



CASCADE CENTER *for* ECOSYSTEM MANAGEMENT

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H.J. ANDREWS FOREST • ECOSYSTEM RESEARCH • EDUCATION • ADAPTIVE MANAGEMENT

CASCADE CENTER FOR ECOSYSTEM MANAGEMENT

The Cascade Center for Ecosystem Management, created in 1991, is a forest research and management partnership between the Pacific Northwest Research Station, the Willamette National Forest, and Oregon State University. It represents part of the evolution of programs historically centered on the H.J. Andrews Experimental Forest which was established in 1948 near Blue River, Oregon. During the last ten years in particular, the partnership has made great strides in the development and transfer of new ecosystem information into management practice.

PURPOSE

The purpose of this partnership has been to explore, test, apply, and share new information about forest and stream ecosystems in the western Cascades of the Pacific Northwest. Research associated with the Andrews Forest has focused on structure and function of managed and natural forests; silviculture; ecology and demography of the northern spotted owl; ecology of riparian zones; effects of forest practices on water quantity and quality; biological diversity; and long-term site productivity.

ROLES

The roles of the partners are diverse. Scientists from the Pacific Northwest Research Station and Oregon State University conduct both basic and applied studies. Land managers from the Willamette National Forest assist in implementing studies and facilitating administrative tasks. In some cases, information from the research activities has been "field" tested through application on several sites throughout the Willamette National Forest. The interactive nature of the partnership has helped define key questions for study. All partners have been involved in educational activities such as short courses and more than 50 field trips annually. Cascade Center land managers and scientists also participate in the Central Cascades Adaptive Management Area as part of implementing the Northwest Forest Plan.

DISTINGUISHING FEATURES

The scientific enterprise is highly interdisciplinary, including geologists, zoologists, botanists, entomologists, microbiologists, hydrologists, forest ecologists, silviculturists, forest engineers, aquatic ecologists, economists, and social scientists. The program has demonstrated an ability to sustain long-term research. The watershed component of the program, for example, has more than 45 years of record and some data sets on vegetation include permanent plots that span 70 years. Additional studies are designed to continue for 200 years. The research / management partnership has created a working environment that has attracted new cooperative research activities, including establishment of a major site in the Forest Service's Pacific Northwest Long-Term Ecosystem Productivity project, and a U.S. Geological Survey project on modeling effects of land use and climate change on streamflow.

INFLUENCES ON POLICY AND PRACTICES

The Cascade Center demonstrates that partnerships between management and research can be very effective in identifying and testing ecosystem management practices which better maintain long-term productivity, growth and yield of conifers, and biological diversity. Some of the changes in management policies and practices which were influenced by this partnership include: approaches to minimize the rate of forest fragmentation; roles of live trees, snags, and coarse woody debris in logged areas to benefit wildlife, biological diversity, and site productivity; effects of coarse woody debris in streams for habitat and stream structure; planning at the landscape scale to better consider effects of management on large-scale processes; minimizing the intensity of slash fires to better protect soil properties; managing riparian areas to minimize effects on stream ecosystems; and minimizing cumulative watershed effects, including potential problems of rain-on-snow flooding.

COMMUNICATION EFFORTS

Together managers and researchers communicate with many agencies, individuals, and organizations about a wide range of issues, research results, and management applications. Education activities include field trips, symposia and workshops, research publications and journal articles. Additional outreach to the general public includes print, television, videotape, radio, and other media. In 1996, over 2,700 people took part in 80 tours, presentations, or workshops delivered by the Cascade Center. Media outlets have included the New York Times, the Washington Post, Discover Magazine, National Geographic, BioScience, local television news programs, and major regional newspapers. Congressional interest has been high. Numerous foreign scientists and managers visit the Andrews Forest annually. In addition to the transfer of basic ecosystem information, foreign visitors are especially interested in, and tell us they benefit from, the example provided by the partnership.

CURRENT ACTIVITIES

In addition to research activities, the Cascade Center has a number of projects that integrate ecological principles, demonstrate rapid incorporation of new research findings, and contribute new knowledge. Projects focused on development and application include:

- Young Stand Thinning and Diversity Study -- silviculture in 30-40 year old plantations to enhance wildlife habitat, old-growth characteristics, and conifer growth and yield
- Very Young Stand Management -- silviculture in precommercial plantations to enhance structural diversity and conifer growth and yield
- Long-Term Ecosystem Productivity Study -- maintenance of soil productivity following different harvest regimes
- Retrospective Studies of Selective Cutting -- understanding ecological effects of green tree retention
- Pool Complexity Study -- experiment in stream habitat enhancement and rehabilitation
- Blue River Landscape Project -- planning using landscape-specific, natural disturbance history
- Quartz Creek Fish Habitat Enhancement -- effects of stream rehabilitation measures