National Park Service
U.S. Department of the Interior

Everglades National Park
Homestead, Florida

FIRE MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT

Finding of No Significant Impact
October 2015

The selected alternative does not constitute an action that normally requires preparation of an Environmental Impact Statement (EIS). The selected alternative will not have a significant effect on the human environment. Some long-term adverse environmental impacts will likely occur, but will be negligible to moderate. Most impacts will be long-term and beneficial. There are no unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, cumulative effects or elements of precedent were identified. Implementation of the selected alternative will not violate any Federal, State or local environmental protection laws.

Based on the forgoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Recommended: _____ 10/6/2015

Pedro Ramos
Superintendent, Everglades
National Park

Date

Approved: _____ 10/13/15

Stan Austin
Regional Director, Southeast Region

Date

INTRODUCTION

In October 2014, the National Park Service (NPS) issued an Environmental Assessment (EA) analyzing impacts associated with a draft fire management plan for Everglades National Park ("EVER" or "the park"). The EA evaluated two alternative courses of action for managing fire in the park.

The purpose of this document is to record the decision of the NPS and to declare a Finding of No Significant Impact (FONSI) pursuant to the Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act Of 1969 (NEPA).

Background

The fire management program at Everglades is currently based on a 1991 fire management plan (FMP) that underwent revisions in 1995. A FMP is needed to provide Everglades National Park with the flexibility to manage fire in accordance with the National Park Service (NPS) *Wildland Fire Management Strategic Plan 2014-2019*, the 1995 and 2001 Federal Fire Policy, the *2009 Guidance for Implementation of Federal Wildland Fire Policy,* the related guidelines in NPS Director's Order #18: *Wildland Fire Management*, and NPS *Management Policies 2006*. These policies and directives require an approved FMP in order to use resource benefit as a primary consideration influencing the selection of fire management strategies. The decision-making process includes specifically managing wildland fire using best available science to restore, preserve, and maintain ecosystems and the use of resource information gained through inventory and monitoring to evaluate and improve program actions and decisions.

Purpose and Need for Action

The purpose of the NPS action is to develop and implement an up-to-date fire management plan that complies with all applicable legal and policy requirements and enables the park's fire management program to meet wildland fire goals and objectives for the park. The proposed action is needed because the current fire management plan does not reflect changes in fire management policy that have come into effect since the plan was completed in 1991 and updated in 1995. The park needs an approved plan that implements all currently applicable requirements for managing fire in NPS units.

Selected Alternative

After review of the alternatives and consideration of comments received from the public, various agencies, and interested stakeholders, the NPS has chosen Alternative B as the selected alternative. Under this alternative, the NPS will manage fire at the park under the terms of a new fire management plan. The new fire management plan for Everglades National Park will be a detailed, comprehensive program of action to implement fire management policy principles and goals, consistent with park management objectives.

Alternative B will provide a flexible range of options and activities that can be used to respond to changes in environmental conditions and the specific needs of individual firefighting efforts. A

variety of fire management strategies will be available to manage unplanned wildfires. These include:

- Full Suppression – a strategy used to achieve control of a fire and prevent it from exceeding a defined perimeter;
- Point/Zone protection – a variety of suppression actions taken to protect a specific point or areas from fire usually by tactics which constrain progressive fire encroachment away from identified values at risk; and
- Monitor/Confine/Contain – management actions conforming to a strategy that periodically checks the fire to ensure it continues to meet established objectives.

Under Alternative B, prescribed fire fuels treatments will be planned for multiple years and will occur as part of a moving 'window' of current and out-year treatments in a multi-year fuels treatment plan. Implementation of a multi-year fuels treatment plan will allow prescribed fire treatments to be planned as part of a revolving five-year scope of work that will be reviewed and updated annually as part of the annual FMP review and update.

Development of the multi-year fuels treatment plan will include the prioritization, selection, review, and update of fuels treatment projects. Prescribed fires will take place in wilderness and non-wilderness areas. Wilderness will be considered within the multi-year fuels treatment plan with an associated programmatic minimum requirements analysis. Under Alternative B, approximately 237,000 – 258,000 acres will be proposed for prescribed fires annually. The actual number of acres treated will likely be less than the number proposed. Alternative B is expected to result in a substantial increase in the amount of acres treated when compared to current management. In addition, prescribed burns will be carried out in fire dependent communities where burning is currently restricted.

Wildfire management remains unchanged under the selected alternative from the park's current fire plan. However, the FMP under Alternative B will function at the programmatic level and accommodate changes in policy guidance and practices from ongoing improvements in the science of wildfire management.

The selected alternative was NPS' preferred alternative in the EA.

Avoidance, Mitigation, and Minimization of Potential Adverse Effects of the Selected Alternative

For all action alternatives, best management practices and mitigation measures would be used to prevent or minimize potential adverse effects associated with the project. These practices and measures would be incorporated into the project implementation documents and plans.

Resource protection measures undertaken during project implementation will include, but not be limited to those listed in **Appendix A**. The impact analyses in the "Environmental Consequences" section of the EA were performed assuming that these best management practices and mitigation measures would be implemented as part of the action alternative.

Other Alternative Considered

In addition to the selected alternative, a "No-Action" alternative was fully analyzed in the EA. Under this alternative (Alternative A), current fire management practices at the park would continue under the existing 1995 fire management plan, as supplemented and modified by the most recent Federal Wildland Fire and NPS policies. The NPS would continue to plan and approve prescribed fire treatments on an annual basis. Because the 1995 FMP and its EA are out-of-date, prescribed fire treatments since 2008 have been limited to those which can be authorized under categorical exclusions (CE's). Treatments would be planned for exotic plant management and hazardous fuel reduction objectives. Hazardous fuel reduction burns would be limited to areas outside of designated wilderness and a maximum of 4,500 acres annually until completion of a new FMP and EA, or until September 30, 2016 when hazardous fuel burns will no longer be allowed under a CE. Exotic vegetation burns would occur in wilderness and non-wilderness areas. While there are no acreage limits for these burns, they are specifically designed to manage exotic plant species. Under current management, the NPS has treated 8,000 - 45,000 acres with prescribed fire annually between 2003 and 2013. These burns have generally been restricted to coastal prairies in southern areas of the park and habitats near park boundaries. Due to the limitations of burning under CE's, prescribed fire cannot be implemented in many fire dependent habitats, including some utilized by listed species. Under Alternative A, it is expected that the amount of acres treated would be the same or less, and the areas proposed for treatment would be similar or less, than those in 2003-2013.

Alternatives Considered but Dismissed

Several approaches for fire management planning in Everglades National Park were considered but eliminated from detailed analysis. These alternative approaches focused on emphasizing a single technique, with implementation of other fire management methods limited to only small areas. These approaches and the justifications for eliminating them from further study are provided below.

Predominant Use of Wildland Fire: Everglades National Park is a highly flammable fragment of a larger ecosystem. It is bounded to the east by private property (since the East Everglades Expansion of 1989), and contains visitor facilities, other infrastructure, and historic properties that are susceptible to fire damage or destruction. It also hosts several species classified as endangered or threatened, primarily because of habitat loss elsewhere in the region. For these species, a major wildfire that alters their remaining habitat in the park could have severe consequences. The predominant use of wildfire would conflict with goals of preventing fires from crossing the park's boundary to the north or east, protecting visitors and infrastructure, and maintaining or enhancing habitat for endangered or threatened species. Therefore, the use of wildfire as the predominant management approach is not considered further.

Predominant Use of Prescribed Fire: Naturally occurring fire is a major factor in maintaining the Everglades and their biodiversity. An experimental program implemented under the 1995 fire management plan found that overuse of prescribed fires resulted in compartmentalization of the landscape that was inconsistent with the mandate in the park's establishing legislation to maintain "the essential primitive natural conditions now prevailing in this area." Therefore, this management approach was eliminated from further consideration.

Predominant Use of Chemical Fuel Reduction: In accordance with section 4.4.2.4 of NPS *Management Policies 2006* (NPS 2006a), the use of chemicals, such as herbicides, is not an acceptable practice for managing natural landscapes in parks. Herbicides are allowed only for use in the management of exotic species, and then only as part of an integrated management program. Moreover, herbicides can have unintended consequences for non-target species such as aquatic vegetation in freshwater and marine systems within and outside the park. The continuously recurring costs of buying and applying herbicides over the park's 1.5 million acres would be prohibitively expensive. For all these reasons, a program predominantly using chemical methods to reduce fuels was dismissed from further consideration.

Predominant Use of Mechanical Fuel Reduction: Most of Everglades National Park's 1.5 million acres are unroaded, a large portion is seasonally or permanently inundated, and more than 85 percent of the park is designated wilderness where the use of mechanized equipment is generally prohibited. The East Everglades Expansion Area is a wilderness study area. The large land area involved, the hydrologic and other physical conditions, and the prohibition on mechanized equipment use would make large-scale mechanical fuel reduction impractical. Moreover, unless it involved offsite hauling and disposal, such as in a landfill, mechanical actions would not reduce fuel loading and associated wildfire risk in treatment areas. Mechanical treatment could only be used seasonally due to wet conditions and therefore the park would be unable to accomplish management objectives at a large scale. This approach also would be inconsistent with the legislative mandate to maintain essential primitive natural conditions in the park. Therefore, an alternative that primarily involved mechanical fuel reduction was not considered further.

Predominant Use of Wildland Fire Suppression: Widespread suppression of wildfires would have the same types of logistical problems cited for mechanical control, including lack of access and prohibitions on the use of mechanized equipment. This approach also would not reduce fuel loading and associated wildfire risk. Moreover, the Everglades is a fire-adapted ecosystem, and wide-scale suppression would cause ecological changes that would be contrary with the legislative mandate to maintain the park's essential primitive natural conditions. As a result, no further consideration was given to an approach that primarily involved wildfire suppression.

Environmental Consequences

The environmental consequences of the two alternatives were assessed using the following impact topics:

- Air quality;
- Soils;
- Hydrology and water quality;

- Vegetation;
- Wildlife and wildlife habitats;
- Special status species and their habitats;
- Cultural resources;
- Wilderness character;
- Visitor use and experience;
- Land use; and
- Park operations.

Chapter 3 of the EA provides a detailed description of the environmental consequences of each alternative. Indirect and cumulative impacts were assessed as well.

Basis for the Selected Alternative

The NPS has selected Alternative B for implementation because it meets the objective of developing and implementing a fire management plan that allows the Everglades fire management program to:

- 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.
- Maintain or improve the quality of the native fire adapted vegetation communities that occur within Everglades National Park.
- Maintain a framework of adaptive management to ensure a responsive, efficient, safe, and accountable fire management organization.
- Allow natural processes to continue by managing fires through monitoring with little or no suppression action to the maximum extent feasible to achieve resource benefits.
- Use planned ignitions to supplement the natural role of fire as an ecosystem process, achieve resource management objectives, reduce hazardous fuel accumulations, reduce threats to wildland urban interface (WUI) from wildfires, protect park resources, maintain fire adapted ecosystems, treat exotic plants, and to secure the park boundary.
- Use science based fire management to maintain a healthy and sustainable ecosystem. To the degree possible, achieve a healthy range of variation in the fire return interval, fire size, fire behavior, fire effects, and other characteristics of the fire regime using the best available science.
- Use science based fire management to maintain and enhance the wilderness character of the Marjory Stoneman Douglas Wilderness and any lands found eligible for wilderness designation.

Alternative B provides the most desirable combination of actions for meeting these objectives and fulfilling the park's mission to protect and preserve its natural and cultural resources.

Alternative B was chosen because it provides the greatest benefit to park resources, while having moderate or less adverse environmental impacts (see "Impacts that may be both Beneficial and Adverse" below).

Environmentally Preferable Alternative

According to the U.S. Department of the Interior regulations implementing NEPA, the environmentally preferable alternative "causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the responsible official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources." 43 CFR section 46.30.

In this case, the preferred alternative (Alternative B) is also the environmentally preferable alternative. Alternative B would provide a programmatic framework for the long-term use of fire in the fire-adapted vegetation communities of the park, which would be more effective in helping to restore and maintain the natural Everglades ecosystem. The ability to use small, frequent fires to preclude large, destructive fires would help protect the park's historical and other cultural resources and allow for more efficient use of resources.

Alternative A, which would continue current management, is not environmentally preferable. The prescribed fire program would continue to be approved with documented categorical exclusions. Areas requiring hazardous fuel management would remain untreated and the constraints would continue to affect the ability to achieve stated goals and objectives. Therefore, Alternative B is the environmentally preferable alternative.

Why the Selected Alternative Will Not Have a Significant Effect on the Human Environment

Consideration of the effects described in the EA, and a finding that they are not significant, is a necessary and critical part of this FONSI, as required by 40 CFR §1508.13. Significance criteria are defined in 40 CFR § 1508.27. These criteria direct NPS to consider direct, indirect, and cumulative impacts of the proposed action, as well as the context and intensity of impacts:

Context. This measure of significance considers the setting within which an impact was analyzed in the EA, such as the affected region, society as a whole, affected interest, and/or a locality. The selected alternative affects only the immediate local area, in terms of resources, employees, and/or visitors. Therefore, that is the context in which the NPS has assessed the potential significance of impacts resulting from the implementation of the selected alternative.

Intensity. This measure of significance refers to the severity of impacts, which may be both beneficial and adverse, and considers measures that will be applied to minimize or avoid impacts. As directed by 40 CFR § 1508.27, intensity is evaluated by considering the following factors:

Impacts that may be both Beneficial and Adverse

Air quality -- Under the selected alternative, air quality in the park, including visibility, will remain unchanged on most days. Written burn plans or prescriptions will be developed for prescribed fire, which will reduce the likelihood for higher emission amounts and for smoke to migrate to untreated areas. Management of wildfire may affect air quality and visibility in the park and within urban areas depending on location and wind conditions. However, these impacts will be short term. The selected alternative will further reduce fuels in the park, helping to prevent and manage future unplanned wildfire. A reduction in unplanned wildfire will reduce emissions from fire both locally and regionally and result in long-term beneficial effects to air quality.

Soils -- Wildfire and prescribed fire will consume the above ground plant matter under normal conditions but will not burn soils or cause oxidation of soils, and soils will not be adversely affected by fire. The effects of nutrient cycling in soils will be beneficial. Wildfires in organic soils are unlikely. During extreme drought conditions, park fire managers will attempt to keep wildfire out of hammocks and sloughs where these soils occur, and prescribed fires will not be used. Fires may consume periphyton crust, but the adverse effects of such burns are limited and short term. By decreasing overall fuel loads, the selected alternative will reduce the potential for wildfires and associated potential adverse impacts to soils.

Hydrology and water quality -- Wildfire and prescribed fires may affect hydrology by removing decadent sawgrass, thereby altering sheetflow until the sawgrass recovers. Burning vegetation may also reduce resistance to sheet flow. Organic soil fires, while rare, could affect soil water storage capacity and could affect ponding in some areas. However, vegetation will recover quickly in most instances, and the reduced potential for catastrophic wildfire under the selected alternative means that adverse impacts will be limited in extent and short term. Similarly, although water quality in the park may be affected by burning due to the release of nutrients, any adverse impact will be temporary, and will be the result of fire effects, a natural ecosystem function.

Vegetation -- Most vegetation communities within Everglades National Park evolved in the presence of fire. Perpetuating or re-creating a natural fire regime will benefit most vegetation communities by sustaining the conditions to which they are adapted. Fires of unusual intensity, as well as some park fire management activities, can damage vegetation; however, the selected alternative will reduce the likelihood of catastrophic wildfire by reducing fuel loads, and the impacts of management activities will be minimized by careful planning in burn plans. In most instances, vegetation will recover rapidly after the wildfire management actions are complete.

Wildlife and wildlife habitats -- Wildlife of Everglades National Park evolved in the presence of fire, and a number of Everglades wildlife species are accustomed to fire and have behavioral and other adaptations to fire. Both unplanned and prescribed fires benefit native wildlife by maintaining natural vegetation and fire mosaics. Following fire, some species respond favorably and increase in numbers, while others respond negatively and decrease. Because the timing of fuel reduction efforts can be planned to avoid sensitive breeding seasons and adjusted for different habitats, the adverse impacts on wildlife species will typically be short-term and

localized. These short-term adverse effects will be offset by the long-term benefits associated with reduced fuel loads and the subsequent lowering of potential fire intensities.

