

Promoting Prescribed Burns on Private Land in Wisconsin

A POLICY BRIEF BY CHRISTOPHER MORGAN

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Current State of Prairies

Historically, natural fires from lightning strikes have routinely burned their way across Wisconsin's prairies – providing a necessary disturbance in keeping woody species out and to ensure the survival of the fire-adapted grasses and forbs. In fact, certain species require the heat of these fires in order to germinate, making fire essential to healthy and diverse prairie ecosystems. Development and sprawl have been occurring at an accelerated rate since the 1950s as cities and towns grow larger, and residents do not want the now-neighboring prairies to burn for the possibility of it spreading to their farms and homes. The

result is fire suppressed prairies, with the

relative proportion of non-native species

increasing by more than 500% since 1950,

and non-natives now representing more than 60% of the total species diversity in

some instances (1). In addition, all of this

fire suppression has resulted in the accumulation of plant litter – tinder that would

make for an even more dangerous blaze if

and when a natural wildfire does strike. Thus,

the consensus is that prescribed fire not only

maintains the structure and diversity of

grassland systems, but prevents more intense wildfires by periodically removing the supply of

flammable material. While prescribed burns are a commonly used tool, they are not performed as

widely or as often as is necessary to be ecologically effective on a larger spatial scale.



Sprawl and subsequent development have been encroaching on prairies at an accelerated rate since the 1950s, resulting in fire suppression.

Opportunities on Easements

This policy brief offers strategies for promoting controlled burns on private property in Wisconsin, exploring the use of easements and other programs/incentives to attain

Easement Holder	Count	Acres	% of all Easement Acreage
WDNR	2,112	230,985	59.7%
USFWS	211	7,158	1.9%
USDA NRCS	668	67,503	17.4%
Others	1,121	81,017	21.0%

that goal. This document is intended to be a guide for the Wisconsin Department of Natural Resources, but much of it could be applied to other easement-holding entities such as the U.S. Fish & Wildlife Service, the USDA Natural Resource Conservation Service (NRCS) and The Nature Conservancy—see inset table (6). Unfortunately, this state that once had two million acres of prairie prior to European Settlement now has less than 12,000 scattered acres (11). This is the motivation behind these initiatives, because while the state does have a sizable amount of land under easement, further education, legal reform, and incentive programs relating to prescribed burns are needed in order to promote restoration of Wisconsin’s prairies.

Inclusion of Prescribed Burns in Standard Easement Template

Easements with the DNR are personalized for landowners from a template that contains both optional and mandatory agreements (9). The current DNR easement template contains two mentions of prescribed burning, both of which are recommended for change. The first way to increase the prevalence of prescribed burns is by standardizing them in the easement template; moving burns from optional to mandatory in an effort to increase their frequency in the state as a land management tool. This does not mean that the DNR will be performing burns on every new parcel of easement land, only that they reserve the right to should it be deemed worthwhile. This change would also allow the landowner to retain the right to undertake the prescribed burn themselves after receiving certification (outlined later) rather than have the DNR perform it. Additionally, the DNR could review the easements it already has on the books and pull those that do not contain language regarding prescribed burns. The landowners that have already entered into easement agreements will likely be more receptive to adding a prescribed burn aspect to their agreement, and should therefore be targeted.

Relaying Benefits of Prescribed Burns

For landowners who are skeptical or not interested in selling a portion of their land rights as part of an easement, DNR land managers could be equipped with information to tactfully explain the benefits of prescribed burns. Of course, persuasion is easiest for managers if the landowner places intrinsic value in the health and endemism of prairies – or the meadow views that come with it – but certain individuals require something more tangible. For instance, controlled prairie burning provides an ecologically sound and attractive habitat for wildlife (4). This would appeal to the sportsman or woman landowner, as it provides nesting areas for game birds like waterfowl and pheasants. More generally, the burning of pasture and forest makes for the functional benefit of more nutritious food for cattle and deer respectively (4). Another practical benefit of prairie burning is that it is a cost effective way to manage vegetation – as opposed to bulldozing, cutting, or chemical treatment.



Sandhill cranes, another species that benefits from prairie habitat.

On a more serious note, the potential safety benefits of removing wildfire fuel from the landscape are significant too, as Wisconsin has had eight major fire events in the last twelve years. The latest of these was the Germann Road Fire in 2013, which consumed 7,499 acres and destroyed 104 structures (93 of them residences) as it burned a swath nearly 10 miles long and a mile and a half wide (7). In this case, six of the residences that were destroyed or badly damaged were year-round homes – meaning a lack of proactivity resulted in six families being displaced (with 28 more seasonal homes also being destroyed or badly damaged).



An aerial view of the Germann Road Fire, roughly equivalent in scale to if a wildfire burned its way from the far west side of Madison across the isthmus to the far east side.

