ICE AGE NATIONAL SCENIC TRAIL (IATR), ICE AGE COMPLEX AT CROSS PLAINS



FIRE MANAGEMENT PLAN

2021



NPS Photo: Sunset at USFWS Shoveler's Sink, South end of Ice Age Complex at Cross Plains

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1.0 INTRODUCTION, LAND MANAGEMENT PLANNING, and COMMUNICATION

The Ice Age Complex, at Cross Plains (henceforth "Complex") is located just west of Madison, Wisconsin, in the town of Cross Plains. The NPS portion of the Complex is also the location of the Ice Age National Scenic Trail Interpretive Site. The area contains an outstanding collection of glacial landforms, including a gorge carved by glacial meltwater and expansive views of both glaciated and non-glaciated terrain, the latter called the "Driftless Area" of Wisconsin. The National Park Service (NPS) currently manages 161 acres (the "NPS site") of the approximately 1,700 acre Complex. The 161 acres is part of the former Wilkie farmstead purchased by the NPS. The ground immediately around the structures on the Wilkie farmstead is about 2 acres, which are included in the 161 acres. Four partner agencies currently own about 770 of the 1,700 acres, with the balance (930 acres) in private ownership. The partners are currently negotiating for additional lands with willing sellers.

The four partner agencies are the National Park Service, Wisconsin Department of Natural Resources, U.S. Fish and Wildlife Service (USFWS), and Dane County Parks. Three distinct but connected collaborative management areas of focus are highlighted at the Complex: The Ice Age National Scenic Trail (IATR) traverses a portion of the Complex, it's the future location for the IATR Interpretive Center and is one of nine Units of the Ice Age National Scientific Reserves. An additional important partner to IATR is the Ice Age Trail Alliance (the Non-Profit Partner to IATR). The Alliance assist with the planning, building and maintaining the trail primarily through the use of volunteers.

The Ice Age National Scenic Trail is a long-distance trail that winds approximately 1,200 miles through 30 counties in Wisconsin, generally following the terminal moraine (where the ice stopped it's forward advance) and other nationally significant geologic features left by the last glacial advance approximately 10,000 to 30,000 years ago. The NPS site at the Complex is the only location along the IATR where fuel reduction and habitat restoration actions would be implemented by the NPS at this time. If other lands are acquired at the Complex by the NPS, they will then be managed as part of the NPS site. Fire management activities may be managed by other landowners in other locations along the existing portions of the trail.

The plan is guided by Director's Order-18 (DO-18) which requires that all park units with vegetation capable of sustaining fire develop a FMP.

"Park units with vegetation capable of burning will prepare a fire management plan that is consistent with federal law and departmental fire management policies, and that includes addressing the need for adequate funding and staffing to support the planned fire management program." (Section 4.5, NPS Management Policies, 2006)

"Each park unit with burnable vegetation must have an approved Fire Management Plan that will address the need for adequate funding and staffing to support the fire management program." (Directors Order #18, Wildland Fire Management, 2008)

The Complex's Fire Management Plan (FMP) is a strategic plan that defines a program of work to manage wildland fire and non-fire fuel treatments and is based on direction contained in existing park unit planning documents. This FMP provides guidance for firefighter and public safety, addresses values to be protected, and includes strategies for managing wildland fire. It is consistent with IATR resource management objectives and environmental laws and regulations

such as the National Environmental Policy Act, the National and State Historic Preservation Act, and the Clean Air Act. This plan will implement techniques for minimal impact suppression efforts (MIST) which would reduce impacts to natural and cultural resources in the event of a wildfire incident.

1.1 Program Organization

Ice Age National Scenic Trail is part of the Great Lakes Fire Management Zone. The Zone Fire Management Officer (FMO) and other fire management support personnel are currently duty stationed at Indiana Dunes National Park (INDU). The fire ecologist is stationed at Saint Croix National Scenic Riverway. Ultimately, the fire program at IATR is the responsibility of the park superintendent and the assigned park fire coordinator, but technical oversight and support is provided by zone fire management staff.





The following identifies the primary responsibilities of park staff related to wildland fire activities at IATR:

Superintendent - The Park Superintendent is responsible to the Regional Director for the safe and efficient implementation of fire management activities within their unit. This includes ensuring compliance with department, service and park policies.

- Take necessary and prudent actions to ensure firefighter and public safety.
- Ensure the Fire Management Officer (FMO) is fully qualified as identified in the *Incident Fire Program Management (IFPM) qualification standards.*
- Provide a written Delegation of Authority to individual(s) responsible for wildland fire management activities to ensure an adequate level of operational authority.
- Ensure applicable park resource management objectives are included in Fire Management Plan (FMP). Ensure FMP is annually reviewed and validated.
- Ensure protection and fire use standards and constraints are in compliance with agency fire policies.
- Ensure use of fire funds are in compliance with The Department of Interior and Agency policies.

- Ensure fire and fire aviation preparedness reviews are conducted each year.
- Ensure an approved burn plan is followed for each prescribed fire project, including completion of technical review and Go/No Go checklist, follow-up monitoring and documentation to ensure management objectives are met.
- Ensure post fire reviews are conducted on all fires that escape initial attack or are managed as long-term incidents.
- Provide incident management objectives, Delegations of Authority, and Agency Administrator briefings to Incident Management Teams (IMT).
- Attend Fire Management Leadership Course.
- Ensure appropriate investigations are conducted for incidents, entrapments, and serious accidents.
- For all unplanned human-caused fires where liability can be determined, ensure actions are initiated to recover cost of suppression activities, land rehabilitation, and damages to the resource and improvements.

IATR Support Staff

- Formulates compliance documents and ensures their completion in Planning, Environment and Public Comment (PEPC).
- Recommends, reviews, provides oversight, and initiates planning for fuels activities.
- Provides input concerning special status species.

IATR Fire Coordinator - Coordinates work activities of staff in support of fire management operations.

- Coordinates work activities of staff in support of fire management operations.
- Serves as liaison with fire management personnel.
- Assures annual updates of agreements are complete.
- Drafts necessary Memorandums of Understanding with local fire departments.
- Reviews all obligations made or proposed for emergency preparedness.
- Ensures that Division personnel comply with arduous duty fitness standards for timely firefighter certification.
- Briefs the Superintendent and Deputy Superintendent on current fire management activity.
- Ensures the fire management program is an effective part of the resource management program.
- Reviews fire management plans and other planning documents, as appropriate.
- Supports the fire management program with staff as appropriate.

Great Lakes Fire Management Officer

- Maintain "safety first" as the foundation for all aspects of fire and fire aviation management.
- Ensures that a comprehensive fire management program for the Ice Age NST is adequately planned and implemented and that the FMP is reviewed annually and revised as necessary.
- Ensures the proper preparation and approval of individual hazard fuel reduction and prescribed fire plans.
- Ensures that an adequately trained and experienced staff of incident qualified personnel is available to handle a normal fire year workload.

- Issues Incident Qualification Cards annually.
- Maintains a public awareness program for all aspects of fire management, and ensures that positive relationships are maintained with cooperators, other agencies and adjacent landowners.
- Coordinates with the Midwest Regional Fire/Aviation Manager and staff.
- Ensures an adequate, effective fire prevention program is implemented.
- Ensure that only trained and qualified personnel are assigned to fire and fire aviation duties.
- Ensure fire and fire aviation policies are understood, followed, and coordinated with other agencies as appropriate.
- Conduct and participate in fire management related reviews and investigations.
- Ensure a Wildland Fire Decision Support System (WFDSS) is initiated, completed and approved for all wildfires according to policy.
- Monitor fire season severity predictions, fire behavior, and fire activity levels. Take appropriate actions to ensure safe, efficient, and effective operations.
- Ensure a written / approved burn plan exists for each prescribed fire project.
- Work with cooperators to identify processes and procedures for providing fire safe communities.
- Ensure budget requests and allocations reflect analyzed anticipated workload.
- Ensure that reports and records are properly completed and maintained.
- Ensure fiscal responsibility and accountability in planning and expenditures.
- Keep agency administrators, suppression resources, communications and Information Officers informed of the current and expected situation.

