

# **Potential Harvest Limitations to be Applied during Initial Implementation of the Proposed Jackson Demonstration State Forest Management Plan**

Department of Forestry and Fire Protection  
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## **Introduction**

In late 2006 and early 2007, a group of six Mendocino County-based members of the public provided the Board of Forestry and Fire Protection and the Department of Forestry and Fire Protection new input on the revised Draft Management Plan for Jackson Demonstration State Forest (JDSF). As part of this input, the group requested that further limitations be placed on the types of harvesting activities that may be conducted during the initial implementation of timber harvesting plans (THPs) in order to not foreclose certain future management opportunities (e.g., development of older forest characteristics, provision of certain recreation qualities). Some members of the group also suggested that a set of cautionary overlays be prepared to guide harvesting during this period. The Mendocino group additionally suggested that, during this initial plan implementation period, advisory entities should further review (and as they deem appropriate, recommend further changes to) the specific spatial and nonspatial forest structure goals, conservation biology approaches, silvicultural systems, and other elements of the Forest Management Plan.

As a result of the input from the Mendocino group, the Board's JDSF Subcommittee asked Department staff to develop a set of overlays and harvesting restrictions, potentially to be applied during initial Plan implementation. This document and its attachments represent the staff response to the Subcommittee's request.

## **Overlays**

The overlays were not a part of the Mendocino group's initial written comments to the Board and the Department (three documents plus a group cover letter dated November 30, 2006, attached). Two members of the group provided specific input on the overlays. Group member Vince Taylor (Campaign to Restore Jackson State Redwood Forest) provided oral, map-based, and written descriptions (see attached letter of January 11, 2007 and overlay maps) of overlays covering five areas of concern:

1. High Value Older Forest
2. High Value for Fish and Wildlife
3. High Value Recreation Areas
4. High Value for Restoration R&D
5. High Value for Botanicals.

Group member Kathy Bailey (Sierra Club) pointed toward the spatial representation of Alternative F included in the Draft Environmental Impact Report as providing a potential overlay that would address multiple areas of concern, including older forest, recreation, watercourse protection, fish and wildlife habitat (see attached January 12, 2007 memo from Kathy Bailey and Map Figure AA from the December 2005 Draft Environmental Impact Report, attached).

There is substantial overlap among the overlay values of concern identified by the Mendocino group members (e.g., older forest and wildlife habitat or older forest and recreation). Some of the identified overlay concerns have been addressed by existing mapped areas in the Draft Forest Management Plan (DFMP) or December 2005 Draft Environmental Impact Report (DEIR) (e.g., pygmy forest). The older forest seemed to be the most fundamental potential overlay.

### Older Forest

The older forest concern is related to areas that are already in older forest or that have a strong potential, due to harvesting history and current stand structure, to be “recruited” into older forest structure through passive growth or through management actions designed to hasten development of older forest structure (e.g., selection harvesting to increase the rate of growth on the remaining trees).

Existing old growth stands are already well mapped. To identify areas with high potential for recruitment to older forest condition, we used the Forest’s geographic information system, spatial information about harvesting history, and forest inventory plot data. Based on general knowledge of forest condition at JDSF and approaches taken by others regarding standards for older forest conditions, we focused on the number of trees per acre greater than 30 inches in diameter as a metric for older forest recruitment potential. See the attached map figure. We also looked at trees per acre greater than 40 inches as a potential metric. However, given the larger size threshold and lower numbers of trees in this size category, this appeared to be a less promising metric.<sup>1</sup>

This table summarizes the acreage by TPA class:

Trees/Acre >30"	Acres	Trees/Acre >30"	Acres
1-2	2,240	8-10	1,150
2-3	8,827	10-12	2,647
3-4	5,133	12-15	20,221
4-6	2,537	15-20	3,388
6-8	468	20+	1,833

<sup>1</sup> It should be noted that “older forest condition” is not just a matter of the number of larger trees. Other important factors are presence of large, decadent standing trees, snags, down woody debris, trees with large “platform” limbs; presence of mosses, lichens, and other lower plant forms on tree limbs and in the forest canopy; multiple forest canopy layers; species composition; and other factors.

