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Memorandum

To: Dayne Barron, District Manager, Medford District Bureau of Land Management
Medford, Oregon
Jan Threlkell

From: Field Supervisor, Roseburg Field Office U.S. Fish and Wildlife Service
Roseburg, Oregon

Subject: Endangered Species Act, section 7 consultation (FWS reference # 01EOFW00-2012-I-0019) regarding effects of proposed Medford District (District) BLM FY 2012-2013 forest management activities (proposed action) on designated *Lomatium cookii* (Cook's desert parsley) critical habitat.

The Fish and Wildlife Service (Service) prepared this memorandum pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act) in response to the District's request for informal consultation, received in our office on November 8, 2011. The Biological Assessment (Assessment) (USDI BLM 2011) we received describes potential impacts to critical habitat for the endangered *Lomatium cookii* (Cook's lomatium). This memorandum updates the September 24, 2008 Service concurrence for management activities on affected listed plant species, within lands managed by the District (USDI FWS 2008) to take into consideration recently designated critical habitat for *Lomatium cookii* (USDI FWS 2010). This memorandum is based on information provided in your Assessment and e-mail, phone, and in-person communication between Service and District staff.

Proposed Action

The activity types included in this programmatic are detailed in the Assessment which is herein incorporated by reference and briefly described below.

Tree harvest. Timber harvest activities include various levels of regeneration harvest, commercial thinning, selective harvest, density management, commercial firewood, hazard tree removal, biomass/stewardship harvest, and opportunistic salvage.

Silviculture. Silviculture includes vegetation management activities consisting of, but not limited to, stand density management, conversion, fertilization, pruning, pre-commercial thinning of managed and natural stands, Port-Orford cedar sanitation, riparian thinning, and slash piling and burning.

Special forest products. Special forest products include Christmas trees, firewood, bough and cone harvests, mushroom and lichen collections, brush and beargrass cuttings, edible and medicinal plants, transplants, shakes, rails and poles, miscellaneous saw timber, and burls.

Watershed restoration. These activities include culvert repair/replacement, road restoration or decommissioning, slope stabilization, habitat improvement projects, stream improvement projects, including tree lining/felling, down wood placement and meadow restoration.

Fuels management. Fuel management includes fuel breaks, piling and prescribed burning, thinning, and brush treatments, including fuels activities within timber sales.

Recreation. Recreation activities include recreation permits (commercial and private), trail maintenance, and facilities maintenance.

Road maintenance. Maintenance activities include maintenance, restoration or decommissioning, culvert replacement and repair, bridge maintenance and repair, and road alignment.

Right-of-Way (ROW) permits – Road. These road permits include discretionary Federal Land Policy and Management Act and O&C road use permits and maintenance. This also includes non-linear features like landings associated with the permit. These do not include non-discretionary actions under O&C reciprocal ROW agreements and permits.

Other ROW/land use permits. These permits include waterlines, power lines, and utilities ROW maintenance, non-linear land use permits like communication towers, permitted events, and minimum impact permits (i.e. filming, equipment parking at power line access points).

Mining. Mining includes plan level operations detailing how soil excavation would occur.

Cultural resources. These activities include archeological excavations and restoration of historic sites.

Weed control. Weed control includes manual, mechanical, biological and chemical control of noxious weeds.

Area Closures. These activities include installation of gates, fences, boulders, berms, and other barriers to exclude vehicle traffic from specific areas.

Recovery actions. These actions include listed plant habitat restoration, burning, thinning, seed collection, growing, and outplanting.

Tracking and monitoring. These activities encompass vegetation (plot) monitoring for forest production, fuels, weed treatment and listed plant demographic and research monitoring. The following activities are not part of the proposed action and will require separate consultation at the individual project scale because their impacts are too variable to predict at a program scale:

1. Recreational off-highway vehicle (OHV) use and area designation.
2. Land exchange/realty actions.
3. Research projects with potential adverse effects to plants or habitats (other than listed recovery actions).
4. Wildfire suppression activities.
5. Catastrophic insect and disease outbreak treatment (e.g. Sudden Oak Death).
6. New environmental assessments for herbicide use tiering to the new vegetation treatment using herbicides (USDI BLM 2010).
7. Livestock grazing.
8. New trail construction and new recreation infrastructure.
9. Construction of new ROW powerlines, pipelines, and other utilities.
10. Construction of new communication sites.
11. Construction of new permanent and temporary roads.
12. Development and expansion of rock quarries.

Action Area

The action area is defined in the implementing regulations for section 7 of the Act as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402). The action area includes all lands within the range of *Lomatium cookii* in the Illinois River Valley managed by the District or activities controlled by the District that occur on non-federal lands (i.e. lands that a federal nexus exists).

Lomatium cookii critical habitat was designated on approximately 1,800 acres of BLM managed land in Illinois River Valley, Josephine County (USDI FWS 2010). However; some roads, landings, mine tailings, and other disturbed areas that occur within designated critical habitat units may not support the Primary Constituent Elements (PCEs) for *Lomatium cookii* critical habitat (USDI FWS 2009, p. 37323).

Project Design Criteria

Project design criteria (PDC) are conservation measures, agreed by the Service and District, and are a requirement as part of the proposed action. The PDC, as described in the Assessment, are consistent with the PDC in the 2008 consultation documents (USDI FWS 2008). In general, PDC shape activities to avoid or reduce impacts to *Lomatium cookii* critical habitat that would remove, degrade, or undermine the PCEs. In addition, the PDC are intended to improve or maintain the PCE. The PCE for *Lomatium cookii* critical habitat for the Illinois River Valley include wet meadows in oak and pine forests, sloped mixed-conifer openings, and shrubby plant communities; the hydrologically and ecologically functional system of streams, slopes, and

wooded systems that surround and maintain seasonally wet alluvial meadows underlain by relatively undisturbed ultramafic soils; silt, loam and clay soils that are ultramafic and nonultramafic alluvial origin, with a 0-40 percent slope; and no or negligible presence of competitive, nonnative invasive plant species (USDI FWS 2010, p. 42503).

Where minor road maintenance and decommissioning will occur, PDC include comprehensive non-native weed deterrence and abatement measures on newly disturbed soils and on machinery. For minor ground disturbance activities, such as water bar repair, occasional hazard tree removal, historic site restoration, and recovery actions, heavy equipment will not be utilized in critical habitat. For cultural resource excavation that could occur on critical habitat, hand tool usage and complete restoration will be required for the activity (S. Fritts, pers. comm., 2011). After all activities are completed, areas will be restored and reseeded with native plant seed, as necessary. Other PDC that are intended to benefit *Lomatium cookii* habitat include vegetation structure enhancement, hydrologic restoration, and establishment of deterrence measures around designated critical habitat units.

PDC include seasonal restrictions to minimal impact and non-ground disturbing vegetation management activities, as necessary, to reduce potential above-ground impacts to critical habitat. Ground disturbing projects such as OHV use, new mine plans, road and landing construction, and ROW permits (such as oil and gas pipelines) are activities excluded from the Assessment and require separate consultation, except for projects on existing disturbed ground or decommissioning of existing roads. These projects will be analyzed under separate consultation.

Exceptions to PDC are occasionally necessary, usually for ecological emergencies or safety reasons. Examples include emergency vegetation treatments to control new pathogenic fungi like Sudden Oak Death or eminent failure of a dam requiring immediate actions. Exceptions for other reasons may require reinitiation of consultation.

Effects of the Action

Direct Effects

The proposed action has the potential to directly impact *Lomatium cookii* critical habitat due to physical ground disturbance. Ground disturbance includes soil compaction, soil horizon displacement, alteration of hydrologic flow, and geomorphic alteration. Controlled broadcast and burn piles can temporarily impact the native plant community and the soil horizons of critical habitat by high intensity heat.

Weed control actions could directly harm or kill native plant species, which are a component of the PCE. The native plant community could be adversely impacted by direct or nearby application of herbicide.

The PDC, as described in the Assessment, will largely reduce the loss or potential degradation of *Lomatium cookii* critical habitat. No additional loss of undisturbed habitat from ground disturbance associated with timber harvests, road construction, mining, cultural resource activities, or recreational development will occur in critical habitat. The maintenance or decommissioning of existing roads in critical habitat is not anticipated to impact PCE. Reduction

or thinning of the conifer canopy within critical habitat will help restore vegetation communities associated with *Lomatium cookii* and reduce high fuel loads. PDC would confine mining to disturbed soils. Fuel reduction, vegetation restoration, and weed control activities will likely mimic the role that wildfire historically played in these habitats by keeping the site more open and restored to a more native plant community.

Roadside maintenance operations may benefit listed plant habitat by creating more open edge habitat and allowing more light to enter plant habitat. Roadside maintenance and other activities will maintain hydrology to critical habitat by the installation and upkeep of ditches and culverts.

Area closures have an overall beneficial effect to critical habitat by helping to maintain the function of the PCE through the exclusion of OHV activity and other disturbance. Placement of permanent structures such as boulders, gates, fences and berms to deter illegal entry and vandalism of *Lomatium cookii* critical habitat does impact a very small portion of the critical habitat, but will be a negligible impact, not exceeding one percent of the total area of the critical habitat unit.

After application of herbicide spray for weed treatment in critical habitat, areas will be reseeded with native plants as appropriate to the location, if necessary. In general the application of herbicide spray would not deplete a native plant component of a critical habitat unit. The implementation of PDC for active weed treatment can have a long-term beneficial effect on both District lands and adjacent habitats by reducing invasive plant species competition within critical habitat.

All listed plant collections and recovery actions will be coordinated with the Service, per the PDC. BLM staff will work with Service staff to develop monitoring plans to measure effectiveness of augmentation and reintroduction activities. All recovery actions are intended to enrich plant populations by restoring habitat, increasing species density or expanding species' populations within their ranges to bolster population viability and to promote pollinator interaction. These actions are anticipated to be beneficial to the listed species.

BLM will ensure hydrologic restoration projects are designed to contribute to the PCE, or have no impact on the hydrologic condition of critical habitat. The PDC require that recreation permits will be reviewed by BLM botanist and hydrologist to assure habitat, hydrology, and soils will not be manipulated and assure the activity would not introduce or increase the spread of invasive weeds.

Indirect Effects

Indirect effects from habitat disturbance can have adverse, neutral, or beneficial effects to critical habitat; depending on the type, timing, intensity, and duration of the disturbance.

The indirect effect of ground disturbing activities from timber sales, fuels projects, ROW permits, watershed restoration, grazing projects etc., is the introduction and proliferation of invasive weeds such as yellow starthistle (*Centaurea solstitialis*), Scotch broom (*Cytisus scoparius*), yellowtuft (*Alyssum* spp.), dyer's woad (*Isatis tinctoria*), and Canada thistle

(*Cersium arvense*). Weeds can have detrimental effects to PCE by competitively reducing light, moisture, and soil nutrients for the native plant community.