Great Lakes Assistant Fire Management Officer

- May be delegated the duties of the FMO.
- Updates annual plans and forwards them to FMO for review.
- Maintains training and qualification records for National Park personnel, assesses staffing needs, recommends staff development to meet initial attack and prescribed fire needs, coordinates the training program and recommends individual qualifications for approval by the FMO.
- Opens taskbooks for fire qualified personnel.
- Maintains, and annually evaluates the Fire Management Plan to ensure accuracy and validity.
- Assures compliance with FMP and fire policy and provides information to Incident Commanders.
- Coordinates trainings, and initial response with fire coordinator

Great Lakes Fire Program Management Assistant

- Provide support services in terms of procurement, travel, and fiscal matters.
- Tracks expenditures against fire accounts for prescribed fire operations, suppression actions, mechanical fuel treatment projects, and preparedness activities for IATR.
- Ensures Individual Fire Reports (DI-1202) are entered into INFORM within ten days of being declared out.
- Maintains administrative files and recordkeeping.
- Makes all entries in the Incident Qualification Computer System (IQCS) for the Qualifications System, including training, experience, employee information, and task books; collects EZ update forms annually; prints red cards
- Requests accounts be opened, supports logistical needs as required.

- Requests account code from region. Makes notification calls.
- Maintains a hard copy file of all DI-1202's.

Great Lakes Fire Ecology Program

- Assists IATR through their monitoring of vegetation and fire effects.
- Works with EMPT personnel to ensure projects are in collaboration with one another.

1.2 Environmental Compliance

An Environmental Assessment of the FMP complies with National Environmental Policy Act (NEPA) requirements, National Park Service (NPS) policy, and National Historical Preservation Act (NHPA) requirements. The completed EA analyzes environmental impacts of the operations detailed in this plan. The EA's Finding of No Significant Impact (FONSI) is located in Appendix C. Additional compliance work may be necessary for prescribed fires and mechanical treatments and will be completed prior to project implementation if appropriate. This will include biological, historical, and cultural assessments.

The FMP will implement activities in accordance with the regulations and directions governing the protection of historic and cultural properties as outlined in the Department of Interior Manual, Part 519 (519 DM), and Code of Federal Regulations (36 CFR 800). The National Historic Preservation Act of 1966 (NHPA), as amended, Section 106, sets the requirements for the protection of the cultural resources found in the park.

Three federally listed species occur or have the potential to occur at the NPS property at Cross Plains, WI. These include the northern long-eared bat (*Myotis septentrionalis*), the rusty patched bumble bee (*Bombus affinis*), and the hooded warbler (*Setophaga citrina*). In addition, 6 species listed by the state as threatened or as species of concern are found or have the potential to be found at the NPS property at Cross Plains, WI. These are the little brown bat (*Myotis lucifugus*), Henslow's sparrow (*Ammodramus henslowii*), redheaded woodpecker (*Melanerpes erythrocephalus*), western meadowlark (*Sturnella neglecta*), yellow-billed cuckoo (*Cocczzus americanus*), and heart-leaved skullcap (*Scutellaria ovata ssp.ovata*).

The northern long-eared bat is a federally listed threatened species under the Endangered Species Act. They are known to be active during the summer months. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds. During the winter months they hibernate in caves and mines.

Threats to the northern long-eared bat include loss or degradation of summer habitat. It is important that the timing of forest management takes the bats into consideration. Where possible and not a safety hazard, leave dead or dying trees on your property. Northern long-eared bats and many other animals use these trees (FWS Fact Sheet https://www.fws.gov/midwest/endangered/mammals/nleb/pdf/NLEBFactSheet01April2015 .pdf).

The rusty patched bumble bee is extremely rare in Wisconsin and is considered both state and globally imperiled. The bee relies on diverse and abundant flowering plant species in proximity to suitable overwintering sites for hibernating queens. Overwintering habitat includes but is not limited to non-compacted and often sandy soils or woodlands but does not include wetlands. Suitable active-season habitat includes but is not limited to prairies, woodlands, marshes/wetlands, agricultural landscapes, and residential parks and gardens. Queens emerge from hibernation in April and the colony is active through September.

The hooded warbler nests and forages in upland forest types with a dense understory of shrubs, saplings, and brambles near small or partial canopy openings. Nests are often near the edges of vegetation. Nest substrates documented in Wisconsin include blackberry/raspberry thickets. The breeding season for the hooded warbler starts a bit later (in late May) and also extends through mid-July. It is an uncommon breeding resident in the southern two-thirds of the state, mostly south of a line from St. Croix to Portage to Manitowoc counties.

1.3 Park Unit/Resource Management Planning

Fire can be used to restore and maintain native vegetation in the park. Fuels management, using both mechanical and prescribed fire treatments, can reduce the risk to cultural and historic resources, and NPS infrastructure on the park. Implementation of the FMP will assist in achieving the park planning objectives.

1.3.1 Vegetation Patterns and Land Cover Change for the Cross Plains Ice Age National Scientific Reserve, 1937-2007 (2008)

A study team from the University of Wisconsin-Madison completed a land cover inventory of the NPS Site to supplement previous surveys, identify significant features of the property, and provide management recommendations. They reported that the site has excellent potential for restoration efforts. The report recommended targets of oak savanna, dry mesic forest, upland prairie, and mesic maple forest for the NPS Site using a combination of fire, cutting, and planting herbaceous species.

1.3.2 General Management Plan (2013)

The GMP establishes a consistent vision for the Ice Age Complex that is shared by the National Park Service, Wisconsin Department of Natural Resources, Dane County Parks, US Fish & Wildlife Service, and the public. It describes the general path the partners will follow in managing the Ice Age Complex. At the Cross Plains Complex, vegetation in the Cross Plains gorge will be restored. Ecological resources will largely be managed to reveal the glacial landscape. There are nonnative and invasive vegetation species present in the complex. Active management actions will be required to reduce these species. High concentration of open-grown white (*Quercus alba*) and burr oak (*Quercus macrocarpa*) representative of the oak savanna that has disappeared from more than 99.9% of its former range, presents an opportunity for restoration and management. The most sensitive ecological areas will be carefully protected. In addition, a wildlife corridor will be established between the former Wilkie property and Shoveler Sink, on the southern half of the Complex. This corridor will be restored or maintained as native vegetation.

1.3.3 Foundation Document (2017)

The purpose of the Ice Age National Scenic Trail is to ensure protection, preservation, and interpretation of the nationally significant resources and values associated with continental glaciation in Wisconsin, and to provide outdoor recreational and educational opportunities in support of and compatible with the conservation and enjoyment of the nationally significant scenic, historic, natural, and cultural resources along the trail.

The Cross Plains Complex and other areas along the trail offer an unparalleled opportunity to compare and contrast the parts of Wisconsin that were glaciated and those that were never glaciated (the driftless area). The two landscapes provide outstanding opportunities to observe, monitor, and understand the impacts of largescale, long-term environmental changes dating back to the Pleistocene epoch.

1.3.4 Cross Plains Vegetation Management Master Plan (2021 Final)

According to the 1833 Government Land Office Survey, the Cross Plains Complex consisted of oak savanna with tall grass prairie to the southwest. Through a combination of agricultural practices, fire suppression, and timber harvest, the structure and composition of the vegetation has changed considerably. Trees and shrubs have encroached into the prairies and savannas, while the woodlands have become denser and converted to shade-tolerant and fire-sensitive species. The vegetation management plan recommends restoration of oak opening, oak woodland, and prairie areas while reducing non-native vegetation across the site. Prescribed fire is preferred for much of the restoration and maintenance of these vegetation types.