Special status species and their habitats -- Some short-term disturbance to park habitats will occur, but over the long term, habitat conditions for special status species will be maintained or improved by the selected alternative. These benefits will stem in large part from the multi-year fuels plan, which will allow the park to conduct necessary large-scale burning. Adverse effects to special status species will generally be the result of injury or death to individuals rather than to long-term destruction of habitat. The USFWS has authorized such incidental take for listed species in a biological opinion (BO) dated June 30, 2105, so long as NPS complies with required Terms and Conditions, which are set forth in the BO. These terms and conditions have been incorporated into the "Mitigations" section of this FONSI and will serve to minimize impacts to Federally-listed species.

Cultural resources -- Fire suppression or mechanical fuels reduction activities could include ground disturbing activities such as the use of equipment or hand tools that may mix soil strata and expose or fragment archeological resources. Such ground disturbance could result in permanent, minor adverse effects. However, the selected alternative will provide better advance identification and protection of archeological resources than currently exists by allowing implementation of a predictive model for the probability of encountering currently unknown archeological sites in unsurveyed areas of the park. Under the selected alternative, enhanced protection of cultural resources will be achieved by a greater emphasis on prescribed fire to achieve desired resources conditions, reductions in fuel loads adjacent to cultural resources, and utilization of an adaptive management approach incorporating new information and technology.

Wilderness character – The selected alternative will have both beneficial and adverse impacts to wilderness character. The alternative's expanded program of prescribed burning will degrade the untrammeled and undeveloped qualities of wilderness because it will entail active manipulation of the wilderness over a large area, including the use of mechanized equipment. However, the improved ecosystem functioning caused by expanding fire on the landscape and reducing fuel loads will enhance the natural quality of wilderness. On balance, the impacts to the untrammeled and undeveloped qualities will be relatively short term, while the enhanced natural functioning of the ecosystem as a whole will yield long term benefits for wilderness character.

Visitor use and experience – The selected alternative will provide for management of wildfire and prescribed fire to achieve resource management goals will have both beneficial and adverse effects on visitor use and experience. Adverse effects could include reduced visibility, exposure to smoke and decreased access to campgrounds, interpretive programs and visitor facilities. These effects will be short-term and localized. Control of exotic vegetation and habitat restoration as a result of fire management activities will provide visitors an opportunity to experience a more natural Everglades environment providing long term benefits. The reduced need for suppression activity will diminish amount of noise and overall disturbance to the visitor experience, resulting in short- and long-term beneficial effects.

Land use -- The greatest potential for impacts to land uses and park neighbors occurs near the East Everglades addition (FMU 4) as prescribed fire and wildfire are used to achieve resource

management goals. Fire management in FMU 4 may potentially impact areas not previously exposed to fire or smoke, especially those areas near the park's eastern boundary of FMU 4. Developed areas along the eastern boundary of the park may experience short-term adverse effects from smoke and other fire management related operations. Impacts could be unpleasant, but generally not a substantial threat to human health. However, as a result of fire management activities in FMU 3 and 4, the reduction of hazardous fuels will provide long-term beneficial effects to neighboring communities and transportation routes near the park.

Park operations -- The selected alternative will expand fire management operations in the park, but not in such a way that will dramatically change existing budgets, staffing commitments, work routines, and staff ability to accomplish tasks.

Based on the EA analysis, most of the impacts of the selected alternative will be beneficial. The selected alternative will not result in significant adverse impacts on the human environment.

Degree of Effect on Public Health and Safety

Fire management involves a variety of risks associated with its operations. Operational guidance in the selected alternative directs all fire management activities to be conducted to provide for firefighter and public safety, mitigate risk from unwanted wildfire, and provide resource benefit. All operational documents will address both public and employee safety. Potential effects of all projects on employees and the public will be considered. Guidance for implementation of federal wildfire management identifies sound risk management as the foundation for all fire management activities. Risks and uncertainties relating to fire management activities are understood, analyzed, communicated and managed as they relate to the cost of either doing or not doing an activity. Net gains to the public are an important component of the decisions. As a result, the effect of the selected alternative on health and safety will not be significant.

Unique Characteristics of the Geographic Area such as Proximity to Historic or cultural Resources, Park Lands, Prime Farmlands, Wetlands, Wild and Scenic Rivers, or Ecologically Critical Areas

Everglades National Park is both a World Heritage Site and a Wetland of International Importance under the Ramsar Convention. The selected alternative will enhance ecosystem functioning in the park by allowing fire to more closely approximate the role it has played historically on the landscape. The park is bordered by Big Cypress National Preserve as well as large blocks of state conservation land. These areas will also benefit from restoration of a more natural fire regime to the landscape. Based on the EA findings, the NPS has determined that there will be no significant impacts to unique characteristics in the immediate vicinity or regionally.

Degree to which Effects on the Quality of the Human Environment are Likely to be Highly Controversial

Department of the Interior regulations implementing NEPA provide that the term "controversial" refers to "circumstances where a substantial dispute exists as to the environmental consequences

of the proposed action and does not refer to the existence of opposition to a proposed action, the effect of which is relatively undisputed." 46 CFR § 46.30.

Based on the content of public and agency comment on the EA, there is no substantial dispute as to what the effects of the selected alternative are likely to be. Therefore, the effects from the selected alternative are not likely to be highly controversial.

Degree to which the Possible Effects on the Human Environment are Highly Uncertain or Involve Unique or Unknown Risks

The effects of the selected alternative are relatively straightforward and easily predicted. The fire management measures and mitigation actions described in the alternative have been used in other NPS sites and their effects are generally predictable and well-understood. The NPS has determined that with respect to these actions, the extent and degree of uncertainty regarding impacts or unique or unknown risks is not significant.

Degree to which the Action Establishes a Precedent for Future Actions with Significant Effects or Represents a Decision in a Principle about a Future Consideration

Nothing in the selected action establishes a precedent that will result in significant effects in the management of Everglades National Park or any other areas in the National Park System. The selected alternative prescribes measures for the management of wildland and prescribed fire that are consistent with NPS practices at other parks where management of fire is necessary for resource protection and visitor safety.

Whether the Action is Related to Other Actions with Individually Insignificant but Cumulatively Significant Impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact to the environment.

The selected alternative will increase the amount of prescribed burning at Everglades National Park. Other fire management efforts are currently occurring at the local and state level, including on properties adjoining the park. Together these efforts will result in cumulative adverse (e.g., smoke, plant and animal mortality) and beneficial (e.g., reduced fuel loads, enhanced ecosystem functioning) impacts. The reduced potential for catastrophic wildfire and the enhancements to ecosystem functioning are expected to far outweigh adverse impacts. On balance, cumulative impacts are likely to be beneficial. Thus, there are no significant cumulative adverse impacts associated with the selected alternative.

Degree to which the Action may Adversely Affect Districts, Sites, Highways, Structures, or Objects Listed or Eligible for Listing in the National Register of Historic Places (NRHP) or may Cause Loss or Destruction of Significant Scientific, Cultural or Historic Resources

Under Section 110 of the NHPA, the NPS, as a Federal land-holding agency, is required to identify, inventory, and nominate properties to the National Register of Historic Places, and to exercise caution to protect such properties (16 U.S.C. § 470). Section 106 of the NHPA requires the agency to consider the effects of its actions on National Register-listed or eligible properties.

As noted above, fire suppression or mechanical fuels reduction activities could include ground disturbing activities that may mix soil strata and expose or fragment archeological resources. Such ground disturbance could result in permanent, minor adverse effects. Fire effects, including heat, could also adversely affect cultural resources. Minimization and avoidance of cultural resource impacts is addressed for fire management activities in Appendix A ("Mitigation"). Over the long term, fire management and reduction in fuel loads under the selected alternative will result in reduced impacts to cultural resources, including archeological sites and historic structures.

In compliance with Section 106 of NHPA, the NPS has determined that implementation of the selected alternative will not have an adverse effect on historic properties, as defined in 36 CFR Part 800.5(d)(1). On November 7, 2014, (see Appendix B), the Florida State Historic Preservation Officer (SHPO) concurred with this determination. The SHPO noted that: "The archaeological site predictive model created by the Regional Archeological Survey Program at the Southeast Archeological Center is sophisticated, and the principles underlying its development have proven effective at accurately predicting site locations in the Everglades in the past."

Degree to which the Action May Affect a Threatened or Endangered Species or Critical Habitat

On April 19, 2013, the NPS requested initiation of informal consultation with the USFWS on the Everglades National Park FMP. Thereafter, on October 27, 2014, the park requested initiation of formal Section 7 consultation on the FMP and notified USFWS of the availability of the final EA. With the release of the final EA, the park officially requested that formal section 7 consultation on the new FMP be completed, with the anticipated effects as described in the EA under the preferred alternative.

The preferred alternative incorporated conservation measures (mitigation) that were developed through discussions with Service staff. In addition to the consultation, the park requested any additional comments that USFWS wished to submit on the final EA. On November 24, 2014, during the public comment period, the USFWS submitted comments on the final EA online at the NPS Planning, Environment, and Public Comment (PEPC) website. On February 18, 2015, the park transmitted by email a document that contained its responses to the comments/questions the USFWS had provided during the public comment period. These responses were intended principally to aid in the consultation process for the FMP.

Impacts of the selected alternative on threatened and endangered species are summarized above under "Impacts that may be both Beneficial and Adverse." After applying the relevant criteria from the Endangered Species Act, the NPS has concluded that implementation of the preferred alternative *may affect, is likely to adversely affect* the following species: Blodgett's silverbush, pineland sandmat, Garber's spurge, Florida pineland crabgrass, and Everglades bully (candidate species), as well as the Florida leafwing butterfly, Bartram's hairstreak butterfly, Eastern indigo snake, Cape Sable seaside sparrow, Everglade snail kite, Florida bonneted bat, and Florida panther (listed species). Adverse effects will generally be the result of injury or death to individuals rather than to long-term destruction of habitat.

In response to this conclusion, the USFWS issued a lengthy Biological Opinion (BO) dated June 30, 2015 (see cover letter to the BO in Appendix B below). The BO's major provisions are summarized in Appendix A (Mitigation). In the BO, the USFWS found that the proposed action is not likely to jeopardize the species listed above or adversely modify critical habitat, where designated, so long as NPS complies with the required Terms and Conditions set forth in the BO. These terms and conditions have been incorporated into the "Mitigations" section of this FONSI and will serve to minimize impacts to Federally-listed species. The FONSI also includes conservations measures recommended by USFWS to minimize impacts to candidate species (i.e., Blodgett's silverbush, pineland sandmat, Garber's spurge, Florida pineland crabgrass, Everglades bully). The NPS will comply with the terms and conditions in the Biological Opinion.

The selected alternative will only affect a relatively small number of individuals of listed and candidate species, and not in any numbers that would prevent the continued existence of these species in the park. At the same time, the alternative will improve habitat for special status species as a whole. Thus, the selected alternative will not have a significant adverse effect on special status species.

Whether the Action Threatens a Violation of Federal, State, or Local Law or Requirements Imposed for the Protection of the Environment

The selected alternative for the management of fire (Alternative 2) does not threaten a violation of any Federal, State, or local law or requirement imposed for the protection of the environment.

Public Involvement

The EA was released for public review on October 23, 2014. The availability of the EA was announced through local and regional news media, targeted mailings to stakeholders and through the NPS Planning, Environment, and Public Comment (PEPC) website at http://parkplanning.nps.gov/ever. No public meeting was held due to a perceived lack of widespread public interest.

Eleven pieces of correspondence containing 25 substantive comments were received by NPS on the PEPC website during the EA comment period. Commenters included private individuals, non-governmental organizations, and governmental entities. All commenters expressing a preference supported Alternative B, the selected alternative. Some commenters raised questions about or sought clarification regarding certain aspects of the selected alternative. These are addressed in Appendix D to this FONSI ("Response to Substantive Comments").

Conclusion

The selected alternative (Alternative B – prepare new FMP for Everglades National Park) does not constitute an action that normally requires preparation of an Environmental Impact Statement (EIS). The selected alternative will not have a significant effect on the human environment. Some short-term adverse environmental impacts will likely occur, but will be negligible to moderate. Most impacts will be long-term and beneficial. There are no unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed

in or eligible for listing in the NRHP or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, cumulative effects or elements of precedent were identified. Implementation of a new FMP at Everglades National Park will not violate any Federal, State or local environmental protection laws. Based on the forgoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

APPENDIX A

MITIGATION

MITIGATION MEASURES

Mitigations are actions or approaches designed to prevent or minimize adverse impacts during and after project implementation. The following measures will be implemented during implementation of Alternative B, as needed. All of the approaches are based on best professional judgment and available science and may be changed as new information is obtained. Mitigations or protective measures that are required as part of formal consultation with the US Fish and Wildlife Service (USFWS) will not change unless changes are made in coordination with the USFWS.

In addition to the specific measures described below, Fire and aviation management, in consultation with South Florida Natural Resources Center, will consult periodically with appropriate regulatory authorities as conditions change or as new information becomes available in order to ensure protection of resources.

The National Park Service commits to implement the mitigation measures identified in this section as a part of implementing prescribed fire projects under the new fire management plan. Impacts for the action alternative in chapter 3 were determined with these mitigation measures in place, with tailoring to meet site-specific conditions.

Unplanned ignition activities and emergency situations may arise. In these situations the mitigation measures described below will still be adhered to unless the on-site decision maker determined in his/her professional judgment that the conditions required activities that may supersede the relevant mitigation measures.

Many of the following mitigations measures will be implemented in Alternative A as well as Alternative B. However, constraints associated with operating an annual prescribed fire program under documented categorical exclusions to comply with NEPA, will limit the fire management program's ability to implement mitigations associated with the use of planned ignition treatments. Additionally Alternative B will provide additional mitigations related to protection of listed species populations and use of the *GIS Model for Archeological Site Prediction and Survey Planning at EVER* in fire management planning.

Air Quality

Everglades National Park enjoys a Class I clean air status and as such the following mitigation measures are to be followed:

- Burn authorizations or permits will be obtained from the Florida Forest Service once they determine that air quality and fire danger are favorable for safe burning.
- Day of burn weather forecasts and fuel types will be used to generate plume trajectory maps.
- Forecasted plume trajectories must not impact smoke-sensitive receptors in order for burn permits to be issued. Smoke management maps shall be printed and included with the permanent fire record.
- Smoke screening tools will be used to determine smoke vector paths for planned ignition treatments and unplanned incidents as appropriate.

- Smoke dispersal will be monitored by Fire Effects Monitors during planned ignition treatments and unplanned incidents as appropriate.
- Caution signs will be placed where smoke may impact transportation corridors.
- Traffic control measures will be implemented as appropriate by Fire Management or requested personnel.
- Advanced notifications of planned ignition treatments will be provided to all park staff and park interpretative staff to have at visitor access points and permitting stations.

Soils

- The use of Minimum Impact Suppression Tactics (Appendix G of the proposed fire management plan) will be employed at all times to minimize substrate and soil disturbance.
- Planned ignition treatments will be used to reduce fuel loading adjacent to hardwood hammocks and tree islands to provide protection from unwanted fire spread.
- Soil moisture levels will be monitored and considered in the planning and implementation of planned ignition treatments to ensure conditions are within the prescription parameters to prevent fire spread into the organic soils of tree islands and hammocks.
- Planned ignition treatments will be used to reduce fuel loading, thereby reducing subsequent fire intensity and severity to lessen the effect of fire on organic soil and periphyton substrates.
- Specialized equipment, such as rolligons, will be used only when an operation could not be safely completed and/or impacts to values could not be mitigated, and not without prior approval from the superintendent. All off road vehicles will only be used in instances where travel by other means is impracticable.
- Under drought conditions when organic fires in sloughs are possible, a full suppression management strategy will be used.
- Fire management will support research and incorporate new information regarding fire effects on soils and organic substrates in Everglades National Park.
- Fire Management will work with the South Florida Natural Resources Center and the park's Cultural Resource Divisionto obtain and use the best available science to plan, review, and adjust fire management practices as needed to mitigate impacts to soils.
- Fire management will be conducted in coordination with restoration projects as they are implemented.

