

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

RANGE PLANTING

(Acre)

CODE 550

DEFINITION

Establishment of adapted perennial vegetation such as grasses, forbs, legumes, shrubs, and trees.

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

- Restore a plant community similar to its historic climax 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 principal goals and method of vegetation management will be with herbivores. 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 for 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 the 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 descriptions (ESDs), local laws and regulations, management objectives, and adapted to climate conditions, soils, landform, or position (e.g., aspect), and recommended seed transfer zones.

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, and fertilizer needs 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 ESD 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 ESD reference state or the desired plant community.

Additional Criteria for Improved Forages for Livestock

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

<p>Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service or download it from the electronic Field Office Technical Guide (eFOTG).</p>

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 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 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.

Other Conservation Practice Standards such as 314, Brush Management; or 595, Pest Management, may be used to promote a satisfactory site preparation to ensure a successful range planting.

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, or 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

For standard plantings, appropriate forms (KS-ECS-4), worksheets, etc., will be used to develop specifications and documentation. Range plantings may require the use of other practices prior to seeding. In that case, a specific site specification will need to be prepared.

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 deferral during the growing season.

REFERENCES

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

<<http://org/native%20plant%20restoration.htm>>, accessed August 14, 2008.

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

Mangold, JM, et al. 2007. Revegetating Russian Knapweed (*Acroptilon 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/see_dplant-pub.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 ESDs. <<http://esis.sc.egov.usda.gov/>>.