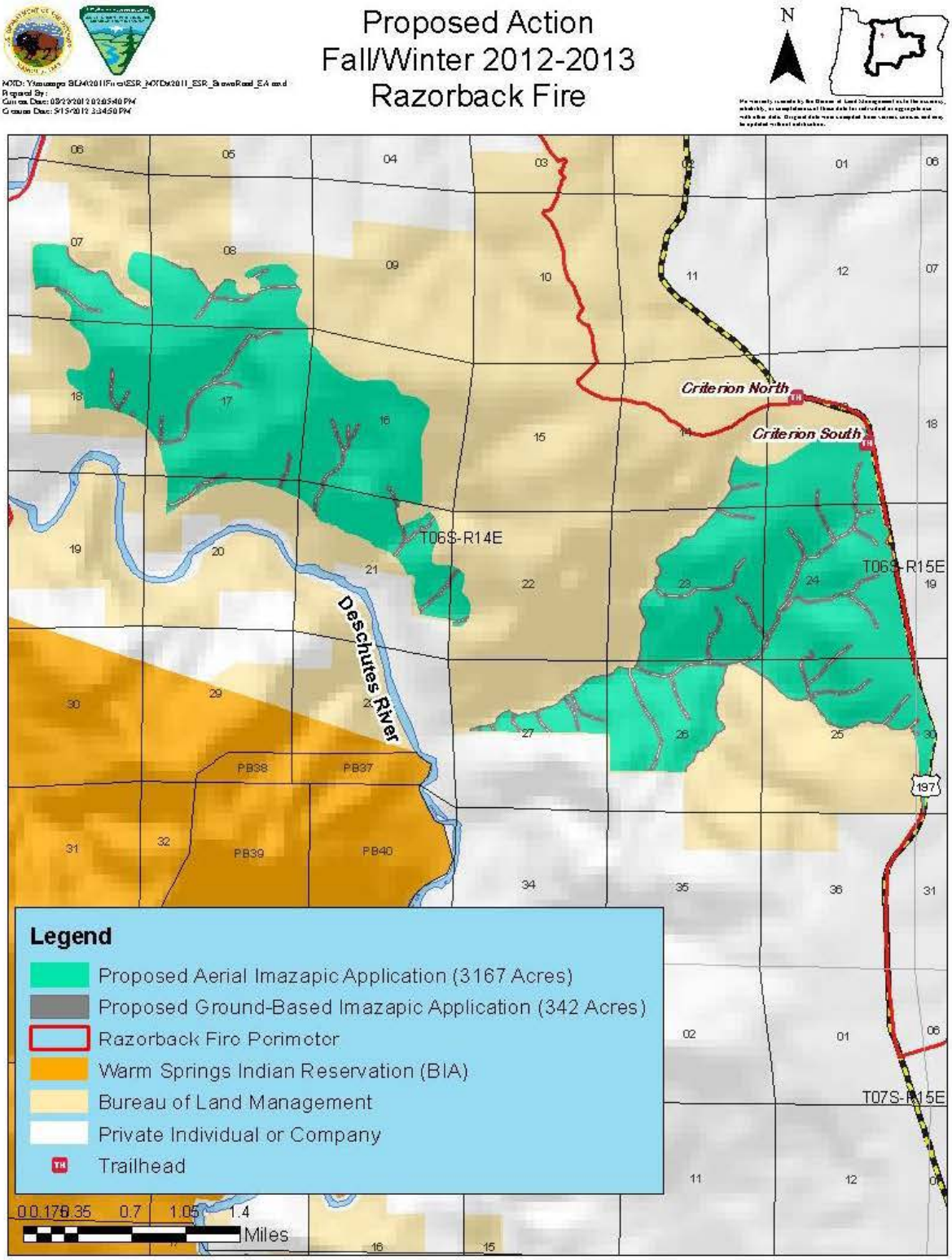
MAP 1



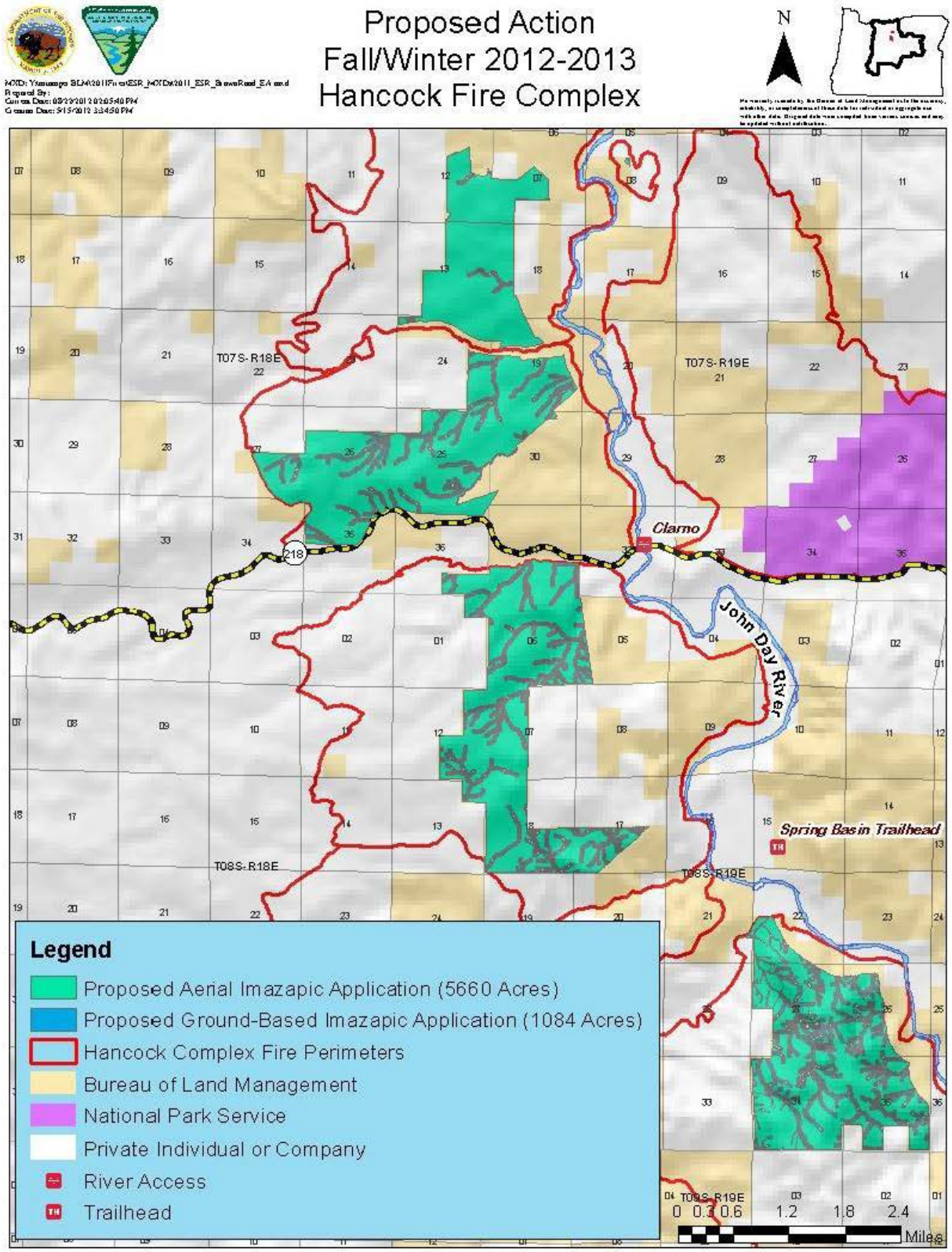
MAP 2


Proposed Imazapic Application
Fall/Winter 2012-2013
Brown Road Fire
N
Twin Springs
Pine Tree
Buckhollow
Deschutes River
T03S-R14E
T03S-R15E
T04S-R15E
Legend
Campground
Day Use Area
Proposed Aerial Imazapic Application (206 Acres)
Brown Road Fire Perimeter
Bureau of Land Management
Private Individual or Company
0 0.15 0.3 0.6 0.9 1.2
Miles

MAP 3


Proposed Action
Fall/Winter 2012-2013
Razorback Fire
N
Criterion North
Criterion South
T06S-R14E
T06S-R15E
T07S-R15E
Deschutes River
PB38
PB37
PB39
PB40
197
Legend
Proposed Aerial Imazapic Application (3167 Acres)
Proposed Ground-Based Imazapic Application (342 Acres)
Razorback Fire Perimeter
Warm Springs Indian Reservation (BIA)
Bureau of Land Management
Private Individual or Company
Trailhead
0 0.175 0.35 0.7 1.05 1.4
Miles

