



# Developing Protocols for Establishing a Restoration Nursery

Project # 08-326

## Background:

The south Puget Sound (SPS) prairies and associated oak woodlands are one of the most endangered ecosystems in the United States. Over 92% of the original prairie habitat has been converted to agriculture, urban development or conifer forest, and only 1% is now considered to be in its historic condition. Fort Lewis prairies are home to many rare or endemic flora and fauna, four of which are Federal Candidates for listing under the Endangered Species Act and five more are Federal Species of Concern. Military training and invasive plants continue to negatively impact prairie quality and biodiversity. Approximately two thirds of the remaining SPS prairie habitat now occurs on Fort Lewis, thereby placing a disproportionate burden on the Army to recover both federal candidates and federal species of concern. The ultimate goal of this project is to improve prairie quality at the landscape level by retaining floral diversity on Fort Lewis' prairies and implementing prairie management and restoration efforts with a primary emphasis on recovering federal candidates and other rare species throughout the SPS.



Established permanent seedbeds at Shotwell's Landing Restoration Nursery

## Objective:

The goal of this Legacy-funded demonstration project is to establish the physical infrastructure needed to provide large quantities of prairie seed. In addition protocols must be developed for target floral species that focus on agronomic factors needed for growth and production requirements. This project also serves as a model that can be replicated at other Department of Defense (DoD) installations.

## Summary of Approach:

This project focused on the establishment of development protocols and permanent seedbeds of forbs and grasses. Propagation information was researched from national databases and through contact with Natural Resource Conservation Service Plant Materials Centers. For species where information was unavailable protocols on germination, field establishment, harvesting and processing were collected. The agronomic factors needed for successful production was also evaluated such as water and fertilization needs. Species protocol information will be presented via a national database.

## Benefit:

The open prairie landscape on Fort Lewis is used extensively for most military training, including artillery practice, large arms fire, Stryker vehicle training, firebase construction, parachute drop zones and foot training. Habitat restoration and enhancement efforts allow military trainers greater flexibility in using existing DoD lands and support Fort Lewis' commitment to recover federal candidate species. Successful prairie restoration will allow for the reintroduction or translocation of candidate species that will benefit regional recovery efforts and could significantly reduce the potential for listing any of the candidate species.

## Accomplishments:

40 seed production beds were established; wild seed collection protocols including information on seed viability and information on factors of growth was researched. Germination requirements were established for 15 species. Irrigation needs, winterization requirements, weed suppression techniques, seed collection methods and processing tools were evaluated for 35 species. Production strategies increased to the field production stage. Initial information on field construction strategies including: seeding and weeding techniques on acre scale production were evaluated.

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