Examining the map of trees per acre (TPA) greater than 30 inches, it became clear that there was a break point in the data distribution at 10 TPA and above (the purple color shades). A total of 28,089 acres have more than 10 TPA. Of this area, 10,535 acres (or 39 percent) are included within Older Forest Structure Zone, Late Seral Development Areas (including Class I and Class II Watercourse and Lake Protection Zones, marbled murrelet habitat recruitment areas, old growth augmentation areas) or old growth groves.

Other approaches in the Pacific Northwest have used 8 TPA greater than 30 inches as a metric for older forest structure. Thus, we believe that in the context of JDSF, a metric of more than 10 TPA greater than 30 inches in diameter provides a useful basis for identifying areas with a high recruitment potential to older forest conditions. A significant portion of area with a substantial number of large trees has been partially harvested within the past 30 years. While the number of large trees in these areas may be somewhat less than in even-aged stands, the larger trees tend to grow faster due to an increase in light and space. These partially harvested stands also exhibit an increase in structural diversity, often having a significant understory component that is missing in even-aged closed canopy stands.

The area thus identified as having a high recruitment potential for older forest condition recruitment has a high correlation to the “high value older forest” overlay area designated by Mr. Taylor on a map. The area identified by staff additionally includes a substantial area in the northwestern portion of JDSF.

The area identified by staff as having a high recruitment potential for older forest condition recruitment has less correlation with the Recovery Research and Recreation (RRR) area designated by the Sierra Club in Alternative F. The RR&R area has a somewhat higher correlation with the Older Forest Structure Zone Corridor proposed in the revised DFMP. The Sierra Club indicates that the RR&R area has a similar purpose to the DFMP’s Older Forest Structure Zone:

The concept behind this R&R Area is to attempt to rebuild some contiguous older forest habitat, linking the existing old growth groves, some of the old second-growth, and including the Camp One area that is already a high recreation use area.

Staff believes that the areas designated on the map as having 10 or more TPA greater than 30 inches in diameter, in conjunction with features of the DFMP such as the older Forest Structure Zone, provides an appropriate basis for an overlay to avoid potential foreclosure of older forest recruitment potentials during the initial plan implementation period. Within these areas, the existing and potential older forest values can be protected, where harvesting is conducted, through the use of commercial thinning or uneven-aged prescriptions such as selection and cluster selection.

## Recreation

Expressed concerns about recreation and timber harvesting are related to harvesting potentially altering an area's direct value for recreation (e.g., placing a large clearcut in an area that might make an excellent campground) or changing an area's effect on a recreation experience (e.g., a harvest in an area that a hiking trail goes through).

The availability of older forest for recreation facilities and activities has been identified as an area of concern. The older forest overlay, described above, will address this concern, at least in part. Other DFMP measures addressing this concern are the Older Forest Structure Zone, the Woodlands Special Treatment Area, Late Seral Development Areas, the Campground Buffers, and the Road and Trail Corridors. The DFMP also incorporates mitigations from the DEIR to address potential visual impacts to recreation from timber harvesting.

Concerns also were expressed about protecting the quality of the recreational experiences of people who live immediately adjacent to the Forest and often take walks and engage in other recreation activities in the Forest. In addition to the above described measures, it should be noted that these areas along the west side of the Forest are designated for unevenaged management. Further, there is a Neighbor Buffer that is applied to areas of the Forest adjacent to nonindustrial forest landowners. While this buffer is meant more to avoid impacts to their homesites, it also provides some recreational value.