MAP 4


Proposed Action
Fall/Winter 2012-2013
Hancock Fire Complex
N
T07S-R18E
T07S-R19E
T08S-R18E
T08S-R19E
Clarno
John Day River
Spring Basin Trailhead
218
Legend
Proposed Aerial Imazapic Application (5660 Acres)
Proposed Ground-Based Imazapic Application (1084 Acres)
Hancock Complex Fire Perimeters
Bureau of Land Management
National Park Service
Private Individual or Company
River Access
Trailhead
0 0.3 0.6 1.2 1.8 2.4
Miles

APPENDIX B – STANDARD OPERATING PROCEDURES AND MITIGATION MEASURES

The following SOPs and MMs are taken from Vegetation Treatments Using Herbicides on BLM Lands in Oregon (USDI 2010). Those inapplicable to the proposed action have been removed.

General

- Prepare an operational and spill contingency plan in advance of treatment. *(SOP)*
- Conduct a pretreatment survey before applying herbicides. *(SOP)*
- Select the herbicide that is least damaging to the environment while providing the desired results. *(SOP)*
- Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, other ingredients, and tank mixtures. *(SOP)*
- Apply the least amount of herbicide needed to achieve the desired result. *(SOP)*
- Follow herbicide product label for use and storage. *(SOP)*
- Have licensed or certified applicators or State-licensed "trainees" apply herbicides, or they can be applied by BLM employees under the direct supervision of a BLM-certified applicator. *(SOP)*
- Use only USEPA-approved herbicides and follow product label directions and "advisory" statements. *(SOP)*
- Review, understand, and conform to the "Environmental Hazards" section on the herbicide product label. This section warns of known herbicide risks to the environment and provides practical ways to avoid harm to organisms or to the environment. *(SOP)*
- Consider surrounding land use before assigning aerial spraying as a treatment method and avoid aerial spraying near agricultural or densely populated areas. *(SOP)*
- Minimize the size of application area, when feasible. *(SOP)*
- Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/ landowners. *(SOP)*
- Post treated areas and specify reentry or rest times, if appropriate. *(SOP)*
- Notify adjacent landowners prior to treatment, if appropriate. *(SOP)*
- Keep a copy of Material Safety Data Sheets (MSDSs) at work sites. MSDSs are available for review at http://www.cdms.net/. *(SOP)*
- Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location. *(SOP)*
- Avoid accidental direct spray and spill conditions to minimize risks to resources. *(SOP)*
- Avoid aerial spraying during periods of adverse weather conditions (snow or rain imminent, fog, or air turbulence). *(SOP)*
- Make helicopter applications at a target airspeed of 40 to 50 miles per hour (mph), and at about 30 to 45 feet above ground. *(SOP)*
- Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph (>6 mph for aerial applications), or a serious rainfall event is imminent. *(SOP)*
- Use drift control agents and low volatile formulations. *(SOP)*
- Conduct pre-treatment surveys for sensitive habitat and Special Status species within or adjacent to proposed treatment areas. *(SOP)*
- Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation. *(SOP)*
- Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species. *(SOP)*

- Turn off application equipment at the completion of spray runs and during turns to start another spray run. *(SOP)*
- Refer to the herbicide product label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. *(SOP)*
- Clean OHVs to remove plant material. *(SOP)*

Air Quality

See Manual 7000 (*Soil, Water, and Air Management*)

- Consider the effects of wind, humidity, temperature inversions, and heavy rainfall on herbicide effectiveness and risks. *(SOP)*
- Apply herbicides in favorable weather conditions to minimize drift. For example, do not treat when winds exceed 10 mph (>6 mph for aerial applications) or rainfall is imminent. *(SOP)*
- Use drift reduction agents, as appropriate, to reduce the drift hazard. *(SOP)*
- Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]). *(SOP)*
- Select proper application methods (e.g., set maximum spray heights, use appropriate buffer distances between spray sites and non-target resources). *(SOP)*

Soil

See Manual 7000 (*Soil, Water, and Air Management*)

- Minimize treatments in areas where herbicide runoff is likely, such as steep slopes when heavy rainfall is expected. *(SOP)*
- Minimize use of herbicides that have high soil mobility, particularly in areas where soil properties increase the potential for mobility. *(SOP)*
- Do not apply granular herbicides on slopes of more than 15% where there is the possibility of runoff carrying the granules into non-target areas. *(SOP)*