PDC are designed to reduce the spread of invasive weeds include washing of BLM, Forest Service, and contractor equipment and vehicles, careful application of herbicide, and use of weed-free gravel in road maintenance projects. Much of the federal weed treatment programs (hand-pulling and spot spray) will occur along roads.

Concurrence

The Service concurs with the effects determination made by the District that the above proposed action, as detailed in the Assessment, may affect, is not likely to adversely affect or adversely modify *Lomatium cookii* critical habitat. This concurrence is based on the fact all projects, both individually and collectively will incorporate the PDC as described in the Assessment and also be consistent with draft recovery plan recommendation (USDI FWS 2006).

The Service reached these conclusions based on the following factors:

- All designated and undisturbed *Lomatium cookii* critical habitat units, will be protected by PDC for ground disturbing actions described in the proposed action.
- The PDC require existing hydrology of all designated and undisturbed *Lomatium cookii* critical habitat units to be maintained.
- Recovery activities, such as improving meadow communities, augmentation of *Lomatium cookii* populations, boulder and fence placement to deter vehicle entry into critical habitat areas will benefit critical habitat by maintenance of all the PCE.
- Impacts caused by boulder and fence placement to deter vehicle entry into critical habitat areas will affect less than 0.01 of a percent of one acre of critical habitat (300 sq. feet maximum) and will maintain critical habitat unit with functioning PCEs.
- By adhering to PDCs, no alteration in hydrology patterns or increase in noxious weeds is anticipated to result from the proposed boulder and fence placement.
- Restoration actions as defined in the silviculture, fuels management, and weed control descriptions of the Assessment will improve habitat within designated *Lomatium cookii* critical habitat units by reducing shading, competing vegetation, and reducing risk of high intensity fire.
- Recovery actions as defined in the Assessment will directly benefit *Lomatium cookii* habitat per recovery actions specified in the draft Rogue Valley and Illinois Valley recovery plan (USDI FWS 2006).

Based on our review of your Assessment, we concur with the above finding for the reasons stated therein. However, please be advised that your Assessment does not address the effects of the proposed action on the following listed species and critical habitats that are known to occur

in the action area and may be affected by the proposed action: the threatened northern spotted owl (*Strix occidentalis caurina*); the threatened marbled murrelet (*Brachyramphus marmoratus*); and critical habitat for the northern spotted owl and marbled murrelet. We recommend that you not proceed with the proposed action until any appropriate consultation has been completed relative to these species and critical habitats in accordance with the requirements of section 7 of the Act. Preparing an assessment that addresses the effects of the proposed action on these additional listed species and critical habitats will ensure full compliance by the District with the requirements of section 7 for the subject action. Once we receive the additional assessment, we will respond to any requests for concurrence or initiation of formal consultation.

If you have any questions or concerns about this consultation or the consultation process in general, please feel free to call Sam Friedman at (541) 957-3478 or me at (541) 957-3470.

cc: Doug Kendig, Medford District BLM, Medford, Oregon (e)
Susan Fritts, Medford District BLM, Medford, Oregon (e)
Office Files FWS-OFWO, Portland, OR (e)

References

- USDI BLM (Bureau of Land Management). 2010. Programmatic Environmental Impact Statement Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 states.
- USDI BLM (Bureau of Land Management). 2011. November 2011 Biological Assessment regarding effects of proposed Medford District Bureau of Land Management FY 2012-2013 forest management activities (proposed action) on designated *Lomatium cookii* (Cook's desert parsley) critical habitat.
- USDI FWS (U.S. Fish and Wildlife Service). 2006. Draft Recovery Plan for Listed Species in the Rogue Valley Vernal Pool and Illinois Valley Wet Meadow Ecosystems. U.S. Fish and Wildlife Service. Region 1. Portland, Oregon. viii + 136 pp.
- USDI FWS (U.S. Fish and Wildlife Service). 2008. Effects of Proposed FY 2009-2013 Forest Management Activities on Federally Listed Species and Designated Critical Habitat. U.S. Fish and Wildlife Service. Roseburg, Oregon. September 25, 2008. Reference Number: 13420-2008-I-0136.
- USDI FWS (U.S. Fish and Wildlife Service). 2009. Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* (Large-Flowered Woolly Meadowfoam) and *Lomatium cookii* (Cook's Lomatium). Federal Register 74: 37314-37392. July 28, 2009.
- USDI FWS (U.S. Fish and Wildlife Service). 2010. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* (Large-flowered Woolly Meadowfoam) and *Lomatium cookii* (Cook's Lomatium). Federal Register 75: 42490-42569. July 21, 2010.

Personal Communication

- Fritts, Susan. November 2011. Botanist. Medford District, BLM. Grants Pass, Oregon.

BIOLOGICAL ASSESSMENT

FY 2012-2013 Programmatic Assessment for Activities that May Affect the Designated Critical Habitat for the Endangered Plant Species Cook's Lomatium

Medford District of the Bureau of Land Management

November 3, 2011

Prepared by: Susan Fritts, Bureau of Land Management, Medford District (BLM): in consultation with Sam Friedman, US Fish and Wildlife Service (FWS), Roseburg.

TABLE OF CONTENTS

I.	Introduction	3
	Action Area	3
	Land Ownership.....	4
II.	Proposed Action.....	4
	Project Types	5
	Project Types Not Addressed.....	6
	Project Descriptions	7
III.	Project Design Criteria.....	19
	General and Specific PDC's	18
IV.	Environmental Baseline	21
V.	Effects Of The Proposed Action On Listed Species.....	23
VI.	Biological Assessment Conclusions	30
VII.	Literature Cited	31
	Appendix A Cook's Iomatium Critical Habitat Units in the Illinois River Valley.	32

Tables

Table 1	Project activities and disturbance estimates	7
Table 2.	Summary of Direct and Indirect effects	22
Table 3.	Species Determinations by Activity Type.....	23
Table 4.	Summary of Effects for projects with PDCs on Critical Habitat.....	33
Table 5.	Species Determination by Activity Type	30

INTRODUCTION

This is a programmatic consultation of management activities on affected designated critical habitat for Cook's lomatium (*Lomatium cookii*), within lands managed by the Medford District of the Bureau of Land Management (BLM). The BLM completed a revision of their Resource Management Plans for Western Oregon Districts in December 2008. The Secretary of the Interior administratively withdrew the 2008 Records Of Decision/Resource Management Plans (RODs/RMPs) in July, 2009 and the districts reverted to implementing the 1995 RMPs. On March 31, 2011, the United States District Court for the District of Columbia vacated and remanded the administrative withdrawal of the Western Oregon BLM Districts' 2008 RODs/RMPs (Douglas Timber Operators et al. v. Salazar) and effectively reinstated the 2008 RODs/RMPs.

Given the current uncertainty surrounding planning in western Oregon, The Medford District will design projects to conform to both the 2008 ROD/RMP and the 1995 ROD/RMP. Consequently, projects will be consistent with the goals and objectives in both the 1995 RMP and 2008 RMP.

The area of consideration includes Medford BLM lands within the range of Cook's lomatium in the Illinois River sub-basin. These federal lands are under the jurisdiction of the Medford District, hereafter referred to as Medford.

The ownership encompasses public land on the Medford BLM District in the area of consideration (Medford BLM GIS 2011). Most of the BLM-managed land is distributed in a checkerboard pattern consisting of alternating sections of public and private land.

The purpose of this biological assessment (BA) is to describe and evaluate the effects of proposed BLM management activities from Fiscal Year (FY) 2012 through FY 2013 on the critical habitat for Cook's lomatium designated on July 21, 2010 (USFWS 2010).

Federally designated critical habitat for fish and wildlife are not included in this BA and will be addressed in separate BA's.

This BA was compiled jointly by Susan Fritts, BLM botanist, and members of the Level 1 team: Doug Kendig from the BLM and Sam Friedman from the US Fish and Wildlife Service (FWS). Specialists from the BLM contributed to the content and analysis of this document.

ACTION AREA

The action area has been defined (50 CFR 402) as all areas to be affected directly or indirectly by Federal actions and not merely the immediate area involved in the action. For the purpose of this BA, the action area includes all lands within the range of Cook's lomatium in the Illinois River Valley managed by the Medford District BLM or activities controlled by the Medford BLM that occur on non-federal lands (i.e. lands that a federal nexus exists).

The proposed actions are located completely within the Klamath Mountains Ecoregion. The Klamath Mountains ecoregion of northwestern California and southwestern Oregon is one of the most distinctive and complex ecological zones in the United States. Its dramatic topography, complex fire history, extensive watercourses, and often-abrupt climate changes create a region rich in natural beauty, diverse vegetation, and scientific value. The variability and richness of this region enhance its importance as an ecologically valuable tableau of endemic plant communities, eclectic geologic conditions, and rare plant habitats (TNC, 2004).

Natural plant community types within the Klamath Mountains Ecoregion are diverse. In the lower elevations Oregon white oak woodlands and grasslands, chaparral, scattered ponderosa pine, and Douglas-fir occur up to about 2,300 feet in the interior valleys. Above this and up to about 4,500 feet, a mixed evergreen zone dominated with Douglas-fir and madrone occurs. Dense, chaparral (sclerophyllous type) communities can occupy large patches of the landscape, composed primarily of wedge-leaf ceanothus (*Ceanothus cuneatus*) and manzanita (*Arctostaphylos* species). Above 4,500 feet is the white fir zone, fading into a Shasta red-fir zone up to timberline. The elevations of the action area range from 1,200 feet in Cave Junction to 5,000 feet at the top of Little Grayback Mountain.

The ecological diversity of communities and species of the Klamath Mountain Ecoregion lead to a high rate of endemism, with numerous species occurring exclusively within the Klamath-Siskiyou Range and the Illinois River Valley.

LAND OWNERSHIP

BLM-managed lands are predominantly intermingled with non-federal “private” lands. Human populations are centered on the cities of Cave Junction, Kerby and Selma. For the 198,172 acres within the range of Cook’s lomatium in the Illinois River Valley, 36,561 acres (19%) is BLM managed lands, 70,534 acres (36%) is US Forest Service, 1,994 acres (0.01%) is owned by the State, and 89,082 acres (45%) is private lands. Private forested lands managed for timber production will typically be harvested between 40 and 60 years of age, in accordance with State Forest Practices Act standards. Private lands are typically not expected to provide habitat for listed plants, as no federal or Oregon state laws protect Cook’s lomatium on private lands. No inventory or protection for these species or their critical habitat is required in the State of Oregon. Private lands have already been converted from natural woodlands, wetlands, and forests to other uses (pastures, woodlots, and urban centers) and likely no longer support listed plants. The conversion of intact suitable habitat in the low elevation woodlands and grasslands into pastures, vineyards, cities, and home sites is increasing throughout the Illinois Valley as the population growth of the valley increases. Federally designated critical habitat for plants does have protection on State public lands, including County and City public lands, under Oregon State laws (e.g. Illinois Forks State Park). Critical habitat on federal lands is protected by the Endangered Species Act.

