Big Cypress National Preserve
Florida

National Park Service
U.S. Department of the Interior

Hydrologic Restoration Management Plan and Environmental Assessment (EA)

Dear Friends,

Big Cypress National Preserve has begun planning to better address hydrologic restoration in the Preserve. This newsletter provides information about the purpose and need for planning, as well as the proposed action and preliminary alternatives that describe different ways of protecting the natural and cultural resources of the Preserve while restoring hydrology.

Currently, we are inviting you to share your thoughts and ideas related to the hydrologic restoration management plan through the public scoping phase of this project. We appreciate your comments as they will help the planning team develop and refine the scope and the range of preliminary alternatives. While we have identified a proposed action, a preferred alternative has not yet been identified, nor have the impacts of the preliminary alternatives been analyzed at this stage of the planning process. Once fully developed, one of these alternatives could be identified as the preferred alternative, or a new alternative could emerge that combines elements from some or all of the preliminary alternatives.

We invite you to join us at one of two virtual public meetings, on June 22 from 6:30-8pm ET and June 24 from 1-2:30 ET, where you will be able to learn about, discuss, and comment on the preliminary alternatives.

June 22, 2021, 6:30 PM ET at:
https://attendee.gotowebinar.com/register/2324967230334382092

June 24, 2021, 1:00 PM ET at:
https://attendee.gotowebinar.com/register/1553181535891621900

As we move forward in exploring different ways to manage the Preserve for the future, I encourage you to stay connected and be an active participant in this important planning process. In this newsletter, you will find a number of ways to contact us and access information. With your continued interest and support, we will develop a plan that enhances your experience of Big Cypress while preserving its extraordinary natural and cultural heritage.

Thank you for your interest and participation in the development of the Big Cypress National Preserve Hydrologic Restoration Management Plan EA. We hope to hear more from you soon!

Thomas Forsyth
Superintendent
Big Cypress National Preserve

Project Purpose and Need

The purpose of the Plan is to provide an overall framework for re-engineering the water management infrastructure within the Preserve (*figure 1*) to help revitalize the hydrologic processes of the Preserve by enhancing the interrelationship between surface and groundwater to improve the quantity, timing, and distribution of water throughout the Preserve's watershed including discharge into downstream environments, while preserving and enhancing visitor experience. Specific purpose statements include:

- Identify, repair, and modify the aged water management infrastructure system to facilitate hydrologic restoration.
- Restore the distribution, duration, and timing of surface water in the Preserve.
- Maintain the hydrologic integrity of natural firebreaks such as domes, strands, and marshes, especially during the spring when the swamp ecosystem is most vulnerable to large wildfires.
- Improve vital freshwater delivery downstream to wetlands and estuaries in Everglades National Park.
- Reduce the severity and duration of ecosystem-damaging drought, flooding, and fire.
- Decrease the Preserve's vulnerability to saltwater intrusion.
- Improve educational and outreach opportunities.
- Improve the Preserve's ability to work with stakeholders on hydrologic restoration projects, including Everglades Restoration initiatives.

The Plan is needed to provide a framework for managers to use in order to update an outdated and aging water management infrastructure that negatively impacts the hydrology of the swamp ecosystem, which makes the Preserve more vulnerable to saltwater intrusion, spring drought, and wildfires that negatively impact the Preserve's hydro-ecological functions.

