West Eugene Wetlands Resource Management Plan

Bureau of Land Management

Eugene District

Proposed Planning Criteria and State Director Guidance

March 14, 2012

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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In Reply Refer to:
1610 WEW (ORE050)

Dear Reader:

The Bureau of Land Management (BLM) has prepared proposed Planning Criteria for the development of the West Eugene Wetlands Resource Management Plan. We invite your review and comments on the proposed Planning Criteria.

As you review this document, keep in mind that the primary purpose of planning criteria is to:

- guide development of the resource management plan, particularly alternatives and analysis;
- ensure the analysis is tailored to the issues; and
- focus data collection.

The proposed Planning Criteria will be posted on the BLM website at http://www.blm.gov/or/districts/eugene/plans/eugenermp.php
Other planning documents related to the West Eugene Wetlands Resource Management Plan are also available on the BLM website.

To be most useful to us in the planning process, please provide your comments by April 13, 2012. Comments can be submitted by mail to: Richard Hardt, Resource Management Plan Team Leader, to the address listed above in the heading of this document; by electronic mail (email) to BLM_OR_EU_Mail@blm.gov; by facsimile to (541) 683-6981; or in person at the Eugene District BLM office located at 3106 Pierce Parkway, Springfield, OR, 97477, Suite E. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339 to contact the above individual during normal business hours. The FIRS is available 24 hours a day, 7 days a week, to leave a message or question with the above individual. You will receive a reply during normal business hours.

All information in your comments including your address, phone number, email address, or other personal identifying information (PII) is maintained as a BLM record. Although your information is sensitive and protected from public access, it may be made available under a Freedom of Information Act request. You may request in your comment that your PII information be withheld from public review although the agency is unable to guarantee full protection of such information. Please consider all information you may want to include in your comments.

Purpose of the Planning Criteria

The primary purpose of the planning criteria is to:

- Guide development of the resource management plan (RMP), particularly alternatives and analysis.
- Ensure the analysis is tailored to the issues.
- Focus data collection.

Planning criteria will be made available for public review (43 CFR 1610.4-2). Some elements of the planning criteria will likely be refined or changed during the planning process as other steps in the process are completed or if new information becomes available.

The Planning Area

The planning area is defined as the geographic area within which the Bureau of Land Management (BLM) will make decisions through this RMP. The planning area includes the approximately 1,340 acres of BLM-administered land and 96 acres of lands on which BLM has an ownership interest (conservation easement) within and near the city of Eugene, Oregon, described as the West Eugene Wetlands (see Map).

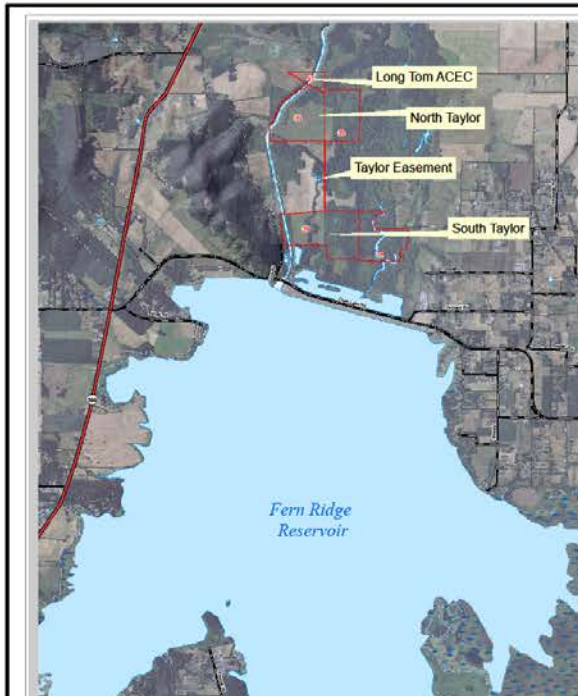
The analysis area is defined as all of the lands, regardless of jurisdiction, for which the BLM compiles, analyzes, and interprets data and information related to planning for BLM-administered lands. Extending the analysis beyond the planning area boundary allows management decisions to be made within the context of overall resource conditions and trends in the surrounding area, considering local, state, other federal and tribal plans. Examples of such information include the relative significance of BLM-managed lands for a certain resource (such as threatened or endangered species), or the anticipated impacts to resources (such as water quality) based on activities on BLM-administered lands. As discussed below, the geographic scope of the analyses will likely vary by issue and will likely extend beyond the planning area.

Relationship of the Planning Area to the Eugene District RMP

The West Eugene Wetlands RMP is being developed independent of the Eugene District RMP. The West Eugene Wetlands are geographically and ecologically distinct from the rest of the BLM-administered lands in the Eugene District, and many of the resources and issues are unrelated to those addressed in the Eugene District RMP. The West Eugene Wetlands contain no timberlands capable of sustained-yield timber production and thus are not a relevant component of the Eugene sustained-yield unit.

The 1995 Eugene District RMP stated:

> The 1992 West Eugene Wetlands Plan governs the management of lands (including BLM lands) located within the "West Eugene Wetlands Study Area" and "West Amazon Drainage Basin" as shown on Map 2, p. 17 of that plan. Except for those provisions of this RMP found in the Resource Program sections for Energy and Minerals, Land Tenure Adjustments, Rights-of-Way,


Long Tom ACEC
North Taylor
Taylor Easement
South Taylor
Fern Ridge
Reservoir

> Access and Withdrawals, this RMP does not apply to the West Eugene Wetlands (BLM 1995, p. 16).

The 2008 Eugene District RMP stated:

> Manage BLM-administered lands within the West Eugene Wetlands under the West Eugene Wetlands Management Plan (BLM 2008c, p. 32).

Current Management Direction

The planning area does not have an existing RMP. The BLM has been managing BLM-administered lands in the West Eugene Wetlands consistent with West Eugene Wetlands Plan developed by the City of Eugene and Lane County (City of Eugene 2004). However, that plan does not provide management direction specific to the BLM-administered lands and was not developed based on a National Environmental Policy Act (NEPA) analysis. The Eugene District RMP, as detailed above, does not apply to the West Eugene Wetlands, except for a few specific provisions. The BLM-administered lands in the West Eugene Wetlands are acquired lands or survey hiatuses, and most lands were acquired with funds appropriated from the Land and Water Conservation Fund. The BLM–administered lands in the West Eugene Wetlands include areas outside of the study area for the West Eugene Wetlands Plan developed by the City of Eugene and Lane County, but the BLM has been managing all of these BLM-administered lands generally consistent with the West Eugene Wetlands Plan developed by the City of Eugene and Lane County (City of Eugene 2004).

In 2005, the Eugene District prepared the West Eugene Wetlands Schedule Environmental Assessment (Schedule EA), which provides a 10-year integrated treatment schedule for some restoration implementation actions (BLM 2005). The current management in the planning area is implementation of the restoration actions described in the Schedule EA and other implementation actions, developed on an *ad hoc* basis. Prior to the preparation of the Schedule EA, the Eugene District had prepared project-by-project analyses for a variety of actions. For example, in 2001, the Eugene District prepared the West Eugene Wetlands Recreation, Access, and Environmental Education Plan (Environmental Assessment No. OR·090·01· 8), which included the grant of a right-of-way to the City of Eugene for the continuation of the Amazon/Fern Ridge Bike Path. These and other past project-specific analyses prepared for the planning area are available at:
http://www.blm.gov/or/districts/eugene/plans/index.php.

Scope of Planning and Analysis

Planning and analysis may vary spatially (regional, project, or site-specific scope) and temporally (short term versus long term), providing a comprehensive basis for implementing resource management actions. Planning and analysis at multiple scopes may be necessary to resolve issues for a geographic area that differs from the planning area for the RMP. For example, an issue such as management of the Fender's blue butterfly requires consideration of desired outcomes and management actions in a broader context than the planning area. Information presented at multiple geographic scopes helps BLM

to understand issues, analyze cumulative impacts, and tailor decisions to specific needs and circumstances.

In planning and analysis, it is often necessary to consider various temporal scopes. Certain natural processes and implementation of management actions may occur over a relatively short time period, whereas other natural processes and implementation of management actions occur over very long time periods. In cases where management action objectives may not be achieved for decades or more, interim benchmarks or rates of progress may be identified where possible.

Cumulative impacts result from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions (40 CFR 1508.7). For analysis in this environmental impact statement (EIS), the existing baseline information is considered a cumulative result of all past actions; therefore it is not necessary to analyze past actions individually. For BLM-administered lands, the analysis will assume that the BLM will implement the specific actions described under the various alternatives, and will take the actions necessary to achieve the objectives described for the various alternatives. For lands other than BLM-administered lands within the analysis area, the analysis will assume that landowners will continue their current management strategies, unless the BLM has specific information to the contrary. The analytical assumptions that will be used in the cumulative effects analysis are described in more detail later in this document.

BLM Planning Process and Schedule

Preparing a RMP involves the following nine interrelated actions or steps:

1. Conduct scoping and identify issues
2. Collect inventory data
3. Analyze management situation
4. Develop planning criteria
5. Formulate alternatives
6. Analyze effects of alternatives
7. Select the preferred alternative; issue Draft RMP/Draft EIS
8. Issue Proposed RMP/Final EIS
9. Sign Record of Decision.

Formal scoping for the RMP started with printing of the Notice of Intent in the Federal Register on June 8, 2011, and concluded on July 8, 2011. The BLM has prepared a scoping report, which summarizes the results of scoping. The Analysis of the Management Situation, which is a brief document for the BLM manager, has been prepared and presented to the BLM manager. The scoping report, other scoping documents, and the Analysis of the Management Situation are available at: http://www.blm.gov/or/districts/eugene/plans/eugenermp.php.

The tentative schedule for issuance of the Draft RMP/Draft EIS is in late summer 2012, and the Proposed RMP/Final EIS in spring 2013. The Record of Decision is tentatively scheduled for fall 2013. This schedule is approximate and subject to change.

Vision

The vision is an expression of long-term desired conditions from an experiential viewpoint. The vision statement for the West Eugene Wetlands RMP is as follows:

> *The West Eugene Wetlands is a place with a healthy, diverse, and sustainable ecosystem that provides recreation, education, and traditional uses for people.*

Goals

Goals are broad statements of desired outcomes that usually are not quantifiable and may not have established time frames for achievement. Land use plan decisions establish goals and objectives for resource management (desired outcomes) and the measures needed to achieve these goals and objectives (management actions and allowable uses). The EIS will examine alternative ways to achieve the goals to the extent allowed under laws and land ownership patterns.

The goals for the West Eugene Wetlands RMP are as follows:

Goal 1 – Contribute to the recovery of threatened and endangered species.

The Endangered Species Act applies to plants and animals that have been listed as endangered or threatened, those proposed for listing, and designated and proposed critical habitat.
The purposes of the Endangered Species Act applicable to BLM land use planning are:

(1) Provide a means to conserve the ecosystems upon which endangered species and threatened species depend;

(2) Provide a program for conservation of endangered species and threatened species.

The Endangered Species Act requires all federal departments and agencies to conserve endangered and threatened species while utilizing their authorities to achieve these purposes.

Goal 2 - Restore and maintain native plant communities and associated wildlife species.

Under the Federal Land Policy and Management Act, the BLM manages public lands in a manner that will preserve and protect certain public lands in their natural condition and provide food and habitat for wildlife. The objective of the BLM Special Status Species Policy is to ensure BLM management actions are consistent with conservation needs of special status species and do not contribute to the need to list any Special Status Species under the provisions of the Endangered Species Act (BLM 2008b).

Goal 3 – Protect cultural resources for the benefit of present and future generations.