The Sierra Club has expressed concerns about harvesting in the vicinity of Roads 100 and 200. The area near Road 200 includes the old growth Waterfall Grove. The general area through which these roads pass was first logged between 1940 and 1970. Subsequent partial cutting removed most of the larger residual old growth trees. These stands are now primarily young, having two or more distinct age classes and a fair amount of tanoak. Very little harvesting is proposed adjacent to these two roads in the short-term. The only harvest currently proposed within the Roads 100 and 200 areas is the West Chamberlin harvest, which lies to the west of Road 200. This proposed harvest is a commercial thin/old forest structure development harvest, so it should enhance, rather than impair, the older forest characteristics that the Sierra Club is interested in protecting in this area. Additionally, these roads are located within the WLPZ (which is to be managed for development of late seral forest) for most of their lengths, and portions of them are also protected by Road and Trail Corridors. In addition, portions of Roads 100 and 200 areas are already afforded some protection by the Older Forest Structure Zone, as is the Waterfall Grove and the area around it. The vast majority of the residual old growth trees in the areas of Roads 100 and 200 will be protected by the residual old growth tree protection measures of the DFMP.

Based on the above considerations, staff does not believe that an additional map overlay is needed to protect current and potential future recreation values during the initial plan implementation period.

## **Fish and Wildlife**

There are a wide range of potential fish and wildlife habitat concerns for JDSF. Key issues are provision of habitat for Threatened and Endangered species (protecting existing habitat and recruiting additional habitat to support recovery) and, in general, increasing the amount of older forest habitat.

The proposed older forest overlay, in conjunction with the Older Forest Structure Zone, Late Seral Development Areas (including Class I and Class II Watercourse and Lake Protection Zones, marbled murrelet habitat recruitment areas, old growth augmentation areas), and existing old growth groves provides protections for existing older forest and areas with high older forest recruitment potential. These areas will provide adequate protection to older forest habitat during the initial Plan implementation period without the need for further overlay development.

The protection and recruitment of the specific habitat needs of key species is already addressed by the DFMP. Marbled murrelet habitat is addressed via the proposed murrelet habitat development area in the southwest corner of the Forest, in part by the late seral forest development goals of Class I and Class II WLPZs, and by the DEIR's Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat (see DEIR p. VII.6.6-118 to 119). Further, site-specific evaluations for the presence of murrelets and the consideration of potential murrelet habitat protection will be a part of each THP or other significant management activity.

The DFMP does not specifically propose murrelet habitat development in the area of Jughandle Creek, as proposed by the Sierra Club. Part of this area is pygmy forest, which does not provide murrelet habitat, but will be protected under the DFMP. Also, the DFMP will protect and recruit potential murrelet habitat in the Class I and Class II WLPZs in this drainage. The proposed Mitchell Creek harvest lies within the upper reaches of these watersheds, and most of the area proposed for harvest has been selectively harvested in the past. As proposed below for harvest during the initial plan implementation period, this harvest will utilize selection and cluster selection. Application of the DEIR's Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat could potentially result in a decision to provide additional murrelet habitat protection to this area.

The Sierra Club also suggests that the Thompson Gulch area north of the Woodlands special treatment area be considered for possible management for murrelet habitat. The DFMP includes proposed late seral development management for this area as part of it short-term harvest listing. This harvest will be the initial demonstration of this management method within JDSF, and will only occur following consultation with other fish and wildlife management agencies and the Department of Parks and Recreation. This area also would be under consideration as a part of the Additional Management Measure for Contribution to Recovery of Marbled Murrelet Habitat

Given the extensive protections for the murrelet and murrelet habitat described above, no additional protective overlays are needed during the initial Plan implementation period.

Aquatic habitat for listed salmonid species is addressed via the DFMP's WLPZ protections, Road Management Plan, Hillslope Management approach, and various additional management measures and mitigations developed in the DEIR (e.g., the Additional Management Measure for Large Woody Debris Survey, Recruitment, and Placement). Further, site-specific evaluations for the presence of salmonids and the consideration of potential salmonid habitat protection will be a part of each THP or other significant management activity. Given these extensive protections for salmonids, no additional protective overlays are needed during the initial Plan implementation period.