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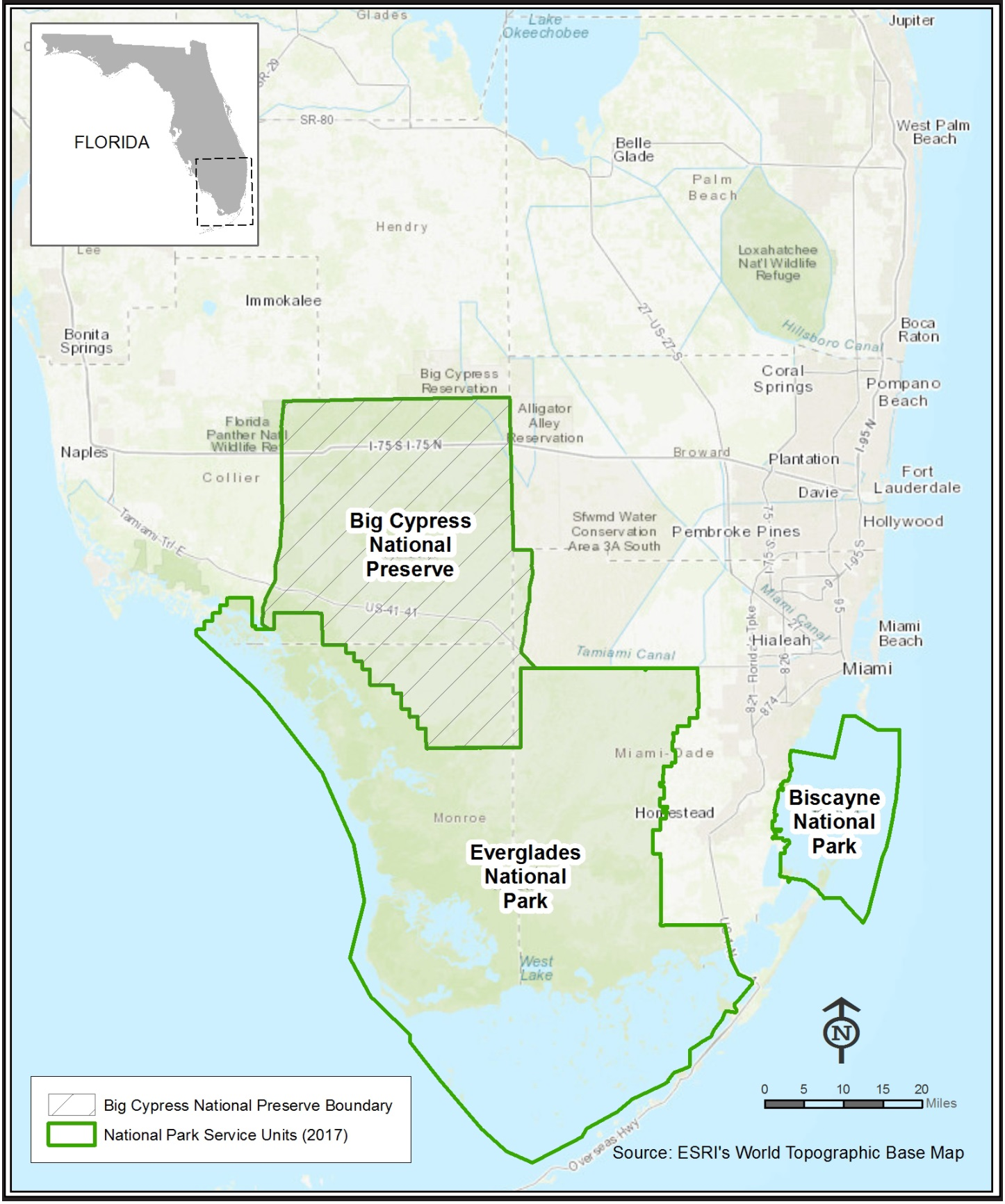

Figure 1 | *Big Cypress National Preserve Location*

Potential Alternatives

As part of the Big Cypress National Preserve Hydrologic Restoration Management Plan EA, three alternatives are being evaluated, including a no-action alternative and two action alternatives. Potential alternatives are summarized below. This evaluation uses a three-tiered ranking system, in which Tier 1 projects would be the simplest and most feasible, Tier 2 projects are more complex, but still within the Preserve's jurisdiction, and Tier 3 projects are the most complex, falling outside the Preserve's jurisdiction and boundary. Action alternatives were developed to modify hydrologic disruptions through the implementation of Tier 1 and Tier 2 projects, whereas Tier 3 projects were determined to fall outside the scope of this plan.

Alternative A

Under the no-action alternative (*Alternative A*), the Preserve would continue to manage water by maintaining existing infrastructure and modifying it on an ad hoc basis with opportunistic planning and management as funding permits. It would continue to modify the existing canal and levee system using passive water management techniques. Passive water management involves simple actions that, once installed, do not require additional inputs or operational control, and with the exception of routine maintenance, they can operate by themselves.

Projects would be adopted without the benefit of a holistic planning process focused on Preserve-wide restoration needs. Historically, this has resulted in one to two small-scale restoration projects per decade, with a slight uptick in the last five years as the Preserve undertook the Ochopee Sheetflow Restoration pilot project. Under the no action alternative, the Preserve would continue to rely heavily on external county, state, and Federal agencies to perform hydrologic restoration on levees, canals, and bridges within and adjacent to the Preserve, and the number of projects would be limited.

Alternative B

Under the proposed action (*Alternative B*), the Preserve would modify the existing canal and levee system using passive water management techniques. A typical passive water management action for an elevated roadbed would be to add culverts to enhance sheetflow. A typical passive water management action for a canal would be to fill it in, or portions of it, back to wetland grade (i.e., plug). The passive water management features would help against both unnaturally high stands of water and unnaturally low drops in the water table. In sum, these actions would help the natural landscape, not the artificial elevated and excavated features, dictate the flow of the water.

Alternative C

Under Alternative C, the Preserve would employ all elements of Alternative B plus additional Tier 2 site specific projects including limited strategic road removal and bridge addition at major flow-ways that are intersected by limerock roads. Bridging is essentially an enlarged version of the plug/culvert pair, but it is structurally different than plugs and culverts due to the larger and longer spans. They also have different load bearing requirements. Bridging is a larger structural construction operation; whereas a culvert/plug pair can be completed in approximately one month, bridges require a greater degree of engineering. A bridge's function in this instance is to convey sheetflow, not span a water body, so the bridge would be low to the ground but longer than a plug/culvert pair (100 to 1,000s of feet long), and generally wide enough to accommodate vehicle traffic. Oftentimes they are so low they do not appear to be bridges. Bridging is generally more expensive than the plug/culvert pair, although it may be more effective at hydrologic restoration and may provide enhanced wildlife and scenic vista benefits.

