

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD

**RANGE PLANTING**

(Acre)

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 Ecological Site Description reference state 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 are herbivore based. Apply this practice 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 and other range improvement measures is unsatisfactory.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Specific seeding/plant material rates, methods of planting, date of planting and/or species selection need to be consistent with documented guidance (see Florida NRCS Conservation Practice Standard Range Planting Guidance. Refer to information cited by the USDA-NRCS Brooksville Plant Materials Center, University of Florida, other 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, landscape position, (e.g., aspect), and seed transfer zones. Additionally, species, cultivars, or varieties selected need to provide adequate cover to

control erosion by wind and/or water within an acceptable period of time.

Do not plant any species found on the Florida Dep. of Agriculture and Consumer Services or the Florida Dep. of Environmental Protection noxious or prohibited weed lists. Additionally, do not plant any species listed as a Category 1 invasive species by the Florida Exotic Pest Plant Council (see FOTG Section I [f] [4] [http://efotg.sc.egov.usda.gov/references/public/FL\(4\)\(d\)\\_Florida\\_Invasive\\_Species\\_Guidance.pdf](http://efotg.sc.egov.usda.gov/references/public/FL(4)(d)_Florida_Invasive_Species_Guidance.pdf)).

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

Calculate seeding rates on a pure live seed (PLS) or percent germination (see Range Planting Guidance). Cooperators who harvest seed for their own use must have a germination and purity analysis completed. Regardless of who grows or sells the seed, a copy of the current (within nine months) analysis must be provided. The analysis needs to show purity, germination, harvest location, and weed content.

With vegetative material (including green chop), base planting rate on pound of planting material per acre or spacing.

Do not use seed lots that contain noxious or weed seed in excess of that permitted by state seed law. When vegetative or green chop material is used, sites need to be inspected for noxious weed or invasive species prior to harvest.

All plans need to include specifications of what constitutes successful establishment, e.g., minimum percent/ground canopy cover, percent survival, stand density, etc. (see Range Planting Guidance). Make establishment determinations at the end of the second growing season unless it is known the range plants emerged and died during the first season. In that case, establishment determination should be made the first year.

Do not graze areas during the first year following seeding/planting and deferment may need to extend into the following growing season to ensure establishment. Exceptions would be where flash or mob grazing is used for weed control (see next page). Dormant season use is permissible as long as adequate residue is left to ensure regrowth and protect from erosion.

Generally, when three weeds per square foot or a 50% canopy are observed, some form of weed control should be considered. Herbicides must be applied in accordance with authorized registered uses, directions on label, and other federal or state policies and requirements. Unless specified differently on label, seeded species should have 3 to 5 leaves per plant before herbicides are applied. Alternatively, mowing can be used to control weeds. Mow or top when weeds are above the height of the planted species and about 6- to 9- inches tall. In some cases, some form of flash or mob grazing can be used to control weeds. Flash or mob grazing uses high concentrations of livestock to harvest palatable competitive plants, e.g. crabgrass, in a short period of time. Cease grazing immediately if there is significant use or damage to seeded plants. In cases where additional applications are needed, the procedure should be repeated soon enough to prevent the weedy vegetation from becoming tough or unpalatable. See Florida NRCS Conservation Practice Standard Pest Management, Code 595, for more information.

Impact to cultural resources, wetlands, and Federal and State protected species needs to be avoided or minimized to the extent practical during planning, design, and implementation of this conservation practice in accordance with established National and Florida NRCS policy; General Manual (GM) Title 420-Part 401, Title 450-Part 401, and Title 190-Parts 410.22 and 410.26; National Planning Procedures Handbook (NPPH) FL Supplements to Parts 600.1 and 600.6; National Cultural Resources Procedures Handbook (NCRPH); and The National Environmental Compliance Handbook (NECH).

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

Select species or combinations of species that will meet or move the site to the Ecological Site Description Reference state or desired plant community.