I. PROPOSED ACTION

Proposed activities analyzed in this BA are for projects that would occur from October 1, 2011–September 30, 2013 (2 years). For the purposes of this BA, it is the signing of the activity decision document (decision record, decision memo, or record of decision) identifies which projects are covered by this BA for critical habitat for Cook’s lomatium. Analysis of the project effects to critical habitat must be done prior to the decision of any activity and the effects of the action documented in the NEPA document (CE, EA, or EIS). Once the decision is signed, the clearance for that project and those acres are valid, even if implementation does not occur immediately. Decision documents signed before the listing of critical habitat for Cook’s lomatium do not need to be reanalyzed for the effects to critical habitat because these projects have been implemented.

Project design criteria (PDCs) are conservation measures developed to reduce impacts to listed species and their designated critical habitat. The PDCs described for each proposed activity are integral and mandatory to meet the requirements of the BA. If PDCs cannot be incorporated, the project will not be in compliance with this BA and reinitiation of consultation with the FWS will be necessary for projects that may affect critical habitat. Project design criteria are necessary for the BLM to comply with their responsibilities to conserve listed species and their designated critical habitat under the Endangered Species Act of 1973 Section 7 (a) (1) and Section 9 (a) (2) (16 U.S. C. 1531 et seq.). Additional

discretionary PDCs may be proposed and adopted during the inter-disciplinary team process to further reduce effects of the proposed action as long as the mandatory PDCs are still implemented.

This BA addresses activities over the next two years (FY 2012-2013) that will be implemented under the Medford District Resource Management Plan. The projects addressed in this BA are grouped into the general project activities described below. The predicted scope and amount of disturbance (acres, miles, number of projects, etc.) of these activities are reported as an average annual amount and as a two (2) year maximum.

PROJECT TYPES ADDRESSED UNDER THIS BA

A. **Tree harvest** includes various levels of regeneration harvest, commercial thinning, selective harvest, density management, commercial firewood, hazard tree removal, biomass/stewardship harvest, road daylighting, and opportunistic salvage.

B. **Silviculture** includes vegetation management activities consisting of, but no limited to, stand density management, conversion, fertilization, pruning, pre-commercial thinning of managed and natural stands, Port-Orford cedar sanitation, riparian thinning, and slash piling and burning.

C. **Special forest products** includes Christmas trees, firewood, bough and cone harvests, mushroom and lichen collections, brush and beargrass cuttings, edible and medicinal plants, transplants, shakes, rails and poles, miscellaneous saw timber, and burls.

D. **Watershed restoration** includes culvert repair/replacement, road restoration or decommissioning, slope stabilization, habitat improvement projects, stream improvement projects, including tree lining/felling, down wood placement and meadow restoration.

E. **Fuels management** includes fuel breaks, piling and prescribed burning, thinning, and brush treatments, including fuels activities within timber sales.

F. **Recreation** includes recreation permits (commercial and private), trail maintenance, and facilities maintenance.

G. **Road maintenance** includes maintenance, restoration or decommissioning, culvert replacement and repair, bridge maintenance and repair, and road alignment.

H. **ROW permits – Road.** These road permits include discretionary FLPMA and O&C road use permits and maintenance. This also includes non-linear features like landings associated with the permit. These do not include non-discretionary actions under O&C reciprocal ROW agreements and permits.

I. **Other ROW/land use permits.** Includes waterlines, power lines, and utilities ROW maintenance, non-linear land use permits like communication towers, permitted events, and minimum impact permits (i.e. filming, equipment parking at power line access points).

J. **Mining** include plan level operations.

K. **Cultural resources** including archeological excavations and restoration of historic sites.

L. **Weed control** includes manual, mechanical, biological and chemical control of noxious weeds.

M. Area Closures includes installation of gates, fences, boulders, berms, and other barriers to exclude vehicle traffic from specific areas.

N. Recovery actions including listed plant habitat restoration, burning, thinning, seed collection, growing, and outplanting.

O. Tracking and monitoring includes vegetation (plot) monitoring for forest production, fuels, weed treatment, and listed plant demographic and research monitoring.

PROJECT TYPES NOT ADDRESSED UNDER THIS BA

The following activities may require separate consultation and are not covered under this BA because the activities are too variable to predict or impacts are too broad.

1. Recreational off-highway vehicle use including designating OHV areas.
2. Land Exchange/Realty Actions
3. Research projects with LAA potential (other than listed recovery actions)
4. Wildfire including suppression activities
5. Catastrophic Insect and Disease outbreak treatment (e.g. Sudden Oak Death)
6. New EAs for herbicide use tiering to the new Vegetation Treatment using Herbicides (USDI, BLM 2010).
7. Livestock grazing
8. New trail construction and new recreation infrastructure
9. Construction of new Right-of-Way powerlines, waterlines, pipelines, and utilities.
10. Construction of new communication sites.
11. Construction of new permanent and temporary roads.
12. Development and expansion of quarries.

PROJECT DESCRIPTIONS

The descriptions evaluate the significant impacts to critical habitat over the 2-year period of the BA resulting from implementing the RMP. The BLM practices adaptive management as described in the RMP. Adaptive management allows minor project variations to meet site-specific conditions or landscape objectives. Therefore, there may be minor deviations in the description on projects over the 2-year life span of this BA. This consultation will address these minor alterations in project activities if the following conditions are met:

- Project complies with the Medford RMP to which it is tiered.
- Complies with existing programmatic consultation for FY 2009-2013 activities that may affect Cook's lomatium
- Impacts and extent of the project are within parameters of described activities in this BA.
- Minor deviations are reviewed by the level 1 team to ensure impacts to critical habitat remain the same or less than those described within this BA.
- Minimization measures proposed for the project are consistent with the intent and impacts of actions described in this BA.
- Any project impacts to critical habitat are reported to FWS in annual monitoring reports.

Separate consultations will be required to meet ESA compliance if the project cannot be revised to comply with this consultation.

Project activities are described in terms of type of activity, estimates of disturbance acres, extent, duration, and timing (Table 1). Determination of effects of these projects is displayed in Section IV of this document. The combined acres of habitat impacts are summarized and evaluated in the Effects section of this BA, without further repeating individual project descriptions. An estimate of the average acres per year and the total number of acres are shown for the two years (FY 2012-2013). If action amounts exceed the 2 year maximum, reinitiating consultation with the FWS may be necessary. The level 1 team will evaluate this on a case by case basis. It may be that additional acres or amounts may not change the net affects or the affect call to the species such that formally reinitiating consultation is unnecessary.

Table 1. Project Activities and Disturbance Estimates				
Project category		Estimated scope on average (acres, lbs, cubic ft, etc) per year in action area	Two year Maximums in action area	Two year maximum in critical habitat
A	All Tree harvest	Commercial tree harvest 300 acres/year	600 acres	20 acres
B	Silviculture	Pre-commercial thinning – managed stands 200 acres/yr Pre-commercial thinning – natural stands 150 acres/yr Vegetation competition release (existing stands) 300 acres/yr Fertilization 250 acres/yr Pruning 200 acres/year Reforestation (planting scalping) 250 acres/yr	400 acres 300 acres 600 acres 500 acres 400 acres 500 acres	40 acres 30 acres 60 acres 50 acres 40 acres 50 acres
C	Special Forest products	Boughs: 2,000 lbs/yr Christmas trees: 200 trees/yr Burls: 2,000 lbs/yr (1 burls) Edibles and Medicinal plants: 500 lbs/yr Floral greenery: 500 lbs/yr Mushrooms (morels, matsutake, chanterelles): 600 lbs/yr Whipstock/bolts/rails/fencing/post/poles: 10,000 board foot (bf)/yr Pulpwood/Roundwood/Sawtimber: 10,000 bf/yr Firewood: 60 cord/yr Manzanita: 2,000 lbs/yr Mosses/Lichens: 100 lbs/yr Transplants 10 plants/yr Seeds/Cones: 50 bushels/yr	4,000 lbs 400 trees 4,000 lbs 1,000 lbs 1,000 lbs 1,200 lbs 20,000 bf 20,000 bf 120 cord 4,000 lbs 200 lbs 20 plants 100 bushels	40 lbs 40 trees 0 lbs 10 lbs 10 lbs 12 lbs 200 bf 200 bf 10 cord 40 lbs 2 lbs 2 palnts 10 bushels
D	Watershed restoration	Stream structures 3/yr Culvert replacement/repair: 1 large fish passage culverts/yr; 5 cross culverts/yr Road obliteration 2 miles/yr Road closure 5 /yr Meadow restoration 25 ac/year	6 structures 2 Large Fish Passage culverts/10 cross culverts 4 miles 10 closures 50 acres	2 structures 1 large fish passage culvert/3 cross culverts 1 mile 4 closures 50 acres
E	Fuels	1,500 acres of mechanical or hand fuels reduction/yr;	3,000 acres	50 acres

	Management	1,000 acres of prescribed burning/yr; 25 acres/ yr of fuels reduction by private along property lines	1,000 acres 25 acres	25 acres 5 acres
F	Recreation	Misc. rec permits: 3 miscellaneous rec. permits/yr Maintenance: 10 trail miles 5 acres of campgrounds and other facilities	6 permits 20 miles 10 acres	2 permits 2 miles 1 acre
G	Roads maintenance	200 miles of road maintenance/repair/yr. Bridge/culvert replacement associated with roads, 2/yr	400 miles 4 structures	20 miles 1 structure
H	FLPMA ROW permits: Roads O&C Road Permits	Existing roads – maintenance 200 miles/yr O&C Linear maintenance: 100 miles/yr O&C Non-linear maintenance: 5 acres/yr	400 miles 200 miles 10 acres	20 miles 10 miles 1 acre
I	Other ROW/land use Permits	Maintenance of existing waterlines, power lines, and utilities: 20 miles/yr Maintenance of communication sites: 5 acres/yr Non-Linear permits (e.g. events) 3 permits/yr minimum impact permits (e.g. filming, equipment parking, etc...) Linear: 1 miles/yr Non-linear: 5 permits/yr	40 miles 10 acres 6 permits <6 acres 2 miles 10 permits <10 acres	4 miles 1 acre 2 permits <2 acres .5 miles 3 permits <3 acres
J	Mining and Quarry Operations	Permits for rock from quarries, 10 permits/yr Expansion of existing quarries 2/yr New rock quarries, 1/yr Mining Notice of Operation 1/ yr Mining Plan of Operations 1/yr	20 permits 4 < 40 acres 2 <20acres 2 <10 acres 2 <10 acres	0 permits 0 acres 0 0 1<5 acres
K	Cultural Resources	2 excavations looting or site evaluations/yr disturbance no more than 5 cubic meters per excavation 1 Historic cemetery restoration	4 excavations < 10 m ³ 2 restorations < 5 acres	2 excavations < 5 m ³ 2 cemetery restoration < 2 acres
L	Weed control	Treat up to 500 acres per year on average, using a combination of manual, biological, and chemical (spot-spray) control methods	1,000 acres	50 acres
M	Area Closures	Barrier maintenance, 2 repairs/yr Installation of new barriers, 0.1 acre/yr	4 repairs 0.2 acre	4 repairs 0.2 acre
N	Recovery Actions	Listed plant habitat thinning and burning, 40 acres/yr Seed collection, 15 sites/yr Planting seedlings 1 acres/yr	80 acres 30 sites 2 acres	80 acres 30 sites 2 acres
O	Tracking and Monitoring	Vegetation and fuels monitoring - < 50 acres/yr Documenting and tracking all Listed plant occurrences	100 acres	10 acres

	located in project areas - < 10 acres/yr Annual monitoring of Cook's lomatium 3 populations/yr	20 acres 30 acres	20 acres 30 acres
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Detailed descriptions of activities follow.

