

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

RANGE PLANTING

(Ac.)

CODE 550

DEFINITION

Establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees.

PURPOSE

Restore a plant community similar to the Ecological Site Description reference state for the site or the desired plant community.

Provide or improve forages for livestock.

Provide or improve forage, browse or cover for wildlife.

Reduce erosion by wind and/or water.

Improve water quality and quantity.

Increase carbon sequestration

CONDITIONS WHERE PRACTICE APPLIES

On rangeland, native or naturalized pasture, grazed forest or other suitable location where the principle goals and method of vegetation management is herbivore based. This practice shall be applied where desirable vegetation is below the acceptable level for natural reseeding to occur, or where the potential for enhancement of the vegetation by grazing management is unsatisfactory

CRITERIA

General Criteria Applicable to All Purposes

Specified seeding/plant material rates, methods of planting, date of planting and/or species selection shall be consistent with documented guidance cited by Plant Materials Program, research institutions or agency demonstration trials for achieving satisfactory establishment.

Species, cultivars or varieties selected for richness and or diversity, must be compatible

with ecological site description(s), local laws and regulations, management objectives and adapted to climate conditions, soils, landform, or position, (e.g., aspect), and recommended seed transfer zones. **Refer to the following technical notes in the NRCS WA Field Office Technical Guide (eFOTG):**

- Plant Materials 1: Conservation Seeding & Planting Guide for Washington State
- Plant Materials 2: Grass, Grass-like, forb, Legume and Woody Species for the intermountain West Plant Identification
- Range 101: Eastern Washington Pasture & Range seeding Planning – Installation – Evaluation

Species, cultivars or varieties selected shall provide adequate cover to control erosion by wind and/or water within an acceptable period of time.

Pre-planting treatments to control invasive plants in highly degraded areas is required for enduring management and restoration.

Seedbed preparation and planting methods will be suitable to meet any special needs for obtaining an acceptable establishment of planted materials.

Recommended planting depths, hydrologic conditions, dates, seeding rates, soil amendments needed for establishment, minimum seed quality standards and management during the establishment period such as weed control and deferment from grazing shall be followed to enhance establishment success.

Seeding rates will be calculated on a pure live seed (PLS) basis .

Additional Criteria to Restore a Plant Community Similar to Its Ecological Site Description Reference State or the Desired Plant Community.

Selection of species or combination of species shall be designed to meet or move the site to the Ecological Site Description reference state or the desired plant community.

Additional Criteria to Improve Forages for Livestock

Selection of a species or combination of species shall be designed to meet the desired nutritional requirements for the kind and class of livestock.

Selection of species or combination of species shall be designed to meet the desired season of use or grazing period.

Species planted as mixtures will exhibit compatible palatability to avoid selective grazing.

Additional Criteria for Improved Water Quality and Quantity

Select a species or combination of species that will maintain a stable soil surface and increase infiltration.

Species that have high evapotranspiration rates shall not be planted when watershed yields are the primary objective.

A mixture of functional groups inherent to the site's hydrologic zone(s) shall be planted when riparian area stream bank stability, and water temperature criteria are important.

Additional Criteria for Improving Forage, Browse or Cover for Wildlife

Selection of planted species shall meet nectar, dietary and palatability requirements for the intended wildlife species.

Species will be selected and planted in a designed manner that will meet the cover and life history requirements of the wildlife species of concern.

Additional Criteria to Increase Carbon Sequestration

For optimal carbon storage, select species that increase site biomass.

Where carbon sequestration goals are at an appropriate spatial scale, deep rooted perennial species that will increase soil carbon storage will be selected.

Reduce the temporal frequency of carbon releases caused by non-historical repetition of wildfires on degraded sites by selecting less flammable perennial plants appropriate for the site.

CONSIDERATIONS

Planting materials selected should contribute to wildlife and aesthetics when opportunities exist.

Use of certified planting materials should be encouraged, however, distance and source limitations on seed and planting stock should be considered in terms of logistics and costs.

Any special handling requirements for planting materials need to be followed for best results, (e.g., beards or awns on seed, hard seed coats, seed mixture ratios).

Where air quality concerns exist, site preparation techniques should be utilized that will minimize airborne particulate matter generation and transport.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for the establishment planting according to the Criteria, Considerations, and Operations and Maintenance described in this standard. Specific specifications will be prepared for each site or management unit.

The following elements will be addressed in the plan to meet the intended purpose:

- Site Preparation
- Seedbed/Planting Bed Preparation
- Methods of Seeding/Planting
- Time of Seeding/Planting
- Selection of Species
- Type of legume inoculant used (if applicable)
- Seed/Plant Source
- Seed Analysis
- Rates of Seeding/Planting

OPERATION AND MAINTENANCE

Operation. Identify any required items needed to assist in stand establishment such as mowing, burning, flash or target grazing, or herbicides to control weeds and vestige of invasive plants. Address insect and disease control needs where they are likely to create establishment problems. Focusing on the ecological mechanisms and processes that direct succession is central to successful stand establishment.

Maintenance. The cooperators has an understanding of the management required to maintain the resulting plant community. Any necessary replanting due to drought, insects or other uncontrollable event which prevented adequate stand establishment should be addressed. Recommendations may vary from complete re-establishment to overseeding or spot replanting. Thin stands may only need additional grazing deferment during the growing season.

REFERENCES

Association of Official Seed Certifying Agencies
Native Plant Connection (2003) URL:

<http://www.aosca.org/native%20plant%20restoration.htm> (accessed 14 Aug 2008)

Jones, TA. 2005. Genetic principles for the use of native seeds: just the FAQs, please, just the FAQs. *Native Plants Journal* 6:14-18, 20-24.

Mangold, JM, etal. 2007. Revegetating Russian knapweed (*Acrotilon repens*) infestations using morphologically diverse species and seedbed preparation. *Rangeland Ecology and Management* 60:378-385.

Sheley, R.L., J.M. Mangold, and J.J. Anderson. 2006. Potential for successional theory to guide restoration of invasive plant dominated rangeland. *Ecological Monographs*. 76(3):365-379.

USDA-NRCS <http://www.plant-materials.nrcs.usda.gov/technical/publications/seedplant-pubs.html>

USDA-NRCS. Technical documents related to plant species community dynamics. The Ecological Site Information System (ESIS) is the repository for the data associated with the collection of forestland and rangeland plot data and the development of ecological site descriptions. [Online]
<http://esis.sc.egov.usda.gov/>