Under the Federal Land Policy and Management Act, the BLM manages public lands for historical and archeological values. The National Historic Preservation Act requires BLM to administer federally owned, administered or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations.

Goal 4 – Provide recreation opportunities.

Under the Federal Land Policy and Management Act, the BLM manages public lands for outdoor recreation use. Substantial recreation infrastructure has already been developed in the planning area and continued support and maintenance of that infrastructure would continue to provide recreation opportunities.

Goal 5 - Make public lands available for special uses including traditional plant collection and needed rights-of-way.

Under the Federal Land Policy and Management Act, the BLM manages public lands for human occupancy and use. The BLM regulates human occupancy, use, and development of the public lands through permits, easements, and rights-of-way.

Goal 6 – Restore and protect water quality.

Under the Federal Land Policy and Management Act, the BLM's land use plans must comply with state and federal water pollution control laws. The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Clean Water Act requires that all RMPs be consistent with state water quality standards.

Guidance for Formulating Alternatives

The Federal Land Policy and Management Act provides the legal authority for the Secretary of Interior to manage public domain lands. In part, the Federal Land Policy and Management Act requires that "… the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental , air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use …" (43 U.S.C. 1701 §102a).

The BLM-administered lands in the planning area are acquired lands or survey hiatuses. The Federal Land Policy and Management Act directs that acquired lands "… shall, upon acceptance of title, become public lands, and, for the administration of public land laws not repealed by this Act, shall remain public lands." (43 U.S.C. 1701 §205c). Most lands in the planning area were acquired with funds appropriated from the Land and Water Conservation Fund. However, the North Taylor and South Taylor parcels were acquired as part of a land exchange and are lands under the authority of the Oregon and California Railroad and Coos Bay Wagon Road Grant Lands Act (O&C lands) (43 U.S.C. §1181a, et seq). The O&C Act requires that the O&C lands "classified as timberlands … shall be managed … for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal [*sic*] of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities." (43 U.S.C. §1181a). Section 701(b) of the Federal Land Policy and Management Act states, "Notwithstanding any provision of this Act, in the event of conflict with or inconsistency between this Act and [the O&C Act] …, insofar as they relate to management of timber resources, and disposition of revenues from lands and resources, the latter Acts shall prevail." In this case, the "latter Acts" refers to the O&C Act. The North Taylor and South Taylor parcels contain no timberlands capable of sustained yield timber production. Therefore, there is no conflict with or inconsistency between the Federal Land Policy and Management Act and the O&C Act with regards to the O&C lands in the planning area.

Purpose and Need for Action

The Federal Land Policy and Management Act requires the BLM to develop RMPs to provide for the use of public lands. Among other requirements, the Federal Land Policy and Management Act directs the BLM to use and observe the principles of multiple use in the development of RMPs. There are specific considerations in the planning area that lead the BLM to focus management on threatened and endangered species: the scarcity of the listed species and their habitat; the importance of the planning area to the recovery of the listed species; and the purposes for which the BLM acquired the lands in the planning area. Therefore, the purpose and need for this RMP is more specific than the broad mandate of multiple use alone.

The purpose of the action is to manage BLM-administered lands in the West Eugene Wetlands to contribute to the recovery of species listed under the Endangered Species Act, while providing other

benefits, particularly water quality enhancement, storm water, and flood control; habitat for other plant and animal communities; and recreation and environmental education opportunities, to the extent compatible with threatened and endangered species management.

The need for the action is established by the US Fish and Wildlife Service Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington, which describes the importance of BLM-administered lands in the West Eugene Wetlands to the recovery of Fender's blue butterfly, Willamette daisy, Bradshaw's lomatium, and Kincaid's lupine, and provides recovery strategies and objectives relevant to BLM management (USFWS 2010). Section 7(a)(1) of the Endangered Species Act requires the BLM to use its authorities to further the purposes of the Endangered Species Act by implementing programs for the conservation of threatened and endangered species and the ecosystems upon which they depend. The BLM Special Status Species Management Manual explains, "Ways in which the BLM can carry out these responsibilities include … Developing and implementing agency land use plans, implementation plans, and actions in a manner consistent with conservation and/or recovery of listed species" (BLM 2008b). The BLM Special Status Species Management Manual further explains that the "BLM will incorporate objectives and actions identified in recovery plans into BLM documents, as appropriate. Examples of such documents include land use plans, implementation level plans, and species conservation plans or agreements" (BLM 2008b). The West Eugene Wetlands embrace some of the last remaining rare Willamette Valley wet prairie habitat, of which less than 1% remains in comparison to historical extent. With so little habitat left, and with more than one-third of the planning area designated as critical habitat for the listed species, it is not likely that recovery of these species can be achieved in this recovery zone without the BLM-administered lands in the West Eugene Wetlands.

The need for the action is also established in the Federal Land Policy and Management Act, which directs BLM to develop RMPs to provide for the use of public lands. Neither the 1995 nor 2008 Eugene District RMPs developed specific goals, objectives, or management direction for the West Eugene Wetlands, other than to state that the BLM–administered lands would be managed consistent with the West Eugene Wetlands plan developed by the City of Eugene.

Most of the lands within the planning area are acquired lands. Most of the lands were acquired with funds from the Land and Water Conservation Fund. The justification for the Land and Water Conservation Fund acquisitions typically highlighted the importance of the lands for threatened and endangered species and, for example, specified that that the acquired lands will: (1) Provide a more natural system for water quality enhancement, storm water and flood control; (2) Provide habitat for sensitive plant and animal communities, including rare species; and (3) Provide new opportunities for the recreational and environmental education needs of the community. Almost all of the remaining lands in the planning area were also acquired to provide, in part, habitat for threatened and endangered species.

How Alternatives Are Identified

An alternative is a combination of proposed land use allocations, activities, resource uses, and management practices designed to meet the stated purpose and need for the RMP (see above). The Council on Environmental Quality NEPA regulations require an agency to rigorously explore and objectively evaluate all reasonable alternatives (40 CFR 1502.14(a)). A reasonable alternative is one that:

- responds to the purpose and need;
- is technically and economically feasible;
- is consistent with the basic policy objectives for the management of the area (in this case, see the guidance described below);
- implementation is not remote or speculative; and
- is not substantially similar to another alternative.

The Council on Environmental Quality guidance further explains that, when there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS (CEQ 1981).

The No Action Alternative

The Council on Environmental Quality NEPA regulations require that an EIS analyzes the No Action alternative (40 CFR 1502.14(d)). The Council on Environmental Quality guidance further explains that for plans, such as this resource management plan, "No Action" means no change from current management direction or level of management intensity (CEQ 1981). The No Action alternative in this RMP/EIS will be continuation of the current management approach, including continued implementation of restoration actions described in the Schedule EA at the approximate rate of implementation that has been occurring since 2005.

Guidance for Development of All Action Alternatives

Several issues raised in scoping and described in the scoping report are more accurately presented as questions to be addressed in the formulation of alternatives, rather than disputes based on some anticipated environmental effect. These include:

- Areas of Critical Environmental Concern (ACEC): Should the existing Long Tom ACEC continue to be designated as an ACEC? Should other areas within the planning area be designated as an ACEC?
- Land Tenure Adjustments: What BLM lands in the West Eugene Wetlands should be identified for retention?
- Costs of Management: What would be the BLM land management priorities and capabilities under different levels of funding?
- Recreation: What management is needed to maintain existing recreation facilities and recreation use of the West Eugene Wetlands? How can the BLM avoid conflicts between recreation use and other resources in the West Eugene Wetlands?
- Illegal uses: How can BLM reduce or halt illegal uses in the planning area, such as illegal camping?

These questions will be addressed in the formulation of the range of alternatives.

The following guidance will assist the development of alternatives. All action alternatives analyzed in detail will:

- Be consistent with the US Fish and Wildlife Service Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010).
- Review nominations for new Areas of Critical Environmental Concern, as well as the existing Long Tom Area of Critical Environmental Concern, and do the following:
    - Determine if they meet the Relevance and Importance criteria. If so, determine if special management is required to protect the relevant and important values.
    - Eliminate from further consideration those areas that do not meet criteria for designation as Areas of Critical Environmental Concern.
    - In development of alternatives, include those nominations that meet criteria for designation as Areas of Critical Environmental Concern.
- Designate areas in Visual Resource Management classifications consistent with alternatives.
- Designate areas as “open,” “limited,” or “closed” to off-highway vehicle use.
- Designate lands for retention or disposal.
- Designate lands as “open” or “closed” to the several forms of mineral entry location, leasing, or sale as is appropriate to the type of commodity and land status.

In addition to the above, State Director guidance has provided the following framework for the scope of alternatives to be considered:

- Disposal of lands (including exchange) in the planning area is beyond the scope of the RMP, except where disposal is specifically directed by law. Most parcels within the planning area were purchased by the BLM in recent decades for specific resource values. Given that these acquired lands continue to have the resource values for which the BLM chose to acquire them, disposal would be inconsistent with the reasons for which BLM acquired the lands.
- Further planned land acquisition by the BLM in the planning area is beyond the scope of the RMP. The BLM has completed an extensive program of land acquisition in the planning area over the past decades. Although additional land might conceivably be acquired by the BLM in the future, such as through donation, the BLM has already completed the planned land acquisition in the planning area.
- Decisions about construction of an environmental education center in the planning area are beyond the scope of the RMP.

Alternatives inconsistent with this guidance will be considered unreasonable alternatives, because they would be inconsistent with the basic policy objectives for the management of the area.

Preliminary Action Alternatives for Development and Detailed Analysis

The preliminary alternatives listed below address proposals that were identified during external and internal scoping. The design of the alternatives varies primarily in the amount and location of lands

within the planning area that would be allocated to the restoration of threatened and endangered species habitat. The alternatives also vary in the management emphasis for other lands, not managed for habitat restoration. Finally, the alternatives vary in whether herbicides would be included as a management tool.

These alternatives may be altered or refined during development of objectives and management action/direction. As these preliminary alternatives are developed more fully, other alternatives may be added; some alternatives may be combined with other alternatives; or and some alternatives may be eliminated from detailed analysis.

Alternative 1:

- Restore threatened and endangered species habitat on high and medium quality sites and designated critical habitat (1,008 acres).
- Include the use of herbicides among tools for restoration treatments.
- Collection of traditional use plants outside restoration areas: provide opportunities for management and collection of traditional use plants.
- Collection of traditional use plants within restoration areas: allow collection of traditional use plants within areas being restored for threatened and endangered species habitat subject to restrictions as need to avoid conflict with restoration.

Alternative 2:

- Restore threatened and endangered species habitat on designated critical habitat (401 acres).
- Herbicide use: same as Alternative 1.
- Collection of traditional use plants: same as Alternative 1.

Alternative 3A:

- Restore threatened and endangered species habitat on high quality sites currently occupied by threatened or endangered species (261 acres).
- Herbicide use: same as Alternative 1.
- Collection of traditional use plants: same as Alternative 1.

Alternative 3B:

- Same as Alternative 3A but without the use of herbicides.

Alternative 4:

- Emphasize providing commodities and services to the extent compatible with threatened and endangered species management.
- Restore threatened and endangered species habitat on designated critical habitat (401 acres): same as Alternative 2.
- Herbicide use: same as Alternative 1.

- Collection of traditional use plants outside restoration areas: Provide opportunities for management and collection of traditional use plants where management and collection does not conflict with other commodities and services given priority on such parcels.
- Collection of traditional use plants within restoration areas: same as Alternative 1.