Water Resources

See Manual 7000 (*Soil, Water, and Air Management*)

- Consider climate, soil type, slope, and vegetation type when developing herbicide treatment programs. *(SOP)*
- Select herbicide products to minimize impacts to water. This is especially important for application scenarios that involve risk from active ingredients in a particular herbicide, as predicted by risk assessments. *(SOP)*
- Use local historical weather data to choose the month of treatment. (*SOP*)
- Considering the phenology of target aquatic species, schedule treatments based on the condition of the water body and existing water quality conditions. *(SOP)*
- Plan to treat between weather fronts (calms) and at appropriate time of day to avoid high winds that increase water movements, and to avoid potential stormwater runoff and water turbidity. *(SOP)*
- Review hydrogeologic maps of proposed treatment areas. Note depths to groundwater and areas of shallow groundwater and areas of surface water and groundwater interaction. Minimize treating areas with high risk for groundwater contamination. *(SOP)*
- Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body. *(SOP)*
- Do not rinse spray tanks in or near water bodies. (*SOP*)
- Minimize the potential effects to surface water quality and quantity by stabilizing terrestrial areas as quickly as possible following treatment. *(SOP)*

- Establish appropriate (herbicide-specific) buffer zones for species/populations (*MM*)
- Areas with potential for groundwater for domestic or municipal use shall be evaluated through the appropriate, validated model(s) to estimate vulnerability to potential groundwater contamination, and appropriate mitigation measures shall be developed if such an area requires the application of herbicides and cannot otherwise be treated with non-herbicide methods. (*MM*)
- Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths from water of 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand spray applications. *(SOP)*
- Maintain buffers between treatment areas and water bodies. Buffer widths should be developed based on herbicide and site-specific conditions to minimize impacts to water bodies. *(SOP)*

<u>Wetlands and Riparian Areas</u>

- Use a selective herbicide and a wick or backpack sprayer. *(SOP)*
- Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths from water of 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand spray applications. *(SOP)*
- See mitigation for Water Resources and Vegetation. (*MM*)

<u>Vegetation</u>

See Handbook H-4410-1 (*National Range Handbook*), and manuals 5000 (*Forest Management*) and 9015 (*Integrated Weed Management*)

- Refer to the herbicide label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. *(SOP)*
- • Use weed-free feed for horses and pack animals. Use weed-free straw and mulch for revegetation and other activities. *(SOP)*
- Identify and implement any temporary domestic livestock grazing and/or supplemental feeding restrictions needed to enhance desirable vegetation recovery following treatment. Consider adjustments in the existing grazing permit, to maintain desirable vegetation on the treatment site. *(SOP)*
- • Establish appropriate (herbicide-specific) buffer zones around downstream water bodies, habitats, and species/populations of interest. Consult the ecological risk assessments (ERAs) prepared for the PEIS for more specific information on appropriate buffer distances under different soil, moisture, vegetation, and application scenarios. (*MM*)
- When necessary to protect Special Status plant species, implement all conservation measures for plants presented in the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment*. (*MM*)

<u>Pollinators</u>

- Complete vegetation treatments seasonally before pollinator foraging plants bloom. *(SOP)*
- Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily. *(SOP)*
- Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment. *(SOP)*
- Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources. *(SOP)*
- Maintain herbicide free buffer zones around patches of important pollinator nectar and pollen sources. *(SOP)*

- Maintain herbicide free buffer zones around patches of important pollinator nesting habitat and hibernacula. *(SOP)*
- Make special note of pollinators that have single host plant species, and minimize herbicide spraying on those plants and in their habitats. *(SOP)*

Fish and Other Aquatic Organisms

See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*)