1.4 Collaborative Planning

Federal fire cohesive strategic goals include: 1) restore and maintain landscapes, 2) create fire-adapted communities, and 3) enhance response to wildfires. The Cross Plains Complex is a combination of private, state, county, and federal ownership. The four partner agencies (who own and manage land at the Complex) are the National Park Service, Wisconsin Department of Natural Resources, U.S. Fish and Wildlife Service, and Dane County Parks. Management of the Complex, including wildland fire management, is a collaborative effort primarily among the four partner agencies. Cross Plains Fire Department and Ice Age Trail Alliance are important Cooperating Agencies.

1.4.1 Cross Plains Fire Department

Cross Plains Fire Department is located about 4 miles from the Complex and it provides structural and wildland fire response as the nearest provider.

1.4.2 Dane County Emergency Services

Dane County provides Dane County Emergency Management (Dane County Emergency Medical Services), Law Enforcement, Dane County Sheriff's Office, and structural and wildland fire response through mutual aid with Cross Plains VFD.

1.4.3 Wisconsin Department of Natural Resources

Wisconsin Department of Natural Resources is a land management agency that does a full range of land stewardship and management which includes wildland fire response

and the use of fire to mitigate the threats from wildland fires and restore and maintain habitat.

1.4.4 Dane County Parks

Dane County is a land management agency that has trained fire responders that use fire to mitigate fire risk and restore and maintain habitat.

1.4.5 United State Fish and Wildlife Service

The US Fish and Wildlife Service is similar to the US NPS in their response and use of wildland fire in land management activities.

1.4.6 Ice Age Trail Alliance

The Ice Age Trail Alliance is a non-profit organization responsible for many activities related to the Ice Age National Scenic Trail such as building and maintaining the trail as well as trail stewardship along the trail corridor. Some of these activities include their trained fire personnel using fire to mitigate threats and restore and maintain habitat.

1.5 Communication and Education

A comprehensive communication and education program that emphasizes the entire scope of wildland fire management activities, particularly the role of fire in ecosystems.

The Park's Communication/Education plan is based on RM 18 Prevention chapter, and RM 18 Communication and Education chapter. In addition, National Wildland Coordination Group's (NWCG) Best Practices in Communication Planning was used as a source of information.

Prior to planned ignitions, the park fire coordinator or their designee will contact local landowners and cooperators and prepare a press release. On the day of the burn, all staff, volunteers and cooperators will be notified of the location and any safety warnings or area closings to pass along to visitors. Key visitor access sites will have appropriate signage in place to indicate that a management planned ignition is occurring. These actions will provide for public safety and education and decrease the likelihood that visitors will attempt to extinguish or report the fire.

Post-burn activities should include assessment of how the local public and cooperators received the efforts. This will be accomplished by contacting local landowners. The purpose of this feedback is to revise plans, procedures, and educational efforts towards ensuring public support and understanding of the fire management program.

The Chief of Natural Resources, in coordination with the Chief of Interpretation and Visitor Services, will ensure a brief interpretive handout regarding the use of planned ignition at the Park is created and ensure that interpretive staff is familiar with and project a positive perspective to the public concerning planned ignition use. The chief of interpretation and Visitor Services will also maintain a file of public comments received concerning prescribed burns and use them to improve pre-burn communications targeted to garnering public support of the fire management program.

1.5.1 Program Capabilities

Disseminating information about fire's natural role and effects is an important step in establishing public support for such programs. IATR's wildland fire management information program will be factual, straightforward, and aimed at many different audiences. The following guidelines will be followed:

- Prior to the initiation of a planned ignition, a Public Information Officer (PIO) will be designated, providing a news release to local media. The release will serve to inform the public about the possibility of reduced visibility on roadways. The PIO will also make personal contact with adjacent landowners to alert them to possible hazards.
- Place interpretive/information signage at trailheads to educate public about ecological restoration practices occurring on site.
- In the case of uncontrolled, unplanned ignitions, the Incident Commander or Superintendent will initiate evacuation of visitors, non-essential personnel, and adjacent landowners.
- Under certain weather conditions (low wind), smoke from wildland or planned ignitions may cause serious visibility problems on roads adjacent to the park. When necessary, smoke mitigation will be initiated by the Incident Commander. Local law enforcement will be contacted to set-up roadblocks or warnings on the effected roads.
- Ecological concepts upon which the wildland fire management program is based will be incorporated into interpretive and curriculum-based education programs.
- The fire management program will be incorporated into appropriate interpretive talks, walks, curriculum-based educational programs, and at visitor center exhibits.
- Public information outlets for neighboring land management agencies will be provided with fire management information, particularly when wildfires and planned ignitions are burning in the park.
- To effectively answer visitor questions, employees in the park will be made aware of the wildland fire management program and the status of ongoing fires. Park volunteers and interns working will also be made aware of the program.
- The wildland fire management program will be discussed in informal contacts with all divisions, park neighbors, and park visitors.

1.5.1.1 Contact List for planned and unplanned ignitions is in Appendix G

1.5.1.2 Materials

Signs notifying the public about prescribed fires and unplanned wildland fires, area closures, dense smoke, or other special situations will be placed along roadways, and at trailheads.

Information handouts explaining the fire management program will be prepared and periodically updated. During periods when management fires are burning, these handouts will be distributed to visitors at the park the visitor center, and by NPS field personnel during informal contacts in the park.

1.5.1.3 Online Resources

http://www.nwcg.gov/branches/ppm/cepc/archives/wfewt/wfewt.htm http://www.nps.gov/fire/download/fir_wil_rm18.pdf http://www.geomac.gov/index.shtml http://www.firewise.org/ http://www.nifc.gov/fireInfo/fireInfo_main.html

1.5.2 Communications Step-Up Plan

When fire danger reaches high levels, information concerning fire danger and restrictions will be disseminated through the use of interpretive contacts, flyers, and signs at park entrances and the Visitors Center.

2.0 WILDLAND FIRE MANAGEMENT GOALS, OBJECTIVES, and MANAGEMENT ACTIONS

The objective of this plan is primarily to permit the use of prescribed fire in support of resource management goals, to comply with DO #18, and to provide the park with the capability to protect human life, structures and resources from wildland fires.

2.1 Program Goals

Complex fire management goals:

- Firefighter and public safety is the highest priority of every fire management activity.
- Apply prescribed fire to achieve specific resource management goals.
- Protect natural and cultural resources from adverse effects of fire and fire management activities.
- Minimize, and where necessary, mitigate unacceptable impacts of fire suppression.
- Reduce unplanned human-caused ignitions.
- Maintain or restore the quality of the native fire-dependent and fire-maintained vegetation communities that occur within the park.
- Facilitate reciprocal fire management activities through the development, collaboration and maintenance of cooperative agreements and working relationships with adjacent fire management entities.
- Provide educational resources that emphasize the entire scope of wildland fire management activities, particularly the role of fire in ecosystems.

2.2 Program Objectives

• Be proactive in reducing the risk of wildfire by protecting values, resources, and adjacent properties through periodic hazard fuel management activities as conditions warrant.

- Coordinate with NPS Cultural and Natural Resource Specialists to ensure that there are no adverse impacts to resources from fire or fire management activities.
- Use prescribed fire to maintain or increase native plant species diversity and meet desired future conditions in the fire-dependent prairie and woodland.
- Minimize the growth and spread of non-native and invasive vegetation species.
- Use prescribed fire to help reduce woody vegetation encroachment into the prairie, savanna, and woodland areas.
- Suppress all unplanned ignition within park boundaries.

