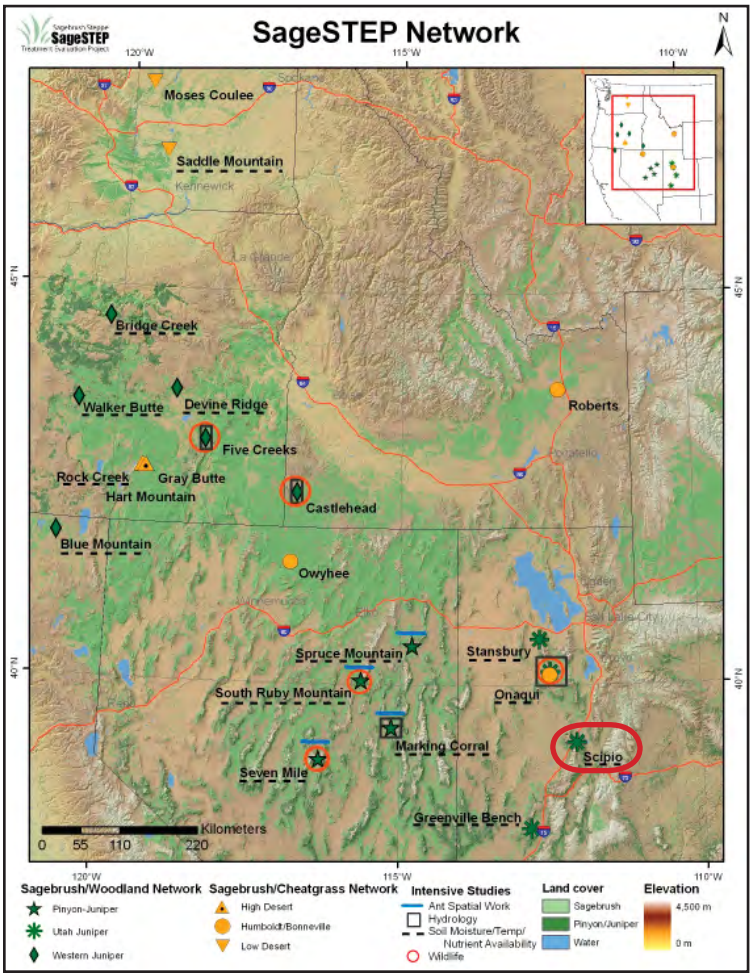
SageSTEP

Sagebrush Steppe Treatment Evaluation Project

SageSTEP is an interdisciplinary, long-term research program evaluating ways to improve the health of sagebrush rangelands across the Great Basin. The purpose of SageSTEP is to conduct research and provide improved information about restoring sagebrush rangelands degraded by conifer encroachment or exotic grassland invasion. This information will help resource managers make restoration management decisions with reduced risk and uncertainty. The project is a collaborative effort among researchers and land managers in a variety of disciplines from five universities, six federal agencies and one non-profit organization in six states in the Great Basin.

Treatment options—including prescribed fire, mechanical thinning of shrubs and trees, and herbicide applications—are being evaluated to learn how to create healthy and diverse plant communities that will be more resilient to fire and resistant to weed invasion. All treatments were implemented in the same year at each site in the fall of 2006, 2007, or 2008. Baseline data were collected at all sites prior to treatment, and post-treatment data have been collected each subsequent year through 2009. Less frequent, longer-term monitoring will help researchers more fully understand treatment impacts.



Multidisciplinary Data Collection

Vegetation and Fuels: 10-, 100-, and 1000-hour fuel samples, along with other vegetation and fuel measurements are collected in both the understory and overstory. Vegetation measurements will allow scientists to learn more about the plant community responds to prescribed fire and other management treatments.

Soils: Soils are sampled for chemical analyses and soil profile descriptions to tell scientists more about the effects of treatments on the availability of essential plant nutrients and to help explain vegetation response.

Hydrology: Rainfall simulations are conducted on small (0.5m^2) and large (35m^2) plots, and measurements are taken to help scientists better understand relationships between changes in vegetation and ground cover and runoff and erosion.

Wildlife: Wildlife data collection focuses on the effects of treatments on migratory songbirds.

Insects: Butterflies are surveyed for biodiversity, and ants are studied for their importance in seed dispersal and predation in sagebrush-steppe systems.

