



Sagebrush Steppe Monitoring

Hagerman Fossil Beds National Monument

Importance: A threatened ecosystem

Sagebrush steppe is one of the most threatened ecosystems in the Intermountain West. Substantial portions of the 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 park steppe communities, continue to fragment and alter steppe ecosystems, and predicted climate change scenarios for the region will likely exacerbate these changes.

2012 Status

In 2012 the UCBN estimated the amount (measured by percent cover) of bare soil and principal native and non-native plant species in steppe communities of Hagerman Fossil Beds National Monument (HAFO). This information provided important baseline indications of ecological health for this area. This is the second year of monitoring in this monument following completion of the final protocol in 2009. Cheatgrass and other invasive forbs appear to be at higher levels in 2012 relative to 2009, a likely result of the Long Butte Fire in 2010 which burned about 75% of HAFO lands. Native shrub, forb and perennial grass cover showed a significant decrease compared to monitoring data from 2009. In the wake of the recent fire, cheatgrass and other invasive weeds pose a clear and present threat to the integrity of remnant bunchgrass steppe communities in HAFO. This information and the patterns described for other native species are being used to identify areas in need of special protection or restoration.

Management Applications

- Provide critical information on park ecological condition
- Provide feedback on the success of park management and restoration activities
- Inform integrated assessments of climate change impacts on park resources
- Support park resource planning and land health reporting efforts

Objectives

- Determine the status and trends in the composition and abundance of principal native and non-native invasive indicator plant species, and in the amount of exposed bare soil, in sagebrush steppe communities of the Upper Columbia Basin Network.



The Long Butte Fire burned most of Hagerman Fossil Beds National Monument (HAFO) in 2010 and the results are apparent today. Photo shows contact point between unburned native sagebrush steppe vegetation and a burned area composed mostly of cheatgrass.



Cheatgrass forms dense carpets inhibiting native plant growth in the aftermath of the 2010 Long Butte Fire in HAFO. Cheatgrass is highly competitive for spring precipitation and tends to push out native plants. The green forbs intermixed with the cheatgrass in the photo are non-native invasive plants called common salsify (*Tragopogon dubius*).