I. Introduction

A. Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

- Introduction: The section includes information on the history of the project proposal, the purpose of and need for the project, the agency's proposal for achieving that purpose and need, and the issues developed to assist in determining environmental effects. This section also details how the Forest Service informed the public of the proposal and an overview of how the public has responded.
- Alternatives, including the Proposed Action: This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes possible mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- Environmental Consequences: This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized primarily by the affected environmental components, and secondarily by the Issues. Within each section, the affected environment is described first to provide a baseline for evaluation and comparison of alternatives.
- Agencies and Persons Consulted: This section provides a list of Interdisciplinary Team members and agencies consulted during the development of the environmental assessment.

Chapter VI of this document lists the contents of the Analysis File for this project. This File contains the various reports prepared by the Interdisciplinary Team provide more detailed information to support the analyses presented in this environmental assessment. The Analysis File is in the project planning record located at the Middle Fork Ranger District Office in Westfir, Oregon.

This document contains numerous literature citations the titles of which can be found at the end in section VII. There are also numerous references to Forest Wide (FW) and Management Area (MA) standards and guidelines contained in the Forest Plan (USDA 1990a). These references are typically in parentheses containing numbers as follows: (FW-XXX; MA-XX-XX), and refer to the standards and guidelines that can be found in Chapter IV of the Forest Plan starting on page IV-47. It also contains numerous citations of the Standards and Guidelines contained in the Record of Decision for the Northwest Forest Plan (USDA/USDI 1994). These citations are made as follows; (ROD, page A-XX).

B. Background

1. Location and General Planning Area Description:

The Jim's Creek Savanna Restoration Project has been proposed to return a dense, mostly young forest to it historically more open character in order to maintain ecosystem biodiversity. The project area is located in the Coal Creek and Buck Creek sixth field watersheds, which are the upper portions of the Hill's Creek Reservoir fifth- field watershed of the Middle Fork of the Willamette River. The project area contains all or portions of sections 1, 2, 11, and 12, T. 24 S., R. 3, Willamette Meridian. The entire project area contains approximately 688 acres (see the following map) which are all tributary to the Middle Fork of the Willamette River.

Elevations in the project area range between 2000 and 3300 feet. Topography is mostly gentle but ranges from nearly flat to over 50 percent in slope. The project area is lightly roaded with a mosaic of mature forest stands dominated by Douglas-fir ranging from 90 to about 400 years of age with a smaller component of ponderosa pine of both age classes. These mature forests contain an average of about 160 trees per acre, about 152 of which are around 100 years old. The remaining trees range in age from about 200 to over 400 years. These older trees are remnants from when this portion of the landscape was a much more open, savanna-like forest which at one time contained a component of large Oregon white oak. These forests have a more or less closed canopy due to the cessation of prescribed fire that was practiced by native Americans (see Bailey and Kertis, 2002, Winkler and Bailey, 2002), a cessation of grazing that likely kept these stands open during the early settlement period, and fire suppression over the last 80 years. The project area contains 63 acres (9 percent) of younger stands created by past regeneration harvest. About two thirds of these managed stand acres are in two shelterwood harvested areas, which have from 20 to 25 large trees per acre and a 20 year old understory. The other third is composed of young plantations, primarily ponderosa pine about 20 years of age.