**Additional Criteria to Improve Forages for Livestock**

The nutritional and palatability requirements of the kind and class of livestock that will be utilizing the range planting in addition to the desired season of use or grazing period will determine the species or combination of species planted. Forbs, legumes, and some shrubs are the quality component of livestock and wildlife diets. Include adapted forbs, legumes, and shrubs in any range planting plan when practical.

Site specific grazing management plan(s) need to be provided to the client with any range planting operation. See Florida Conservation Practice Standard Prescribed Grazing, Code 528, for more information.

**Additional Criteria for Improved Water Quality and Quantity**

Species or combination of species utilized need to maintain a stable soil surface and increase infiltration. Include short-lived perennials and/or annual herbaceous plants in mixtures as nurse crops when soil erosion is a potential problem.

Do not plant species that have high evapotranspiration rates, such as some woody species and phreatophytes, when watershed yields are the primary objective.

Plant a mixture of functional groups (e.g., herbaceous material, shrubs, and trees) inherent to the site's hydrologic zone(s) when riparian area, stream bank stability, and water temperature criteria are important. See Florida NRCS Conservation Practice Standards Stream Habitat Improvement and Management, Code 395, and Riparian Forest Buffer, Code 391, for more information.

**Additional Criteria for Improving Forage, Browse, or Cover for Wildlife**

Utilize plant species that meet nectar, dietary and palatability requirements for the intended

wildlife species, and plant them in a manner that will meet the cover requirements of the wildlife species of concern. See Florida NRCS Conservation Practice Standard Upland Wildlife Habitat Management, Code 645, and accompanying guidance for more information on plants for wildlife.

**Additional Criteria to Increase Carbon Sequestration**

For optimal carbon storage, choose species that will maximize site biomass. Additionally, when the spatial scale is appropriate, the use of deep-rooted perennial species will enhance soil carbon storage above that of annual or shallow rooted species.

To reduce carbon releases caused by wildfires that occur more frequently than historically observed for the Ecological Site Description, select the least flammable, perennial plants appropriate to the site.

**CONSIDERATIONS**

When opportunity exists, use plant materials that contribute to wildlife and aesthetics. Activities need to be scheduled to avoid critical periods (e.g., mating, nesting, denning, rearing of young, etc.) when sensitive or protected wildlife species are present.

Other NRCS Conservation Practice Standards such as Brush Management, Code 314, may be used to promote a satisfactory site preparation to insure a successful range planting. Where air quality concerns exist, utilize site preparation techniques that minimize airborne particulate matter generation and transport.

Encourage the use of certified planting materials, 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, proper inoculant, seed mixture ratios).

**PLANS AND SPECIFICATIONS**

For standard plantings, appropriate forms, worksheets, etc., may be used to develop specifications and documentation. When additional conservation practices are implemented prior to range planting, a site

specific worksheet is required for each practice that is implemented.

Minimally, specifications need to include:

1. Site preparation specifics including type and amount of soil amendments.
2. Species and seeding or planting rates.
3. Planting date(s), care and handling of seed or planting material, and stand densities that constitute successful stand establishment.
4. A statement that says only viable, high quality, and regionally recommended seed or planting material will be used.
5. Specific grazing management plan(s) for both establishment and maintenance phases of expected stand life.

### OPERATION AND MAINTENANCE

**Operation.** Identify any required items needed to assist in stand establishment such as mowing, burning, flash grazing, and herbicides to control weeds and vestiges 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 need to have an understanding of the management required to maintain the resulting plant community. Any necessary replanting due to drought, insects or other uncontrollable events, which prevented adequate stand establishment, should be addressed as soon as possible. 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)
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- Mangold, J.M., C.L. Poulsen, and M.F. Carpinelli. 2007. Revegetating Russian knapweed (*Acroptilon repens*) infestations using morphologically diverse species and seedbed preparation. *Rangeland Ecology and Management* 60:378-385.
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- Surrency, D., C.M. Owsley, and M. Kirkland. 2003. Plant Fact Sheet: Switchgrass. USDA-NRCS, Athens, GA. (<http://www.plant-materials.nrcs.usda.gov/pubs/gapmcf04607.pdf>)
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- 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/>