

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
SOUTH DAKOTA SUPPLEMENTS ITALICIZED**

RESTORATION AND MANAGEMENT OF DECLINING HABITATS

(ac.)
CODE 643

DEFINITION

Restoring and conserving rare or declining native vegetated communities and associated wildlife species.

PURPOSES

Restore *terrestrial* habitats degraded by human activity.

Increase native plant community diversity.

Management of unique or declining native habitats.

Note: Natural Resources Conservation Service (NRCS) uses the term “wildlife” to include all terrestrial and aquatic *wild animals*.

CONDITIONS WHERE PRACTICE APPLIES

On any landscape which once supported or currently supports *rare and declining* habitat to be restored or managed.

The only native plant community considered rare or declining in South Dakota is Tallgrass Prairie occurring in Major Land Resource Areas (MLRAS) 102A and 102B.

CRITERIA

Criteria for Seeding Tall Grass Prairie Vegetation

Plant at least eight native grass species and seven native forbs and/or shrubs for the appropriate range site(s) as listed in Table 1. If the range site lists less than eight grass species or less than seven forb and shrub species, use the appropriate numbers of species for the range site or contact the state biologist or state rangeland management specialist.

Species *to be seeded* will be adapted to soil-site conditions *according to Section II, “Rangeland*

Interpretations,” in the South Dakota Technical Guide (SDTG). Species planted/selected designs will closely resemble the native plant community to the extent technically and fiscally practical.

Seeding rates will be adequate to accomplish the planned purpose.

Only high quality certified *or ecologically adapted native seed and plant material will be used according to Section II “Pasture and Hayland Interpretations,” “Adapted Grass Varieties,” in SDTG. No substitution of introduced species can be made.*

Planting dates, *seeding/planting rates, care and handling of plant materials, and planting requirements will follow requirements in NRCS standard Range Planting (550).*

Cover crop establishment and site preparation shall be according to NRCS standard Range Planting (550).

Methods used *to restore or manage declining habitat* will be designed to protect the soil resource from erosion.

Management measures which may be used to manipulate plant communities or to restore native plant diversity include: prescribed burning, mechanical, biological, or chemical methods, or a combination of these measures.

Management measures must be *used* to control invasive species and noxious weeds in order to *establish and maintain the desired native plant community and* comply with state noxious weed laws.

Spraying or other *forms* of noxious weed control will be done on a “spot” basis to protect insect food sources for grassland nesting birds and native *plants* that benefit native pollinators and other wildlife.

Conservation practice standards are reviewed periodically and updated if needed. The current version of this standard is posted on our website at www.sd.nrcs.usda.gov or may be obtained at your local Natural Resources Conservation Service.

Timing of activities and equipment utilized will be appropriate for the site and soil conditions.

Criteria For Management Of Tall Grass Prairie Vegetation For Establishment or Maintenance

Grazing, haying, or burning will be planned every three to five years on established cover to mimic the natural disturbance regime.

Management measures will not disturb herbaceous cover from May 1 through July 15 (the primary nesting period). Exceptions may be granted for spring grazing or burning, as needed to maintain the health and plant composition of the declining habitat. Mowing, herbicide applications, or other appropriate vegetation control measures occasionally may be needed during the nesting season to enhance establishment or maintenance.

Follow all federal, state, and local laws as applicable.

CONSIDERATIONS

Management measures may be more beneficial if rotated throughout the restored/managed area.

Confer with specialists from other agencies and organizations knowledgeable about native ecosystems to develop guidelines and site specifications for declining habitats.

In many cases, threatened and endangered species or species of concern will benefit from conservation of declining habitats.

Wetlands included within the practice application area will be restored following the requirements in NRCS standard Wetland Restoration (657).

Where feasible, use prescribed burning instead of mowing. Prescribed burning will be conducted according to NRCS standard Prescribed Burning (338).

Where feasible, obtain seeds for establishing the site by harvest of native plant materials from the local area. Use of genetic material harvested within a maximum of 100-mile radius of the site is recommended.

Consideration should be given to herbicide carryover, drift, or runoff before planting and/or selecting species.

Establishment of a tall grass prairie community is an intensive project. Several groups and agencies have programs that could enhance or facilitate

application of this practice and may participate in monitoring the practice.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each ecological site. Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Follow-up habitat assessments will be performed at intervals to evaluate success of the practice.