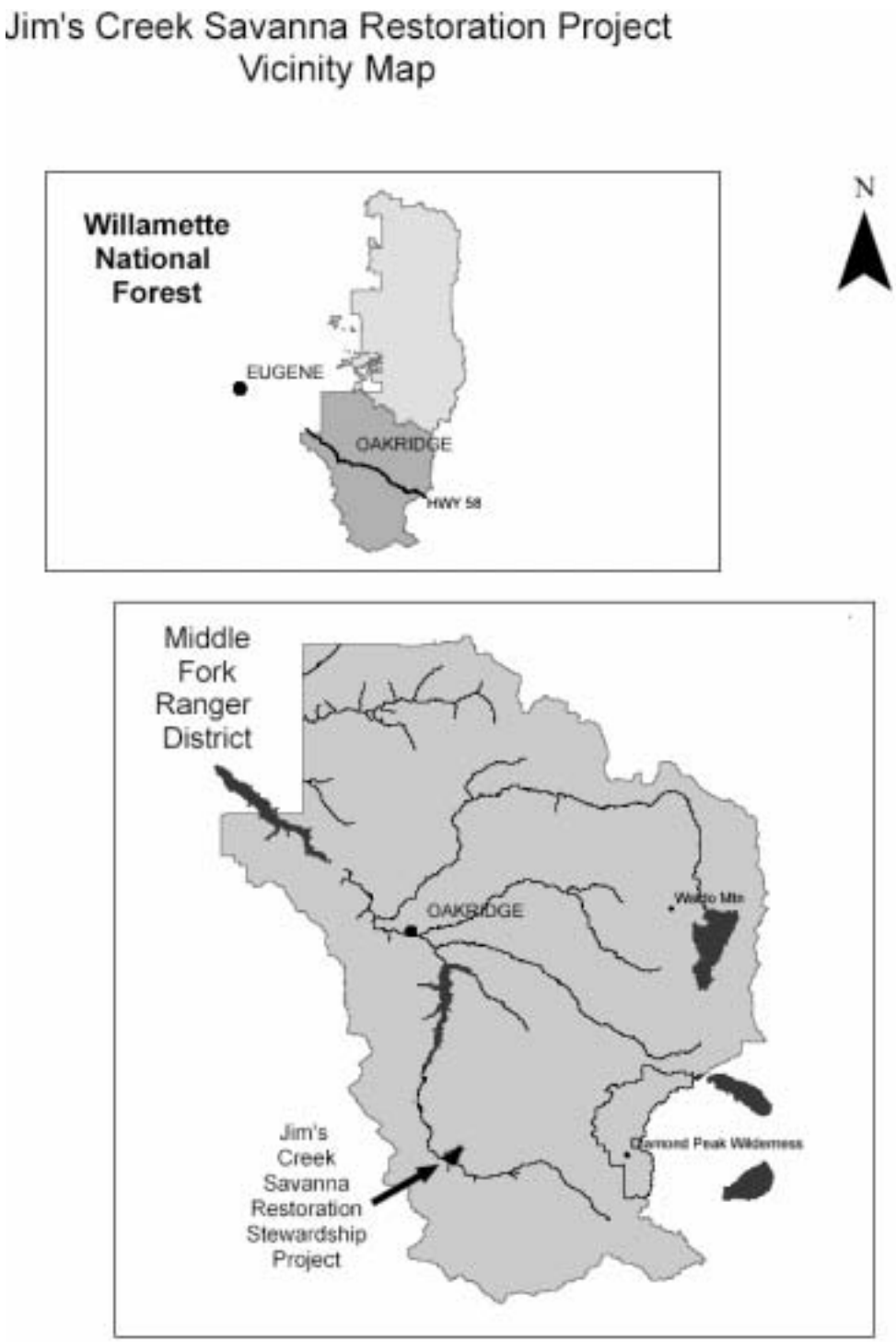

Figure 1 - Vicinity Map

One recreation trail, the Young's Rock trail, traverses the project area. At the bottom of the slope is Forest Road 21, which has scenic allocations along it. The Campers Flat

campground is also located in the southeastern corner of the planning area between Road 21 and the Middle Fork of the Willamette River.

As will be more completely discussed and supported in the Purpose and Need section below, this forest was once much more open than it is now, and that more open condition at one time provided for a greater plant and animal species diversity than currently exists.

The Willamette National Forest has received Stewardship Contracting Authority for the Jim's Creek restoration project from the Pacific Northwest's Regional Forester, should an action alternative be selected. This special contracting authority is limited to projects with a restoration component that have strong public support and collaborative efforts. The authority provides for the use of special contracts in accomplishing restoration activities, and any receipts generated from the sale of forest products can be retained by the Forest Service for use in funding additional restoration projects in an identified stewardship contracting area not limited to the initial project area.

2. Forest Plan Direction:

The Willamette National Forest Land and Resource Management Plan and Final Environmental Impact Statement (USDA, 1990a and b) as amended by the Record of Decision of April 1994 for the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl (North West Forest Plan; USDA/USDI 1994) provides management direction, land allocations, and standards and guidelines for the management of forest lands in this planning area. To distinguish between the two plans, this document will refer to them as the Forest Plan and the Northwest Forest Plan (NWFP), respectively. The Northwest Forest Plan provides a regional strategy for management of federal lands and the old-growth and late-successional forest ecosystems they contain. The Northwest Forest Plan amends land allocations established in the Willamette Forest Plan. These new land allocations build the framework for maintaining a functional and interconnected late-successional forest ecosystem throughout the Northwest Region.

The Northwest Forest Plan has designated all of this area as Matrix lands, aside from the riparian reserves mentioned below. Matrix lands are where most timber harvest and other silvicultural activities are to occur (NWFP Standards and Guidelines, page C-39).

The Willamette Forest Plan allocates this project area to Management Areas (MA), as follows: General Forest (MA-14A; 57 percent), Scenic-Partial Retention-Middleground (MA-11C; 17 percent), Scenic-Partial Retention-Foreground (MA-11d; 17 percent), and

