

South Florida and Caribbean Parks

Exotic Plant Management Plan and
Environmental Impact Statement

National Park Service
U.S. Department of the Interior



SOUTH FLORIDA AND CARIBBEAN PARKS

EXOTIC PLANT MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

Abbreviated Final

AUGUST 2010

ABBREVIATED FINAL SOUTH FLORIDA AND CARIBBEAN PARKS EXOTIC PLANT MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

AUGUST 2010

This abbreviated final *South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement* (abbreviated final EPMP/EIS) responds to and incorporates the public and agency comments received on the draft EPMP/EIS. An abbreviated final format is used because the comments received on the draft EPMP/EIS require only minor responses and editorial or clarifying changes or factual corrections. No substantive changes have been made to the alternatives or to the impact analysis presented in the draft EPMP/EIS as a result of public comments. Therefore, alternative C remains as the NPS Preferred Alternative.

The U.S. Environmental Protection Agency Notice of Availability (NOA) was published on September 27, 2006. The publication of the NOA initiated a 60-day public comment period. The draft EPMP/EIS presented and evaluated three alternatives for management and control of exotic plants and restoration of native plant communities in nine national parks: Big Cypress National Preserve, Biscayne National Park, Canaveral National Seashore, Dry Tortugas National Park, Everglades National Park, Buck Island Reef National Monument, Christiansted National Historic Site, Salt River Bay National Historic Park and Ecological Preserve, and Virgin Islands National Park.

Under *Alternative A, Continue Current Management*, the parks would continue to manage exotic plants under the existing management framework. The parks would continue to treat infestations of exotic plants on an ad hoc basis using a variety of physical, mechanical, chemical, and biological methods and through currently available funding sources.

Under *Alternative B, New Framework for Exotic Plant Management: Increased Planning, Monitoring, and Mitigation*, the parks would apply a systematic approach that would prioritize exotic plants for treatment, monitor effects of those treatments on exotic plants and park resources, and mitigate any adverse effects to park resources, as determined through the monitoring program. Alternative B would employ an adaptive management strategy, using the results of monitoring to adjust treatment methods or mitigation methods to reach the desired future condition of treated areas in the parks. The effectiveness of efforts to control exotic plant invasion of native habitats would increase as a result of uniform recording and storage of information acquired during monitoring and of sharing that information among the nine park units.

Alternative C, New Framework for Exotic Plant Management: Increased Planning, Monitoring, and Mitigation, with an Emphasis on Active Restoration of Native Plants, would augment the systematic approach integral to alternative B, and would add an active restoration program to enhance the return of native species to treated areas in selected high-priority areas. Under alternative C, a decision tool would be applied to determine areas that are appropriate for active restoration, which would occur in park areas that have been previously disturbed and in areas with potential threatened and endangered species habitat or sensitive vegetation communities where a more rapid recovery would be desirable. The active restoration approach for a given treatment area would be determined based on a site-specific evaluation. Other areas in the parks would recover passively as described in alternative B.

Environmental impacts that would result from implementation of the alternatives were discussed in detail in the draft EPMP/EIS. Impact topics included native plants/vegetation, soils, water quality and hydrology, special status species, wildlife and wildlife habitats, air quality, cultural resources, visitor use and experience, soundscapes, wilderness, public health and safety, essential fish habitat, and management and operations.

This abbreviated final EPMP/EIS includes NPS responses to comments, errata detailing changes to the draft EPMP/EIS, and copies of comments. The public release of this abbreviated final EPMP/EIS will be followed by a 30-day no-action period, after which a Record of Decision (ROD) will be prepared to document the selected alternative and set forth any stipulations for implementation of the plan. This abbreviated final EPMP/EIS and the draft EPMP/EIS constitute the complete and final documentation upon which the ROD will be based.

For further information regarding this document, please contact Sandra Hamilton, National Park Service, Environmental Quality Division, P.O. Box 25287, Denver, CO 80225, (303) 969-2068.

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ACRONYMS

BLM	U.S. Department of the Interior, Bureau of Land Management
EPMP/EIS	South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
Forest Service	U.S. Department of Agriculture, Forest Service
NEPA	National Environmental Policy Act
NMFS	U.S. Department of Commerce, National Marine Fisheries Service
NOA	Notice of Availability
NPS	U.S. Department of the Interior, National Park Service
PEPC	Planning, Environment, and Public Comment
PA	Programmatic Agreement
ROD	Record of Decision
USFWS	U.S. Department of the Interior, Fish and Wildlife Service

ABBREVIATED FINAL SOUTH FLORIDA AND CARIBBEAN PARKS EXOTIC PLANT MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

FOREWORD

The *Draft South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement* (draft EPMP/EIS) analyzes the management and control of exotic plants and restoration of native plant communities in nine national parks: Big Cypress National Preserve, Biscayne National Park, Canaveral National Seashore, Dry Tortugas National Park, Everglades National Park, Buck Island Reef National Monument, Christiansted National Historic Site, Salt River Bay National Historic Park and Ecological Preserve, and Virgin Islands National Park.

The U.S. Environmental Protection Agency (EPA) Notice of Availability (NOA) was published on September 27, 2006. The publication of the NOA initiated a 60-day public comment period. Copies of the document were sent to federal departments and agencies, tribal governments and organizations, state agencies, libraries, schools, other organizations, and businesses listed in the “Consultation and Coordination” chapter of the draft EPMP/EIS. The draft EPMP/EIS was also made available for review at the parks and on the National Park Service (NPS) Planning, Environment, and Public Comment (PEPC) website (<http://parkplanning.nps.gov/EVER>).

An abbreviated final format is used because the comments received on the draft EPMP/EIS require only minor responses and editorial or clarifying changes or factual corrections. No substantive changes have been made to the alternatives or to the impact analysis presented in the draft EPMP/EIS as a result of public comments.

This abbreviated final EPMP/EIS includes the errata, which detail changes to the draft EPMP/EIS, the comment response report, and copies of agency and public comment letters. The public release of this abbreviated final EPMP/EIS will be followed by a 30-day no-action period, after which a Record of Decision (ROD) will be prepared to document the selected alternative and set forth any stipulations for implementation of the EPMP. This abbreviated final EPMP/EIS and the draft EPMP/EIS will constitute the complete and final documentation upon which the ROD will be based.

COMMENT RESPONSE REPORT

Pursuant to the *National Environmental Policy Act* (NEPA), its implementing regulations, and NPS guidance on meeting the Service’s NEPA obligations, the NPS must assess and consider comments submitted on the draft EPMP/EIS and provide responses. This abbreviated final EPMP/EIS outlines and describes how the NPS considered agency and public comments and provides the necessary responses to those comments.