2.3 Approved Wildland Fire Management Actions

The fire management program of Ice Age National Scenic Trail consists of suppression of all unplanned ignitions, as well as the use of prescribed fire and mechanical treatments to restore and manage prairie, oak and other fire-adapted ecosystems.

2.3.1 Management of Wildfires

Management responses to specific wildland fires will be determined through evaluation of public and firefighter safety, fire behavior, values at risk, potential suppression damage, and availability of fire suppression resources. All available park and local firefighting resources will be utilized, as necessary and qualified, to limit damage to values at risk, protect private and public lands outside the park boundary, and provide for the health and safety of firefighters and the public.

A full suppression strategy is recommended, although the selection of suppression strategies is at the discretion of the Incident Commander in consultation with the park superintendent. Minimum Impact Strategy and Tactics (MIST) should be utilized to the extent possible on all suppression actions.

2.3.2 Management of Fuel Treatments

The intent of this strategy is to meet resource management objectives and to reduce hazardous wildland fuels to ensure protection of life, property, cultural values, and natural resources. Methods for accomplishing hazardous fuels reduction include prescribed fire, mechanical, and chemical treatments.

Prescribed fires are intentionally ignited under predetermined weather and fuelmoisture conditions allowing managers to exert substantial influence over the spread and intensity of the fire. All prescription parameters, acceptable ranges, and objectives are clearly stated in a prescribed fire plan for each prescribed fire conducted. All prescribed fires will be planned and managed in compliance with NPS policy.

Managers may use fire to meet objectives for hazard fuel management activities outside of developed areas, while maintaining the fire dependency of the ecosystem treated. Prescribed fire will be used in support of prairie and woodland ecosystem management to maintain and restore plant communities, increase plant diversity, provide for wildlife habitat, recycle nutrients, reduce or remove exotic and/or invasive species, and reduce hazard fuels.

Managers must consider the needs of all wildlife, including state and federally listed species that may be impacted by prescribed fire.

Mechanical and chemical treatments can be used to reduce hazard fuels, to reduce exotic and/or invasive vegetation and to help achieve resource/plant diversity goals. These treatments can be conducted independently, or in conjunction with prescribed fire. Chemical treatments will follow agency best practices, e.g., prior approval through Integrated Pest Management (IPM) and Pesticide Use Proposal System (PUPS). Mechanical treatments may include methods such as manual removal, cutting, and mowing. Use of mechanical equipment must be approved by the Superintendent. Vegetation will be removed from the immediate vicinity of park structures and sensitive resources as needed to protect them.

2.3.3 Defensible Space (see RM 18 - Chapter 7)

The NPS has adopted the International Code Council's (ICC's) International Urban-Wildland Interface Code (2006) that contains descriptions of defensible space and maintenance requirements for urban wildland interface areas. Maintenance of the defensible space includes modifying or removing non fire-resistant vegetation and keeping needles, leaves, and other dead vegetative material regularly removed from around structures and roofs.

3.0 WILDLAND FIRE OPERATIONAL GUIDANCE

National Park Service wildland fire management activities are essential to the protection of human life, personal property and irreplaceable natural and cultural resources, and to the accomplishment of the NPS mission. High potential risks and expenses associated with fire management activities require exceptional skill and attention to detail when planning and implementing these activities. The following sections identify and summarize the wildland fire management strategies that will be implemented over the life of the plan.

3.1 Response to Wildfire

Because of the small size of the park and proximity to private structures outside the park, full suppression strategies and protection objectives are the option when responding to unplanned ignitions.



NAD 1983 HARN Transverse Mercantor



Figure 3 Ice Age Complex at Cross Plains in Dane County, WI

3.1.1 Wildfire Response Planning

Although wildland fires can occur in any season when there is a lack of snow and dry conditions are present, a typical fire season at the Complex is a split season. March, April, May in the spring and October, November in the fall. There have been no documented wildland fires at the NPS site since the park was established in 1980.

• Expected Fire Behavior

Fuel models at the NPS site are primarily grass, grass-shrub, and timber understory. Fuel model descriptions refer to Standard Fire Behavior Fuel Models (Scott and Burgan 2005).

Fuel Model GR2 (102): Low Load, Dry Climate Grass

The primary carrier of fire in GR2 is grass. Load is greater than GR1. Shrubs, if present, do not affect fire behavior.

Fuel Model GR4 (104): Moderate Load, Dry Climate Grass (Dynamic)

The primary carrier of fire in GR4 is continuous dry-climate grass. Load is 2-3 tons/acre and depth is about 2 feet.

Fuel Model GR7 (107): High Load, Dry Climate Grass (Dynamic)

The primary carrier of fire in GR8 is continuous, very coarse, humid-climate grass. Load is 6-7 tons/acre and depth is about 3 feet. Spread rate and flame length can be extreme if grass is fully cured.

<u>Fuel Model TU3 (163): Moderate Load, Humid Climate Timber-Grass-Shrub</u> (Dynamic)

The primary carrier of fire in TU3 is grass and timber litter with a shrub component combined. Grass/shrub load is up to 2 tons/acre with depth of 1-2 feet. Spread rate and flame length are much higher than in broadleaf timber litter model.

Fuel Model TL2 (182): Low Load, Broadleaf Litter

The primary carrier of fire in TL2 is low broadleaf litter. Load is 1-2 tons/acre. Spread rate and flame length are low.

• Minimum Impact Strategy and Tactics

Utilization of Minimum Impact Strategy and Tactics (MIST) is the policy of the NPS. Fire management activities within the park will be carried out in a manner that minimizes impacts to the natural and cultural resources. Of primary importance is the need to impart upon suppression forces a minimum impact fire suppression philosophy. Suppression forces will choose methods and equipment commensurate with suppression needs and the appropriate management response strategy which least alters the landscape or disturbs park natural and cultural resources. At IATR, most fire will be controlled by using water, leaf blowers or tools. Ground disturbance should rarely be needed and would be rehabbed. The main issue to consider minimizing impact at IATR is vehicle usage. Vehicle usage should be confined to walking paths when possible and heavy vehicles that break through the sod or leave ruts should not be used. Utility Vehicles (UTV's) or All-terrain vehicles (ATV's) outfitted with sprayers or slip in fire units are the preferred vehicle for fire response.

3.1.2 Wildfire Response Objectives

- Conduct all fire management activities in a manner that maintains the safety of firefighters and the public.
- Protect human life and property both within and adjacent to park areas.
- Protect natural and cultural resources from adverse effects of fire and fire management activities.
- Incident-specific objectives will be developed by the Incident Commander and approved at the appropriate level for implementation.

3.1.3 Wildfire Response Procedures

• Decision Support

Current direction on Decision Support information pertaining to the NPS can be found in the Interagency Standards for Fire and Fire Aviation Operations (Red Book) in Chapters 3 and 11.

Wildland Fire Decision Support System (WFDSS)

Unplanned ignitions are required to have a Published Decision within WFDSS when they: 1) Escape initial attack, 2) Exceed initial response, or 3) Include objectives with both protection and resource benefit elements. Since this will rarely happen at IATR, it is unlikely that WFDSS will be utilized at IATR for anything beyond basic incident information.

Initial Response Procedures

Initial response to wildfires will be completed by contacting the Cross Plains Fire Department or the Middleton Fire Department via 911. Park managers will give guidance of NPS policy and provide trained and qualified NPS firefighters as available. Non-fire employees will be utilized as needed in support roles, to direct traffic, maintain fire hydrants, assist with logistics, etc.