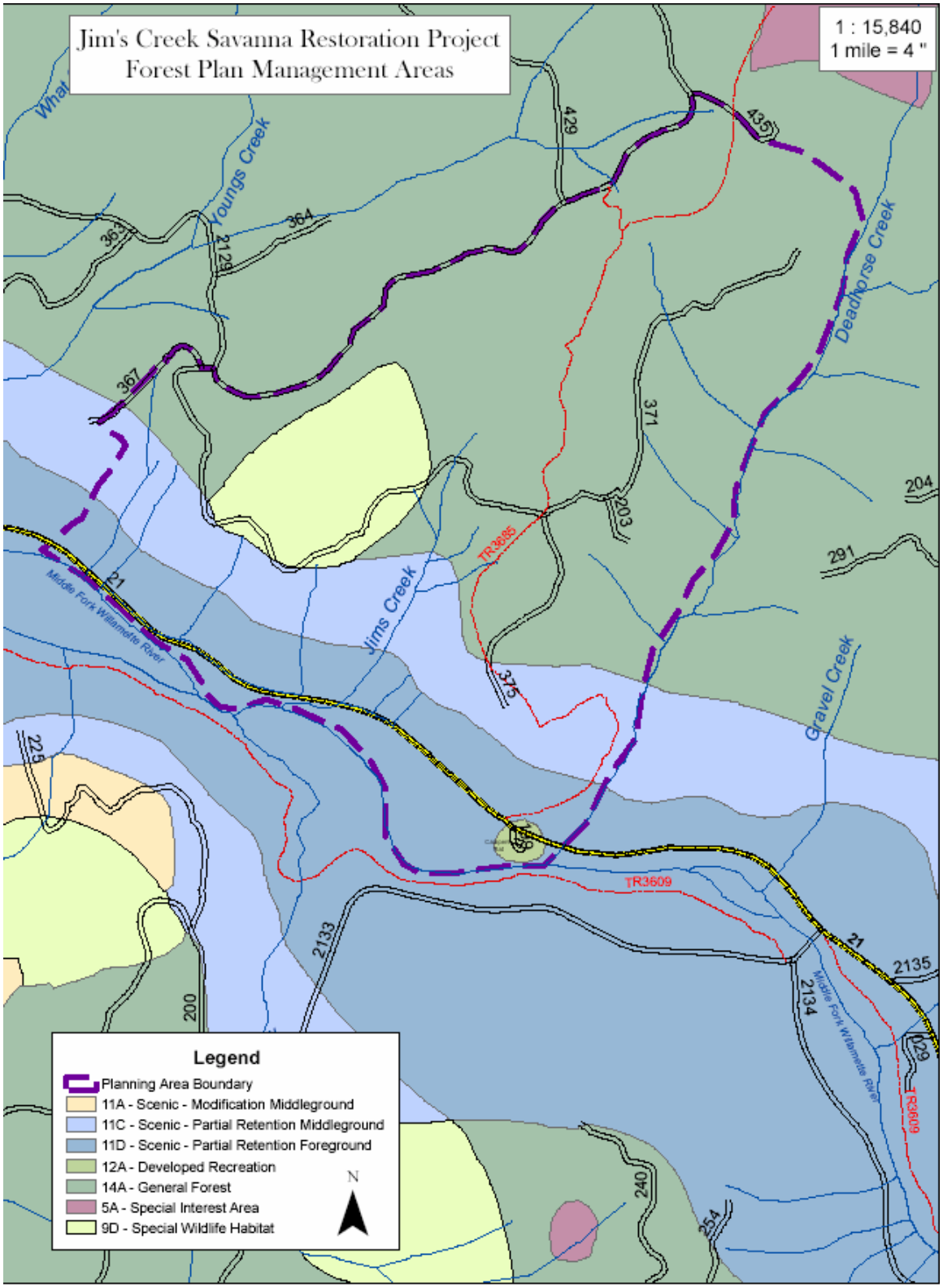

Figure 2 - Project Area Forest Plan Management Areas

Special Wildlife habitat (MA-9d; 9 percent), as shown on the following map. The area also contains about 167 acres of riparian reserves (24 percent of the project area). See the Forest Plan (pages IV-, 177, 205, 207, and 231) for full description of the Standards and Guidelines for Management Areas 9d, 11c, 11d, and 14a, respectively. See page C-30 of the NWFP for a descriptions of the standards and guidelines for riparian reserve management and protection. Both these plans also contain general standards and guidelines that apply to all land allocations (Forest Plan, starting on page IV-45; NWFP, page C-1). Of particular relevance to this proposed action are those standards relating to forest and stand level diversity, as fully discussed below under the Purpose and Need for Action.

The Desired Future conditions stated in the Forest Plan for these land allocations are as follows: MA 9d - to have a well distributed network of high quality habitats that provide unique characteristics and diversity to the landscape; natural processes will prevail without human intervention. MA 11c - will be managed to maintain a near natural setting; management activities will be noticeable in the middleground and background; MA 11d – will be managed to maintain a near natural setting; management activities will remain subordinate to the characteristic landscape; MA 14a – the landscape will be a patchwork of ages classes and species of trees, timber will be available for sale on a non-declining even-flow basis on lands suitable for timber production; Riparian reserves (MA-15) are to be managed (NWFP page B-13) to maintain and restore riparian structures and functions, riparian dependant species, provide dispersal corridors for terrestrial plants and animals and provide watershed connectivity. See the Land Management Objectives (Section II) of the Silvics Background Paper (Bailey, 2005; contained in this project's Analysis File) for a more in-depth discussion of Management Area standards and guidelines, and some of the inconsistencies they contain regarding the accomplishment of biodiversity objectives.

The project area is not within an inventoried roadless area, nor any other area identified as being unroaded.

C. Purpose and Need for Action

The purpose of the proposed project is to restore and develop an open, low density forest dominated by large ponderosa pine, Douglas-fir, and Oregon white oak with a significant component of native bunchgrass and other disturbance dependant herbaceous plants in the understory. An associated purpose of the project is to create a forest condition sustainable through time by either naturally ignited or prescribed frequent, low intensity fires. This type of vegetation would be less likely to experience stand replacement mortality from wildfire. The further purpose of these restoration actions is to achieve

biodiversity objectives by providing habitat for a number of plant and animal species that are no longer common in the Willamette River watershed.

Vegetation within the Jim's Creek project area consists of a 100 to 120 year old forest with about 160 trees per acre averaging 17 inches in diameter (Bailey, 2005b). -This forest is principally composed of Douglas-fir, with some ponderosa pine and incense cedar, and a widely scattered overstory of older ponderosa pine and Douglas-fir with an average diameter of about 35 inches that were present during the past savanna conditions. Approximately five of these older trees per acre remain in the stand. The bunchgrass that historically grew in dense patches under the sparse tree canopy (Kerchholtes, 2006) has declined and disappeared in most places.

The large ponderosa pine that used to dominate this forest are slowly dying due to competition from the dense secondary canopy trees. The shade cast by the 100 year-old canopy does not allow for the development of pine regeneration. This closed canopy of 100 year-old trees presents some risk of losing the entire stand, including savanna legacy trees, to wildfire. Since the crowns of these trees touch, a fire event occurring certain weather conditions could result in a crown fire which would likely kill all vegetation on the site, thereby diminishing any restoration potential that exists.

The Desired Future Condition (DFC) of this area (see Bailey and Kertis, 2002 and the DFC section of Bailey, 2005b) is its historic condition of an open forest with an understory of native grasses and herbs. One hundred twenty years ago this forest contained approximately 14 large ponderosa pine, Douglas-fir, and Oregon white oak trees per acre (in about equal amounts) and the ground was probably covered by a more or less contiguous stand of native bunchgrass (Kirchholtes, 2006). It is apparent from the characteristics of the remaining legacy trees (see pages 11-15 of Bailey, 2005b, and Bailey and Kertis, 2002) that fire played an important role in maintaining this open forest with a grassy understory.