Correspondence received during the public comment period included two public comments on the NPS PEPC website, correspondence from two federal government agencies, and correspondence from three state government agencies. This abbreviated final EPMP/EIS responds to and incorporates the public and agency comments received on the draft EPMP/EIS. All comments and correspondence received during the public comment period are included in appendix A.

RESPONSES TO AGENCY AND PUBLIC COMMENTS

The comments received were identified as substantive or non-substantive according to criteria described in the Council on Environmental Quality regulations (40 CFR 1500). These criteria state that substantive comments raise an issue regarding law or regulation, agency procedure or performance, compliance with

stated objectives, validity of impact analyses, or other matters of practical or procedural importance. Non-substantive comments offer opinions or provide information not directly related to the issues or impact analysis. Non-substantive comments are acknowledged and considered, but do not require responses from the NPS. Responses to substantive comments are provided below.

Topic 1: Use of herbicides near water

Comment: Any chemical means of removing exotic species should not be used in the vicinity of water.

Response: As noted in the “Alternatives” chapter of the draft EPMP/EIS (volume 1, page 94), Metsulfuron methyl, Triclopyr, Imazapyr, Glyphosate would be among the primary herbicides used under the alternatives analyzed in this draft EPMP/EIS because of their low level of environmental impacts.

The analysis of essential fish habitat in the “Environmental Consequences” chapter of the draft EPMP/EIS describes methods of reducing the risk that herbicides would enter the aquatic environment (volume 1, pages 591–596). In summary, the potential for runoff of herbicide into aquatic environments following herbicide application is low for the following reasons:

1. Rapid binding and/or breakdown of the selected herbicides in the environment
2. Use of best management practices and standard operating procedures to avoid application when there is potential for extreme rain occurring after application of the herbicide
3. Use of best management practices and standard operating procedures to reduce drift when herbicides are applied aerially

Refer to “Appendix J: Herbicides” in volume 2 of the draft EPMP/EIS for more information. Specifically please note the following regarding the primary herbicides selected for use (volume 2, pages 201–204).

- Glyphosate: Only those glyphosate herbicides that are labeled for use in aquatic setting would be used in the parks according to label instructions.
- Metsulfuron methyl: It appears that compound related mortality after acute exposure is not likely to be observed in fish exposed to concentrations less than or equal to 1,000 mg/L (SERA 2000).
- Triclopyr: If applied properly, triclopyr would not be found in concentrations adequate to kill aquatic organisms (Tu et al. 2001).
- Imazapyr: Imazapyr and its formulations are low in toxicity to invertebrates and practically nontoxic to fish.

Topic 2: Testing indicator species for pesticide accumulation

Comment: It would be prudent to initiate testing of some indicator species to determine if accumulation of residues is occurring in park biota.

Response: Much of this analysis already exists and continues to be investigated and reported in the scientific literature. This EIS incorporates by reference the U.S. Department of Agriculture, Forest Service (Forest Service) pesticide risk assessments and the risk assessments prepared for the U.S. Department of the Interior, Bureau of Land Management (BLM) Vegetation Treatment Using Herbicides EIS, June 2007, to help determine the short and long term effects of pesticides considered under this proposal. These documents are prepared to quantitatively evaluate the probability (i.e., risk) that a pesticide use might pose harm to humans or other species in the environment. It is similar to the risk assessment process used for regulation of allowable residues of pesticides in food, as well as safety evaluations of medicines, cosmetics, and other chemicals. These assessments are updated regularly to incorporate new information and findings. Copies of these risk assessments are posted on the BLM and

Forest Service web sites (<http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>, http://www.blm.gov/wo/st/en/prog/more/veg_eis.html).

For the purpose of the risk assessments, risk is defined as the likelihood that an effect (injury, disease, death or environmental damage) may result from a specific set of circumstances. It can be expressed in quantitative or qualitative terms. Risk assessments help evaluate the risks associated with activities, including exposure to chemicals such as pesticides. When evaluating risks from the use of pesticides proposed in a NEPA planning document, reliance on EPA's pesticide registration process as the sole demonstration of safety is insufficient. The Forest Service and BLM were involved in court cases in the early 1980's that specifically addressed this question (principally *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1248 (9th Circuit, 1984) and *Southern Oregon Citizens v. Clark*, 720 F. 2d 1475, 1480 (9th Cir. 1983)). These court decisions and others affirmed that although the Forest Service can use EPA toxicology data, it is still required to do an independent assessment of the safety of pesticides rather than relying on Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. § 136 *et seq*) (FIFRA) registration alone. Therefore the risk assessments do not rely solely on the EPA toxicology data accumulated for FIFRA, but supplement this information.

The assessments analyze field application rates and conditions on an array of target and non-target organisms through exposure scenarios likely to be encountered in field conditions. The situations or scenarios explored in these risk assessments were evaluated for their applicability to anticipated activities considered under this analysis for herbicide applications in Florida and Caribbean parks. The scenarios were found to be similar and therefore were used in the analysis of the potential environmental and human health effects. The risk assessments use indicator species, as is suggested by EPA, as surrogates for investigating the potential effects of using these herbicides in land management activities. The risk assessments are a thorough examination and analysis of the range of scientific information available, particularly on selected indicator species which include plants, mammals, birds, fish, aquatic environments and soils. The risk assessments should be consulted for the complete analysis of bioaccumulation and effects on indicator species.

As a group these chemicals are short lived in the environment. The risk assessments include an in-depth analysis of the effects on soil organisms, soil fertility and the environmental fate of pesticides within the soil profile. While there is some variation among the four herbicides under consideration, the effect on soil microorganisms is similar and is documented in detail in the risk assessment for each of the herbicides. The herbicides are readily metabolized by soil microorganisms; short lived, small increases in soil organisms' activity have been shown as the herbicides are being metabolized. There is substantial evidence that glyphosate (Busse et al. 2001) and other herbicides under field conditions will have little effect on soil microorganisms.

Following is a synopsis of information contained in the risk assessment for imazapyr. Imazapyr is considered to be essentially non-toxic to mammals through physical exposure or ingestion. If ingested, imazapyr is rapidly excreted in the urine and feces and does not bioaccumulate in animals. Studies indicate that imazapyr has a low potential to bioconcentrate in aquatic organisms. These results were confirmed in two aquatic field dissipation studies and a freshwater clam field accumulation study conducted in support of proposed aquatic registrations in the United States (Borysewicz 1999a). Studies of the effect of imazapyr treatments on soil microorganisms show that imazapyr has no adverse effect on a number of soil organisms, growth rates of microbial populations, soil enzymes, nitrogen cycling, sulphur oxidation, mineralization of organic substrates, or normal soil respiration processes (Atlas 1983).

Atlas, R.M. 1983. Assessment of the Effects of the Herbicide AC 243,997 on Soil Microorganisms. Department of Biology, University of Louisville. August 1, 1983.