- Use appropriate buffer zones based on label and risk assessment guidance. *(SOP)*
- Minimize treatments near fish-bearing water bodies during periods when fish are in life stages most sensitive to the herbicide(s) used, and use spot rather than broadcast or aerial treatments. *(SOP)*
- Use appropriate application equipment/method near water bodies if the potential for off-site drift exists. *(SOP)*
- For treatment of aquatic vegetation, 1) treat only that portion of the aquatic system necessary to meet vegetation management objectives, 2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms, and 3) follow water use restrictions presented on the herbicide label. *(SOP)*
- Limit the use of diquat in water bodies that have native fish and aquatic resources. (*MM*)
- Limit the use of terrestrial herbicides (especially diuron) in watersheds with characteristics suitable for potential surface runoff that have fish-bearing streams during periods when fish are in life stages most sensitive to the herbicide(s) used. (*MM*)
- When necessary to protect Special Status fish and other aquatic organisms, implement all conservation measures for aquatic animals presented in the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment* (see Appendix 5). (*MM*)
- Establish appropriate herbicide-specific buffer zones for water bodies, habitats, or fish or other aquatic species of interest (Tables A2-3 and A2-4, and recommendations in individual ERAs). (*MM*)
- Consider the proximity of application areas to salmonid habitat and the possible effects of herbicides on riparian and aquatic vegetation. Maintain appropriate buffer zones around salmonid-bearing streams. (*MM*)
- At the local level, consider effects to Special Status fish and other aquatic organisms when designing treatment programs. (*MM*)

Wildlife

See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*)

- Use herbicides of low toxicity to wildlife, where feasible. *(SOP)*
- Use spot applications or low-boom broadcast operations where possible to limit the probability of contaminating non-target food and water sources, especially non-target vegetation over areas larger than the treatment area. *(SOP)*
- Use timing restrictions (e.g., do not treat during critical wildlife breeding or staging periods) to minimize impacts to wildlife. *(SOP)*
- When necessary to protect Special Status wildlife species, implement conservation measures for terrestrial animals presented in the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment* (See Appendix 5) (*MM*)

Threatened, Endangered, and Sensitive Species

See Manual 6840 (*Special Status Species*)

- Provide clearances for Special Status species before treating an area as required by Special Status Species Program policy. Consider effects to Special Status species when designing herbicide treatment programs. *(SOP)*
- Use a selective herbicide and a wick or backpack sprayer to minimize risks to Special Status plants. *(SOP)*
- Avoid treating vegetation during time-sensitive periods (e.g., nesting and migration, sensitive life stages) for Special Status species in area to be treated. *(SOP)*

Livestock

See Handbook H-4120-1 (*Grazing Management*)

- Whenever possible and whenever needed, schedule treatments when livestock are not present in the treatment area. Design treatments to take advantage of normal livestock grazing rest periods, when possible. *(SOP)*
- As directed by the herbicide product label, remove livestock from treatment sites prior to herbicide application, where applicable. *(SOP)*
- Use herbicides of low toxicity to livestock, where feasible. *(SOP)*
- Take into account the different types of application equipment and methods, where possible, to reduce the probability of contamination of non-target food and water sources. *(SOP)*
- Notify permittees of the herbicide treatment project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. *(SOP)*
- Notify permittees of livestock grazing, feeding, or slaughter restrictions, if necessary. *(SOP)*
- Provide alternative forage sites for livestock, if possible. *(SOP)*

Cultural Resources and Paleontological Resources

See handbooks H-8120-1 (*Guidelines for Conducting Tribal Consultation*) and H- 8270-1 (*General Procedural Guidance for Paleontological Resource Management*), and manuals 8100 (*The Foundations for Managing Cultural Resources*), 8120 (*Tribal Consultation Under Cultural Resource Authorities*),and 8270 (*Paleontological Resource Management*). See also: *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act.*

- Follow standard procedures for compliance with Section 106 of the National Historic Preservation Act as implemented through the *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act* and State protocols or 36 Code of Federal Regulations Part 800, including necessary consultations with State Historic Preservation Officers and interested tribes. *(SOP)*
- Follow BLM Handbook H-8270-1 (*General Procedural Guidance for Paleontological Resource Management*) to determine known Condition I and Condition 2 paleontological areas, or collect information through inventory to establish Condition 1 and Condition 2 areas, determine resource types at risk from the proposed treatment, and develop appropriate measures to minimize or mitigate adverse impacts. *(SOP)*
- Consult with tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments; work with tribes to minimize impacts to these resources. *(SOP)*

- Follow guidance under Human Health and Safety in the PEIS in areas that may be visited by Native peoples after treatments. *(SOP)*

Visual Resources

See handbooks H-8410-1 (*Visual Resource Inventory*) and H-8431-1 (*Visual Resource Contrast Rating*), and manual 8400 (*Visual Resource Management*)