Most of the large Oregon white oak that were in these forests have died. They persist mostly within or along the edges of several natural openings. Oregon white oak vegetation types have declined dramatically in the Willamette watershed (ODF, 2004; Oregon Biodiversity Project, 1998), as have the open ponderosa pine forests in the Middle Fork watershed. There is a need to restore or maintain biodiversity consistent with direction set forth in the Willamette Forest Plan as amended by the Northwest Forest Plan (see the discussion for Forest Plan biodiversity standards and guidelines below). In order to achieve the above purposes, the following specific needs should be met:

- There is a need to maintain the potentially unique genetic resource represented by the Oregon white oak and ponderosa pine which are growing at the edge of their ranges and which may be uniquely adapted to dry conditions. These remnant

populations could serve as a center for recolonization of the larger landscape should climatic conditions change;

- There is a need to proactively provide native bunchgrass, other native and culturally important herbaceous plants, and Oregon white oak regeneration to assure all plants key to restoring the original savanna are established in adequate amounts;
- In order to provide for the first two needs, as well as to accomplish the over-all purpose of maintaining and restoring important biodiversity, there is a need to dramatically reduce the number of trees occupying these sites so that there will be enough sunlight available to provide for reestablishment of native grasses and herbs, as well as provide for oak and ponderosa pine regeneration. Specifically, about 140 trees per acre need to be removed;
- There will be a need to reduce the amount of woody fuels generated by the above removal of trees, should the proposed action be implemented;
- There is a need to provide an adaptive learning opportunity on this small piece of the landscape in order to determine if similar actions are appropriate across the 25,000 acre mixed conifer forest type, within which the Jim's Creek area is centered;
- There is a need to do restoration at the landscape level, which creates habitat patch sizes more in keeping with the natural disturbance regime. While there are many small pockets of remaining oak and pine habitat scattered across the Middle Fork Ranger District, it is clear by the absence of various species (such as the acorn woodpecker and Lewis's woodpecker) which require open oak and pine forest that these small patches do not provide all the functions of a larger habitat pattern;
- There is a need to create conditions where periodic prescribed fire can be applied to the sites where tree density is reduced to maintain this area in an open forest condition and sustain native grasses;
- There is a need to reduce the fire regime condition class from a III (many missed natural fire cycles) to a I (natural fire regime is unchanged) in order to reintroduce the natural disturbance process and ensure this important habitat element is less threatened by wildfire and more resilient should wildfire occur (see Hays, 2005 and Bailey, 2005b);
- There is a need to accomplish the above purposes in an economically efficient manner. There is little funding allocated for restoration work and commercial removal of forest products would facilitate restoration and potentially generate

funding. Such funding can be used for other restoration projects in and around the Jim's Creek planning area which would not generate commercially valuable products.

The following narrative explains in greater detail why these purposes and needs are important in general and why this particular piece of the landscape has been proposed within which to achieve them.

1. Purpose and Need Rationale:

Recent public interest in, and concern for the persistence of oak and pine forests in the Willamette Valley has developed, as these vegetation types have become quite rare (Tolle, 1982; Oregon Biodiversity Project, 1998; USDA/USDI, 2000; Chappell and Kagen, 2001; Whelan, 2004) . The vegetation type that used to exist in the Jim's Creek vicinity has many values as described below. Restoration of the historic vegetative structure and composition would address the biodiversity objectives of providing habitat for a number of plant and animal species that are no longer very common in the Willamette River watershed. Restoration would also provide a number of educational and recreational opportunities, and protect and enhance cultural components of the ecosystem important to Native American communities. Restoration would provide for the preservation of an important genetic reserve, as the oak and pine on these sties are on the edge of the species' range (Wright, 1976) and the populations may have a unique genetic composition.

Over the past decade or more the maintenance or restoration of biodiversity has become an important consideration when developing management prescriptions for National Forest lands. Such objectives are reflected in the Willamette National Forest Plan's Standards and Guidelines for forest, landscape, and stand level diversity (pages IV-78 and 79). Specifically, Standards and Guidelines FW-199, 201, 207, and 211, as described below, encourage the maintenance and restoration of biodiversity and plant habitats:

FW-201: "Biological diversity shall be maintained or enhanced by providing ecologically sound distribution and abundance of plant and animal communities and species of all age classes at the Forest, basin, and stand level. This distribution will contribute to the goal of maintaining all native….species and communities".

FW-207: "During project planning, site-specific analysis shall consider biological diversity and ecosystem function".

FW-211: "Special wildlife and plant habitats….shall be maintained….examples of special habitats include…. unique plant associations".

In addition, standards and guidelines for Management Area 9d – Special Wildlife Habitat direct the District to maintain habitats of native wildlife and plants (MA-9d-07). The

desired future conditions for the management areas within this planning area are discussed above (and on pages 7 to 9 of Bailey, 2005b).

The Northwest Forest Plan Aquatic Conservation Strategy Objectives (USDA/USDI, 1994, page B-11) also provide direction relevant to restoration of changing vegetation types at the landscape level. Specifically, Objectives 1. ("maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features …") and 8 ("maintain and restore the species composition and structural diversity of plant and animal communities…") address the need to restore altered components of the ecosystem. These guidelines are to be met at the 5th field watershed level and this project would contribute to achieving the objectives above.

Both the Middle Fork Willamette Viewshed Corridor Study (USDA, 1988) and the Middle Fork Watershed Analysis (USDA, 1995) specifically recognize the uniqueness of this forest type and the threat under which it currently exists, and both analyses recommend these originally open stands be managed to maintain or restore their open character. The Watershed Analysis specifically presented a priority recommendation to assess and develop management strategies to maintain functions of the open forest habitats in the ponderosa pine area (page 6-2). Also, A First Approximation of Ecosystem Health – National Forest Lands. (USDA, 1993) concluded that the mixed conifer stands in the Middle Fork watershed are some of the vegetation types furthest outside their natural range of conditions within the Willamette watershed.

Additionally, the Integrated Natural Fuels Management Strategy (USDA/USDI, 2000) identifies the rare nature of pine and oak vegetation types in the Willamette Basin, observes that such vegetation types on Federal lands show considerable encroachment by Douglas-fir, and establishes the desired future condition of maintenance and restoration for these vegetation types.