Hydrology and Water Quality

- Fire retardant will be used only when an operation cannot be safely completed and/or impacts to values could not be mitigated without the use of retardant. Superintendent approval will be required prior to use.
- Specialized equipment, such as rolligons, will be used only when an operation could not be safely completed and/or impacts to values could not be mitigated without the use of

this equipment. Additional approval from the superintendent will be required prior to the use of specialized equipment.

- Class A foam (surfactant) will only be used to protect life and property. Engines operated by Everglades Fire Management will be flushed to eliminate residual foam in pump equipment that will be used in park fire operations.
- The water tanks of air tankers will be rinsed prior to use in the park to eliminate residual substances being transferred through the water being dropped.
- Solution holes will not be used as helicopter dip sites.
- During fire management operations, funnels and spouts will be used when dispensing fuel and/or oil, spill containment berms will be used during portable pump operations, and containers will be filled to the appropriate level to prevent overflow and spills.
- Fire Management will work with the South Florida Natural Resources Center to obtain and use the best available science to plan, review and adjust fire management practices as needed to mitigate impacts to water resources.
- Fire management will be conducted in coordination with restoration projects as they are implemented.

Exotic Vegetation

- South Florida Natural Resources Center will provide Fire and Aviation Management the most current information and data regarding exotic species.
- During fire management operations, vehicles and equipment will be washed to prevent increased spread of exotics as a result of fire management actions.
- Untreated stands of melaleuca will not be treated with planned ignition treatments without prior approval from the Exotic Vegetation Management Program.
- In consultation with the South Florida Natural Resources Center, Fire and Aviation Management will use planned ignition treatments as tool to treat, manage, and reduce the presence and spread of exotic species invasions in the park to the maximum extent feasible.
- Fire Management will work with the South Florida Natural Resources Center to obtain and use the best available science to plan, review, and adjust fire management practices as needed to manage and reduce the spread of exotic plant populations.
- Fire management will be conducted in coordination with restoration projects as they are implemented.

Federal Threatened and Endangered Species and Their Habitats

Set forth below are the mandatory "Terms and Conditions" for fire management at EVER as specified by the USFWS in its Biological Opinion on the Everglades Fire Management Plan dated June 30, 2015. Where applicable, the "Terms and Conditions" for a particular species are followed by the "Reasonable and Prudent Measures" recommended by USFWS:

Terms and Conditions

To minimize adverse effects to threatened and endangered species from implementation of prescribed fire and wildland fire suppression activities described in the Fire Management Plan, EVER will implement a range of avoidance and minimization measures outlined below.

Avoidance and minimization measures for all species
Conduct surveys and monitoring of listed species and their habitats at the population level to assess overall population and trends. In addition, surveys for wading bird nesting activity and snail kite nesting shall be conducted.

EVER shall notify all vehicle and equipment operators to avoid adverse impacts to all listed, proposed and candidate species. In addition, all on-site personnel will be educated to recognize covered species and where those species occur in a burn unit. If personnel encounter any listed species it will be avoided. If listed animals are encountered, project activities shall cease until the animal leaves the area.

EVER shall ensure that if a dead, injured or sick individual of any listed animal species is encountered, the South Florida Ecological Field Services Office will be contacted with information related to the animal.

EVER shall submit an annual report to the South Florida Ecological Services Office that includes:

1) a list of areas burned with dates and estimated total acreage burned by habitat;
2) identification of projects where activities were implemented where covered species are known to occur; and
3) all observed take of covered species.

EVER shall, where feasible, record the locations of any covered species and nests, dens, cover sites or tracks. EVER shall make this information available to the Service upon request.

EVER shall conduct burns in pine rocklands in small units as described in the multi-year fuels plan and shall burn with the goal of creating a mosaic pattern of burned and unburned habitat to provide some on-site refugia for imperiled species and facilitate recolonization of sites following fire.

Fire breaks, if constructed shall be limited in width to no more than 30 feet. Debris from construction of firebreaks shall be scattered in such a way as to avoid impacting butterfly host plant species or for animals, their dens, nests or cover.

Interior firebreaks within the periphery of the fire, if constructed, shall be limited to 20 feet in width. Debris from construction of firebreaks shall be scattered in such a way as to avoid impacting butterfly host plant species or for animals, their dens, nests or cover.

EVER shall construct temporary fuel breaks, if needed, using methods that have the least likelihood of creating soil disturbance.

EVER shall use prescribed fire of varying intensity and intervals to the extent practicable using an adaptive management approach in order to provide a mosaic of habitats suitable for the listed species.

EVER shall use firing patterns that provide escape routes for wildlife.

Where possible, EVER shall use fire alone to accomplish restoration goals and minimize or avoid use of mechanical or herbicide treatments.

EVER shall use objective-dependent fire effects plots, environmental sampling, fire behavior monitoring and detailed mapping protocols to evaluate mitigations and objectives as part of an adaptive management strategy and revise the FMP accordingly.

Fire supported herbicide application

EVER may use herbicide as a treatment to support prescribed fire when it enhances the application of prescribed fire and does not impact listed species.

Aerial applications of herbicide shall not be used in areas where covered species are known to occur without conducting additional consultation with the Service.

Herbicide application to invasive species may be used in conjunction with prescribed fire to improve treatment and reduction of invasive species, consistent with EVER's Invasive Plant Management EIS.

Fire supportive mechanical treatment

EVER typically does not use mechanical treatment to create safe burning conditions or more effectively introduce fire. However, if EVER determines mechanical treatment is necessary to accomplish these objectives, treatment shall be limited to perimeters or will otherwise be the least amount necessary to introduce fire.

Mechanical treatment of an entire listed plant population shall not be carried out. Treatments, if needed, will be varied by season and by year to avoid treating an entire habitat at one time. Mechanical treatment shall be limited to 50 percent of a population or habitat in a given cycle.

If employed, mechanical treatment methods shall be carried out in ways that minimize ground disturbance in habitats occupied by covered ground dwelling species.

If mowing is employed, mower height shall be as high as possible to provide some protection for listed species.

If necessary, mechanical treatments shall be carried out using methods that minimize production of fine mulch.

If necessary, mechanical treatments shall be timed to avoid sensitive periods in the life history of covered species.

If necessary, mechanical treatments shall be carried out using techniques that minimize permanent alterations to natural hydrology.

Species-specific measures

EVER shall also adhere to the following species specific avoidance and minimization measures.

Invertebrates

Bartram's hairstreak and Florida leafwing butterflies

EVER shall, in coordination with the Service, implement monitoring protocols to evaluate the seasonal and annual abundance and distribution of the Florida leafwing and Bartram's hairstreak populations and croton host plant populations throughout FMU 3 and any adjoining areas into which they may expand, prior to conducting prescribed burn activities.

EVER may modify the multi-year fuels plan specifically to reduce potential risk to butterfly populations, and shall provide notification to the Service of their conclusion.

Boundaries of prescribed burns shall be mapped following burns. These maps, along with butterfly and host plant monitoring results, shall be used to assess the efficacy of prescribed fire and to modify burn plans if needed. Any modification to burn units or schedules in the multiyear fuels plan shall be coordinated with the Service prior to initiating the revised plan.

When possible, fire breaks or staging areas for prescribed fire activities shall not be placed through known occurrences of host plants for listed butterflies.

Planned ignition treatments shall be used to maintain croton host plant populations and pine rockland habitat for the Bartram's hairstreak and Florida leafwing butterfly.

Planned ignition treatments shall be implemented with the objective of creating mosaic patterned burns leaving unburned refugia for use by adult and larval Bartram's hairstreak and Florida leafwing butterflies that may potentially be present.

In addition to within unit refugia, landscape scale mosaic patterns and unburned refugia shall be created by prescribed fire in adjacent Long Pine Key pine rockland management blocks being separated by a minimum burn interval of at least one year.

Fires in all habitats within Long Pine Key that contain pineland croton will be carried out with the goal of burning a minimum of 50 percent and a maximum of 75 percent of the burnable habitat within each fire management block and retain a minimum of 25 percent and a maximum of 50 percent unburned habitat. Achieving a specific percentage of burned vs unburned is difficult to ensure, and this numerical value is considered a goal, not an objective.

Everglades Fire Management shall use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant succession, and limit exotic plant invasions within and adjacent to pine rockland habitat.

Fire and Aviation Management, in consultation with the South Florida Natural Resources Center, Biological Resources Branch, shall ensure that appropriate actions are taken to protect Bartram's hairstreak and Florida leafwing larvae and adult butterflies.

EVER Fire Management and South Florida Natural Resources Center, Biological Resources Branch, shall monitor fire effects within monitoring plots to ascertain the effects of fire on croton and post-fire butterfly larval presence. Pre- and post-fire monitoring shall be conducted on an annual basis.

Reasonable and Prudent Measures for Bartram's Hairstreak and Florida Leafwing

The following reasonable and prudent measures are also necessary and appropriate to further minimize the incidental take of Bartram's hairstreak and Florida leafwing:

1. ENP, in coordination with the Service, shall continue monitoring and evaluation of the seasonal and annual abundance and distribution of the Bartram's hairstreak and Florida leafwing butterfly populations within the Pine Rocklands Fire Management Unit (FMU 3). ENP shall make modifications to the FMP to reduce potential risk to the species if indicated and notify the Service of their conclusions.

2. Planned prescribed fires shall be conducted with the goal to maintain and improve croton host plant populations and pine rockland habitat for the Bartram's hairstreak and Florida leafwing butterfly. Burning shall be conducted to allow within unit unburned refugia and creating landscape scale mosaic patterns. Boundaries of prescribed burns shall be mapped following burns and analyzed along with butterfly host plant monitoring results to assess prescribed fire effects and make modifications if necessary for future planned fires.

3. All appropriate actions shall be taken to protect Bartram's hairstreak and Florida leafwing butterfly larvae and adults.

4. Pre- and post-fire monitoring shall be conducted to determine fire effects on host croton plant survival and recovery and to determine post-fire butterfly larval presence.

5. In conjunction with management goals using prescribed fires to enhance Bartram's hairstreak and Florida leafwing butterfly populations in ENP, seek to restore and maintain pine rockland, marl prairie, and pineland-prairie ecotone habitat, including prevention of woody plant succession where applicable and limit exotic plant invasions both within and in adjacent habitat.

Reptiles

Eastern indigo snake

If occupied refugia such as stumps or burrows are encountered, they will be marked and avoided.

In the event that vehicle access to uplands for planned fire management activities is required, surveys for burrows shall occur concurrently with the activities. If a burrow is encountered, operations shall either continue in a way that avoids disturbing the burrow or operations shall stop.

Planned ignition treatments shall be implemented with the objective of creating mosaic patterned burns, leaving unburned refugia and vegetative cover for use by adult and hatchling indigo snakes that may be present. Fires within potentially occupied indigo snake habitat will be planned with a goal to burn at least 50 percent of the potential habitat while maintaining at least 25 percent of the area unburned. Achieving a specific percentage of burned vs unburned is difficult to ensure, and this numerical value is considered a goal, not an objective. In addition to within unit refugia, landscape scale mosaic patterns and unburned refugia shall be created by prescribed fire in adjacent Long Pine Key pine rockland management units being separated by a minimum burn frequency interval of at least 1 year.

Ignition techniques shall be used that lessen the likelihood of wildlife entrapment; ring fires shall not be used.

Everglades Fire Management shall use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to indigo snake habitat.

Soil moisture levels shall be monitored and considered in the planning and implementation of prescribed fire treatments to ensure conditions are within the prescription parameters to prevent fire spread into hammocks where indigo snakes may occur.

Debris piles created from prescribed fire activities shall be removed promptly to prevent eastern indigo snakes from inhabiting the temporary piles and thereby reduce the potential for burning dens.

EVER shall conduct planned ignition treatments in drier mangrove habitats utilizing the above safeguards to prevent impacts to the indigo snake that may be utilizing these areas.

Personnel shall record and report any sightings of eastern indigo snakes. If an eastern indigo snake is encountered, observations should be reported to the park wildlife biologist through the use of an observation log. Observation logs will be provided to the Service on a monthly basis.

Eastern indigo snakes, if encountered, shall not be handled or moved.

Crews shall be instructed to not harm or kill snakes unless the snake is definitively identified as a

Burmese python or other nonnative species.

Where snakes bearing a resemblance to indigo snakes are encountered, all operations shall be ceased and the snake allowed to move away.

If large snake skins are found that may have been shed by an eastern indigo snake, the location should be recorded, the skin shall be collected and sent to the park wildlife biologist and the information forwarded to the Service.

Fire and Aviation Management, in consultation with the South Florida Natural Resources Center, Biological Resources Branch, shall ensure that all appropriate actions are taken to protect eastern indigo snakes.

EVER shall contact the Service, South Florida Ecological Service Office and the EVER Biological Resources Division Chief if a dead eastern indigo snake is discovered.

Reasonable and Prudent Measures for Eastern Indigo Snake

The following reasonable and prudent measures are also necessary and appropriate to further minimize the incidental take of eastern indigo snakes:

1. Conduct prescribed fire with the goal of creating a mosaic pattern of burned and unburned habitat to provide some on-site refugia for indigo snakes and facilitate recolonization of the sites following fire. This pattern of burns should leave unburned refugia and vegetative cover for use by adult and hatchling indigo snakes that may potentially be present. In addition to within unit refugia, create landscape scale mosaic patterns and unburned refugia by prescribed fire in adjacent Long Pine Key pine rockland management units being separated by a burn interval of at least 1 year.

2. If occupied refugia, such as stumps or burrows, are encountered, they should be marked and avoided. In the event that vehicle access to uplands for planned fire management activities is required, conduct surveys for burrows concurrently with the activities. If an occupied burrow is encountered, continue operations in a way that avoids disturbing the burrow or cease operations. Remove debris piles created from exotic plant management prescribed fire activities promptly to prevent eastern indigo snakes from inhabiting those temporary piles and thereby reduce the potential for burning dens.

3. EVER shall use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to indigo snake habitat. Monitor and consider soil moisture levels in the planning and implementation of prescribed fire treatments to ensure conditions are within the prescription parameters to prevent fire spread into hammocks where indigo snakes may occur.

4. All appropriate actions shall be taken by EVER to protect eastern indigo snakes through ongoing consultation with the FWC and Service. Ignition techniques shall be used that

lessen the likelihood of wildlife entrapment; ring fires should not be used. Conduct planned ignition treatments to prevent potential impacts to the indigo snake in drier mangrove habitat they may be utilizing.

5. Do not handle or move eastern indigo snakes. Instruct crews to not harm or kill snakes unless the snake is definitively identified as a Burmese python or other nonnative species. If snakes bearing a resemblance to indigo snakes are encountered, cease all operations and allow the snake to move away.

6. Record and report any sightings of eastern indigo snakes. If an eastern indigo snake is encountered during fire management operations, observations should be reported to the park wildlife biologist through the use of an observation log. If large snake skins are found that may have been shed by an eastern indigo snake, they should be collected and sent to the park wildlife biologist. EVER shall contact the Service, South Florida Ecological Service Office and the EVER Biological Resources Branch Chief if a dead eastern indigo snake is discovered.

Birds

Cape Sable seaside sparrow

Prescribed fires in occupied and/or critical habitat or CSSS-A undesignated habitat, (Figure 3 in biological opinion), should be planned to be performed during the non-breeding season (July 15 through February 28) to avoid impacts to breeding birds, nests, eggs, and fledglings. However, if prescribed fires in occupied and/or critical habitat (or CSSS-A undesignated habitat) are planned to be performed during the breeding season (March 1 through July 15), it may be permitted upon coordination between the Service and EVER subject to verification by EVER that no sparrows are found within the area to be treated with the prescribed burn.

If occupied and/or critical habitat (or CSSS-A undesignated habitat) is threatened by wildfires during the breeding season (March 1 through July 15) control of fires shall be conducted to avoid impacts to breeding birds, nests, eggs, and fledglings. Wildfires that threaten occupied and/or critical habitat (or CSSS-A undesignated habitat) may be managed and allowed to burn in a manner consistent with prescribed fires following coordination between the Service and EVER, subject to a determination of the current status of the CSSS within the threatened area and the following thresholds:

1. All proposed fire management strategies shall be based on thresholds for maximum areas burned annually. No more than a combined total of 35 percent of all CSSS subpopulations/critical habitat (or CSSS-A undesignated habitat), and no more than 20 percent of occupied habitat shall be treated with fire annually, including wildfires and prescribed fires. The Service recognizes that not all wildfires will be able to be controlled, and wildfire has the potential to exceed these thresholds.