The following actions shall be carried out to ensure that this practice functions as intended throughout its expected life.

Periodic management activities will be necessary to maintain the desired plant community once it is established.

Use of fertilizers, pesticides and other chemicals should be planned so as to not compromise the intended purpose of this practice.

REFERENCES

“Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation,” United States Department of the Interior, National Biological Service, Biological Report 28, February 1995.

**TABLE 1: TALL GRASS PRAIRIE RESTORATION SEEDING RATES AND MIXTURES ^{4/}
EASTERN TECHNICAL GUIDE AREA - MLRA's 102A & 102B**

		Minimum and Maximum Percentage of Species per Range Site											
		PLS lbs per	Number of										
		acre for a	seeds per	Cov,	^{3/} LSb,	^{1/} , ^{3/}	Sa	Sw	SM ^{2/3/}	SwG	^{3/}		
Common Name	Scientific Name	full seeding	PLS Pound	Cy & Si	LOv	Cp	SSb	SL	Sa & Sy	SwC, TU	WL & WM	& VSw	Sb
GRASSES & GRASS LIKES		Min & Max for Group		70-90	65-95	75-90	80-90	80-90	70-90	70-90	75-90	70-90	80-90
American sloughgrass	<i>Beckmannia syzigachne</i>	0.9	1,150,000								0-10		
Big bluestem	<i>Andropogon gerardii</i>	6.6	165,000	10-25	20-40		10-40		0-20	10-20		0-10	30-60
Blue grama	<i>Bouteloua gracilis</i>	1.3	825,000			0-20			0-10	0-10		0-20	
Bluejoint grass	<i>Calamagrostis canadensis</i>	0.2	4,480,000										
Canada wildrye	<i>Elymus canadensis</i>	9.5	115,000	0-10	0-10		0-10						0-10
Green needlegrass	<i>Stipa viridula</i>	6.5	168,000	0-20	0-25	0-30	0-20			0-30		0-15	
Indiangrass	<i>Soghastrum nutans</i>	6.2	175,000	0-20	10-30		0-10		0-20	0-10			10-30
Inland saltgrass	<i>Distichlis stricta</i>	2.1	520,000					20-70					
Little bluestem	<i>Schizachyrium scoparium</i>	4.2	260,000	15-30	0-20	0-15	10-50		10-30	10-30		10-25	0-25
Needleandthread	<i>Stipa comata</i>	9.5	115,000	0-10		0-15	0-10		0-20	0-20		0-25	
Nuttall alkaligrass	<i>Puccinella nuttalliana</i>	1.1	1,000,000					0-30					
Porcupinegrass	<i>Stipa spartea</i>	19.1	57,000	0-20	0-10				0-20	0-10			
Prairie cordgrass	<i>Spartina pectinata</i>	6.0	183,000					0-20			0-60		
Prairie dropseed	<i>Sporobolus heterolepis</i>	4.9	224,000	0-10	0-10	0-10	0-10		0-10	0-10			0-10
Prairie junegrass	<i>Koeleria macrantha</i>	0.5	2,315,400	0-5	0-5	0-5			0-10	0-10		0-10	
Prairie sandreed	<i>Calamovilfa longifolia</i>	4.0	273,000	0-10		0-10			10-20	0-10			
Sand bluestem	<i>Andropogon hallii</i>	10.9	100,000						0-30				
Sideoats grama	<i>Bouteloua curtipendula</i>	5.7	191,000	0-15	0-10	10-20	0-10		0-10	0-20		10-20	
Slender wheatgrass	<i>Elymus trachycaulus</i>	6.8	159,000	0-10	0-10	0-10		0-10	0-10	0-10	0-10	0-10	0-10
Slough sedge	<i>Carex atherodes</i>	4.7	230,490								0-60		
Switchgrass	<i>Panicum virgatum</i>	2.8	389,000	0-20	0-30	0-10	0-10	20-50	0-20	0-10			0-25
Western wheatgrass	<i>Pascopyrum smithii</i>	9.9	110,000	0-20	0-20	25-50		20-70	0-20	0-20	0-10	0-15	0-10
Whitetop	<i>Scolochloa festucacea</i>	2.4	457,000								0-50		

^{1/} On these sites a minimum of three grass species must be planted.