Considering the above current condition and general recommendations, there is a need to markedly reduce the number of trees on these sites and to develop a stand structure and ground vegetation that would provide for the use of periodic fire to maintain the area as a savanna or open forest in the future. Maintenance of this vegetation type is important because it provides the following values:

- It would provide for the maintenance of plant and animal species that require an open forest and periodic fire, in particular Oregon white oak which has become quite rare in the Willamette Valley (less than one half of one percent of these open oak forests remain; USDA, 1993), an area where open oak stands used to be quite common.
- In addition to the above general biodiversity objectives, there may also be an additional need to restore this area in relation to the potential for future climate

change. Should the future climate become warmer and drier, as has occurred periodically in the distant past, it would be very important to have a healthy and reproductive ponderosa pine and Oregon white oak forest adapted to dry conditions which could serve as a center for re-colonization of the larger landscape.

- It would provide for the maintenance of historical and current cultural needs of the native American populations that have used and continue to use this landscape (Boyd, 1999).
- It provided important wildlife forage and native American food supplies, both in terms of the grass, camas, and other herbaceous plants that grew under the scattered conifer understory, and the acorns produced by the more abundant and healthy oak;
- It would create fuel conditions which markedly reduce the likelihood that a crown fire would be able to develop, and would help ensure the continued existence of the live legacy trees.
- It would present a variability in the landscape for the overall visual experience;

2. Why Here; Why Now?

This question is addressed because a concern that there may be other areas with a higher restoration priority was identified during some of the public field trips over the past four years. Once it was recognized the Jim's Creek area had once contained a savanna vegetation type with such a relatively high abundance of large Oregon white oak, other areas within the mixed conifer forest type were searched to determine how unique the Jim's Creek area was in that context. To date, no other areas on the Middle Fork Ranger District have been found that have or had as large an area occupied by large, open-grown oaks, nor which have as many remaining, large diameter oaks capable of providing a seed source for restoration efforts. If we are to embark on a restoration effort to restore the open forest that used to be so common on the Middle Fork of the Willamette watershed, the Jim's Creek area seems to be the place to start. Efforts here would have benefits in terms or providing for both ponderosa pine and oak regeneration, as well as the whole host of ground vegetation plants which also still remain on the site.

The Jim's Creek planning area has lost approximately half of the savanna-form ponderosa pine and more than 90 percent of the open-grown Oregon white oak (Bailey, 2005b, Bailey and Kertis, 2002). Delay of restoration actions would likely result in an increased risk of loosing the remaining unique genetic and structural legacies on the site. Ideally, restoration should have begun on this site decades ago, before many of the larger oak and pine succumbed to competition mortality.

This area provides some especially unique restoration opportunities in addition to the legacy vegetation that it still contains. The area is entirely in public ownership. Air quality concerns are less compared to other oak habitat areas closer to the Willamette Valley and residential areas (responding to the need to return fire to its original frequency and function). Other areas containing remnant oak and pine (such as the City of Oakridge and its surroundings) contain land uses that may not be compatible with restoration or periodic burning. The project area also presents climatic conditions which facilitate application of prescribed fire during the winter months when risk of escape and unacceptable air quality impact are considerably lessened.

Though complete restoration in this area will take a long time, there is little vegetation present that could seriously compete with re-establishing grasses, oaks, and pines. There are few of the very aggressive noxious weeds such as Himalayan blackberry and Scots broom occurring on this site, such as those that threaten many other oak and pine types lower in the Willamette Valley. Therefore, restoration in this area, even though conditions have changed so much, presents a greater likelihood of success without incurring a high risk of noxious weed invasion or expansion.

Additionally, this area contains an abundance of cultural sites (in particular the many culturally modified ponderosa pine) from past Native American use. The proposed restoration would re-create the cultural landscape that was maintained, if not created, by the prehistoric use and management of the land's resources. While restoration of an open mixed conifer forest could be done in other areas, the Jim's Creek area may provide the best opportunity to accomplish both biodiversity and cultural objectives.

D. Proposed Action

The action proposed by the Middle Fork Ranger District of the Willamette National Forest is implementation of the following activities to begin restoration of a savanna vegetation type in the Jim's Creek area in order to meet the above Purpose and Need. Effects of these actions have been addressed in this analysis (see the following map included under Alternative A).

Removal of most of the younger age class of trees on about 240 acres of the project area. This proposed action is the most direct approach to restoration. Removal of about 140 trees per acres from the 100 year age class would open up the stand to provide for reestablishment of the native bunchgrass and provide for the potential for natural or managed ponderosa pine and Oregon white oak regeneration. Tree removal would also reduce competition to extend the life of existing oak and pine legacy trees. The excess tree removal would be accomplished with a commercial timber sale that would be sold in FY 2007. Cable and aerial logging systems would be used to removal the trees from the site.

Reconstruction and maintenance of Roads 2129, 2129.369, 371, and 375 to facilitate removal of the excess trees. These activities would include ditch line improvement, surface rock replacement, culvert replacement (including the Young's Creek culvert on road 2129) and brushing, and would occur prior to removal of timber in 2007 or after;

Plantation restoration: The four 20 year old plantations in the Jim's Creek stand (two clearcuts and two shelterwoods) have already experienced some restoration of original conditions; all have developed a relatively dense and healthy stand of bunch grass (California fescue), oaks have regenerated to some extent, and retained overstory trees have survived and are more vigorous. Treatments needed to provide for continued restoration of historic conditions in these areas include reduction of fuels generated by the recent pre-commercial thinning, young conifer thinning, oak regeneration, snag creation, the application of light prescribed fire to maintain these areas as an open forest, and possibly culturing the bunchgrass for seed collection. These activities would occur after funding is generated by timber harvest payments, in 2008 or after.

