THE NORTHERN SPOTTED OWL

CENTRAL CASCADES DEMOGRAPHY STUDY

background

Nearly 30 years ago, researchers from the Oregon Cooperative Wildlife Research Unit, the Pacific Northwest Research Station, Oregon State University, and managers of the Willamette National Forest began some of the original research on the northern spotted owl in and around the H.J. Andrews Experimental Forest. In the ensuing years, similar studies were initiated throughout the owl's range (the western portions of Oregon and Washington, and in northern California) by various government agencies, universities, and private entities.

These early research efforts warned of an impending natural resource predicament: the decline of a species strongly associated with structurally complex older forests in the Pacific Northwest. This information led the U.S. Fish & Wildlife Service to list the owl as "threatened" in 1990 (under the Endangered Species Act of 1973) and sparked a national controversy over the management of these ecologically and economically valuable forests.

Society responded by dramatically changing the policies governing federally-managed forests in this region by developing the Northwest Forest Plan (also called the "President's Plan"). This plan set forth new guidelines for public lands subject to timber harvest and established a network of large "Late-Successional Reserves" to provide for the long-term persistence of the many plants and animals that make old-growth forests unique. Many of the guidelines in the Northwest Forest Plan are derived directly from the results of spotted owl studies.

the study

Early investigations examined the owls' life-history (diet, breeding habits, nest requirements, life-span, predators, etc.) which was largely unknown just a few decades ago. Radio telemetry revealed the habitat preferences and other key aspects of the bird's biology, such as the size of a pair's home range and the fate of their young after leaving the nest.

The study was expanded in 1987 to encompass an entire sub-population of spotted owls. Annual surveys of a 364,225 acre area (approx. 600 sq. miles), including portions of the Blue River, McKenzie Bridge, Middle Fork, and Sweet Home Ranger Districts, have identified over 120 pairs, making this one of the more dense populations in Oregon.

Today, assessment of the status and trend of this sub-population is of primary interest. Researchers strive to understand the factors that influence reproduction

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and survival rates. Forests are surveyed annually for occupancy by specific owl pairs which are identified by colored leg-bands. Each pair of owls is checked in spring and summer for reproductive status. If they nest, the young are counted and banded. These techniques enable researchers to detect trends in the population over time with sophisticated population models.

Researchers also study the creatures eaten by spotted owls. In this area, the northern flying squirrel comprises about half of the owl's diet. Bushy-tailed woodrats, brush rabbits and young snowshoe hares, red-tree voles, red-backed voles, deer mice, and a number of other small animals comprise the rest of the diet. Understanding the life-cycles of these creatures has been instrumental in better understanding the owls ecology.

How "forest fragmentation" (the amount and arrangement of habitat) affects spotted owls is also studied. Northern spotted owls are well suited to living in large expanses of relatively unbroken forest. The patterns and techniques of timber harvest in this region since WWII have resulted in a patchy forested landscape. In addition to the direct loss of habitat due to timber harvest, a patchy arrangement of clear-cuts is thought to be detrimental for a variety of reasons (e.g., changes in microclimate, and possibly improved conditions for spotted owl predators (e.g., great-horned owls) and competitors (e.g., barred owls).

The Central Cascades study continues monitoring the owl's progress under the Northwest Forest Plan, increasing our understanding of the role of this species in the forests of the Pacific Northwest. Perhaps this will continue to enable society to make informed decisions regarding the use of these natural resources that we and the owls depend upon.

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publications

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