Notification of any fire shall be made to the Great Lakes Zone AFMO/Duty Officer at Indiana Dunes NP as soon as possible. The Great Lakes Zone personnel will assist with decisions, provide NPS fire support, or arrange for immediate support through the Wisconsin Interagency Dispatch Center.

- Criteria for initial attack response consistent with Resource Management Plan objectives:
 - Public and firefighter safety
 - Protection of cultural, historic, and natural resources
 - Protection of improvements and private property
 - Minimum fire line construction
 - o Available suppression resources and response times
 - Fire danger as determined by fuels, weather, and topography

- Mechanized equipment use only where necessary to support above-listed criteria. Aircraft cannot reasonably be deployed in this setting.
- Response times
 - Typical fire response times for local cooperators are seven minutes for Cross Plains Fire Department and eleven minutes for Middleton Fire Department. The Wisconsin DNR can respond from Dodgeville, WI within one hour.
 - NPS firefighters will be very limited due to staffing at IATR. Staff from Indiana Dunes NP can respond with firefighters, equipment, and command staff in about four hours.
- Restrictions and special concerns
 - Initial attack should be aggressive to contain the fire as fast as possible and to keep fires from crossing boundaries and damaging private property. Minimum Impact Suppression Tactics (MIST) will be used in efforts to contain wildland fires wherever practical.

• Transition to Extended Response

Due to the size of the park, and the predominant fuel types, extended response is unlikely. If a fire exceeds the initial decisions and actions taken:

- The Incident Commander (IC), park superintendent, and Great Lakes Zone Duty Officer will determine the appropriate fire response and order additional resources. A complexity analysis may be utilized to provide guidance to assigning the proper incident command organization (see Redbook Chapter 11, appendix E and F; or WFDSS).
- If a Published Decision is required in WFDSS, Great Lakes Zone personnel will assist to prepare the document for signature by the superintendent.
- IATR staff will be in a support role only, unless staff possesses the appropriate level of fire qualifications to assist.

3.2 Fuel Treatments

Complex will utilize prescribed fire, manual and mechanical treatments, and targeted herbicide use in a planned program to modify fuels, to restore and maintain native vegetation, historic landscapes, and provide defensible space around structures within and adjacent to the park.

3.2.1 Fuels Planning

The IATR fuels management program is designed to achieve the program goals and objectives, as well as help achieve resource management and fire management goals as defined in NPS policy. Fuels projects and mitigation priorities are selected based on thatch/litter build up, number of years since last prescribed fire, species and quantity of invasive species, and the ability to help implement invasive species control (removing vegetation so woody species can be treated with chemicals in a more efficient manner).

General Fuels Management Implementation Procedures

The activities proposed in the Fire Management Plan will be planned and implemented in accordance with Reference Manual 18 - Fuels Management, the Interagency Prescribed Fire Implementation Guide, and the Interagency Standards for Fire and Fire Aviation Operations (Red Book).

Prescribed Fire

Prescribed fire is an important tool to manage vegetation communities and to achieve resource management objectives of the park.

A burn plan will be written for each prescribed fire. This is the responsibility of the Great Lakes Fire Management Zone FMO. The assigned Burn Boss will be responsible for the pre-burn preparations, burn-day implementation, and post-burn follow up.

Multi-year Fuels Treatment Plan

Specific fuels management goals and objectives will be in the prescribed burn plan. Prescribed fires should be scheduled on a 1 to 5 year interval. This longterm management strategy will be assessed yearly and updated as required.

Non-Fire Fuel Treatments

At IATR, non-fire treatments include chemical, mechanical, and manual removal of invasive, exotic, or nuisance species for the stewardship of fundamental and/or significant resources and values through management of plant species that alter the desired resource condition. Refer to the Great Lakes Invasive Plant Management Plan Environmental Assessment (GL-IPMP/EA). Current targeted species include but are not limited to garlic mustard (Alliaria Petiolata), leafy spurge (Euphorbia Esula), reed canary grass (Philaris Arundinacea), and various tree and shrub species invading the prairie and woodlands.

- Manual treatments- Conducted by manual removal of as much of the root as possible while minimizing soil disturbance. Refer to Sec 2.3.4 GL-IPMP/EA.
- Mechanical Treatments- Include the use of hand cutting tools, pulling tools, power tools, or heavy equipment to physically damage or remove all or parts of the plant. Logging may be permitted if approved by the Superintendent. Refer to Sect 2.3.4 GL-IPMP/EA.
- Chemical Treatments Consists of applying pesticides as prescribed by their labels, using a variety of application methods. Examples include portable sprayers, utility terrain vehicles (UTV's) equipped with sprayers, aerial application, and hand-wicking, cut stump, hack and squirt, broadcast, and individual plant treatments. Refer to Sect 2.3.6 GL-IPMP/EA.

The NPS has adopted the International Code Council's (ICC's) International Urban-Wildland Interface Code (2006). Contained in the ICC's code (sections 603 and 604) are descriptions of defensible space and maintenance requirements for urban wildland interface areas. Maintenance of the defensible space includes modifying or removing non fire-resistant vegetation and keeping needles, leaves, and other dead vegetative material clear from around structures and roofs. Refer to RM 18 Chapter 7 for current direction.

3.2.2 Fuels Management Goals and Objectives

The Vegetation Management Plan lists goals and objectives for implementation. Listed are the goals that pertain to wildland fire management.

3.2.2.1 Goal A: Enhance geologic interpretation and views.

Objectives

- Manage for average overstory canopy cover of 30% or less in areas of geologic interest, except where otherwise specified.
- Remove saplings in the Gorge that grow within 3-5 feet in front of or nestled against the rock outcrop faces.
- Midstory shrubs will be limited to no more than 10% cover in areas where glacial features occur and their visibility is important to interpretation activities.
- Manage prairie vegetation on and around the features such that it is less than four feet in height.

Strategies

- Utilize prescribed fire in prairies and woodlands.
- Vary seasonality of prescribed fire cycle.
- Vary fire regime on a cycle to adhere with best management practices and restoration goals.
- Plant short prairie species to facilitate views of the geologic features.
- 3.2.2.2 Goal B: Maintain and restore oak openings, oak woodlands, and prairies.

Objectives

- Oak openings with overstory canopy cover of 10-30% dominated by oak species. Understory with shrub cover less than 10%, grass cover less than 60%, 75% species richness is forb species.
- Oak woodlands with canopy cover 30-70% dominated by oak and hickory. Understory with shrub cover less than 10%, grass cover less than 40%, and forb species making up majority of the remaining cover.
- Prairies with overstory canopy cover less than 10% (around 1 tree per acre) dominated by open-grown bur oak. Herbaceous layer with shrub cover less than 5%, forb species cover 30-70%, and species richness including 15 native grass and 60 native forb species.

• Dry-mesic woodlands with overstory canopy cover 70-100% dominated by oak and maple species. Understory with shrub cover less than 30%, and an herbaceous mix of sedges, ferns, forbs, and grasses.

Strategies

- Utilize prescribed fire to maintain these ecosystems.
- Mechanically remove unwanted overstory trees. Debris will be removed, chipped or burned.
- Vary seasonality of prescribed fire cycle.
- Vary regime on a 3-year cycle.

3.2.2.3 Goal C: Manage to reduce undesired non-native and native species.

Objective

- Cover by invasive and undesired species shall not increase from their baseline percentage (as determined by most recent survey).
- Reduce and maintain woody invasive species and the majority of herbaceous exotic species occur at less than 5% cover.
- Reduce and maintain shrubs in prairies to less than 5% cover.