Creation of 'Learn to Burn' Program

If the landowner decides they want a burn performed on their land, the DNR can create prescribed-burn-only easements to perform regular burns on the private prairie. If the landowner wants to burn non-prairie land or perform the prairie burn themselves, they can register in a newly created 'Learn to Burn' (LTB) Program, designed to avoid the stigma of signing away land rights and give the landowner more freedom. In this program, the department would perform the initial burn after agreeing on its parameters, allowing the landowner to observe throughout the process. The landowner would then also complete a two-day course of prescribed burning techniques and corresponding regulations (e.g. ideal weather conditions and smoke control) based on a

program in place in North Carolina (3). When the landowner and DNR agree the land is in need of another burn, the DNR will perform it with the participation of the landowner for them to apply their skills. Upon successful completion of these steps, the landowner will earn their Prescribed Burn Certification, complete with badge, and can now perform burns on their own property by themselves, borrowing the necessary equipment from the DNR if need be—a common sense practice already employed by Minnesota (4). The goal of certification status and the earned badge is to achieve prescribed burning competence while instilling pride in landowners over the prosperity of their land and their ability to take care of it – and ideally encouraging neighbors to do the same by example.



Proposed design for badge awarded to those who complete the certification process in the 'Learn to Burn' Program.



Cost of a Prescribed Burn

The bottom line that the DNR and landowners must weigh is the economic cost of a prescribed burn. As the price is highly variable and on a case to case basis, it is difficult to put a price tag on burns in general, but these are a few guidelines to keep in mind in the early planning stages of a burn:

- The 'buy in bulk' motto applies to prescribed burns as well—the more acres burned, the lesser the price per acre is since the amount of fuel and labor does not increase proportionally with acreage.
- Labor is the most costly item.
- Denser vegetation and topography increase cost (i.e. a wooded slope would be most costly). This is good news in regards to prairies, as they are not woody or dense, and are generally located on flat terrain, with rolling hills at most.

A few examples on opposites ends of the price spectrum would be a large pasture burn and a small forest burn. The first is a 5,000 acre grassland that was burned in Oklahoma, which came out to just 23¢/acre (8). On the other hand, the Army Corps of Engineers estimates that a relatively small, 60 acre burn in a wooded area could be as high as \$600/acre. Most prescribed prairie burns are going to fall somewhere in between though, and closer to that Oklahoma example based on characteristics; a USDA survey found the average price of a brush, range, or grassland prescribed burn to be **\$57.09/acre** (2).



Drip torches and safety gear used to properly perform a prescribed prairie burn



The iconic prairie compass plant.

Summary of Private Land Scenarios for Prescribed Burning

Several scenarios where prescribed burning is an appealing option were laid out above, and are delineated below in an attempt at clarity:

- Land under burn easement, DNR performs burns
- Land under burn easement, landowner completes LTB Program and performs burn themselves
- No easement on land, but land deemed desirable for prairie habitat by DNR and so they will perform burns free of charge if landowner so chooses
- No easement on land, landowner wants to burn own prairie, completes LTB Program and performs burn themselves
- No easement on land, landowner wants to burn land other than prairie, completes LTB Program and performs burn themselves

Liability & Risk Assessment

In keeping with the idea of increased landowner participation in prescribed burning, the DNR would be held liable for any damage done by poorly controlled fires under their management. This would mean the development of a Risk Assessment Plan template to further put the landowner's mind at ease and spell out the steps that would be taken should the burn get out of hand. These steps include:

- Identification of areas most at-risk for escaped fire
- Escaped fire mitigation strategy
- Emergency action plan
- Outline of potential damages payments



Risk Assessment Plan developed to handle and ideally prevent situations like this

Conclusion

There are many reasons to invest in making prescribed burns a prevalent land management tool in Wisconsin. The promotion of healthy prairie habitat for native plants and animals (notably our state animal – the American badger) isn't enough for everyone, and the intrinsic beauty aspect even fewer still, but it's difficult to ignore the safety and financial implications of wildfires. Safely burning built-up leaf litter and other plant material is essentially reducing the fuel of a potentially catastrophic wildfire – no small accomplishment in a state with over 2,500 wildfires a year, $\frac{3}{4}$ of which are due to simple carelessness (10). Acting on these initiatives will mean healthier land, increased biodiversity, and safer countryside across the state of Wisconsin.



Another prairie resident and the nickname of the state.

“When people see evidence of prescribed fires on the land this spring, they should remember the benefits this management tool brings to Wisconsin. It removes accumulated flammable materials, reducing the risks of uncontrolled wild fires, enhances habitat for our wildlife and plants, and maintains those beautiful meadow views we enjoy here.”

-Steve Lenz,

U.S. Fish & Wildlife Service (5).



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