- Minimize the use of broadcast foliar applications in sensitive watersheds to avoid creating large areas of browned vegetation. *(SOP)*
- Consider the surrounding land use before assigning aerial spraying as an application method. *(SOP)*
- Minimize off-site drift and mobility of herbicides (e.g., do not treat when winds exceed 10 mph; minimize treatment in areas where herbicide runoff is likely; establish appropriate buffer widths between treatment areas and residences) to contain visual changes to the intended treatment area. *(SOP)*
- If the area is a Class I or II visual resource, ensure that the change to the characteristic landscape is low and does not attract attention (Class I), or if seen, does not attract the attention of the casual viewer (Class II). *(SOP)*
- Lessen visual impacts by: 1) designing projects to blend in with topographic forms; 2) leaving some low-growing trees or planting some low-growing tree seedlings adjacent to the treatment area to screen short-term effects; and 3) revegetating the site following treatment. *(SOP)*
- When restoring treated areas, design activities to repeat the form, line, color, and texture of the natural landscape character conditions to meet established Visual Resource Management (VRM) objectives. *(SOP)*

Wilderness and Other Special Areas

See handbooks H-8550-1 (*Management of Wilderness Study Areas (WSAs)*), and H-8560-1 (*Management of Designated Wilderness Study Areas*), and Manual 8351 (*Wild and Scenic Rivers*)

- Encourage backcountry pack and saddle stock users to feed their livestock only weed-free feed for several days before entering a wilderness area, and to bring only weed-free hay and straw onto BLM lands. *(SOP)*
- Encourage stock users to tie and/or hold stock in such a way as to minimize soil disturbance and loss of native vegetation. *(SOP)*
- Revegetate disturbed sites with native species if there is no reasonable expectation of natural regeneration. *(SOP)*
- Provide educational materials at trailheads and other wilderness entry points to educate the public on the need to prevent the spread of weeds. *(SOP)*
- Use the “minimum tool” to treat noxious weeds and other invasive plants, relying primarily on the use of ground-based tools, including backpack pumps, hand sprayers, and pumps mounted on pack and saddle stock. *(SOP)*
- Use herbicides only when they are the minimum treatment method necessary to control weeds that are spreading within the wilderness or threaten lands outside the wilderness. *(SOP)*
- Give preference to herbicides that have the least impact on non-target species and the wilderness environment. *(SOP)*
- Implement herbicide treatments during periods of low human use, where feasible. *(SOP)*
- Address wilderness and special areas in management plans. *(SOP)*
- Control of weed infestations shall be carried out in a manner compatible with the intent of Wild and Scenic River management objectives. *(SOP)*

- Mitigation measures that may apply to wilderness and other special area resources are associated with human and ecological health and recreation (see mitigation measures for Vegetation, Fish and Other Aquatic Resources, Wildlife Resources, Recreation, and Human Health and Safety). (*MM*)

Recreation

See Handbook H-1601-1 (*Land Use Planning Handbook, Appendix C*)

- Schedule treatments to avoid peak recreational use times, while taking into account the optimum management period for the targeted species. *(SOP)*
- Notify the public of treatment methods, hazards, times, and nearby alternative recreation areas. *(SOP)*
- Adhere to entry restrictions identified on the herbicide product label for public and worker access. *(SOP)*
- Post signs noting exclusion areas and the duration of exclusion, if necessary. *(SOP)*
- Mitigation measures that may apply to recreational resources are associated with human and ecological health (see mitigation measures for Vegetation, Fish and Other Aquatic Resources, Wildlife Resources, and Human Health and Safety). (*MM*)

Social and Economic Values

- Consider surrounding land use before selecting aerial spraying as a treatment method, and avoid aerial spraying near agricultural or densely-populated areas. *(SOP)*
- Post treated areas and specify reentry or rest times, if appropriate. *(SOP)*
- Notify grazing permittees of livestock feeding restrictions in treated areas, if necessary, as per herbicide product label instructions. *(SOP)*
- Notify the public of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. *(SOP)*
- Control public access until potential treatment hazards no longer exist, per herbicide product label instructions. *(SOP)*
- Observe restricted entry intervals specified by the herbicide product label. *(SOP)*
- Notify local emergency personnel of proposed treatments. *(SOP)*
- Use spot applications or low-boom broadcast applications where possible to limit the probability of contaminating non-target food and water sources. *(SOP)*
- Consult with Native American tribes to locate any areas of vegetation that are of significance to the tribes and Native groups and that might be affected by herbicide treatments. *(SOP)*
- To the degree possible within the law, hire local contractors and workers to assist with herbicide application projects and purchase materials and supplies for herbicide treatment projects (including the herbicides) through local suppliers. *(SOP)*
- To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an integrated vegetation management program for projects proposing local use of herbicides. *(SOP)*