Busse, MD; Ratcliff, AW; Shestak, CJ; Powers, RF. 2001. Glyphosate toxicity and the effects of long term vegetation control on soil microbial communities. *Soil Biology and Biochemistry*. 33:1777-1789.

Borysewicz, R.F. 1999a. Residues of CL 243997, CL 9140 and CL 119060 in Aquatic Field Dissipation and Aquatic Non-Target Organisms for ARSENAL® Herbicide Applied to Freshwater Ponds in Missouri. American Cyanamid Co. Unpublished Report RES 99-060.

Borysewicz, R.F. 1999b. Residues of CL 243997, CL 9140 and CL 119060 in Aquatic Field Dissipation and Aquatic Non-Target Organisms for ARSENAL® Herbicide Applied to Freshwater Ponds in Florida. American Cyanamid Co. Unpublished Report RES 99-059.

Topic 3: Continued consultation with Florida Department of Transportation

Comment: US 41 / SR 90 / Tamiami Trail, a state road, is an area appropriate for active restoration, therefore continued coordination with the Florida Department of Transportation is necessary for all project activities proposed within the right-of-way.

Response: The National Park Service will continue to consult with the appropriate Florida Department of Transportation districts when exotic plant management activities are expected to occur within transportation right-of-ways. According to NPS *Management Policies 2006*, Section 8.1.2, “The Service will coordinate with appropriate state authorities regarding activities that are subject to state regulation or to joint federal/state regulation.”

Topic 4: Continued consultation with the U.S. Fish and Wildlife Service in Florida

Comment: The best approach is for the U.S. Fish and Wildlife Service to provide annual input to the National Park Service on the avoidance of adverse impacts to protected species so the action is not likely to have adverse effects.

Response: If threatened and endangered species occur in the project area of effect, the NPS would coordinate with the U.S. Fish and Wildlife Service (USFWS) on an annual basis for Florida parks. For clarity, the following sentence has been added to the draft EPMP/EIS (volume 1, page 138, as a last paragraph), (refer to errata item 4):

In Florida, alternative B would involve an annual coordination between the park and the USFWS. The decision flowchart “Figure 6: Exotic Plant Treatment and Restoration Decision Tree” (volume 1, page 139) was also updated as follows to indicate annual coordination with the USFWS (refer to errata item 5).

For Florida parks, initiate annual coordination between USFWS and park on prescribed burn plans and treatment areas.

Topic 5: Cultural Resources

Comment: Historic properties may be only minimally adversely affected provided that the National Park Service evaluates potential direct and indirect impacts the program may have on cultural resources listed in, or considered eligible for listing in, the National Register, on an individual basis. Consideration for historic landscapes and historic plantings must be addressed. Any ground disturbing activities that will occur in areas not previously subjected to a cultural resources assessment survey should be assessed in coordination with National Park Service archeologists.

Response:

Ethnographic Resources

For clarity, the following sentence has been added to the draft EPMP/EIS (volume 1, page 524), at the end of “Section 106 Description of Effects of Alternative C on Ethnographic Resources” (refer to errata item 14):

Until a programmatic agreement is developed, potential direct and indirect impacts would be evaluated on an individual basis.

Cultural Landscapes

Until more specific information is developed, site-specific evaluations will be done on a case-by-case basis as described in alternative C for cultural landscapes in the draft EPMP/EIS (volume 1, page 534).

For clarity, the following sentence has been added to “Table 13: Mitigation Measures and Best Management Practices under Alternative B” at the end of the second item under Cultural Resources (refer to errata item 2):

Any ground disturbing activities that would occur in areas not previously subjected to a cultural resources assessment survey, would be assessed.

Topic 6: Potential impact of herbicides on corals

Comment: Herbicides have the potential to wash into the coastal areas and have the potential to impact corals.

Response: As noted in the “Alternatives” chapter of the draft EPMP/EIS (volume 1, page 94), metsulfuron methyl, triclopyr, imazapyr, and glyphosate would be among the primary herbicides used under the alternatives analyzed in this draft EPMP/EIS because of their low level of environmental impacts.

The analysis in the “Environmental Consequences” chapter of the draft EPMP/EIS describes methods of reducing the risk that herbicides would enter the aquatic environment (volume 1, pages 591–596). In summary, the potential for runoff of herbicide into aquatic environments following herbicide application is low for the following reasons:

1. Rapid binding and/or breakdown of herbicides in the environment
2. Use of best management practices and standard operating procedures to avoid application when there is potential for extreme rain occurring after application of the herbicide
3. Use of best management practices and standard operating procedures to reduce drift when herbicides are applied aerially

Additionally as discussed in “Appendix J: Herbicides” in volume 2 of the draft EPMP/EIS (pages 201–204), the herbicides NPS would use in coastal areas would be those appropriate for use in those areas

because of low toxicity to aquatic organisms. For example, only those glyphosate herbicides that are labeled for use in aquatic settings would be used in the parks according to label instructions, and imazapyr and its formulations are low in toxicity to invertebrates. Herbicides, such as atrazine, which persist in seawater, would not be used in the Florida and Caribbean parks.

Major threats (stressors) to corals are disease, hurricanes, and elevated sea surface temperatures according to The Atlantic Acropora Status Review (Acropora Biological Review Team, 2005). Therefore, herbicides should not be applied in areas susceptible to runoff that are also adjacent to coral habitat when sea surface temperatures are either above or below normal thermal tolerance limits (see NOAA Coral Reef Watch program: <http://coralreefwatch.noaa.gov/satellite/index.html>). Although NPS expects that the mitigation measures and BMPs will preclude herbicides from entering marine waters, as an additional precaution, the following text has been added to the Wildlife and Special Status Species section of “Table 13: Mitigation Measures and Best Management Practices under alternative B” (page 126).

As an added precaution, herbicides would not be applied in areas susceptible to runoff that are also adjacent to coral habitat when sea surface temperatures are either above or below normal thermal tolerance limits for Acropora species.

In parks with Acropora species, hand pulling would not be used to treat areas where there is an appreciable slope, soils susceptible to erosion, and continuous or near continuous, dense patches of exotic plants, with little or no spacing between individual exotic plants, with no, or nearly no native plants interspersed between or around the exotic plants.

The mitigation measures and best management practices under alternative B also apply to alternative C.

Acropora Biological Review Team. 2005. Atlantic *Acropora* Status Review Document. Report to National Marine Fisheries Service, Southeast Regional Office. March 3, 2005. 152 p + App.

ERRATA

Responses to some comments resulted in clarifying changes to text in the draft EPMP/EIS. A few minor corrections have also been made by NPS. These changes and corrections are listed below and are presented in order by page number corresponding to volume 1 of the draft EPMP/EIS, except for errata item 15, which is in volume 2.

