

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

RANGE PLANTING

(Acre)
CODE 550

DEFINITION

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

PURPOSE

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

- Begin restoration of a plant community to its historic climax or the desired plant community.
- Provide or improve forages for livestock.
- Provide or improve forage, browse or cover for wildlife.
- Improve water quality and quantity.
- Reduce wind or water erosion.
- Increase carbon sequestration.

CONDITIONS WHERE PRACTICE APPLIES

Applies on rangeland, native or naturalized pasture, grazed forest or other suitable locations where the principle method of vegetation management will be with herbivores. This practice shall be applied where desirable vegetation is below the acceptable level for natural regeneration to occur or where the potential for enhancement of the vegetation by grazing management is unsatisfactory.

CRITERIA

General Criteria Applicable for All the Purposes Stated Above

Plant species cultivars, varieties or accessions shall be selected based on:

- Compatibility to ecological site.
- Climate conditions such as annual rainfall, seasonal rainfall patterns, growing season length and temperature extremes.

- Soil condition and position attributes such as soil texture, pH, available water holding capacity, slope, aspect, shallow depth or restrictive pans, inherent fertility, salinity and alkalinity, acidity, drainage class, flooding and ponding and severe levels of toxic elements that may be present.
- Plant compatibility with other species and their selected releases in rate of establishment, maturity and growth habit when seeded together.

Species released cultivars (varieties) or accessions selected shall provide adequate cover to control erosion by wind and/or water.

Specified seed, planting rates, methods of planting and date of planting shall be consistent with documented guidance cited by plant materials program, research and demonstration trials for achieving satisfactory establishment.

See Plant Materials Technical Notes 10 and 24.

All seed materials shall be labeled and meet state seed quality standards. Use of certified seed will be encouraged.

When needed, seedbed preparation will be performed to provide a firm, weed-free seedbed that ensures seed contact with mineral soil and ample moisture to uniformly facilitate seedling emergence. *Rule-of-thumb: a person's footprint will not be deeper than about 1/2 inch.* A weed-free seedbed will generally not exceed one (1) seedling per square foot of an unwanted plant at time of planting.

Seedbed preparation and drilling will be completed in such a manner to maintain the maximum possible amount of residue. Residue levels shall not interfere with good seed contact with mineral soil. Rangeland being reseeded over burned areas, drilling will be done into existing surface without prior mechanical

disturbance. Application of chemicals for seedbed preparation must adhere to label, local and state regulations and Pest Management (595).

Based on seed tags, adjust seeding rates at field site to ensure desired amount of pure live seed (PLS) is applied to site. **See Plant Materials Technical Note 4.**

Management during the establishment period such as weed control and deferment from grazing shall be followed to enhance establishment success.

Do not graze until the stand is well established. This may require deferring grazing more than one growing season.

Legume seed shall be inoculated with the proper, viable Rhizobia before planting.

Additional Criteria for Improved Forages for Livestock

Forage species or combination of species shall be designed to meet the nutritional and palatability requirements and the desired season of use or grazing period for the kind and class of animal.

The forage species selected shall be managed to avoid animal health problems such as grass tetany.

Additional Criteria for Improved Water Quality and Quantity

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

Species that have high evapotranspiration rates, such as some woody species and phreatophytes, shall not be planted when watershed yields are the primary objective.

Additional Criteria for Improving Forage, Browse or Cover for Wildlife

Selected plant materials shall meet dietary, palatability and habitat requirements for the intended wildlife species.

Species will be selected and planted in a design that will meet the cover requirements of the wildlife species of concern. See Animal Guides, Ecological Site Descriptions and Plant Materials Technical Note No. 41 for additional information on plant species selection and planting methods.

Additional Criteria to Increase Carbon Sequestration

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

CONSIDERATIONS

Other management and facilitating practices may be used to promote a satisfactory site preparation to insure a successful rangeland planting.

This practice should only be undertaken where domestic animal grazing can be excluded or controlled to permit stand establishment. Temporary fencing may be required where only part of a grazing unit is being seeded and where livestock exclusion is not possible for the entire area.

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

Consider the effects of seedbed preparation and the seeding application on wind and water erosion.

In wind erosion areas, consider a temporary cover crop to control erosion.

Use nurse crops only under high annual rainfall (16 inches or greater) areas. Seeding rates for nurse crops under dryland conditions should be no more than 30 percent of the normal seeding rate used for that crop. Consider harvesting nurse crop as hay, and manage according to moisture conservation practices and light requirements of seedlings to aid seeding establishment.

Consider chemicals as an alternative for mechanical seedbed preparation where persistent weeds, soil erosion and moisture retention are a problem.

