



*U.S. Department of the Interior
U.S. Geological Survey
Northern Rocky Mountain Science Center -
(NoRock)*

The Northern Rocky Mountain Science Center conducts scientific research in support of natural resource management in the Northern Rocky Mountains of Montana, Wyoming, and Idaho. We produce and disseminate scientific information needed for decision-making in collaboration with Federal, state, and local land management agencies, Native American tribes, academic institutions, and non-government organizations. Our Center is based at Montana State University Bozeman with field stations at West Glacier and Missoula, Montana, and Jackson, Wyoming.



Scientific Projects –We address scientific questions relevant to natural resource management through an approach that involves characterization and description of natural resources and of factors affecting them, hypothesis-driven research to understand cause-and-effect relationships, and modeling and prediction of natural resource conditions under various management scenarios. The delivery of useful information to managers of natural resources, the scientific community, and the public is one of the key elements of the Center mission. Our scientific efforts are organized into three thematic areas:

The conservation of amphibians, fish and wildlife of the Northern Rocky Mountains - Center scientists are studying grizzly bear population biology in Yellowstone and Northern Continental Divide ecosystems, the spread and control of brucellosis and other wildlife diseases, ecology of bison, elk, pronghorn antelope, bighorn sheep and other ungulates, and trumpeter swans. Additional studies examine the status and trend of native amphibians and reptiles, and native trout.



The changing landscape of the Northern Rocky Mountains - Center scientists evaluate the effects of climate change on glaciers and ecosystems, study the consequences of flow regulation on aquatic and riparian resources, and explore the influence of geology and hydrology on the dynamics of wetland ecosystems. The dynamics of vegetation change are explored through studies on the effects of ungulate browsing on riparian habitat, plant community succession and invasive species ecology related to energy development, and the evaluation of wildfire severity on forest vegetation.

Modeling complex systems and decision support - Tools are needed to integrate multiple-species and habitat information to determine the ecological effects of land management on both public and private lands. The increasing pressure of land development on private lands, expanding energy production, and continued commodity extraction in the northern Rockies requires more complicated analyses to identify potential consequences and trade-offs of management. We develop systems-based ecological models for key habitats and species of the

northern Rockies, conduct simulation experiments using the models and develop decision support tools for managers to identify potential tradeoffs from management alternatives.

The development and delivery of natural science information through the Mountain Prairie Information Network (MPIN - <http://mpin.nbii.gov>)- The regional node of the National Biological Information Infrastructure (NBII) develops natural sciences learning tools, and supports a large database of biological information on many species and issues throughout the Mountain Prairie information area, and develops decision support tools for a variety of projects.

Partners – Major partners include Montana State University, the National Park Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, the U.S. Forest Service, the University of Montana, Montana Department of Fish, Wildlife and Parks, Wyoming Game and Fish Department, and Idaho Department of Game and Fish. We also collaborate with numerous partners through the Interagency Grizzly Bear Committee, Greater Yellowstone Coordinating Committee, Greater Yellowstone Interagency Brucellosis Committee, Rocky Mountains Cooperative Ecosystem Studies Unit, Northern Yellowstone Cooperative Wildlife Working Group, Pacific Flyway Council, Montana Wetland Council, Big Sky Institute, and other joint ventures. Our role in all of these activities is to provide objective scientific information that can be used by others in making natural resource management decisions.



Importance to Montana – The Center brings USGS scientific capabilities to focus on natural resource issues that are important to the State of Montana:

- We conduct studies in collaboration with State agencies to meet their information needs
- We involve faculty and students of the State University System in our research projects
- We work with Montana State University on joint ventures, including the Big Sky Institute, Montana Water Center, and the Cooperative Ecosystem Studies Unit
- Our scientists participate as affiliate faculty in academic activities of Montana's universities, and we have established a USGS adjunct scientist program to recognize and promote collaboration with university faculty
- The regional MPIN node will help provide access to natural resources information to managers, scientists, educators, and the public

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