1. On page 126, under Wildlife and Special Status Species, after the last item, add the following two items:
 - As an added precaution, herbicides would not be applied in areas susceptible to runoff that are also adjacent to coral habitat when sea surface temperature are either above or below normal thermal tolerance limits for Acropora species.
 - In parks with Acropora species, hand pulling would not be used to treat areas where there is an appreciable slope, soils susceptible to erosion, and continuous or near continuous, dense patches of exotic plants, with little or no spacing between individual exotic plants, with no, or nearly no native plants interspersed between or around the exotic plants.
2. On page 127, under Cultural Resources, after the second item, add the following clarifying sentence: “Any ground disturbing activities that would occur in areas not previously subjected to a cultural resources assessment survey, would be assessed.”
3. On page 138, last paragraph, before first word of paragraph, add “In the Caribbean,” so the revised sentence reads: “In the Caribbean, alternative B would involve the establishment of a programmatic consultation agreement between the parks and the USFWS and the National Marine Fisheries Service (NMFS) to meet consultation requirements, as required by Section 7 of the ESA.”
4. On page 138, add the following clarification as a final paragraph: “In Florida, alternative B would involve an annual coordination between the park and the USFWS.”
5. On page 139, add a block with the following clarifying text to figure 6: “For Florida parks, initiate annual coordination between USFWS and park on prescribed burn plans and treatment areas.” The revised figure is included on page 10 of this abbreviated final EPMP/EIS. Changes to the diagram are shown in red.
6. On page 230, in the first sentence of the paragraph under Bald Eagle insert the word “formerly” between “the” and “federally threatened” so that the phrase reads... “the formerly threatened bald eagle”.... At the end of the paragraph, add the following sentence: The bald eagle was determined recovered and delisted by the U.S. Fish and Wildlife Service in July, 2007.
7. On page 230, in the first sentence in the paragraph under Brown Pelican, change “is currently designated by the USFWS as endangered in the entire US, with the exception of the U.S. Atlantic Coast, Florida, and Alabama, where the population recovered and was delisted in 1985” to “was determined recovered and delisted in November 2009.” Also, delete the words “where it is federally endangered,” in the second sentence of the paragraph.

8. On page 235, following the end of the paragraph about the Stock Island Tree Snail, add the following paragraph for the recently listed *Acropora* species:

Elkhorn Coral and Staghorn Coral

Biscayne National Park, Buck Island Reef National Monument, Dry Tortugas National Park, Salt River Bay National Historic Park and Ecological Preserve, and Virgin Islands National Park

Elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) are relatively fast-growing, immobile, colonial invertebrates that also provide habitat for a multitude of coral reef creatures. In 2006, the once dominant Caribbean reef-building species of elkhorn and staghorn corals were listed under the Endangered Species Act (ESA) as threatened. Both coral species are distributed throughout the Caribbean from the Bahamas to Venezuela, from Mexico to Florida, and in Puerto Rico and the U.S. Virgin Islands. These species were once so common that entire reef zones were named after them. Now, it is estimated that less than three percent of their populations remain. The decline of these species, and their eventual listing as threatened, resulted mainly from disease, climate change (which increased bleaching in response to elevated sea surface temperatures), and hurricane impacts. Other threats contributing to their decline include damage resulting from boating, fishing, diving, and snorkeling, as well as impacts of coastal development, including sewage and stormwater discharges. The Atlantic *Acropora* Status Review Document (2005) noted that recent surveys indicated an increase in abundance of these species in some areas, such as Buck Island Reef National Monument, and no change in the Florida Keys. The National Marine Fisheries Service rule listing these species expressed the belief that the species are showing limited, localized recovery and, rangewide, the rate of decline appears to have stabilized and is comparatively slow.

9. On pages 302 and 303, replace incorrectly titled references to the Salt River Bay National Historic Park and Ecological Preserve with the correct title for the park:
- Page 302, second line of section subheading
 - Page 302, second paragraph under section subheading, fourth line
 - Page 302, second paragraph under section subheading, sixth line
 - Page 302, third paragraph under section subheading, first line
 - Page 303, second paragraph from end of page, second line
 - Page 303, last paragraph on page, first line
10. To clarify explicitly assumptions about climate change effects, insert the following text on page 316 after the “Assumptions” paragraph:

Climate Change

Given the complex interactions among multiple factors and the uncertainties over human response to climate change, the level of uncertainty about possible effects on specific resources or impact topics over the 5- to 10-year life of the plan makes analysis for impacts of climate change in this document speculative. It is assumed that exotic plant management would help build resiliency into the parks’ wildlife and native plant resources and

would be beneficial to those resources as they adapt to changed conditions over future decades.

11. On page 422 after the first paragraph, add the following:

Elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) — There would be no effect on these species from herbicide treatments of exotic plants due to the low mobility, rapid degradation and brief persistence of herbicides used in the parks, the rapid recovery of native vegetation after treatment, and the use of best management practices and standard operating procedures to prevent spills and leaks into the aquatic environment. In parks with these coral species, hand pulling would not be used to treat areas where there is an appreciable slope, soils susceptible to erosion, and continuous or near continuous, dense patches of exotic plants, with little or no spacing between individual exotic plants, with no, or nearly no native plants interspersed between or around the exotic plants. The use of mechanical methods to pull individual seedlings or saplings that are spaced apart from each other, surrounded by a continuous or near continuous cover of native plants would expose only small, widely separated, areas of bare soils. Because of the presence of the surrounding native vegetation, which would prevent erosion, and the rapid recovery of the native vegetation, which would fill these small, separated bare areas, there would be no effects on the aquatic habitat supporting these corals.

12. On page 434 after the last paragraph in the invertebrates section, add the following:

Elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) — There would be no effect on these species from herbicide treatments of exotic plants due to the low mobility, rapid degradation and brief persistence of herbicides used in the parks, the rapid recovery of native vegetation after treatment, and the use of best management practices and standard operating procedures to prevent spills and leaks into the aquatic environment. In parks with these coral species, hand pulling would not be used to treat areas where there is an appreciable slope, soils susceptible to erosion, and continuous or near continuous, dense patches of exotic plants, with little or no spacing between individual exotic plants, with no, or nearly no native plants interspersed between or around the exotic plants. The use of mechanical methods to pull individual seedlings or saplings that are spaced apart from each other, surrounded by a continuous or near continuous cover of native plants would expose only small, widely separated, areas of bare soils. Because of the presence of the surrounding native vegetation, which would prevent erosion, and the rapid recovery of the native vegetation, which would fill these small, separated bare areas, there would be no effects on the aquatic habitat supporting these corals.