Alternative 5:

- Enhance recreation opportunities to the extent compatible with threatened and endangered species management, such as construct more trails, upgrade facilities, and provide more interpretation.
- Restore threatened and endangered species habitat on high quality sites currently occupied by threatened or endangered species (261 acres): same as Alternative 3B.
- Herbicide use: same as Alternative 3B
- Collection of traditional use plants: same as Alternative 1.

Analytical Methods and Techniques

This section guides analysis of effects related to the preliminary issues identified for analysis. These analyses will form the basis for most of the discussions of environmental consequences in the EIS. For each identified issue, this section will describe the following elements of the analytical approach:

Analytical Questions: focused and specific questions to be answered by the analysis to understand how an alternative addresses an identified issue.

Analytical Assumptions: the science and relationships of the natural systems that will be used in analysis of the alternatives. The assumptions are not general lists of true statements regarding a resource, but rather only those assumptions needed to conduct the analysis. Assumptions may include thresholds or measures of acceptability or goodness.

Analytical Methods and Techniques: the analytical method is the "what" of the analytical approach (use of a particular model, quantitative approach, or qualitative approach). The analytical technique is the "how" of the analytical approach (outline of step-by-step process for analysis, use of data).

Analytical Conclusion: a description of the kinds of conclusions (quantitative, qualitative, ranking, or weighing) expected from the information and analysis, including units of measure.

Data Needs: descriptions of what specific data is needed and how and why the data will be used in analysis.

Data Display: descriptions of how information, analysis, and conclusions will be displayed to show the outcome of the analysis.

Issues

- How would BLM management actions contribute to meeting the recovery objectives described in the recovery plan for ESA-listed species?
- How would BLM management actions affect BLM sensitive plant and animal species?
- How would BLM management actions affect the restoration of native plant communities?
- How would herbicide use affect plants, wildlife, soil, and water?
- How would prescribed burning affect air quality?
- How would changing climate conditions alter the effect of BLM management actions on resources?
- How would BLM management actions affect greenhouse gas emissions and carbon storage?
- How would BLM management actions effect archaeological, historical and traditional use resources?
- How would BLM management actions affect access to the planning area?
- How much would it cost to implement the alternatives?

How would BLM management actions contribute to meeting the recovery objectives described in the recovery plan for ESA-listed species?

Analytical Question: What would be the abundance of plants of Willamette daisy, Bradshaw's lomatium, Kincaid's lupine and golden paintbrush?

Analytical Assumptions:

- For Willamette daisy, Bradshaw's lomatium, Kincaid's lupine: incorporate by reference analysis of abundance from West Eugene Wetlands Threatened and Endangered Plant Augmentation Environmental Assessment (BLM 2011). That analysis simulated the potential habitat which could be occupied by the target species at a given site and applied species-specific survival rates for plugs and seedlings to the number of plugs and seedlings that could be planted at each site (BLM 2011; pp. 3-4, 9-14).
- Run new analysis for Kincaid's lupine at Fir Butte and golden paintbrush:
  - Assume the existing populations of each of the plant species remain static. There is insufficient information on natural recruitment for the plant species to reasonably foresee natural changes in populations over the analysis period (T. Kaye, Institute for Applied Ecology, personal communication, July 8, 2011).
  - All suitable sites under each alternative would be planted.
  - Individual plant sites do not constitute "populations." Most sites within the planning area are within the 2-mile pollinator distance of each other and are likely sharing genetic material (USFWS 2010, pp. IV-20, IV-26, IV-57). Thus, many "sites" together constitute a "population."
  - Map a 100-foot buffer around all known plant points to differentiate between potential augmentation "within plant habitat" versus what is considered "outside plant habitat", as described in BLM 2011.
  - A five-foot buffer around each plant would not be available for any augmentation.
  - Consider sites with multiple species separately to determine available "within plant habitat" and "outside plant habitat."
  - Assume all plants/seeds to be planted in one year to estimate plug survival and seedling establishment.
  - Assume seed and plugs to be planted in available habitat at the recommended densities and survival rates shown in Table 1. For Willamette daisy, only plugs would be used because seedling establishment has not been sufficiently successful.

Table 1. Suggested planting method and densities for listed plant species (BLM 2011; p. 3).

Species	Recommended planting method and density	Plug survival (after 4 years)	Seedling establishment (after 4 years)
Willamette daisy	Plugs: 5/m ^{2}	20%	NA
Bradshaw's lomatium	Seeds: 50/m^2 Plugs: 5/m ^{2}	35%	25%
Kincaid's lupine	Seeds: 50/m2 Plugs: 2/m2	20%	5%
golden paintbrush	Seeds: 1000 – 2000/m^2 Plugs: 1 – 4/m2	20%	5%

Analytical Methods and Techniques

- Simulate all potential habitat that could be occupied by the target species at a given site using the methodology described in BLM 2011 (pp. 3-4, 6). In that analysis, potential habitat was defined as sites within designated critical habitat or sites classified as high quality habitat ("red sites") or medium quality habitat ("blue sites") in BLM 2005 (pp. 10-11; map 5) in the appropriate plant community. (Note that red sites were defined in BLM 2005 as high quality habitat; this definition was made relative to the existing range of habitat conditions, and does not imply attainment of the recovery targets in USFWS 2011). The appropriate plant community for each species is defined as follows:
    - Willamette daisy and Bradshaw's lomatium: wet prairie
    - Kincaid's lupine and golden paintbrush: upland prairie and oak savanna.
- Apply the species-specific survival rates for plugs and seedlings to the number of plugs and seedlings, respectively, that could be planted at each site.

Analytical Conclusion

- number of plants for Willamette daisy, Bradshaw's lomatium, and golden paintbrush; meters^2 of foliar cover for Kincaid's lupine
- Rank alternatives by summarizing plant numbers in 10 years against recovery targets.

Data Needs

- Plant community maps for upland habitats overlaid with golden paintbrush and Kincaid's lupine/Fir butte planting regime

Data Display

- Maps showing potential plant augmentation by alternative; tables with number of plants; acres of suitable habitat

Analytical Question: how much total habitat would there be for Fender's blue butterfly?

Analytical Assumptions

- High quality wet prairie, upland prairie and oak savanna in the plant community modeling are Fender's blue butterfly habitat that provides larval and nectar species, but may not meet requirements for suitable habitat of patch size and connectivity.

Analytical Methods and Techniques

- Use plant community modeling outputs described below under native plant communities to model Fender's blue butterfly habitat over time.

Analytical Conclusion

- Acres of Fender's blue butterfly total habitat
- Rank alternatives by abundance of Fender's blue butterfly total habitat

Data Needs

- Plant community modeling outputs for each alternative at 0 and 10 years

Data Display

- Maps showing total habitat over time by alternative
- Tabular or graphic display of acreage of total habitat over time by alternative

Analytical Question: how much suitable habitat would there be for Fender's blue butterfly?

Analytical Assumptions

- Suitable habitat must meet the above assumptions for total habitat; with a minimum patch size of 15 acres; within 1.2 miles of another patch of habitat of at least 15 acres in size; "stepping stones" of habitat <15 acres in size within 0.6 miles of another stepping stone or patch (USFWS 2010).
- Habitat provided on non-BLM-administered lands will continue to provide habitat during the analysis period.

Analytical Methods and Techniques

- Use FRAGSTATS to identify patches of habitat 15 acres in size and greater. FRAGSTATS is a spatial patterns analysis program for categorical maps. FRAGSTATS quantifies the extent and spatial configuration of patches within a landscape (McGarigal et al., 2012).
- Use FRAGSTATS to determine "Functional Connectivity" or connectance with a threshold distance of 1.2 miles between patches and 0.6 miles between "stepping stones"

Analytical Conclusion

- Acres of Fender's blue butterfly suitable habitat

- Rank alternatives by abundance of Fender's blue butterfly suitable habitat
- For each alternative, compare abundance, patch size, and distribution of suitable habitat to recovery targets (USFWS 2010).

Data Needs

- Maps of Fender's blue butterfly suitable habitat for each alternative over time
- Maps of current Fender's blue butterfly habitat on non-BLM-administered lands

Data Display

- Maps showing suitable habitat over time by alternative
- Tabular or graphic display of acreage of suitable habitat over time by alternative

Analytical Question: what would be the connectivity of habitat and populations of Willamette daisy, Bradshaw's lomatium, Kincaid's lupine, golden paintbrush, and Fender's blue butterfly?

Analytical Assumptions

- Habitat does not need to be structurally connected to be functionally connected; species are capable of linking resources across uninhabitable or partially inhabitable areas.
- Patches of habitat or populations within 200 feet or less are considered connected (BLM 2011). Note: this is less than the 1.2-mile threshold distance for Fender's blue butterfly and the 2-mile threshold distance for plants in USFWS 2010.
- Assume the following outputs from plant community modeling represent habitat for connectivity analysis:
  - Willamette daisy and Bradshaw's lomatium: high quality wet prairie
  - Kincaid's lupine and golden paintbrush: high quality upland prairie and high quality oak savanna
  - Fender's blue butterfly: high quality wet prairie, high quality upland prairie, and high quality oak savanna

Analytical Methods and Techniques

- The landscape will be classified into patches of habitat and non-habitat.
- Plant populations will be mapped based on the results of the above analysis about plant abundance.
- FRAGSTATS will be utilized to determine "Functional Connectivity" or connectance.

Analytical Conclusion

- Rank alternatives by connectance between habitat patches and connectance among populations for each species at 0 and 10 years.

Data Needs

- Plant community modeling outputs for each alternative at 0 and 10 years

- Classification of the GIS layers of plant communities into a map of habitat and non-habitat
- Data on the non-BLM-administered lands and the habitat condition of those lands

Data Display

- Maps showing patches of habitat and patches of population by species; tabular or graphic display of connectance values for habitat and population by alternative by species at 0 and 10 years.

How would BLM management actions affect BLM sensitive plant and animal species?

Analytical Question: how much habitat would there be for BLM sensitive vascular plant species?

Analytical Assumptions

- Plant number targets expressed for listed species in USFWS 2010 will be used as the guideline for vascular sensitive plant species (three "populations" of 5,000 individuals each or three "populations" of 2,500 m^2, depending on growth form); one "population" for *Lathyrus holochlorus* of 1,000 individuals (T. Kaye, personal communication, November 28, 2011).
- Not all suitable sites under each alternative would be planted.
- For species that have a transitional habitat requirement between wetland and upland on fine topographic scales, assume that only 50% of the "wetland habitat" types would support transitional species (*Horkelia congesta* ssp*. congesta, Sericocarpus rigidus, Sisyrinchium hitchcockii, Pyrrocoma racemosa* var*. racemosa*), *Cicendia quadrangularis* was assessed along with these species; include *Lathyrus holochlorus* in all upland habitat with no correction factor.
- Red sites (high quality habitat as defined in BLM 2005) are considered to suitable for augmentation in the appropriate plant communities as follows:

  Horkelia congesta ssp*. congesta* (wet prairie/upland prairie transitional)
  Sericocarpus rigidus (wet prairie/upland prairie transitional)
  Sisyrinchium hitchcockii (wet prairie/upland prairie transitional)
  Lathyrus holochlorus (upland prairie)
  Cicendia quadrangularis (wet prairie)
  Pyrrocoma racemosa var. *racemosa* (wet prairie/upland prairie transitional).
- Plantings would be done as part of diversity plantings to improve prairie quality as first priority
- Include all analytical assumptions from the above analytical question about abundance of threatened and endangered plant species.
- Assume planting methods, densities, and survival as described in Table 2.

