



Lake County Forest Preserves

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DATE: March 6, 2023

MEMO TO: Jessica Vealitzek, Chair
Operations Committee

Agenda Item # 10.7

FROM: Pati Vitt
Director of Natural Resources

RECOMMENDATION: Recommend approval of a Resolution approving a new Prescribed Burn Management Policy.

STRATEGIC DIRECTIONS SUPPORTED: Conservation; Leadership; Communication, Education and Outreach

FINANCIAL DATA: There is no financial impact.

BACKGROUND: Fire has shaped the landscape and habitats of North America, Illinois, and Lake County, and the native flora and fauna have adapted to fire over many thousands of years. Indigenous Peoples used fire for diverse purposes ranging from cultivation of plants for food, medicine, and basketry to the extensive modification of landscapes for game management or travel (Payne 1982; Anderson 2005; Abrams and Nowacki 2008; McClain et al 2021). Both Anderson (1970) and McClain and Elzinga (1994) have described the dynamic balance between prairie and forests in Illinois, where repeated fires during periods of drought favored the formation of grassland community types.

As European settlers moved westward, natural and human-caused fire regimes were disrupted – prairies were plowed and savannas were cleared to expand agricultural production - dividing the landscape and thereby reducing fire adapted/dependent habitats and their connectivity. Unregulated forest harvesting during the 19th and early 20th centuries generated logging debris that contributed to catastrophic wildfires (Haines and Sando 1969; Pyne et al. 1996). Societal and legal responses to these fires led to widespread fire suppression actions by federal, state, and private forest managers. Agency policies, along with marketing campaigns on fire prevention (Smokey Bear) impacted fire dependent habitats through active suppression (Pyne 1982). The consequences of fire suppression in fire dependent communities has led to a reduction or loss of ecosystem services, altered fuel loads (duff and leaf litter), increased tree and shrub density (i.e. excessive shading) and homogenized landscape structure (Taylor 2004; Hutchinson et al. 2008; Nowacki and Abrams 2008). Consequently, the influx of fire-sensitive and invasive species alters community composition, structure, and ecosystem processes (Keane et al. 2002; Rodewald and Abrams 2002; McShea et al. 2007; Alexander and Arthur 2010; Maynard and Brewer 2013).

In 2001, the District Board approved the Controlled Prescribed Fire Policy, which included approval of procedures for implementation of the program. The policy authorized the Finance and Administrative Committee to approve revisions to the procedures associated with the policy. The procedures have been updated periodically to reflect changes in staff, regulations, and best management practices. The District seeks to replace the previous policy to address changes in language that reflect a growing understanding and acceptance of prescribed burning as a critical

management tool to maintain the quality of publicly owned natural areas, as well as changes in District Committee and Department structure. In addition, the District seeks to update the Prescribed Burn Management Procedures, to reflect changes in Department structure and updated training requirements, and to allow the Director of Natural Resources to update the procedures as needed in the future.

The procedures and methods used to implement the proposed new policy are consistent with the standards developed by the National Wildfire Coordinating Group, the U. S. Forest Service as well as regional standards set by the Chicago Wilderness Alliance. In 2007, the State of Illinois recognized the importance of prescribed burning with the passing of the Illinois Prescribed Burn Act. This act establishes the need for periodic fire as essential to the perpetuation, restoration, and management of the State's plant and animal communities and recognizes that "significant loss of the State's biological diversity will occur if fire is excluded from these fire-dependent communities". Similarly, the Illinois Prescribed Fire Council recognizes prescribed fire as "the most important management practice in maintaining and restoring healthy landscapes." The Objectives of the proposed Prescribed Burn Policy are:

Objective 1. Maintain/Increase Native Species Abundance and Richness

Prescribed burning is an effective tool for maintaining and increasing native species abundance and diversity. Results of studies support high fire frequencies to maintain species richness (Bowles and Jones 2013). Monitoring of District preserves indicates that burning more frequently and maintaining a maximum of 3 to 4 years between burns is correlated with higher native species richness and lower invasive species richness (see Figure 1). The lack of fire or fire suppression also impacts wildlife communities. Butterfly (Huntzinger 2003), Avian, herpetofauna and mammalian (Means 2006) diversity declined substantially in areas that were not burned when compared to recently burned areas. The rarity of some threatened/endangered species may be due to the alteration of habitat caused by the lack of fire.