13. On page 449 after the third paragraph in the invertebrates section, add the following:

Elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) — There would be no effect on these species from herbicide treatments of exotic plants due to the low mobility, rapid degradation and brief persistence of herbicides used in the parks, the rapid recovery of native vegetation after treatment, and the use of best management practices and standard operating

procedures to prevent spills and leaks into the aquatic environment. In parks with these coral species, hand pulling would not be used to treat areas where there is an appreciable slope, soils susceptible to erosion, and continuous or near continuous, dense patches of exotic plants, with little or no spacing between individual exotic plants, with no, or nearly no native plants interspersed between or around the exotic plants. The use of mechanical methods to pull individual seedlings or saplings that are spaced apart from each other, surrounded by a continuous or near continuous cover of native plants would expose only small, widely separated, areas of bare soils. Because of the presence of the surrounding native vegetation, which would prevent erosion, and the rapid recovery of the native vegetation, which would fill these small, separated bare areas, there would be no effects on the aquatic habitat supporting these corals.

Active restoration activities in Biscayne National Park, Virgin Islands National Park, Salt River Bay National Historic Park and Ecological Preserve, and Buck Island Reef National Monument would have negligible effects on these species. During restoration actions, best management practices would be employed to reduce soil erosion and minimize the transport of soil amendments to the aquatic environment. Active restoration is not proposed for Dry Tortugas National Park.

14. On page 524, at the end of “Section 106 Description of Effects of Alternative C on Ethnographic Resources,” add the following clarification: “Until a programmatic agreement is developed, potential direct and indirect impacts would be evaluated on an individual basis.”
15. Include the Florida Exotic Pest Plant Council’s 2009 List of Invasive Plant Species (see appendix B of this abbreviated final EPMP/EIS).

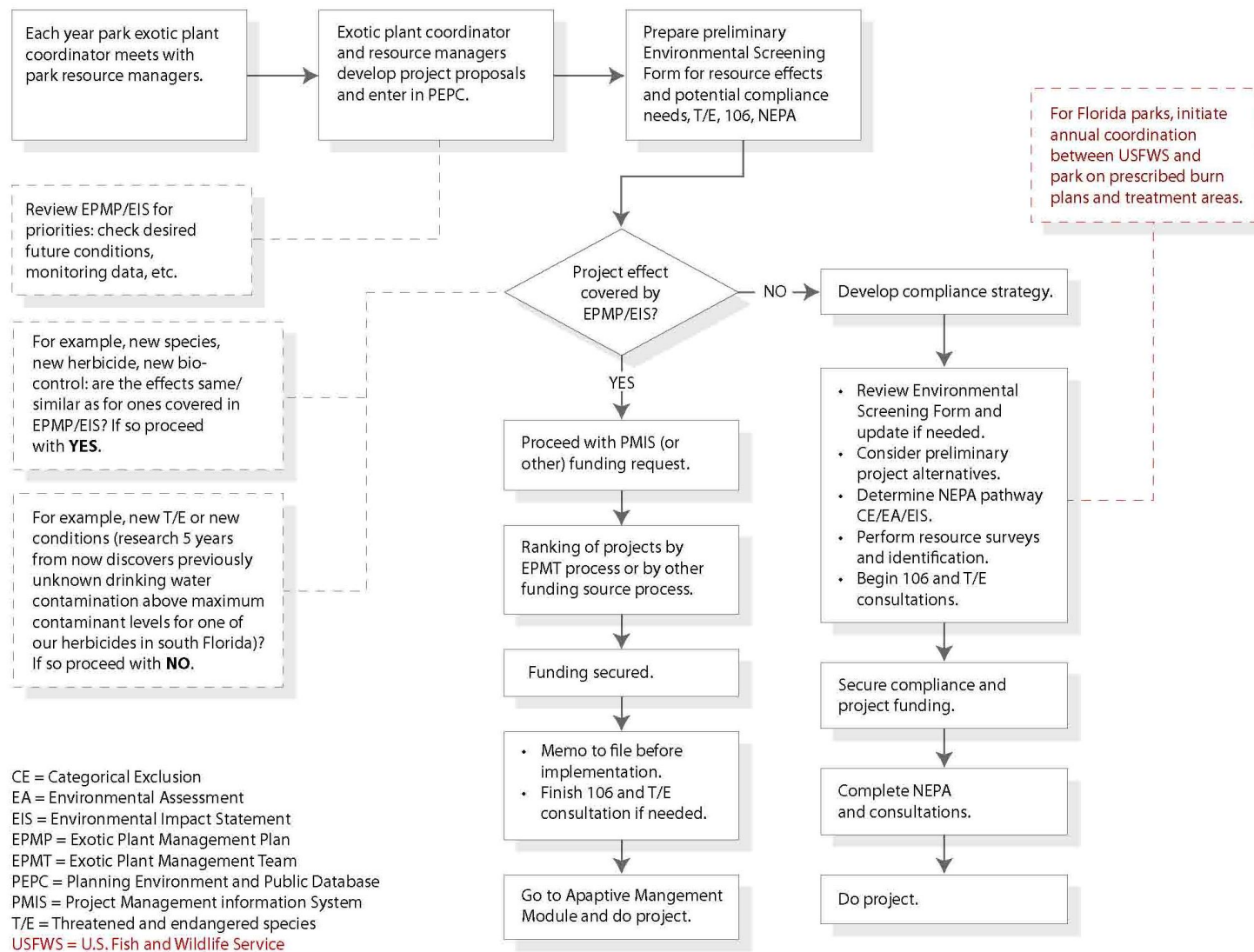


FIGURE 6: EXOTIC PLANT TREATMENT AND RESTORATION DECISION TREE

APPENDIX A: PUBLIC AND AGENCY COMMENTS

PUBLIC COMMENTS

Name: Scott J. Stoner
Organization:
Organization Type: I - Unaffiliated Individual
Address: Loudonville, NY 12211
USA
E-mail:

Correspondence Text

I am glad to see that the National Park Service is considering action to address the problem of exotic plants in south Florida and Caribbean parks. I have seen the significant extent of exotic plants in Everglades, and applaud the efforts to date to eradicate them from the Flamingo area.

I support Alternative C in the draft management plan, because it includes restoration of native plants in addition to undertaking a carefully considered, systematic approach to eradicate the exotic plants.

Name: john e. diversey
Organization:
Organization Type: I - Unaffiliated Individual
Address: 758 n elmore
park ridge, IL 60068
USA
E-mail: johndiversey@yahoo.com

Correspondence Text

Thank-You for allowing comments on this issue. While I am no expert on the issue of removing invasive species, I have had some experience. I have worked as a volunteer at the Indiana Dunes NP site on prairie restoration, also some local woodland restoration work in the Rockton IL area.

One thing that must be recognized is that ANY chemical means of removing exotic species should not be used in the vicinity of water. Please do not harm the aquatic world that co-exists with these park sites. I have had the pleasure of visiting most of these areas and they are treasures, their underwater beauty is unmatched.