A. Tree Harvest

Tree harvest includes commercial and non-commercial removal of overstory and/or understory trees and can include regeneration harvest, seed-tree cuts, selective harvest, salvage, density management, commercial thinning, road daylighting, and individual tree removal. Commercial timber is generally classified as trees 8" or greater in diameter at breast height (dbh). Tree harvest also covers miscellaneous projects, including the removal of hazard trees for public safety, commercial firewood, biomass/stewardship sales, and salvage sales. Salvage sales result from blow-down (other than hazard trees), disease, or wildfires. Typically, a salvage project is less than a few hundred acres but can be as much as 10,000 acres for large wildfire salvages or catastrophic wind events.

Harvest can result in the removal of a few trees within a stand or can result in removal of all the trees. Openings may occur in an even or patchy distribution, depending on objectives of the treatment and constraints of the land use allocation. Trees are harvested by individual sawyers, or machine-mounted saws. Harvest includes the layout, marking, falling, limbing, yarding, and decking the trees to be removed from the site. In all cases but biomass removal, the limbs and needles/branches (slash) remain within the project area, and the bole of the harvested tree is removed. Sometimes the slash is lopped, scattered and allowed to decompose. In areas of heavier slash, it is piled and burned or in the case of regeneration harvests it may be broadcast burned (see Silviculture and Fuels below). Slash can also be removed and sold as Biomass, generally material less than 8 inches in diameter. Trees are yarded to landings by cable or skidded by tractors/skidders where they are decked. Helicopter logging involves picking the logs in bunches and flying to a designated landing to be loaded onto trucks. Soil disturbance from yarding and skidding in thinning and partial harvests is focused along corridors, which can make up between 7% of the area for skyline cable yarding, and 21% of the area for tractor logging (Landsberg, 2003, p. 29). Helicopter logging has shown deep disturbance on only 2% of the area, (Clayton, 1982, p.6). Higher levels of soil disturbance with ground methods tend to be focused in areas close to the landings and radiating outward.

Access to the timber sale involves the use of existing roads (see road maintenance) in areas where roads already occur, and can also involve the design and development of new roads. New roads involve the total removal of all vegetation along a corridor, creation of the road prism (cut, bench, and fill), grading, laying gravel, installing culverts and water bars, and stabilizing adjacent areas. Small temporary road spurs can be built off of existing roads to facilitate logging activities. These temporary roads are ripped (to reduce compaction) and revegetated after the sale. Trees removed from road prisms are often decked for inclusion in the timber sale, or could be sold in unrelated sales, or could occasionally be used on-site or off-site for watershed restoration, down wood supplementation, or in-stream structures.

The size of the harvest and the disturbance to the soil and understory vegetation in a project area is related to the intensity of activity. Regeneration harvest units, which remove the majority of trees, occur on fewer acres than density management or selective harvest, which removes fewer trees, maintains more residual trees, but covers more acres to obtain the same volume. Density Management treatments can include meadow restoration which removes trees encroaching into meadows, thinning brush, and sowing of native grasses.

Various types of thinning, density management, or selective harvest will occur if the harvest meets the objective as specified in the Resource Management Plan. Selective harvest techniques can result in project areas that often cover large acreages (several thousand acres), and contain stands with 120 – 140 feet of basal area per acre, 40 – 50 trees per acre, and average canopy coverage of 40-60 percent.

B. Silviculture Projects

Silviculture projects involve reforestation and young stand management activities in managed and natural stands within timber harvest areas, rehabilitation sites and watershed restoration projects on forestland. Reforestation treatments would include spot scalping, conifer and nonconifer planting, spot fertilizer pellet installation, mulching, tubing, animal damage control, and shade card installation. Young stand management treatments would include vegetation competition release, early stand thinning, pruning of lower live limbs, and piling of created slash. Cutting Port-Orford-cedar along roadsides for sanitation of *Phytophthora lateralis* would also be included.

Spot scalping involves two types of treatments; removal of ground cover to bare mineral soil on a four feet square treatment area at a 12'x12' spacing or an eighteen inch square treatment at a 8'x8' spacing. Fertilizer is applied by hand at each planting spot. Young stand management treatments involve the cutting of shrubs, hardwoods, and excess conifers utilizing chainsaws. Spacing of conifers range from 8'x8' to 18'x18', hardwood spacing range from 25'x25' to 40'x40'.

C. Special Forest Products

Special forest products consist of, but are not limited to the collection of boughs, Christmas trees, burls (madrone and maple), edible mushrooms, lichens, moss, brush and bear grass cuttings, edible and medicinal plants, whipstock (seedlings/cuttings of willow, aspen etc...), fence and corral rails, firewood, post and poles, pulpwood, roundwood and individual tree or incidental sawtimber sales. Most of these types of activities usually occur in areas less than a couple of acres. The BLM issues about 130 permits a year for various products, plus an additional 200 Christmas tree permits per year. About 60 permits (nearly half) are for firewood. Individual trees blocking roads can be sold as a Special forest product. Pulpwood, roundwood and sawtimber permits (< \$2,500 in values ~ a log truck load), average about 10 permits a year, about 4,500 board feet a year. On average about 10 permits a year are issued for fencing, post and poles, about 1,000 board feet per year, mostly small poles from already cleared timber sales

or areas being pre-commercially thinned. About 6 permits a year are issued for edible and medicinal plants (mostly lichens), about 40 mushroom permits, and there are about 2 burl permits issued per year.

These activities require personal and commercial use permits through the BLM. For activities designated as concentrated use (such as designated firewood cutting areas within sale areas), and for products like poles, habitat evaluations and plant surveys have already occurred following policy. Burl removal, and mushroom harvests are dispersed across the landscape. Edible plants, brush, floral, lichens and moss collections are species specific done by hand.

D. Watershed Restoration

Watershed restoration projects anticipated in the Medford District include: road decommissioning, storm proofing of roads (see road maintenance/decommissioning below), upslope erosion rehabilitation, riparian restoration, in-stream habitat improvement, large wood restoration, meadow restoration, and prescribed burning (see fuels management). The installation and maintenance of culverts and bridges occurs across the landscape on the road system.

Roads no longer essential for forest management may be gated, closed or decommissioned (ripped, seeded or put back to natural contours). Roads with the potential to fail or deliver large amounts of sediment to stream segments may be decommissioned, closed, or may be improved. Improvements include repairing road drainage facilities (culverts, drain dips, etc.) and surfacing (to reduce sediment). Restoration activities could include down wood development or placement in streams. This is accomplished manually with chainsaws or mechanically with heavy equipment. Meadow restoration, including burning, removal of competing vegetation, fencing, native plant seeding and planting, and weed removal may occur to restore or repair healthy ecosystems. These activities typically occur with manual labor, but may require equipment to dig post holes, or place rocks. Restoration work may be required as the result of future wind, snowstorms, rain, and flooding. Expected activities and effects specific to roads are evaluated under road maintenance (below), although restoration, maintenance, and drainage work is interdependent and interrelated to most BLM activities.

E. Fuels Management

Lands on the Medford BLM have short natural fire return intervals, but years of fire suppression have resulted in habitat conditions much brushier and denser than occurred historically. Fuels management has three primary purposes: fuels reduction to reduce wildfire hazard, site preparation/slash reduction for improving conifer planting (see Silviculture above), and restoration of ecosystem function where wildfire has been suppressed. Fire can also be used as a tool for weed control if used at the right time under the correct conditions.

Fuels management includes manual and/or mechanical treatments using chainsaws or mechanical equipment, followed up with prescribed fire (pile burning or under-burns). Broadcast burning without pre-treatment (brush fields) can also occur. Mechanical treatment is designed to convert

abnormally high amounts of shrubs and ladder fuels so that subsequent prescribed burning or wildfire won't be as severe. The activity slash which is piled is usually burned once that material dries out. A small portion of the acres treated by mechanical equipment may also be later burned to remove treated material. Fuels treatments can alter the environment (humidity, shade, water and nutrient relations) for understory herbaceous plants. Some acres are treated in steps, such as pile construction in year 1 and pile burning in year 2. Piles will cover (on average) about 5% of an acre, and range from 25 to 50 sq feet per pile in conifer communities. In heavy fire suppressed brush fields, piles may cover 10% of an acre.

Prescribed fire use is dependent upon management objectives. The primary role of prescribed fire has traditionally been for site preparation and fuels reduction. Recently, natural fuels reduction and ecological improvement have become end goals of prescribed fire. Prescribed natural fire is not currently used on the Medford BLM. Prescribed burning is generally restricted to spring or fall, due to risks of escapes, smoke concerns, and the weather. When successful understory treatments have been completed, and risks of escape are reduced, more burning during late summer or fall could be anticipated. Manual and mechanical treatments can occur at any time of the year. Natural and created fuel breaks across the landscape may be developed to help with the suppression of large-scale wildfires. In this case, treatment of fuels along a ridge or topographic break would occur to reduce the fuels and facilitate suppression activities. Fire line construction may occur as a tool to help create fire lines.

Small scale clearing along property lines next to private homes can occur through BLM permits. In this case the BLM authorizes the private landowner to treat along the property line (and onto BLM) to create a fuel break to meet county standards for fire protection for safety. This usually is less than 100 feet along the property line.

F. Recreation

Recreation management includes trail maintenance, facilities maintenance, observation decks and guard rails, signing, foot bridges, and permits for recreation activities (e.g. bicycle and equestrian races on roads and trails). Heavy equipment used to maintain infrastructure may result in minor soil and vegetation disturbance in previously disturbed areas. Heavy recreation use can trample vegetation in and around recreation sites and along trails. Trees may be felled in developed areas or along trails where public safety is a concern (this is generally an annual activity).

