

THE RESTORATION OF DEGRADED TALL FORB RANGELANDS OF THE INTERMOUNTAIN WEST

Investigators:

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Objectives:

(1) Identify treatments that can “short circuit” or “jump start” the restoration process of Tall Forb rangelands so that management options can be implemented and carried to fruition on the order of a few years. (2) Delineate critical microenvironmental properties that may be manipulated by stakeholders to encourage tall forb establishment. (3) Develop methodologies for reintroduction, proper species mix, and the maintenance of the tall forbs once reestablished.

Methodology

This study emphasizes the use of multiple study sites that possess both intact and degraded tall forb communities. The intact communities are being used as a baseline for indicators of system functionality. The effects of restoration efforts on degraded sites is being monitored and then compared to the intact communities. Soil properties are being most intensely monitored as soil condition appears to be the major influence dictating tall forb reestablishment. Tall forb communities with these associated sites occur on Cedar Mountain, as well as on the Manti-La Sal and Cache National Forests. Treatments implemented, which coincide with seeding, include excelsior and straw mulches, fertilizer and mycorrhizal applications, a soil conditioning adjuvant, and all their respective interactions.

Results:

Products:

- (1) PhD dissertation at USU (Seth Ohms—2007).
- (2) Proposal presentation at the International meeting for the SRM - 2004
- (3) Publication of dissertation findings in relevant scientific journals.

Additional Research Questions:

ESTABLISHING TALL FORB SEEDINGS – A HOLISTIC APPROACH.

This smaller study is being conducted in conjunction with the study entitled “The restoration of degraded tall forb rangelands of the Intermountain West.” While presenting our research proposal and design at a tall forb symposium at the Society for Range Management’s 2004 national meeting in Salt Lake City, managers and scientists questioned whether costs to prepare the seedbed and cover the seed could be minimized by utilizing livestock hoof action, rather than mechanical tilling and seeding. At that time, no efforts directly related to tall forb reestablishment were known. Researchers involved with the Cedar Mountain Initiative quickly recognized the opportunity to research this topic at the Miners Peak study site (a degraded tall forb rangeland). Because the land is privately owned and the livestock intensively managed, a study could be implemented in a timely manner. Presently, the effects of trampling by sheep on tall forb seeding success are being studied. The study includes plots that are seeded and trampled (unfenced), seeded and trampled (fenced), and seeded and non-trampled (fenced). The study design not only allows for identification of the effectiveness of the hoof action, but the ability of the tall forbs to reestablish under present livestock use. If sheep hoof action proves to be effective, it is hoped that an additional study can be implemented utilizing cattle.

Other Funding Partners:

Utah State University, Rocky Mountain Research Station (USDA-Forest Service, Logan), and the collaborating National Forests.