

Eastern Oregon Agricultural Research Center (EOARC)

The Eastern Oregon Agricultural Research Center (EOARC) is a cooperative venture between the USDA-Agricultural Research Service and Oregon State University. The unit's mission is to "provide the scientific basis for sound land and livestock management". In addition to a broad portfolio of research on the ecology and management of Great Basin rangelands and agricultural enterprises, the EOARC also maintains a strong commitment to outreach and customer service. Our mission statement specific to this function is as follows: "Knowledge is transferred to the public and to managers of both public and private land".

The beginnings of EOARC date back to 1911 when the Harney Branch Station was established. After about 20 years of research it became clear that this area was not well suited to row crops and the focus shifted to forage and livestock production. During the late 1930's the U.S. Department of Interior established the 6,475 hectare Squaw Butte Range Livestock Station west of Burns, OR. In 1944 the Harney and Squaw Butte stations were merged, and 260 hectares of flood meadow was purchased by Oregon State University. In 1974, the name of the station was changed to the Eastern Oregon Agricultural Research Center.

Site Description The EOARC consists of 260 hectares of state land (Section 5) located 8 km south of Burns, Oregon on highway 205 and 6,475 hectares of federally owned land designated the Northern Great Basin Experimental Range (NGBER), and located about 56 km west of Burns. Section 5 is where our meadowland research and management is conducted. The NGBER is our rangeland property and where much of our rangeland research and management is conducted. The climate for the area is characterized by its short growing season of an averaged 65 days between killing frosts. Average temperatures range from -4°C in January to 19°C in July.



Annual precipitation averages 28 cm/yr with 48% coming in late fall and winter. The soils of the area range from sandy loams to heavy clays with a mosaic of areas with high salinity and alkalinity. The major plant communities are sagebrush steppe (Basin big sagebrush, Wyoming big sagebrush, Mountain big sagebrush, low and black sagebrush), and western juniper woodlands. These communities are characterized by woody species in the canopy and grasses such as bluebunch wheatgrass, basin wildrye, Idaho fescue, Sandberg's bluegrass and needlegrasses dominating the understory. Invasive annual grasses, such as cheatgrass and medusahead, are invading many sagebrush steppe communities.

Research Focus The research builds on a rich history that in some cases reaches back into the 1940's. The unit provides information that is used by ranchers and other private landowners, state and federal land managers, policymakers, and the interested public. Today, our research spans a gradient from very applied to basic in nature and has progressed to include an

understanding of how management influences ecological sustainability. The first broad objective is to improve our basic understanding of rangeland, riparian, and meadow ecosystems in the northern Great Basin. Within this objective is an emphasis on juniper encroachment, prescribed fire, native seed production, productivity, and CO₂ sequestration. The second broad objective is to provide applied information that can be



used to develop restoration strategies and forage/livestock management systems for the northern Great Basin. Within this objective is research on grazing behavior and methods to improve grazing distribution on Great Basin rangeland, methods of improving yield and quality of flood meadows, and growth of riparian vegetation under grazing regimes. The third objective is to produce management tools and information/technology transfer to aid in the restoration and management of public and private rangeland ecosystems dominated and/or threatened by weed invasion.