G. Road Maintenance

Road maintenance consists of grading, brushing, culvert maintenance and repair, installing and repairing water bars, resurfacing, and occasional hazard tree removal or minor re-routing. The maintenance or construction of water structures such as culverts and bridges can occur along roads (see watershed restoration). The BLM maintains roads on a schedule, but also respond to unanticipated repairs due to weather, accident, or landslide. Most activity is limited to short periods of time (*i.e.*, one or two passes with a grader). Road grading generally affects the ditch and a few feet or so of the cut-slope; some loose material is spilled over the fill-slope.

Maintenance brushing generally entails mechanically cutting brush down to less than a foot high within six feet of the edge of road tread. Brush more than six feet from the edge of the road tread is not treated. Some blasting may be required with road projects removing unstable portions of the cut-slope, often at rock faces.

Road decommissioning is usually tied to Watershed Restoration and covers activities that reduce or eliminate traffic use on the road by installing gates, barriers, rocks, ripping the tread where compacted, pulling culverts, and seeding grass and herbs.

H. ROW permits - Roads

The BLM authorize ROWs and permits for private landowners to construct new roads or use existing roads across BLM managed land for ingress and egress. These ROW permits are usually authorized under the Federal Land Policy and Management Act of 1976 and are often referred to as FLPMA permits. For the purpose of this BA, private lands refer to privately-owned or other government non-federal parcels, located as in holdings or adjoining property through which access is granted across federally managed lands. Maintenance of the road also can be included in these permits.

The BLM also issues O&C Road ROW permits for commercial purposes and/or to haul commercial products on BLM maintained road systems if these permits are not already in place. Road construction and/or maintenance can be part of these permits, as well as non-linear features like landings or turn-around areas. Federal discretion to influence the implementation of recovery efforts for threatened or endangered species may be limited or non-existent where certain pre-existing Road Use or Reciprocal Right-of-Way agreements exist between private landowners and the BLM. Many existing road activities in the action area are already covered by reciprocal rights of ways with other land owners and the BLM no longer has discretion. Section 9 prohibitions (ESA) are the responsibility of the applicant in situations when federal discretion is not retained, however this does not apply to plants (only vertebrates). This BA does not address non-discretionary activities, including but not limited to road construction and reconstruction, maintenance, haul, logging decks, and tail-holdings. Discretionary O&C permits are subject to ESA and NEPA analysis and the BLM can stipulate Project Design Criteria (PDCs) to reduce or negate impacts.

Road maintenance will be authorized on BLM land under the terms of individual FLPMA or O&C road permits. Road maintenance and restoration activities were described under road maintenance above.

On 30 January 2003, a new multi-agency policy (*Application of the Endangered Species Act to proposals for access to non-federal lands across lands administered by the Bureau of Land Management and the Forest Service*) was instituted. The Bureau of Land Management, Forest Service (FS), Fish and Wildlife Service, and NOAA (National Oceanic and Atmospheric Administration) Fisheries are signatories to this policy. The provisions of this agreement apply only when a BLM right-of-way grant is required for the reconstruction or construction of a road,

for either private or commercial purposes (see O&C permits below), to secure access to a parcel of non-federal land. The key components of the interagency agreement are:

- The agreement applies to grants of rights-of-way across BLM and/or public lands administered by the FS under their respective authorities, for purposes of access to non-federal lands.
- The “proposed federal action” to which the agreement applies is the authorization for access across federal land and subsequent activities on federal land – it does not include any actions on non-federal lands.
- The agreement clarifies that the FS and BLM will not include terms and conditions in access authorizations that will regulate activities on non-federal land.
- At the applicant’s discretion, the agreement provides applicants an option to include the effects of those activities that will be facilitated by the proposed access and conducted on the applicant’s non-federal lands as part of a federal agency ESA consultation on the access application.
- The agreement applies to applications for new authorizations for access that are processed by the BLM after January 30, 2003.

I. Other Rights-of-Way permits/land use permits, Water and power lines, utilities, communication sites, events, and minimum impact permits.

The BLM authorize ROW’s and permits for various uses on federal land for private and commercial utilities, water and power lines, public works, canals, dams, non-profit and commercial gatherings, cell or radio towers, group gatherings, etc. Construction or maintenance of power lines, pipe lines, or cellular towers can result in the removal of vegetation and soil disturbance. Other permitted activities (e.g. Native American gatherings, festivals, and other group events) can have affects to vegetation from trampling and camping. These permits are discretionary and the BLM can re-route activity locations and stipulate PDCs to reduce or negate impacts. Minimum impact permits are ones given where there is minimal or no impact (e.g. Equipment parking outside existing ROW for electric tower maintenance or a camera crew filming the landscape).

J. Mining Operations

Operators must submit a Notice of Operation (NoO) for mining activities on BLM-managed lands, causing surface disturbance on 5 acres or less, and removing less than 1,000 tons. Under the mining regulations (43 CFR 3809) the BLM must respond to these “Notice level plans” within 15 days. Reclamation of the operation is part of the Notice. Any mining Notice level activities that are proposed within designated critical habitat require a Plan of Operations (BLM Manual Section 3809.11 part C (6)).

Operators are required to file a Plan of Operations (PoO) for activities that remove more than 1,000 tons of material which are on more than 5 acres or are within critical habitat as stated above. PoOs also require NEPA. Reclamation of the operation is part of the operators Plan.

Each year many small-scale suction dredge operations are conducted on BLM. The BLM calls this ‘causal use’ and does not issue permits for dredges less than 4 inches in diameter, or for mining by hand without motorized equipment. Few miners are likely to notify the BLM of their intent to operate, since regulations authorize most small-scale, low impact operations such as these, and do not require notification or approval. All activity is assumed to be within the channel and no vegetation affects should occur. Recreational gold panning is not a regulated activity and the public is not required to get a permit.

K. Cultural Resources

Cultural activities could involve one to several-person crews digging and excavating historical and archeological areas. This work generally involves hand tools and would have minimal impacts to existing vegetation. Often BLM excavations are conducted where sites have been disturbed by looters or areas that have already been disturbed. Occasional heavy equipment might be used for preservation or restoration work to historic structures or to install protective barriers or fences as protection measures. Restoration work at historic graveyards would include rebuilding fences, righting grave markers, and removing overgrown vegetation.

L. Weed control

Noxious weeds, as defined by the State of Oregon are the only targets for weed treatment at this time. Weed control treatments include methods like mechanical brushing or mowing, sawing, hand-pulling, mulching, digging, grubbing, steaming, burning, seeding, or the introduction of biological control insects. Vehicle and ground crews walk through infested areas spraying or hand pulling weeds. Weed control usually is done with backpack sprayers using select herbicides, but can occur from low-mounted truck booms or ATV-mounted sprayers. The use of wicks instead of sprays is used to control application on specific plants and minimize incidental spray to adjacent vegetation. Herbicide spraying using aerial methods is not authorized. The selected herbicides used by the Medford District of the BLM are: Glyphosate, 2-4-D, Pichloram, and Dicamba (Medford District Weed Environmental Assessment, 1998). Most herbicide treatments for noxious weeds use Glyphosate, and are formulations made for use around water (i.e. non-ionic surfactants).

The BLM has completed a State-wide EIS that will allow the use an additional 10 chemicals. The Medford district will do a step-down EA tiered to this EIS and consultation on the new local Medford BLM EA will occur at a later time. This BA only addresses activities covered under the existing 1998 EA.

Treatments occur during the period of the year the targeted weeds are most susceptible to a particular treatment. The listed noxious weeds that are of most concern in the basin are: Scotch Broom, Yellow Starthistle, Puncture vine, Himalayan blackberry, Rush Skeleton weed, Yellowtop alyssum, Dyers woad, Purple loosestrife, Japanese knotweed, Canada thistle, and Meadow knapweed. There are over 20 other listed noxious weeds that have been found on the district and other new non-native weed species are being discovered in the sub-basin every year. As new species are found, they will be treated within the life of this BA.

M. Area Closures

Area closures involve the blocking of access to protect ecological or cultural values, enforce vehicle closures, or prevent damage from unauthorized OHV activities. Methods used may include placement of gates, fences, earthen berms, boulders, guard rails, trenches or other structures to exclude vehicles and discourage or exclude vehicle use. Heavy equipment may be used to create or place these structures. Maintenance and reinforcement of structures may be necessary if they become damaged.

M. Recovery Actions

There is a Draft Recovery Plan (USDI, FWS 2006) for Cook's lomatium. The Cook's lomatium recovery plan recommends seed collection, direct seeding, out growing (in greenhouses) and out-planting seedlings to increase (augment) existing population sizes and create new populations in management areas. The recovery plan also recommends habitat restoration through the use of fire and removal of encroaching trees and shrubs and the acquisition of lands for protection through land swap.

N. Tracking and Monitoring

Vegetation monitoring on BLM occurs for timber inventory, riparian vegetation monitoring associated with hydrology, fuels monitoring, weed, and rare plant monitoring. Most monitoring is non-destructive, involving fixed or random plots collecting data on the abundance and composition of the vegetation. Some involves the removal and weighing of biomass samples, and collection of samples of vegetation for identification. Monitoring is done by botanists, ecologists, foresters, or inventory contractors that are familiar with the vegetation and federally listed species.

Tracking and monitoring of activities and listed species are critical to determine if plans are properly implemented. Existing monitoring efforts include: demographic monitoring of Cook's lomatium at three locations in the Illinois valley, and reintroduction monitoring at two locations at French Flat and one location at Reeves Creek. The BLM verifies all new sites found within project areas, and attempts to monitor buffered sites within project areas, however annual appropriations influence how much monitoring occurs. Tracking and monitoring has no effect on critical habitat and will not be analyzed further in this document.

II. Project Design Criteria

Project Design Criteria (PDCs) are conservation measures incorporated into a project to minimize or avoid affects to critical habitat and the Primary Constituent Elements. The PDCs may include modifying the prescription or activity method, modifying the activity intensity, changing the timing of the action; establish no activity buffers on the critical habitat, or dropping portions of units. Additional discretionary

PDCs can be proposed and adopted during the interdisciplinary team process to further reduce effects as long as the mandatory PDCs listed in this BA are still incorporated.

Should new information arise that significantly changes impacts to federally designated critical habitat, the BLM has the discretion to halt and modify all projects, anywhere in the process.

In an emergency to protect public safety, PDCs may be waived at the discretion of the decision-maker, if necessary. The FWS will be notified of all such occurrences and the level 1 team will determine if emergency consultation is required and to adjust environmental baselines if necessary. The BLM will be prudent in evaluating public safety decisions. They will attempt to predict potential problems (such as road failures) such that remedies can occur during times and using methods that minimize impacts to the extent possible. In the event emergency consultation is initiated, the BLM will act prudently and efficiently to complete or close consultation in a timely manner, preferably within 6 months or less of the emergency action.