Objective 2. Decrease Adventive (Non-Native) Species Richness

Prescribed fire can be used to manage unwanted vegetation, such as non-native invasive plant species that outcompete native flora. Burning alone can reduce the need for chemical control measures such as herbicides, but to be effective burning may need to be done repeatedly. Burning can also be used in conjunction with chemical or mechanical treatments to maximize effectiveness, minimize chemical use, and reduce costs.

Objective 3. Maintain Quality Habitats Across the LCFPD (including impeding woody encroachment)

Prescribed fire helps maintain many native plant communities, especially prairie and wetland ecosystems. Prescribed fire is also important for maintaining important tree species, such as oaks in our wooded communities. Fire reduces the thick leaf litter layer that is a barrier to oak seedling establishment. Oaks are also intolerant of heavy shade and cannot successfully regenerate in densely wooded areas. Fire can be used to create openings in the canopy necessary to support the light requirements of oak seedlings. Oaks are adapted to withstand regular burning and develop a thick bark at the base of the tree.

Excluding fire from previously fire-frequent ecosystems results in major changes in ecosystem structure, composition, and function across a variety of scales (Covington and Moore, 1994; Keane et al. 2002; Varner et al. 2005). The consequences of suppression-altered fire regimes include a

reduction in or loss of ecosystem services, and vastly altered fuels and potential future fire behavior. In woodland habitats, for example, tree densities increase and the structure of the landscape is homogenized (Taylor 2004; Hutchinson et al. 2008; Nowacki and Abrams 2008). Further the canopy is occupied by shade-tolerant, fire-sensitive trees and the accumulated litter in unburned forest floors can lead to reduced species diversity and low abundance or species cover (Hiers et al. 2007; Engber et al. 2011). Plant species that benefit from disturbance and exposed bare soil typically decline (Harvey et al. 1980; Gilliam and Platt 1999; Knapp et al. 2007).

As a result of these undesirable changes in habitat structure and function associated with lack of fire, the District employs prescribed burning to maintain habitat quality, ecosystem function and species diversity.

Objective 4. Optimize Burn Return Intervals

Fire frequency refers to the recurrence of fire in an area over time, while the burn return interval is the time between fires in a designated area. Vegetation monitoring of District preserves has shown that Burn Return Intervals between 0-1 and 2-3 years is ideal for maintaining native species richness. This means that optimizing our prescribed burn program to ensure that high quality habitats are burned every 3-4 years to maintain species diversity. District monitoring efforts revealed a similar pattern in both prairie and woodland habitat.

Objective 5. Ensure Safety of All Prescribed Burn Operations

The District adheres to all established safety protocols when conducting prescribed burning. Burn units are well-established and the optimal conditions for burning each are well documented. Burn breaks are designed to ensure safe containment across and within established burn units. Burn crews are well-trained, experienced, and equipped with the proper Personal Protective Equipment. The District follows the Prescribed Burn Management Procedures during the planning, implementation and reporting of all prescribed burning activities. District staff periodically revise the prescribed burn management procedures to reflect changes in District staffing and/or regulations.

The new Prescribed Burn Policy is intended to reflect:

1. Updated language changing the name of the "Controlled Prescribed Burn Policy" to the "Prescribed Burn Policy" to align with national, regional, and state programs and policies;
2. An updated approval process for the Prescribed Burn Bosses to reflect changes in training procedures;
3. The authorization of the District's Director of Natural Resources to amend and implement updates to the Procedures in order to keep current with changing technologies, science and best practices.

Recommended changes to the Prescribed Burn Procedures are intended to reflect:

1. Updated language changing "Controlled Burn" to "Prescribed Burn" to align with national, regional, and state programs and policies;
2. Updated Department structure and other staff changes;
3. Updated communication procedures that will allow greater efficiency in the use of staff resources and be more cost-effective;

4. Updated training and approval requirements for Prescribed Burn Crew Members and Prescribed Burn Bosses.

REVIEW BY OTHERS: Chief Operations Officer, Director of Operations, Director of Finance, Corporate Counsel

STATE OF ILLINOIS)

COUNTY OF LAKE) SS
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**BOARD OF COMMISSIONERS
LAKE COUNTY FOREST PRESERVE DISTRICT
REGULAR MARCH MEETING
MARCH 15, 2023**

MISTER PRESIDENT AND MEMBERS OF THE BOARD OF COMMISSIONERS:

Your **OPERATIONS COMMITTEE** presents herewith "A Resolution approving a Prescribed Burn Management Policy," and requests its approval.