Table 2. Suggested planting method and densities for sensitive plant species (T. Kaye, personal communication, November 2, 2011)

Species	Status	Recommended planting method and density	Plug survival (after 4 years)	Seedling establishment (after 4 years)
Horkelia congesta ssp. *congesta*	USFWS Species of Concern/ BLM Sensitive	Seeds: 100/m^2 Plugs: 1-4/m^2	50%	5%
Sericocarpus rigidus	USFWS Species of Concern/ BLM Sensitive	Plugs: 1-4m^2	20 – 80%	1-2%
Sisyrinchium hitchcockii	USFWS Species of Concern/ BLM Sensitive	Plugs: 1-4m^2	20%	NA
Lathyrus holochlorus	BLM Sensitive	Plugs: 1-4m^2	10-20%	NA
Cicendia quadrangularis	BLM Sensitive	Seeds: 100 – 1000/m^2	NA	1-2%
Pyrrocoma racemosa var. *racemosa*	BLM Sensitive	Plugs: 5/m^2	20%	NA

Analytical Methods and Techniques

- Generate area of available habitat for each site for each plant species based on the above suitable habitat.
- Generate the potential number of plugs or seedlings which could be augmented at each site based on the area of available habitat and the rule set for each alternative.
- Adjust plug and/or seedling augmentation numbers to reflect a 4-year survival rate.
- Generate area to reflect an optimum planting and/or seeding regime for each site by alternative and by species.

Analytical Conclusion

- Rank alternatives by summarizing plant numbers at 0 and 10 years against viability targets

Data Needs

- Plant community maps for upland/wetland habitats overlaid with planting regime for BLM sensitive plants

Data Display

- Maps showing potential plant augmentation by alternative; tables with number of plants; acres of suitable habitat

Analytical Question: how much habitat would there be for BLM sensitive non-vascular plant species?

Analytical Assumptions

- The location and number of existing populations of each of the non-vascular plant species would not change over time. There is too little known about population dynamics, germination and growth requirements, and natural recruitment for these species to make assumptions about future population changes.
- High quality prairie conditions will provide suitable habitat for existing and future populations of the three special status bryophyte species: *Bruchia flexuosa*, *Ephemerum crassinervium*, and *Pseudephemerum nitidum*.

Analytical Methods and Techniques

- Classify high quality prairie, modeled in other analyses, as suitable habitat.

Analytical Conclusion

- Rank alternatives by summarizing acres with high quality prairie suitable for non-vascular plants over time

Data Needs

- Plant community modeling outputs for each alternative at 0 and 10 years

Data Display

- Maps showing acres of suitable habitat by alternative over time; number of extant sites

Analytical Question: how much habitat would there be for BLM sensitive wildlife species?

Analytical Assumptions

- BLM management actions would have no effect on habitat for bald eagle, peregrine falcon, white-tailed kite, and dusky Canada goose
- Habitat for the following sensitive species can be represented by plant communities as follows:
    - Habitat for vesper sparrow, meadowlark, and streaked horn lark is represented by high quality upland prairie, high quality wet prairie, and high quality oak savanna
    - Habitat for Taylor's checkerspot is represented by high quality upland prairie and high quality wet prairie
    - Habitat for American acetropis bug is represented by high quality wet prairie

    - Habitat for Lewis' woodpecker is represented by oak woodland, high quality oak savanna, and low quality oak savanna; preferred habitat is represented by high quality oak savanna
- Habitat for sensitive bat species (fringed myotis, Townshend's big-eared bat, and pallid bat) and purple martin in the planning area can be represented by the number of snags created. Snag abundance is the limiting habitat feature. Existing snag abundance in the planning area is low. Future rates of natural creation of snags would not differ among the alternatives.
- Habitat for Northwestern pond turtle can be represented by (1) the abundance of high quality upland prairie and high quality upland prairie within 500 feet of open water; (2) the abundance of open water; and (3) basking structures in open water.

Analytical Methods

- For vesper sparrow, meadowlark, streaked horn lark, Taylor's checkerspot, American acetropis bug, and Lewis' woodpecker, calculate the acres of the representative plant community identified above to determine acreage of habitat.
- For bats and purple martin, calculate the number of snags created over time for each alternative.
- For Northwest pond turtle, calculate the acres of high quality upland prairie and high quality wet prairie within 500 feet of open water; calculate the number of ponds that would be created over time under each alternative; calculate the number of basking structures that would be created over time under each alternative.

Analytical Conclusions

- Rank alternative by the acres of habitat for vesper sparrow, meadowlark, streaked horn lark, Taylor's checkerspot, and American acetropis bug
- Rank alternative by the acres of total habitat and the acres of preferred habitat for Lewis' woodpecker
- Rank alternatives by the number of snags for bats and purple martin
- Rank alternatives by the acres of habitat, number of ponds, and number of basking structures for Northwest pond turtle

Data Needs

- Plant community modeling outputs for each alternative at 0 and 10 years
- Number of snags that would be created over time by alternative
- Number and location of ponds that would be created over time by alternative

Data Display

- Maps showing habitat for each species or group of species by alternative
- Tabular or graphic display number of snags by alternative
- Tabular or graphic display number of ponds and basking structures for Northwestern Pond Turtle by alternative

How would BLM management actions affect the restoration of native plant communities?

Analytical Question: what would be the abundance and quality of plant communities over time?

Analytical Assumptions

- High quality habitat meets recovery standards (>50% native; <15% woody, etc.) defined in USFWS 2010; high quality upland prairie meets nectar species requirements in USFWS 2010
- No sites currently have high quality habitat
- Emergent wetlands and ash swale plant communities can be restored to high quality wet prairie. Although it is likely that only a portion of each of these areas could support habitat for wet prairie species, site-specific analysis would be needed to identify which portions could be restored to high quality wet prairie.
- The plant community modeling will assume that open water and freshwater/riverine plant communities would remain static over time. Management treatments to change these communities to another plant community would not be proposed, and successional changes to another plant community are unlikely within the temporal scope of the analysis.
- The plant community modeling will assume that the use of the following management tools would be common to all treatments, as needed and appropriate: hand weeding, seeding, plugging, weed whip, solarization, grazing.

Analytical Methods and Techniques

- Plant community modeling will simulate changes in plant communities over time under these various management strategies. The model will simulate application of management practices and successional assumptions to characterize what the abundance and spatial arrangement of plant communities in the planning area will be 10 years into the future.
- The classification of plant communities will be adapted from the classification used in BLM 2005 (pp. 19-22):

  freshwater/riverine
  open water
  wet prairie
  upland prairie
  oak savanna
  oak woodlands
  ash swale/riparian
  Douglas-fir forest.

  Emergent wetlands and vernal pools will be grouped with wet prairie. The plant community of shrub scrub will be added to the list of plant communities used in BLM 2005.
- The modeling will use the following table to simulate changes in plant communities in response to various management tools. As described above, modeled changes in plant communities represent changes over a ten-year time increment.

Table 3. Changes in plant communities in response to management tools

plant communities	management tools							
	Mowing	**Mowing Burning**	**Mowing Herbicides**	**Burning Herbicides**	**Mowing Burning Herbicides**	**Mowing Burning Thinning**	**Mowing Burning Herbicides Thinning**	**none**
wet prairie high quality	wet prairie low quality	wet prairie high quality	wet prairie low quality	wet prairie high quality	wet prairie high quality	wet prairie low quality	wet prairie high quality	ash swale
wet prairie low quality	wet prairie low quality	wet prairie low quality	wet prairie low quality	wet prairie high quality	wet prairie high quality	wet prairie low quality	wet prairie high quality	ash swale
upland prairie high quality	upland prairie low quality	upland prairie high quality	upland prairie high quality	upland prairie high quality	upland prairie high quality	upland prairie low quality	upland prairie high quality	shrub scrub
upland prairie low quality	upland prairie low quality	upland prairie low quality	upland prairie low quality	upland prairie high quality	upland prairie high quality	upland prairie low quality	upland prairie high quality	shrub scrub
oak savanna high quality	oak savanna low quality	oak savanna low quality	oak savanna low quality	oak savanna high quality	oak savanna high quality	oak savanna low quality	oak savanna high quality	oak woodland
oak savanna low quality	oak savanna low quality	oak savanna low quality	oak savanna low quality	oak savanna high quality	oak savanna high quality	oak savanna low quality	oak savanna high quality	oak woodland
oak woodland	oak woodland	oak woodland	oak woodland	oak woodland	oak woodland	oak savanna low quality	oak savanna high quality	oak woodland
ash swale	ash swale	ash swale	ash swale	ash swale	ash swale	wet prairie low quality	wet prairie high quality	ash swale

Analytical Conclusion

- Rank alternatives by amount of high quality upland prairie, wet prairie, and oak savanna

Data Needs

- Scenarios of site-specific management tools by alternative

Data Display

- Maps of plant communities by alternative over time
- Tabular display of acreage of plant communities over time

How would herbicide use affect plants, wildlife, soil, and water?

Analytical Question: how would herbicide use affect non-target vegetation?

Analytical Assumptions

- Herbicides would be applied consistent with label requirements by certified pesticide applicators.
- Herbicide impacts to non-target plants vary with the herbicide used, its selectivity, application rate, concentration, relative toxicity to the plants in the treatment area, likelihood of exposure, timing and method of application, environmental conditions during application, overspray, off-site movement to off-site plants from spay drift or when air temperature or movement is high. Risk to off-site plants from surface runoff and movement through soil (leaching) is influenced by precipitation rate and timing, soil type, and application area.
- Measures taken to limit exposure, such as selective application methods (e.g., spot spraying, or wiping) and typical application restrictions based on environmental conditions (wind, precipitation, temperature, etc.), would reduce the off-target movement of herbicides.
- Standard operating procedures and mitigation measures would minimize risks to non-target plants. Design considerations include the abundance and distribution of target versus non-target plant species, state of growth (phenology) of plants, and the size of the treatment area, as well as physical features like soil moisture timing of precipitation, air temperature, wind speed and other factors.
- Residential lands and agricultural lands (including areas such as pastures) would be protected from BLM-applied herbicides by standard operating procedures which include no-spray buffers, drift reduction measures, and other practices that minimize or eliminate herbicide drift or off-site movement.
- Implementing standard operating procedures and mitigation measures described in USFWS 2008, USFWS 2011a, and USFWS 2011c would result in effects on threatened and endangered species consistent with those opinions and findings. Implementing standard operating procedures and mitigation measures described in BLM 2007 and BLM 2010 would result in effects on non-threatened and endangered plant species consistent with those analyses.
- In alternatives that propose herbicide use, the following herbicides would be available for use under the conditions described in Table 4.

Table 4. Herbicide application assumptions

Active Ingredient	Target Species	Application Purpose/Method	Site Conditions
Aminopyralid	Thistles, knapweeds, legumes	Target Application; Broadcast – Reset Plant Community	Spring/Fall No standing water; year-round greenup
Clopyralid	Composites, legumes, forbs and shrubs	Target Application; Broadcast – Reset Plant Community	Spring/Fall No standing water; year round; greenup
Glyphosate	Non-specific: grasses, forbs, and shrubs reed canary grass	Target Application; Broadcast – Reset Plant Community	
Sethoxydim	Grasses, especially *Poa* species	Target Application; Broadcast – Reset Plant Community	No standing water; Spring - year round; greenup; grass small stature
Fluazifop –p-butyl	Grasses other than *Vulpia* species	Target Application; Broadcast – Reset Plant Community	No standing water; Spring - year round; greenup; grass small stature
Clethodim	Grasses, especially *Vulpia* species	Target Application	No standing water; Spring - year round; greenup; grass small stature
Triclopyr	shrubs and trees	Target Application	No standing water; year round; greenup/fall

- Broadcast application would involve boom application
- Target application would involve wicking, spot spray, stump frilling, or cartridge, as appropriate
- Aminopyralid, Fluazifop –p-butyl, Clethodim, and Sethoxydim would be used consistent with the BLM policy on Research and Demonstration: demonstration plots up to 5 acres in size with a maximum of 15 acres/year for each herbicide.