2. Additionally no more than 50 percent of any individual subpopulation critical habitat (or CSSS-A undesignated habitat), and no more than 20 percent of an individual

subpopulation's occupied habitat shall be burned annually. These thresholds were selected based on careful consideration of likely potential burn units, and the operational feasibility of achieving target treatments.

Occupied habitat shall be defined as the area within a radius of 1 kilometer of any documented occurrence of a Cape Sable seaside sparrow within the most recent three years, excluding pinelands and other unsuitable vegetation communities where sparrows are not known to occur. Occupied habitat shall be identified and delineated annually prior to any fire management activities in CSSS habitat.

EVER shall host an annual Cape Sable seaside sparrow working group meeting to establish fire management strategies and collaborate with species experts. As part of this process, EVER shall continue to work with the Service to improve the Cape Sable seaside sparrow fire management strategy as the latest data on sparrow population numbers, demographics and habitat conditions dictates. EVER fire management activities that affect the Cape Sable seaside sparrow shall adhere
to the most updated Cape Sable seaside sparrow fire management strategy that has been developed and approved by EVER and the Service.

The exact locations and the percent of critical and occupied CSSS habitat to be burned annually and the optimal frequency of return shall be established on an annual basis during the Cape Sable seaside sparrow fire management meetings with EVER, the Service, and other appropriate partners. These meetings shall be used to develop annual fire management strategies based on available information regarding population and subpopulation status, burn severity and recovery rates of vegetation in previously burned areas and data on reoccupation by CSSS of previously burned habitat. This information, along with the multi-year fuels treatment plan, shall be used as the basis for proposing areas to be burned. Additionally, all available information should be considered during the annual meeting to determine treatment priorities for the Cape Sable seaside sparrow. The multi-year fuels treatment plan may be adjusted to ensure treatment of priority areas.

Prescribed fire planning units containing occupied and/or critical habitat (or CSSS-A undesignated habitat), scheduled for treatment in a given year shall be evaluated to determine woody vegetation presence, fire history and fuel loading.

EVER shall use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to occupied Cape Sable seaside sparrow habitat.

Fire and Aviation Management, in consultation with the South Florida Natural Resources Center, Biological Resources Branch, shall ensure that appropriate actions are taken to protect the Cape Sable seaside sparrow.

Reasonable and Prudent Measures for Cape Sable Seaside Sparrow

The following reasonable and prudent measures are also necessary and appropriate to

further minimize the incidental take of Cape Sable seaside sparrow:

1. Use operational flexibility during implementation of the EVER FMP to minimize impacts related to fire and associated activities. During the CSSS breeding season, EVER will work with the Service and other partners to identify operations that minimize detrimental effects or reduce the risk of future adverse effects to the CSSS.

2. In order to ensure the potential adverse effects of the EVER FMP do not exceed those anticipated in this Biological Opinion, the EVER must obtain information on: a) the status and distribution of CSSS in areas affected by FMP operations; b) effects of hydrology and its interrelationship with fire management operations on the CSSS and their habitat; and c) the long range effects of fire management operations on CSSS habitat, recovery intervals, effects of fuel availability and soil characteristics, and woody vegetation occurrence.

3. Plan prescribed fires in occupied and/or critical habitat (or CSSS-A undesignated habitat) to be performed during the non-breeding season (July 15 through February 28) to avoid impacts to breeding birds, nests, eggs, and fledglings. Conduct control of wildfires during the breeding season (March 1 through July 15) to the extent practicable consistent with the needs to maintain human safety. Additionally, fires threatening occupied or recently occupied habitat will be controlled to avoid impacts to breeding birds, nests, eggs, and fledglings. Recently occupied habitat is defined as the area within a radius of 1 kilometer of any documented occurrence of a Cape Sable seaside sparrow within the most recent 3 years.

4. Base all proposed fire management strategies on thresholds for maximum areas burned annually. Fires shall be planned to treat no more than a combined total of 35 percent of all CSSS subpopulations/critical habitat (or CSSS-A undesignated habitat), and no more than 20 percent of occupied habitat with fire annually, including prescribed fires and wildfires managed to burn acres within critical habitat (or CSSS-A undesignated habitat), and/or occupied habitat. It may not be possible to control all wildfires and they may have the potential to exceed these thresholds.

5. EVER shall host an annual Cape Sable seaside sparrow working group meeting at the end of each calendar year, to establish fire management strategies and collaborate with species experts. As part of this process, EVER shall continue to work with the Service to improve the Cape Sable seaside sparrow fire management strategy as the latest data on sparrow population numbers, demographics and habitat conditions dictates. EVER fire management activities that affect the Cape Sable seaside sparrow shall adhere to the most updated Cape Sable seaside sparrow fire management strategy.

6. The multi-year fuels treatment plan shall be used as the basis for proposing areas to be burned. Burn no more than 50 percent of any subpopulation critical habitat (or CSSS-A undesignated habitat), at one time based on careful consideration of likely potential burn units, and the operational feasibility of achieving target treatments. Establish the locations and the percent of critical and occupied CSSS habitat to be burned annually and the optimal frequency of return on an annual basis during the Cape Sable seaside sparrow

fire management meetings with EVER, the Service, and other appropriate partners. These meetings shall be used to develop annual fire management strategies based on available information regarding population and subpopulation status, burn severity and recovery rates of vegetation in previously burned areas and data on reoccupation by CSSS of previously burned habitat. All available information should be considered during the annual meeting to determine treatment priorities for the Cape Sable seaside sparrow. It may be necessary to adjust the multi-year fuels treatment plan to ensure treatment of priority areas.

7. Evaluate prescribed fire planning units containing occupied and/or critical habitat (or CSSS-A undesignated habitat), scheduled for treatment in a given year to determine woody vegetation presence, fire history and fuel loading. Use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions in and adjacent to occupied Cape Sable seaside sparrow habitat.

8. Live, dead, or injured Cape Sable seaside sparrows will be handled appropriately including the proper notification of the FWC and Service.

Everglade snail kite

EVER Fire Management shall obtain the most current snail kite nest locations for the burn units prior to initiating fire management. Snail kite nest location maps may be obtained from various sources including the Service, University of Florida, and South Florida Natural Resources Center, Biological Resources Branch.

EVER shall avoid activities including fire and the operation of aircraft, watercraft and other vehicles, within a 500 foot buffer around known active snail kite nests to prevent disturbance of active nests unless human health and safety would be jeopardized by doing so.

Within the 500-meter foraging buffer, prescribed fire shall be conducted to create a mosaic pattern of burned and unburned habitat with a goal of no more than 50 percent of the foraging buffer burned.

Planned ignition treatments will use smoke dispersal data from weather forecast and smoke modeling tools to reduce impacts from smoke to active nests.

Everglades Fire Management shall use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to snail kite habitat.

Fire and Aviation Management, in consultation with the South Florida Natural Resources Center, Biological Resources Branch, shall ensure that all appropriate actions are taken to protect the snail kite.

Reasonable and Prudent Measures for Everglades Snail Kite

The following reasonable and prudent measures are also necessary and appropriate to further minimize the incidental take of Everglades snail kite:

1. EVER shall continue to obtain information on snail kite demographics, habitat change and apple snail availability throughout the EVER FMP Action Area, as it relates to habitat changes from the implementation of the FMP.

2. EVER shall obtain and consider the most current snail kite nest locations from the Service, University of Florida, and South Florida Natural Resources Center, Biological Resources Branch, prior to conducting burn activities and ensure that appropriate actions are taken to protect the snail kite. Avoid activities including fire and the operation of aircraft, watercraft and other vehicles, within a 500 foot buffer around known active snail kite nests to prevent disturbance of active nests unless human health and safety would be jeopardized by doing so. Within the 500 meter foraging buffer, prescribed fire should be conducted to create a mosaic pattern of burned and unburned habitat with a goal of no more than 50 percent of the foraging buffer area burned during a given year. Planned ignition treatments will use smoke dispersal data from weather forecast and smoke modeling tools to reduce impacts from smoke to active nests.

3. Use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to snail kite habitat.

4. Live, dead, or injured Everglade snail kite will be handled appropriately including the proper notification of the FWC and Service.

Mammals

Florida bonneted bat

Cavity trees, where identified, shall be protected to the extent possible in areas where Florida bonneted bats are known to occur. If cavity trees must be removed for fire break integrity or human safety, they will be examined for roosting bats before any action is taken.

Any known or suspected roosts shall be marked and avoided or vegetation cleared around the base to prevent fire damage. Identification of suspected roosts will be based on the observations of bats emerging from a tree cavity, bat vocalization heard from a tree cavity, presence of guano, observation of individuals, or recordings of echolocation calls in a focused area.

EVER shall perform acoustic surveys for Florida bonneted bats in potential habitat use areas to the
extent that resources permit, and shall conduct targeted surveys and assessment if potential roost locations are identified.

Planned ignition treatments shall be implemented with the objective of creating mosaic patterned burns leaving unburned refugia and vegetative cover for use by Florida bonneted bats that may be present.

Refugia shall be provided by retaining stumps, snags, large cavity trees with hollows or cavities, and woody debris during activities. Snags and woody debris shall be retained if they do not burn to provide habitat and escape cover.

Prescribed burns shall be conducted carefully in known or suspected occupied areas for bonneted bats, especially during the Florida bonneted bat breeding season (January to March; June to October). Where prescribed fire is to be used near known active or suspected roosts, consideration should be given to avoiding these areas if there are high fuel loads, to reduce the risk of losing roosts during intense fires.

Reasonable and Prudent Measures for Florida Bonneted Bat

The following reasonable and prudent measures are also necessary and appropriate to further minimize the incidental take of Florida bonneted bat:

1. Information on Florida bonneted bat habitat utilization and roosting locations in EVER needs to be expanded. In an effort to improve existing information that will be used to reduce the effects of fire on this species, EVER should continue acoustic surveys for Florida bonneted bats in potential habitat use areas to the extent that resources permit, and should conduct targeted surveys and assessment if potential roost locations are identified.

2. Cavity trees, where identified, and any known or suspected roosts shall be marked and avoided or cleared around to prevent fire damage. Identification of suspected roosts shall be based on the observations of bats emerging from a tree cavity, bat vocalization heard from a tree cavity, presence of guano, observation of individuals, or recordings of echolocation calls in a focused area. If cavity trees must be removed for fire break integrity or human safety, they shall be examined for roosting bats before any action is taken.

3. Implement planned ignition treatments with the objective of creating mosaic patterned burns leaving unburned refugia and vegetative cover for use by Florida bonneted bats that may potentially be present. Provide refugia by retaining stumps, snags, large cavity trees with hollows or cavities, and woody debris during activities. Retain snags and woody debris if they do not burn to provide habitat and escape cover.

4. Conduct prescribed burns carefully in known or suspected occupied areas for bonneted bats, especially during the Florida bonneted bat breeding season (January to March; June to October). Consider avoiding these areas where prescribed fire is to be used near known active or suspected roosts, if there are high fuel loads, to reduce the risk of losing roosts during intense fires.

5. Live, dead, or injured Florida bonneted bats will be handled appropriately including the proper notification of the FWC and Service.

Florida panther

EVER shall conduct planned ignition treatments to reduce fuel loading adjacent to hardwood hammocks to provide protection from unwanted fire spread.

Everglades Fire Management shall use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to Florida panther habitat.

Soils moisture levels shall be monitored and considered in the planning and implementation of prescribed fire treatments to ensure conditions are within the prescription parameters to prevent fire spread into tropical hardwood hammocks.

Planned ignition treatments shall be used to improve forage for white tailed deer, an important food source for the panther.

Fire and Aviation Management, in consultation with the South Florida Natural Resources Center, Biological Resources Branch, shall ensure that appropriate actions are taken to protect panther den sites and juvenile panthers.

Burns shall be conducted when environmental conditions prevent the spread of wildfire into hammocks and tree islands and create mosaic patterns of burned and unburned habitat in each burn unit. While the planned approach will result in significant amounts of habitat in earlier successional stages, it is also expected to preserve significant amounts of edge habitat and stalking cover for the Florida panther.

Reasonable and Prudent Measures for Florida Panther

The following reasonable and prudent measures are also necessary and appropriate to further minimize the incidental take of Florida panther:

1. Burns shall be conducted when environmental conditions prevent the spread of fire into hammocks and tree islands and create mosaic patterns of burned and unburned habitat in each burn unit. This approach should result in significant amounts of habitat in earlier successional stages, and preserve significant amounts of edge habitat and stalking cover for the Florida panther. Plan ignition treatments, where applicable, with a further goal to improve forage for white tailed deer.

2. Conduct planned ignition treatments to reduce fuel loading adjacent to hardwood hammocks to provide protection from unwanted fire spread. Monitor and consider soil moisture levels in the planning and implementation of prescribed fire treatments to ensure conditions are within the prescription parameters to prevent fire spread into tropical hardwood hammocks.

3. Use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural

fire regimes, reduce hazardous fuel loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to Florida panther habitat.

4. EVER, in ongoing consultation with the South Florida Natural Resources Center, Biological Resources Branch, FWC, and the Service, shall ensure that appropriate actions are taken to protect panther den sites and juvenile panthers. This shall include ongoing review and consideration of available information on panther locations and current and former den sites. Burning pattern should be conducted to provide adequate escape corridors for Florida panthers.

5. Live, dead, or injured Florida panthers will be handled appropriately including the proper notification of the FWC and Service.

Wildlife, Other Special Status Species, and Their Habitats

- Planned ignition treatments will be used to reduce fuel loading adjacent to hardwood hammocks tree islands and other fire sensitive habitats to provide wildlife protection from unwanted fire spread.
- Soil moisture levels will be monitored and considered in the planning and implementation of planned ignition treatments to ensure conditions are within the prescription parameters to prevent fire spread into tree islands and hammocks.
- Planned ignition treatments will be implemented to restore and maintain the pine rockland and wetland prairie ecosystems to benefit wildlife and plant species associated with these habitats.
- Planned ignition treatments will be implemented with the goal of creating a mosaic pattern of burned and unburned habitat to provide some on-site refugia for imperiled species and to facilitate recolonization of sites following fire.
- NPS will use planned ignition treatments of varying intensity and intervals to the extent practicable using an adaptive management approach.
- Planned ignition treatments will be implemented using firing patterns that provide escape routes for wildlife.
- South Florida Natural Resources Center will provide Fire and Aviation Management the most current information and data regarding rare and important vegetation communities.
- Fire effects monitoring in the pine rockland and prairie ecosystems will continue to inform fire managers and support adaptive management in fire operations.
- Fire Management personnel will be educated to recognize listed species and where those species occur in a burn unit to the extent practicable. Vehicle and equipment operators will be notified to avoid impacts to listed species. If encountered, species will be allowed to leave the immediate area before operations are resumed.
- If dead, sick or injured listed species are encountered, fire management will contact the South Florida Ecological Service Field Office and the EVER Biological Resources Branch Chief.