All PDCs are mandatory and must be incorporated in all projects to reduce adverse effects that may affect critical habitat, unless a specific exemption is mentioned. Effects determinations for all projects have been made using the required PDCs in this BA. The goal is to reduce the detrimental effects of any projects which “may affect” any critical habitat. Projects with a “may affect” determination unable to incorporate mandatory PDCs will be analyzed under separate consultation and will not be covered under this programmatic.

Project Design Criteria have been developed to maintain the Primary Constituent Elements (PCEs) for Cook’s lomatium. The PCEs for Cook’s lomatium are listed in the final designation of critical habitat for Cook’s lomatium on page 21 (Federal Register, 2010). Not all of the PCEs need to occur simultaneously within a unit to constitute critical habitat. For the purpose of this analysis, critical habitat for Cook’s lomatium will be analyzed as effects to suitable dispersal and germination habitat and effects to unsuitable dispersal and germination habitat within critical habitat. (1) For this document suitable dispersal and germination habitat is defined as areas within a critical habitat unit that possess the characteristics necessary for individual and population growth, germination, and seed dispersal of Cook’s lomatium. (2) Unsuitable dispersal and germination habitat is defined as areas within a critical habitat unit that do not possess the characters necessary for individual and population growth, germination, and seed dispersal of Cook’s lomatium. Unsuitable dispersal and germination habitat is part of the hydrologically and ecologically functional system of streams, slopes, and wooded systems that surround and maintain the seasonally wet alluvial meadows. An example of unsuitable dispersal and germination habitat is an 100 year old timber stand that is dominated by Douglas-fir and is not a residual grassland or mixed evergreen woodland savannah such as the Reeves Creek sites.

The PDCs developed for project activities may be different in the suitable and unsuitable dispersal and germination habitat of Critical Habitat.

GENERAL AND SPECIFIC PDCs

The Project Design Criteria listed below are required for activities occurring within critical habitat unless otherwise specified.

A. TREE HARVEST- PDCs

- No tree harvest in suitable dispersal and germination habitat. Hazard trees may be felled but will be left on site unless they can be accessed by a self-loader from the roadway.
- No regeneration harvest or broadcast burning
- No new permanent or new temporary road construction.
- No new landing construction.
- No construction of truck turn-arounds in suitable dispersal and germination habitat.
- Yarding activities are limited to dry condition.
- Single end suspension yarding for cable and ground yarding systems.
- Based on soil type, slope and amount of compaction, BLM hydrologist will recommend means such as subsoiling, water barring, and slash placement on skid trails to reduce impacts to surface and subsurface water flow due to compaction from yarding.
- Skid trails will be seeded with an appropriate native seed upon completion of the tree harvest.
- Existing landings and truck turn-arounds located in critical habitat or within 100 feet of critical habitat will be ripped, recontoured, and seeded after completion of the tree harvest.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

B. SILVICULTURE PROJECTS-PDCs

- No reforestation in suitable dispersal and germination habitat.
- No conversion of hardwood stands to conifer stands in suitable dispersal and germination habitat.
- No treatment of natural stands in suitable dispersal and germination habitat.
- Reforestation sites that are in unsuitable dispersal and germination habitat or are directly adjacent to critical habitat will be monitored for weed populations when stocking monitoring occurs. Reported weed sites will be treated.

C. SPECIAL FOREST PRODUCTS-PDCs

- No burl removal
- BLM botanist must review firewood cutting areas and commercial permits for special forest products to assure the activity would cause no change to PCEs for Cook's lomatium critical habitat.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

D. WATERSHED RESTORATION

- Disturbed areas will be seeded with an appropriate native seed.

- BLM hydrologist will assure projects are designed to benefit or have no impact on the hydrologic needs of critical habitat.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

E. FUELS MANAGEMENT

- Use Chainsaws or other hand tools to cut vegetation.
- Piles must be constructed to be no larger than 8'x8' in size and cover no more than 5% of the treatment area.
- No mechanized equipment will be used to build fire line.
- Firelines constructed in suitable habitat will be pulled back and seeded with an appropriate native seed.
- Burn piles within 50 feet of established weed populations or along weed infested roads will be seeded with an appropriate native grass.

F. RECREATION-PDCs

- No new construction of trails or facilities.
- Permitted events for vehicles, bicycles, and horses are restricted to system roads and trails.
- For recreation permits, vehicle parking is only allowed in already established parking areas.
- Recreation permits will be reviewed by BLM botanist and hydrologist to assure habitat, hydrology, and soils will not be manipulated and assure the activity would not introduce or increase the spread of noxious and invasive weeds.
- Rock and fill need to come from a weed free source. If a weed free source is not available the site where the material was used will be monitored for noxious weeds for three consecutive years following the completion of the project. All noxious weeds observed during the monitoring would be treated with methods consistent with existing protocol.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

G. ROAD MAINTENANCE

- No new permanent or new temporary road construction.
- For new or replacement crossdrains, avoid concentrated discharge into fill slopes. If water must be discharged onto fill slopes install energy dissipaters.
- Decommission roads in a manner that will return the old road bed to the natural hydrologic function, spread native topsoil, and seed with appropriate native vegetation.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.
- Rock and fill need to come from a weed free source. If a weed free source is not available the site where the material was used will be monitored for noxious weeds for three consecutive years

following the completion of the project. All noxious weeds observed during the monitoring would be treated with methods consistent with existing protocol.

H. ROW PERMITS-ROADS-PDCs

- No new permanent or temporary road construction.
- No new landing construction.
- For new or replacement crossdrains, avoid concentrated discharge into fill slopes. If water must be discharged onto fill slopes install energy dissipaters.
- Decommission roads in a manner that will return the old road bed to the natural hydrologic function and seed with appropriate native vegetation.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.
- Rock and fill need to come from a weed free source. If a weed free source is not available the site where the material was used will be monitored for noxious weeds for three consecutive years following the completion of the project. All noxious weeds observed during the monitoring would be treated with methods consistent with existing protocol.

I. OTHER ROW PERMITS/LAND USE: Water and powerlines, utilities, communication sties, events, and minimum impact permits-PDCs

- No permits for new construction activities in suitable dispersal or germination habitat.
- New construction activities in unsuitable dispersal and germinations habitat must be reviewed by BLM hydrologist to assure they will cause no change in hydrologic condition.
- No event permits will be issued in suitable dispersal or germination habitat with the exception of minimum impact permits.
- Event permits in unsuitable dispersal and germination habitat must not cause ground disturbance that would alter hydrologic condition.
- Equipment and vehicle parking is only permitted on previously disturbed ROW.
- Rock and fill need to come from a weed free source. If a weed free source is not available the site where the material was used will be monitored for noxious weeds for three consecutive years following the completion of the project. All noxious weeds observed during the monitoring would be treated with methods allowed in the Medford District weed treatment EA (BLM, 1998).
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

J. MINING OPERATIONS-PDCs

- Mining operations are limited to reprocessing old mine tailing as long as work can be completed in one calendar year between May and October, and site can be reclaimed to existing condition before November of the same year. An operation would be permitted to work for multiple seasons (May through October) if a hydrologist deems the project will have no impact on the hydrology of the area. Operations must be accessed from existing roads and operations will occur on existing disturbed areas.

- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

K. CULTURAL RESOURCES

- If heavy equipment is to be used for excavations, the activity must be completed in one calendar year between May and October, and revegetated before November of the same year. An operation would be permitted to work for multiple seasons (May through October) if a hydrologist deems the project will have no impact on the hydrology of the area.
- After completion of excavation activities the hydrologic function of site will be returned to pre-project condition or better.
- The vegetative/organic layer at excavation sites will be preserved at the start of the project and used to restore the site at completion of the project, creating a natural cap for the excavation site, if this layer cannot be preserved, vegetate disturbed area with appropriate native seed.
- Scatter vegetation cut for cemetery restoration to avoid piles that would need to be burned.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

L. WEED CONTROL-PDCs

- Comply with the Medford District weed treatment EA (1998).

M. AREA CLOSURES

- BLM hydrologist will assess project design and assure project does not change hydrology of the area.
- No trenches allowed in suitable habitat
- No greater than 1% of the total area for each Critical Habitat Units will be removed through the placement of permanent structures such as boulders, gates, fences and berms.
- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

N. RECOVERY ACTIONS

- All heavy equipment used for activities in critical habitat and adjacent to critical habitat will be cleaned prior to entering BLM lands to remove all dirt and vegetation from the vehicle body, undercarriage, tires; and heavy equipment components such as scoops, blades, and mowing heads.

III. ENVIRONMENTAL BASELINE

The final rule (Federal Register Vol. 75, No. 139, pp. 42490-42570) describes primary constituent elements (PCEs) of critical habitat as: Space for individual and population growth, germination, and seed dispersal; water, nutritional, or physiological requirements; and habitat protected from disturbance.

Critical habitat for Cook's lomatium is designated in two geographic areas, the Rogue River Valley and

the Illinois River Valley. The physical and biological features that support populations of Cook’s lomatium in the two areas are very different. For discussion in this document only the Illinois River Valley PCEs will be described and discussed, as there is no critical habitat on BLM lands in the Rogue River Valley.

Below is a summary of the PCEs for Cook’s lomatium in the Illinois River Valley. A more detailed description can be found in the final ruling.

1. Wet meadows in oak and pine forests, sloped mixed-conifer openings, and shrubby plant communities that are seasonally inundated and support native plant populations and are a minimum of 20 acres in size.
2. The hydrologically and ecologically functional system of streams, slopes, and wooded systems that surround and maintain seasonally wet alluvial meadows underlain by relatively undisturbed ultramafic soils within the greater watershed.
3. Silt, loam and clay soils that are ultramafic and nonultramafic alluvial origin, with a 0-40 percent slope.
4. No or negligible presence of competitive, nonnative invasive plant species. Negligible is defined as the minimal level of nonnative plant species that will still allow Cook’s lomatium to continue to survive and recover.

The following tables display the land ownership of the critical habitat units and the land allocation from the 2008 Medford District RMP.