^{2/} On these sites plant a minimum of four grasses and one forb.

^{3/} If site is a wetland refer to Wetland Restoration (657).

^{4/} All eligible species are not included in this table. Plant species found to be native to a given ecological site will be allowable in a seeding mixture.

**TABLE 1 CONTINUED: TALL GRASS PRAIRIE RESTORATION SEEDING RATES AND MIXTURES
EASTERN TECHNICAL GUIDE AREA - MLRA's 102A & 102B**

		Minimum and Maximum Percentage of Forb and Shrub Species per Ecological Site											
		Species Adaptability by Ecological Site											
		PLS lbs per	Number of										
		acre for a full	seeds per	Cy	COv,		^{3/} LSb,	^{1/} , ^{3/}		Sw	SM ^{2/3/}	SwG	^{3/}
Common Name ^{4/}	Scientific Name ^{4/}	seeding	PLS Pound	& Si	LOv	Cp	SSb	SL	Sa & Sy	SwC, TU	WL & WM	& VSw	Sb
FORBS & SHRUBS		Min & Max for Group		10-30	10-35	10-25	10-20	0	10-30	10-30	10-25	10-30	10-20
American licorice	<i>Glycyrrhiza lepidota</i>	18.8	58,000		X		X				X		
Blackeyed Susan	<i>Rudbeckia hirta</i>	0.8	1,450,000	X		X			X	X		X	X
Black samson	<i>Echinacea angustifolia</i>	9.5	115,000	X		X	X		X	X		X	
Blanket flower	<i>Gaillardia aristata</i>	7.0	156,500	X		X			X				
Blue vervain	<i>Verbena hastata</i>	0.7	1,488,000		X		X				X		X
Boneset	<i>Eupatorium perfoliatum</i>	0.4	2,560,000		X		X				X		X
Butterfly milkweed	<i>Asclepias tuberosa</i>	16.3	67,000	X	X	X			X				
Canada milkvetch	<i>Astragalus canadensis</i>	4.1	266,000	X		X			X				
Canada tick trefoil	<i>Desmodium canadense</i>	12.4	88,000	X	X	X	X		X				X
Compass plant	<i>Silphium laciniatum</i>	103.1	10,560	X	X		X			X			X
Common milkweed	<i>Asclepias syriaca</i>	17.0	64,000	X	X	X	X		X	X	X		X
Cudweed sagewort	<i>Artemisia ludoviciana</i>	0.2	4,500,000	X	X	X	X		X				X
Culvers root	<i>Veronicastrum virginicum</i>	0.1	12,800,000		X		X				X		X
Cup plant	<i>Silphium perfoliatum</i>	48.6	22,400		X		X				X		X
Dotted gayfeather	<i>Liatriis punctata</i>	8.0	136,000	X		X			X	X		X	
Dwarf indigo	<i>Amorpha nana</i>	6.8	160,000	X					X	X		X	
False sunflower	<i>Heliopsis helianthoides</i>	18.2	60,000	X	X	X	X		X				X
Fragrant giant hyssop	<i>Agastache foeniculum</i>	0.8	1,440,000	X	X	X	X		X	X		X	X
Grayhead coneflower	<i>Ratibida pinnata</i>	1.7	625,000	X		X			X				
Golden alexanders	<i>Zizia aurea</i>	6.2	176,000	X	X	X			X				X
Gray goldenrod	<i>Solidago nemoralis</i>	0.2	4,800,000	X		X			X	X		X	
Groundplum milkvetch	<i>Atragalus crassicaarpus</i>	13.1	83,200	X	X	X			X	X		X	
Heath aster	<i>Aster ericoides</i>	0.3	3,200,000	X	X	X			X	X			
Hoary vervain	<i>Verbena stricta</i>	2.4	448,000	X	X	X	X		X	X		X	
Illinois bundleflower	<i>Desmanthus illinoensis</i>	18.2	60,000	X		X			X	X		X	
Illinois tick trefoil	<i>Desmodium illinoense</i>	15.8	68,800		X				X				
Indian blanket	<i>Gaillardia aristata</i>	7.1	153,000						X	X		X	
Indian breadroot scurfpea	<i>Psoralea esculenta</i>	61.9	17,600	X	X	X			X	X			
Ironweed	<i>Veronia fasciculata</i>	2.8	384,000		X		X				X		X

^{1/} On these sites a minimum of three grass species must be planted.

