



1.0 Background

Prior to European settlement, about six percent of Wisconsin's total acreage was composed of prairies and related plant communities. Today, less than 0.1 percent of the original tallgrass prairie still exists. Many of these remnants are located on old highway rights of way, particularly if old railroad rights of way are parallel to and contiguous with the highway right of way. Protecting and restoring these plant communities, as well as re-establishing them in appropriate areas, is necessary to preserve our natural heritage.

The Wisconsin Department of Transportation (WisDOT) is in a unique position to do this. Many prairie remnants exist on WisDOT rights of way. In these situations, the plant communities are often relatively intact, undisturbed by agricultural and construction activities.

In the early 1990's, the department began an inventory of roadside vegetation to determine a baseline to be used to develop an integrated vegetation management plan. Approximately one-third of the highway lane miles were inventoried before funding ceased. The completed inventories were then evaluated to determine if there are quality remnants of native prairies remaining on state highway rights of way. During this process, over 20 high quality sites were identified (Table 1). Other sites are occasionally identified through casual observation.

In recent years, the department has been active in re-establishing native grasses and forbs (non-grasslike wildflowers) in appropriate areas along its roadsides by using special native seed mixes. This began in the mid 1970's when the department began planting native grasses and forbs on roadsides and roadside sites such as safety rest areas and waysides. Initial efforts began as part of the federal Operation Wildflower program in cooperation with local garden clubs. This evolved into special seeding items in highway construction project special provisions, and finally to several standard native seed mixes in Standard Specification Section 630 for Highway and Structure Construction. Once established, these native seedings provide more effective erosion control than Eurasian sod-producing grass species because of their deep, fibrous root systems. They are also more adapted to the local environment so are less susceptible to environmental stress.

[FDM 27-25-5](#), Herbaceous Plant Materials, describes steps to be taken to preserve and protect native plants. It also describes the process of establishing native seeding as well as long-term management needs.

2.0 Prairie Remnants

It is desirable to prevent woody species and invasive herbaceous species from invading high quality prairie remnants. Prescribed burning is the most effective method of controlling these species. Selective mowing and/or herbicides may be used for woody and invasive species control in accordance with a specific management plan or recommendations from the Bureau of Highway Maintenance (BHM) landscape architects.

3.0 Native Seeding

During the first year, seeds of native grasses and forbs are expending their energy establishing their root system. It generally takes about 2 years to begin to show significant aboveground evidence of establishment. Typically, a nurse crop is sown with the native seed to provide cover during this establishment period.

Areas seeded with native species should be mowed for the first two years after seeding to reduce competition and keep weeds from going to seed. Ideally, the areas should be burned every 2 to 5 years thereafter. If this is not possible, they may be mowed if the mowed clippings can be removed after mowing. Research has shown there is little if any benefit to mowing if the clippings are not removed. Mowing should be done in accordance with a specific management plan or recommendations from the BHM landscape architects.

4.0 Prescribed Burning

In the past, wildfires on the prairie were started intentionally by Native Americans or accidentally by natural phenomena such as lightning. Herbaceous prairie plants have structural adaptations allowing them to survive and thrive under these conditions. Since trees and shrubs usually lack these adaptations, fire is much more damaging to them than to grasses and forbs.

Fire is an integral and necessary part of preserving or restoring prairie and savanna ecosystems and establishing native grass and forb plants or seeding. Care of roadside prairie plantings, savanna plantings or remnants of native plant communities may include periodic prescribed burning (note: the terms 'prescribed' and 'controlled' are often used interchangeably). Prescribed burns are defined as the skillful application of fire to natural fuels in a definite area under precisely defined conditions (including wind speed and direction, fuel moisture, soil moisture and other factors) in order to produce the intensity of heat and rate of spread required to accomplish the desired result. Prescribed burning is the tool of choice for managing native stands of grasses and forbs. Typically, they should occur every two to five years.

Burn management has been instituted by the department in some areas to manage native plant communities and areas seeded with native species. It is the most cost-effective, efficient and environmentally sound strategy (along with periodic mowing and litter removal) to maintain the prairie plants and discourage weeds. Without such efforts, these native plant communities are likely to become further degraded and may become extinct in the state. These burns may be conducted either by WisDOT personnel or by a contractor. Regardless, they should be conducted by trained and qualified personnel under the direction of an experienced burn boss.

Section [NR 429.04\(2\)](#) of the Wisconsin Administrative code states "All allowed open burning shall be conducted in a safe pollution-free manner, when wind and weather conditions are such as to minimize adverse effects and in conformance with local and state fire protection regulations." Prescribed burns on roadsides should only be conducted if the burn can be performed with minimal risk to workers, travelers, neighbors and the environment (Figure 1).



Figure 1. Prescribed burn on I-39 near Westfield, WI.

The standards of the [Wisconsin Prescribed Fire Council](#) should be followed when conducting prescribed burns.

The BHM landscape architects should be consulted whenever a prescribed burn is being considered.

5.0 Goals of Prescribed Burns

The department's goals for using fire as a management tool on prairie remnants and planted native grasses and forbs are:

- To lengthen the growing season for native prairie plants.
- To shorten the growing season for many Eurasian weeds.
- To increase microbial activity in the soil, which in turn releases more nutrients earlier in the growing season.
- To stimulate the growth of native prairie legumes which have root nodules for fixing nitrogen in the soil.
- To control woody plants, thereby eliminating one source of competition for the prairie plants.