I understand that using equipment and people power may never win the "battle", at least you would be sure that a ecosystem would survive.

Please consider Alternative C as a choice to help manage and remove exotic plants from these NP sites. Thank-You John Diversey

AGENCY COMMENTS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 20 2006

Sandra Hamilton
Environmental Quality Division
Project Manager
National Park Service
Box 25287
Denver, Colorado 80225-0287

Subj: South Florida and Caribbean Parks Exotic Plant Management /Environmental
Draft Impact Statement (DEIS) CEQ No. 20060383

Dear Ms. Hamilton:

Pursuant to Section 102(2) (C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the referenced National Park Service (NPS) DEIS. The document provides management plans for exotic plant control in nine South Florida and Caribbean parks including Big Cypress National Preserve, Biscayne National Park, Canaveral National Seashore, Dry Tortugas National Park, Everglades National Park, Buck Island Reef National Monument, Christiansted National Historic Site, Salt River Bay National Historic Park and Ecological Preserve, and Virgin Islands National Park.

The climate of South Florida and the Caribbean region make these areas susceptible to exotic plant infestations that threaten biological and cultural resources in national, state, and local parks and private lands. Aggressive exotic plant species, such as melaleuca and Australian pine, have over the years invaded park lands and crowded out thousands of acres of native plants replacing them with monoculture infestations of little to no value as habitat. Effective invasive plant controls are essential to prevent further degradation of park habitat resources.

The DEIS and Management Plan explored a range of options to stem encroachment by exotic invasive plant species. Alternative A (No Action) is continuation of current management plans that include case-by-case strategies for each park, usually employing a combination of herbicides, mechanical removal, re-treatment, with application decisions based upon need and available resources. Alternative B proposed higher levels of planning and monitoring that would focus treatment at critical times in the exotic species life cycle, and using GIS-based decision tools for prioritization and decision-making. Re-treatment of sites under this alternative would be more robust, and increase the rate of reduction of exotic plants. Alternative B relies upon passive restoration with native plants of treated acres (the passive restoration process is very slow, requiring from 10 to 15 years for some native species to reestablish themselves). Alternative C (the preferred alternative) comprises elements found in Alternative B and

includes active planting/seeding of native plants to sites following invasive plant species removal.

NPS proposes controlling invasive species using a variety of methods through the use of herbicides; mechanical controls; physical control, such as fire; biological controls by the intentional introduction of melaleuca-damaging beetles; and public awareness. Herbicides, however, are generally non-selective in inhibiting plant growth. Control methods most appropriate for widely differing park habitats need to be determined by NPS scientific staff, who must balance the protection of native plants/wildlife with exotic plant control objectives.

There is discomfort among some members of the public who harbor concerns over herbicides having unforeseen consequences adversely impacting park ecosystems and ultimately human health. These concerns include herbicide movement in soils, persistence in ground/surface waters, long-term ecological effects on non-target species such as fish, birds, mammals, and target plant species becoming resistant to herbicides. EPA nonetheless supports the use of registered herbicides if they are properly applied by licensed applicators, because there do not appear to be any cost-effective alternatives for controlling the spread of invasive exotic plant infestations. Infested sites are often situated in remote areas making mechanical removal impractical because of access difficulties.

To be used legally in the U. S., herbicides must be registered by EPA. This registration process requires rigorous scientific, legal, and administrative procedures through which EPA examines the ingredients of the herbicide; the particular site or crops on which it is to be used; the amount, frequency, and timing of its use; and storage/disposal practices. The Florida Department of Agriculture likewise has an herbicide/pesticide approval process. Testing and risk assessments are conducted to evaluate whether a pesticide would pose an unreasonable risk to humans, wildlife, fish, and plants, including endangered species and non-target organisms, as well as possible contamination of surface water or ground water from leaching, runoff, and spray drift. When used in accordance with the EPA approved labeling, an herbicide should not pose an unreasonable risk to human health or the environment. EPA does not “approve” herbicides, but rather makes agency technical findings and evaluations available as public information.

EPA recommends an integrated pest management approach and using products with a low toxicity profile in sensitive ecosystems, since studies done in labs and under controlled conditions cannot always predict the effects on particularly sensitive individuals, biota or ecosystems. While EPA supports the use of herbicides if properly applied, it would be prudent to initiate testing of some indicator species to determine if accumulation of residues is occurring in park biota.

Mechanical removal as a primary means of control is limited because of expense and difficulty of ingress/egress to infested sites, the inevitable persistence of root systems remaining in situ to generate re-growth, and the collection/disposal of unwanted plant

material that must be hauled to disposal areas. Biological controls are showing promise, such as the melaleuca snout beetle and the melaleuca psyllid, two insects that have demonstrated significant impact of melaleuca on affecting flower formation and limiting seed production.

It is probable that no single control method will control exotic invasive species. Re-treatment is critical in catching the most vulnerable point in the plant's life cycle, i.e., the reproductive and younger stages. The level of effort and intensity needed to control exotic plants will decline over time, as the level of infestation decreases. Ad hoc treatments on an infrequent or irregular basis are not an effective means of control because undesirable plants can recover thru re-seeding or other means of propagation. Proper timing of treatments greatly reduces labor costs and spray product use. Keeping abreast of treatment frequencies, vulnerabilities of pest species, protection for threatened and endangered species residing at hundreds of differing locales, clearly require sophisticated management tools. Integrated management techniques including herbicides, mechanical removal, fire, biological controls, need to be coordinated through the use of GIS-based management tools to ensure that invasive species control is achievable for the long term.

In conclusion, EPA supports implementation of Preferred Alternative C as described in the DEIS and Management Plan, as it appears to be the most effective solution for controlling invasive plant species. This action was rated LO, Lack of Objection. However, EPA recommends testing of a limited number of indicator species to determine if pesticide residues are accumulating. Thank you for the opportunity to comment on this action. If we can be of further assistance or more information is needed, please contact John Hamilton (404) 562-9617.

Sincerely,

A handwritten signature in black ink, appearing to read "Heinz Mueller". The signature is fluid and cursive, with a long horizontal stroke at the end.

Heinz J. Mueller, Chief
NEPA Program Office



United States Department of the Interior

FISH & WILDLIFE SERVICE

Boqueron Field Office

Carr. 301, KM 5.1, Bo. Corozo

P.O. Box 491

Boqueron, PR 00622

MAR 13 2007



Ms. Sandra Hamilton
Project Manager
South Florida and Caribbean Parks Exotic Plant
Management Plan
National Park Service
P.O. Box 25287
Denver, CO 80225

Re: BA for Exotic Plant Management Plan
Caribbean Parks, USVI

Dear Ms. Hamilton:

Thank you for your letter of March 2, 2007, requesting concurrence with your determination that the above referenced project is not likely to adversely affect federally-listed species within the Buck Island Reef National Monument, Christiansted National Historic Site, Salt River Bay National Historic Park and Ecological Preserve and Virgin Islands National Park, U.S. Virgin Islands. Our comments are provided under the Endangered Species Act (87 Stat. 884, as amended; 16 United States Code 1531 et seq.).