- When constructing firebreaks, boundary fire breaks will be limited to up to 30 ft. maximum width and interior firebreaks will be limited to up to 20 ft. maximum width. Avoid scattering debris on listed species or their nests, dens or cover.
- South Florida Natural Resources Center will provide Fire and Aviation Management the most current information and data regarding species of special concern.
- Fire Management will work with the South Florida Natural Resources Center and the U.S. Fish and Wildlife Service to obtain and use the best available science to plan, review, and adjust fire management practices as needed to help maintain or expand the population size or numbers of populations of species of special concern and rare and important vegetation communities.
- Where possible the use of mechanical or herbicide treatments in combination with planned ignition treatments will be minimized or avoided. In some cases the combined use of fire and herbicide is the most effective treatment.
- Fire management personnel will, to the extent practicable, record the locations of any covered species and nests, dens, cover sites, or tracks. This information will be made available to the USFWS upon request.
- NPS will construct temporary fuel breaks, if needed, using methods that have the least likelihood of creating soil disturbance when appropriate.
- Fire breaks or staging areas will not be placed through known populations of listed plant species for planned ignition activities. Occasionally, listed plants occur on or adjacent to hiking trails, administrative roads, or similar features, and hiking, administrative uses, including maintaining firebreaks, may result in impacts to individuals.
- Specific mitigations for species of special concern will include the measures listed below:

  Wood stork and wading birds

  - South Florida Natural Resource Center will provide to Fire Management the most current wood stork and wading bird nesting colony locations and buffer size requirements.
  - Everglades Fire Management will avoid management actions during nesting season within a 1,300ft buffer around exposed known active wood stork and other wading bird nesting colony sites and within a 700ft buffer around colonies protected by vegetative cover or where no birds are observed, to prevent disturbance of active nests.
  - When possible, the park will avoid burning in close proximity to active wood stork and wading bird colonies, and under some circumstances this may not be practicable.
  - Planned ignition treatments will use smoke dispersal data from weather forecast and smoke modeling tools to reduce impacts from smoke to active nests.
  - Everglades Fire Management will use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel

loading, prevent woody plant encroachment, and limit exotic plant invasions within and adjacent to wood stork and other wading bird habitat.

- Everglades Fire Management will use objective-dependent fire effects plots, environmental sampling, fire behavior monitoring and detailed mapping protocols to evaluate mitigations and objectives as part of an adaptive management strategy.

- Rare and important vegetation communities mitigations will include the following:
  - Planned ignition treatments will be used to reduce fuel loading adjacent to hardwood hammocks and tree islands to provide protection from unwanted fire spread.
  - Soil moisture levels will be monitored and considered in the planning and implementation of prescribed fire treatments to ensure conditions are within the prescription parameters to prevent fire spread into tree islands and hammocks. These parameters will be periodically reviewed by fire management and South Florida Natural Resources Center staff to ensure that they are serving a protective function.
  - Planned ignition treatments will be implemented to restore and maintain the pine rockland and fire-adapted wetland ecosystems to benefit wildlife and plant species associated with these habitats.
  - South Florida Natural Resources Center will provide fire and aviation management the most current information and data regarding rare and important vegetation communities.
  - Fire effects monitoring in the pine rockland and prairie ecosystems will continue to inform fire managers and support adaptive management in fire operations.
  - Fire Management will work with the South Florida Natural Resources Center (SFNRC) to obtain and use the best available science to plan, review and adjust fire management practices as needed to help maintain and protect rare and important vegetation communities.

- For Plant Species of Special Concern (Blodgett's silverbush, Everglades bully, Florida pineland crabgrass, Garber's spurge and pineland sandmat), mitigations will include adopting the following USFWS Conservation Recommendations to the extent practical:

  1. The multi-year FMP has been written so that the implementation of prescribed burns specifically avoids the creation of new firebreaks or staging areas through covered plant populations. However, in some instances it may be necessary to place a firebreak or staging area in the vicinity of a covered plant population. If this occurs, ENP should take all available measures to avoid placement through covered plant populations. If placement through a known covered plant population is determined to be unavoidable, a temporary firebreak or staging area should be created next to the covered plant population and plants will be allowed to seed into adjacent burned habitat. If the plant population has successfully moved into a temporary firebreak or staging area, the originally planned firebreak or staging area can then be constructed otherwise, further planning should be required to avoid impacts. It is recognized that emergency situations

may arise that supersede this mitigation measure. In those instances where emergency actions are necessary, ENP should take every measure available to avoid placement of emergency firebreaks or staging areas through covered plant populations.

2. In pine rocklands, ENP should implement prescribed burns in small burn units as described in the multi-year fuels plan. These burns should be carried out with the intention of creating a mosaic burn pattern and will allow habitat to recover for a period of at least 1 year before burning adjacent unburned units. ENP will also strive for a 3 to 7 year fire rotation in those units.

3. Whenever possible, entire populations of covered plant species should not be burned at each prescribed fire site. Project units or partial units within FMU's should be designed and implemented to minimize the potential of impacting the entire population of these plant species.

4. The long term stability of covered plant populations within ENP is interpreted as a measure of the success in protecting covered plant populations where they occur. If certain populations of covered plant species are considered vulnerable by the Service and need more fine scale monitoring to determine the occurrence of plant populations either within or beyond the current extent, or the status post-fire, ENP should work in coordination with the Service to develop and implement these strategies.

5. Planned ignition treatments should be implemented to restore and maintain the pine rockland and marl prairie habitat and the pineland-prairie ecotone for these species.

6. Weather forecasts should be observed to determine appropriate timing of prescribed fire treatment implementation to avoid possible adverse fire-flood interactions.

7. Everglades Fire Management should use prescribed fire treatments to reduce the effects of unwanted fire, to maintain natural fire regimes, reduce hazardous fuel loading, prevent woody plant succession, and limit exotic plant invasions within and adjacent to pine rockland habitat.

8. Fire and Aviation Management, in consultation with the South Florida Natural Resources Center, Biological Resources Branch, should ensure that appropriate actions are taken to protect covered plant species.

9. South Florida Natural Resources Center, Biological Resources Branch and Fire Management staff should collaborate to monitor populations of covered plant species to determine the effects of fire on those populations. Fire Management should use the results of this monitoring to adjust prescribed fire practices as needed to protect Blodgett's silverbush, Everglades bully, Florida pineland crabgrass, Garber's spurge and pineland sandmat populations.

Cultural Resources

- Fire Management will work with the Cultural Resource Division to obtain and use the best available science to plan, review, and adjust fire management practices as needed, to mitigate impacts to cultural resources.
- The park Cultural Resource Divisionwill provide fire and aviation management the most current data of cultural and archeological sites.
- In consultation with the Cultural Resources Division, fire and aviation management will assure that appropriate actions are taken to protect cultural resource sites.
- Cultural resource protection and mitigations will be a consideration in every fire management action.
- The use of minimum impact suppression tactics (in Appendix G of the proposed fire management plan) will be employed at all times to minimize ground disturbance to any known or unknown cultural resource sites.
- Prior to the use of ground disturbing equipment or techniques in planned ignition operations, the Cultural Resource Division will be consulted and consultation with the State Historic Preservation Office and affiliated Tribes will be undertaken if necessary.
- Planned ignition treatments will be used to reduce fuels adjacent to cultural sites to provide protection from unwanted fire spread.
- During periods of high fire risk, fire management will implement prepositioning of wildfire operational resources for the protection of cultural resources.
- Soil moisture levels will be monitored and considered in the planning and implementation of planned ignition treatments to ensure conditions are within the prescription parameters to prevent fire spread into high probability cultural site, including tree islands and hammocks.
- Fire management will request resource advisor or technical specialist assistance as required for planning and implementing fire management activities related to cultural resource sites.
- Consultation with the Miccosukee and Seminole Tribes will occur to ensure that Tribal cultural values are protected.
- Fire Management will work with the Cultural Resource Division to utilize the *GIS Model for Archeological Site Prediction and Survey Planning at EVER* (Appendix H) in fire management planning (Appendix B of this EA and Appendix H of the proposed Fire Management Plan).
- Fire Management will work with the Cultural Resource Division to identify currently unidentified archeological and historical resources threatened by burn activities. Survey strategies will be designed to both identify and protect resources threatened by prescribed burns and to further refine and modify the *GIS Model for Archeological Site Prediction and Survey Planning at EVER* (Appendix B of this EA and Appendix H of the proposed Fire Management Plan).

- With regard to Fire Management Planning, in the vast majority of cases, planned ignitions are expected to occur only in areas (Pine Rockland, Sawgrass Prairie, Muhly Prairie, and Coastal Prairie) which can be characterized as generally impacting only low or very low archeological and historical site probability areas since the currently identified moderate probability zones (Mixed Mangroves and Mud areas) and the high probability zones (Subtropical Hardwood Hammocks and Bayheads) (see Appendix B below) are not normally affected by planned ignitions. Since only low to very low probability areas are normally subjected to planned ignitions, and are unlikely to result in serious harm to below ground archeological resources when burned within prescription - i.e. within controlled low intensity and low soil temperature conditions (Sturdevant 2009), it is the potential loss of above ground flammable resources that might exist at unidentified nineteenth to twentieth century historic sites that is of most concern. For this reason, pedestrian survey (under the guidance of the park Cultural Resources Division or regional archeological partners) will be conducted pre-burn in order to identify above-ground fire-threatened resources in burn units in areas described in the *GIS Model for Archeological Site Prediction and Survey Planning at EVER* (Appendix B below) as low or very low archeological and historical site probability areas.
- In the unlikely event that prescribed burning is to extend into areas other than low or very low archeological and historical site probability areas, then the Cultural Resource Divisionwill be consulted for pre-burn survey recommendations and consultation with the State Historic Preservation Office (SHPO) and affiliated Tribes will be undertaken.
- When appropriate resources are available and conditions identified in the *GIS Model for Archeological Site Prediction and Survey Planning at EVER* (Appendix B below) are met, the park and/or regional cultural resource partners will conduct metal detecting and subsurface archeological survey in specified low or very low archeological and historical site probability areas after selected planned ignition treatments to document sites and fire effects on them and/or confirm/further refine the probability model included within the *GIS Model for Archeological Site Prediction and Survey Planning at EVER* (Appendix B below). The strategy for these opportunistic surveys is described in the *GIS Model for Archeological Site Prediction and Survey Planning at EVER* (Appendix B below). The results of these surveys will be shared with the State Historic Preservation Office (SHPO).

Wilderness Character

- All planned fire management operations that involve otherwise prohibited uses will be conducted in accordance with an approved Minimum Requirements Decision Guide (found in the appendix of the proposed fire management plan).
- Use of specialized equipment, such as rolligons, in planned fire management operations will require preparation of a new Minimum Requirements Decision Guide, review by the Wilderness committee, and approval by the Superintendent prior to implementation.
- All unplanned fire response actions will be conducted using the minimum impact suppression tactics (see Appendix G of the proposed fire management plan) to minimize impacts to the wilderness character of the park.

- Fire Management will work with the South Florida Natural Resources Center, the Cultural Resource Branch, and other park divisions to obtain and use the best available science to plan, review, and adjust fire management practices as needed to mitigate impacts and enhance wilderness character to the maximum extent feasible.
- Planned ignition treatments and science based fire management will be implemented to maintain and enhance the natural wilderness character of Everglades National Park.

Visitor Use and Experience

- Fire Management will consider the safety of public, personnel, and fire crews as the highest priority for all fire management activities.
- Reconnaissance will be conducted prior to planned fire operations to verify that no backcountry users, campers, or visitors will be adversely impacted.
- Advanced notifications of planned ignition treatments will be provided to Park interpretative staff to have at visitor access points and permitting stations.
- Fire management will coordinate with the park's interpretive staff to provide educational and interpretative opportunities regarding fire management activities and fire ecology.

Park Operations and Wildland Urban Interface

- Fire management will consider the safety of the public, park personnel, and fire crews as the highest priority for all fire management activities.
- Park staff will be notified of all planned and unplanned fire management activities with the potential to impact park operations.

APPENDIX B

CORRESPONDENCE
FROM

FLORIDA CLEARINGHOUSE
And
STATE HISTORIC PRESERVATION OFFICER
And
UNITED STATES FISH AND WILDLIFE SERVICE

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

November 24, 2014

Mr. Brien F. Culhane, AICP
Chief, Planning and Compliance
Everglades and Dry Tortugas National Parks
40001 State Road 9336
Homestead, FL 33034

RE: National Park Service – Draft Fire Management Plan/Environmental Assessment (FMP/EA) for Everglades National Park – Collier, Miami-Dade and Monroe Counties, Florida.
SAI # FL201410247081C

Dear Mr. Culhane:

The Florida State Clearinghouse has coordinated a review of the subject Draft FMP/EA under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection and Florida Department of Agriculture and Consumer Services' Florida Forest Service submitted comments and recommendations regarding the Draft FMP/EA in the attached memorandum and Clearinghouse database entry, which are incorporated herein by this reference and made an integral part of this letter.

Based on the information contained in the Draft FMP/EA and enclosed state agency comments, the state has determined that the proposed federal activities are consistent with the Florida Coastal Management Program (FCMP). The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of any issues identified during this and subsequent reviews.

Thank you for the opportunity to review the draft document. Should you have any questions regarding this letter, please contact me at Lauren.Milligan@dep.state.fl.us or (850) 245-2170.

Yours sincerely,

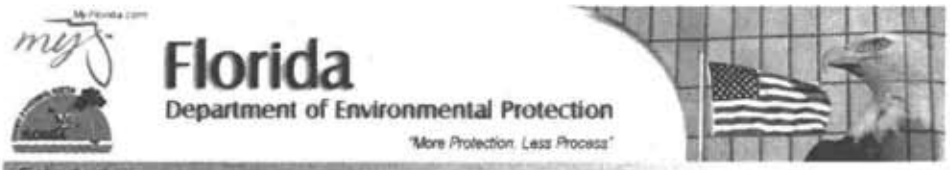
Lauren P. Milligan

Lauren P. Milligan, Coordinator
Florida State Clearinghouse
Office of Intergovernmental Programs

www.dep.state.fl.us

Enclosures

ec: Ed Smith, DEP OEP
Chad Kennedy, DEP OEP, West Palm Beach
Marianne Gengenbach, DEP DSL
Forrest Watson, FDACS FFS



Project Information	
Project:	FL201410247081C
Comments Due:	11/19/2014
Letter Due:	11/25/2014
Description:	NATIONAL PARK SERVICE - DRAFT FIRE MANAGEMENT PLAN/ENVIRONMENTAL ASSESSMENT FOR EVERGLADES NATIONAL PARK - COLLIER, MIAMI-DADE AND MONROE COUNTIES, FLORIDA.
Keywords:	NPS - FIRE MNGT. PLAN/EA FOR EVERGLADES NATIONAL PARK - COLLIER/DADE/MONROE CO.
CFDA #:	15.916

Agency Comments:

AGRICULTURE - FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

It is good to have a great burning partner with the Everglades National Park. We hope they will continue to work with all the other burning partners to recognize when smoke becomes a major issue for transporation and health/air quality with an ability to do something about the smoke when needed.

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

NO COMMENT BY JASON HIGHT FOR MARISSA KRUEGER ON 11/14/14.

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The FMP/EA presents two alternatives, each including a continuation of active management of fire and fuels within Everglades National Park. The Department supports Alternative B, which follows the adaptive management paradigm. This alternative includes a multi-year fuels treatment plan that calls for prescribed fires to be planned and implemented on a multi-year rotation of fuels treatments. Prescribed fires would take place in wilderness and non-wilderness areas. The prescribed fire treatments would be prioritized annually based on public safety and ecological goals. After reviewing the above evaluations and efforts undertaken by the NPS to update their FMP, the Department finds the FMP/EA to be consistent with its Everglades restoration goals, objectives, and policies. The Department sincerely appreciates the opportunity to comment. Should you have any questions on the comments provided, please feel free to contact Natalie Barfield at (850) 245-3197.

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the Clearinghouse Home Page to query other projects.

Memorandum

TO: Florida State Clearinghouse

THROUGH: Ed Smith
Director, Office of Ecosystem Projects

FROM: Inger Hansen and Jerilyn Ashworth
Office of Ecosystem Projects

Marianne S. Gengenbach
Division of State Lands

DATE: November 19, 2014

SUBJECT: National Park Service (NPS) – Draft Fire Management Plan/Environmental Assessment for Everglades National Park – Collier, Miami-Dade and Monroe Counties.
SAI # FL201410247081C

Background:

The NPS is updating the park's Fire Management Plan (FMP) due to changes in federal fire management policies which have evolved since the last FMP/Environmental Assessment (EA) was prepared in 1991 and the last FMP update in 1995. The first Everglades National Park (ENP) FMP was approved in 1956, and the first prescribed burn in NPS history was conducted in the pinelands area of ENP in 1958. The 2014 FMP/EA evaluates two alternatives for the implementation of a comprehensive fire program including wildland fire response, fire protection, and fuels management utilizing prescribed fire treatments. The proposed fire management plan supports NPS goals to restore fire's natural role in the ecosystem.