An additional listed species of concern for JDSF is the Northern spotted owl. It should be noted that this species is currently wide-spread within the redwood region. Also, it is important to note that the owl uses a range of habitat types to meet its nesting, roosting, and foraging needs. These habitat types include recent even-aged management units, which provide additional prey base, and other stages of forest development utilized for breeding and cover requirements. Site-specific evaluations for the presence of Northern spotted owl, and protection of owl habitat at activity sites, will be a part of each THP or other significant vegetation disturbing management activity. Given current and projected owl habitat conditions on the Forest, current distribution and utilization of the Forest by this species and need for a range of habitat types, as well as protection procedures followed at the project level, no additional protective overlays are needed during the initial Plan implementation period.

The above addresses the key listed species of concern for JDSF. Considerations for various other listed species are thoroughly discussed in the DEIR. For other Threatened and Endangered species that may be present on JDSF, at a minimum, site specific evaluations for species presence and provision of needed protections will be provided. Further, there is no current spatial information on these species that could be used to develop a precautionary overlay. Thus, there is no realistic potential for the development of overlays for these additional species for application during the initial plan implementation period.

## **Botanical Resources**

Key known botanical resources, such as pygmy forest, cypress groves, and Mushroom Corners are already spatially designated and protected in the DFMP and through additional measures provided in the DEIR. Thus, there is no need to develop and apply overlays for these important resources for application during the initial plan implementation period.

Spatial information on the presence of other botanical resources is either very limited or nonexistent. Further, these resources are protected by the DFMP's requirement for the application of the Department of Fish and Game's botanical survey protocols for THPs.

The primary objective of management will be to identify both species presence and habitat, and to protect the species and the integrity of the habitat. Thus, development of overlays for these botanical resources is neither feasible nor necessary for application during the initial plan implementation period. Note also that the department also has committed to the development of Forest-wide monitoring protocols for botanical resources during the early period of Plan Implementation.

### **High Value for Restoration R&D**

Vince Taylor has roughly identified two areas of JDSF as having a high potential for demonstration of forest restoration. While the intended form of this restoration is not entirely clear, these are generally areas of the Forest that have been harvested in the past, including areas with steep slopes that were logged decades ago with ground-based yarding equipment that produced a high level of soil disturbance, excavation, and erosion. It is the intent of the DFMP to reduce erosion and promote stand productivity by managing the roads and slopes to mitigate past damages and restore both growth potential and natural ecological process. A substantial area of the Forest, as explained earlier, will be managed to restore and develop late seral forest conditions. Given these elements of the DFMP, staff does not believe that an overlay for this area of concern is needed during the initial Plan implementation period,

### **Harvesting Restrictions to be Applied during Initial Plan Implementation**

These restrictions, to be applied to harvesting activity during the initial plan implementation period, are designed, in part, to complement the older forest overlay in particular. By restricting the intensity of timber management during the initial implementation period, and by including checks such as requiring approval of the Demonstration State Forest Advisory Group for evenaged management during this period, these harvest restrictions will help to protect or enhance the older forest, wildlife habitat, recreation, and other values of concern.

1. Utilize selection, group selection, or commercial thinning, except in Tunnel and Upper Parlin THPs (see below). Both of these harvests lie outside of the Sierra Club's RR&R Area. Tunnel lies outside of the high value older forest area mapped by Vince Taylor. They both fall within the older forest potential layer developed by staff. However, these two harvests represent only 1.1 percent of the staff's older forest potential overlay.
2. BOF to approve of general harvest location and Rx to be used in short-term as a part of DFMP approval (see revised DFMP Table 3.4). This table, with some reorganization, also is presented below. It should be noted that none of these identified short-term harvests is hard-wired to occur. Harvests in the list may be modified or dropped; other harvest may be added. These changes are a normal part of the adaptive management approach utilized in the DFMP.

3. Harvest the following proposed THPs as indicated below (for which a substantial amount of preparatory work has been completed) and as marked in the field, in consideration of normal operating necessity (e.g., cable corridors, new road right-of-way, landing safety):
  - North Fork Spur: selection or as marked
  - West Fork Chamberlain: commercial thinning or as marked
  - Upper Parlin: Alternative prescription similar to variable retention or clearcut, or as marked (subject to review and approval of the Demonstration State Forest Advisory Group)
  - Tunnel: Alternative prescription similar to variable retention or clearcut and selection, or as marked (subject to review and approval of the Demonstration State Forest Advisory Group)
  - Mitchell Creek: selection and cluster selection
  
4. For uneven-aged harvesting during the initial implementation period:
  - selection
    - retain minimum of 150 square feet of conifer basal area
    - comply with other provisions of the Forest Practice Rules for selection harvesting
  - group selection:
    - limit group opening size to 1.5 acres or less
    - retain minimum of 150 square feet of conifer basal area within the matrix
    - retain at least 5 trees per acre >24 inches DBH in group openings
  - commercial thinning:
    - comply with provisions of Forest Practice Rules
  
5. For Camp 3 and Brandon Gulch, the two enjoined timber sales subject to a settlement agreement and contracts with timber buyers, restarted operations must be consistent with silvicultural designations per DFMP Figure 6.
  
6. Initial implementation period harvest limitations will sunset no more than 36 months after approval of the Forest Management Plan by the Board. During this period, the spatial and nonspatial forest structure goals, conservation biology approaches, silvicultural systems, and other elements of the Forest Management Plan will be subject to review via advisory committee processes. This review may lead to the department making changes in these Plan elements. Depending upon the degree of the changes made, approval of the Board may be required. The intent of this process is that any changes made will be within the scope of potential management activities and potential environmental impacts already considered in the CEQA processes for the Forest Management Plan, such that further substantial CEQA analysis will not be required.

A table presenting the list of potential short-term harvests to be conducted during the first five to ten years of Plan implementation is provided below.

Sale Area Name	Planned Silviculture	Harvest Acres* (approx.)	Planning Watershed
<b>Planned Harvests with Substantial Preparation Work Completed, Expected Action for Year 1 to 2</b>			
Mitchell	selection/cluster selection	635	Mitchell Creek
Northfork Spur	selection/cluster selection	600	Brandon Gulch
Parlin	commercial thin / alternative prescription with scattered, grouped, and combination scattered and grouped structure retention (during initial implementation period, subject to review and approval of the Demonstration State Forest Advisory Group)	251	Parlin Creek
Tunnel	alternative prescription similar to seed tree, with structure retention /selection (during initial implementation period, subject to review and approval of the Demonstration State Forest Advisory Group)	54	Hare Creek
West Chamberlain	commercial thin/old forest structure development	650	Chamberlain Creek
<b>Potential Future Harvests Next 1 to 2 Years</b>			
14 Gulch North	group selection with small, medium, and large groups	400	Berry Gulch
Berry Flat	commercial thinning/selection/cluster selection/with road and trail buffer	50	Berry Gulch
Dunlap North	light and moderate commercial thin/selection with road and trail corridor/cluster selection	300	Chamberlain Creek
Dunlap South	group selection with small, medium, and large groups with and without matrix thinning	350	Chamberlain Creek/ Lower North Fork Big River/Two Log Creek
Hare Creek GHIJK	selection/cluster selection, clusters with matrix thinning, clusters with no matrix thinning/variable WLPZ demonstration	250	Hare Creek
<b>Potential Future Harvests Years 2 to 3</b>			
Orchard	selection /cluster selection/group selection with small groups, with and without matrix thinning	500	Caspar Creek
Park Gulch	group selection/silvicultural demonstration area with selection; cluster selection; group selection with small, medium, and large groups, with and without matrix thinning	300	Chamberlain Creek
Pleiades #4	selection/cluster selection (4th selective cut)	50	Kass Creek
S Whiskey Springs	light and moderate commercial thin/selection/cluster selection/selection with road and trail corridor	300	Berry Gulch
Upper Hare Creek	selection/cluster selection/variable WLPZ treatment demonstration	100	Hare Creek
Volcano #2	group selection with small, medium, and large groups; with and without matrix thinning/selection with road and trail corridor	500	Brandon Gulch
Water Gulch #1	commercial thinning with light and moderate thinning	300	Chamberlain Creek

