

A Vision for the Future

Report of the Jackson Demonstration State Forest Advisory Group

Introduction and Summary

Jackson Demonstration State Forest (JDSF) is a redwood and Douglas-fir forest of 48,652 acres located in Mendocino County, California. It starts near the coastal towns of Fort Bragg and Mendocino and continues 20 miles east. Most of the acreage was purchased by the state of California in 1947 and has been managed since by the California Department of Forestry and Fire Protection (CAL FIRE).

The Forest's management direction derives from state statutes and from policies set by the California Board of Forestry and Fire Protection. Board policy states that the primary purpose of JDSF is to conduct innovative demonstrations, experiments, and education in forest management; that timber production will be the primary land use on JDSF; and that recreation is recognized as a secondary but compatible land use on JDSF.

This report presents the recommendations of the Jackson Demonstration State Forest Advisory Group ("the JAG"). The JAG was formed in April of 2008 and charged with making recommendations on long-term management of JDSF to CAL FIRE and the Board of Forestry by January 2011.¹

The results of the work of the JAG are remarkable on two counts.

First, the JAG has created an exciting vision for the future of JDSF. The vision includes:

- Creating a world-class forest research and demonstration center
- Developing older forest conditions across much of the landscape
- Maintaining future options to shift land to different structural development goals
- Allowing trees to grow to their natural ages in significant portions of the forest
- Expanding public opportunities for camping, hiking, and outdoor education
- Maintaining and increasing timber harvests over time to support the local economy and to fund operations of the forest. The funding will support forest management, restoration of land and stream habitats, expanded recreation opportunities, forest research and demonstration programs, and enhanced public safety and resource protection.

Second, the JAG has achieved consensus on issues that had divided the community for over a decade and led to the halt of timber harvesting on JDSF for seven years. Achieving consensus was the goal set for the JAG when it was formed in 2008, and that goal has been reached to a degree that some thought might not be possible.

The JAG brought together forestry professionals and managers, environmentalists, conservationists, recreationists, and forest researchers and scientists -- thirteen

¹ The JAG has 13 members, plus a liaison to the Board of Forestry. JAG membership is provided in Appendix 1.

members in all. Many members have technical knowledge about forests and forest management. Each member of JAG brings to it a unique and complex set of interests, values, knowledge, and perspectives.

On the one hand, the differing interests, experiences, and perspectives of JAG's members made reaching agreement on some issues difficult. On the other hand, these same factors helped inform the discussions in ways that ultimately led to reaching consensus on a number of challenging issues. The JAG was given just 2-1/2 years to accomplish the daunting task of developing consensus recommendations for the future management of JDSF.

Every recommendation in this report is supported by a strong majority, and in most instances by all, of the JAG. [This will be rewritten if the JAG makes a consensus vote on the overall package.]

These consensus recommendations provide a framework for future of collaboration among the diverse parties and the successful operation of JDSF.

Reaching Consensus

From the beginning, JAG members generally agreed on a number of important issues:

- Timber harvesting should continue at levels sufficient, at a minimum, to support the operations of the forest
- Research and demonstration are important and need to be of high quality
- There should be a significant effort to expand the area with older forest attributes
- Recreation is important

Although there is much agreement on general goals, there were important differing viewpoints on the specifics of implementation. Background is provided here to enable readers to better understand how the JAG moved from disagreement to final agreement and why it is important for the recommendations to be considered as a whole. The resolution of differing views required compromise. It was the balancing of differing interests within the overall package that made consensus possible.

The following identifies several areas of significant initial disagreement and describes key agreements and compromises that made consensus possible. Examples considered are:

1. How much of the forest should be put on a path toward restoration of the conditions that existed in redwood forests prior to European settlement?²
2. How much even-aged management (including clearcutting) should be allowed?
3. How should JDSF be managed to provide the structural conditions needed to support the research and demonstration program?

The steps to resolving these differences are described below.

² Sometimes referred to as "restoration of old growth", but in the 2008 Management Plan, old growth trees are defined as those existing prior to European settlement. To avoid confusion, This report sometimes uses the terms "old forest" and "growing trees to their natural ages" to refer to such restoration. In forestry literature, management for old forest development is termed "late seral development." This is the term generally used in the body of the report.