The NPS has been conducting fire management within ENP based on outdated plans and authorizations (Categorical Exclusions). As a result of this, for over a decade they have only been conducting prescribed burns on 8,000 – 45,000 acres per year, though the ENP is comprised of 1,509,000 acres, most of which is fire dependent and fire adapted. The preferred alternative is to update their FMP, and conduct as much as 237,000 – 258,000 acres of prescribed burns per year. The EA impact topics that were evaluated in detail included air quality, soils, hydrology, water quality, vegetation, wildlife, special status species, cultural resources, wilderness character, visitor use and experience, land use and park operations. All impacts were determined to be of moderate to low intensity. The prescribed burns are important for maintenance of habitat, reduction of hazardous fuel buildup, and exotic plant management. ENP has chosen fire return intervals based on peer reviewed literature, internal technical reports, institutional knowledge and decisions made

by their interdisciplinary team. They participate on the South Florida Fire Management Council.

A multi-year fuels treatment plan would be reviewed and updated annually. The process would include the prioritization, selection, review and update of fuel treatment projects. Prioritization values would include fire return interval departure, fuel loading, proximity to Cape Sable seaside sparrow populations, proximity to wildland urban interface and park boundary values, and exotic plant presence management values. Fire management with Cape Sable seaside sparrow habitat would be determined in consultation with the U.S. Fish and Wildlife Service and appropriate partners. Burn authorization permits would be obtained from the Florida Forest Service. ENP would particularly protect hardwood hammock communities from fire. Soil moisture levels would be monitored to lessen the effect of fire on organic soil, and fire suppression would be implemented. ENP intends to create a mosaic pattern of burned/unburned habitat to provide refugia for imperiled species and to facilitate recolonization.

Comments:

The FMP/EA presents two alternatives, each including a continuation of active management of fire and fuels within ENP. The Department supports Alternative B, which follows the adaptive management paradigm. This alternative includes a multi-year fuels treatment plan that calls for prescribed fires to be planned and implemented on a multi-year rotation of fuels treatments. Prescribed fires would take place in wilderness and non-wilderness areas. The prescribed fire treatments would be prioritized annually based on public safety and ecological goals.

After reviewing the above evaluations and efforts undertaken by the NPS to update their FMP, the Department finds the FMP/EA to be consistent with its Everglades restoration goals, objectives, and policies. The Department sincerely appreciates the opportunity to comment. Should you have any questions on the comments provided, please feel free to contact Natalie Barfield at (850) 245-3197.

Electronic copies to:
Ed Smith
Frank Powell
Kelli Edson
Chad Kennedy
Inger Hansen
Jerilyn Ashworth
Deinna Nicholson
Jordan Pugh

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Penelope Del Bene, Chief of Cultural Resources
National Park Service, Everglades and Dry Tortugas National Parks
40001 State Road 9336
Homestead, FL 33034

November 6, 2014

Re: DHR Project Review File Number 2014-4950
Section 106 NHPA Consultation for the Everglades National Park Fire Management Plan, and Notification of Availability of the Final Environmental Assessment

Dear Ms. Del Bene:

The office of the Florida State Historic Preservation Officer reviewed this project in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations contained in 36 CFR Part 800, Protection of Historic Properties. I note that the National Park Service intends to complete its responsibilities under Section 106 through the completion of an Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI), pursuant to 36 CFR 800.8(c).

Everglades National Park (ENP) described two alternatives for the Park Fire Management Plan in the EA. Under Alternative A, current fire management would continue under the existing plan. Under Alternative B, the preferred alternative, priorities would be assessed annually based on public safety and ecological goals and would be implemented on a multi-year rotation in wilderness and non-wilderness area. According to the EA, Alternative B would "provide better identification and protection of archaeological resources" based on "a predictive model for the probability of encountering currently unknown archaeological sites in unsurveyed areas of the park." Planned ignitions would be used to reduce fuel loading in areas adjacent to known archaeological resources and areas of high archaeological probability, thus reducing the likelihood of fire damage to any resources that might be present both on the surface and below ground in the areas. Based on these factors, the National Park Services proposes a determination of *no adverse effect* to archaeological resources.

Alternative B also includes increased measures to reduce potential impacts to historic structures from fires, and provides an emphasis on protection of the park's cultural landscapes. Based on this, the National Park Service proposes a determination of *no adverse effect* to historic structures and cultural landscapes.

The archaeological site predictive model created by the Regional Archeological Survey Program at the Southeast Archeological Center is sophisticated, and the principles underlying its development have proven effective at accurately predicting site locations in the Everglades in the past. However, authors Dr. Guy Prentice and Jill Halchin note that additional data are necessary to further refine and test the

VIVA FLORIDA

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Historical Resources

model, including high resolution LiDAR-based elevation data and further archaeological survey. I encourage ENP to continue collaboration with SEAC in developing, refining, and testing this model.

Based on the information presented in the EA, the report detailing the development of the GIS based site predictive model (Appendix B), and the evident benefits of Alternative B over the present fire management plan, I concur with the National Park Service's determination of *no adverse effect.*

If you have any questions concerning these comments, please contact me at Timothy.Parsons@DOS.MyFlorida.com, or at 850.245.6333 or 800.847.7278.

Sincerely,

Timothy A. Parsons, Ph.D., RPA
Deputy State Historic Preservation Officer
for Compliance and Review

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

June 30, 2015

Memorandum

To: Pedro Ramos, Superintendent, Everglades and Dry Tortugas National Parks

From: Donald (Bob) Progulske, Everglades Program Supervisor, South Florida Ecological Services Office

Subject: Everglades National Park Fire Management Plan; Service CPA Code: 04EF2000-2013-CPA-0083; Service Consultation Code: 04EF2000-2013-F-0294

Dear Mr. Ramos:

Enclosed is the U.S. Fish and Wildlife Service's (Service) Biological Opinion to the Everglades and Dry Tortugas National Parks of the potential effects of implementation of the Preferred Alternative for the Everglades National Park (ENP) Fire Management Plan (FMP) Environmental Assessment (EA). The ENP FMP is a programmatic document that is intended to guide fire management within ENP for the next 10 to 20 years. It includes implementation of a multi-year fuels treatment which would allow prescribed fire treatments to be planned as part of a revolving 5-year scope of work that would be reviewed and updated annually. The process would include the prioritization, selection, review, and update of fuels treatment projects. The prioritization values would include fire return interval departure, fuel loading, proximity to threatened and endangered species populations, proximity to the wildland urban interface and other park boundary values, and exotic plant species infestations.

Prescribed fires would take place in federally designated wilderness and non-wilderness areas throughout ENP. Depending on environmental conditions, the actual number of acres burned would likely be somewhat less than the number proposed, but the preferred alternative is expected to result in a substantial increase in the amount of acres burned when compared to current management. In addition, prescribed burns will be carried out in fire dependent communities where burning is currently restricted. Wildfire management remains essentially unchanged from current management practices. The FMP EA includes detailed analysis of the impacts of fire management on threatened and endangered species and critical habitat, and serves as the biological assessment for the FMP.

ENP has determined implementing the FMP "may affect, but is not likely to adversely affect" the Stock Island tree snail (*Orthalicus reses*), American crocodile (*Crocodylus acutus*) or its critical habitat, West Indian manatee (*Trichechus manatus*), wood stork (*Mycteria americana*),

Everglade snail kite (*Rostrhamus sociabilis plumbeus*) critical habitat, Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*) critical habitat, Bartram's hairstreak (*Strymon acis bartrami*) critical habitat and Florida leafwing (*Anaea troglodyta floridalis*) critical habitat.

In addition, implementation of the FMP "may affect, and is likely to adversely affect" Blodgett's silverbush (*Argythamnia blodgettii* - currently a candidate species), pineland sandmat (*Chamaesyce deltoidea ssp. pinetorum*), Garber's spurge (*Chamaesyce garberi*), Florida pineland crabgrass (*Digitaria pauciflora* - currently a candidate species), Everglades bully (*Sideroxylon reclinatum ssp. austrofloridense* - currently a candidate species), Florida leafwing, Bartram's hairstreak, eastern indigo snake (*Drymarchon corais couperi*), Florida panther (*Puma concolor coryi*), Florida bonneted bat (*Eumops floridanus*), Cape Sable seaside sparrow, and Everglade snail kite.

The Service concurs with all the "No Effect" and "may affect, but is not likely to adversely affect" determinations made by ENP in regard to the applicable threatened or endangered species that are found in the action area and that the proposed plan is not likely to adversely modify critical habitat, where designated for the above species. Therefore, the enclosed Biological Opinion will only analyze effects on species listed above that ENP has made the determination of "may affect, and is likely to adversely affect." Based on the analysis in this Biological Opinion, the Service's conclusion is that implementation of the Preferred Alternative for the ENP FMP for the next 10 years as of the date of this Biological Opinion, is not likely to jeopardize the continued existence of the species listed above and is not likely to adversely modify critical habitat, where designated.

The Service understands the first priority in every fire management activity will be to ensure firefighter and public safety. The Fire Management Plan, including all species protective measures, shall be adhered to for all planned fire management actions including prescribed fire planning, preparation and implementation and monitoring activities. Unplanned wildfire response may also be conducted under the FMP except in those cases when there is a conflict with the stated priorities of protecting life, human welfare, and property. In the event actions are necessary to protect life and property, the Incident Commander and Duty Officer may determine emergency response is required and there is no practical means to adhere to the FMP to protect life and property during wildfire response. In these instances emergency consultation procedures with the Service shall be initiated as soon as practicable. During wildfire response, ENP fire management would conduct an initial fire size up, safety assessment and risk assessment. Environmental and fire behavior parameters, and fire decision support tools would be used to predict fire threats to listed species and potential conflicts with protective measures. If it is determined potential actions required to protect human life or property may be in conflict with protective measures for listed species, emergency consultation with the Service shall be initiated as soon as practicable. The terms and conditions should then be considered recommendations to minimize the effects of emergency response actions on listed species and their critical habitat until the Service is able to provide additional recommendations specific to the emergency response action and emergency consultation can be completed.

The enclosed Biological Opinion is in accordance with section 7 of the Endangered Species Act of 1973, as amended in 1998 (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project site is located in Monroe and Miami-Dade Counties in South Florida. This Biological Opinion is based on information provided in ENP's October 2014 EA of the FMP, maps, meetings, field investigations, telephone conversations, email correspondence, and other sources of information. A complete administrative record of this consultation is on file at the Service's South Florida Ecological Services Office (SFESO), Vero Beach, Florida.

Thank you for your cooperation in the effort to protect fish and wildlife resources. If you have any questions regarding this project, please contact Bob Progulske at 772-469-4299 or Richard Fike at 772-469-4262 or by email at richard_fike@fws.gov.

Enclosure

cc: electronic only (w/enclosure)

Corps, Jacksonville, Florida (Eric Bush, Gina Ralph, Gretchen Ehlinger)
DEP, West Palm Beach, Florida (Inger Hanson)
ENP, Homestead, Florida (Tylan Dean)
FWC, West Palm Beach, Florida (Barron Moody)
District, West Palm Beach, Florida (Matthew Morrison)
DOI, West Palm Beach, Florida (Shannon Estenoz)
NOAA Fisheries, Miami, Florida (Joan Browder)
Service, Atlanta, Georgia (David Horning)
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APPENDIX C

NON-IMPAIRMENT DETERMINATION

NON-IMPAIRMENT DETERMINATION

Fire Management Plan
Everglades National Park

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of Interior and the NPS to manage units "to conserve the scenery, natural and historic objects, and wildlife [therein] and to provide for the enjoyment of [the same] in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 USC § 100101). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which the System units have been established, except as directly and specifically provided by Congress" (54 USC 100101).

NPS *Management Policies* 2006, Section 1.4.4, explains the prohibition on impairment of park resources and values:

> While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the Nation Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The NPS has discretion to allow impacts on Park resources and values when necessary and appropriate to fulfill the purposes of a Park (NPS 2006 sec. 1.4.3). However, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006 sec 1.4.3).

NPS *Management Policies* 2006, Section 1.4.7.1, also prohibit unacceptable impacts. These are defined as "impacts that fall short of impairment, but are still not acceptable within a particular park's environment." During impairment analysis, the Selected Alternative was also evaluated for unacceptable impacts. The NPS has concluded that for the same reasons no impairment to EVER resources or values will occur (as discussed below), no unacceptable impacts will occur as a result of implementation of the Selected Alternative.

What is Impairment?

NPS *Management Policies 2006*, Section 1.4.5, *What Constitutes Impairment of Park Resources and Values*, and Section 1.4.6, *What Constitutes Park Resources and Values*, provide an explanation of impairment.

> Impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the

opportunities that otherwise would be present for the enjoyment of those resources or values.

Section 1.4.5 of *Management Policies 2006* states:

An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- Identified as a goal in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

Per Section 1.4.6 of *Management Policies 2006*, park resources and values that may be impaired include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and condition that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structure, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park, but this would not be a violation of the Organic Act unless the NPS was in some way responsible for the action.

How is an Impairment Determination Made?

Section 1.4.7 of *Management Policies 2006* states, "[i]n making a determination of whether there would be an impairment, an NPS decision-maker must use his or her professional judgment. This means that the decision-maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969 (NEPA); consultations required under Section 106 of the National Historic Preservation Act (NHPA); relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision.

Management Policies 2006 further defines "professional judgment" as "a decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account the decision-maker's education, training, and experience; advice or insights offered by subject matter experts and others who have relevant knowledge and experience; good science and scholarship; and, whenever appropriate, the results of civic engagement and public involvement activities relative to the decision.

Impairment Determination for the Selected Alternative

This determination on impairment has been prepared for the selected alternative described in the FONSI. An impairment determination is made for all resource impact topics analyzed for the selected alternative. An impairment determination is not made for visitor use and experience, park operations and facilities, and public health and safety because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values.

Findings on Impairment for Air Quality

Under the selected alternative, air quality in the park, including visibility, will remain unchanged on most days. Prior to the execution of a prescribed fire, a written burn plan or prescription will be developed that will help guarantee that appropriate conditions exist during the implementation of a prescribed fire, which will reduce the likelihood for higher emission amounts and for smoke to migrate to untreated areas. If the prevailing winds are from the west, prescribed fires will be carefully evaluated to consider smoke dispersal. A variety of fire management strategies will be available to manage unplanned wildfires, including full suppression, point/zone protection, and monitor/confine/contain. Management of wildfire may affect air quality and visibility in the park and within urban areas depending on location and wind conditions. However, these impacts will be short term.

Unplanned wildfires and prescribed fire will generate smoke and ash, i.e., particulate matter, which is a criteria pollutant having ambient air quality standards. Impacts on air quality from the generation of smoke under the selected alternative will be short-term minor to moderate (depending on the extent of the fire) and adverse. However, the selected alternative will further reduce fuels in the park, helping to prevent and manage future unplanned wildfire. A reduction in

unplanned wildfire will reduce emissions from fire both locally and regionally and result in long-term beneficial effects to air quality.

The selected alternative will not impair air quality in the park because its implementation, using the methods described above, will manage the amount and duration of emissions from individual fires and ultimately reduce the threat of intense or severe future wildfires. The result will be long-term beneficial effects to air quality.

Findings on Impairment for Soils

Under the selected alternative, wildfire and prescribed fire will consume the above ground plant matter under normal conditions but will not burn soils or cause oxidation of soils, and soils will not be adversely affected by fire. Fire returns nutrients to soils that were previously stored in plants (such as calcium and magnesium), and phosphorus is sequestered by the limestone in the soils. The overall impact to soils and ecosystem function will thus be beneficial.

Wildfires in organic soils are unlikely. If such fires occur, they will have short- and long-term, negligible to moderate adverse impacts. Fires in organic soils result in loss of peat, potentially exposing rock or another substrate, and can result in a change in the plant community. Such fires typically occur in drought conditions, particularly in hammocks and sloughs. Accordingly, park fire managers will attempt to keep wildfire out of hammocks and sloughs during extreme drought conditions and prescribed fires will not be used during these times. Fires may also consume periphyton crust, but the adverse effects of such burns are limited and short term.

