

Prescribed Burns for Natural Areas Management

What are they and why do them?

There are many benefits to properly planned and controlled prescribed burns. Prescribed burning is an extremely important tool and cost-effective way of reducing the spread of weeds, removing dead vegetation, minimizing the spread of pests, insects and diseases (can help control tick populations), recycling nutrients back into the soil, and promoting biodiversity.

What is a prescribed burn?

A prescribed burn, also called a controlled burn, is a maintenance practice performed by trained professionals that entails burning the land with intentionally set fire as a management strategy. This practice is used to ensure ecological health, diversity, and specific land management goals.

Burning naturalized areas every 1-3 years should replace the need to remove invasive species by hand or with chemicals.

Many ecosystems are vitally linked to fire. Prescribed burns have been an important management tool for maintaining and enhancing certain natural areas throughout history; contemporary prescribed burning is directly adapted from the cultural practice Native Americans performed seasonally for millennia as part of their intimate relationship with the land.

What are the benefits of prescribed burns?

They assist in managing and reducing invasive weeds and other undesirable vegetation and helps control detrimental pests and the spread of disease.

They help return nutrients back to soil from the residue of the burned-off dormant perennial plant material (grasses and flowering forbs) from the previous growing season.

They promote more vigorous growth of native plants by building soil ecology; the sun exposure warms the dark soil which also encourages plant vitality. Some native plants actually require a fire to activate seed germination, allowing the native system to propagate and become more resilient and diverse over time.

Fire-managed native plantings provide critical habitat for wildlife and help keep Michigan's natural ecosystems healthy and productive (michigan.gov).



Trained professionals conducting a prescribed burn at Rouge Park.



Prairie in Rouge Park just after a prescribed burn is completed.



Native plants thriving after a prescribed burn, providing habitat for wildlife.



When do prescribed burns generally take place?

Prescribed burns usually happen within short windows in the spring and fall to burn off the previous season's dead foliage. These seasonal windows are based on the ecological cycles of plants (when they are dormant), and when temperature, humidity, and wind conditions are suitable. In new restorations, spring burning usually favors grassier prairies and fall burns tend to support more flowery meadows. However, neither is exclusive and it is most important to burn when the right conditions are present.

There is typically a shorter window between the first hard frost and snowfall, making it harder to schedule fall burns, although this more closely mimics aboriginal practices.

There is a longer window of time between spring snow melt and early foliage growth, making scheduling somewhat easier.



Prescribed burn of a meadow in progress at Palmer Park.

Is it safe to do a prescribed burn, and can they get out of control?

Prescribed burns are safe when conducted by trained professionals under carefully managed conditions. Unlike wildfires, which are uncontrolled and unpredictable, prescribed burns are designed to be contained. While there is a small risk that conditions may change, crews monitor conditions closely and adjust the burn plan as needed to ensure safety. When done regularly, prescribed burns can help limit the spread and reduce the potential impacts of fire in areas where they occur.

To ensure safety and minimize smoke, trained crews time the burn for a specific range of conditions, including temperature, wind direction and strength, humidity, and ground moisture. Specialized equipment is used to prepare for, light, and control the fire. During the burn, there is ongoing monitoring of safety, site conditions, and weather.

Prescribed burns are done in close collaboration with municipal fire departments. In Detroit, a permit is required from the Fire Chief before the burn occurs. A fire official is typically on-site during the burn, with local fire units on standby.

Where do the insects and butterflies go when an area is burned? Are they harmed?

Although a few overwintering insects may be affected by a burn, generally the result is a healthier ecosystem that ensures better habitat for native insects, including butterflies and other beneficial pollinators, to sustain and thrive.

Does it cause air pollution?

The prescribed burn will create some smoke, which is largely water vapor with very little particulate matter, and odor similar to a wood fire. While controlled burning does cause some air pollutants to be temporarily released, a healthy native ecosystem adapted to fire will remove more carbon dioxide and produce more oxygen in the years following the burn.

To put into perspective, substantially fewer emissions are produced from a prescribed burn than the exhaust emitted from mowing a comparable area of turf grass with a gas mower, especially if done on a frequent basis.



Smoke during prescribed burn at Palmer Park.

Additional Resources:

Michigan DNR Prescribed Fire Explained

<https://www.michigan.gov/dnr/managing-resources/forestry/fire/prescribed-fire-explained>

Michigan United Conservation Clubs

<https://mucc.org/prescribed-fire-as-a-habitat-management-tool-in-michigan/>

Land Conservancy of West Michigan

<https://naturenearby.org/prescribedburnnotice/>

Michigan Prescribed Fire Council

<https://www.firecouncil.org/>

Michigan Natural Resources and Environmental Protection Act - prescribed burning

<https://bit.ly/mnrepa>



Wildflower meadow at Palmer Park.



GENERAL SERVICES DEPARTMENT
**PARKS & RECREATION
DIVISION**