



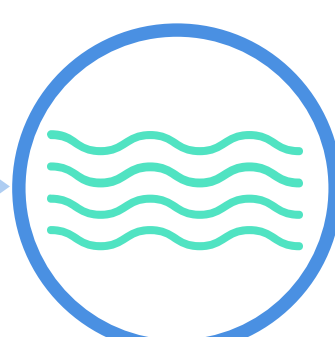
# Building Water Resilience: Rangeland Management

Changes in the timing and availability of water resources across the Northwest are affecting rangelands. Anticipating and adapting to change can help reduce negative impacts of climate change.

Below are several resources that provide information on water challenges and how to address them. You will also find links to USDA programs that provide technical and financial assistance to adopt management changes and conservation practices.



**Case Studies of Rangeland Resilience in the Northwest.** Find out how ranchers across the region are changing how they manage their operations to meet the challenges of more frequent drought (Jack Southworth, OR) and flooding (Jay Gordon, WA). You will also find general information about resilience-building tactics being implemented in the Northwest.



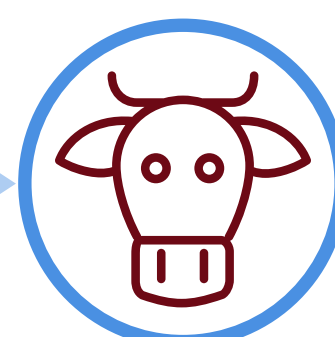
**Incised Stream Restoration in the Western U.S.** This page discusses water resource challenges associated with land management and provides information about stream restoration options that can improve ground- and surface-water resources on rangelands.



**Going with the Flow: Beaver-focused Stream Restoration on Western Rangelands.** This story map walks readers through five case studies of beaver-focused restoration efforts aimed at restoring river and rangeland ecosystems to improve long-term water resilience for cattle and wildlife.



**Smart Water Use on Your Farm or Ranch from Western Sustainable Agriculture Research & Education SARE.** This guide discusses pasture rotation, cool- and warm-season water-conserving plant selections, cover crop grazing strategies, rotational grazing, and a case study example from ranchers implementing these tactics in Picabo, Idaho.



**Vulnerability of Cattle Production to Climate Change on U.S. Rangelands.** This report addresses the future of rangeland health, especially in the context of expected changes in water resource availability.



**Climate Change Adaptation Strategies for Rangeland Managers: A Literature Review.** This review summarizes current research and actions on managing rangeland systems in a changing climate, with a focus on grazing and water resources.



**Managing Grazing to Improve Climate Resilience.** This two-page resource discusses rotational stocking and provides tactics that can improve pasture management under increasingly uncertain climate conditions.



**Climate Change Adaptation Library for The Western United States.** Consider searching for rangeland-related climate change adaptation tactics using this searchable library.



**Climate Adaptation Resources for Northwest Rangelands.** Here you will find a list of regionally focused tools and organizations that provide information useful to rangeland managers interested in climate change adaptation.



**Drought and Rangelands: Effects and Management Responses.** The impacts of drought on rangeland vegetation, soils, livestock, and wildlife are discussed, along with pre- and post-drought management recommendations.

## USDA Programs

- ✓ **Agricultural Conservation Easement Program, Natural Resources Conservation Service (NRCS).** The NRCS works with landowners to improve water and other natural resources through land easements.
- ✓ **Conservation Innovation Grants, Natural Resources Conservation Service (NRCS).** Conservation Innovation Grants support private landowners in developing new conservation approaches and practices for water and other natural resources on their land.
- ✓ **Conservation Reserve Program, Farm Service Agency (FSA).** Enrolled landowners receive rental payments in exchange for taking environmentally sensitive land out of agricultural production to improve environmental health, including water and other natural resources.
- ✓ **Conservation Stewardship Program, Natural Resources Conservation Service (NRCS).** This program provides assistance for landowners to improve practices on working lands. NRCS works hand in hand to help plan and carry out improvements, based on needs. These can include a wide variety of place-appropriate water conservation practices.
- ✓ **Environmental Quality Incentives Program, Natural Resources Conservation Service (NRCS).** This program provides technical and financial assistance to agriculture producers interested in investing in voluntary conservation management practices.