Analytical Methods and Techniques

- Incorporate by reference analysis of effects of herbicide use on non-target vegetation from the following documents for the chemical-specific analysis: BLM 2010, BLM 2007, EPA 2005, USFWS 2011a, USFWS 2011b, USFWS 2011c, USFWS 2008, US Forest Service 2001. Those analyses generally conclude that herbicide use would have the potential to cause mortality in non-target vegetation but that standard operating procedures and mitigation measures would minimize risks to non-target plants. See Table 5.

Table 5. Analysis of chemical effects in existing documents

Chemical	USFWS 2008	USFWS 2011	BLM 2010	USFWS 2010b
Triclopyr*	X		X	X
Triclopyr 4a		X		
Glyphosate	X	X	X	X
Clethodim	X	X		
Sethoxydim	X	X		
Fluazifop–p-butyl	X	X		
Clopyralid		X	X	
Nu-Film (spreader/sticker)		X		

* Garlon 3a not explicitly mentioned

Analytical Conclusion

- Mortality of threatened and endangered plant species due to herbicide use by alternative
- Mortality of non-threatened and endangered plant species due to herbicide use by alternative.

Analytical Question: what would be the exposure of wildlife to herbicides?

Analytical Assumptions

- Same assumptions about herbicide application as above analytical question on non-target vegetation
- Herbicide impacts to wildlife vary with the herbicide used, its selectivity, application rate, concentration, relative toxicity to the wildlife species in the treatment area, likelihood of exposure, timing and method of application, environmental conditions during application,

Analytical Methods and Techniques

- WorksheetMaker – model developed by USDA Forest Service, for Human Health and Ecological Risk Assessments. Worksheetmaker is an EXCEL-based model to calculate exposure scenarios and risk characterization associated with application of different pesticides, including herbicides. The model incorporates the specific characteristics including chemical formulation, use rate, and site factors (WorksheetMaker, 2006).
- Incorporate by reference analysis of effects of herbicide use on wildlife from the following documents for the chemical-specific analysis: BLM 2010, BLM 2007, EPA 2005, USFWS 2011a, USFWS 2011b, USFWS 2011c, USFWS 2008, US Forest Service 2001. Those analyses

generally conclude that herbicide use would have the potential to cause adverse effects on some wildlife species, but those potential effects vary substantially by species and by chemical. Furthermore, those analyses conclude that standard operating procedures and mitigation measures would minimize any risks to wildlife.

Analytical Conclusion

- Comparison of exposure and risk to wildlife with use of herbicides by alternative. Exposure is the dose of a chemical that an organism would experience under a specific scenario, such as consumption (in which the organism would consume vegetation to which the herbicide had been applied), direct spray (in which the herbicide would land on the organism during application), or indirect exposure (such as aquatic species which would be exposed to herbicide transported to water from runoff). Risk is the likelihood that adverse effects would result from exposure to the herbicides.

Data Needs

- WorksheetMaker Version 6.0 (WorksheetMaker, 2006)

Data Display

- Table or graph by herbicide characterizing exposure and risk to wildlife species.

Analytical Question: How much herbicide would persist in soils where herbicides would be applied?

Analytical Assumptions

- Herbicides would leech into the soil profile
- Herbicides persistent in the soil could result in exposure for non-target vegetation and wildlife, and could result in runoff and transport of herbicides to water.

Analytical Methods and Techniques

- GLEAMS model. GLEAMS (Groundwater Loading Effects of Agricultural Management Systems) is a root zone model that can be used to examine the fate of chemicals in various types of soils under different meteorological and hydrogeological conditions.

Analytical Conclusion

- Rank herbicides by mobility/adsorption capacities
- Rank alternatives by herbicide concentration in soil

Data Needs

- Acres of bottomland soils on BLM parcels.

Data Display

- Tabular display of herbicide concentration in soil by alternative

Analytical Question: How would application of herbicides affect water quality and beneficial uses in adjacent streams?

Analytical Assumptions

- Impermeable subsurface clays cause water to pond. High rainfall events would route herbicides to Amazon Creek/A Channel through overflow culverts.
- Imogolite clay in the planning area would behave similar to montmorillinite clay used in the model with respect to transport of herbicides.
- Weather conditions in the planning area are similar to the weather conditions in Corvallis, which would be used in the model.
- Only aquatic formulations or low aquatic risk herbicides would be used when there is a high water table.
- Herbicides would be used in accordance with label instructions.
- Sites in the planning area were previously farmed and had pesticides applied (Oregon DEQ 2006a).
- West Eugene Wetlands partners are applying herbicides and other landowners are applying herbicides that flow into the storm sewers and into Amazon Creek (City of Eugene 2002; Oregon DEQ 2006b).
- The planning area is located within and downstream of a heavy industrial area that has ambient background air and water quality pollution (Long Tom Watershed Council 2007; Rinella, 1993).
- Other local landowners cause water pollution from discharge into the ditchlines and stream channels.
- Other local landowners cause soil and water pollution from air emissions that rain down and pollute the soil and waterways in the planning area.

Analytical Methods and Techniques

- GLEAMS-Driver ver. 1.9, using inputs derived from West Eugene hydrologic studies and on-site field visits, as described in the above analytical question about persistence in soil.
- Worksheetmaker, as described in the above analytical question about exposure of wildlife.

Analytical Conclusion

- Describe the fate of applied herbicides in clay soil by alternative
- Rank alternatives by herbicide concentrations entering stream channels
- Compare herbicide concentrations entering water under each alternative to listed thresholds for herbicides entering stream channels

Data Needs

- City of Eugene hydrologic and contour maps.
- US. Forest Service technical support to run the GLEAMS model and interpret results
- Types, amounts, and locations of herbicides used by adjacent landowners

- Acres of land that would be treating by each herbicide under each alternative
- Application amounts over 10 years
- Local water pollution discharge sources from Oregon Department of Environmental Quality
- Local air emissions from Lane Regional Air Protection Agency

Data Display

- Tabular display of herbicides used (and application rates) by adjacent landowners and proposed BLM herbicide use
- Tabular display of concentrations of herbicide in the soil of a treated field, the water body, and the soil in adjacent non-target fields, by alternative

How would prescribed burning affect air quality?

Analytical Question: what would be the particulate emissions from prescribed burning?

Analytical Assumptions

- Planned ignitions would result in emissions, which would be regulated under, and comply with, the Oregon Smoke Management Plan.
- The primary pollutant of concern from prescribed burning is particulate matter.

Analytical Methods and Techniques

- Calculate particulate emissions based on acres of prescribed burning and anticipated fuel loads
- Calculate particulate matter (PM) in two diameter classes: 2.5 microns ($PM_{2.5}$) and 10 microns (PM_{10})

Analytical Conclusion

- Average annual $PM_{2.5}$ and PM_{10} emissions by alternative, compared to threshold value of air quality standards for particulate emissions

Data Needs

- Average acres of prescribed burning by alternative
- Average fuel loads per acre for typical prescribed burning

Data Display

- Tabular and graphical display of average annual particulate emissions by alternative and comparison to air quality standards for particulate emissions

How would changing climate conditions alter the effect of BLM management actions on resources?

Analytical Question: what is the vulnerability of prairie plant and animal species in the planning area to climate change?

Analytical Assumptions

- Changing climate conditions of precipitation and temperature have the potential to alter habitat conditions for plant and animal species in the planning area.
- Changing climate conditions have the potential to alter the competitive advantage of invasive species.
- Vulnerability of prairie plants and animals to climate change can be assessed by species-specific evaluation of four groups of species: threatened, endangered, and sensitive plants and butterflies; nectar plants significant to butterfly conservation; common native plants used in habitat management and restoration; and key invasive species that threaten these systems.
- The species to be evaluated are identified in Table 6 below.

Table 6. Species to assess with Climate Change Vulnerability Index

T&E and sensitive species	Nectar species	Common natives	Invasive species
Kincaid's lupine	Wooly sunflower	Tufted hairgrass	Himalayan blackberry
Fender's blue butterfly	Rose checkermallow	Roemer's fescue	Meadow knapweed
Willamette daisy	Tolmie's mariposa lily	California oatgrass	Creeping bentgrass
Bradshaw's lomatium	Oregon iris	Spike bentgrass	Oxeye daisy
Golden paintbrush	Slim-leaf onion	Willow dock	Tall oatgrass
Shaggy horkelia	Common camas	Western buttercup	
Hitchcocks's blue eyed grass		Rosy plectritis	
White-topped aster		Yarrow	
		Self heal	
		Slender cinquefoil	
		Showy tarweed	

Analytical Methods and Techniques

- Use NatureServe's Climate Change Vulnerability Index rapid assessment methodology to evaluate the vulnerability of native plant species to climate change (NatureServe). The NatureServe Climate Change Vulnerability Index will be used because it combines downscaled local and regional physical climate change data with species biological information; allows the incorporation of empirical findings to

improve the quality of the assessment; and provides output that is easily interpreted in a planning process.

Analytical Conclusions

- a categorical rank assigning relative climate change risk categories to each species (High to Low Vulnerability, Presumed Stable, Increase Likely, or Insufficient Evidence) and identification of factors causing risk in the planning area. Use the identified factors causing risk to address how management actions would exacerbate or alleviate risks.

Data Needs

- species-specific demographic data sets from Institute of Applied Ecology.
- climate data under multiple climate changes scenarios from the PRISM group at Oregon State University

Data Display

- Tabular display of risk categories for each species

How would BLM management actions affect greenhouse gas emissions and carbon storage?

Analytical Question: how much greenhouse gas emissions would result from land management actions?

Analytical Assumptions

- Carbon is the only greenhouse gas likely to result in substantial emissions from the land management actions considered in the alternatives.
- Biomass consumed in prescribed fire emits 50% carbon by weight
- Diesel fuel emits 6 pounds of carbon (22 lbs. of carbon dioxide) per gallon consumed (Environmental Protection Agency)
- Mowing consumes 0.35 gallon of diesel fuel per acre treated (Colorado State University Extension)
- Mastication consumes 0.72 gallons of diesel fuel per acre treated (Colorado State University Extension)
- Management treatments with chainsaws and other hand machinery not related to forest harvest treatments would result in carbon emissions negligibly small carbon emissions: chainsaws consume approximately 1 gallon of gasoline per day of treatment work (Bonneville Environmental Foundation)

Analytical Methods and Techniques

- Carbon emissions from prescribed fire will be calculated based on the assumed carbon content of fuels times the estimated fuels consumption rate times the estimated acres of treatment.
- Carbon emissions from fuel use associated with management actions will be calculated based on the assumed consumption rates multiplied by the estimated acres of treatment.
- Carbon emissions from timber harvest or forest site conversion will be calculated based on the BLM Timber Harvest Carbon Calculator (on file in the Eugene BLM Office) and factors presented in BLM 2008a (Appendix C, p. 28) and R. Hardt, personal communication (November 8, 2009, on file in the Eugene BLM Office).

Analytical Conclusion

- Rank alternatives by carbon emissions per year at 10 years
- Emissions will be compared to emissions at national and global scales for similar sectors (i.e., land management actions)
- The analysis will not predict specific changes in climate that would result from greenhouse gas emissions from the proposed action: it is currently beyond the scope of existing science to identify a specific source of greenhouse gas emissions or sequestration and designate it as the cause of specific climate impacts at a specific location.