^{2/} On these sites plant a minimum of four grasses and one forb.

^{3/} If site is a wetland refer to Wetland Restoration (657).

^{4/} No individual forb or shrub species may make up more than three percent of the mixture.

TABLE 1 CONTINUED: TALL GRASS PRAIRIE RESTORATION SEEDING RATES AND MIXTURES
EASTERN TECHNICAL GUIDE AREA - MLRA's 102A & 102B

		Minimum and Maximum Percentage of Forb and Shrub Species per Ecological Site											
		Species Adaptability by Ecological Site											
		PLS lbs per	Number of										
		acre for a full	seeds per		COv,		^{3/} LSb,	^{1/} , ^{3/}	Sa	Sw	SM ^{2/} , ^{3/}	SwG	^{3/}
Common Name ^{4/}	Scientific Name ^{4/}	seeding	PLS Pound	Cy & Si	LOv	Cp	SSb	SL	& Sy	SwC, TU	WL & WM	& VSw	Sb
FORBS & SHRUBS		Min & Max for Group		10-30	10-35	10-25	10-20	0	10-30	10-30	10-25	10-30	10-20
Joe-pye weed	<i>Eupatorium maculatum</i>	0.7	1,520,000		X		X				X		X
Leadplant	<i>Amorpha canescens</i>	6.8	161,000	X					X	X		X	
Maximilian sunflower	<i>Helianthus maximiliani</i>	4.4	250,000	X	X	X	X		X				X
Meadow blazing star	<i>Liatris ligulistylis</i>	6.8	160,000	X	X	X	X						X
New England aster	<i>Aster novae angliae</i>	0.8	1,300,000	X		X			X				
Plains coreopsis	<i>Coreopsis tinctoria</i>	0.7	1,650,000		X		X				X		X
Prairie coneflower	<i>Ratibida columnifera</i>	1.5	737,000	X		X			X				
Prairie cinquefoil	<i>Potentilla arguta</i>	0.3	3,680,000	X	X	X			X	X			
Prairie rose	<i>Rosa arkansana</i>	24.2	45,000	X					X				
Purple prairieclover	<i>Petalostemum purpurea</i>	3.8	290,000	X		X			X	X		X	
Rough blazing star	<i>Liatris aspera</i>	4.3	256,000	X	X	X	X		X	X		X	X
Round-headed bush clover	<i>Lespedeza capitata</i>	8.5	128,000	X		X			X				
Shell leaf beardstongue	<i>Penstemon grandiflorus</i>	4.0	273,000	X	X	X	X		X	X		X	X
Showy partridgepea	<i>Cassia fasciculata</i>	25.2	43,200	X	X				X				
Stiff goldenrod	<i>Solidago rigida</i>	1.4	771,800	X		X			X	X		X	
Stiff sunflower	<i>Helianthus pauciflorus</i>	12.8	85,000	X	X	X	X		X				X
Swamp milkweed	<i>Asclepias incarnata</i>	15.1	72,000		X		X				X		X
Tall meadow rue	<i>Thalictrum dasycarpum</i>	6.2	176,000	X	X	X	X						X
Thickspike gayfeather	<i>Liatris pycnostachya</i>	8.0	136,000	X	X		X						X
Water plantain	<i>Alisma subcordatum</i>	1.1	960,000								X		
Western snowberry	<i>Symphoricarpos occidentalis</i>	16.8	65,000	X	X				X				
Western yarrow	<i>Achillea millefolium</i>	0.4	2,800,000	X	X	X	X		X	X		X	X
White prairieclover	<i>Petalostemum candidum</i>	2.8	384,000	X		X			X	X		X	
Wild bergamot	<i>Monarda fistulosa</i>	0.9	1,200,000	X	X	X	X		X	X		X	X

^{1/} On these sites a minimum of three grass species must be planted.

^{2/} On these sites plant a minimum of four grasses and one forb.

^{3/} If site is a wetland refer to Wetland Restoration (657).

^{4/} No individual forb or shrub species may make up more than three percent of the mixture.