

Cascade-Siskiyou National Monument

Bureau of Land Management, Medford, Oregon

Ecology Program



CSNM Grassland Restoration Program

A Cooperative Study with the Sampson Creek Preserve and The Understory Initiative



Hiking to one of our Grassland Restoration Plots

Introduction

This project is a cooperative effort between the *Cascade-Siskiyou National Monument (CSNM)*, the *Sampson Creek Preserve*, and *The Understory Initiative*. The primary objective is to restore our grassland communities from a non-native and dysfunctional state to an ecologically functioning native system that protects and preserves the renowned biodiversity of the area.

Why Restore Our Grasslands?

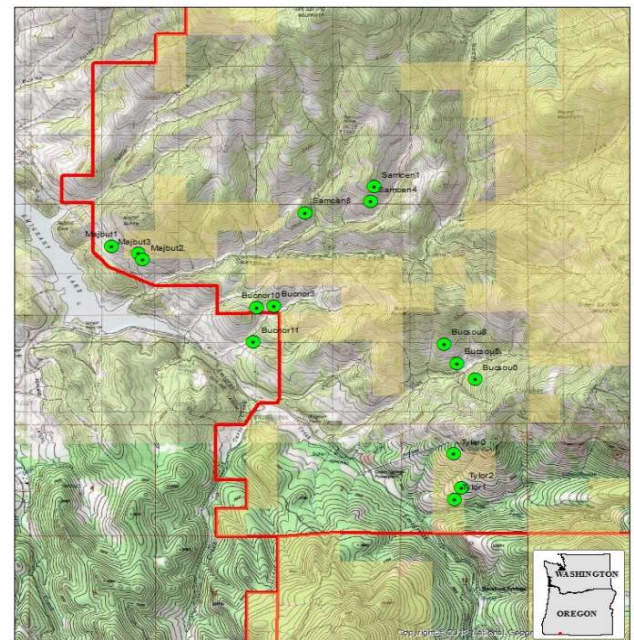
Oregon and California native grasslands are among the most important and most endangered ecosystems in the United States. Birds, pollinators and other insects, and small mammals that rely on grasslands are among the fastest declining species in North America. In the CSNM grasslands have been severely degraded over the past 100 years due to the invasion of non-native annual grasses replacing the native perennial grasses that are so valuable to the native wildlife of the area. This tragic transition is a result of a long history of destructive livestock overgrazing and habitat loss due to excessive land uses by agriculture, industry, housing expansion, and a host of other human caused disturbances. For these reasons, and because the native perennial grasses are more preferred by livestock, most existing grasslands are now comprized of the less palatable non-native annual plants that have flourished in response to these long term and intense disturbances.



Grassland Oak Community

Why are Native Grasslands Important?

Native perennial grasslands have evolved as intricate and complex ecosystems that provide vital food and shelter for numerous native plants and animals. Many of which are federally listed species, including approximately 50% of Oregon and California's listed terrestrial invertebrates, 55% of the listed terrestrial vertebrates, and 75% of the listed vascular plants.



Cascade-Siskiyou NM / Sampson Creek Preserve Grassland Plots



Locations of Grassland Restoration Plots in CSNM

Native grasslands are important for several reasons: They increase and maintain biodiversity; provide habitat for wildlife; contribute to water quality and quantity, provide flooding and erosion prevention through root filtration and increased water holding capacity; they store high amounts of carbon for sequestration; and they have high aesthetic and recreation values.

The remaining native perennial grasslands are clearly of high conservation importance and must be preserved. Their restoration will help tremendously with protecting and revitalizing this invaluable plant community.

CSNM Grassland Restoration Program

We will do this by establishing long-term grassland management plots where we will test different restoration techniques and monitor them for treatment efficacy. This information will inform resource managers of effective tools for converting highly degraded non-native grasslands back to resilient ecologically functioning systems. Treatments will be applied, monitored, and changed as we learn effective techniques and avoid the use of herbicides.



Native Grass in CSNM

Grassland Restoration Program Goals

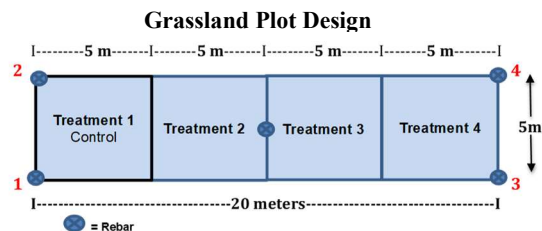
1. Restore our native grasslands from their current non-native species content to an ecologically balanced and functioning native grassland/forb/ shrub complex.
2. Enhance biodiversity, and ecological processes in our grassland communities.
3. Establish plots for testing and monitoring different treatments to determine the most effective strategies.
4. Re-introduce native perennial bunchgrasses and a host of other important native forbs and shrubs.
5. Enhance ecological processes by including strategies for providing habitat for native pollinators and wildlife.
6. Establish a rigorous long-term monitoring program to follow the development of the areas after treatments and to use this to follow their effectiveness.
7. Form a corps of volunteers that are committed to working with The Understory Initiative and the Cascade-Siskiyou National Monument to assist with restoration and monitoring activities.



Checkerspot in Grassland

Grassland Treatments

In 2020, eighteen grassland areas were selected within the monument boundary and permanent plots located in each area. Each plot is a rectangular macroplot of **20 meters X 5 meters**. The corners are permanently marked by rebar and geo-referenced. The macroplot is divided into 4 sub-plots, each **5m X 5m**. Each sub-plot is assigned a treatment that is proposed to enhance the establishment of native grasses and pollinator plants, see below for treatments and sub-plot assignments. These treated area will act as a seed source for helping further establishment and spread into adjacent areas.



CSNM Grassland Plot Treatments

Plots are located in the western edge of the CSNM and on lands owned by the Sampson Creek Preserve. Areas with extensive exotic species invasion were selected and plots randomly selected within these areas. The following treatments have been selected for each subplot:



Permanent Plot Establishment and Data Collection

Treatment 1: This is a control plot with no treatment and used to compare with the treated plots.

Treatment 2: This treatment will involve the use of weed shading by using an opaque black tarp to cover the area to kill the weeds. Then seeded with native species.

Treatment 3: This sub-plot is mowed close to the ground twice during the growing season with hand-held string trimmers. Then seeded with native species.

Treatment 4: This sub-plot will be burned with a flame weeder early in the growing season (Jan-Feb) to target weed seedlings. Then seeded with native species.

All plots will be monitored for treatment effectiveness every year for five years.

Grassland Restoration Citizen Scientists

Local citizen scientists, volunteers, and school groups will be recruited to help with treatments and plot monitoring. This will provide an opportunity to share the importance of native grasslands with the public. This has become a popular and important program for the success of this intensive monitoring effort.

All photos by; CSchelz

The Cascade-Siskiyou National Monument is designated to protect the areas biodiversity and biological connectivity.



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