6.0 Where Burning is NOT Appropriate

Burning is not appropriate near:

- Hospitals
- Nursery or primary schools and daycare centers
- Retirement homes and nursing homes
- Airports
- Commercial establishments that sell or store flammable materials such as pesticides, gasoline, fertilizer, etc. This list is not all-inclusive.
- Any other location where safety concerns are a significant issue.

Since January, 1999 the department has participated in a multi-partner Habitat Conservation Plan (HCP) to protect the endangered Karner blue butterfly. See HMM 07-15-10, Karner Blue Butterfly Accommodations, for specific requirements of the HCP.

7.0 Burning Regulations and Permits

Permit requirements vary in the state, depending on location. Visit the [Wisconsin Department of Natural Resources burning permits](#) website for specific requirements and current burning restrictions.

Contact the local fire department, the local law enforcement agency, the county sheriff and the state patrol a day or two in advance of the proposed burn and again just prior to starting the burn so they are aware and can respond appropriately to in-coming calls reporting a fire.

8.0 Season and Time of Day to Burn

Season: Early spring (late March, April or early May) is considered the best time to burn prairies. Fall (late October to early December) is a secondary period.

Time of Day: Typically, conditions most conducive to begin burning occur in the morning after the dew has evaporated but before the winds pick up. Typically, winds are calmer in the morning and relative humidity is higher.

9.0 Burning Rotations

In general, burn every two to five years on an irregular cycle. Prairies with abundant weeds will benefit from more frequent burning.

10.0 Smoke Management

The safety of the traveling public must be of utmost concern. Smoke over the highway may adversely affect visibility. If smoke causes a hazardous driving condition, the fire should be shut down.

Do not allow smoke to infringe on private residences located in close proximity to the burn site.

11.0 Traffic Control

County highway patrolmen and equipment may be used to provide traffic control and assist with fire control when the prescribed burning is performed by WisDOT personnel. A WisDOT-approved traffic control plan is required when the work is done under contract.

Table 1

State Highway Maintenance Manual						Guideline 71.40	
County	Hwy.	Name	Begin	End	Length (Miles)	Side of Road	Adjacent Owner
Columbia	STH 16	Lewiston Prairie	Wolfram Rd.	Weyh Rd.	1.55	S	CP-Amtrak
Dane	STH 69	Belleville Prairie	Old 69	CTH A (E)	1.65	E	WisDOT
Grant	STH 133	Muscoda Prairie	Johnson St.	Leaches Crossing Rd.	18.5	N&S	WisDOT
Racine	STH 11	Barnes Prairie	66th Rd.	Old STH 11	2.3	N	CP
Jefferson	STH 59	Scuppernong Prairie	1/2 mile east of Co. line	1/2 mile west of Co. line	1	S	WisDOT
Portage	USH 10	Amherst Prairie	Custer Rd./CTH T	Lake Rd./Morgan Rd.	7.4	N&S	Wis. Central
Juneau	USH 12	New Lisbon Remnant	O'Connor Rd./6th Ave.	1.2 miles E of 6th Ave.	1.2	S	CP-Amtrak
Juneau	USH 12	Lyndon Station	Industrial Ave.	Southern Rd. +1.35 miles	2.75	N	
Portage	STH 54	Rapids-Plover Prairie	90th St. +1/2 mile	Intersection with RR	6.5	S	Wis. Central
Jackson	USH10	Osseo Prairie	CTH R (N)	Shaky Ln.	5.3	N	WDNR
Jackson	USH 12	Millston Prairie	Browns Crossing Rd.	Woodland Rd. +1.4 miles	4.8	N	UP
Richland	USH 14	Lone Rock Prairie	0.4 mi. W of Whispering Pines	STH 130 (N)	4.5	N&S	Richland Co.
Monroe	STH 16	Sparta-Tomah Prairie	CTH A -1.2 miles	Hazel Ave. +0.2 mile	6.8	N&S	WisDOT
Jackson	STH 27	Fall Hall Prairie	Mills Rd./Fall Hall Rd.	7th St./Castle Mound Rd.	6.3	E&W	WDNR
Jackson	STH 95	Hixton Prairie	Sand Prairie Rd.	CTH FF +0.6 mile	1.35	S	Wis. Central
Dunn	USH 12	Elk Mound Prairie	970th St. -0.75 mile	Vollendorf Rd. +0.6 mile	4.05	N	UP
Eau Claire	USH 12	Fall Creek Prairie	CTH D	CTH AF +0.7 mile	8	N	CP
Eau Claire	STH 27	Augusta Prairie	CTH V	CTH SD	1.9	E&W	WisDOT
Eau Claire	STH 37	Eau Claire Prairie	37/94 interchange	37/94 interchange		All	WisDOT
Dunn	STH 170	Wheeler Prairie	CTH F -3.5 miles	Morton Rd. +0.35 mile	7.15	N	CP
Burnette	STH 77	Danbury Prairie	Lakes Rd./Riverside Cutoff Rd.	Deer Lake Rd./Bear Lake Rd.	2.5	S	WisDOT
Dane	USH14	Cross Plains Prairie	0.4 mile W of Kahl Rd.	0.3 mile E of CTH KP	4.15	S	WisDOT