Data Needs

- Acres of prescribed fire by alternative
- Estimated fuel consumption rates for prescribed fire
- Acres of mowing by alternative
- Acres of mastication by alternative
- Acres of forest stand treatments by alternative

Data Display

- Tabular or graphic display of carbon emission per year by alternative in units of tonnes of carbon emitted at year 10. Tonnes (i.e., metric ton = 2200 lbs.) will be used for measurement because most of the scientific literature reports carbon emissions in tonnes, even when using English units for other measurements.

Analytical Question: how would carbon storage change as a result of the land management actions in the alternatives?

Analytical Assumptions

- Measurable changes in carbon storage would occur only as a result of changes in plant communities (e.g., ash swale converted to wet prairie through restoration actions; or upland prairie converting to Douglas-fir forest through succession)
- Grassland contains 1 tonne/acre of carbon; shrub vegetation contains 12 tonnes/acre of carbon; hardwood stands contain 40-60 tonnes/acre of carbon, depending on canopy cover; conifer stands contain 100-120 tonnes/hectare of carbon, depending on canopy cover (Brown et al. 2004, pp. 16-17)
- Plant communities in the planning area, as described in the BLM 2005 will be assigned the following carbon storage rates:
    - wet and upland prairie 1 tonne/acre
    - shrub scrub 12 tonnes/acre
    - oak savanna 40 tonnes/acre
    - oak woodland 60 tonnes/acre
    - ash swale/riparian 60 tonnes/acre
    - Douglas-fir forest 100 tonnes/acre.
- Freshwater/riverine and open water are assumed to have no changes to carbon storage over time as a result of management actions.
- Land management practices considered in the alternatives would not alter soil organic carbon levels (see BLM 2008a, p. 540).

Analytical Methods and Techniques

- Existing carbon storage in the planning area will be calculated by multiplying the acreage in each plant community by the assumed carbon storage rate.

- Changes in carbon storage will be calculated by changes in the acreage in each plant community over time

Analytical Conclusion

- Rank alternatives by total amount of carbon storage in the planning area at year 0 and year 10

Data Needs

- Acres of plant communities at 0 and 10 years

Data Display

- Tabular or graphic display of total carbon storage by alternative in units of tonnes of carbon at 0 and 10 years

How would BLM management actions effect archaeological, historical and traditional use resources?

Analytical Question: how would land management actions affect archaeological resources or historical properties?

Analytical Assumptions

- It is likely that archaeological and historical resources occur within the planning area.
- The history of the land use in the planning area will have had some impacts to archaeological and historical resources that may exist. Additionally, the condition of the land within the planning area most likely conceals the locations of archaeological resources.
- The likelihood of locating archaeological sites by employing pedestrian survey methods is in direct correlation to the amount of mineral soil visible on the surface.
- Archaeological and historical resources are not distributed evenly over the landscape, but the likelihood of certain resources can be moderately predicted using various landscape characteristics. Areas with less than 20% slope and south aspects, such benches, saddles or terraces, are considered "high probability areas" for locating archaeological sites.
- Impacts to archaeological and historical resources would be in direct correlation to the amount of ground disturbing activities and prescribed burning allowed by each alternative.
- Adverse impacts to archaeological or historical resources occur when site materials are disturbed or removed from their original context or their integrity is disrupted or destroyed. Historical structures eligible or listed on the National Register of Historic Places can be adversely impacted by changes to the structure itself or changes to elements of the surrounding environment that are considered part of the criteria making the site or structure eligible.
- Impacts to archaeological sites are avoided or mitigated by conducting pre-disturbance cultural resource inventories to identify the location of archaeological sites.

Analytical Methods and Techniques

- Impacts to archaeological and historical resources will be measured by alternative based on the number of acres of ground disturbing activities permitted or required under that alternative.
- Impacts to archaeological resources will be measured by alternative based on the number of acres proposed for burning under each alternative.

Analytical Conclusions

- Rank alternatives by impacts to archaeological and historical resources (i.e., acres of ground disturbance and prescribed burning per year)

Data Needs

- Cultural inventory identifying archaeological and historical resources within the planning area
- Acres (or locations) of ground disturbing activities proposed by alternative
- Acres (or locations) of prescribed fire proposed by alternative

Data Display

- Tables and graphs displaying the correlations of archaeological and historical resource locations to proposed ground disturbing activities and prescribed fire locations for each alternative

Analytical Question: how would land management actions affect Native plant collection, management, and use?

Analytical Assumptions

- Culturally important plants include camas, tarweed, hazel, willow, juncus, and possibly others.
- The availability of culturally important plants is indicated by the abundance of associated plant communities:
    - camas and tarweed in wet prairie
    - hazel in oak woodlands
    - willow in riparian areas
    - juncus in emergent wetlands.
- Impacts to management, collection and use of traditional plants include loss or prevention of access, reduction or complete removal of traditional use plants, and herbicide application.
- Sites that have herbicide application would not be available for plant collection the year of application.
- Areas allocated for the restoration of threatened and endangered species habitat would not be available for access for plant collection, management, and use. Some collection of some species may be possible under restrictions to avoid conflict with management of threatened and endangered species habitat, but such site-specific and species-specific opportunities cannot be forecast. Therefore, for the purpose of analysis, these areas will be assumed to be unavailable for collection.
- Consultation with tribes will identify those plants that are important for traditional uses. Early consultation will reduce or eliminate negative impacts to traditional use resources, when important resources are identified up front and measures to protect them are employed.
- Identification of traditional use plant material locations will reduce or eliminate unintentional adverse impacts, because the BLM can protect them if they are known.

- Mitigation measures will be employed to reduce or eliminate impacts to traditional plant resources but may not always be adequate to protect them, such as where mitigation would conflict with the objectives for the management of the area or where mitigation would not be within BLM's authority.

Analytical Methods and Techniques

- The abundance of culturally important plants will be measured by the acreage of associated plant communities over time, by alternative.
- Access to areas for plant management and collection will be measured by the acreage of sites with plant communities associated with culturally important plants that have public access and access is not blocked by lands allocated to restoration of threatened and endangered species
- Availability of areas for plant collection will be measured by accessible sites with plant communities associated with culturally important plants that have would not have had herbicide application within the previous year.

Analytical Conclusion

- Rank the alternatives by the abundance of culturally important plants
- Rank the alternatives by area accessible and available for plant collection

Data Needs

- Acres, location, and timing of proposed herbicide use by alternative
- Acres and locations of plant communities associated with culturally important plants
- Acres and locations of possible traditional plant use and collection by alternative

Data Display

- Tables and graphs displaying the abundance of culturally important plants over time by alternative.
- Maps displaying the areas accessible and available for plant collection over time by alternative

How would BLM management actions affect access to the planning area?

Analytical Question: what areas would be available for rights-of-way?

Analytical Assumptions

- Much infrastructure (roads, cell towers, power lines, utility lines, etc.) servicing adjacent landowners for a majority of the parcels is currently in place.
- The urban and developing setting of the planning area ensures a continuing potential for future infrastructure requests.

Analytical Methods and Techniques

- District resource and realty specialists will assess valid existing rights to determine the potential for new development adjoining BLM parcels within the planning area that might create new authorization requests. The assessment will consist of professional judgment based on district records, local knowledge, and existing regulation and policy.
- District resource and realty specialists will assess the number of application requests we have received since the parcels were acquired to determine if there is any kind of trend toward an increase in application activity.
- Identify any right-of-way exclusion areas, right-of-way avoidance areas, or right-of-way corridors allocated in the alternatives

Analytical Conclusions

- Map right-of-way exclusion areas to determine areas not available for rights-of-way
- Rank alternatives by the amount of the planning area that would be available for rights-of-way

Data Needs

- Currently recognized right-of-way corridors as identified in the Designations of Energy Corridors on Federal Land in the 11 Western States.
- Current BLM authorizations over lands within the planning area.
- Lands in the planning area that were acquired “subject to” rights-of-way that have yet to be developed.

Data Display

- Map showing current authorizations and existing corridors or rights-of-way.
- Maps showing any right-of-way exclusion areas, right-of-way avoidance areas, or right-of-way corridors by alternative

Analytical Question: what areas would be available for mineral and energy exploration and development?

Analytical Assumptions

- There is very little potential for either leasable or locatable minerals within the planning area
- Leasable mineral development without authorizing any surface occupancy could be consistent with the purpose and need for the planning area
- There are few saleable materials in the planning area that contain either the quantity or quality needed to realistically yield any serious interest, but those that are present may represent a future potential development opportunity.

Analytical Methods and Techniques

- Describe the existing condition regarding mineral and energy exploration and development, including any current mining claims on the planning area
- Identify those acres currently available for mineral entry (and what type of entry) and those acres currently withdrawn or closed to mineral entry (and the extent of withdrawal or closure)
- Define the potential for any mineral (leasable, locatable or saleable) within the planning area and describe any specific materials containing mineral potential

Analytical Conclusion

- Identify any limitations that would restrict the exploration and/or development that would be allowed
- Rank each alternative based on the amount of change that would occur to the mineral availability

Data Needs

- Identification of any existing and potential energy and mineral exploration and development. Identification of that interest by material.
- Acres open and withdrawn for locatable, leasable and saleable minerals respectively
- Acres of land within the planning area with access restrictions.

Data Display

- Map showing any identified parcels with mineral potential (if any)
- Map showing any parcels currently withdrawn from saleable, leasable or locatable mineral entry
- Maps showing any areas proposed to be closed to leasable, saleable or locatable mineral entry by alternative and which, if any of those open acres are subject to planning-based restrictions

How much would it cost to implement the alternatives?

Analytical Question: how much would habitat restoration treatments cost?

Analytical Assumptions

- Assume treatment costs/acre from BLM 2010 (p. 340):

mechanical	$225
non-restoration mowing	$56
manual	$345
prescribed fire	$340
seeding	$199
herbicides	$107.

Analytical Methods and Techniques

- Multiply costs/acre times acres treated over the first decade. Divide by ten to derive average annual cost.

Analytical Conclusions

- Rank alternatives by average cost per year

Data Needs

- Acres treated by treatment method for each alternative (from plant community modeling)

Data Display

- Tabular or graphic display of cost per year for each alternative

Analytical Question: how much would recreation facilities cost?

Analytical Assumptions

- Assume construction and maintenance costs based on past experience as follows:

  Annual cost for maintenance of trails: $4,000
  Annual cost of maintenance of concrete vault restroom: $1,000
  One-time cost of trail construction: $5-$7,500
  One-time cost of concrete vault restroom with Chase storage: $30,000
  One-time cost of gravel parking lot: $5,000
  One-time cost of paved parking lot: $30,000
  One-time cost of kiosks, viewing, picnic tables, benches, signs: $10,000
  One-time cost replacement of existing decking: $15,000
  Barriers and fence construction: $3,000.

Analytical Methods and Techniques

- Assign costs to maintenance and proposed construction of new facilities based on alternative designs over first decade. Divide by ten to derive average annual cost.

Analytical Conclusions

- Rank alternatives by average cost per year

Data Needs

- Specific proposed recreation facilities for each alternative

Data Display

- Tabular or graphic display of cost per year for each alternative

Consistency with Other Agency Plans and Programs

The BLM planning regulations require that resource management plans be ". . . consistent with officially approved or adopted resource-related plans and the policies and procedures contained therein, of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans are also consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands . . . "(43 CFR 1610.3-2).

This section of the planning criteria addresses consistency with known Federal agencies; state agencies and local governments; and tribal plans and treaties. Consistency and coordination with other agency laws, regulations and officially approved or adopted natural resource related plans, program and policies will be more fully described within the RMP.

