



## CONSERVATION ENHANCEMENT ACTIVITY

E512E

# CONSERVATION STEWARDSHIP PROGRAM

### Forage and biomass planting that produces feedstock for biofuels or energy production

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

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

**RESOURCE CONCERN: Plants**

**ENHANCEMENT LIFE SPAN: 5 years**

#### Enhancement Description

Conversion of cropped land to grass-based agriculture. Mixtures of perennial grasses, forbs, and/or legume species are established on cropland where annually-seeded cash crops have been grown.

#### Criteria

- Establish perennial grassland mixture on cropland. Mixtures shall be selected based on:
  - Minimum of 50% grass species.
  - Climatic conditions, such as annual precipitation and its distribution, growing season length, temperature extremes and the USDA Plant Hardiness Zone.
  - Soil condition and landscape position attributes such as pH, available water holding capacity, aspect, slope, drainage class, fertility level, salinity, depth, flooding and ponding, and levels of phytotoxic elements that may be present.
  - Resistance to disease and insects common to the site or location.
  - Intended use, level of management, realistic yield estimates, maturity stage, and compatibility with other species. Verify plant adaptation to the area prior to planting.
- Follow state specific recommendations for planting rates, methods and dates. Seeding rates will be calculated on a pure live seed (PLS) basis. Plant at a depth appropriate for the seed size or plant material, while assuring uniform contact with soil.
- Prepare the site to provide a medium that does not restrict plant emergence.

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- Plant when soil moisture is adequate for germination and establishment.
- All seed and planting materials must meet state quality standards.
- Do not plant federal, state, or local noxious species.
- Apply all plant nutrients and/or soil amendments for establishment purposes according to a current soil test and developed specifications.
- When planting legumes, use pre-inoculated seed or inoculate with the proper viable strain of Rhizobia immediately before planting.
- Exclude livestock until the plants are well established.
- Ground cover and root mass need to be sufficient to protect the soil from wind and water erosion.

### **Additional criteria when livestock are included in the system:**

- Grazing plan must be developed to keep grazing periods sufficiently short to allow for plants to recover before re-grazing occurs.
- No more than 20% of the mixture may be alfalfa. Other legumes (especially non-bloating species) may be used in place of or in addition to alfalfa up to a maximum legume percentage of 50%.

### **Documentation and Implementation Requirements**

#### **Participant will:**

- Prior to implementation, select perennial grassland mixture for establishment. If livestock are included in the system, no more than 20% of the mixture may be alfalfa. (NRCS will provide technical assistance, as needed.)



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| Species | Species type (grass, legume, broadleaf) |
|---------|---|
|         |   |
|         |   |
|         |   |

- Prior to implementation, select planting technique, seeding rates, and timing appropriate for the site and soil 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 plants to recover before re-grazing occurs.
- 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 (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 for each field.
- If livestock are included in the grazing system, during implementation in areas where animals congregate, establish persistent species that can tolerate close grazing and trampling.
- After implementation, make documentation and records available for review by NRCS to verify implementation of the enhancement.



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**NRCS will:**

As needed, provide technical assistance to meet the criteria of the enhancement.

Prior to implementation, provide and explain NRCS Conservation Practice Standard Pasture and Hay Planting (Code 512) as it relates to implementing this enhancement.

Prior to implementation, verify the enhancement is planned for cropland.

Prior to implementation, verify the selected perennial grassland mixture includes a minimum of 50% grass species. If livestock are included in the system, no more than 20% of the mixture may be alfalfa.

If livestock are included in the system, prior to implementation verify a grazing plan is developed to keep grazing periods sufficiently short to allow for plants to recover before re-grazing occurs.

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).
- Preparing 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 plants to recover before re-grazing occurs.

Prior to implementation, verify the enhancement is planned for cropland.

During implementation, evaluate any planned changes to verify they meet the enhancement criteria.

After implementation, verify the planned perennial grassland mixture was established to specifications developed for the site.

**NRCS Documentation Review:**

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

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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 E512E**

**Additional Criteria for Oregon**

- In addition to the criteria specified in the National job sheet E512E, the following additional criteria apply in Oregon:
    - Eligible enrolled acres must be capable of producing 4000 lbs/acre of biomass for bio-fuel or energy production using a species approved by the state plant material specialist.
- AND**
- This enhancement is applicable to cropland that receives an average of at least 18 inches of precipitation each year or is irrigated. If site conditions are less than 18 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 E512E 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](#)