USDA United States Department of Agriculture

**CONSERVATION ENHANCEMENT ACTIVITY**

**E512D**

CONSERVATION STEWARDSHIP PROGRAM

# Forage plantings that help increase organic matter in depleted soils

**CONSERVATION PRACTICE: 512 - Pasture and Hay Planting**

**APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture**

**RESOURCE CONCERN: Soil**

**ENHANCEMENT LIFE SPAN: 5 years**

## Enhancement Description

Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production that can help improve soil quality of depleted sites through increase or conservation of the organic matter in the soil.

## Criteria

- Select perennial grass or forb and legume plant species or a mix of annual and perennial species and their cultivars based on climatic conditions, soil condition, landscape position and resistance to disease and insects, that will provide ground cover and root mass needed to be sufficient to protect the soil from wind and water erosion.

- This enhancement is applicable where soils have been depleted of organic matter (typically from direct exposure to air through plowing or disking, and/or having little or no vegetation growing on the soil for a period. In these circumstances, organic matter can be increased through planting of deep-rooted perennial species or a mix of deep-rooted perennials and annual species with the capability of moving carbon into the soil horizons naturally, and then managing these plant communities for optimum production of above ground matter (forage).

- Recommendations for planting rates, methods, depths, and dates from land grant/research institutions, plant materials program, extension agencies, or agency field trials will be followed.

- Prepare seed bed for planting that does not restrict plant emergence or leave the site vulnerable to erosion.
- Planting will take place when soil moisture is adequate for germination and establishment.
- Federal, state, or local noxious species will not be planted.
- Plant nutrients and/or soil amendments for establishment purposes will be applied according to a current soil test and according to Land Grant University recommendations. Legume seed will be pre-inoculated or inoculated with the proper viable strain of Rhizobia immediately before planting.
- Inspect and calibrate equipment prior to use. Continually monitor during planting to ensure proper rate, distribution and depth of planting is maintained.
- Monitor new plantings for water stress. Depending on the severity of drought, water stress may require reducing weeds, early harvest of any companion crop, irrigating when possible, or replanting failed stands.

**Documentation and Implementation Requirements**

**Participant will:**

☐ Prior to implementation, select a deep-rooted perennial forage species or grassland mixture of deep-rooted perennials and annuals for establishment. *If livestock are included in the system*, forage species selected will meet the desired level of nutrition for the kind and class of the livestock to be fed. (NRCS will provide technical assistance, as needed.)

| Species | Forage category (grass, legume, forb) |
|---|---|
| | |
| | |
| | |

☐ Prior to implementation, select planting technique, seeding rates and timing appropriate for the site and climatic conditions. (NRCS will provide technical assistance, as needed.)

| | |
|---|---|
| **Planting date** | |
| **Planting method** | |
| **Seeding rate** | |

- ☐ *If livestock are included in the system*, prior to implementation a grazing plan must be developed to keep grazing periods sufficiently short to allow for forages to recover before re-grazing occurs and ensure adequate stubble heights remain to prevent erosion.

- ☐ During implementation, keep the following documentation:
  - Records and photographs of planting preparation and any materials purchased or materials on hand used for the implementation of the enhancement.
  - Documentation of seed rate basis (Pure Live Seed) and any fertilizer or soil amendments used for the implementation of the enhancement.

- ☐ *If livestock are included in the grazing system*, documentation, and photographs of turn in/turn out grazing records and stubble height residue for each field. *If livestock are included in the grazing system*, during implementation in areas where animals congregate, establish persistent species than can tolerate close grazing and trampling.

- ☐ After implementation, make the forage planting and grazing records available for review by NRCS to verify implementation of the enhancement.

**NRCS will:**

As needed, prior to implementation, NRCS will provide technical assistance:

- Planning site preparation and establishment specifications meeting NRCS Conservation Practice Standard Pasture and Hay Planting (Code 512).
- Prepare specifications for applying this enhancement for each site using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- *If livestock are included in the system*, develop a grazing plan to keep grazing periods sufficiently short to allow for forages to recover before re-grazing occurs and maintain adequate stubble heights to prevent erosion.

- ☐ During implementation, evaluate any planned changes to verify they meets the enhancement criteria.
- ☐ After implementation, verify the planned grassland mixture was established to specifications developed for the site.

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**NRCS Documentation Review:**

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

_____ _____

NRCS Technical Adequacy Signature Date

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# OREGON SUPPLEMENT TO

# CONSERVATION ENHANCEMENT

CONSERVATION STEWARDSHIP PROGRAM

# ACTIVITY E512D

## Additional Criteria for Oregon

- In addition to the criteria specified in the National job sheet E512D the following additional criteria apply in Oregon:
    - This enhancement is applicable to cropland that receives an average of at least 16 inches of precipitation each year or is irrigated. If site conditions are less than 16 inches per year contact the Basin or State Rangeland Management Specialist to discuss options and alternatives.

## Additional Documentation Requirements for Oregon

- In addition to the documentation requirements specified in the National job sheet E512D the following additional documentation requirements apply in Oregon
- Recommended a minimum of 3 species for the seeding mix that includes different structural and functional groups.
- Livestock will be excluded from new seedings until they are well established – typically 1 to 2 growing seasons after planting and should be documented with an Oregon Prescribed Grazing Specification (528).
- These seeding recommendations assume that the seedbed is clean, firm, and weed-free and that the seeding is performed with a drill. Broadcast seedings will require **twice** as much seed.
- Seedling density for a successful planting will be at least 3 seeded plants per square foot at the end of the second growing season after planting.

References include:

Oregon – Washington Guide for Conservation Seedings and Plantings, 2000, USDA-NRCS

Intermountain Planting Guide

Grass, Grass-Like, Forb, Legume, and Woody Species for the Intermountain West