Table 2: Landownership of Critical Habitat in the Illinois Valley				
Unit Number/acres	Acres BLM	Acres Private	Acres FS	
IV 1A 56 acres	0 (0%)	56 (100%)	0 (0%)	
IV 1B 29 acres	29 (100%)	0 (0%)	0 (0%)	
IV 2 70 acres	0 (0%)	67 (100%)	0 (0%)	
IV 3 374 acres	271 (70%)	103 (30%)	0 (0%)	
IV 4 204 acres	130 (64%)	74 (36%)	0 (0%)	
IV 5 407 acres	390 (96%)	18 (4%)	0 (0%)	
IV 6A 25 acres	0 (0%)	25 (100%)	0 (0%)	
IV 6B 424 acres	1 (>1%)	423 (99%)	0 (0%)	
IV 7 136 acres	34 (25%)	102 (75%)	0 (0%)	
IV 8 579 acres	26 (5%)	552 (95%)	0 (0%)	
IV 9 30 acres	10 (33%)	20 (67%)	0 (0%)	
IV 10 110 acres	24 (22%)	86 (78%)	0 (0%)	
IV 11 292 acres	215 (74%)	71 (25%)	6 (>1%)	
IV 12 1216 acres	617 (51%)	597 (49%)	0 (0%)	
IV 13 54 acres	46 (89%)	8 (11%)	0 (0%)	
TOTALS 4006 acres	1793 (45%)	2205 (55%)	6 (negligible)	

Unit Number/Acres BLM	Administrative Withdrawn	NLCS ¹	RMA ²	TMA ³	Deferred TMA
IV 1A 0 acres	0	0	0	0	0
IV 1B 29 acres	27	0	1	1	0
IV 2 0 acres	0	0	0	0	0
IV 3 271 acres	42	0	82	146	0.3
IV 4 130 acres	40	0	30	59	0.3
IV 5 390 acres	31	0	84	275	
IV 6A 0 acres	0	0	0	0	0
IV 6B 1 acres	1	0	0	0	0
IV 7 34 acres	23	11	0	0	0
IV 8 26 acres	23	0	0	3	0
IV 9 10 acres	0	10	0	0	0
IV 10 24 acres	0.2	0	0	24	0
IV 11 215 acres	188	0	2	3	22
IV 12 617 acres	526	8	11	63	9
IV 13 46 acres	0	46	0	0	0
TOTALS 1793 acres	901	75	210	574	32

1 NLCS = National Landscape Conservation System

2 RMA= Riparian Management Area

3 TMA=Timber Management Area

A complete description of this species, life history, distribution, ecology and habitat is available on page 42490 of the Federal Register designation of Critical habitat for Cook's lomatium, Final Rule (USFWS, 2010)

IV. EFFECTS OF THE PROPOSED ACTION OF DESIGNATED CRITICAL HABITAT

The PCEs for Cook's lomatium are described in detail in the critical habitat designation and can be summarized as suitable habitat for plants, hydrologic function, soil, and absence or negligible presence of competitive nonnative invasive plants, typically noxious weeds. The PCEs for the Illinois Valley are described above. The function of these elements must be maintained or the action would be likely to adversely affect critical habitat and not meet the standards for this BA.

Suitable habitat can be affected by physically removing the vegetative components, such as the dominate vegetation listed in the final designation for Cook's lomatium critical habitat. This can occur by a variety of activities including, but not limited to constructing permanent roads or trails, building infrastructure for recreation, developing or expanding quarries, or reforestation practices that may convert hardwood stands to conifer dominated stands.

Activities may affect the hydrologic function of critical habitat by redirecting surface or subsurface water flow. **Activities include those listed above plus temporary road construction** and culvert placement.

Many of these projects can be designed to reduce or eliminate the effect on hydrology, such as placing coffer dams on the out-flow end of culverts to spread water across the land scape instead of channeling it. Skidding and cable yarding associated with tree harvest may affect the hydrology by compacting the soils which may cause routing of surface water or disruption of subsurface flow down to 18-24 inches.

Soils provide rooting medium, nutrients to the plants and certain physiological characteristics such as soil structure that allow the habitat to be seasonally inundated with water. Equipment operations can compact the soil causing soil porosity changes that adversely affect root growth and hydrologic flow changes. Activities affect soils if the soil is physically removed from the site, such as quarry construction or expansion. Mining activities may also affect soils by removing ten or more feet of soil. This soil is processed, which mixes up the soil structure and is then returned to the mined area during reclamation. It is not well known if the structure of soil can be “re-made” during reclamation, and it is unknown how long with would take nature to “sort out” the horizons.

All activities that are ground disturbing pose a risk for invasive plant introduction. The scope, location, and scale of the activity will dictate the level of risk of invasion and spread. Activities such as planting Cook’s lomatium seedlings is a low risk because the area of disturbance is measured in square feet, where as regeneration harvest, the associated broadcast burning, and reforestation activities may be the most disturbing because the ground disturbance is measured in acres, canopy cover is removed, competitive native vegetation may be consumed in broadcast burns, and the distrubance of bare ground from maintenance activities such as scalping. Requiring the cleaning of equipment and seeding of disturbed areas greatly reduces these risks, and for many activities the effects are indiscernible from the natural spread of weeds by animals and wind.

Project category		Direct effects
A	Tree Harvest	Implementation of PDCs would reduce the effects of tree harvest to hydrology and invasive competitive plants and would maintain the function of these PCEs. With implementation of PDCs timber harvest would have no effect on habitat or soils.
B	Silviculture	Silviculture projects would have no effect on critical habitat because PDCs prohibit reforestation in suitable dispersal and germination habitat and conversion of hardwood stands to conifer stands. Projects will be monitored for noxious weeds and if found treated.
C	Special Forest Products	Implementation of PDCs will minimize the effect from extraction of special forest products and prohibit burl harvest from critical habitat. These activities would cause no irreversible damage to critical habitat and its PCEs.
D	Watershed	These activities would have a beneficial effect on critical

	Restoration	habitat by improving hydrology and meadow habitats. Implementation of PDCs would reduce the risk of weed introduction. Road and culvert work are described in the road maintenance section.
E	Fuels Management	Fuels treatments may have a short-term impact to habitat, but in the long-term they will be beneficial because reduced fuels loads create open canopy layers and improve the quality of habitat for Cook's lomatium. Fuels treatments would also reduce the effects of wildfires by creating conditions that burn cooler and allow vegetation to recover faster.
F	Recreation	Recreation activities would have no affect to habitat, hydrology, or soils with implementation of PDCs. These activities would not increase the risk of noxious weed introduction above the level already occurring for activities that do not require special permits.
G	Road maintenance	Road maintenance would have a beneficial effect to critical habitat by reducing undesirable erosion and improving hydrology. Road decommissioning would be beneficial to critical habitat by improving the hydrology, reducing soil compaction, establishing native vegetation, and reducing weed spread.
H	ROW permits-Roads	Road maintenance would have a beneficial effect to critical habitat by reducing undesirable erosion and improving hydrology. Road decommissioning would be beneficial to critical habitat by improving the hydrology, reducing soil compaction, establishing native vegetation, and reducing weed spread.
I	Other ROW/land use permits	Implementation of PDCs would cause no measurable change to the function of critical habitat because no new construction permits are allowed in suitable dispersal and germination habitat and event permits will cause no new ground disturbance.
J	Mining and Quarry operations	Mining operations are limited to previously disturbed areas, are seasonally limited causing minimal impacts and would not alter the function of critical habitat.
K	Cultural resources	The hydrologic condition of critical habitat may improve after assessment and restoration of looted cultural sites. Activities would have indiscernible changes to PCEs with the implementation of PDCs.
L	Weed Control	Weed control treatments would be applied as necessary to prevent the spread of noxious weeds. These treatments have a beneficial effect on critical habitat.
M	Area Closures	Area closures would have a beneficial effect to critical

		habitat by preventing damage to habitat, hydrology, and reducing introduction of competitive vegetation.
N	Recovery Actions	Recovery actions have a beneficial effect on critical habitat by improving meadows and increasing the number and size of Cook's lomatium populations.

Effects to Critical Habitat

Tree harvest and associated activities such as log decks and truck turn-arounds will not be allowed in suitable dispersal and germination habitat for Cook's lomatium, this will maintain the habitat and soils associated with critical habitat. The use of log decks, heavy equipment for yarding, and opening the canopy in unsuitable dispersal and germination habitat can all contribute to the introduction and spread of noxious weeds and nonnative competitive vegetation. PDCs such as equipment washing, dry condition yarding, no new log decks, and seeding of skid trails have been developed to reduce that risk to a level that is indistinguishable from vectors we cannot control such as animal and wind spread and vehicle traffic not associated with tree harvest. Activities associated with tree harvest that would affect hydrology are road construction and yarding systems. PDCs for no new permanent or temporary road construction or new log desks in critical habitat and reducing compaction from yarding will allow water to spread across the landscape and return the hydrology to pre-project condition. Given the Illinois Valley received 60 inches of rainfall a year on average, it is my professional opinion that where the terrain is flat and the soils have a strong clay component, the rainfall is the main water contribution to the system while surface and subsurface flows play a lesser role.

Silvicultural practices would cause no change to hydrology or soils that would affect critical habitat because the amount of ground disturbance by planting is indiscernible and planting would not occur in suitable dispersal and germination habitat. The PDCs to prohibit reforestation in suitable dispersal and germination habitat and prohibit habitat conversion in critical habitat would retain the habitat necessary for the growth and reproduction of Cook's lomatium. Activities such as site prep for reforestation, reforestation, and scalping offer opportunities for the introduction and colonization of noxious weeds because of the large amount of bare ground created by those activities. Additionally if weed seed exists in the soil, disturbance such as those described for silvicultural practices can stimulate the germination of that seed. Monitoring for and treating noxious weeds would reduce the risk of nonnative plant competition in critical habitat.

Burl harvest will not be allowed in critical habitat and the harvest of most special forest products is done with manual methods and without vehicles leaving existing roadways. As a result there is no effect to the PCEs. The activities that may cause disturbance to PCEs are firewood cutting areas, hauling of fence and corral rails, post and poles, pulpwood, roundcuts, and incidental saw timber sales if vehicles are allowed to leave the roadways. PDCs have been designed to reduce these potentially adverse affects to insignificant adverse affects.

Activities to improve watershed function typically would have a beneficial effect to critical habitat in the long term. These types of activities often repair poor drainage of roads, add structure to streams, and

improve meadow habitat. With the inclusion of PDCs these projects have little risk of introducing noxious weeds. Road work and culvert replacement are analyzed in the road maintenance section.

Fuel reduction projects may have a long term beneficial affect by creating more open habitat that is better suited for Cook's lomatium. The burning of meadows may benefit critical habitat by removing thatch build up to create areas where seed germination can occur. Burning has helped increase the health and vigor of Cook's lomatium plants on the Nature Conservancy preserve on the Agate desert (Borgias 2004). Areas that receive fuels treatments are likely to burn with less intensity during a wildfire, increasing the recovery time for the vegetative component of the critical habitat following a wildfire.

Pile burning of slash does create a black ring on the landscape that is devoid of vegetation in the short-term. PDCs will limit the size of piles to 64 square feet (8'x8' pile). Larger piles would burn longer, exposing the soil to more heat which could increase the amount of time it takes to vegetate. The amount of area covered with burn piles is also limited to 5% of the treatment area, approximately 35, 8'x8' piles per acre. This minimizes the number of piles to maximize the amount of ground left undisturbed. Personal observations have shown that 5 years post burn the ring has vegetated with early successional vegetation. This is the same observation made by fuels specialist on the Medford District. Given this information pile burning would not remove the function of the critical habitat or the PCEs of the habitat.

