

USDA Forest Service Rocky Mountain Research Station

One of 5 units that make up
USDA Forest Service
Research and
Development

12 field laboratories
throughout a 14-state
territory encompassing
the Great Basin,
Southwest, Rocky
Mountains, and parts of
the Great Plains.



RMRS "New" Science Programs

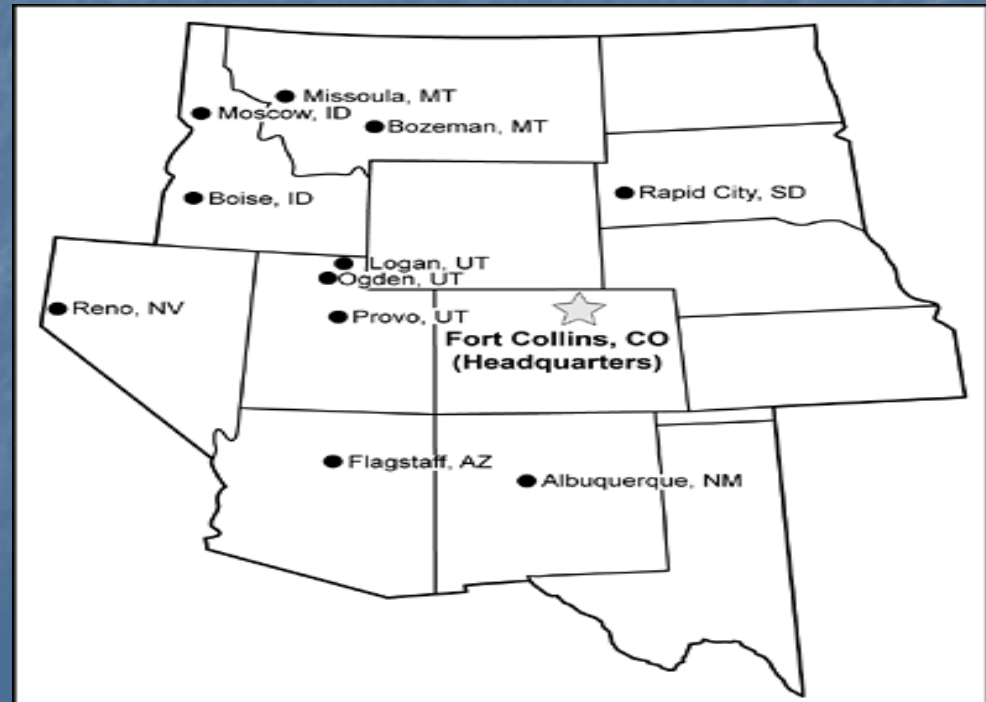
1. Grasslands, Shrublands & Desert Ecosystems
 - Durant McArthur (Provo, UT)
2. Forests & Woodland Ecosystems
 - Dennis Ferguson (Moscow, ID)
3. Air, Water & Aquatic Environments
 - Kerry Overton (Boise, ID)
4. Wildlife & Terrestrial Habitats
 - Bill Block (Flagstaff, AZ)
5. Human Dimensions
 - Cindy Swanson (Fort Collins, CO)
6. Fire, Fuels & Smoke
 - Colin Hardy (Missoula, MT)
7. Inventory, Monitoring & Analysis
 - Michael Wilson (Ogden, UT)
8. Aldo Leopold Wilderness Research Institute
 - Dave Parsons (Missoula, MT)

Grasslands, Shrublands, and Desert Ecosystems Research Program

Durant McArthur, Acting Program Manager

14 Scientists in 6 Locations across the RMRS Territory

Idaho
Montana
Nevada
New Mexico
South Dakota
Utah



Main goal-

“To develop and deliver scientific knowledge, technology, and tools that will enable people to restore and sustain grasslands, shrublands, and deserts under increasing threats from expanding human-related uses, invasives, changing disturbance patterns and climate changes.”



Research Focus Areas

- **Disturbance**
- **Invasives**
- **Restoration**
- **Sustainability**
- **Climate Change**

Cross Cutting Areas

- **Basic ecology, biology, genetics**
- **Tech transfer**
- **Human relationships**
- **Emerging issues**



Assets of the GSD Program

- 15 Scientists in 6 locations: Albuquerque, Boise, Bozeman, Provo, Rapid City, Reno
- Covers diverse and widespread ecoregions
- Desert Experimental Range and Great Basin Experimental Range
- LTER Cooperation: Sevilleta, Jornada
- Greenhouses and laboratory facilities
- Bozeman biocontrol lab

Desert Experimental Range



The Desert Experimental Range is in Pine Valley approximately 70 km west of Milford, Utah. In 1976 it was designated a Biosphere Reserve (BR) by UNESCO and currently participates as one of a handful of BRs representative of cold-desert biomes worldwide

Great Basin Experimental Range

The Great Basin Experimental Range has been a focal point for research on the ecology and management of watersheds and rangelands as well as on silvicultural problems since it was established as the Utah Experiment Station in 1912.



Valles Caldera National Preserve



The Valles Caldera Trust was created by the Valles Caldera Preservation Act of 2000 to preserve and protect the historic Baca Ranch of New Mexico's Jemez Mountains. The VCNP has a Research Program led by Bob Parmentar.

Sevilleta NWR, LTER & Field Station

The Sevilleta NWR, NM lies at the junction of several biomes of the American SW: Chihuahuan Desert, Great Plains Short-grass Prairie, & Colorado Plateau Shrub-Steppe. Along the Rio Grande are gallery forests ("bosque") of cottonwood, Russian olive, and salt cedar & in the mountains are juniper savannas & piñon-juniper woodlands



National Grasslands



The Secretary of Agriculture designated 3,800,000 acres of Land Utilization Projects as National Grasslands. These were originally lands needing rehabilitation following farming hardships & drought (the 30's "dust bowl").

Buffalo Gap NG

Cimarron NG

Ft. Pierre NG

Grand River NG

Kiowa & Rita Blanca NGS

Little Missouri NG

Oglala NG

Pawnee NG

Sheyenne NG

Thunder Basin NG

Curlew NG

Potential Strategic Partners

- National Forest System
- Bureau of Land Management
- Universities
- Long-term Ecological Research Sites
- Natural Resources Conservation Service
- U.S. Fish and Wildlife Service
- State Agencies
- NGOs (e.g. The Nature Conservancy)

Research Problems

- **Understand the separate and interacting effects of natural and anthropogenic disturbances and management actions on grasslands, shrublands, deserts and associated riparian ecosystems**
- **Develop tools and techniques to evaluate and manage the increasingly rapid spread of invasive plant species**
- **Develop effective concepts, tools, and approaches to restore disturbed upland and riparian ecosystems , evaluate the ecological benefits and costs of ecosystem restoration, and monitor restored ecosystems to ensure sustainability, diversity, and resilience**

Research Problems

- **Develop knowledge and tools for managing and sustaining proper function of natural and restored ecosystems to provide ecosystem services and wildlife habitat**
- **Acquire an improved understanding of climate change and climate variability as drivers of past and present grassland, shrubland, and desert flora and faunal compositions, distributions, and ecosystem processes in order to devise meaningful management scenarios in response to potential future climatic changes**