Great Basin LTAR, Boise, ID and Burns, OR

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The Great Basin (GB) member of the Long-Term Agro-ecosystem Research (LTAR) network is operated by the USDA-ARS Northwest Watershed Research Center (NWRC) in Boise, Idaho, and the Range and Meadow Forage Management Research Unit located at the Eastern Oregon Agricultural Experiment Center (EOARC) in Burns, OR. The GB-LTAR represents the Great Basin Floristic Province, focusing on Intermountain sagebrush steppe plant communities in the Great Basin and Columbia Plateau. The human population in this region is expanding at the highest rate in the nation and major sociological and ecological changes are occurring from urbanization, changing technology and land use, climate change, limited water resources, altered fire regimes and invasive species.

The NWRC and EOARC have been conducting ecological and hydrologic research at multiple locations within the Great Basin and Columbia plateau for over 50 years, contributing to the ARS National Programs in Pasture, Forage and Rangeland systems (NP215), Water Availability and Watershed Management (NP211) and Crop Protection and Quarantine (NP304). They maintain long-term meteorological, soil, water, vegetation and grazing monitoring programs at the Reynolds Creek Experimental Watershed (RCEW) in southwestern Idaho and the Northern Great Basin Experimental Range (NGBER) in eastern Oregon, and have developed successful partnerships with federal and state agencies, and universities for technology transfer.

The Boise and Burns ARS units have provided leadership for major regional, national and global research and technology-transfer programs including the Sagebrush-Steppe Treatment Evaluation Project (Sage-STEP), Rangeland Conservation Effects Assessment Project (CEAP), Ecologically Based Invasive Plant Management (EBIPM) program, Great Basin Research and Management Partnership (GBRMP), GEWEX Americas Prediction Project (GAPP), Critical Zone Observatory (CZO) network and USDA Climate Hub network. NWRC and EOARC work with a variety of collaborators including federal and state agencies, over 25 universities around the world, private landowner/producers, and non-governmental organizations.

Classification System	NWRC and EOARC Category
Farm Resource Regions	Basin and Range
Hydrologic Unit Codes (HUC-2)	Region 17 (Pacific Northwest)
National Ecological Observatory Network Domain	D15 Great Basin

Principal research projects related to the LTAR network are:

1. Hydrologic modeling focused on ecosystems dominated by snow.
2. Soil erosion models and risk assessment of wildfire and invasive weed disturbance.
3. Invasive weed ecology and management and ecologically based restoration.
4. Livestock production and grazing management.
5. Terrestrial carbon balance impacted by geology, vegetation and climate.