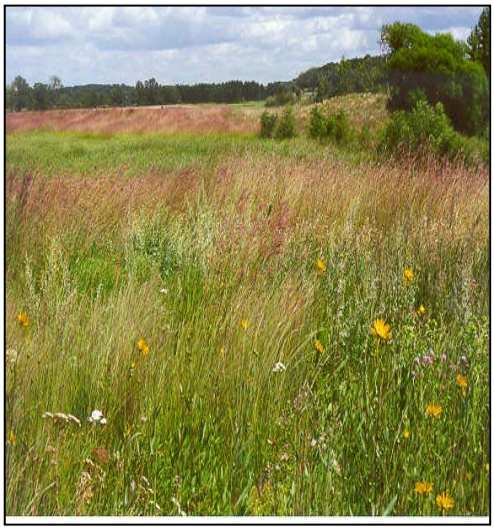
Animal Enhancement Activity – ANM 21 - Prairie restoration for grazing and wildlife habitat



Enhancement Description
This activity consists of restoring/renovating prairie habitat by establishing native vegetation and managing the restored plant community.

Land Use Applicability
Cropland, pastureland and rangeland

Benefits
Establishing and managing native prairie vegetation will provide food, cover, and nesting habitat for adapted species, especially grassland nesting birds.

Criteria
The resulting plant community will consist of at least 10 species of native perennial grasses and at least six species of native forbs. In areas where seed availability or seed cost is an issue, the NRCS State Office can modify the seeding combinations to meet local conditions. Species appropriate fungal and microbial inoculants will be used during establishment where appropriate. Additional planting conditions may be specified if an ecological site description has been developed for the area.

After establishment, the field will be protected from grazing and disturbance during the primary nesting and fawning season as defined by the NRCS State Office. A grazing management plan will be prepared, documented, and followed. Grazing intensity outside of the nesting season will never exceed "moderately" grazed as defined by the NRCS State Office. Rest or rotation intervals will also be documented.

Documentation Requirements

Following implementation of this activity, the landowner must document the restoration of native vegetation by providing a brief written description of the actions taken; providing receipts and dates; documenting the area (acres) restored, grazing management plan, and delineating the location of the restored prairie on a map or aerial photograph.

Michigan Supplement

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Grazing and wildlife habitat can be complementary uses for land in a prairie restoration. Wise selection of plant materials and a prescribed grazing plan that protects key areas during the critical nesting seasons are the keys to a successful restoration.

Plant Selection

Select plant materials for the livestock intended to graze the prairie restoration as well as the intended wildlife. Tables 1 and 2 offer recommendations for cool and warm season grasses. Switchgrass should not be used if intended livestock are horses or sheep.

Table 3 lists recommended legumes and forbes to benefit wildlife as part of the prairie restoration. Legumes for forage include Ladino Clover, Red Clover, Alfalfa, Kura Clover and Birdsfoot Trefoil. Some of the forbs listed in Table 3 may be grazed as forage when in a young vegetative stage. The intensity of grazing use by livestock is not known.

TABLE 1: Recommended Native Cultivars and Ecotypes for Prairie Restoration

Warm Season Species	Cultivar or Ecotype	Geographic Zone
Switchgrass	Forestburg	Statewide
	Shelter	Statewide
	Trailblazer	Statewide
	Southlow	Southern MI
Indiangrass	Tomahawk	Statewide
	Rumsey	Statewide
	Southlow	Southern MI
Little Bluestem	Blaze	Southern MI
	Aldous	Statewide
	Southlow	Southern MI
Big Bluestem	Roundtree	Southern MI
	Bonilla	Statewide
	Bonanza	Statewide
	Bison	Statewide
	Niagra	Statewide
	Southlow	Southern MI

Appropriate fungal and microbial inoculants must be used. Bacterial inoculants are especially important when seeding legumes.

Table 2. Recommended Seeding Mixtures for Prairie Restoration

Species	Livestock Use	% of Mix	Seeds per Square Ft. (lb/ac)	pH Minimum	Wet Soils 1/	Drought Tolerance 2/	Flood Tolerance
Big Bluestem	Yes	10-50	3.8	>5.5	Yes	Moderate	Good
Indiangrass	Yes	10-50	4.0	>5.5	No	Moderate	Moderate
Little Bluestem	Yes	10-30	6.0	>5.5	No	Good	Poor
Prairie Sandreed	No	0-30	6.6	>5.5	No	Excellent	Poor
Canada Wildrye	Yes	5-20	2.6	>5.5	Yes	Moderate	Moderate
Switchgrass	Cattle	0-5	9.0	>5.5	Yes	Poor	Good

Table 2. Recommended Seeding Mixtures for Prairie Restoration							
Species	Livestock Use	% of Mix	Seeds per Square Ft. (lb/ac)	pH Minimum	Wet Soils 1/	Drought Tolerance 2/	Flood Tolerance
	only						
Canada Bluejoint	Yes	0-5	9.0	>5.5	Yes	Poor	Excellent
Prairie Cordgrass	No	0-5	3.8	>5.5	Yes	Fair	Excellent