Strategies

- Utilize prescribed fire, manual removal, and chemical application.
- Target the ecotone between the prairie and woodland to reduce brome and restore a more gradual edge.
- Remove exotic trees followed by stump treatment.
- Actively control all areas of reed canary grass.
- Remain vigilant for invasive species

3.3 Preparedness

Fire preparedness is the state of being ready to provide an appropriate response to wildland fires based on identified objectives. Preparedness is the result of activities that are planned and implemented prior to fire ignitions. Preparedness requires identifying necessary firefighting capabilities and implementing coordinated programs to develop those capabilities.

Preparedness requires a continuous process of developing and maintaining firefighting infrastructure, predicting fire activity, implementing prevention activities, identifying values to be protected, hiring, training, equipping, pre-positioning, and deploying firefighters and equipment, evaluating performance, correcting deficiencies, and improving operations. All preparedness activities should be focused on developing fire operations capabilities and on performing successful fire operations.

3.3.1 Preparedness Activities

Prevention

The objectives of the park's fire prevention program are: to prevent human caused wildland fires and, to incorporate prevention messages into interpretive programs.

Annual Training

Annual refresher training emphasizing safety will be required for fire trained park staff. Minimum training will include LCES, Standards for Survival, fire shelter training and other updates as appropriate. Requirements for annual firefighter refreshers are listed in DO-18.

In addition, each year the Zone Fire Management Officer and Park Fire Coordinator will assess the current qualifications of the park's fire qualified personnel. From this assessment, current and future training needs for both the park and individuals (including volunteers) will be determined. Training will be obtained in the most cost-effective manner through services of the Zone Fire Management Office or through interagency training courses. Qualified instructors will be utilized for all courses.

Readiness

Any needed supplies or equipment will be requested through the Zone Fire Management office. The Fire Coordinator will also be responsible for ensuring that park fire tools and equipment are maintained in a state of readiness, especially during the fire season.

• Coordination and Dispatching

Initial attack dispatching will be completed through Park Communications. They will be responsible for contacting the Cross Plains Fire Department and mutual aid as needed. The first Cross Plains firefighter on scene will serve as IC until a more experienced firefighter arrives.

A Memorandum of Understanding will be put in place and signed with the Cross Plains Fire Department.

Duty Officer

The superintendent or the designee is responsible for providing duty officer (DO) coverage during any period of predicted incident activities. DO's responsibilities may be performed by any individual with a signed Delegation of Authority from the Superintendent. The required duties for all DOs are:

- Monitor unit incident activities for compliance with NPS safety policies.
- Coordinate and set priorities for unit suppression actions and resource allocation.
- Keep Agency Administrators, suppression resources and Information Officers informed of the current and expected situation.
- Plan for and implement actions required for future needs.
- Document all decisions and actions.

DOs will provide operational oversight of these requirements as well as any specific duties assigned by fire managers through the fire operating plan. DOs will not fill any ICS incident command functions connected to any incident. In the event that the DO is required to accept an incident assignment, the Superintendent will ensure that another authorized DO is in place prior to the departure of the outgoing DO.

3.4 Post-Fire Programs and Response

At IATR, the only rehabilitation needs anticipated are those associated with fireline construction and mop-up activities. Proper placement of hand constructed firelines should reduce the need for major work. Areas with handlines will be restored to their pre-fire condition as soon as possible. The nature of fires on the park indicates that long term rehabilitation should rarely be necessary. Should a Burned Area Emergency Rehabilitation Team (BAER) be required on the park an archeologist or cultural resource specialist should be part of the team.

In the event of suppression activities that require emergency stabilization or repair, the park will take prompt action after a wildfire to minimize threats to life or property, and to prevent unacceptable degradation to natural and cultural resources. Damages resulting from wildfires and suppression activities are addressed through four activities (see RM 18, chapter 19 and Red Book):

Suppression Repair: Planned actions taken to repair the damages to resources, lands, and facilities resulting from wildfire suppression actions and documented in the Incident Action Plan. These actions are usually implemented prior to, or immediately after containment of the wildfire by the incident management organization. Repairs under this activity may be completed to return the value to pre-wildfire management activity condition as practical but may not improve the condition beyond what was existing prior to the incident.

Emergency Stabilization: Planned actions to stabilize and prevent unacceptable degradation to natural and cultural resources, minimize threats to life or property resulting from the effects of a wildfire, or to repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Emergency stabilization actions must be taken within one year plus twenty-one days after the ignition date of a wildfire and documented in a Burned Area Emergency Response Plan or an agency specific plan. Within the Department of Interior, the Bureau Director may approve an extension beyond the one-year plus twenty-one days to accommodate circumstances related to climatic conditions or other significant events.

<u>Rehabilitation</u>: Efforts taken within five years following 21 days after the ignition date of a wildfire to repair or improve wildfire-damaged lands unlikely to recover naturally to management approved conditions, or to repair or replace minor assets damaged by wildfire. These efforts are documented in a separate Burned Area Rehabilitation Plan (BAR) or in combination with Burned Area Emergency Response Plan (BAER).

<u>Restoration</u>: Continuing the rehabilitation beyond the initial five years or the repair or replacement of major assets damaged by the wildfire. This activity is paid for from regular non-fire program funds.

3.5 Air Quality/Smoke Management

National Park Service wildland fire activities resulting in the emission of air pollutants are subject to all local, state, and federal air pollution control requirements. Federal requirements are outlined in Section 118 of the Clean Air Act (42 USC 7418). As smoke is a natural and inevitable byproduct of fire, a prescribed burn or wildfire are not considered to be point sources of air pollutants. Impacts are temporary and are expected as part of the burn process – therefore, mitigation efforts take place to lessen impacts on air quality and visibility due to smoke.

Ensure air quality thresholds for National Ambient Air Quality Standards are not exceeded and visual quality is not severely reduced along Old Sauk Pass Road, Timberline Road, Mineral Point Road and State Highway 14 due to fire use activities.

3.5.1 Air quality issues

Ice Age National Scenic Trail is designated as a Class II air quality area.

3.5.2 Smoke Management Activities

A key consideration in the entire fire management program, including prescribed fire activities and wildland fire, is smoke management. The Complex is situated approximately 4 miles west of Madison, Wisconsin and 1 mile east of Cross Plains on State Highway 14.

A significant residential development is located along the east boundary of the Complex. With the residential area and the very significant highway traffic, smoke management is a primary concern. However, the areas to the north, west, and south of the NPS site are relatively sparsely populated.

In order to advise area residents of impending prescribed fire events, press releases and media advisories to print and broadcast media will be issued. Interpretive brochures, specifically developed by the NPS to interpret fire in the national parks, will be issued to visitors.

The following management guidelines will be adhered to during all phases of the fire management program.

- No prescribed fires will be ignited when a burn ban affecting the jurisdiction has been established.
- Fire weather forecasts will be used to predict smoke dispersal.
- Prescribed fires will only be conducted when conditions permit.
- Prescribed fire prescriptions will be developed and firing techniques utilized that minimize smoke production and mitigate smoke impacts on highways and areas of human activity.
- Local fire and police agencies will be notified of any prescribed fire activities so they may provide any needed assistance with traffic flow if any problems with smoke dispersal occurs.
- Smoke advisory signs will be placed in needed areas.
- Smoke monitors will be utilized to observe direction of smoke movement, column heights, and the effect of smoke upon area highways.
- If conditions become hazardous because of visibility, traffic will be stopped until the smoke has lifted from the highway.

3.6 Data and Records Management

Considerable time and effort is dedicated to acquiring and managing fire program information and data. Information is used by the park, regions, and national offices for a variety of purposes.

Data and recordkeeping represent a significant investment and must be well managed to be readily available for use when needed and must be safeguarded from damage or destruction.

All business practices are based on the Interagency Incident Business Management Guide.

