



# DIVERSE GRASSLAND PLANTING

Michigan State Acres for Wildlife Enhancement Program SAFE – CP38E

Natural Resources Conservation Service (NRCS)

June 2014

Photo courtesy of USDA NRCS



## WHAT IS DIVERSE GRASSLAND PLANTING?

Diverse grassland planting consists of a mixture of planted short or tall native grasses and wildflowers (forbs) reminiscent of the short and tall grass prairies that once were common in southern Michigan. A subset of the short grass planting is a savanna, which includes scattered clumps of planted oak trees. This State Acres for Wildlife Enhancement (SAFE) project is intended to reestablish diverse grasslands, which have nearly been eliminated from the Michigan landscape, and provide food and cover for a variety of birds, mammals and insects dependent on these systems.

Short grass prairies are less dense stands of grasses, 2 – 4 feet in height, mixed with a variety of wildflower species. Short grass prairies are often found on drier sites: usually sandy soils, ridge tops and western facing slopes. Typical grass species found in short grass prairies include little bluestem, broom sedge, Canada wild rye, sideoats grama and June grass.

Tall grass prairies are often dense stands of grasses and wildflowers that are 4 – 6 feet in height. Tall grass prairies are commonly found in lower, richer soils with more moisture present, but can be found in drier sites. Common grass species found in tall grass prairies include big bluestem, Indian grass and switch grass.

When early settlers arrived in southern Michigan, much of the landscape was in short grass prairie. Grasslands they described as “park-like” were oak savannas, a grassland plant community with scattered fire tolerant oak trees. Oaks occupied about 10% to 60% of these grasslands.

Grasslands are fire-dependent vegetative communities. With European settlement, fires were virtually eliminated and the savanna and other grasslands succeeded into denser forested landscapes. Native grasslands are now considered one of the most threatened plant communities in Michigan.

## ELIGIBILITY

To be eligible for this SAFE practice the land must be located in the SAFE focus area that includes 27 counties in the southern Lower Peninsula of Michigan. The land must have a cropping history (4 out of 6 years from 2008- 2013), and be either a block of 30 acres or greater in size or, a linear habitat that connects existing habitats and must be at least an average minimum width of 200 feet and 10 acres or greater in size.

Landowners with previously existing CRP enrolled lands may enroll additional contiguous acres under SAFE agreements that meet the above criteria.

## SAFE POLICY

The diverse grassland planting **must** include a short grass prairie component that includes planting of clusters of oak trees, and **may** include a tall grass prairie component.

Between 30 and 100% of the total acres must be planted to short grass prairie. Further, native oak trees must be planted at a rate of 4 trees per acre on a minimum of 10% or 2 acres, whichever is greater, but not more than 30% of these short grass prairie acres. In all cases, oak trees will be planted on at least 2 acres.

Zero to 70% of the total acres may be planted to tall grass prairie. For tall grass prairie plantings greater than 20 acres a minimum of 2 acres and a maximum of 5 acres may be planted to a homogeneous block of switch grass. For linear plantings less than 20 acres, no more than 2 acres may be planted to switch grass.

## PLANTING SPECIFICATIONS

Short grasses should be planted on lighter, drier soils: such as sandy loams, ridges, hilltops and west/south facing slopes. Part of the short grass prairie stands must be planted with clusters of oaks to reflect the savanna type ecosystem.

The short grass prairie mix must be planted with the following specifications:

5 pounds Pure Live Seed (PLS) per acre of native grass including: little bluestem; Canada wildrye,

sideoats grama; and at least one other grass species such as, prairie dropseed, prairie brome and June grass.

Oak trees must also be included as a component of the short grass prairie. Historically trees in oak savannas were more common on south and west slopes, along ridge lines and knolls, and in protected draws or ravines. Oaks should be planted in similar locations when possible.

When planted, trees must be 3-5 feet in height with a stem at least ½-inch in diameter. All trees must be protected after planting. The large initial size is required to facilitate their protection from fire, and reduce competition from grass.

Use weed barrier fabric squares (4 feet by 4 feet or larger) to control competing vegetation. Tree tubes or fencing should be used to protect trees from wildlife damage.

Plant trees in clumps at the rate of 4 trees per planted acre at a 40-60 foot spacing between trees. Clumps will be spaced a minimum of 200 feet apart but 300-400 feet apart is preferred. Two native tree species should be used. Bur oak (*Quercus macrocarpa*), white oak (*Quercus alba*) and black oak (*Quercus velutina*) are recommended.