The fire management goals and strategies in the selected alternative are designed to maintain a healthy and sustainable ecosystem. The selected alternative will reduce the potential for wildfires and associated potential adverse impacts to soils. The alternative will also reduce the need for potentially damaging wildfire management actions (e.g., equipment use that can result in localized soil compaction). The selected alternative will thus **not impair** soils because soil functions will continue to operate naturally and support a wide range of plants and other biota.

Findings on Impairment for Hydrology and Water Quality

Hydrology. Wildfire and prescribed fires under the selected alternative may affect hydrology. If fires remove decadent sawgrass, sheetflow will be altered until the sawgrass recovers. Burning vegetation may also reduce resistance to sheet flow, and more water will be transported to other parts adjacent areas, depending on the timing and location of the fire. However, vegetation typically recovers fairly quickly after fire, and as it does, hydrological conditions return to pre-fire conditions.

Organic soil fires, while rare, could affect soil water storage capacity and could affect ponding in some areas. Fire management and prescribed fire activities may also affect hydrology by altering vegetation in the vicinity of smash lines or blacklines, and thus altering sheetflow patterns. Here again, however, vegetation will recover quickly in most instances, resulting in only short term adverse impacts and impacts that are limited in geographic extent.

Water Quality. Water quality in the park may be affected by burning due to the release of nutrients. Burning vegetation results in the release of nitrogen and other nutrients both in the treatment area and off-site in the form of ash that may be recirculated into plant biomass and cause an increase in nutrient availability. The result may have an adverse or beneficial effect on water quality depending on the water filtering capability of the vegetation. However, any adverse impact will be temporary, and will be the result of natural ecosystem functioning.

Fire management activities can result in the dispersal of small amounts of fuels used in handheld and aerial ignition devices, and fire retardant. However, any artificial contaminants entering the park will be released in only small quantities. Water drops necessary for fire management activities, are obtained from water sources inside the park, including canals, borrow pits, and natural waters sources. Use of park waters for these efforts ensures that the water quality of dropped water is not of lower quality than the receiving waters. In addition, air tankers used for water drops must rinse out tanks prior to responding to fires within the park.

The selected alternative will **not impair** water resources because fire is a natural process and any adverse impacts to water quality due to increases in nutrient availability will be only temporary. Likewise, vegetation typically recovers fairly quickly after fire, and as it does, hydrological conditions return to pre-fire conditions

Findings on Impairment for Vegetation

Most vegetation communities within Everglades National Park evolved in the presence of fire, and therefore perpetuating or recreating a natural fire regime will benefit vegetation communities as a whole.

Some adverse effects of wildfire on vegetation communities may occur if fire burns during weather conditions that will remove or diminish vegetation communities (for example, during drought conditions or during conditions when soil and fuel moisture is low, and does not prevent fire spread to hammocks or tree islands). Fire intensity or fire severity may also adversely affect vegetation communities if all above-ground vegetation is burned and plants cannot resprout or reestablish from the seed bank, due to altered soils or hydrology. Furthermore, some wildfire management actions, including fire suppression activities, could result in removal of vegetation for control lines, use of natural openings for helicopter landing areas, and use of personnel and equipment that could compact the soils and temporarily trample or remove vegetation. However, minimum impact suppression tactics will be used in the park, including in wilderness areas, to mitigate these effects. Similarly, the effects of prescribed burning on vegetation can be mitigated through careful planning and implementation. As a result, wildfire management actions, including fire suppression activities, will remove smaller areas of vegetation relative to unplanned wildfires or prescribed fires. Whole vegetation communities will not be removed, and the vegetation will recover rapidly after the wildfire management actions are complete.

Beneficial effects of prescribed fire (and wildfire) on vegetation communities include the maintenance of ecological function and values of the native communities. Prescribed fire can replace the role of natural fire in maintaining fire dependent plants and communities where habitat fragmentation and alteration has changed the natural fire regime. Under appropriate

conditions wildfires are important for fire-adapted communities. Beneficial effects from fire management include:

- reduction of hazardous fuel loads that contribute to the potential for catastrophic wildfire;
- management of some species of exotic plants which are sensitive to fire;
- restoration and maintenance of historical habitat succession conditions; and
- Enhancement of the diversity of plant and animal assemblages.

The selected alternative will **not impair** vegetation because most plant communities in the park are adapted to fire. Implementation of the alternative will help maintain ecological function and values of the park's native communities.

Findings on Impairment for Wildlife and Their Habitats

Wildlife of Everglades National Park evolved in the presence of fire, and a number of Everglades wildlife species are accustomed to fire and have behavioral and other adaptations to fire. Both unplanned and prescribed fires benefit native wildlife by maintaining natural vegetation and fire mosaics. Fires that are patchy result in a mosaic of burned and unburned or mixed burn severity areas. These fires help maintain more heterogeneous environments with broader wildlife species diversity than larger-scale, high-intensity fires that burn over large areas. The selected alternative allows for landscape mosaics to develop because it calls for more prescribed fires and less fuel buildup, thereby reducing the incidence of high intensity fires.

Following fire, some species respond favorably and increase in numbers, while others respond negatively and decrease. Wildlife species that do not escape fire may be injured or killed. Less mobile life stages of wildlife species (such as nestlings and juveniles) and less mobile species (such as amphibians and reptiles) will be most impacted by fire. Wildlife able to escape fire may be forced into marginal habitat or occupied territories resulting in an increase likelihood of predation, difficulty foraging, and difficulty in finding shelter and mates. Wildlife species may experience habitat loss from a fire. Changes in vegetation structure and composition, burned material, and snags that occur after the fire can all affect wildlife, and loss of vegetation structure may lower wildlife species diversity in an area. Depending on the season, a fire can also have adverse effects on a species' nesting or reproductive success.

Because the timing of fuel reduction efforts can be planned to avoid sensitive breeding seasons and adjusted for different habitats (e.g., chemical use will be restricted in aquatic environments), the adverse impacts on wildlife species will be short-term, local, and minor at most. These impacts will occur primarily as a result of the presence of field personnel and equipment use, including noise and emissions, vehicles, and temporary disturbance. These short-term adverse effects will be offset by the long-term benefits associated with reduced fuel loads and the subsequent lowering of potential fire intensities.

The selected alternative will **not impair** wildlife and their habitats because it will perpetuate natural processes, maintain habitats required by fire-adapted species, and reduce the likelihood of catastrophic wildfire.

Findings on Impairment for Special Status Species and Their Habitats

The selected alternative will result in a wide range of impacts on special status species. The NPS has determined that the selected alternative "may affect, but is not likely to adversely affect" the Stock Island tree snail, American crocodile, Florida manatee, and wood stork. In contrast, the NPS has determined that the alternative "may affect and is likely to adversely affect" the Blodgett's silverbush, pineland sandmat, Garber's spurge, Florida pineland crabgrass, and Everglades bully (candidate species), as well as the Florida leafwing butterfly, Bartram's hairstreak butterfly, Eastern indigo snake, Cape Sable seaside sparrow, Everglade snail kite, Florida bonneted bat, and Florida panther (listed species). Adverse effects will generally be the result of injury or death to individuals rather than to long-term destruction of habitat. The USFWS has authorized such incidental take for listed species in a biological opinion (BO) dated June 30, 2105, so long as NPS complies with required Terms and Conditions, which are set forth in the BO. These terms and conditions have been incorporated into the "Mitigations" section of the FONSI and will serve to minimize impacts to Federally-listed species. The FONSI also includes conservations measures recommended by USFWS to minimize impacts to candidate species (i.e., Blodgett's silverbush, pineland sandmat, Garber's spurge, Florida pineland crabgrass, Everglades bully).

Some short-term disturbance to park habitats will occur, but over the long term, habitat conditions for affected species will be maintained or improved by the selected alternative. These benefits will stem in large part from the multi-year fuels plan, which will allow the park to conduct necessary large-scale burning in designated wilderness, which constitutes the majority of land in the park. The park will continue to coordinate with USFWS and state resource agencies, and will continue to minimize as much as possible impacts to individuals of special status species caused by fire management activities. However, some losses will be unavoidable.

The selected alternative will **not impair** special status species and their habitats because the net effect of the multi-year fuels plan and other fire management activities will be to maintain and improve habitat for special status species and perpetuate natural processes. Any incidental losses of individuals will be outweighed by improved habitat for each species as a whole.

Findings on Impairment for Cultural Resources

Implementation of the selected alternative will reduce fuel loadings in the park and thereby serve to reduce the intensity of individual fires. Many of the park's archeological resources were likely subjected to fire at some point in the past; however, these resources may nevertheless be adversely affected by extreme temperatures. Fires can damage sites by destroying or degrading building materials; or by burning down into the soil, charring bone, shell, and pottery. These impacts can, in turn, skew attempts at dating archeological resources, rendering identification and documentation more difficult. Less intense fires will have the effect of preserving cultural resources.

Fire suppression or mechanical fuels reduction activities could include ground disturbing activities such as the use of equipment or hand tools that may mix soil strata and expose or fragment archeological resources. Such ground disturbance could result in permanent, minor adverse effects. However, the selected alternative will provide better advance identification and protection of archeological resources than currently exists. In particular, the NPS Southeast Archeological Center has developed a predictive model for the probability of encountering currently unknown archeological sites in unsurveyed areas of the park. This model will be utilized to guide archeological pedestrian survey in advance of prescribed burns in low and moderately low archeological site probability areas, and as a means of identifying areas (via vegetation and landform type) where prescribed burning should not be undertaken without prior subsurface archeological testing and associated consultation with the Florida State Historic Preservation Office and the park's consulting Tribes. The selected alternative also provides a framework for collaborative post-burn archeological survey that will further refine and improve the accuracy of the predictive model and potentially identify new archeological sites (and bring them under management) within the park.

The selected alternative also includes a greater emphasis on prescribed fire to achieve desired resources conditions within the park. Hardwood hammocks or tree islands are home to a high concentration of archeological resources. Planned ignitions will be used to reduce fuel loading adjacent to these sensitive areas, thereby providing enhanced protection from unwanted fire spread. Soil moisture levels will also be monitored and considered in the planning and implementation of planned ignition treatments to ensure conditions are within the prescription parameters to prevent fire spread into high probability cultural sites, including tree islands and hammocks. Prescribed fire will also have the effect of protecting historic structures (e.g., the former NIKE missile base), cultural landscapes, and ethnographic resources.

The selected alternative will **not impair** cultural resources because the net impact of the alternative on these resources will be beneficial. The increased degree and range of protection to archeological resources, greater emphasis on prescribed fire to achieve desired resources conditions, reductions in fuel loads adjacent to cultural resources, and utilization of an adaptive management approach incorporating new information and technology will all combine to improve protection for cultural resources.

APPENDIX D

ERRATA SHEETS
and
RESPONSE TO SUBSTANTIVE COMMENTS

ERRATA SHEETS

EVERGLADES NATIONAL PARK
FIRE MANAGEMENT PLAN/ENVIRONMENTAL ASSESSMENT
OCTOBER 2015

Minor corrections and revisions to the *Everglades National Park Fire Management Plan/Environmental Assessment (EA)* are listed in this section. Revisions were made in response to comments from public and agency reviews of the EA. These revisions have not resulted in substantial modification of the selected alternative. It has been determined that the revisions do not require additional environmental analysis. Additions to the text are shown in bold and text removed is shown with strikeout. The page numbers referenced are from the *Everglades National Park Fire Management Plan/Environmental Assessment* issued for public review in October 2014. The EA and this errata section form the record on which the FONSI is based.

Summary, third paragraph:
Hazardous fuel reduction burns would be limited to areas outside of designated wilderness and a maximum of 4,500 acres annually until completion of a new FMP and EA, or until ~~April 2015~~ **September 30, 2016** when hazardous fuel burns will no longer be allowed under a CE.

Page 6, Need For The Action, 4th paragraph:
As of **September 30, 2016** ~~April 2015~~, the NPS will no longer base management actions on the Hazardous Fuels CE which would halt the uses of prescribed fire for hazardous fuels reduction until completion of a new FMP and EA.

Page 24, Second paragraph under bulleted statements:
These treatments are planned in conjunction with the ~~Exotic Plant Management Team (EMPT)~~ **Exotic Vegetation Management Program (EVMP)** on an annual basis.

Page 29 last paragraph:
Exotic vegetation prescribed fire treatments are planned in conjunction with the ~~EPMT~~ **EVMP**.

Page 46, table 2, column 1, third row:
The spread of exotic species would be limited through conducting fire operations in support of the ~~exotic plant management program~~ **Exotic Vegetation Management Program**.

Page 92, second bullet under "Exotic Vegetation":
~~During fire management operations, vehicles and equipment would be washed to prevent increased spread of exotics as a result of fire management actions.~~ **Fire Management vehicles and equipment would be washed to prevent increased spread of exotics as a result of fire management actions.**

Page 92, third bullet under "Exotic Vegetation":

Untreated stands of melaleuca would not be treated with planned ignition treatments without prior approval from the ~~exotic vegetation management program~~ **Exotic Vegetation Management Program.**

Page 122, Table 10: National Ambient Air Quality Standards [a/]

6th row 2nd column:

Particulate matter (2.5 microns or less)	~~15.0 µg/m³~~ **12.0 µg/m³**	Annual (arithmetic average) [iv]	Same as primary
	35 µg/m³	24-hour [v]	

Page 124, 2nd paragraph under "Air Quality at Everglades National Park":
Table 11 is the Air Quality Index summary for Collier and Miami-Dade Counties, Florida, showing data from ~~2003 through 2007~~ **2006 through 2010**.

Page 125, Table 11: Air Quality Index Summary for Collier and Miami-Dade Counties, Florida, 2006 through 2010 [a/]

Parameters are updated for Collier and Miami-Dade County for 2006-20010

Parameter	2006	2007	2008	2009	2010
Collier County days of data	365	365	360	365	365
Maximum Air Quality Index value	101	**137** ~~120~~	100	74	**92** ~~82~~
Days rated "good"	**264 (72%)** ~~319 (87%)~~	**283 (78%)** ~~309 (85%)~~	**307 (84%)** ~~331 (92%)~~	**321 (88%)** ~~344 (94%)~~	**319 (87%)** ~~350 (96%)~~
Days rated "moderate"	**100 (27%)** ~~45 (12%)~~	**81 (22%)** ~~55 (15%)~~	**53 (15%)** ~~29 (8%)~~	**44 (12%)** ~~21 (6%)~~	**46 (13%)** ~~15 (4)~~
Days above "moderate"	1 (<1%)	1 (<1%)	0	0	0
Determining pollutant: days (%)					
Carbon monoxide	0	0	0	0	0
Nitrogen dioxide	0	0	0	0	0
Particulate matter ($PM_{2.5}$ + PM_{10})	**251 (69%)** ~~148 (41%)~~	**216 (59%)** ~~121 (33%)~~	**207 (57%)** ~~108 (30%)~~	**288 (79%)** ~~233 (64%)~~	**218 (60%)** ~~134 (37%)~~
Ground-level ozone	**114 (31%)** ~~217 (59%)~~	**149 (41%)** ~~244 (67%)~~	**153 (42%)** ~~252 (70%)~~	**77 (21%)** ~~132 (36%)~~	**147 (40%)** ~~231 (63%)~~
Sulfur dioxide	0	0	0	0	0
Miami-Dade County days of data	365	**365** ~~366~~	**366** ~~365~~	365	365
Maximum Air Quality Index value	161	**125** ~~111~~	**155** ~~147~~	101	124
Days rated "good"	**175 (48%)** ~~261 (72%)~~	**235 (64%)** ~~286 (78%)~~	**251 (69%)** ~~312 (85%)~~	**278 (76%)** ~~324 (89%)~~	**264 (72%)** ~~327 (90%)~~
Days rated "moderate"	**184 (50%)** ~~98 (27%)~~	**124 (34%)** ~~75 (21%)~~	**110 (30%)** ~~49 (13%)~~	**86 (24%)** ~~40 (11%)~~	**99 (27%)** ~~36 (10%)~~
Days rated "unhealthy for sensitive groups"	5 (1%)	**6 (2%)** 4 ~~(1%)~~	**4 (1%)** ~~5 (1%)~~	1 (<1%)	2 (<1%)
Days above "unhealthy for sensitive groups"	1 (<1%)	0	**1 (<1%)** ~~0~~	0	0
Determining pollutant: days (%)					
Carbon monoxide	0	0	0	0	0
Nitrogen dioxide	**2 (<1%)** ~~11 (3%)~~	**3 (1%)** ~~10 (3%)~~	**3 (1%)** ~~13 (4%)~~	**1 (<1%)** ~~8 (2%)~~	**6 (2%)** ~~23 (6%)~~
Particulate matter ($PM_{2.5}$ + PM_{10})	**305 (84%)** ~~217 (59%)~~	**293 (80%)** ~~204 (56%)~~	**303 (83%)** ~~202 (55%)~~	**291 (80%)** ~~179 (49%)~~	**275 (75%)** ~~164 (45%)~~

Ground-level ozone	**58 (16%)** ~~137 (38%)~~	**69 (19%)** ~~151 (41%)~~	**60 (16%)** ~~151 (41%)~~	**72 (20%)** ~~178 (49%)~~	**84 (23%)** ~~178 (49%~~
Sulfur dioxide	0	0	0	0	0

a/ Source: Information extracted from the Internet at <http://www.epa.gov/airdata/ad_rep_aqi.html> ~~http://epa.gov/air/data/geosel.html>~~.

