



Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

RANGE PLANTING

CODE 550

(ac)

DEFINITION

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

PURPOSE

This practice is used to accomplish one or more of the following purposes—

- 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 Certified Perennial Grass Varieties Recommended for Nebraska, Range Planting Guidance Document and Herbaceous Vegetation Establishment Guidance Document for additional guidance on species selection.

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. Refer to the Certified Perennial Grass Varieties Recommended for Nebraska.

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.

When sensitive areas, such as riparian habitats are present, additional practices may apply such as: Riparian Forest Buffer (391); Riparian Herbaceous Cover (390); Tree/Shrub Establishment (612); Streambank and Shoreline Protection (580).

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 manner to establish micro-habitats among plant communities that will meet the cover requirements of the wildlife species of concern.

Refer to the NE-CPA-35 Rangeland Habitat Evaluation Worksheet to aid in selecting plant species and providing for other habitat requirements.

Additional Criteria to Increase Carbon Sequestration

For optimal soil carbon storage, select species that provide optimum biomass production.

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 practices such as Brush Management (314), Integrated Pest Management (595), Prescribed Grazing (528), Prescribed Burning (338) or Grazing Land Mechanical Treatment (548) may be used to promote a satisfactory site preparation to insure 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, 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, worksheets, etc. may be used to develop specifications and documentation. Where plantings require more detailed information or require the use of other conservation practices prior to planting, a specific site specification will 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. Refer to the Herbaceous Vegetation Establishment Guidance Document for guidance in stand evaluation. Use NE-CPA-8A for stand evaluation documentation.

Maintenance

The cooperator 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, **interseeding** 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, 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/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/>

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