Federal Agencies

US Fish and Wildlife Service

- Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010)

State Agencies

Department of Agriculture

- Weed Control Plans
- State-listed endangered plant species

Department of Environmental Quality

- Visibility Protection Plan and air quality standards
- Water Quality Management Plan
- Public use watersheds

Department of Fish and Wildlife

- Statutory Wildlife Policy
- Oregon Endangered Species Programs
- Sensitive Species Rule
- Non-game Wildlife Plan
- Big Game Population Management Objectives
- Comprehensive Wildlife Conservation Strategy
- Basin Fish Management Plans

Department of Forestry

- Smoke Management Plan
- Oregon Forest Practices Act
- Forestry Program for Oregon

Water Resources Department

- River basin programs
- Water Resources Commission rules and statutes

Parks and Recreation Department

- State-wide Comprehensive Outdoor Recreation Plan

- State Parks and Recreation System Plan
- State Recreation Trails Plan
- State Historic Preservation Program
- State-designated Scenic Waterways

Department of Transportation, Highway Division

- Oregon Highway Plan

Division of State Lands

- Removal-fill Law
- Natural Heritage Program

Local Governments

City of Eugene and Lane Council of Governments

- West Eugene Wetlands Plan (City of Eugene 2005)

Opportunities for Coordination through Cooperating Agency Relationships

The Federal Land Policy and Management Act and NEPA provide direction regarding coordination and cooperation with other agencies and governments. The Federal Land Policy and Management Act emphasizes the need to ensure coordination and consistency with the plans and policies of other relevant jurisdictions. NEPA provides for what is essentially a cooperative relationship between a lead agency and cooperating agencies in the NEPA process. Cooperating agency status provides a formal framework for governmental units—local, state, tribal, or Federal—to engage in active collaboration with a lead Federal agency to implement the requirements of NEPA.

The Council on Environmental Quality NEPA regulations specify that a Federal agency, state agency, local government, or tribal government may qualify as a cooperating agency because of ". . . jurisdiction by law or special expertise."

1) Jurisdiction by law means ". . . agency authority to approve, veto, or finance all or part of the proposal." (40 CFR 1508.15).

2) Special expertise means ". . . statutory responsibility, agency mission, or related program experience." (40 CFR 1508.26).

Cooperators are important to the preparation of RMPs, and therefore will be involved early and often in the planning process. They can provide expertise in much of the subject matter being analyzed. Some cooperators can provide advice based on experiences with similar planning efforts. The BLM has invited the US Fish and Wildlife Service, US Army Corps of Engineers, City of Eugene Parks and Open Space Division, and the Confederated Tribes of Grand Ronde to be cooperators in the preparation of this RMP because of their special expertise. At this time, the US Army Corps of Engineers and City of Eugene Parks and Open Space Division have agreed to be cooperators.

Guidance for Use of the Completed RMP

This section explains how the RMP will be implemented, monitored, evaluated, and changed.

Requirement for Further Environmental Analysis

The analysis in the EIS for this RMP will set the stage for subsequent NEPA analysis of many RMP implementation actions. This subsequent analysis will typically be an environmental assessment that would tier to the EIS. The Council on Environmental Quality NEPA regulations explain that tiering is "… the coverage of general matters in broader EISs … with subsequent narrower statements or environmental analyses … incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared." (40 CFR 1508.28).

This EIS is also likely to include analysis of specific implementation actions, and the RMP is likely to include decisions on specific implementation actions. This analysis and decision-making may be specific enough to implement actions without further NEPA analysis. For many such implementation actions, the BLM would likely prepare an action-specific Decision Record, prior to which the BLM would conduct a "Determination of NEPA Adequacy" (DNA) to determine whether additional NEPA analysis would be necessary. The DNA itself is not a NEPA document, but is merely an interim step in the BLM internal analysis process. Where site-specific conditions differ, or circumstances change, from those described in the EIS, or if a DNA is inappropriate for other reasons, the BLM may need to conduct additional NEPA analysis prior to reaching a decision to implement specific implementation actions.

Monitoring and Evaluation

The BLM planning regulations (43 CFR 1610.4-9) call for monitoring and evaluating RMPs at appropriate intervals. RMP monitoring is the process of (1) tracking the implementation of land use planning decisions (implementation monitoring); and (2) collecting data/information necessary to evaluate the effectiveness of land use planning decisions (effectiveness monitoring).

The monitoring process should collect information in the most cost-effective manner and may involve sampling or remote sensing. Monitoring could be so costly as to be prohibitive if it is not carefully and reasonably designed. Therefore, it is not necessary or desirable to monitor every management action or direction. Unnecessary detail and unacceptable costs can be avoided by focusing on key monitoring questions and proper sampling methods. The level and intensity of monitoring will vary, depending on the sensitivity of the resource or area and the scope of the proposed management activity.

The RMP will contain a monitoring plan that provides:

- key monitoring questions
- standards
- methods
- sample size and intervals.

Evaluation is the process of reviewing the RMP to determine whether plan decisions and NEPA analysis are still valid and whether the plan is being implemented. The RMP will be evaluated to determine if:

(1) decisions remain relevant to current issues,
(2) decisions are effective in achieving (or making progress toward achieving) desired outcomes,
(3) any decisions need to be revised,
(4) any decisions need to be dropped from further consideration, and (5) any areas require new decisions.

The plan will be evaluated every 5 years, or as necessitated by changed circumstances or significant new information. Evaluations should be focused on issues resulting from monitoring or new information.

The evaluation will address the following questions:

1. Are management actions outlined in the plan being implemented?
2. Does the plan establish desired outcomes (i.e., goals and objectives)?
3. Are the allocations, constraints, or mitigation measures effective in achieving (or making progress towards achieving) the desired outcomes?
4. Have there been significant changes in the related plans of Indian Tribes, state or local governments, or other Federal agencies?
5. Are there new data or analyses that significantly affect the planning decisions or the validity of the NEPA analysis.
6. Are there unmet needs or new opportunities that can best be met through a plan amendment or revision, or will current management practices be sufficient?
7. Are new inventories warranted pursuant to the BLM's duty to maintain inventories on a continuous basis?
8. Are there new legal or policy mandates as a result of new statutes, proclamations, Executive Orders, or court orders not addressed in the plan?

Plan Maintenance

RMP decisions can be maintained to reflect minor changes in data. Maintenance is limited to further refining, documenting, or clarifying a previously approved decision. Maintenance must not expand the scope of resource uses or restrictions or change the terms, conditions, and decisions of the approved plan. Examples of plan maintenance items include:

- Correction of typographical, mapping, or tabular data errors
- Clarification of terms
- Refinement and clarification of a Best Management Practice
- Refinement of an implementation monitoring question or evaluation interval.

Changing the RMP

RMP amendments change one or more of the terms, conditions, or decisions of an approved RMP. Plan amendments are most often prompted by the need to:

- Consider a proposal or action that does not conform to the plan.
- Implement new or revised policy that changes land use plan decisions.

- Respond to new, intensified, or changed uses on public land.
- Consider significant new information from resource assessments, monitoring, or scientific studies that change land use plan decisions.

RMP revisions involve preparation of a new plan to replace an existing one. Revisions are necessary if monitoring and evaluation findings, new data, new or revised policy, or changes in circumstances indicate that decisions for an entire plan or a major portion of the plan no longer serve as a useful guide for resource management. When possible, the RMP will specifically describe the changed conditions (new data, new policies, or circumstances) regarding management objectives/decisions and environmental consequences that would trigger a plan revision.

Valid Existing Rights and Continuing Uses

The RMP will acknowledge that the BLM will recognize existing rights-of-way, permits, and easements as continuing uses subject to the terms of the specific use authorization. Rights-of-way, permits, easements, and other established legal authorizations have been granted over the years on the BLM-administered lands in the planning area. Many established authorizations on the BLM-administered lands in the planning area were granted prior to BLM acquisition of the lands. When developing alternatives and implementing the RMP, actions on BLM-administered lands will be subject to valid existing rights and BLM will consider the terms of specific use authorizations as well as BLM's discretion concerning those authorizations. In some cases, authorization for implementing an action may be subject to approval by the holders of valid existing rights and may not be discretionary to BLM.

Management of Newly Acquired Lands

As stated above, State Director guidance directs that further planned land acquisition by the BLM in the West Eugene Wetlands is beyond the scope of the RMP. However, there is the possibility of future, unplanned land acquisition by the BLM in the West Eugene Wetlands, such as from donations. Any such additional acquired lands would be managed for the purpose for which it is acquired. If any future, unplanned land acquisitions are acquired by the BLM under Section 205 or 206 of the Federal Land Policy and Management Act, the lands would take on the status of “acquired lands,” and therefore would not be available for location, lease, or sale until the land is formally opened to such entry.

There may be additional BLM-administered lands identified in the West Eugene Wetlands through the future location of survey hiatuses. Whether such lands should identified for retention or disposal will be addressed in the RMP.

Key Personnel

Decision-making

Approval of the RMP will be made by the BLM Oregon/Washington State Director. Recommendation for the approval of the RMP will be made by the Eugene District Manager. Management leadership and direction of the RMP interdisciplinary team is provided by the Field Manager, Siuslaw Resource Area.

Interdisciplinary Team members

The following seven Eugene BLM staff members have prepared the planning criteria and will be responsible for the preparation of most of the RMP/EIS. Additional BLM specialists will assist the interdisciplinary team as needed, in areas such as fuels management, recreation, and Endangered Species Act compliance.

Cheryl Adcock – *realty*. Cheryl has a Bachelor's degree in Political Science from the University of Oregon. She has 22 years of experience working for the BLM and is currently a Natural Resource Supervisor in the Upper Willamette Resource Area, Eugene District. Cheryl's expertise is in lands and realty.

Karin Baitis – *soils and hydrology.* Karin has a B.S degree in Geography and a Master's degree in Geomorphology from the University of Oregon. She has seven years of natural resource experience working for private industry and eleven years of experience working for the BLM. She is currently the Soil Scientist in the Siuslaw Resource Area, Eugene District. Karin's expertise is in geology, hydrology and soils.

Richard Hardt - *team leader*. Richard has a Bachelor's degree in Natural Sciences from The Johns Hopkins University; a Master of Landscape Architecture degree from Harvard University; and a Ph.D. in Forest Resources from the University of Georgia. He has 18 years of experience working for the BLM and is currently the District Planner in the Eugene District. Richard's expertise is in forest ecology, land use planning, and NEPA.

Jay Ruegger - *geographic information systems*. Jay has a B.S. degree in Soil Science from Southern Illinois University. He has more than 20 years of experience working with geographic information systems and 10 years of experience as a field soil scientist with NRCS and BLM in Illinois, Arizona, and Nevada. Jay is currently the Eugene District GIS Coordinator.

Nancy Sawtelle – *botany.* Nancy has a Bachelor's degree in Wildlife Management from Oregon State University. She has worked for federal government for over 30 years, with the US Forest Service PNW Station and the BLM. She is the Senior Staff Specialist Botanist/Plant Ecologist for the Eugene District BLM and coordinates the Botany Program, Natural Areas Program, and Native Plant Materials Program for the District.

Heather Ulrich – *archaeology.* Heather has a Bachelor's degree and a Master's degree in Anthropology from University of Oregon. Heather worked for the BLM while a student from 2007 to 2009 before becoming the District Archaeologist in both the Eugene and Salem Districts. Heather's expertise is in Northwest Coast archaeology, cultural resource management, and faunal analysis.