Page 125, last sentence of 1st paragraph below table:
~~During large wildfires, nearby air-quality monitoring stations may be turned off, and the data are not included in daily emissions counts.~~ **Miami-Dade County's air monitoring equipment operates during large wildfire events. The monitoring data on any such day are counted in determining the daily Air Quality Index (AQI). On those days when the AQI is determined to be in the "Unhealthy for Sensitive Groups" range, a public health advisory is issued. However, Miami-Dade County may thereafter request the USEPA to exclude data showing an exceedance or violation of the National Ambient Air Quality Standard (NAAQS) due to an exceptional event, when making any subsequent designation of air quality attainment.**

Page 195, last paragraph, next to last sentence:
Between 2007 and ~~2011~~ **2014**, the peak number of wood stork nests in a year has ranged from 145 in 2008 to 2,602 in 2009.

Page 304 Local Agencies that received copies of the Environmental Assessment:

Local Agencies

Miami-Dade County Dept. of Regulatory and Economic Resources, **Division of Environmental Resources; and Miami-Dade** ~~Dept. of~~ Parks, Recreation & Open Spaces, **Natural Areas Management Division**

RESPONSE TO SUBSTANTIVE COMMENTS

The following table includes substantive comments that were received during public review of the Environmental Assessment (EA) and NPS responses to these comments. Substantive comments are those that 1) question, with reasonable basis, the accuracy of the information in the EA, 2) question, with reasonable basis, the adequacy of the environmental analysis, 3) present reasonable alternatives other than those presented in the EA, or 4) cause changes or revisions in the proposal. The substantive comments are presented as direct excerpts from the original comments and are organized according to the commenting agency, organization or individual. Comments that resulted in minor technical corrections to the EA were addressed in accompanying the errata sheets and are not included in this matrix.

#	Name/Entity	Comment	Response
1	FL Dept. of Agriculture and Consumer Services comments	*It is good to have a great burning partner with the Everglades National Park. We hope they will continue to work with all the other burning partners to recognize when smoke becomes a major issue for transportation and health/air quality with an ability to do something about the smoke when needed.*	Everglades National Park (ENP) will continue to work with all surrounding partners (including Big Cypress National Preserve, Loxahatchee National Wildlife Refuge (NWR), Florida Panther NWR, the Florida Forest Service and other burning partners) to mitigate smoke impacts. ENP Fire Management coordinates with Florida Highway Patrol and Park Law Enforcement, providing advanced notification of prescribed fires and notification of wildfires where smoke impacts to corridors within and adjacent to the Park are anticipated. Fire Management works with the Florida Highway Patrol and Park Law Enforcement to implement appropriate traffic control measures. Additionally, ENP has participated and will continue to participate in the I-75 US 27 Smoke Fog Task Force as needed to coordinate maintenance of traffic and communications during smoke/fog closures along I-75, US 27 and US 41. Additional mitigations related to air quality and smoke management are in place; these include: • Burn authorizations or permits would be obtained from the Florida Forest Service once they determine that air quality and fire danger are favorable for safe burning. • Day of burn weather forecasts and fuel types will be used to generate plume trajectory maps. • Forecasted plume trajectories must not impact smoke sensitive receptors in order for burn permits to be issued. Smoke management maps shall be printed and included with the permanent fire record. • Smoke screening tools will be used to determine smoke vector paths for planned ignition treatments and unplanned incidents as appropriate. • Smoke dispersal will be monitored by Fire Effects Monitors (FEMO) during planned ignition treatments and unplanned incidents as appropriate. • Caution signs will be placed where smoke may impact transportation

			corridors. • Traffic control measures will be implemented as appropriate by fire management or requested personnel. • Advanced notifications of planned ignition treatments will be provided to all park staff and park interpretative staff to have at visitor access points and permitting stations.
2	City of North Lauderdale, Fire Rescure Dept	*Alternative B appears to be the most proactive of the two courses of action and this may result in the department becoming better able to manage these types of calls with a proactive education program to advise residents of the city of preplanned burning that may result in smoke moving through our city.*	Currently, Everglades National Park Fire Management has notification procedures in place which include notifying park personnel, local federal & state partners (Florida Forest Service and South Florida Water Management District), FL Highway patrol, & Miami-Dade Fire. Additionally a press release may be sent to various media outlets to inform the public of fire events in the Park. Prescribed burns are carefully planned and mitigations are in place to minimize smoke impacts. Mitigations related to air quality and smoke management include: • Burn authorizations or permits would be obtained from the Florida Forest Service once they determine that air quality and fire danger are favorable for safe burning. • Day of burn weather forecasts and fuel types will be used to generate plume trajectory maps. • Forecasted plume trajectories must not impact smoke sensitive receptors in order for burn permits to be issued. Smoke management maps shall be printed and included with the permanent fire record. • Smoke screening tools will be used to determine smoke vector paths for planned ignition treatments and unplanned incidents as appropriate. • Smoke dispersal will be monitored by Fire Effects Monitors (FEMO) during planned ignition treatments and unplanned incidents as appropriate. • Caution signs will be placed where smoke may impact transportation corridors. • Traffic control measures will be implemented as appropriate by fire management or requested personnel. • Advanced notifications of planned ignition treatments will be provided to all park staff and park interpretative staff to have at visitor access points and permitting stations.
3	National Parks Conservation Association	*Alternative B is a vast improvement to the outdated 1991 FMP. However, NPCA has several concerns with gaps in research and information presented in the FMP. Specifically, NPCA is concerned with the lack of scientific research regarding benchmark indicator species of a healthy habitat, the lack of specific targets or measurable goals NPS is seeking to reach with this FMP, the lack of a specific guaranteed acreage of fire dependent land that will be burned under the FMP, and the lack of specific parameters outlining when and to what extent*	See responses to specific comments below

		the MFT program can be modified.	
4	National Parks Conservation Association	*The FMP fails to identify specific scientific benchmarks of healthy ENP ecosystems, such as how many individual specimens of particular flora, fauna, and biota would indicate a healthy ecosystem in each of the vegetation communities within ENP (optimal levels). While the FMP generally provides a range of years within which particular vegetation communities should be burned, the precise frequency, timing, and size of burnings necessary to maintain optimal levels is not discussed. This data should have been included in the FMP, either as an optimal scenario as a third management alternative, or at least as a basis of comparison for analysis of the projected effectiveness of the programs described under Alternatives A and B.*	The goal of restoration and management within the everglades ecosystem is to reestablish natural processes to have a dynamic system that promotes recovery of species and communities within the ecological system (Progress Towards Restoring the Everglades: The Fifth Biennial Review - 2014). The fire management plan is designed to use a process oriented approach to manage fire on the landscape. Our goal of maintaining a healthy ecosystem is based on achieving a healthy range of variation in the fire return interval as well as other aspects of the fire regime. For each vegetation community a fire return interval range has been identified. The fire return intervals were chosen based on peer reviewed literature, internal technical reports, institutional knowledge and decisions made by the interdisciplinary team. Precise targets of burn frequency and acres to be burned each year are identified in the multi-year fuels treatment plan. Implementing the multi-year fuels treatment plan proposed schedule of work and maintaining all fire adapted vegetation communities within the fire return interval will provide a healthy range of variation in fire effects across the landscape allowing for a natural variation in species presence and abundance within these communities. The process oriented approach of the fire management plan is intended to further NPS policy directing that all components and processes of naturally evolving park ecosystems be maintained, together with the natural abundance, diversity, and integrity of the plant and animal species native to the area.
5	National Parks Conservation Association	*The FMP does identify the number of acres of fire dependent vegetation communities in each FMU, and it also identifies approximate numbers of certain species in ENP. However, both* *Alternative A and B fail to identify any specific, measurable goals for the number of future acres of certain vegetation communities, or the numbers of specific species NPS hopes to achieve within each FMU. This means that the effectiveness of both Alternative A and Alternative B, whichever is selected, cannot be easily measured in the future.* *While NPCA approves of the goal of increasing the number of prescribed burns annually under the updated FMP, and recognizes that access to all areas within the ENP is not always possible, nor are there necessarily ways to accurately count every individual member of certain types of benchmark*	The goal of restoration and management within the everglades ecosystem is to have a dynamic system that includes natural variation in species presence and abundance and allow for natural shifts in native vegetation communities over time. The goal of fire management is to maintain a healthy ecosystem through achieving a healthy range of variation in the fire return interval as well as other aspects of the fire regime. For each vegetation community a fire return interval range has been identified, and this is, in essence, the measureable target. Implementing the multi-year fuels treatment plan proposed schedule of

		species, we would encourage the inclusion of more hard data to support the target of *Alternative B's stated goal to propose to burn 237,000 - 258,000 acres per year. The FMP should specify explicit, measurable benchmarks and management goals wherever possible*	work and maintaining all fire adapted vegetation communities within the identified fire return interval will provide a healthy range of variation in fire effects across the landscape. Such a range of variation in fire effects will, in turn, allowing for a natural variation in species presence and abundance within these communities. An assessment of the fire return interval departure and fire regime condition class within fire adapted vegetation communities will indicate the level of effectiveness of the multi-year fuels plan process for selecting and scheduling prescribed fire treatments.
6	National Parks Conservation Association	*NPCA is also concerned with the lack of a guaranteed minimum acreage to be burned under the FMP. While NPCA generally agrees that more acres of fire dependent habitat should be burned more frequently in ENP in order to reach the stated management goals of the FMP (to protect human life and property within an adjacent to park boundaries, to protect natural and cultural resources, etc. FMP p 26), the FMP indicates that the amount of acres actually burned will likely be less than the amount proposed. Furthermore, there is no guarantee written into the FMP that a minimum number of acres will be burned annually. NPCA would suggest that NPS determine and more explicitly state in the FMP the minimum acreage necessary to burn annually by prescribed fire to reach the specific goals of the FMP and to set that amount as a the minimum benchmark that NPS guarantees will be burned annually under Alternative B.*	ENP cannot commit to a guaranteed minimum number of acres burned due to the fact that there are many factors outside of our control that can impact the number of acres treated in any one year. These include budget constraints, the occurrence of wildfires, unsuitable weather conditions, concerns with smoke impacts, or other environmental factors that may inhibit implementation of prescribed fires.
7	National Parks Conservation Association	*The FMP does not specify what criteria or benchmarks will be used to determine if modifications to the MFT program are necessary, nor does the FMP state what types of modifications to the MFT program will be permissible. For example, can prescribed burn patterns be altered and to what extent? What would justify reducing the frequency or acreage of prescribed burns? Can the acreage prescribed to be burned under the current MFT be reduced, how much, and can scheduled burns be eliminated entirely? Are there circumstances under which NPS could choose not to follow the MFT and not burn any acres in a year?*	Planned ignitions are dependent on many factors, many of which are outside of the park's control and the MFT program needs to retain flexibility in order to allow managers to be responsive to these factors. Among the factors affecting planned ignitions are weather conditions, occurrence of wildfires, smoke impacts and potential resource impacts. The process of annual review of the MFTP by an interdisciplinary team is outlined in the FMP, and this process allows park managers to take into account the risk of wildfires, the unplanned burning of land by wildfires, analysis of data from research and monitoring, and changes in the budget situation, among other factors. Any changes to the MFTP will only be made after the annual review process. Due to the unpredictability of many of the factors affecting planned ignitions, there must be a broad range of modifications permissible to the MFTP. Though it is not likely, such modifications may necessarily include not burning any acres in a given year. Changes in frequency of burning may occur and is considered acceptable as long as all areas are within the fire return interval range.

8	National Parks Conservation Association	*While NPCA supports a program that permits flexible implementation of prescribed burnings and suppression of unintended fires consistent with the most up to date scientific knowledge and adaptable to the current regulatory framework, Alternative B seems too flexible in that it lacks defined parameters and limits on what in the FMP can be modified, when.* *In comparison, Alternative A could be viewed as providing more protections to historic places and to wildlife, including endangered species. By requiring formal consultations and reviews on a burn by burn basis, Alternative A is arguably a more environmentally protective, if not archaic, program. In light of this tension, NPCA would urge NPS to make the research and results of all consultations and ongoing reviews and analyses under Alternative B available to the public. Alternatively, or in addition to the foregoing, NPCA would support a 3 year burn program instead of a 5 year burn program under the MFT.*	The fire management plan is structured such that the multi-year fuels treatment plan will be reviewed on an annual basis. During the annual review, previous planned ignition treatments and accomplishments, unplanned fire occurrence and new information regarding policy changes, scientific knowledge and Park conditions, research and results from previous burns will be reviewed and incorporated into the planning and selection of burns for the coming year. This review ensures all plans for the following year are in compliance with applicable law and policy and provides an opportunity to adapt our management strategies. Additionally we will make all fire management plan documents allowed by policy available to the public, excluding sensitive data and information.
9	National Parks Conservation Association	In conclusion, Alternative B is a far superior option under Alternative A and is the environmental choice of preference. We applaud the efforts of the NPS and the collaborating agencies and individuals that assisted to produce a more modern, flexible, and vigorous burn program for ENP. However, we suggest that there should be clearly defined indicators and metrics for monitoring resource outcomes under the adaptive management strategy outlined in Alternative B, and there should be clear, measurable management objectives articulated. These are critical to the success of adaptive management. Then, the FMP should also set forth clear parameters outlining under what circumstances and to what extent modifications to the MFT can be made, with certain minimum standards (acreage and frequency of burns) guaranteed.	As noted previously, the fire management plan is designed to use a process oriented approach to manage fire on the landscape. The goal of restoration and management within the everglades ecosystem is to have a dynamic system that includes natural variation in species presence and abundance and allow for natural shifts in native vegetation communities over time. For each vegetation community a fire return interval range has been identified. Implementing the multi-year fuels treatment plan proposed schedule of work and maintaining all fire adapted vegetation communities within the fire return interval will provide a healthy range of variation in fire effects across the landscape allowing for a natural variation in species presence and abundance within these communities. An assessment of the fire return interval departure and fire regime condition class within fire adapted vegetation communities will indicate the level of effectiveness of the multi-year fuels plan process for selecting and scheduling prescribed fire treatments. In addition, data collected from a network of fire effects monitoring plots located throughout the fire adapted vegetation communities would be used to evaluate impacts and effectiveness of the MFTP. Monitoring data would be used to evaluate actions, assess achievement of management goals and objectives related to hazardous fuels reduction and vegetation diversity and make adjustments as necessary. Planned ignitions are dependent on many factors, many of which are outside of our control and the MFT needs to retain flexibility in order to allow managers to be responsive to these changes.

			The process of annual review of the MFT by an interdisciplinary team is outlined in the FMP, and this process allows park managers to take into account the risk of wildfires, the unplanned burning of land by wildfires, analysis of data from research and monitoring, and changes in the budget situation, among other factors. Due to the unpredictability of many of these factors, there must be a broad range of modifications permissible to the MFT. ENP cannot commit to a guaranteed minimum number of acres burned due to the fact that there are many factors outside of our control that can impact the number of acres treated in any one year. These include budget constraints, the occurrence of wildfires, unsuitable weather conditions, concerns with smoke impacts, or other environmental factors that may inhibit implementation of prescribed fires.