Table 3. Forbs and Legumes for Prairie Restoration				
Species		Value to Wildlife 1/	Seeding Rate PLS Oz/Acre	Seeds Per Square Ft 2/
DRY				
Dotted Blazingstar	*(Liatris punctata)*	EX	1.0	0.3
Silky Aster	*(Aster sericeus)*	EX	1.0	0.6
Purple Coneflower	*(Echinacea angustifolia)*	EX	2.0	0.25
Showy Penstemon	*(Penstemon grandifloris)*	G	1.0	0.25
Bush Clover	*(Lespedeza capitata)*	G	1.0	0.25
DRY to MESIC				
Leadplant	*(Amorpha canescens)*	EX	1.0	0.4
Butterfly Weed	*(Asclepias tuberosa)*	EX	2.0	0.2
Smooth Aster	*(Aster laevis)*	EX	1.0	1.0
Heath Aster	*(Aster ericoides)*	EX	1.0	1.0
Stiff Tickseed	*(Coreopsis palmata)*	EX	1.0	0.3
Showy Goldenrod	*(Solidago speciosa)*	G	1.0	1.2
Rough Blazingstar	*(Liatris aspera)*	EX	1.0	0.3
Compass Plant	*(Silphum laciniatum)*	G	2.0	0.1
Hoary Vervain	*(Verbena stricta)*	G	1.0	7.5
Prairie Smoke	*(Geum triflorum)*	G	1.0	1.0
MESIC to WET				
Rattlesnake Master	*(Eryngium yuccifolium)*	EX	2.0	0.4
Giant Sunflower	*(Helianthus giganteus)*	EX	1.0	0.3
Common Ox-eye	*(Heliopsis helianthoides)*	EX	2.0	0.4
Tall Blazingstar	*(Liatris pycnostachya)*	EX	1.0	0.3
Yellow Coneflower	*(Ratibida pinnata)*	EX	1.5	0.9
Golden Alexanders	*(Zizia aurea)*	G	1.0	0.3
Canada Tick Trefoil	*(Desmodium canadense)*	G	3.0	0.3
Wild Bergamot	*(Monarda fistulosa)*	EX	1.0	1.25
WET				
Swamp Milkweed	*(Asclepias incarnata)*	EX	2.0	0.2
Panicled Aster	*(Aster lanceolatus)*	EX	1.0	0.75
Boneset	*(Eupatorium perfoliatum)*	EX	1.0	N/A
New England Aster	*(Aster novae-angliae)*	G	1.0	1.3
Joe-pye Weed	*(Eupatorium maculatum)*	G	1.0	2.0
Blue Vervain	*(Verbena hastata)*	G	1.0	1.0
DRY to WET				

Table 3. Forbs and Legumes for Prairie Restoration				
Species		Value to Wildlife 1/	Seeding Rate PLS Oz/Acre	Seeds Per Square Ft 2/
Yarrow	*(Achillea millefolium)*	EX	1.0	1.0
Maximillian Sunflower	*(Helianthus maximiliani)*	EX	1.0	1.0
Black-eyed Susan	*(Rudbeckia hirta)*	EX	1.0	2.5
Stiff Goldenrod	*(Solidago rigida)*	EX	1.0	1.0
Purple Prairie Clover	*(Dalea purpurea)*	EX	1.0	1.0
FORAGE LEGUMES				
Alfalfa	*(Medicago sativa)*	EX	3-6 lbs/acre	6
Kura Clover	*(Trifolium ambiguum* Bieb.*)*	G	1.0 lbs/acre	6
Ladino Clover	*(Trifolium repens* var *giganteum)*	EX	1.5 lbs/acre	6
Red Clover	*(Trifolium pretense L.)*	EX	1-3 lbs/acre	6

EX- excellent G- good

Grazing Management

The grazing schedule will include rest of deferment of use of key areas or paddocks during primary nesting and fawning dates from April 15 through August 1. A written grazing management plan will detail the schedule of use. Outside of the primary nesting season, grazing intensity will **never** exceed Moderate Use. Grazing records documenting date of record, dates of actual use, the livestock numbers and grazing heights in and out of the key areas or paddocks are required. Managers can use the Grazing Record Sheet that follows.

Table 4. Grazing Intensity Indicators defines light and moderate grazing use based on removal of forage. Numbers of livestock may need to change to accomplish moderate or lighter grazing in the restored acres. Light grazing will have fewer head on more acres to accomplish grazing of the tops of desirable plant materials only. Moderate grazing allows more use of the desirable forage plants and some use of the lesser quality forage plants. Grazing management will include monitoring forage plant height to determine when to move livestock.

Table 4. Grazing Intensity Indicators					
Grazing Intensity	Uniform Grazing	Stand Utilization	Forage Plants Used	Seed Stalks Present	Trailing
Light	No, obvious areas not grazed throughout area	< 40%	30- 50% of Desirable Forages	60-80% of plants have stalks	None
Moderate	Yes on most of the key area	40-50%	70% Desirable forages <10 % Undesirable forages	15-25% Desirable forages have stalks	Little

When planning stocking rates for light and moderate grazing, use a utilization factor in the appropriate formula. Light grazing has a factor of 0.40 and moderate grazing uses a factor of 0.50.

1. Animal Number = $\frac{\text{(total forage production * acres* utilization factor)}}{\text{(average animal weight* intake rate* days of grazing planned)}}$

2. Carrying capacity= $\frac{\text{(total forage production* utilization factor)}}{\text{(average animal weight* intake rate* length of grazing season)}}$

3. Grazing period stocking density=

$$\frac{\text{(Available forage present * utilization factor)}}{\text{(Average animal weight * intake rate* length of grazing rotation)}}$$

Monitoring grazed forage heights as an indicator of grazing intensity will be needed at least weekly and more frequently as the end of the grazing period approaches. Key species to monitor are the native grasses and forbs. Big Bluestem is a key species in a warm season grass mix as it is grazed preferentially over the other grasses and can disappear over time.

Grazing heights of 8 inches will be maintained over the key area or paddock.

GRAZING RECORDS							
APPLICANT NAME:				Total Pasture Acres**:**			
Farm or Tract:							
Management Unit	Acres	Livestock		Date	Forage Height	Date	Forage Height
Key Forage		Type	Number	In	Inches	Out	Inches

Remarks: