



**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: Forage and Biomass Planting**

**APPLICABLE LAND USE: 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 provide for reduced soil erosion, improving soil health.

**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.
- 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.

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- 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 Implementation Requirements**

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**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.



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- 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 that 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 Forage and Biomass 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.*

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- 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

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## SOUTH DAKOTA (SD) SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

## CONSERVATION STEWARDSHIP PROGRAM

### E512B

#### Forage and biomass planting for water erosion control to improve soil health

##### **Additional Criteria for SD:**

In addition to the criteria specified in the national job sheet E512B, the following additional criteria apply in SD:

- See the SD Range Technical Note No. 4 (found in Section 1 of the SD Technical Guide at <http://efotg.sc.egov.usda.gov>) for more information on:
  - Table 1 lists allowable varieties for use in SD
  - Table 2 provides seeding rate guidance
  - Table 3 provides information on species characteristics and adaptability
  - Table 4 lists allowable species for each forage suitability group by Major Land Resource Area (MLRA).
- On slopes over 8 percent (%), 50% of the seed mixture (pure live seed (PLS) basis) will be rhizomatous species.
- Stand enhancement (adding legumes to existing stands) is sometimes a viable option to improve an existing stand. Seeding rates for stand enhancement through the addition of legumes should be one-half of a full seeding on pasturelands. Seedbed preparation will follow procedures described in SD Range Technical Note No. 4. Stand enhancement with legumes is only recommended east of the Missouri River, on all irrigated lands, and within the Black Hills and surrounding foothills.
- Do not utilize until the stand is fully established. This period will be a minimum of 1 full growing period.
- For additional information see the SD Prescribed Grazing Standard (528), the SD Forage and Biomass Standard (512), and the appropriate SD Range Technical Note.



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### **Additional Documentation Requirements for SD:**

In addition to the documentation requirements specified in the national job sheet E512B, the following additional documentation requirements apply in SD:

- Complete the South Dakota Range Tool (SD-CPA-39 Forage/Animal Inventory, Grazing Schedule using the SD-CPA-15 or similar form, and SD-CPA-16 or similar grazing records document).
- Complete a drought contingency plan using the SD Drought Tool or provide the participant with a copy of the example drought contingency plan located within the SD Prescribed Grazing Technical Note 9.
- Complete the SD Seeding Tool (SD-CPA-4).
- Complete the appropriate erosion prediction software (RUSLE2, WEPS, IET) for conditions before and after implementation of enhancement *or*, complete the SD Pasture Condition Score Sheet (SD-ECS-15) to document the before and after condition score.