Reduction of fuels created by the above excess tree removal by hand piling and burning in the late fall or winter, after logging has been completed. This would begin to occur in 2008;

Noxious weed abatement along the road system and within meadows;

Closure of road 2129.371 (and all tributary spurs) by gating to reduce wildlife disturbances, after slash disposal and planting have been completed, some time in 2010;

Prescribed underburning would occur, starting about 2015, to maintain an open forest in the future. The first application of this maintenance prescribed fire would not occur until a dense grass layer has developed (This would be the fuel to carry the fire) and the planted oaks have attained a stature sufficient to survive the fire. It is estimated this could take 10 to 12 years once the grass is seeded and oaks are planted. Since such a long period of time would elapse before the prescribed burning would occur, this NEPA analysis would not cover its implementation, since not enough is known about the future conditions under which it would be implemented to accurately estimate its environmental effects. Supplemental environmental analysis would have to be conducted in the future prior to implementation of a prescribed burning regime. This periodic underburning would be essential for successful long-term implementation of this restoration project and it is mentioned here even though it would be covered by a future analysis to indicate our intent that such activities do take place in the future. This underburning is intended to occur every five to ten years as necessary to reduce the density of conifer seedlings.

Meadow restoration on 30 acres, including removal of invading conifers, removal of invasive species, burning, and seeding of native meadow vegetation. These activities would occur after funding is generated by timber harvest payments, in 2008 or after;

Planting of native ground vegetation across all the areas to be treated. This would include native grasses and other culturally important plants, including Oregon white oaks. These activities would occur in 2008, after slash has been burned.

Implementation of these proposed actions would require a site-specific, non-significant Forest Plan amendment. There are several Forest Wide and Management Area standards and guidelines with which this proposal may not fully comply (see a more detailed explanation of this situation in section II. F. of this document). Specifically, Forest Wide trail management guidelines may have to be modified for this specific area, as well as timber harvest guidelines for scenic Management Areas 11c and 11d. The trail guidelines (FW-046 to 048) are essentially scenic in nature and they restrict even-aged timber harvest within trail corridors and trail frontage. While the proposed restoration harvest would not constitute even-aged harvest (see Bailey, 2005b), the proposed excess tree removal would substantially change the visual character of the area, even though it is designed to re-create the characteristic landscape. Similarly, the scenic management guidelines for timber harvest (MA-11c-04 to 08 and MA-11d-07 to 16) do not directly address the potential for extensive, uneven-aged harvest for the purpose of restoring the characteristics landscape. Again, these scenic guideline apply specifically to even-aged regeneration harvest, but the size of the proposed harvested area in this proposed action would exceed harvest unit restrictions by a factor of 30.

Decision Framework

1. The deciding official, the Willamette National Forest Supervisor, will review the proposed action and the other alternatives, given the purpose and need, in order to make the following decisions and determinations:
2. What the optimal method of accomplishing the purposes and needs for this project should be, while resolving issues associated with the planning area, and which actions alternative, if any, should be implemented;
3. Whether other restoration activities, such as prescribed burning, should be applied;
4. Whether or not a Forest Plan Amendment is necessary, should an action alternative be selected, and what specifically would have to be amended;
5. Whether the selected alternative should be modified in any way;
6. What mitigating measures should occur along with any restoration activity;
7. How the road system in this area should be managed;
8. Whether this action is in compliance with the Forest Plan (USDA, 1990a, USDA/USDI, 1994).

Relation To Other Documents and Analyses

This environmental assessment is tiered to The Final Environmental Impact Statement for the Willamette National Forest Land and Resource Management Plan (USDA, 1990b) as amended by the Record of Decision of April 1994 for the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl (Northwest Forest Plan; USDA/USDI 1994) The above actions have been proposed to implement the objectives and guidelines of these two plans.

The Watershed Analysis for the Middle Fork of the Willamette Downstream Tributaries (USDA, 1995) is incorporated by references throughout this document. The Watershed Analysis recommends the needed activities and mitigation measures to comply with the Aquatic Conservation Strategy Objectives, determines the width for riparian reserves, and establishes the need for and benefit of thinning stands within the riparian reserves (see Recommendations section, page 5 and Appendix K).The Willamette National Forest Road Analysis Report (USDA, 2003.) is also referenced. The proposed actions and other alternatives addressed in this document are also in compliance with guidance provided by the Middle Fork District Supplemental Road Analysis (USDA 2004b), which specifies system roads that should remain open to facilitate management and public use or that should be closed to reduce maintenance costs and resources risk.

E. Public Involvement

Public scoping is an ongoing process used to determine the scope and significance of a proposed set of actions, the issues that should be addressed in analyzing proposed actions, and the alternatives that need to be addressed to provide for a well-considered decision. Agency and public comments are solicited throughout the project planning period to help determine the above items, in conjunction with review of existing landscape analyses which assessed the current condition of the planning area. Scoping for this project began in December, 2001 after an extensive field survey was completed to document the large changes that have occurred on this landscape over the last 100 years.

The November, 2003 Willamette National Forest "Forest Focus", a quarterly planning newsletter, included the first formal announcement of the Jim's Creek Savanna Restoration proposal. Updated information on this proposal has been included in each subsequent Forest Focus edition through Spring, 2006. This newsletter is the initial vehicle used to inform interested parties about this and similar project proposals and is routinely sent to a 150 plus person mailing list, in additional to being available on the Willamette National Forest's web site.

The public outreach efforts for this project began in 2002 with a series of public field trips. The first of these trips were to give people an overview of the area's characteristics and conditions to solicit thoughts as to whether or not there was a need for action and what, if anything, needs to be done to address the habitat changes that have occurred in this area over the last 100 years. A total of ten public field trips to the project area have been conducted to date.

