Great Basin Watershed Sustainability

FY 2009 President's Budget

ISSUES

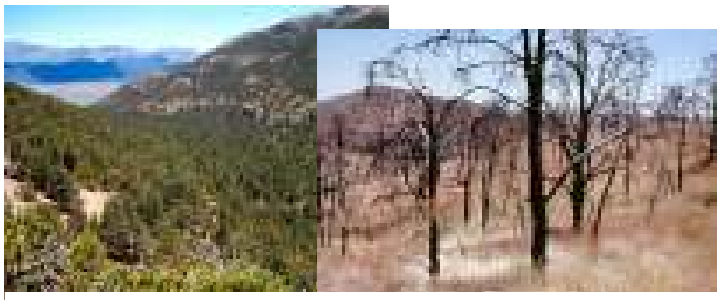
The Great Basin is one of the most endangered ecoregions in the U.S. This large, arid to semi-arid region covers 140,110 square miles and includes most of Nevada and parts of California, Oregon, Idaho and Utah. The region is growing at one of the highest rates in the nation and is undergoing rapid ecological and socioeconomic change. Major drivers of change include urban, suburban, and exurban development, past and present land uses like livestock grazing, and mineral and energy development and production. Climate change is already influencing water resources, disturbance regimes, and species distributions. Fire regimes have been altered and dramatic shifts are occurring in fire frequency, severity, and size. A single wildfire in 2007 burned 653,000 acres in Nevada and Idaho. Rapid expansion of invasive species, especially annual grasses like cheatgrass, has resulted in an annual grass-fire cycle and conversion of shrublands and woodlands to homogenous annual grasslands with little ecological or economic value.

IMPORTANCE

The cumulative effects of the ongoing changes include vegetation type conversions and loss of watershed functioning, biological diversity, and ecosystem services, such as safe environments for human habitation, forage and browse for wildlife and livestock, and clean air and water. Managers are increasingly challenged to meet the needs of a growing number of diverse user groups. Sustaining the ecosystems, resources, and human populations of the Great Basin will require innovative approaches for maintaining and restoring the region's natural resources.

ACTIVITIES

Promote comprehensive research and management partnerships to sustain ecosystems, resources, and communities in the Great Basin.



Conversion of Pinyon-Juniper Woodland to Cheatgrass, Nevada

- Understand the causes and effects of climate, and natural and human-related disturbance on watersheds and riparian ecosystems, and develop techniques and guides for management.
- Understand the causes and effects of both cheatgrass invasion and pinyon and juniper expansion into sagebrush ecosystems, and develop techniques and guides for management.
- Demonstrate ecosystem responses to prescribed fire and fire surrogate treatments, and develop guides to fuels and fire management in sagebrush and pinyon-juniper ecosystems.
- Develop identification, collection, and seeding techniques of native plants for restoration with the Bureau of Land Management, Great Basin Native Plant Selection and Increase Initiative.

OUTCOMES

RMRS will provide science-based information to assist in planning for the future of the region. Additional science capacity would facilitate developing sound scientific information on the effects of climate change, land use, altered fire regimes, invasive species, and management practices. Concepts and approaches would be developed for sustaining ecosystems and watersheds, including linked watershed and riparian ecosystem management, invasive species and fuels management, and restoration plant materials and techniques. Extensive partnerships are key to a productive research program.

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