Based on the information provided in the Biological Assessment (BA), the National Park Service is proposing to control exotic plants using specific chemical, biological, and mechanical treatments in the above-mentioned parks. The BA (Table 10) established species-specific conservation measures for listed species, including applying herbicides by hand within 25 feet of any occupied habitat.

Based on the above, we concur with your determination that the proposed exotic vegetation control plan is not likely to adversely affect the following federally-listed species: leatherback sea turtle (*Dermochelys coriacea*), hawksbill sea turtle (*Eretmochelys imbricata*), green sea turtle (*Chelonia mydas*), brown pelican (*Pelecanus occidentalis occidentalis*), roseate tern (*Sterna dougallii*), piping plover (*Charadrius melodus*), St. Croix ground lizard (*Ameiva polops*), St. Thomas pickly ash (*Zanthoxylum thomsonianum*) and St. Thomas lidflower (*Calypttranthes thomasi*). Should additional information on listed or proposed species become available, this determination may be reconsidered.

Ms. Hamilton

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If you have any questions, please call Marelisa Rivera at 787-851-7297 extension 231.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Edwin E. Muñiz', with a stylized flourish at the end.

Edwin E. Muñiz
Field Supervisor
Caribbean Field Office

Mtr

2



United States Department of the Interior

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



August 7, 2007

Memorandum

To: Sandra Hamilton, National Park Service, Environmental Quality Division

From: Paul Souza, Field Supervisor, South Florida Ecological Services Office *[Signature]*

Subject: South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement; Service Federal Activity Code: 41420-2007-FA-1279

This memorandum is a follow-up to a recent telephone conversation with Winston Hobgood of our South Florida Ecological Services Office in Vero Beach, Florida regarding the South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement.

The Fish and Wildlife Service (Service) would like to reiterate its commitment to working in partnership with our sister agency, the National Park Service (Park Service). In that spirit, we have reviewed the above document and believe we can concur with a determination of "may affect, not likely to adversely affect" federally protected threatened and endangered species if the Service assists the Park Service by annually reviewing prescribed burn plans and treatment areas, which target exotic plant species. Exotic species are a particularly onerous problem in tropic and sub tropic environments. By collaborating with the Service on annual plans related to the document, the Park Service and the Service can identify sensitive habitats to federally protected species and adjust boundaries and/or prescriptions to avoid adverse impacts, including incidental take, to protected species. This process would also preclude having to re-consult if new species are listed or delisted, since they would automatically be included, or not, in the annual coordination. Therefore, the Service reiterates its belief the best approach to this matter is for the Service to provide annual input to the Park Service on avoidance of adverse impacts to protected species so the action is not likely to have adverse effects. If the Park Service agrees with this approach, this letter may be used as our affirmation of concurrence.

Thank you for allowing the Service to comment on the Park Service's proposal to manage exotic species. If you have any questions regarding this memorandum, please contact Winston Hobgood at 772-562-3909, extension 306.

cc:
ENP, Homestead, Florida





Jeb Bush
Governor

Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

November 9, 2006

Ms. Sandra E. Hamilton
Environmental Quality Division
National Park Service
P. O. Box 25287
Denver, CO 80225-0287

RE: National Park Service – South Florida and Caribbean Parks, Draft Exotic Plant Management Plan and Environmental Impact Statement – Big Cypress National Preserve, Biscayne National Park, Canaveral National Seashore, Dry Tortugas National Park, and Everglades National Park. SAI # FL200609202804C

Dear Ms. Hamilton:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4231, 4331-4335, 4341-4347, as amended, has coordinated a review of the referenced Draft Exotic Plant Management Plan and Environmental Impact Statement (EPMP/EIS).

The Florida Department of Transportation (FDOT) District VI office in Miami notes that US 41/SR 90/Tamiami Trail, a state road, is listed as an "Area Appropriate for Active Restoration;" therefore, continued coordination with FDOT District VI will be required for any project activities performed within FDOT right-of-way. Staff advises that coordination with the appropriate FDOT District office will be necessary for all project activities proposed within FDOT right-of-way. For further information, please contact Mr. Xavier Pagan or Ms. Marjorie Bixby at (305) 470-5220.

Based on the information contained in the EPMP/EIS and the comments provided by our reviewing agencies, the state has determined that the proposed federal activities are consistent with the Florida Coastal Management Program.

Thank you for the opportunity to review the proposal. Should you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2161.

Sincerely,

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm
Enclosures
cc: Lisa Stone, FDOT

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Jeb Bush
Governor

Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

November 16, 2006

Ms. Sandra E. Hamilton
Environmental Quality Division
National Park Service
P. O. Box 25287
Denver, CO 80225-0287

RE: National Park Service – South Florida and Caribbean Parks, Draft Exotic Plant Management Plan and Environmental Impact Statement – Big Cypress National Preserve, Biscayne National Park, Canaveral National Seashore, Dry Tortugas National Park, and Everglades National Park.
SAI # FL200609202804C

Dear Ms. Hamilton:

The enclosed comments provided by the Florida Department of State (DOS) were received after our previous letter, dated November 9, 2006, was mailed. Please be advised that these comments do not change our finding that the proposed federal activities are consistent with the Florida Coastal Management Program. Please continue to coordinate with the DOS Division of Historical Resources to ensure protection of any historic properties in the proposed project area.

If you have any questions or need further assistance, please don't hesitate to contact me at (850) 245-2170.