Potential Impact Topics

Based on discussions among the NPS planning team with subject matter experts, a preliminary list of impact topics has been developed that may be considered in the EA.

- **Water:** The project would likely improve the depth, duration and distribution of water on the landscape and as a result, improve the Preserve's hydro-ecological functions. The passive water management features would help the landscape dictate the flow of the water.
- **Vegetation and Invasive Species:** The effects of changes in regional hydrology through restoration projects could have impacts on three federally-listed plant species: the Everglades bully, Florida prairie-clover, and Florida pineland crabgrass and the habitats that they occupy. The project would likely provide general beneficial impacts to natural vegetative communities by restoring the historical hydroperiod and thereby lessening high-intensity wildfire occurrences and increasing the potential for beneficial, low-intensity fires.
- **Wildlife and Protected Species:** The project could impact wildlife and protected species in the short-term during construction but provide beneficial impacts over the long-term after construction is complete. The base of the swamp's food chain would likely benefit (i.e. invertebrate and fish communities) thereby supporting the rest of the swamp ecosystem, such as alligators and wading birds, that are dependent on the aquatic food base. Projects would contain design elements such as box culverts over round culverts and longer plugs at wetland grade over short plugs, which have been noted to provide wildlife benefits in terms of foraging and road/canal crossing opportunities. The project would also likely provide general beneficial impacts to all wildlife species by lessening unnatural wildfire occurrences and by increasing the potential for wildfires to be beneficial when they do occur.
- **Visitor Use and Experience:** The project would not introduce new water to the landscape in a way that is likely to negatively impact long-term visitor use and experience in the Preserve. Rather, the hydrologic restoration plan should enhance the long-term visitor use and experience through improvements to the flood and fire adapted character of the Preserve. However, potential short-term impacts to visitor use and experience could result from construction activities in limited areas through the disruption of road/trail/waterway access and wildlife avoidance.
- **Ethnographic Resources and Cultural Landscapes:** Although known archeological and American Indian ceremonial sites would be avoided during design of restoration projects, it remains possible that unidentified sites could be encountered and subsequently impacted unintentionally. An archeological survey would be conducted prior to any ground disturbance by heavy equipment and work would be adjusted to avoid or mitigate impacts to any identified sensitive resources.

Next Steps in the Planning Process

The planning team will analyze your comments to determine potential changes, and then evaluate the impacts of the alternatives before identifying the preferred alternative. The preferred alternative may be one of the alternatives or a combination of management strategies from the range of alternatives. Public comments on the specific management strategies within each alternative will help inform the identification of the preferred alternative as well as potential impacts.

After the National Park Service has evaluated the impacts of the proposed action and other alternatives, the preferred alternative, the range of alternatives and environmental impacts will be presented in the draft Big Cypress National Preserve Hydrologic Restoration Management Plan and Environmental Assessment, which will also be available for public review and comment. These public comments will then be used for further refinements before it is finalized.

The following table provides an updated planning schedule, including opportunities for public input.

Planning Schedule

Schedule/Milestone	Public Input
June 14-July 13 Public scoping	Review the purpose, need, preliminary alternatives and potential impacts and provide your comments at https://parkplanning.nps.gov/BICY_hydro
Late Summer 2021 Analyze public comments and prepare the draft Big Cypress National Preserve Hydrologic Restoration Plan Environmental Assessment	
Fall 2021 Public review of the draft Big Cypress National Preserve Hydrologic Restoration Plan Environmental Assessment	Review the draft Big Cypress National Preserve Hydrologic Restoration Plan Environmental Assessment, attend public meetings, and provide your comments at https://parkplanning.nps.gov/BICY_hydro
Fall 2021 Prepare the final Big Cypress National Preserve Hydrologic Restoration Plan and Environmental Assessment	Stay up-to-date on the planning process at https://parkplanning.nps.gov/BICY_hydro
Late Fall 2021 Prepare the Finding of No Significant Impact	

How to Comment

Big Cypress National Preserve is soliciting public comment on the scope of this plan, purpose and need, proposed action and preliminary alternatives, from June 14 to July 13. There are a number of ways to submit comments. You may submit your comments electronically at the National Park Service Planning, Environment, and Public Comment (PEPC) website: **https://parkplanning.nps.gov/BICY_hydro**. Once on the website, select "Open for Comment" to provide comments.

Comments may also be submitted in writing to the following address:

Superintendent
Big Cypress National Preserve
33100 Tamiami Trail East
Ochopee, Florida 34141-1000

Thank you for your interest in the Hydrologic Restoration Management Plan and Environmental Assessment!

Notes: *Comments will not be accepted by fax, e-mail, or any other way than those specified above. Please also note that your entire comment—including personal identifying information such as your address, phone number, and e-mail address—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. Comments submitted by individuals or organizations on behalf of other individuals or organizations will not be accepted*