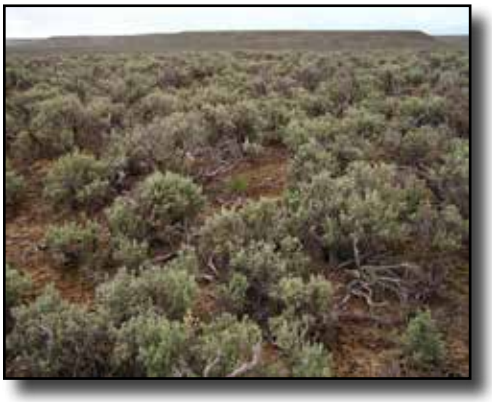
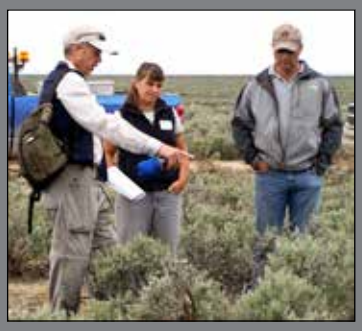
SageSTEP: From Short-term Research to Long-term Monitoring



The Sagebrush Steppe Treatment Evaluation Project (SageSTEP) is designed to provide information to land managers to help them deal with significant changes that have occurred on sagebrush rangelands over the past 150 years: **cheatgrass invasion**, pinyon and juniper **woodland encroachment**, and the resulting **changes in fire regimes**. For ten years we have been evaluating fuels treatments (prescribed fire, mechanical and herbicides) and looking for thresholds at which these systems can recover after disturbance without expensive restoration measures such as seeding.

What We've Accomplished: 2005–2015

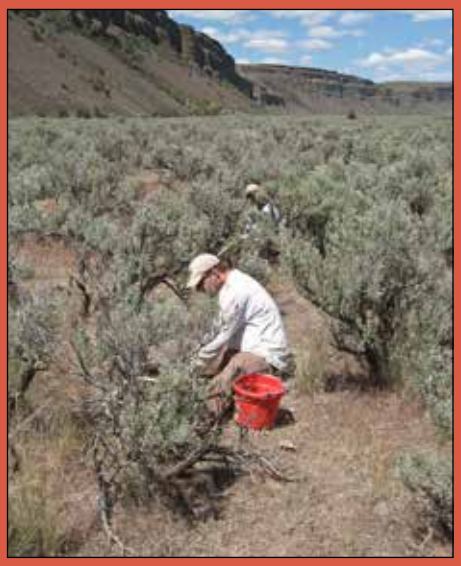
- 1–3 years of pre-treatment data collected at each study site
- Fuels treatments implemented at 19 study sites
- 6 years of post-treatment data collected at each study site
- Short-term treatment response analysis (vegetation, fuels, water runoff and erosion, soils, wildlife, etc.). Information available through:
  - Published articles
  - Presentations at professional meetings and workshops
  - Electronic newsletter since 2006
  - Website: www.sagestep.org



- Land manager workshops held since 2007
- Field guides, DVD, handbook, and other resources produced and distributed throughout the Great Basin and beyond
- Economic analyses of fuels treatments, including wildfire suppression costs averted, valuation of ecological goods and services, and ranch-level impacts
- Social science research, including stakeholders' and managers' perspectives on restoration treatments
- Numerous collaborative projects that have expanded the scope of SageSTEP research

Sagebrush Steppe
SageSTEP
Treatment Evaluation Project

The Short-term Story is Not Enough



Long-term monitoring of the SageSTEP study plots is essential to understanding the full implications of fuels treatments. Short-term results indicate that many important ecosystem components will not stabilize until more time has elapsed. Therefore we are adjusting our scientific approach:

- Starting in 2016, we will begin measuring sites at the 10-year post-treatment mark.
- Our long-term plan is to continue measuring for up to 25 years post-treatment.
- This length of time will be sufficient to begin to understand climate change influences in the flora and fauna.

Features of a Long-term Monitoring Network

- 19 study sites that provide baseline data relevant to the efficacy of management treatments and to future responses associated with climate change
- Wide array of variables measured across key gradients of woodland encroachment and cheatgrass invasion
- Variables interpreted within the context of key remotely-sensed information
- Variables monitored every three years at each site
- Online database for data entry, quality control, downloading, and reports
- Annual reports by the end of December of each measurement year
- Results will be linked to other global change efforts (NEON, etc.)
- Information can be used by land managers to understand fuel treatment responses in the context of short-term climatic variability.

The NEON Connection

The SageSTEP Onaqui study site west of Salt Lake City, Utah, is part of the National Science Foundation's National Ecological Observatory Network (NEON). This network is being created to collect data across the United States on the impacts of climate change, land use change and invasive species on natural resources and biodiversity.

neon

www.neoninc.org

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