



Sagebrush Steppe Monitoring

Lake Roosevelt National Recreation Area



Why is sagebrush steppe important?

Sagebrush steppe is one of the most threatened ecosystems in the Intermountain West. Substantial portions of this region have been converted to agriculture and heavily grazed rangeland. Much of the remaining sagebrush steppe has been degraded through altered fire regimes and invasion of introduced plants. Historic and current land use practices, both within and adjacent to Upper Columbia Basin Network (UCBN) park steppe communities, continue to fragment and alter steppe ecosystems, and predicted climate change scenarios for the region will likely exacerbate these changes.

Why do we monitor sagebrush steppe?

- To determine the status and long-term trends of sagebrush steppe communities. This includes determining the composition and abundance of native and invasive plant species.
- To determine the status and trend in the amount of bare soil (a fundamental indicator of soil stability).

How do we use the monitoring data?

- To provide critical information on the park ecological condition
- To identify areas susceptible to invasion by exotic annual grasses
- To support resource managers in their efforts to protect and restore this landscape
- To provide feedback to park managers on the success of restoration activities

What have we found?

Data collection in 2014 occurred over the course of one week in early June. Monitoring is done by recording estimated cover of native plants, invasive plants and exposed bare ground in randomly located plots at Lake Roosevelt National Recreation Area (LARO). Big sagebrush and bitterbrush are the dominant shrub species at LARO with rabbitbrush throughout the sampling area. The 2014 sampling showed slight increases in the proportion of plots containing native perennial grasses when compared to the results of the 2011 survey. As is common across sagebrush steppe in the Upper Columbia Basin, cheatgrass dominates the understory at LARO. However, the proportion of plots where cheatgrass cover exceeded 25% was lower in 2014 than was observed in 2011. The higher cover of cheatgrass in 2011 was likely due to favorable spring weather conditions that year. The proportion of plots containing invasive noxious forb species in some of the sampling units at LARO has increased significantly since 2011, a worrisome trend and a challenge for park management.



Sagebrush steppe vegetation and native shrubs near Coulee Dam at LARO.



Technician collecting sagebrush steppe monitoring data in LARO.



Cheatgrass (*Bromus tectorum*)

USDA-NRCS PLANTS Database Photo