It is recommended that container grown air root pruned stock be used because these seedlings have thick fibrous roots as opposed to a large taproot, which may be difficult to plant. Bare root stock can also be used if they are of sufficient size. Plant either in the spring or fall from October 1<sup>st</sup> until June 1<sup>st</sup> in a hole dug with a shovel or with a tractor mounted hole auger, and not a planting bar.

Tall grass prairie species should be planted on soils that have more moisture: north and east slopes, bottomlands and lowlands and heavier soils.

The tall grass prairie mix must be planted with the following specifications:

5 pounds PLS per acre of grass (big bluestem, Indian grass, switch grass, Canada wild rye, and little bluestem)

Wildflowers mixtures will be a minimum of 1.5 pounds PLS per acres and will include as least 10 native species and include the following six species: Coreopsis, Yellow coneflower, Purple coneflower, Wild Bergamot, New England Aster and a goldenrod species. No one species may exceed 15%, (by weight or 6 seeds per sq. ft.), of the total wildflower mix. Wildflowers for both the short and tall mix should be selected from the Michigan SAFE Eligible wildflower list. Wildflowers should be selected to provide not only a diversity of species, but also to provide a diversity of flower color and structure, and to ensure flowering throughout the growing season.

Other seed mixes may be allowed during the planning process based on the unique soil type and/or

topography of the site and wildlife needs (seeding mixes or rates outside practice standards must be approved by the NRCS Biologist).

## SEEDBED PREPARATION AND SEEDING

Thorough site preparation and weed control are critical to a successful prairie planting. There are three (3) recommended ways to plant grasses and wildflowers:

- Grasses and wildflowers planted in the spring with herbicide treatment
- Grasses and wildflowers planted in the spring with mowing treatment
- Grasses planted in the spring with herbicide treatment, then wildflowers planted as a dormant seeding in the fall

Spring planting of grasses and wildflowers can be done using no-till or conventional tillage methods. When using no-till it is important to plant into a weed-free firm seed bed. In most cases herbicide weed control efforts may need to begin prior to planting. Grasses and wildflowers should be planted no deeper than ¼ inch, with 1/8 inch preferred. When using conventional tillage try to minimize the depth of disturbance but still attain a friable soil bed, cultipack the soil firmly after tillage, then broadcast the grasses and wildflowers and cultipack again.

### **First year post planting weed control is imperative for success.**

When planting grasses and wildflowers in the spring using mowing treatment it is necessary to repeat mowing operations. Mow to a height just above the new desired seedlings to prevent weed seed development and damage to the prairie seedlings, but never lower than 10 inches. Vegetation height must not be allowed to get above 18 inches before mowing. Mowing will need to be repeated every couple of weeks to keep vegetation heights between 12-18 inches.

To maximize broadleaf weed control during the first growing season it is recommended that the grasses be planted first in the spring and the wildflowers be planted in the late fall of the planting season when temperatures will remain cold enough to prevent germination.

When planting grasses without the wildflowers in the spring with herbicide treatment and broadcasting wildflowers in the late fall, plant the grasses no deeper than ¼ inch using no-till or conventional tillage as described above. Treat the planting with selective herbicides, pre-emergent and post-emergent, to control weeds. Always follow label recommendations for timing, and rates.

Weed control begins with identifying a weed history on site and managing those weeds before planting. After planting, monitor the site periodically for weed

development to prevent weeds from becoming bigger problems later.

**OPERATION AND MAINTENANCE**

Noxious weeds and other undesirable plants, insects, and pests shall be controlled, including such maintenance as necessary to avoid detrimental effects to the surrounding land. Some of the most common pests that need controlled on CRP acreage include, thistles, spotted knapweed, quackgrass, reed canary grass, sweet clover, autumn olive, and multiflora rose.

**After** the Final Status Review or three years after planting, maintain the planting according to your CRP conservation plan. Maintenance activities are allowed only on a spot basis and only if necessary to maintain stand health and/or diversity, or control pests that will damage the CRP cover or adjacent lands. Burning must be in accordance with a prescribed burn plan. See the Conservation Information Sheet "Prescribed Burning" for further information. **MOWING** is only authorized between Aug 1<sup>st</sup> and Aug 20<sup>th</sup> to protect ground-nesting wildlife and to allow re-growth for winter cover. Other maintenance activities are only allowed between August 1 –May 1st (i.e. - outside of the Primary Nesting and Brood-Rearing season). If maintenance activities are needed at times other than these, the FSA County Committee **must** approve the maintenance activity **prior to** the activity occurring.