<b>Potential Future Harvests with High Research or Demonstration Potential (subject to review by advisory entities)</b>			
Helms	selection/group selection/combined selection and group selection/with control stands	250	Mouth of Big River/Berry Gulch
Riley Ridge	old forest structure development using light and moderate thinning with variable density hardwood retention	600	Brandon Gulch
Thompson Gulch	late seral development using light and moderate variable density thinning and selection	250	Berry Gulch
Water Gulch #2	light and moderate commercial thin/silvicultural demonstration area with selection; cluster selection; group selection with small, medium, and large groups, with and without matrix thinning/two-aged stand	450	Chamberlain Creek
West Berry Gulch	light and moderate commercial thin/silvicultural demonstration area with selection; cluster selection; group selection with small, medium, and large groups, with and without matrix thinning/two-aged stand	400	Berry Gulch
<b>Potential Even-aged Management in Years 3 to 7 (subject to review by advisory entities)</b>			
Frolic #2	two-aged stand/variable retention/alternative prescription using combination of scattered and clumped retention/with control stands/variable WLPZ treatment demonstration	200	Parlin Creek
Road 80	two-aged stand/alternative prescription similar to seed tree, with clustered structure retention/clearcut(max. 20 acres total clearcut area)	200	Parlin Creek
Scissors #2	selection with road and trail corridor/cluster selection/variable retention/alternative prescription similar to seed tree with clumped structure retention	100	Parlin Creek
Waldo	two-aged stand/variable retention/ alternative prescription similar to seed tree with clustered structure retention/clearcut (max. 20 acres total clearcut area)/variable WLPZ treatment demonstration	150	Parlin Creek
Walton Gulch #2	two-aged stand/variable retention/alternative prescription similar to seed tree with scattered and clumped structure retention/variable WLPZ treatment demonstration	100	Hare Creek
<b>Enjoined Harvests Subject to Legal and Contract Resolution</b>			
Brandon**	selection, cluster selection	540	Brandon Gulch
Camp 3**	selection, cluster selection	366	Brandon Gulch
*For group selection units, the number in this column represents the total area of the unit. Typically, about 20 percent of the area is in group openings; the remaining area is sometimes thinned during the group selection harvest entry.			
**The Camp 3 and Brandon THPs are currently enjoined from operation and subject to a stipulated agreement under First District Court of Appeal Case No. 102911 and Mendocino County Superior Court Action No. SCUK CVPT 0289022.			

## **Consistency with Scope of DEIR**

Staff believes that the management activity and approach described here are within the range of the alternatives and environmental assessment contained in the December 2005 Draft Environmental Impact Report for the Draft Jackson Demonstration State Forest Management Plan.

### **Attachments**

- November 30, 2006, Materials from Mendocino group (four items)
- January 11, 2007, Letter from Vince Taylor, Campaign to Restore Jackson State Redwood Forest, to Russ Henly, California Department of Forestry and Fire Protection
- January 4, 2007 maps provide by Vince Taylor
- January 12, 2007, Memo from Kathy Bailey, Sierra Club, to Russ Henly, California Department of Forestry and Fire Protection
- Map Representation of Alternative F from December 2005 Draft Environmental Impact Report
- Map of Trees per Acre over 30" in Diameter with Short-Term Harvest Polygons
- Methods used to Create Map of Trees per Acre over 30" in Diameter