Issues in the Matrix

The JAG adopted the term “the Matrix” to refer to all areas of JDSF not in Reserves, the Older Forest Structure Zone, or Special Concern Areas. The Matrix areas are likely to be the major source of revenues to support forest operations. Matrix lands will be the primary areas allocated to research and demonstration projects that require treatments not compatible with the goals of the OFSZs, Reserves, and Special Concern Areas.

To manage the Matrix lands, early proposals were to use “light touch” or “thin from below” silviculture to continually grow stands to higher volumes and larger tree diameters, allow some portion of trees to grow indefinitely (to old forest conditions), and to continue sustainable timber harvesting in perpetuity.

The initial proposals met with multiple concerns and objections. Some were concerned that a uniform management style across the landscape would not create sufficient diversity of conditions to support research and wildlife needs. Some members worried that if the trees got too big, the public would shut down logging. Others worried that the proposed approach would lead to lower harvests over time. Yet others were concerned that JAG would be applying an untested management method as a standard.

Agreements that led to developing consensus include:

Creating carefully crafted guidelines for selection silviculture prescriptions in the Matrix that includes flexibility for varying site conditions to limit the risk of uniform application.

- Encouraging focused research and demonstration projects in the Matrix that use prescriptions other than the standard silvicultural prescriptions.
- Adoption of a 40-year term for JAG recommendations that, in effect, defers the decision on allowing trees to grow old to a later generation of managers and stakeholders.
- An agreement not to allow trees to grow beyond the largest feasible size for harvesting during the planning period.
- Guidelines for approvals of research and demonstration to ensure that the integrity of such projects would be maintained.

Older Forest Development versus Late Seral Development

The 2008 Plan contains a band of older forest, termed the **Older Forest Structure Zone (OFSZ)** that runs primarily along the northern boundary of the eastern half of JDSF, with some smaller areas on the eastern boundary.

Many on the JAG felt that the functionality of the OFSZ for habitat could be improved by enhancing connectivity, keeping the general concept of the OFSZ as a band, and adding a north-south corridor to link with the Woodlands and Marbled Murrelet Late Seral Development in the southwest quadrant of the forest.

Debate occurred in JAG about how much of the additions to the OFSZ should be Older Forest Development Areas (OFDAs), in which sustained timber harvesting would be one priority, and how much should be in Late Seral Development Areas (LSDAs), in which older forest restoration would be the primary goal. Concerns were expressed about moving land into Late Seral Development because of loss of future harvest potential and reduction of the research and demonstration capacity of the forest.

Several factors led to JAG reaching a near-consensus on the division of added land between OFDAs and LSDAs. The 40-year planning horizon adopted by JAG helped create a pathway to consensus. Many of those wanting more late seral forest agreed that in the 40-year planning horizon there would be little difference in forest development between the two designations. Decision makers in the future would still have the option to shift areas from Older Forest to Late Seral Development with little loss of structural development.

The JAG also agreed that one component of the overall research and demonstration program should be research on the relative benefits of OFDAs versus LSDAs, and to apply the findings in future reviews of the allocations as new information becomes available.

Concerns over the impact of the OFSZ allocations on research and demonstration were alleviated by agreement on formation of a Research Planning Team, as part of the overall Research and Demonstration plan. The Planning Team would review these allocations in the context of recommending overall forest allocations to support the R&D program. The JAG also agreed that, when an analysis of the economic impacts of JAG landscape recommendations becomes available, the recommendations would be reviewed for possible revision.

After acceptance of these conditions, several larger proposed Late Seral Development areas were changed to Older Forest Development Areas. JAG added 137 acres of Late Seral Development, largely around old growth groves, in addition to designating for LSD 641 acres that had recently been harvested under Late Seral Development prescriptions agreed to in a prior negotiated settlement. With only a few exceptions, the final allocation recommendations were supported by all JAG members

Comment [vt1]: This is the latest value from Lynn.

Even-Aged Management, Landscape Allocation, and Diversity for Research

Another challenging area of debate was the issue of providing diversity of structural conditions across the landscape, particularly those associated with even-aged management. The main focus of debate was on the roles of diversity and use of even-aged silviculture in support of research and demonstration objectives.

The 2008 Management Plan proposed that even-aged management could occur on up to 2,700 acres per decade, as necessary to create a diversity of stand conditions for future research and habitat.

Largely because of the strong public sentiment against even-aged management, and the substantial even-aged habitat in surrounding commercial forests, general agreement was reached fairly quickly on restricting the use of even-aged management to research and demonstration. But, this did not resolve the issue.

Some JAG members and outside researchers felt it was important to do regular even-aged management so there would always be even-aged stands at different stages of regrowth for potential future research. Some members did not share these values for diversity and were concerned that even-aged harvesting was destructive of forest health and aesthetic values

This issue represented one of the most challenging issues for the JAG.

The final outcome was agreement that even-aged management would be tied to specific research and demonstration projects. Important factors in reaching this agreement were:

- Bringing in outside experts. Outcomes of a workshop of scientists convened by JAG in early 2010 were 1) a decision to focus research on a limited number of “Centers of Excellence” and 2) an agreement to design silvicultural allocations to support this specific research program, rather than an unknown program of open-ended possible research.
- A decision to recommend establishing a Research Planning Team that would develop a Strategic Research Plan based on Centers of Excellence and recommend silvicultural allocations that would provide sufficient diversity of forest structure conditions to support the Plan.
- Agreeing that the entire forest was available for research, and that research-driven harvests could expand the extent of structural diversity across the landscape.
- Limiting even-aged management to specific research projects that would be peer-reviewed, restricted to the minimum size required for scientific validity, and for which funding was reasonably assured.

Keys to Consensus

The review above identifies the content of significant decisions and accommodations that made consensus possible, but how was it possible to come to these? Several aspects stand out:

- The charter established consensus as the goal, and this goal was always at the forefront of all discussions. Whenever an apparent impasse arose, members kept searching for common ground, often looking “*outside the box*” for creative solutions.
- The viewpoints of members were generally treated with respect by other members, even when they disagreed. Respect for others was crucial to moving people to middle ground.
- Consulting with outside experts when members couldn’t agree. This was central to resolving several contentious issues.
- The identification by all members of their “core or bottom-line needs” and “red flags” made a crucial contribution. At a point when progress was stalled, core needs were put up against the list of proposed recommendations, and members could see that most core needs were being met. The JAG was then able to focus on meeting remaining core needs and removing red flags.
- Looking at the recommendations as a whole. Members became more willing to give ground in some areas when they felt their core needs had been met in other areas.
- The dedication and hard work of the members.
- Last but not least, Jackson Demonstration State Forest was large and “rich” enough so that it could accommodate the core needs of the diverse stakeholders.

Advisory Group Recommendations

Introduction

During the initial implementation period (not to exceed 3 years), the Jackson Advisory Group was charged with providing recommendations on a number of aspects of the 2008 JDSF Management Plan.

The Management Plan and associated Draft Environmental Impact Report are comprehensive, professionally-developed documents. The Plan sets out, in substantial detail, all aspects of mission, goals, current and desired conditions, research and demonstration programs, monitoring and adaptive management. Its numerous Appendices provide details of legislation, policy, regulations, and programs.

In the context of the JDSF mission and in support of its management goals, the charter³ specifically charges JAG with commenting, by January 2011, on the following topics:

1. *Desired future forest structure condition goals for the Forest and the forms, amounts, and spatial designation of silvicultural treatments to be applied to attain those goals.*
2. *Long-term goals for a wide range of forest structures, including but not limited to:*
 - a. *The extent and general location of the areas to be dedicated to late-seral development and older forest structure, where timber production will be secondary to habitat development.*
 - b. *The extent and general location of areas to be dedicated to old forest structure zones (OFSZs). The OFSZs will maintain or develop key old forest features. The OFSZs will be available for timber harvest.*
3. *The Management Plan's approach to (a) protecting residual old growth and (b) restricting the extent and conditions under which herbicides may be utilized to control native hardwoods.*
4. *The process of conducting a recreation users survey, establishing a recreation user group, and developing a new recreation plan for the Forest. This plan would indicate the desired extent and location of recreation areas, corridors, roads, trails, and facilities that will be managed to enhance the full spectrum of appropriate recreational opportunities given JDSF's management goals.*
5. *The need to modify other elements of the Management Plan, as requested by the Director.*

This report presents JAG's recommendations in the context of the 2008 Management Plan. The appendices provide supplemental material to support recommendations found in the body of the report.

It is important to consider the recommendations as a whole. Although not every recommendation satisfies everyone, the complete package represents a balancing of interests that enabled reaching overall consensus.

Goals that Frame the Recommendations

The goals of the Management Plan provided a comprehensive framework for the JAG's work. In making its recommendations, the JAG consciously strove to see that no one

³ The complete JAG Charter is in Appendix 2.

goal was pursued to the detriment of others and that the multiple goals of the forest were respected.

The Goals of the Management Plan listed in order, with an additional goal adopted by the JAG appended are:

1. RESEARCH and DEMONSTRATION
2. FOREST RESTORATION
3. WATERSHED and ECOLOGICAL PROCESSES
4. TIMBER MANAGEMENT
5. RECREATION and AESTHETIC ENJOYMENT
6. INFORMATION, PLANNING, and STAFFING:
7. PROTECTION OF THE FOREST
8. MINOR FOREST PRODUCTS.
9. PROPERTY CONFIGURATION
10. EDUCATION and OUTREACH [Goal added by the JAG]

Guiding Principles

Several key principles guided JAG's work. These included:

- **Redwood Forests as a World Treasure:** Redwood is an iconic species, and the redwood ecosystem is unique. JDSF is a pivotal component and unique research forest within this ecosystem.
- **Becoming a World Leader:** JDSF should become a recognized leader in innovative redwood forest management, research, demonstration, and recreation.
- **Public Trust and Collaboration:** The ultimate success of JDSF depends not only on the professional and scientific credibility and quality of its programs but also on the building of public trust and collaboration. Recommendations in this Report reflect the consensus view that the goals of the Plan can only be met with the involvement and support of all sectors of the public.

Qualifications to the Recommendations

In considering the JAG's recommendations, please keep the following in mind:

- The JAG recognizes and desires that all recommendations regarding allocations, research and demonstration, modified silvicultural approach, recreation, outreach, and other considerations be evaluated for their effects on forest revenues and costs.

Such an evaluation requires an analysis of likely growth and yield under diverse constraints and scenarios. This analysis was not available for JAG in time to be considered with the necessary depth prior to the reporting date. As a result, some modifications may be necessary.

JAG recommends that the analysis should be conducted early in 2011. Financial implications of this analysis must recognize the current national economic downturn, sustained depression of the timber industry, and low log prices.

- JAG recognizes that achieving the long-term vision outlined in this Report will take considerable time, organization, and funding. Implementation of the recommendations, if adopted, may need to be staged over time, depending on the funds available.
- JAG also recognizes that moving the Forest towards a higher proportion of older forest structures and enhancing the aesthetic and economic value of sustainable, annual timber sales by increasing the size and quality of redwood trees will also take time. Our immediate goal is to recommend practices that will set forest development on trajectories towards attaining the Plan's stated goals.
- Forest management entails long-term planning that is responsive to new knowledge and experience. JAG recommendations are intended to provide a long-term plan with a 40-year planning horizon, but the JAG also realizes that our plan will require periodic revisiting to examine its provisions in light of advances in knowledge and changes in both ecological and societal factors.
- Some of our recommendations contain the words "will" and "shall" when the intent of the group was that the related element of the recommendation be mandatory. However, we recognize this report constitutes a set of recommendations and that the Board of Forestry has the responsibility and authority for determining provisions of the JDSF management plan.

Recommendations Overview

The JAG's recommendations, taken together, form an integrated package designed to enhance the capacity of JDSF to become a world-class research and demonstration forest. The recommendations are also designed to foster strong public support and a sense of ownership. To attain this, the recommendations aim at maintaining or increasing the sustained production of timber, restoring forest habitats and structures, enhancing recreational opportunities, and developing stronger educational and outreach programs.

The most far-reaching recommendations concern landscape management and development of a framework for developing research and demonstration programs. Brief summaries of these components are included here. Complete summaries are at the beginning of the chapters on these components.

Summary of Recommendations

(For complete recommendations, see appropriate sections of the Report)

Landscape Management

Planning Horizon: Limit JAG allocation and silviculture recommendations to a 40-year planning horizon. Reasons include higher degree of confidence in modeling projections, and to achieve a higher degree of consensus for the Late Seral allocations.

Requested Research: As a component of the overall research and demonstration program, conduct research to determine whether Late Seral Development provides significantly more benefits than does Older Forest Development, which allows more timber harvest. The intent is to provide a scientific basis for discussions and to help guide future decision makers.

Matrix Forestry: A set of goals and guidelines for applying single-tree selection silviculture at JDSF, including group selection under limited circumstances, to be applied on areas of the forest not designated for Older Forest Structure, Reserve, or Special Concern, and when no research and demonstration project is proposed.

Older Forest Structure Zone: Allocate more Older Forest Structure (OFSZ) to fulfill the Goals and Guidelines of the Management Plan and to provide more substantial buffering for old growth groves; to recognize the negotiated litigation settlement regarding two Timber Harvest Plans; to provide strengthened contiguity for the Older Forest Structure Zone; and to create a more robust north/south Older Forest Structure corridor. Specific Goals and Guidelines apply.

OFSZ Components: Old Growth Groves, Reserves, Late Seral Development (LSD) Areas, and Older Forest Development (OFD) Areas. Logging is permitted in LSD Areas and OFD Areas to differing degrees.

Late Seral Development: Areas to be managed for goals identified in the Management Plan. Predominantly use single-tree selection with additional provisions applied. LSD Areas will, at some point, reach a stand condition where manipulation is no longer necessary.

Older Forest Development: Areas to be managed for goals identified in the Management Plan, including timber harvest of trees of all ages and sizes. Utilize single-tree and group selection, and commercial thinning, with additional provisions applied.

Unique Areas: Designated to recognize and study special attributes, forest stand types or particular stand histories to assure management consistent with maintaining them for research and demonstration.

Hardwood Research: Designation of a specific set of hardwood-dominated areas from which to study the ecology and appropriate management of hardwoods in the landscape.

Allocations: Fourteen allocation changes include Unique Area Reserves, Older Forest Structure Zone Reserves, Late Seral Development Areas, and Older Forest Development Areas.

Woodlands STA: Close cooperation and early information sharing between JDSF and California State Parks whenever management activities are considered for the STA.

Other Management Issues:

- ***Campground Buffers***
- ***Buffers for Old Growth Trees Outside Reserves***
- ***Even-aged Management***
- ***Information to be provided to assist JAG THP Review***

Research and Demonstration

JAG is recommending a Research-Oriented Management Framework that would move JDSF toward becoming a world-class research and demonstration forest. The main elements of this framework include:

- Organizing research and demonstration within up to three Centers of Excellence that would integrate multi-disciplinary research in a manner that would resolve complex (often difficult) management challenges
- Developing a strategic research and demonstration agenda and research-oriented landscape allocation that incorporates a regional perspective and the needs of stakeholders in scientific, landowner and conservation communities
- Assurances that the entire forest is available to Research and Demonstration while providing guidelines for silviculture constraints in support of landscape objectives
- Establishing an Experimental-Basis for Management that would leverage management activities as opportunities to test hypotheses
- Considerations for integrating the framework with monitoring and adaptive management practices
- Implementing the program through:
 - Convening a Research Planning Team (short-term consultant) to develop the Strategic Research Plan and associated land allocation.
 - Establishing a Redwood Research Group (science staff and managers) to administer the program.
 - Forming a Regional Research Consortium of landowners and agencies to guide continued collaboration

Recreation

- To the extent feasible, incorporate the recommendations of the recently formed JDSF Recreation Task Force for expanded low-impact recreation and education in the new Recreation Plan for JDSF.
- As soon as possible, hire a single contractor to develop a recreation plan and associated user survey.
- Prior to the completion of the Recreation Plan process, proceed with recreation maintenance and improvements to existing sanctioned trails and facilities as needed or as recommended by the Recreation Task Force.