A total of six public meetings and presentations were conducted to inform various groups of the project, and to solicit comments. The Siletz, Klamath, Cow Creek Band of the Umpqua, Grand Ronde, and Warmer Spring tribes were all sent notification of the project proposal. Representatives of the Grand Ronde Tribe have visited the project area on two occasions. The Middle Fork Watershed Council was given presentations on this project on three separate occasions and several of the field trips were attended by Watershed Council members. Presentations were also made to the Oregon Hunter's Association. A meeting on February 1, 2003 for all those who had visited the project area was the venue from which the proposed action was developed, based upon attendees' input and the vision they expressed for what they would like to see this area look like 50 years from now.

An electronic mailing list was developed over the course this project which at this time includes about 80 names (including some local Forest Service employees and representatives of other Federal agencies). These are people who have visited the project area and expressed a desired to receive periodic updates and/or continue to be involved in the development of this proposal, who listened to presentations, or who had heard about the project by word of mouth. Notes from every Interdisciplinary Team meeting (totaling about 18) have been sent to this mailing list, as well as electronic copies of the various background, NEPA, and scoping documents that have been prepared to date. The mailing list and a list of the various field trips and public meetings can be found in the Public Involvement section of the project's Analysis File.

Additionally, the Dead Mountain Echo (Oakridge weekly newspaper) ran a two part series on the project, highlighting the May 12, 2004 field trip. On March 1, 2005, a one page flyer announcing the project and asking for comments was also placed on the Young's Rock trail head above Campers Flat campground, and where the trail leaves the north end of the planning area.

The first formal announcement of a specific proposed action was made in a Scoping Letter mailed to a list of 23 people, agencies, and tribes that have expressed interest in similar past projects on April 2, 2004. This Scoping Letter was also sent electronically to the 80 person project mailing list mentioned above.

In early November, 2004 the Middle Fork Ranger District sponsored a five day community collaboration workshop (put on by James Kent Associates) which used the Jim's Creek Savanna Restoration Project as a case study and opportunity to generate local collaborative interest and efforts. Workshop participants went into the communities of Oakridge/Westfir, Lowell, Dexter, and to a lesser extent Eugene/Springfield to census the community's interest in the Jim's Creek project.

In general, public reaction to this restoration proposal has been favorable. Just about everyone who has participated in public field trips or meetings has expressed general support for the project objectives and the proposed actions. All issues raised by the public during the outreach processes are addressed in some fashion within this analysis. Some have expressed some reservations in terms of how much land to initially treat. This is fully discussed under the vegetation portion of Chapter III, Environmental Consequences of this document, and specifically addressed in the restoration efficacy discussion.

F. Issues

The scoping process for this project area identified the following specific issues around which alternatives were developed and analyzed. All the people and organizations participating in the scoping efforts detailed above helped to determine the issues. Significant issues are those around which alternatives are developed. Alternatives can be compared by how well they respond to these issues.

Non-significant issues are not necessarily unimportant. They can be those issues which are so important that all alternatives need to respond to them equally, for example protection of cultural resource sites, and in that sense would not help to differentiate between alternatives.

Non-significant issues may also be those which are mitigated by standards and guidelines in the Forest Plan or decided upon by laws and regulations. Generally these non-significant issues can be addressed through resource prescriptions or by following the procedures established by laws and regulations.

1. Water Quality/Fish Habitat – **Significant Issue -** The Middle Fork of the Willamette River is at the bottom of the slope that is proposed for restoration to a savanna. This river has been designated as critical habitat for Chinook salmon and bull trout. This river has been listed by the Oregon Department of Environmental Quality under Section 303d of the Clean Water Act as being water quality limited due to elevated summer temperatures. The proposed activities have a potential to impact water quality, either by producing sediment by altering hydrologic functions, or by increasing water temperatures. The planning area is in the Coal Creek and Buck Creek 6th field watersheds. This issue will

serve to address the effects on fish habitat as well as water quality. Because no activities are proposed that would have any direct effect to the physical aspects of aquatic habitat, potential water quality changes will be used to assess fisheries effects.

Evaluation criteria:

- change in temperature in the Middle Fork of the Willamette River below the project area
- potential for an increase in peak flow, as measured by change in the Aggregate Recovery Percentage
- potential for turbidity increases, as measured by potential soil erosion

2. Late-Successional Wildlife Habitat – **Significant Issue -** Restoration of savanna conditions would change the wildlife habitat from a closed canopy forest slowly approaching late-successional conditions to a much more open forest that would not provide late-successional habitat as long as savanna conditions are maintained. The proposed actions are designed in part to restore a type of wildlife habitat that has all but disappeared in the Willamette River watershed. Making this forest more open at any scale will have an impact on the suite of species that may currently be using the area, in particular northern spotted owls. This area now provides spotted owl dispersal, foraging, and roosting habitat and one area of nesting habitat; habitat that did not likely exist on these lands 100 years ago. The proposed action would eliminate suitable spotted owl nesting habitat from a portion of this area. This is a purposeful tradeoff between maintaining closed canopy, late-successional forest and restoring the scarce oak/pine savanna habitat.

Evaluation criteria:

- amount of modified habitat;
- amount of closed canopy habitat eliminated
- acres of suitable northern spotted owl suitable habitat removed or degraded
- acreage of suitable habitat northern spotted owl habitat within home ranges, as measured by acres of suitable habitat within 1.2 miles of activity centers

3. Maintenance of Biodiversity – **Significant Issue -** This issue is directly related to the purpose and need for savanna restoration. The Forest Wide Standard and Guideline FW-201 (page IV-78) directs that "biological diversity **shall** be maintained or enhanced by providing an ecologically sound distribution and abundance of plant and animal communities and species of all age classes at the Forest, basin and stand level" and FW-

211 (page IV-79) directs that "wildlife and plant habitats not currently identified in non-harvest management areas **shall** be maintained" (emphasis added). Much of the original diversity that existed on these slopes has been lost, especially in terms of wildlife species that use open pine and oak habitat, and various plant species requiring more open conditions. The structural characteristics of this forest have changed with the increasing canopy closure. Continuation of the status quo will result in continued reduction in landscape biodiversity compared to what used to exist on these lands.