With inclusion of PDCs to spread seed on burn piles near known weed sites and to rehabilitate fire lines, the risk of increasing weeds through these actions is reduced and would not cause competition with native vegetation in critical habitat.

Recreation activities would cause no new soil damage and PDCs would limit the impacts to hydrology and habitat, to insignificant levels. With the implementation of PDCs the risk of introducing noxious weeds would not be discernable from activities that do not require permits.

Road maintenance and ROW road maintenance would occur within the road prism, an area of existing disturbance. Road maintenance often improves hydrology by fixing washouts that channel water. Road decommissioning will benefit critical habitat by reducing vehicle traffic that could introduce and spread noxious weeds, restore hydrology to natural systems, and create areas for native vegetation to establish.

Other ROW/land use permits allow for activities such as maintenance of existing power and water lines, utilities and communication sites and occur in previously disturbed areas. Washing of equipment would reduce the risk of weed introduction and spread. Permits for new construction would be allowed in unsuitable dispersal and germination habitat but would be designed to maintain the hydrologic condition. Implementation of PDCs would reduce the introduction or spread of weeds. Only minimum impact permits would be allowed in suitable dispersal and germination habitat and would have no effect on critical habitat. Other event permits would be allowed on unsuitable dispersal and germination habitat, but would not allow ground disturbance so as to have no effect on hydrology or weed introduction.

Cultural resource excavations may benefit hydrologic condition by restoring looted sites. Fences and other barriers would discourage further disturbance, and revegetation of project sites with native

vegetation would keep noxious weeds from establishing. Historic cemetery restoration projects have little to no impact on critical habitat PCEs. Vegetation cut would be similar to a fuels maintenance project, but more selective and on a much smaller scale, not much greater than one acre. This would not affect the function of the habitat in the critical habitat.

With the PDCs, mining activities in critical habitat are limited to reworking old mine tailing. These are areas that are already disturbed so there is no anticipated new disturbance of critical habitat. Additionally operations cannot alter hydrologic systems during the wet season when grasslands/meadows become seasonally inundated.

The establishment and spread of noxious weeds in critical habitat can cause competition with the native vegetation and create a monoculture of undesirable vegetation that does not maintain the function of the critical habitat. Control of noxious weeds through manual, cultural, biological, and chemical methods can control and eliminate noxious weeds in critical habitat and the adjacent land base, this is a beneficial affect to critical habitat.

OHV use in wet soils may alter the hydrology by creating ruts that channel water; they also create disturbed areas that lend to the establishment of noxious weeds and other competitive nonnative vegetation. Area closures have an overall beneficial effect to critical habitat by helping to maintain the function of the PCEs through the exclusion of OHV activity. There may be some minor short term ground disturbance due to placement of boulders and digging post holes, but personnel observations of these activities show the disturbed area vegetate naturally in one year. Placement of permanent structures does remove a very small portion of the critical habitat, but the amount removed is measured in square feet and would be less than 10,000 square feet, which is 0.2 acres, and will not exceed 1% of the total area of the Critical Habitat Unit for which the structures are being placed. The PDC to limit trench development to areas where hydrology would not be disturbed was developed to maintain the hydrologic function of the critical habitat.

Meadow improvements as part of recovery actions such as removal of encroaching conifers and shrubs, and burning of excess thatch improve the condition of critical habitat. Planting of Cook's lomatium seedlings creates minor ground disturbance as a small hole needs to be dug for each plant. The disturbance for each hole would be no greater than two square inches. Planting 1,000 plants would create less than 1/10,000 of an acre of disturbance. Direct seeding of Cook's lomatium creates no ground disturbance.

Interrelated and Interdependent Effects

Interrelated actions are part of the larger action and depend on the larger action for their justification, and Interdependent actions are ones having no independent utility apart from the proposed action. Timber harvest projects often have activities that are interrelated and interdependent (I&I). Surveys, fuels projects, associated road building, restoration actions within timber sales are all examples, and these affects are addressed above. Surveying for and protecting known occurrences of Cook's lomatium will result in no effects on critical habitat.

The issuance of ROW road building permits is one of the main I&I actions. It can be addressed by using the “but for” test, i.e. “But for” the issuance of a BLM construction permit to access private lands the activity affecting critical habitat (presumably logging or development) would not occur. If other access is reasonably available (it does not have to be economical, just reasonable), or if another way to accomplish the private land objectives exists, then this is NOT an I & I issue. The BLM and the FWS has agreed that the issuance of a ROW permit on an existing road is not an interconnected and interdependent action requiring consultation for any action on private lands. See 10 March 2003 2670 memo *Endangered Species Act and Access to Nonfederal Lands Across National Forest System Land and 30 March 2003 interagency agreement Application of the Endangered Species Act to proposals for access to non-federal lands across lands administered by the Bureau of Land Management and the Forest Service.*

Cumulative Impacts

Cumulative effects are those effects of future tribal, county, state or private activities, not involving a Federal nexus, that are reasonable certain to occur within the action area of the federal action subject to consultation (50 CFR 402.2). The effects of future federal actions will be evaluated during future Section 7 consultations and are not included in cumulative effects under ESA. Cumulative effects analysis of foreseeable state and private actions provide the FWS and the BLM an accurate environmental baseline to assess impacts of federal actions. While ESA applies to federal lands within the action area, it is assumed that other federal agencies are meeting the Endangered Species Act. It is also assumed that existing State laws that apply to State, County and City public lands, are protecting federally designated critical habitat. ESA does not apply to private lands, which have the largest ownership in the Illinois River Valley sub basin (2207 acres), and it is assumed that cumulative effects are adverse; critical habitat will continue to be modified and converted to other uses, protection is unplanned or non-existent. Through time, existing critical habitat on private lands will lose their function.

For critical habitat on non-federal lands under ESA, if there is no federal nexus, there is no federal requirement to manage the critical habitat. Existing Oregon State laws for endangered species require State public lands (state, county, city) to address critical habitat. Critical habitat on non-federal lands have likely experienced negative impacts over the last 150 years from resource extraction (mining, grazing, and logging), the conversion of low elevation wild-lands to pastures, agricultural lands, and rural/urban centers. Habitat for Cook’s lomatium on non-federal lands will continue to be adversely affected, or lost, as the human population of the Illinois River Valley sub-basin expands. Fifty-five percent of critical habitat occurs on private lands. This habitat may continue to function if located within green belts, parks, and refuges, but the ability of this habitat to persist across an ever-increasing fragmented landscape is unknown and unlikely. The likelihood of critical habitat maintaining its functionality for the next 100 years is unknown, and will depend upon future landowners, or revised state laws that would require protection. Critical habitat occurring on federal lands, where the ESA specifically mandates conservation, will likely serve as the primary refugia for these species into the 22nd century.

V. BIOLOGICAL ASSESSMENT CONCLUSIONS

The determination effects table below (Table 5) reflects the entire project including interrelated and interdependent and cumulative effects. There will be situations where “No Effect” determinations will be made on specific projects in specific situations, and a “May Affect Not Likely to Adversely Affect” call can be avoided, even if the determination on the table is NLAA. If PCDs are not implemented the effects of the project on critical habitat may be more adverse and lead to a “Likely to Adversely Affect” determination, which is outside the scope of this BA. It is imperative the PDCs are incorporated into project design.

Table 5. Species Determinations by Activity Type. NE = No effect. NLAA = Not Likely to Adversely Affect, including Beneficial Effects.	
Activity Type	Cook’s Lomatium Critical Habitat
A. Tree Harvest	NLAA
B. Silviculture	NE
C. Special Forest Products	NLAA
D. Watershed Restoration	NLAA with Long Term Beneficial Effects
E. Fuels Management	NLAA
F. Recreation	NE
G. Road maintenance	NLAA with Long Term Beneficial Effects
H. ROW permits-Roads	NLAA
I. Other ROW/land use permits	NLAA
J. Mining and Quarry operations	NLAA for mining NE for Quarries
K. Cultural resources	NLAA
L. Weed Control	NLAA with Long Term Beneficial Effects
M. Area Closures	NLAA with Long Term Beneficial Effects
N. Recovery Actions	NLAA with Long Term Beneficial Effects
O. Tracking and Monitoring	NE

It is the conclusion of this biological assessment that the proposed action may affect designated critical habitat for Cook's lomatium as documented above. The BLM requests concurrence on "may affect, not likely to adversely affect" NLAA determinations made relative to all actions included in this assessment.

IV. Literature Cited

Bellville, Don. 2011. Fuels Specialist Wild River Ranger District, Rogue Siskiyou National Forest. Personal communication about burn pile recovery.

Clayton, James L. 1981. Soil Disturbance Caused by Clearcutting and Helicopter Yarding in the Idaho Batholith. Intermountain Forest and Experiment Station. Research Notes INT-305.

Dulin, Coleen. 2011. Hydrologist Grants Pass Resource Area, Medford BLM. Personal communication about burn pile recovery.

Federal Register. 2010. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Limnanthes floccose* ssp. *Grandiflora* (Large-flowered Willy Meadowfoam) and *lomatium cookii* (Cook's Lomatium; Final Rule). Federal Register Vol. 75, No. 139 Pg. 42490-42570.

Landsberg, Johanna D., Miller, R.E., Anderson, H.W., and Tepp, J.S., 2003. Bulk density and Soil Resistance to Penetration as affected by Commercial Thinning in Northeastern Washington. Pacific Northwest Research Station. Research Paper PNW-RP-551.

Larson, Jon. 2011. Fuels specialist Grants Pass Resource Area, Medford BLM. Personal communication about burn pile recovery.

Main, Mike. 2011. Fuels specialist Grants Pass Resource Area, Medford BLM. Personal communication about burn pile recovery.

Medford District Integrated Weed Management Plan and Environmental Assessment OR-110-98-14, April 1998.

Medford BLM GIS, 2011. Ownership query, 9/30/2011.

TNC, 2004. Vander Schaaf et. al. ed's. Klamath Mountains Ecoregional Conservation Assessment. The Nature Conservancy, Portland, Oregon.

USDI, Bureau of Land Management. 1995. Medford District. Record of Decision and Resource Management Plan. Medford, Oregon.

USDI, Bureau of Land Management. 2008. Biological Assessment: FY 2009-2013 Programmatic Assessment For Activities that may Affect the listed endangered plant species Gentner's Fritillary, Cook's Lomatium, McDonald's rockcress, and large flowered wooly meadowfoam. Medford, Oregon.

USDI, Bureau of Land Management. 2008. Record of Decision and Resource Management Plan: Medford District. Portland, Oregon.

USDI, Fish and Wildlife Service, 2006. Draft Recovery plan for Listed species in the Rogue Valley Vernal Pool and Illinois Valley wet meadow Ecosystems. Portland, Oregon, 89 pp.

Attachment 1: Cook's Lomatium Critical Habitat Units in the Illinois River Valley