The FPMA at INDU is in charge of budget tracking and management of IATR fuels, monitoring and planned ignition projects; payroll and timekeeping for personnel from IATR that assist in fuels projects and planned ignitions that are charged to a fuels project; administrative files and recordkeeping of fuels projects and planned ignitions at IATR; reviewing and updating IQCS records for IATR personnel.

The fire ecologist is responsible for planning fuels projects at the National Scenic Trail. This position assists with the 5-year burn plan and will update it accordingly.

The Superintendent is ultimately responsible for fire reporting and fiscal accounting. Individual report assignments may be made by the Superintendent. The table below is a checklist of possible wildland fire documents and the individual usually responsible for completing them.

Time and filing deadlines are associated with each of these reports and will control scheduling and response times.

Document	Revision or Preparation Frequency	Responsible Party
DI-1202	Each incident	Incident Commander
Decision Document (WFDSS)	As needed	Superintendent
Fire Weather	Daily in season	Park Fire Coordinator and AFMO
Fire Situation Report	Daily in season	Park Fire Coordinator and AFMO
Fire Danger	Daily in season	AFMO and FMO
Fire Complexity Analysis	Per Incident as Needed	Incident Commander
Monthly Risk Analysis	Monthly	AFMO and FMO
Pre-Attack Plan	Annually	AFMO and FMO
Wildland Fire Critique	Each Incident	On site suppression staff

Table 1. Checklist of Wildland Fire Documentation

4.0 PROGRAM MONITORING AND EVALUATION

Intent: Describe actions the park unit will take to review and update this plan by incorporating lessons learned from fire reviews and fire effects monitoring data as well as through findings from scientific research.

4.1 Monitoring

The National Park Service Fire Monitoring Handbook, developed by the National Park Service (U.S. NPS, 2003), outlines protocols for monitoring fire weather, behavior, and effects, and describes in detail all aspects of a comprehensive monitoring program. This Handbook will provide the standard for fire weather, behavior, and effects monitoring

All NPS units applying prescribed fire, using wildfire for resource objectives, or altering the arrangement of wildland fuels for the purpose of modifying fire behavior beyond defensible space building codes must prepare a fire monitoring plan. Monitoring is the primary means of assessing whether the fire program is meeting management goals and objectives. The Fire Ecologist will interact with the IATR staff to create this.

All wildland fires will be monitored. Information gathered during fire monitoring is needed to keep fires within predetermined criteria, to help identify trigger points for initiating holding and suppression actions, and to protect human life and property. On any fire that exceeds the initial response, monitoring will be initiated to observe the fire, assess its potential and provide a historical record. Monitoring may include documenting the fire environment (such as weather, fuels, and topography), fire behavior (such as manner and rate of spread, and flame length), and fire effects (such as percent of fuels consumed and changes in plant and animal community composition and structure). Photographs may be taken. Weather readings will be made periodically at the fire site.

In addition, fire weather or fire indices will be monitored by the Prescribed Burn Boss or a designee at least 14 days, and preferably 30 days, prior to the earliest proposed ignition date of for prescribed fires.

4.2 Science and Climate Change

To date, no fire research has been conducted at the Cross Plains Complex. That said, the *Cross Plains Vegetation Management Master Plan* (2021) analyses relevant data and prescribes landscape restoration and maintenance efforts through fire and non-fire techniques.

With the development of this prescribed fire program, research questions will be developed. The Great Lakes Ecoregion Fire Ecologist will assist, as needed, park managers to develop specific research questions, solicit researchers, and identify funding sources. Partners from the University of WI, Madison will also assist in developing and accomplishing research for the Complex.

There is a breadth of peer reviewed research available on the fire ecology of specific ecosystems at the Complex as well as climate change research for the region. This literature will be reviewed when specific research questions arise.

4.3 Annual Program Evaluation and Fire Management Plan Review Process

This plan will be reviewed annually in accordance with RM 18 - Chapter 4 in order to incorporate new knowledge, program adjustments/refinements and updates as needed. This review requires Superintendent approval and will follow the Annual Update Checklist. After the Annual Update Checklist is completed and all suggested changes have been vetted through the appropriate fire management and park staff, the Superintendent must sign the FMP Annual Update Checklist. All approved changes must then be incorporated in the FMP and the Annual Update Checklist must be added to the FMP immediately following the cover-page.

All wildland fires and fire-related incidents must also be reviewed at some scale, whether it is a tailgate after-action-review or at the other end of the spectrum, a formal review conducted by a team. This includes all prescribed fires, which will also be reviewed as appropriate. Reviews are conducted for one or more of the following purposes:

- To examine the progress of an on-going fire incident and to confirm effective decisions or to correct deficiencies.
- To identify new or improved procedures, techniques, or tactics.
- To compile consistent and complete information to improve or refine park, regional, or national fire management programs.
- To examine anomalous fire-related incidents in order to determine cause(s), contributing factors, and where applicable, to recommend corrective actions; if negligence is indicated, the circumstances will be reported and investigated in accordance with applicable regulations, policies, or guidelines.
- To determine the cost effectiveness of a fire operation.

Appendix A – References Cited

National Wildfire Coordinating Group. 2014. Wildland Fire Incident Management Field Guide. PMS 210.

- International Code Council's (ICC's) International Urban-Wildland Interface Code (2006)
- National Park Service. 2006a. Director's Order 18 Wildland Fire Management. U.S. Department of the Interior, National Park Service, Washington, DC.
- National Park Service. 2014. Reference Manual 18 Wildland Fire Management. U.S. Department of the Interior, National Park Service, Washington, DC.
- National Wildland Fire Coordinating Group. 2019. Interagency Standards for Fire and Fire Aviation Operations (aka "Redbook").
- Scott, Joe H.; Burgan, Robert E. 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. Gen. Tech. Rep. RMRS-GTR-153. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 72 p.

Appendix B – Definitions: see the Glossary of Wildland Fire Terminology at: http://www.nwcg.gov/pms/pubs/glossary/pms205.pdf

Appendix C – Compliance Components for FMP

Individuals and Organizations consulted Contributors and reviewers Environmental Assessment & FONSI Section 106 ESA Section 7

Appendix D – Multi-Year Fuels Treatment Plan

This appendix will be updated in the future. At this time, there are no burn units or burn plans established. The Ice Age Complex at Cross Plains (IACACP) Vegetation Master Plan (May 27, 2021) identifies many of the attributes and metrics related to multi-year fuel treatment of the NPS site at Cross Plains but additionally it addresses the entire project area of the Ice Age Complex at Cross Plains.

Map created from Draft Vegetative Management Plan of NPS Property Cross Plains Complex Desired Future Conditions.



Appendix E – Fire Monitoring Plan

This plan will be created.

Appendix F – Preparedness Planning Documents

Initial Response Plan

Middleton Fire District 608-827-1090, Response time 11 minutes and 6.2 miles 7600 University Ave, Middleton, WI 53562 <u>mifd.net</u>

Cross Plains F.D. 608-798-2220, Response time 7 minutes and 4.3 miles 1501 Bourbon Rd., Cross Plains WI 53528 crossplainsfire.com

Dane County Dispatch Center- 608-266-4135

WDNR, Dodgeville- 608-835-1929, response time of 45 minutes and 40 miles.

Step-up Plan

<u>Staffing</u> <u>Class</u>	<u>*Fuel</u> Model	<u>Burning</u> Index	Step Up Actions	
SC-1	E	1-7	Normal tours of duty are scheduled	
	R	1-4	Get Away standard:15 min	
SC-2	E	8-15	Same as SC-1	
	R	5-7		
SC-3	E	16-30	Same as SC-1	
	R	8-15	During Periods of high visitation (holidays, weekends, hunting seasons) consider moving to Class 4.	
SC-4	E	31-37	Actions in SC-3 plus	
	R	16-18	Visitor Center personnel and all field rangers may caution visitors of hazardous fire conditions. Interpretive programs may include a brief, appropriate, fire prevention message.	
			Fire prevention efforts and messages will be coordinated with local cooperator offices so the public will receive consistent information.	
			During periods of high visitation (holidays, weekends, hunting seasons) consider moving to Staffing Class 5.	
SC-5	E	38+	Actions in SC-4 plus	
	R	19+	If deemed necessary, local federal USFWS or WDNR resources will be asked to provide coverage for IA response for the NPS lands.	
			Trailheads will be posted with fire danger warning signs.	