**Mowing for generic weed control or for cosmetic purposes is prohibited.**

**Livestock must be excluded from the planting.**

**REQUIRED MANAGEMENT**

All Diverse Grassland SAFE contracts must have mid-term contract management activities scheduled that are site specific and will ensure plant diversity, wildlife habitat, and protection of soil and water resources. See the Mid-Contract Management Sheet for your contract.

**OTHER MANAGEMENT CONSIDERATIONS**

Seed should originate from Michigan genotypes when possible. If Michigan genotype seed is not available, sources should be selected from Great Lakes Basin producers if possible. Do not substitute species without making sure that it is an appropriate substitute and with approval from the NRCS Biologist.

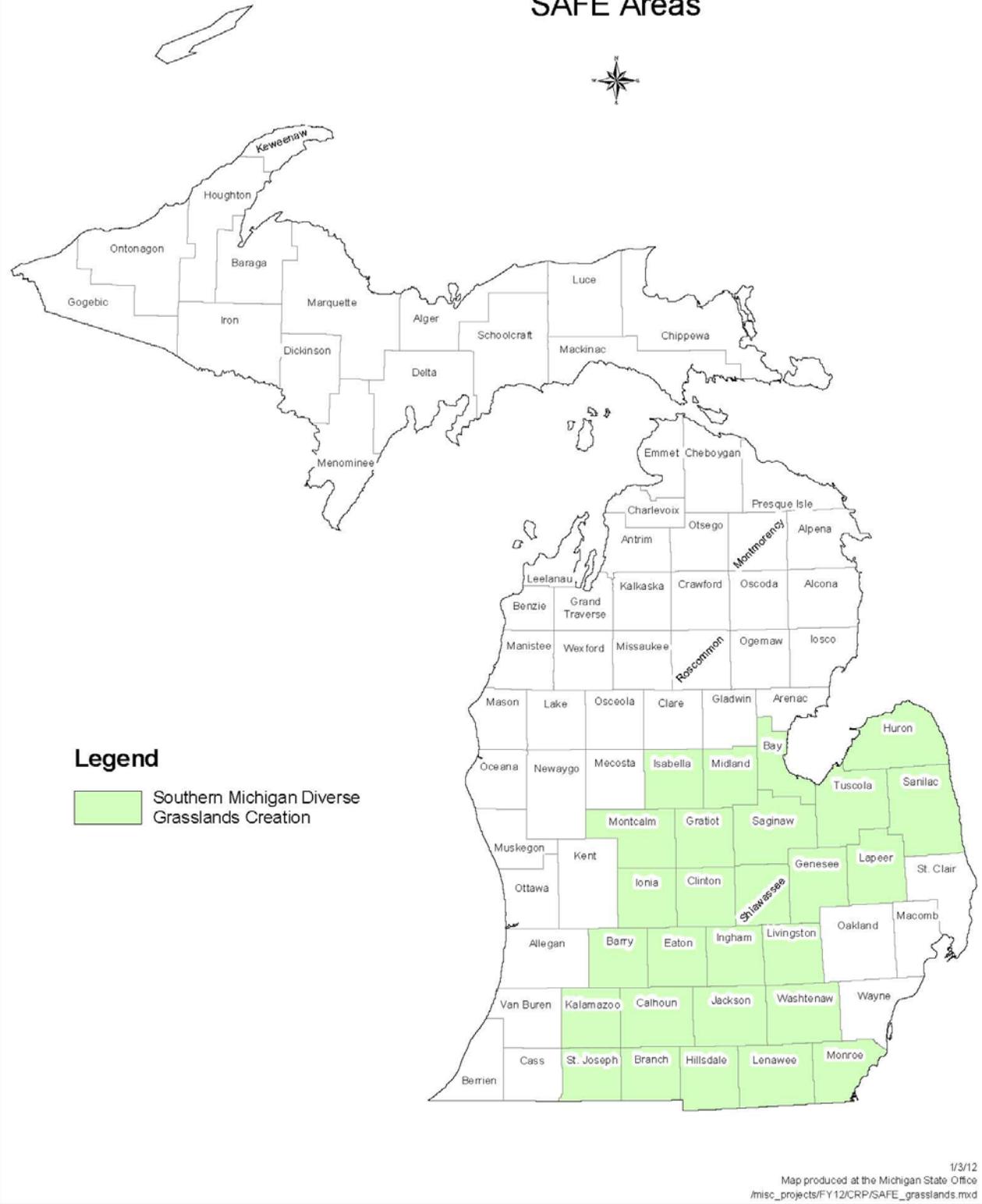
Prairie type (short grass or tall grass) will be taken into consideration when selecting wildflowers for the planting. Refer to the **Michigan Wildflower list lists, Table 1: Tall Grass Prairie Wildflower List and Table 2: Short Grass Prairie Wildflower List.**

To facilitate future prescribed burning, consider establishing the perimeter of the field to the Cool-Season Grasses and Legumes.