- JDSF staff should develop, in coordination with the JAG, situation-appropriate guidelines, including measurable guides where appropriate, to apply to Timber Harvesting Plans for protecting recreation resources wherever located in the forest and for protecting aesthetic resources along highly traveled roads (e.g., Hwy 20 and Road 350).

Economics

- Identify cost centers and develop quarterly profit-loss statements with allocation to each based on revenue sources and time or supplies spent in the categories.
- The timber sale program should reflect the standards for silviculture consistent with JAG landscape allocation recommendations.
- If feasible, and gradually as market conditions allow, a three-year “Prudent Reserve” fund should be established with the funds to be invested in a money-market-type fund. Interest earned should be applied to state forest programs.
- A year-by-year projection of individual research project costs should provide for annual budget allocations as a line item.
- JDSF-initiated research projects should use the above recommendation for annual and future budgets, and other projects should be required to provide long-term projection of costs with assurance of the initiation of budget support.
- JDSF should continue to support local utilization of materials produced in nearby forest and saw mill operations in order to raise net values from timber sales.
- Capital support for basic infrastructure should serve all or major portions of JDSF and be separate from direct operation of an individual timber sale.
- Consistent with the applicable authority of law and policies of the Board of Forestry, JDSF should charge fees for forest uses, other than and in addition to, the sale of forest products.
- CAL FIRE should obtain professional grant-writing capability as a way to gather funds for the science program.

Herbicides

Although the current use of herbicides on the Forest is very limited, we recognize public sensitivities and concerns regarding the application of herbicides – especially on public lands – associated with potential or perceived impacts on human and wildlife health, water quality, and aesthetics. Because of these concerns the JAG recommends that, in addition to provisions in the JDSF Management Plan, particular attention be given to the following:

- Explore alternative treatments with a goal of eventually eliminating herbicide utilization on JDSF.
- All significant herbicide applications/programs should be reviewed for their potential to contribute to addressing the objectives and questions of the research, demonstration, and monitoring programs.
- All scheduled herbicide applications should be posted in the field and at the JDSF office to enable the public to be aware of areas to be treated.

The minimum posting requirement will be for a period extending an order of magnitude beyond the label posting requirement.

- In particularly sensitive habitats and public use areas, such as campgrounds, roads, and trails, an enhanced level of evaluation should be utilized.
- All herbicide use should be limited to non-aerial applications using minimum effective doses and concentrations recommended for treatment success.
- All operations should be prepared and conducted recognizing the need to minimize, to the extent feasible, the development of conditions that potentially lead to the introduction of invasive weeds or excessive hardwood regeneration.
- As with all research and demonstration on the Forest, use and evaluation of herbicide applications should be incorporated in public outreach and information programs.
- JAG recognizes the important ecological values of hardwoods and supports the JDSF Plan goal of maintaining hardwoods on the forest at historic levels. JDSF should establish guidelines for what level of hardwood cover will trigger use of herbicides for their management.
- With respect to invasive plants, JAG supports the careful and limited use of herbicides to control their development in context with the Integrated Weed Management Program.

Outreach

- Move ahead with the many provisions in the 2008 Management Plan.
- Provide funding and facilities that ensure the development of a high-quality and effective outreach and public education program.
- Provide grants and technical assistance to schools and colleges to establish study areas within existing and proposed allocation areas to enable successive classes to gather time-series data on ecosystem dynamics and management.
- Form a collaborative Outreach Consortium that fosters complementary outreach and education interests, goals, and programs among interested parties.

- Develop an imaginative, high-quality JDSF Website that provides information to the public on all programs, activities, and publications on JDSF.