*E = Before green-up, R = After green-up

Recommended Staffing Levels for Step up Plan

Staffing Class	Minimum Staffing	Optimum Staffing
SC-1	None	Coverage from Local Cooperators
SC-2	None	Coverage from Local Cooperators
SC-3	None	Coverage from Local Cooperators
SC-4	None	Coverage from Local Cooperators
SC-5	None	Coverage from Local Cooperators

Job Hazard Analysis

Fire Management JHAs have been created and are located on the Great Lakes Fire Management Zone Network Drive at INDU. All JHAs in coordination with prescribed burning and mechanical treatments will be reviewed prior to initiating any project. All JHAs for wildland response are reviewed annually prior to fire season.

Delegation of Authority Template

Delegation of Authority for Incident Name

Date:

To: Incident Commander – Name of IC

From: NPS Unit

Subject: Incident Number, and jurisdictional unit

Effective at <u>XXXX hours</u> on <u>Provide the Date</u>, You are delegated authority for the management of the <u>XXXX</u> Incident on the <u>XXXX Jurisdictional</u> Unit – <u>include other jurisdictions if needed</u>. You have full authority for fire management activities on <u>this/these jurisdiction(s)</u> within the framework of law, agency policies, and direction provided within the Delegation of Authority, Wildland Fire Decision Support System Decision, the Leader's Intent Letter and the Team Briefing Package provided.

This Delegation carries with it the full authority for the management of the resources (personnel and equipment), costs, and rehabilitation of fire management efforts directly associated with this *incident(s)*. Your primary responsibility is to organize, manage and direct your assigned resources for safe, efficient and effective management of the fire. You are accountable to the Agency Administrator or designated representative.

Agency Administrator Agency/Jurisdictional Unit

<u>Agency Administrator</u> <u>Agency/Jurisdictional Unit</u> Date/Time

Date/Time

I accept this Delegation:

Incident Commander

Date/Time

Appendix G

Fire Prevention, Communication and Education Plan

Fire Education

- Provide fire safety message for employees, volunteers, cooperating association and concessionaires at seasonal orientations and discuss fire management program informally with employees of all divisions Prevention Tech, FMO, Fire Staff
- Incorporate fire management concepts and fire safety messages into appropriate park publications and programs Prevention Tech, Interpretive Division
- Conduct public outreach activities and educational programs Prevention Tech, Interpretive Division, Fire Staff
- Post current fire danger ratings at all entrance stations (even when fire danger is low) Fee Collection Supervisor
- Post fire regulations at campground and fee areas Prevention Tech, Fee Supervisor
- Contacts with park communities and neighbors should emphasize Firewise concepts Prevention Tech, FMO, Fire Staff

Actions to complete during periods of fire activity or high fire danger as per Step-up Plan:

- Incorporate fire prevention messages into visitor contacts and interpretive programs All staff
- Include a fire safety and prevention message on park social media outlets Prevention Tech, Interpretation Division
- Distribute fire restriction information and post a fire safety message at unstaffed park sites -Prevention Tech, Interpretation Division
- Post fire restrictions at campgrounds Prevention Tech, Fee Supervisors
- Post trailheads with fire restriction information Prevention Tech, Sub-District Rangers
- Develop fire prevention Press Releases and Public Service Announcements in conjunction with cooperating agencies Prevention Tech

Appendix H – Cooperative and Interagency Agreements

The superintendent of IATR is responsible for ensuring cooperative and interagency agreements are created.

Appendix I – WFDSS Objectives and Requirements

Wildfire Decision Support System (WFDSS)

http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml

Preparation of the WFDSS for extended attack and large fire suppression shall be completed to document suppression responses to wildfires that have exceeded initial response or exceeded management capability.

Appendix J – Serious Injury or Death Procedure

Agency Administrator's Guide to Critical Incident Management. 2008. PMS 926

NPS Loss of Human Life Response Handbook. 2013.

The rule for handling any medical emergency is to provide care consistent with your level of training and experience. Generally this will be at the basic or advanced first aid level.

A. MAJOR INJURY OR ILLNESS

A major injury or illness is one which requires emergency medical care at the basic life support level (EMT-A) or above. This level of care is provided by the closest qualified emergency response agency.

B. MEDICAL EMERGENCIES

1. <u>Provide basic life support</u> - Identify and treat the life threatening injury or illness first. Employees who have been trained in CPR and/or basic first aid have the skills necessary to provide this care.

2. <u>Report the emergency</u> to 911. Notify other park personnel by phone or radio.

3. <u>Provide additional care</u> - Once the life threatening injury or illness is no longer a concern, provide additional care consistent with your level of training and experience. Park personnel will not provide emergency transportation services for victims of injury or illness. Such transportation will be performed by the Ambulance Service.

C. FATALITIES

Fatalities should be reported as soon as possible to the Superintendent and/or Collateral Duty Safety Officer. Do not pronounce the victim dead or make any death notifications and do not speculate as to the cause. Those responsibilities lie with the County Coroner or Sheriff's Office. DO NOT DISTURB the scene. The Superintendent will notify the Regional Chief Ranger who will contact WASO. NOTE: All serious accidents must also be reported by the Superintendent to OSHA by calling 1-800-321-6742 within 8 hours of the accident. A serious accident is defined as a work-related employee fatality or an in-patient hospitalization of one employee as a result of a work-related incident.

A BOARD OF INQUIRY is required when a serious accident results in:

- 1. Death of an employee(s) or visitor(s)
- 2. Hospitalization of three (3) or more employees
- 3. \$100,000 or more damage

The Board of Inquiry shall be designated within 48 hours of the incident and must meet within five (5) working days to determine all available facts and identify steps to prevent similar incidents.

A BOARD OF REVIEW is required for ALL employee accidents resulting in lost time - AND for ALL Government vehicle (or boat) accidents. The time requirements for the Board of Review are the same as the Board of Inquiry.

Appendix K – Safety Program/Plan

Health screening – All personnel who want to participate in fire management and be red carded must pass the annual fire health questionnaire. Personnel must be active in the fire program, get approval from their supervisor and then contact the INDU FMO to get put into the system. Follow national requirements for taking and passing physicals.

Wellness/fitness training and testing – Collateral fire fighters are allowed up to 3 hours a week of physical training if approved by their supervisor. Each firefighter must be able to complete the national standards of fitness (light, moderate or arduous) that pertain to their red card. Primary and Secondary fire fighters are allowed 3-5 hours a week of physical training as determined by the FMO.

Safety training – All personnel that desire to be red carded must complete the 8 hour annual wildland firefighter refresher and shelter deployment annually.

Job hazard analysis – All personnel that take part in planned ignitions and unplanned ignitions must review and follow the job hazard analysis that is included in appendix F of this document.

After Action Review process – All personnel that participate in every planned and unplanned ignition at the NPS site will actively participate in the AAR process (see IRPG for outline).

Work/rest standards – All red carded personnel will adhere to the national work/rest guidelines and standards.

Right of refusal of assignment – All red carded personnel have the responsibility of knowing their rights and being up to date on their right to refuse an assignment based on the guidelines in the IRPG.

Appendix L – Smoke Management Plan

There is no current smoke management plan. The state of WI has a draft in production.