

Biological Science in Oregon

Background

Biological science to meet the priorities of the Department of the Interior and the public is a key mission of the U.S. Geological Survey (USGS). There are numerous USGS centers conducting biological research in the western United States to inform policy and land-management decision-making processes. Management of forests, rangelands, and fish and wildlife are some of the important concerns in Oregon. Several USGS centers are located in Oregon, and one facility is just north of the state boundary along the Columbia River (see map).



Biological Science Capabilities

Aquatic ecology	Fish and wildlife population dynamics
Conservation biology	Forest ecology
Conservation genetics	Invasive species
Contaminants	Migratory birds
Fish health and disease	Rangeland ecology



Restoring Cheated Shrublands

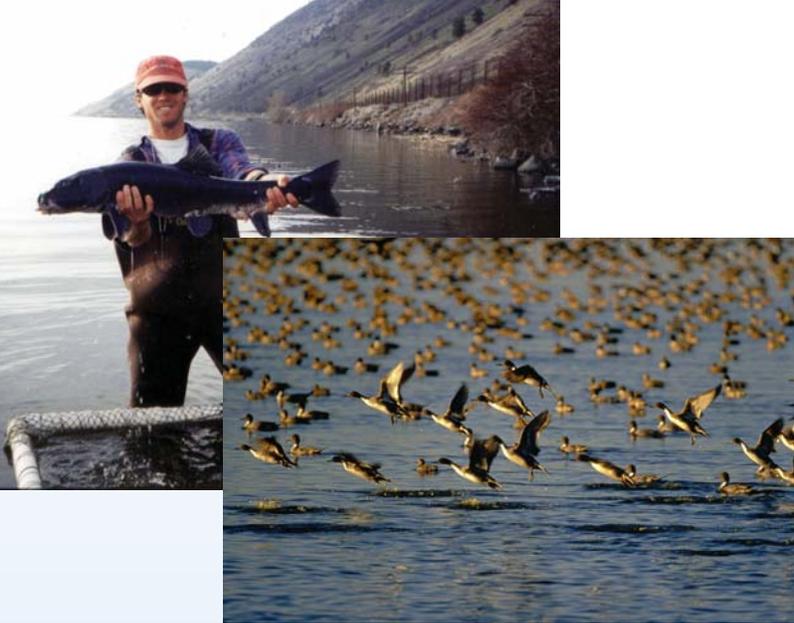
As the sun sets over eastern Oregon, hot air from a shadeless day lingers over the expansive grassland. A vast landscape once covered by native shrubs, grasses, and herbaceous plants is now largely a monoculture of an exotic and invasive annual grass called cheatgrass. Cheatgrass has invaded and “cheated” native plants out of essential water and nutrients. It has created fuel loads that perpetuate fires on a nearly annual basis, threatening human communities, wildlife, and traditional ranching practices. USGS scientists are investigating techniques for removing cheatgrass and restoring native shrub and grass species in an effort to preserve the valuable lands that so many people, plants, and animals call home.

One-Stop Shopping for Sage Grouse and Shrub-Steppe Management Information

Sage grouse are charismatic and distinguished birds, well known for their ritualized springtime courtship, when males strut about with chests proudly displayed in hopes of attracting females. Despite over 70 years of research and conservation efforts, sage grouse populations have declined throughout much of the Intermountain West, and some populations are being considered for listing under the Endangered Species Act. The USGS is investigating ways of restoring sage grouse and its sagebrush-steppe habitat. An internet-based information portal called SageMap (<http://sagemap.wr.usgs.gov>) has been particularly successful in providing one-stop shopping for maps and datasets describing sage grouse, their habitats, and related information.



Photo by Terry Steele



Water in the Klamath Basin

The Klamath Basin's finite water resources are shared by many, including farmers, ranchers, townspeople, tribes, recreationists, wildlife, forests, and fish. Supplies can be insufficient to meet the needs of all in dry years. USGS scientists are helping resource managers and water users address the complex challenge of finding balanced water use. Research is conducted to assess the status of endangered fish populations, determine factors regulating water quality in Upper Klamath Lake, evaluate the role groundwater may play in alleviating drought conditions, and determine effects of decreased water supply on the vast number of birds that rely on the basin's wetland areas.

The Mighty Columbia is an Endless Wonder



Some folks imagine that the Columbia River Basin was at its best when Lewis and Clark visited in 1805 and 1806. Certainly, the free-flowing, pristine river with a seemingly limitless supply of

salmon was a significant resource for Native Americans and European explorers alike. Others, however, value the developed Basin as it is today, with its agriculture, industries, towns, dams, and other uses. This development is not without costs; the decline of salmon, sturgeon, and other fishes in the Columbia River is a national concern. USGS researchers conduct studies to help regulatory and conservation agencies enhance the survival of migrating salmon while maintaining the diverse uses of the Basin's resources that are vital to the economy of the Pacific Northwest. Funding from nine agencies allows the USGS to conduct such a diversified research program and provide reliable scientific information.

Forests for the Future

Upon hearing the phrase "Pacific Northwest," many of us think of lush forests with giant trees and mossy forest floors. People in Oregon depend on these and other types of forests for their livelihood and for recreation, relaxation, and a general sense of place. All sorts of wildlife, from small insects to towering elk, also find their livelihood in and around forests. Changes in priorities for forest management on public lands in the Pacific Northwest have raised questions about ways to manage forests to support multiple values while minimizing risks associated with fire and disease. Such challenges have moved the framework of forest management from single forest stands and individual species to forest ecosystems encompassing millions of acres. USGS biologists throughout Oregon are monitoring rare and poorly known species and are investigating how different management strategies influence forest disturbance, health, and biodiversity of plants and animals.



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