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### Southern Michigan Diverse Grasslands Creation SAFE Areas



# DIVERSE GRASSLAND PLANTING DESIGN WORKSHEET SAFE CP38E

**Landowner:** \_\_\_\_\_ **County:** \_\_\_\_\_

**Farm:** \_\_\_\_\_ **Tract:** \_\_\_\_\_ **Field(s):** \_\_\_\_\_ **SG Acres:** \_\_\_\_\_ **TG Acres:** \_\_\_\_\_ **Total Acres:** 0.0 **Date:** \_\_\_\_\_

## RECOMMENDED SPECIES and SEEDING RATE (PLS #/ac = Pure Live Seed Pounds per Acre)

SHORT GRASS PRAIRIE MIX <small>(see map for location)</small>	RATE PLS#/ac	TOTAL = <small>(RATE X Acres)</small>		TALL GRASS PRAIRIE MIX <small>(see map for location)</small>	RATE PLS#/ac	TOTAL = <small>(RATE X Acres)</small>	
little bluestem		0.00	Lb.	big bluestem		0.00	Lb.
Canada wild rye		0.00	Lb.	little bluestem		0.00	Lb.
sideoats grama		0.00	Lb.	Indian grass		0.00	Lb.
prairie dropseed		0.00	Lb.	Canada wild rye		0.00	Lb.
				Switchgrass		0.00	Lb.
WILDFLOWERS <small>(Required)</small>	RATE PLS oz/ac	TOTAL = <small>(RATE X Acres)</small>		WILDFLOWERS <small>(From Safe Eligible Tall Grass Prairie Wildflower List)</small>	RATE PLS#/ac	TOTAL = <small>(RATE X Acres)</small>	
		0.00	Oz.			0.00	Oz.
showy goldenrod		0.00	Oz.			0.00	Oz.
yellow coneflower		0.00	Oz.			0.00	Oz.
purple coneflower		0.00	Oz.			0.00	Oz.
wild bergamot		0.00	Oz.			0.00	Oz.
New England aster		0.00	Oz.			0.00	Oz.
<b>Switchgrass Homogeneous Block (optional)*</b>		<b>Acres</b>		<b>Rate PLS#/ac</b>		<b>TOTAL = <small>(RATE X Acres)</small></b>	
						0.00 Lb.	

**NOTES:** 5 lbs/acre of native grasses and a minimum of 1.5 lbs/acre of wildflowers is required. Total short grass mix above is 0.00 lbs/acre and the tall grass mix is 0.00 lbs/acre. The wildflower mix is 0.00 lbs/acre.  
 \*Switchgrass homogeneous block planting is 0.00 lbs/acre.  
 \*\*Wildflower mixtures are required for both the short and tall grass prairies.

**Recommended trees for this planting include:**  
**NOTE:** Trees must be 3-5 feet in height and ≥ 0.5 inch caliper diameter

### SITE PREPARATION - BEFORE PLANTING in Year:

Herbicide<sub>1</sub> (per label): \_\_\_\_\_ Dates = \_\_\_\_\_

Herbicide<sub>2</sub> (per label): \_\_\_\_\_ Dates = \_\_\_\_\_

Tillage: \_\_\_\_\_ Dates = \_\_\_\_\_

Other: \_\_\_\_\_

### PLANTING METHOD in Year:

**Planting Method:**

Dates	Grass = _____ Trees = _____	Wildflowers = _____
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(If unforeseen circumstances prohibit the planting of the grass, wildflowers, and/or trees by this date, please contact our office as soon as possible)



**POST-PLANTING MAINTENANCE** for Pest Control

**Mowing: BEFORE FINAL STATUS REVIEW** = mow 10" high when the weeds are taller than the planted grasses

Grass = AFTER FINAL STATUS REVIEW\* = 10" MINIMUM Mowing Height\*

Herbicide\* (per label):  Prescribed Burning\*: According to an approved plan

Trees: weed barrier fabric used                      tree tubes or fencing used

Other:\*

**\*NOTE:** After the Final Status Review has been issued or 3 years after planting, weeds will be treated on a "spot" basis only, unless prior approval is granted by the County Committee. Spot treatment options include mowing between August 1 through 20 and other activities between August 1 and May 1st

**LOCATION AND LAYOUT SKETCH & ADDITIONAL INFORMATION**

**ADDITIONAL INFORMATION:**

Reset Form