Rights-of-way

- Coordinate vegetation treatment activities where joint or multiple use of a ROW exists. *(SOP)*
- Notify other public land users within or adjacent to the ROW proposed for treatment. *(SOP)*
- Use only herbicides that are approved for use in ROW areas. *(SOP)*

Human Health and Safety

- Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of ¼ mile for aerial applications and 100 feet for ground applications, unless a written waiver is granted. *(SOP)*
- Use protective equipment as directed by the herbicide product label. *(SOP)*
- Post treated areas with appropriate signs at common public access areas. *(SOP)*
- Observe restricted entry intervals specified by the herbicide product label. *(SOP)*
- Provide public notification in newspapers or other media where the potential exists for public exposure. *(SOP)*
- Store herbicides in secure, herbicide-approved storage. (*SOP*)
- Have a copy of MSDSs at work site. *(SOP)*
- Notify local emergency personnel of proposed treatments. *(SOP)*
- Contain and clean up spills and request help as needed. *(SOP)*
- Secure containers during transport. *(SOP)*
- Follow label directions for use and storage. *(SOP)*
- Dispose of unwanted herbicides promptly and correctly. *(SOP)*

APPENDIX C - REFERENCES

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Finding of No Significant Impact

Brown Road, Razorback, and Hancock Complex Post-Fire Herbicide EA

DOI-BLM-OR-P000-2012-0011-EA

US Department of the Interior, Bureau of Land Management

Prineville Field Office, Oregon

Introduction

The Bureau of Land Management (BLM) has completed an Environmental Assessment (EA), No. DOI-BLM-OR-P000-2012-0011-EA that analyzes the effects of one action alternative proposing to apply the herbicide imazapic to control the noxious and invasive annual grasses Medusahead rye (*Taeniatherum kaput-medusae*), cheatgrass (*Bromus tectorum*), and North Africa grass (*Ventenata dubia*) on 32,714 acres affected by the Brown Road, Razorback, and Hancock Complex Fires of 2011. The EA is incorporated by reference in this Finding of No Significant Impact (FONSI).

The Council on Environmental Quality (CEQ) regulations state that the significance of impacts must be determined in terms of both context and intensity (40 CFR 1508.27).

Context

The proposed action is set within the context of a comprehensive post-fire emergency stabilization and rehabilitation plan. Actions that are already taking place in the project area are drill and aerial seeding of native and non-invasive perennial grasses and forbs; grazing rest and deferment; fence and sign replacement; camouflaging of cultural sites; and application of glyphosate, 2, 4-D, dicamba, and picloram to control Medusahead rye and broadleaf noxious weeds such as thistles. Glyphosate can be used to control Medusahead rye under the existing Prineville District Integrated Weed Management Plan (USDI 1994), however, it does not reduce the seedbank and is non-selective, thereby removing native shrubs and forbs needed to revegetate proposed treatment areas (USDI 2010). Cheatgrass and North Africa grass are invasive weeds that are not included on any county, state, or federal noxious weed list, and therefore could not be treated using glyphosate under the existing Prineville District Integrated Weed Management Plan (USDI 1994). This was due to a 1984 U.S. District Court injunction issued in Northwest Coalition for Alternatives to Pesticides, et al. v. Block, et al (Civ. No. 82-6273-E) which only allowed for the use of glyphosate, 2, 4-D, dicamba and picloram to control officially listed noxious weeds.