Additional Data: Yearly standard photographs are taken, and multiple soil moisture sensors, and a climate station are present at each site.

Economics: Environmental valuation study will identify and measure changes in environmental benefits (such as recreation and ranching) resulting from ecosystem changes caused by treatments.

Sociopolitical: Studies focus on understanding the social acceptability of management practices as well as factors that influence managers' willingness to use them.

Scipio Site Quick Facts

Location: Millard County, ~ 5 miles from Scipio, UT

Land Management Agency: Bureau of Land Management Fillmore Field Office

Plots: Four 6-acre core plots (Control, Burn, Mechanical, Bull Hog™)

Elevation: 5500-5900 ft.

Topography: 2-28% slopes, primarily W aspect

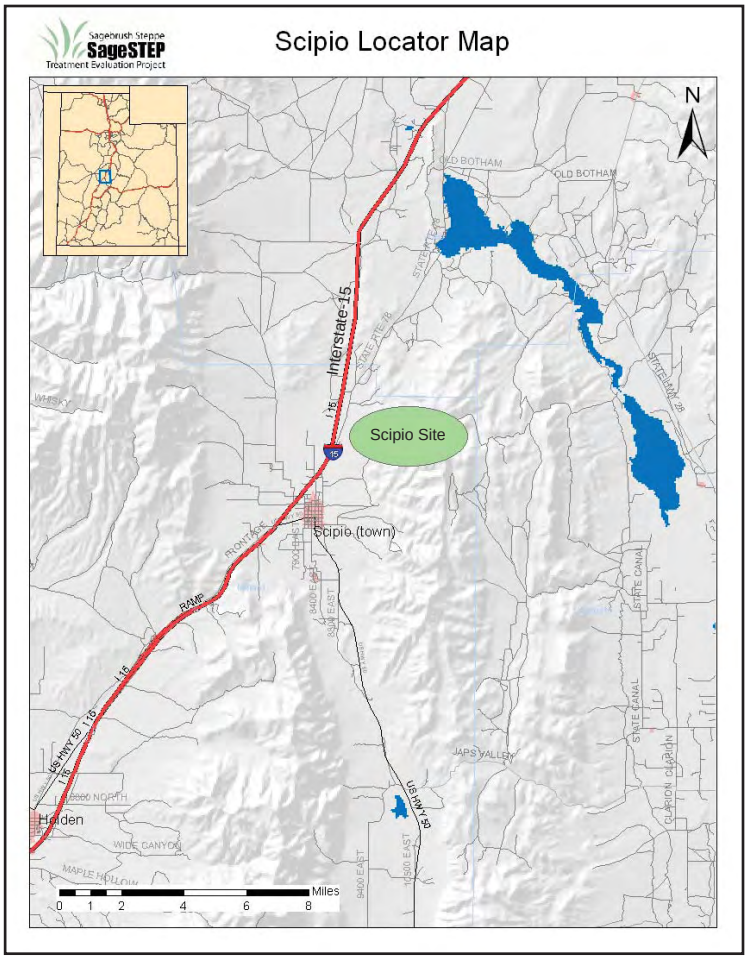
Common Vegetation: Utah Juniper, Wyoming big sagebrush, bluebunch wheatgrass, Sandberg bluegrass, cheatgrass

Soils: gravelly fine sandy loam

Fire Regime: Historically ranging from 20 to >100 years. Woodland invasion suggests that the majority of these communities have not burned since the late 1800's. As woodlands gain dominance, the fire regime shifts to infrequent, high-intensity fires.

Representative Land Base: Several million acres in western UT, northeastern NV, and southern ID

Grazing: This site is within a non-use grazing allotment.



Land Management Treatments

This site is part of the study of woodland encroachment into sagebrush communities. The primary objective is to find out how much native sagebrush and bunchgrasses need to be present at the time of treatment in order for managers to improve land health without having to conduct expensive re-seeding. Treatments were implemented at this site in fall 2007.

- Prescribed burn was patchy and terra-torches were used to blacken core plots.
- Mechanical treatment: all trees >0.5m tall were cut and left on site.
- Bull Hog™: all trees were mulched and left on site
- Control: untreated

Questions about this site?
Contact outreach coordinator Lael Gilbert at lael.gilbert@usu.edu or site manager Maggie Gray at maggie.gray@usu.edu.

www.sagestep.org

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