OPERATIONS COMMITTEE:

Date: 3/6/2023 Roll Call Vote: Ayes: _____ Nays: _____
 Voice Vote Majority Ayes; Nays: 0

**LAKE COUNTY FOREST PRESERVE DISTRICT
LAKE COUNTY, ILLINOIS**

A RESOLUTION APPROVING A PRESCRIBED BURN MANAGEMENT POLICY

WHEREAS, the Lake County Forest Preserve District (the "District") manages thousands of acres of land for outdoor recreation, education, wildlife habitat, preservation of savanna, woodland and prairie communities, and other public purposes; and

WHEREAS, many of the District's natural plant and animal communities are fire dependent and periodic prescribed burning is required for their perpetuation and management and for restoration of their ecological diversity and function, and

WHEREAS, significant loss of the County's biological diversity will occur if fire is excluded, and

WHEREAS, the use of prescribed burns for management of public lands is essential to cost effective and efficient maintenance of the specific resource value for which these lands were acquired, by preparing sites for restoration, removing undesirable and competing vegetation, expediting nutrient cycling and controlling invasive species, thus allowing for more abundant growth and reproduction of native species; and

WHEREAS, prescribed burns reduce the buildup of fuels in woodlands, wetlands and prairies lessening the risk and severity of wildfires and reducing the threat of loss of life and property; and

WHEREAS, it is in the best interests of the District to approve the Prescribed Burn Policy in the form attached hereto stating the District's policy concerning and objectives for prescribed burns of the District's preserves; and

WHEREAS, the District's response to wildfires will be directed by the procedures outlined in the Prescribed Burn Management Procedures (the "Procedures") that are authorized by the Prescribed Burn Policy, and

WHEREAS, safe implementation and proper training as directed by the Procedures are necessary to ensure the maximum benefits and protection for the District and the public; and

WHEREAS, on September 21, 2001, pursuant to Resolution No. 3116, the District Board of Commissioners approved a "Controlled Prescribed Burn Policy" (the "2001 Policy");

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Lake County Forest Preserve District, Lake County, Illinois **THAT**:

Section 1. Recitals. The recitals set forth above are incorporated as part of this Resolution by this reference.

Section 2. Approval of Prescribed Burn Policy. The Prescribed Burn Policy attached to this Resolution is hereby approved.

Section 3. Authority to Approve Procedures. The Director of Natural Resources of the District is hereby authorized to establish and approve changes to procedures to implement the Prescribed Burn Policy.

Section 4. Repealer. The 2001 Policy and (to the extent they are inconsistent with all or any part of the Prescribed Burn Policy attached to this Resolution) the provisions of other District resolutions, policies, and procedures are hereby repealed.

Section 5. Effective Date. This Resolution shall be in full force and effect, from and after its passage and approval in the manner provided by law.

PASSED this _____ day of _____, 2023

AYES:

NAYS:

APPROVED this _____ day of _____, 2023

Angelo D. Kyle, President
Lake County Forest Preserve District

ATTEST

Julie Gragnani, Secretary
Lake County Forest Preserve District

Exhibit No. _____

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LAKE COUNTY FOREST PRESERVE DISTRICT PRESCRIBED BURN POLICY

The Lake County Forest Preserve District ("District") desires to promote the ecological integrity of its preserves and actively conserve, restore and manage its natural resources including native species and their habitats, ecological processes, and ecosystem services, so visitors to the District's preserves can enjoy their scenic beauty, diversity and ecological functions. Fire has shaped the landscape and habitats of Lake County, and prescribed burning is an effective and efficient management tool.

DISTRICT POLICY AND OBJECTIVES

It is the policy of the District to implement prescribed burns to promote biodiversity, control invasive weeds and shrubs, reduce fuel loads thus decreasing the possibility and severity of wildfires, and to educate and inform the public to the benefits, timing, and location of burns. The District's Prescribed Burn Program will be conducted using ecologically accepted procedures during the planning and implementation process, described in the Prescribed Burn Management Procedures, to ensure that management objectives are met and all safety issues are addressed. The District's Director of Natural Resources is authorized and directed to prepare, approve, amend, and implement the Procedures.

Update Objective 1. Maintain/Increase Native Species Abundance and Richness

Objective 2. Decrease Adventive (Non-Native) Species Richness

Objective 3. Maintain Quality Habitats Across the LCFPD (including impeding woody encroachment)

Objective 4. Optimize Burn Return Intervals

Objective 5. Ensure Safety of All Prescribed Burn Operations