Evaluation criteria:

- change in Habitat Effectiveness Index for big game
- Species that would be favored or not favored by restoration
- acres of meadow habitat improvement
- acres of savanna/open forest created
- likelihood that treatment will achieve the desired future condition
- average patch size of savanna, as an approximation of historic landscape conditions
- change in fire regime condition class

4. Fuel Accumulation and Fire Risk – Significant Issue – The vegetation structure and composition in this area has changed considerably from what it was about 100 years ago due to fire suppression and the apparent cessation of prescribed burning. These slopes have missed from four to 12 fire cycles over that period of time, resulting in the development of a closed canopy forest. This could result in a crown fire over an area that previously did not have dense enough coniferous vegetation to support severe fires. Should such a fire event happen in the future (as it did in 1996 just north of the project area) most of the existing trees including the residual savanna oaks and pines would likely be killed. A stand replacing fire event would also have a negative impact on the scenic qualities of the area. Though the area currently does not have a great amount of ground fuel accumulation compared to other closed canopy forests, this fuel loading continues to increase as the stands thin themselves. Restoration activities could also generate fuels that could put remaining and adjacent vegetation at risk of fire mortality in the short-term, unless treated.

Evaluation criteria:

- change in fuel structure
- fuel loading; tons per acre
- likelihood of the forest to carry a crown fire

5. Cultural Resources– This savanna landscape was likely maintained by native Americans through use of prescribed fire. The burning was likely done to maintain a vegetative assemblage containing plants useful to that culture. There is an opportunity to enhance a traditional cultural landscape by preserving and cultivating a number of traditional cultural plants, such as camas, yampa, ponderosa pine, and Oregon white oak, including the culturally modified trees scattered throughout the stands. The proposed activities have the potential to impact culturally modified trees trees. Lack of restoration would eventually result in disappearance of a number of culturally important plant species from the site, and would not provide for the continued vigor of the still remaining, culturally modified trees.

Evaluation criteria:

- acres of cultural traditional plants created or enhanced

6. Maintenance of Soil Productivity – Depending upon how restoration activities, in particular tree removal, slash disposal and subsequent future burning are conducted, soil productivity could be reduced.

Evaluation criteria:

- percent of the area with detrimental soil conditions (as per page IV- 60 of the Forest Plan)

7. Air quality - Burning to reduce ground fuels after certain restoration activities, as well as periodic underburning used to maintain the savanna condition, have the potential to reduce air quality by generation of particulates. Smoke could also cause temporary scenic degradation. The Diamond Peak Wilderness, about 13 miles east of this project area, is designated a class I airshed and no smoke intrusion is allowed.

Evaluation criteria:

- amount of particulates produced by prescribed fire.

8. Economics – Some of the potential alternative actions and proposed restoration activities would be expensive, and funding for restoration activities is limited. It is important to develop cost-effective actions and to minimize the cost of future actions. Conversely, restoration activities involving the reduction in tree density could generate money through the sale of excess trees. The money generated by such a sale could be used to fund other restoration activities. This issue is addressed because there is little funding available for restoration of biodiversity. Alternatives which do not generate some amount of income and which include considerable costs are unlikely to be implemented.

Evaluation criteria:

- income generated to the government (Present Net Value)

- total amount of funding available for future restoration projects

9. Noxious Weeds – Though some the more aggressive woody species of non-native plants (such as Himalayan blackberry and Scots broom) do not exist in this area, there are a number of perennial and annual herbaceous species of non-native plants now growing along the road and within the meadows. Disturbance of vegetation and soils by some of the proposed actions could potentially allow these species to colonize new areas. Vehicle and equipment movement into the area could bring in non-native species not currently in the project area, in particular the two woody species mentioned above.

Evaluation criteria:

- acres of ground disturbance
- amount of road adjacent to disturbed areas

10. Recreation – Implementation of some of the proposed actions could change the setting for recreational activities in this area. Restoration of the savanna vegetation would likely improve hunting success through increasing the number of big game animals using the area and improving site distance for hunters. Closure of Road #2129.371 would also provide for a higher quality hunt by limiting the number of hunters that would traverse the area and reducing the degree of disturbance to animals by vehicle travel. Restoration done along the Young's Rock trail would affect the scenic experiences of trail users; in the short-term that effect could be perceived as negative since the ground would be bare and stumps would be visible. Once the savanna ground vegetation becomes re-established the trail experience could be scenically very pleasant, with well visible old pine and oak trees and a dense stand of bunchgrass, providing visual diversity.

Evaluation criteria:

- subjective discussion of potential disturbance to recreational activities

11. Scenic Conditions - This area is visible from Forest Road 21 and The Young's Rock trail. A portion of the area, in general the lower third of the slope, has been allocated as either Scenic – partial retention foreground or middleground by the Willamette Forest Plan (see pages IV-205 to 209) as part of the scenic corridor centered on Road 21. The Young's Rock trail is a class III trail within the Jim's Creek area. Class III trails are to be managed to maintain a visual quality objective of partial retention (page IV-54). The Forest Plan specifies for both the viewshed and the trail that form, line, color and textural contrasts with the character of the landscape should be minimized when harvesting is to occur. The Forest Plan guidelines for both viewsheds and trails are focused in the effects of limiting the impacts of even-aged regeneration harvest on the appearance of the characteristic landscape (page IV-54, 205, 27). Since the proposed

actions do not include even-aged regeneration harvest (see Bailey, 2005b) and have been proposed to restore the characteristic landscape, these standards are met by this proposal. Restoration activities could change the current scenic qualities of the area and there would be some short-term degradation of scenic value while the cover of native bunchgrass and other plants are becoming re-established.

Evaluation criteria:

- a general, qualitative discussion of the efficacy of restoring the characteristic landscape, as well as the number of acres over which the characteristic landscape is restored.