

Agenda Item No:	C
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SUMMARY

The purpose of this agenda item is to provide the Board of Forestry with an update on implementation of its Dynamic Forest Ecosystems Work Plan.

In late 2007, the Department of Forestry entered into an agreement with the Institute for Natural Resources (INR) at Oregon State University to conduct an *Ecosystems Dynamics Policy Study*. Once completed, the study will substantially accomplish Objective 1 of the Dynamic Forest Ecosystem Work Plan. Study products will be made available throughout the latter half of 2008 and in 2009.

CONTEXT

The goal of the Board's Dynamic Forest Ecosystem Work Plan is to promote the science, information acquisition, and analysis systems that are essential for developing sound natural resource policies that sustain and enhance the health of Oregon's forest ecosystems, watersheds, and airsheds within a context of natural disturbance and active management (based on *Forestry Program for Oregon Strategy F*.) Objective 1 of the Work Plan calls for promoting dialogue and greater understanding among scientists, decision makers, and stakeholders about dynamic forest ecosystem processes and their interactions with forest policies.

The INR project is examining experiences with various approaches to integrating ecosystem dynamics into forest management in order to identify successes, drawbacks, and unintended consequences. The ultimate objective is to use the results of the project to frame forest management policies that embody current and future understanding of forest ecosystem dynamics. The Oregon Department of Environmental Quality has expressed interest in this project and has been invited to participate as an informal partner in developing and reviewing project products.

INR is nearing completion of a research paper titled *Nonequilibrium Ecosystem Dynamics: Management Implications for Oregon*. As described by the primary author Master of Science graduate student, James Johnston:

“This paper is the first step in a multi-part project that Oregon State University is conducting for the Oregon Department of Forestry and the Department of Environmental Quality. The project focuses on nonequilibrium ecosystem dynamics, a body of scientific research that characterizes and interprets ecosystem change. OSU will summarize knowledge from this field, describe ways in which the current management framework does not adequately account for these science findings, and make recommendations for changes to existing policy. This paper is a starting place for a dialog between researchers and managers that will eventually lead to new real-world management policies and practices.”

The research paper will provide an overview of key concepts such as:

- Nonequilibrium ecosystem dynamics
- Range of variability
- Resilience
- Management goals for the built environment
- Different paradigms for land management

The research paper will discuss the following case studies and management questions:

- Oak conservation in the Willamette Valley
- Regulation and management of aquatic systems
- Managing fire risk in Southern Oregon
- Fire management strategies
- Biomass utilization in Eastern Oregon
- Fire history and landscape level timber management in the western Oregon Cascades
- Incorporating forestry and land use into Oregon’s global climate change action plans
- The Coastal Landscape Analysis and Modeling Study project and age class and structural patterns of forest cover in the Oregon Coast Range.
- Restoring old forest structure in the Oregon Coast Range
- Distribution and management of salmon habitat in the Oregon Coast Range

The research paper will then summarize and synthesize the management implications and recommendations from case studies organized around four broad themes:

- Aquatic systems
- Fire and fuels management
- Climate change and adaptation
- System function and resilience

The research paper will also provide an ecosystem dynamics literature review.

The research paper is not intended to be a definitive study. It is meant to provide a framework for a dialog between researchers and managers that will eventually lead to new real-world management policies and practices. Several key themes already emerging from the overview of current knowledge about non-equilibrium ecosystem dynamics and review of current management policies include:

- Ecosystems experience a wide variety of disturbance. They are dynamic and can shift from one stable state to another;
- The processes that shape ecosystem change, not static point-in-time measurements of structure or composition, are most important in predicting and managing for change;
- Knowledge of the historic range of variability in ecosystems, as well as the future expected and desired range of variability, should inform management;
- Ecosystem resilience should be a goal where realistic. In rural residential areas, social expectations must inform management; and
- Long-term study should be conducted to test new management frameworks that account for non-equilibrium ecosystem dynamics.

This research paper will summarize several paradigms for forest management and recommend that a new approach that integrates contemporary scientific knowledge about disturbance processes and environmental change be adopted. Preliminary recommendations for policy change and further study will be made which will begin the shift to ecosystem dynamics management.

A series of four seminars are planned to be held beginning in late 2008 and finishing in spring 2009. The topics for the four seminars are anticipated to be the same four themes highlighted in the research paper

- Aquatic systems
Chair: Dr. Gordon H. Reeves, USDA Forest Service Pacific Northwest Research
- Fire and fuels management
Chair: Dr. John D. Bailey, Oregon State University College of Forestry
- Climate change and adaptation.
Chair: Dr. Barbara J. Bond, Oregon State University College of Forestry
- System function and resilience
Chair: Dr. Fred J. Swanson, USDA Forest Service, Pacific Northwest Research Station

All four areas will include human dimensions. The seminar series will be publicized to draw interest from the broader university system and public. Seminar speakers will submit brief white papers that summarize their perspectives, to be included in the project's final report. After each seminar, an invited group will convene for a work session to identify key challenges in the area defined by the seminar and discuss options for addressing potential policy adjustments.

A final summit policy workshop will be developed and conducted that brings together core Department of Forestry managers, Oregon University System scientists, other state and federal agency cooperators, and stakeholders to synthesize needed policy changes based on key themes from the research paper and seminar work sessions, known areas of disconnect from ecosystem dynamics, and findings from the literature. This final workshop will be an invited event with the central goal of developing a new menu of policy choices guided by the four theme areas, fleshing them out with current knowledge, and identifying key areas of uncertainty, further information and research needed, and preferred analysis systems. A final report will be produced after the

workshop, tying together all three stages of the proposed work, and capturing the framework developed at the summit workshop.

NEXT STEPS

The Department will make the INR research paper publicly available and assist the INR in publicizing the seminars and summit policy workshop once they are scheduled. The Board will be kept informed on study progress through periodic updates.