USDA United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY

E512B

CONSERVATION STEWARDSHIP PROGRAM

Forage and biomass planting to reduce soil erosion or increase organic matter to build soil health

CONSERVATION PRACTICE: 512 - Pasture and Hay Planting

APPLICABLE LAND USE: Pasture

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 5 years

Enhancement Description

Establishing adapted and compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production that can provide for reduced soil erosion, improving soil health. Species must be planted into existing perennial stands.

Criteria

- Select species from a minimum of two functional groups (cool season grasses, warm season grasses, legumes, other forbs) 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.
- 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.
- Prior to planting, graze, or mow existing stands as needed to improve seedling competiveness.
- Prepare seed bed for planting that does not restrict plant emergence or leave the site vulnerable to erosion. Minimize soil disturbance during planting operations.
- 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. Legume seed will be pre-inoculated or inoculated with the proper viable strain of Rhizobia immediately before planting.

- Deep-rooted, perennial species or deep-rooted perennial and annual species mix will be selected that will contribute to maintaining or increasing underground carbon storage.

- New plantings will be monitored for water stress. Depending on the severity of drought, water stress may require reducing weeds, early harvest of any companion crops, irrigating when possible, or replanting failed stands. Plantings will be protected from grazing until an adequate stand is established and meets the species specific, local standard for beginning grazing.

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 and photos available for review by NRCS to verify implementation of the enhancement.

NRCS will:

Prior to implementation, use selected mixture and site information to calculate the before and after soil loss from water erosion using current NRCS wind and water erosion prediction technologies.
Soil erosion BEFORE _____ t/ac/year and AFTER _____ t/ac/year

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 meet the enhancement criteria.
- ☐ After implementation, verify the planned grassland mixture was established to specifications developed for the site.

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

WASHINGTON SUPPLEMENT TO

CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

512 - Pasture and Hay Planting References:

Pasture and Hay Planting (512) Practice Standard and Implementation Requirements (IR's) are located in NRCS Field Office Technical Guide (FOTG) Section 4/Washington Conservation Practices/Pasture and Hay Planting (AC) (512) folder.

FOTG Section 4

Pasture and Hay (pasture) species, with seeding rates**,** for **Western Washington** can be found in the Extension Publication **EB1870, Pasture and Hayland Renovation** for Western Washington and Oregon. Also provides guidance on site preparation, seeding and when livestock grazing can resume.
https://s3.wp.wsu.edu/uploads/sites/2079/2015/06/Pasture-and-Hayland-Renovation-for-Western-Washington-and-Oregon-WSU.pdf

Ecological Site Descriptions and **Forage Suitability Groups** can be found in the **NRCS Field Office Technical Guide** Washington | Field Office Technical Guide | NRCS - USDA
in Section 2. For planning unit ecological sites and forage suitability groups see next item.

Soil information, including productivity, **Ecological Sites and Forage Suitability Groups** for planning unit soils can be found by using the **Web Soil Survey**
https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Seedbed Preparation and Seed to Soil Contact, Plant Materials Technical Note 6, can be found in the NRCS Field Office Technical Guide (FOTG) in Section1/References Lists/Technical Notes by Discipline/Plant Materials.
Washington | Field Office Technical Guide | NRCS - USDA

CONSERVATION STEWARDSHIP PROGRAM

Appropriate plant species, and seeding rates for **Eastern Washington** dryland plantings can be found in the **Plant Materials Technical Note 1 Seeding Guide** in the NRCS Field Office Technical Guide in Section 1/Reference Lists/Technical Notes by Discipline/Plant Materials
Washington | Field Office Technical Guide | NRCS - USDA

In depth information on **pasture** species for the **Intermountain West** can be found in **Plant Materials Technical Note 19**, November 2009, Pasture – Species Selection and Grazing Management Guidelines. This document is found in the NRCS Field Office Technical Guide (FOTG) in Section 1/References Lists/Technical Notes by Discipline/Plant Materials.
Washington | Field Office Technical Guide | NRCS - USDA

In depth information on suitable **range and pasture species** can be found in **Plant Materials Technical Note 2**, March 2011, Grass, Grass-Like, Forb, Legume, and Woody Species for the **Intermountain West**. This document is found in the NRCS Field Office Technical Guide (FOTG) in Section 1/References Lists/Technical Notes by Discipline/Plant Materials. Washington | Field Office Technical Guide | NRCS - USDA

Pasture Condition Scoring documents in NRCS Field Office Technical Guide (FOTG) in Section 1/Reference Lists/Technical Notes by Discipline/Pasture folder
Washington | Field Office Technical Guide | NRCS - USDA

Wildlife References and WHEG:

Washington State's Wildlife Habitat Evaluation Guide (WHEG) is **Biology Technical Note 14 Wildlife Habitat Evaluation Guide (WHEG)**. It can be found in the NRCS Field Office Technical Guide (FOTG) in Section 1/References Lists/Technical Notes by Discipline/Biology folder. Washington | Field Office Technical Guide | NRCS - USDA

Use the Washington Department of Fish & Wildlife (WDFW) **Priority Habitats and Species (PHS) database** to identify priority wildlife and habitat in your area.
http://wdfw.wa.gov/mapping/phs/

Consult Biology Technical Note 24, **Plants for Pollinators in the Inland Northwest, Revised 2016** for appropriate plant species east of the Cascade Mts. and for guidance on establishing pollinator habitat. FOTG Section 1/References Lists/Technical Notes by Discipline/Biology Washington | Field Office Technical Guide | NRCS - USDA

For west side environments consult **Plant Materials Techical Note 13, Plants for Pollinators in Oregon** **Plants_for_Pollinators_in_Oregon**

Prescribed Grazing:

Available for use – **Prescribed Grazing (528) Design Worksheet**/s. This document has several useful worksheets for developing grazing plans. It can be found in the NRCS Field Office Technical Guide (FOTG) Section 4/Washington Conservation Practices/Prescribed Grazing 528) folder. Washington - Field Office Technical Guide

Pasture Technical Note No. 105. **The Western Oregon and Washington Pasture Calendar,** A Pacific Northwest Extension Publication PNW 699. Oregon State University, University of Idaho, Washington State University. https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/pnw699.pdf