Intensity

I have considered the potential intensity and severity of the impacts anticipated from implementation of a Decision on this EA relative to each of the ten areas suggested for consideration by the CEQ. With regard to each:

1. **Would any of the alternatives have significant beneficial or adverse impacts (40 CFR 1508.27(b)(l)? No.**

   Rationale:
   The proposed action would impact resources as described in the EA. Mitigations to reduce impacts to the ground were incorporated in the design of the proposed action. These project design features are outlined in Chapter 3 Affected Environment and Environmental Effects and Appendix B of the EA. None of the environmental effects discussed in detail in the EA are considered significant, nor do the effects exceed those described in the 2010 Vegetation Treatments Using Herbicides on BLM Lands in Oregon Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), 1986 FEIS for the Two Rivers Resource Management Plan (RMP) and the 2000 FEIS for the John Day River Management Plan

2. **Would any of the alternatives have significant adverse impacts on public health and safety (40 CFR 1508.27(b)(2)? No.**

   Rationale:
   No significant adverse impacts on public health and safety would result from the alternatives due to standard operating procedures and project design features as outlined in Chapter 3 Affected Environment and Environmental Effects and Appendix B.

3. **Would any of the alternatives have significant adverse impacts on unique geographic characteristics (cultural or historic resources, park lands, prime and unique farmlands, wetlands, wild and scenic rivers, designated wilderness or wilderness study areas, or ecologically critical areas (ACECs, RNAs, significant caves)) (40 CFR 1508.27(b)(3)? No.**

   Rationale:
   Any resource of concern identified to be at risk from the project activities will be protected from damage or disturbance. There are no effects on park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas

4. **Would any of the alternatives have highly controversial effects (40 CFR 1508.27(b)(4)? No.**

   Rationale:
   There are no effects which are expected to be highly controversial.

5. **Would any of the alternatives have highly uncertain effects or involve unique or unknown risks (40 CFR 1508.27(b)(5)? No.**

   Rationale:
   There are no unique or unusual risks. The BLM has implemented similar actions in similar areas. The environmental effects are fully analyzed in the EA. There are no predicted effects on the environment that are considered to be highly uncertain or involve unique or unknown risks.

6. **Would any of the alternatives establish a precedent for future actions with significant impacts (40 CFR 1508.27(b)(6)? No.**

   Rationale:
   Use of imazapic to control invasive annual grasses and noxious weeds has occurred numerous times throughout BLM. There is no evidence that this action has potentially significant environmental effects. This management activity does not commit the BLM to pursuing further actions, and as such would not establish a precedent or decision for future actions with potentially significant environmental effects.

7. **Are any of the alternatives related to other actions with potentially significant cumulative impacts (40 CFR 1508.27(b)(7)? No.**

   Rationale:
   The actions considered in the proposed action were evaluated by the interdisciplinary team within the context of past, present, and reasonably foreseeable future actions. Significant cumulative effects are not predicted. An analysis of the effects of the proposed action is described in the EA.

8. **Would any of the alternatives have significant adverse impacts on scientific, cultural, or historic resources, including those listed or eligible for listing on the National Register of Historic Resources (40 CFR 1508.27(b)(8)?**

   Rationale:
   The project will not adversely affect scientific, cultural, or historic resources, including those eligible for listing in the National Register of Historic Places.

9. **Would any of the alternatives have significant adverse impacts on threatened or endangered species or their critical habitat (40 CFR l508.27(b)(9)?**

   Rationale:
   Mitigations to reduce impacts to special status species have been incorporated into the design of the proposed action. These project design features are outlined in Chapter 3 Affected Environment and Environmental Effects and Appendix B of the EA.

10. Would any of the alternatives have effects that threaten to violate Federal, State, or local law or requirements imposed for the protection of the environment (40 CFR l508.27(b)(lO)? No.

Rationale:
The project does not violate any known Federal, State, Local or Tribal law or requirement imposed for the protection of the environment. Tribal interests were given the opportunity to participate in the environmental analysis process.

Finding

On the basis of the information contained in the EA, the consideration of intensity factors described above, all other information available to me, it is my determination that: (1) implementation of the alternatives would not have significant environmental impacts beyond those already addressed in the 2010 Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS and ROD, 1986 FEIS for the Two Rivers RMP and the 2000 FEIS for the John Day River Management Plan; (2) the alternatives are in conformance with the 2010 Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS and ROD, 1986 FEIS for the Two Rivers RMP and the 2000 FEIS for the John Day River Management Plan; and (3) neither alternative would constitute a major federal action having a significant effect on the human environment. Therefore, an EIS or a supplement to the existing EIS is not necessary and will not be prepared.

_____ _____
Molly M. Brown Date
Field Manager, Deschutes Resource Area

_____ _____
H.F. “Chip” Faver Date
Field Manager, Central Oregon Resource Area