Sally Villegas-Moore – *wildlife biology*. Sally is a wildlife biologist and now holds a Wetlands Natural Resource Specialist position in the Eugene District. Sally has two B.S. degrees, one in natural resources and the other in fisheries & wildlife, from Oregon State University. She has six years of experience as a wildlife biologist and seven years as a natural resource specialist working for BLM. Sally's expertise lies in restoring rare prairie habitats and works closely with the nine West Eugene Wetland partners to implement projects for the four federally listed species.

Glossary

Area of Critical Environmental Concern (ACEC) - Lands where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish, and wildlife resources or other natural systems or processes or to protect life and provide safety from natural hazards.

Best Management Practices (BMPs) - Methods, measures, or practices designed to prevent or reduce water pollution. Usually, BMPs are applied as a system of practices rather than a single practice.

Bureau Sensitive Species - Plant or animals species eligible for federal listed, federal candidate, state listed, or state candidate (plant) status, or on list 1 in the Oregon Natural Heritage Data Base, or approved for this category by the BLM State Director.

Candidate Species – A species of plant or animal for which the US Fish and Wildlife Service or National Marine Fisheries Service has on file sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened.

Cooperating agency—assists the lead Federal agency in developing an environmental assessment or an EIS. A cooperating agency may be any agency that has special jurisdiction by law or special expertise for proposals covered by the NEPA (40 CFR 1501.6). Any Federal, state, tribal, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

Critical Habitat - Under the Endangered Species Act, critical habitat is defined as: (1) the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographic area occupied by a listed species, when it is determined that such areas are essential for the conservation of the species.

Cumulative effect - The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

Determination of NEPA Adequacy (DNA)—an interim step in the BLM's internal analysis process that concludes that a proposed action is adequately analyzed in an existing NEPA document. Where applicable, the determination also addresses conformance with an approved land use plan.

Endangered species - A species of plant or animal defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register.

Function - What a site does; especially the hydrologic, geochemical, and biological processes it potentially performs without human assistance, in support of ecosystems and economies.

Goal – A broad statement of a desired outcome; usually not quantifiable and may not have established timeframes for achievement.

Invasive plant - A plant species whose introduction or spread does, or is likely to, cause economic or environmental harm or harm to human health.

Issue – a point or matter of discussion, debate, or dispute about the potential environmental effects or impacts, of an action. Issues point to environmental effects and may drive the development of alternatives to the proposed action.

Land use allocation - Uses that are allowed, restricted, or prohibited for a particular area of land; a type of decision in a land use plan.

Monitoring - The review, on a sample basis, of management practices to determine how well objectives are being met, as well as the effects of those management practices on the land and environment.

Noxious Weed - A plant species designated by Federal or state law as generally possessing one or more of the following characteristics: aggressive or difficult to manage; parasitic; a carrier or host of serious insect or disease; or non-native, new, or not common to the United States. According to the Federal Noxious Weed Act (PL 93-639), a noxious weed is one that causes disease or had adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health.

Objective - A description of a desired outcome for a resource. Objectives can be quantified and measured and, where possible, have established timeframes for achievement.

Off-Highway Vehicle (OHV) - Any motorized track or wheeled vehicle designed for cross-country travel over any type of natural terrain.

Off-highway vehicle designation - Designation of lands for use of off-highway vehicles.

Open: All types of vehicle use is permitted at all times, anywhere in the area subject to certain operating regulations and vehicle standards.

Limited: Restricted at certain times, in certain areas, and/or to certain vehicular use.

Closed: Off-road vehicle use is prohibited.

Plant Community - An assemblage of plant species unique in its composition; occurs in particular locations under particular influences; a reflection or integration of the environmental influences on the site such as soils, temperature, elevation, solar radiation, slope, aspect, and rainfall.

Prescribed fire - A fire burning under specified conditions that will accomplish certain planned objectives. The fire may result from planned or unplanned ignitions.

Public domain lands - Original holdings of the United States never granted or conveyed to other jurisdictions, or reacquired by exchange for other public domain lands.

Recovery plan - A plan for the conservation and survival of an endangered species or a threatened species listed under the Endangered Species Act, for the purpose of improving the status of the species to the point where listing is no longer required.

Relevant and Important Resource Value – Criteria used to evaluate nominated Areas of Critical Environmental Concern.

Resource Management Plan (RMP) - A land use plan as described by the Federal Land Policy and Management Act.

Right-of-Way - A permit or an easement that authorizes use of public lands for certain specified purposes, commonly for pipelines, roads, telephone lines, electric lines, reservoirs, and so on; also, the lands covered by such an easement or permit.

Special status species - Plant or animal species in any of the following categories:

- Threatened or endangered species
- Proposed threatened or endangered species
- Candidate species
- State-listed species
- Bureau sensitive species.

Threatened species - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. A plant or animal identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.

Visual resource management (VRM) - The inventory and planning actions to identify values and establish objectives for managing those values and the management actions to achieve those objectives.

Visual Resource Management classes - Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective that prescribes the amount of change allowed in the characteristic landscape.

Water quality - The chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

Watershed - The divide separating one drainage area from another. The term “watershed” is commonly used to refer to an area; specifically, the area in which all surface waters flow to a common point.

Wetland - areas where water exists at or near the land’s surface in flooded or saturated soils in sufficient amounts during the March to October growing season to sustain wetland types of plants. Generally, three factors must be present in a wetland:
1) hydric soils (those soils officially identified as being wetland-type soils),
2) water (surface or groundwater within the root growing zone or upper 18 inches of soil), and
3) predominance of plants that are recognized as wetland species.

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In Reply Refer to:
1610 WEW (ORE050)

Dear Reader:

The Bureau of Land Management (BLM) has prepared proposed Planning Criteria for the development of the West Eugene Wetlands Resource Management Plan. We invite your review and comments on the proposed Planning Criteria.

As you review this document, keep in mind that the primary purpose of planning criteria is to:

- guide development of the resource management plan, particularly alternatives and analysis;
- ensure the analysis is tailored to the issues; and
- focus data collection.

The proposed Planning Criteria will be posted on the BLM website at http://www.blm.gov/or/districts/eugene/plans/eugenermp.php
Other planning documents related to the West Eugene Wetlands Resource Management Plan are also available on the BLM website.

To be most useful to us in the planning process, please provide your comments by April 13, 2012. Comments can be submitted by mail to: Richard Hardt, Resource Management Plan Team Leader, to the address listed above in the heading of this document; by electronic mail (email) to BLM_OR_EU_Mail@blm.gov; by facsimile to (541) 683-6981; or in person at the Eugene District BLM office located at 3106 Pierce Parkway, Springfield, OR, 97477, Suite E. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339 to contact the above individual during normal business hours. The FIRS is available 24 hours a day, 7 days a week, to leave a message or question with the above individual. You will receive a reply during normal business hours.

All information in your comments including your address, phone number, email address, or other personal identifying information (PII) is maintained as a BLM record. Although your information is sensitive and protected from public access, it may be made available under a Freedom of Information Act request. You may request in your comment that your PII information be withheld from public review although the agency is unable to guarantee full protection of such information. Please consider all information you may want to include in your comments.

> Access and Withdrawals, this RMP does not apply to the West Eugene Wetlands (BLM 1995, p. 16).

The 2008 Eugene District RMP stated:

> Manage BLM-administered lands within the West Eugene Wetlands under the West Eugene Wetlands Management Plan (BLM 2008c, p. 32).

Current Management Direction

The planning area does not have an existing RMP. The BLM has been managing BLM-administered lands in the West Eugene Wetlands consistent with West Eugene Wetlands Plan developed by the City of Eugene and Lane County (City of Eugene 2004). However, that plan does not provide management direction specific to the BLM-administered lands and was not developed based on a National Environmental Policy Act (NEPA) analysis. The Eugene District RMP, as detailed above, does not apply to the West Eugene Wetlands, except for a few specific provisions. The BLM-administered lands in the West Eugene Wetlands are acquired lands or survey hiatuses, and most lands were acquired with funds appropriated from the Land and Water Conservation Fund. The BLM–administered lands in the West Eugene Wetlands include areas outside of the study area for the West Eugene Wetlands Plan developed by the City of Eugene and Lane County, but the BLM has been managing all of these BLM-administered lands generally consistent with the West Eugene Wetlands Plan developed by the City of Eugene and Lane County (City of Eugene 2004).

In 2005, the Eugene District prepared the West Eugene Wetlands Schedule Environmental Assessment (Schedule EA), which provides a 10-year integrated treatment schedule for some restoration implementation actions (BLM 2005). The current management in the planning area is implementation of the restoration actions described in the Schedule EA and other implementation actions, developed on an *ad hoc* basis. Prior to the preparation of the Schedule EA, the Eugene District had prepared project-by-project analyses for a variety of actions. For example, in 2001, the Eugene District prepared the West Eugene Wetlands Recreation, Access, and Environmental Education Plan (Environmental Assessment No. OR·090·01· 8), which included the grant of a right-of-way to the City of Eugene for the continuation of the Amazon/Fern Ridge Bike Path. These and other past project-specific analyses prepared for the planning area are available at:
http://www.blm.gov/or/districts/eugene/plans/index.php.

Scope of Planning and Analysis

Planning and analysis may vary spatially (regional, project, or site-specific scope) and temporally (short term versus long term), providing a comprehensive basis for implementing resource management actions. Planning and analysis at multiple scopes may be necessary to resolve issues for a geographic area that differs from the planning area for the RMP. For example, an issue such as management of the Fender's blue butterfly requires consideration of desired outcomes and management actions in a broader context than the planning area. Information presented at multiple geographic scopes helps BLM

to understand issues, analyze cumulative impacts, and tailor decisions to specific needs and circumstances.

In planning and analysis, it is often necessary to consider various temporal scopes. Certain natural processes and implementation of management actions may occur over a relatively short time period, whereas other natural processes and implementation of management actions occur over very long time periods. In cases where management action objectives may not be achieved for decades or more, interim benchmarks or rates of progress may be identified where possible.

Cumulative impacts result from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions (40 CFR 1508.7). For analysis in this environmental impact statement (EIS), the existing baseline information is considered a cumulative result of all past actions; therefore it is not necessary to analyze past actions individually. For BLM-administered lands, the analysis will assume that the BLM will implement the specific actions described under the various alternatives, and will take the actions necessary to achieve the objectives described for the various alternatives. For lands other than BLM-administered lands within the analysis area, the analysis will assume that landowners will continue their current management strategies, unless the BLM has specific information to the contrary. The analytical assumptions that will be used in the cumulative effects analysis are described in more detail later in this document.

BLM Planning Process and Schedule

Preparing a RMP involves the following nine interrelated actions or steps:

1. Conduct scoping and identify issues
2. Collect inventory data
3. Analyze management situation
4. Develop planning criteria
5. Formulate alternatives
6. Analyze effects of alternatives
7. Select the preferred alternative; issue Draft RMP/Draft EIS
8. Issue Proposed RMP/Final EIS
9. Sign Record of Decision.

Formal scoping for the RMP started with printing of the Notice of Intent in the Federal Register on June 8, 2011, and concluded on July 8, 2011. The BLM has prepared a scoping report, which summarizes the results of scoping. The Analysis of the Management Situation, which is a brief document for the BLM manager, has been prepared and presented to the BLM manager. The scoping report, other scoping documents, and the Analysis of the Management Situation are available at: http://www.blm.gov/or/districts/eugene/plans/eugenermp.php.

The tentative schedule for issuance of the Draft RMP/Draft EIS is in late summer 2012, and the Proposed RMP/Final EIS in spring 2013. The Record of Decision is tentatively scheduled for fall 2013. This schedule is approximate and subject to change.

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