Forage species planted in mixture should exhibit similar palatability to one another to avoid spot or selective grazing.

Fall and dormant seedings may expose legumes to potential death due to frosts during seedling stage.

On heavy to medium textured soils that tend to form soils crusts overwinter, early spring plantings should be considered.

Control of noxious and competitive weeds by mowing, clipping or herbicide should be planned. Grass seedlings should be allowed to attain 4-5 leaf stage before herbicides are applied.

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).

Sites with compacted surfaces or pans may benefit by deep discing or ripping prior to seeding per Grazing Land Mechanical Treatment (548).

Costs and benefits of seeding need to be considered during planning including such items as deferment, failures, increased production and cost of seeding.

Consider the effects of improved vegetation and organic matter on water budget, especially volumes and rates of infiltration and runoff.

Where applicable, consider the effects of snowcatch and melt on the water budget.

Consider the potential for a change in plant growth and transpiration because of changes in the volume of soil water.

Consider effects on downstream flow or aquifers that would affect other water uses or users. Consider effects of erosion and the movement of sediment and soluble and sediment-attached substances carried by runoff.

PLANS AND SPECIFICATIONS

Plans and specifications are to be prepared for each treatment area and include planting area preparation, species to be planted, methods and rates of planting, planting depth, time of planting and management or establishment requirements.

Generally accepted planting dates for non-irrigated land are:

MLRA	Spring (before)	Fall	Dormant (after)
8	4/1	10/1*	11/15
9	5/1	8/12-9/20	11/1
10	5/15	8/25-9/20	10/20
11	4/20	9/20*	11/1
12	5/15	9/20*	10/20
13	5/15	8/25-9/20	10/20
25	5/15	8/25-9/20	10/20
28A	5/1	9/1-10/1	11/1
43A	6/1	9/1*	11/1
43B	6/1	8/15-9/10	10/10
44	6/1	9/1*	11/1
47	6/1	8/25-9/20	10/20

Seeding dates may vary from these guidelines based on local experience and conditions.

*Fall seedings on irrigated land only.

Fine textured soils will be seeded in the spring. These have sandy clay, silty clay, loamy clay and clay texture classes.

Form ID-CPA-025, Seeding/Planting Plan - Specification will assist in planning practice and documenting application. Refer to Plant Materials Technical Note 24 for species information.

Actual seeding rates of applied seeding mixture will be within 80 to 125 percent of rate expressed in Seeding/Planting Plan-Specification ID-CPA-025.

Fall seedings will be expected to attain the 3-4 leaf stage prior to cessation of growth in the fall. This requires 30-45 days of growth from date of planting.

Legume seedings will only be made after the average date of last spring frost or 30 days prior to average date of first fall frost. Legumes may be planted in a dormant seeding, but the risk of death loss in spring due to frost should be considered.

All seedings will be protected from grazing by domestic animals until stand is established. Seeded species may be considered established when they are well-rooted (not easily pulled out of ground by hand) and/or are producing reproductive stems. A minimum of one full

growing season is recommended prior to grazing.

Application of chemicals for seedbed preparation must adhere to label, local/state regulations and Pest Management (595).

The drill used will provide for depth control with bands or other suitable method such that seed placement depth does not exceed recommended depths expressed in Plant Materials Technical Note 24 for that species.

Broadcasting will only be used on designated emergency seedings or special situations. Broadcast seeding rates will be a minimum of 150 percent of the normal seeding rates. Where possible, seed should be covered by dragging, raking or trampling with grazing animals.

OPERATION AND MAINTENANCE

Maintenance needed for this practice includes:

1. Periodic inspection and evaluation of vegetation to determine establishment and maintenance needs.
2. Replanting due to drought, insects or other event which prevented adequate stand establishment should be addressed within 1-3 years of planting. Recommendations may vary from complete re-establishment to overseeding or spot replanting. Thin stands may only need additional grazing deferment during the growing season.
3. Management of vegetation growth, as applicable, by mowing, approved chemicals, flash grazing or other means to establish the desired cover.
4. Repair of appurtenances and fences.
5. Pest (weeds, insects, rodents, etc.) control will be undertaken when determined to be detrimental to establishing new seedlings. Any control specified shall be in accordance with Pest Management (595).

REFERENCES

NRCS, Idaho Plant Materials Technical Notes

No. 4 – Reading Seed Packaging Labels and Calculating Seed Mixtures

No. 10 – Pasture and Range Seedings

No. 24 – Grass, Grass-Like, Forb, Legume and Woody Species for the Intermountain West

No. 41 – Restoration and Diversification of Plant Communities with Woody Plants

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