Sincerely,

Lauren P. Milligan
Environmental Consultant
Office of Intergovernmental Programs

/lpm
Enclosure

cc: Laura Kammerer, DOS

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Florida

Department of Environmental Protection

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Project Information	
Project:	FL200609202804C
Comments Due:	10/24/2006
Letter Due:	11/18/2006
Description:	NATIONAL PARK SERVICE - SOUTH FLORIDA AND CARIBBEAN PARKS, DRAFT EXOTIC PLANT MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT - BIG CYPRESS NATIONAL PRESERVE, BISCAYNE NATIONAL PARK, CANAVERAL NATIONAL SEASHORE, DRY TORTUGAS NATIONAL PARK, AND EVERGLADES NATIONAL PARK.
Keywords:	NPS - SOUTH FL NATIONAL PARKS DRAFT EXOTIC PLANT MANAGEMENT PLAN/EIS
CFDA #:	15.916
Agency Comments:	
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION	
NO COMMENT BY SCOTT HARDIN ON 10/4/06.	
STATE - FLORIDA DEPARTMENT OF STATE	
No Comments Received	
TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION	
The National Park Service (NPS) has submitted the Draft South Florida and Caribbean Exotic Plant Mangement Plan (EPMP)/Environmental Impact Statement (EIS), which includes three South Florida parks within or bordering FDOT District VI. These include Big Cypress National Preserve, Biscayne National Park and Everglades National Park. The draft EPMP/EIS proposes a range of strategies to manage and control exotic plants and establish a framework for future implementation of site-specific actions in the various parks. Although no adverse impacts to FDOT right-of-way are anticipated, staff notes the following: 1) US 41/SR 90/Tamiami Trail, a state road, is listed as an "Area Appropriate for Active Restoration," therefore, continued coordination with FDOT District VI will be required for any project activities performed within FDOT right-of-way. 2) Coordination with other FDOT Districts will be required for any project activities performed within FDOT right-of way outside the jurisdiction of FDOT District VI. Should you have any questions, please contact Mr. Xavier Pagan or Ms. Marjorie Bixby at (305) 470-5220.	
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
The DEP Bureau of Invasive Plant Management supports the proposed plan and commends the National Park Service for its efforts to manage exotic species within the five South Florida parks studied.	

For more information please contact the Clearinghouse Office at:

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

Visit the Clearinghouse Home Page to query other projects.

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FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State
DIVISION OF HISTORICAL RESOURCES

RECEIVED
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OIP / OLGA

Ms. Lauren Milligan
Florida State Clearinghouse
3900 Commonwealth Boulevard MS 47
Tallahassee, FL 32399-3000

November 9, 2006

RE: DHR Project File No.: 2006-9771
Received by DHR: September 22, 2006
South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement - Draft

Dear Ms. Milligan:

Our office received and reviewed additional information for the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties* and the *National Environmental Policy Act of 1969*, as amended. The State Historic Preservation Officer is to advise Federal agencies as they identify historic properties (listed or eligible for listing in the *National Register of Historic Places*), assess effects upon them, and consider alternatives to avoid or minimize adverse effects.

Based on the information provided, it is the opinion of this office that historic properties may be only minimally adversely affected by this undertaking, provided that:

- NPS chooses "Alternative C, New Framework on Active Restoration of Native Plants...The active restoration approach for a given treatment area would be determined based on a site-specific evaluation."
- NPS evaluates potential direct and indirect impacts the program may have on cultural resources listed in, or considered eligible for listing in the *National Register*, on an individual basis. Consideration for historic landscapes and historic plantings must be addressed.

It is the recommendation of this office that any ground disturbing activities, which will occur in areas not previously subjected to a cultural resources assessment survey, should be assessed. These activities should be coordinated with the National Park Service archaeologists. We look forward to working with the National Park Service and the parks here in Florida in the future on this management plan and the protection of historic properties involved with this program.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6436

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Southeast Regional Office
(954) 467-4990 • FAX: 467-4991

☐ Northeast Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Central Florida Regional Office
(813) 272-3843 • FAX: 272-2340

Ms. Milligan
November 9, 2006
Page 2

If you have any questions, please contact James Toner, Historic Sites Specialist, by electronic mail at jetoner@dos.state.fl.us, or at 850-245-6333.

Sincerely,

A handwritten signature in black ink, appearing to read "Frederick P. Gaske". The signature is written in a cursive style with a long horizontal line extending to the right.

Frederick P. Gaske, Director, and
State Historic Preservation Officer



United States Department of the Interior

NATIONAL PARK SERVICE
Environmental Quality Division
P.O. Box 25287
Denver, CO 80225
October 5, 2009

Mr. J.P. Oriol
Federal Consistency Coordinator
DPNR-CZM
CEKING Air Port Terminal building
St Thomas, VI 00802

Dear Mr. Oriol,

By email of May 25, 2006, Steve Stone of the National Park Service conveyed to our office that Mr. Bill Rohring, Assistant Director of Virgin Islands Coastal Zone Management, indicated to him in a phone conversation on May 5, 2006 that it was premature for us to seek a CZMA consistency determination on the South Florida and Caribbean Parks Exotic Plant Management Plan/Draft Environmental Impact Statement (Plan/DEIS), which was distributed for public review in September 2006. Mr. Rohring also informed Mr. Stone that because there was no alternative in the Plan/DEIS involving development or large continuous areas of land being cleared, a formal consistency determination was not necessary for the Virgin Islands.

As requested by Mr. Rohring, I am enclosing a copy of the public review Plan/Draft EIS, and I will also send you a copy of the final plan with a statement that the National Park Service finds the plan to be consistent with the Virgin Islands Coastal Zone Management Plan. We expect the final plan/EIS to be released early in 2010. It will be in the format of an abbreviated EIS containing corrected sections of the DEIS, rather than a corrected reprint of the entire plan/DEIS, and therefore should be read with reference to the enclosed plan/DEIS. In our response to comments in the final plan/EIS we will address Mr. Rohring's comment to Mr. Stone about whether there is a potential for herbicides to wash into coastal areas and have the potential to impact corals.

I understand from Mr. Stone's description of his conversation with Mr. Rohring that when you receive the final plan/EIS from us, you will send us a letter if you disagree with our statement that we find the plan to be consistent with the Virgin Islands Coastal Zone Management Plan. However, if we do not receive a response from your agency in 30 days of your receipt of the final plan/EIS and our determination, then we should assume your agency agrees with our determination of consistency.

Please let me know if this is not the correct process for us to follow. Thank you for your help.

Sincerely,

Sandra E. Hamilton
Environmental Protection Specialist
National Park Service, Environmental Quality Division
Academy Place, P.O. Box 25287
Denver, CO 80225

APPENDIX B: FLORIDA EXOTIC PEST PLANT COUNCIL'S 2009 LIST
OF INVASIVE PLANT SPECIES

Florida Exotic Pest Plant Council's 2009 List of Invasive Plant Species

Purpose of the List: *To focus attention on —*

- ▶ the adverse effects exotic pest plants have on Florida's biodiversity and plant communities,
- ▶ the habitat losses from exotic pest plant infestations,
- ▶ the impacts on endangered species via habitat loss and alteration,
- ▶ the need to prevent habitat losses through pest-plant management,
- ▶ the socio-economic impacts of these plants (e.g., increased wildfires in certain areas),
- ▶ changes in the seriousness of different pest plants over time,
- ▶ the need to provide information that helps managers set priorities for control programs.

CATEGORY I

Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. *This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.*

Scientific Name	Common Name	FLEPPC Cat.	Gov. List	Reg. Dist.
<i>Abrus precatorius</i>	rosary pea	I	N	C, S
<i>Acacia auriculiformis</i>	earleaf acacia	I		C, S
<i>Albizia julibrissin</i>	mimosa, silk tree	I		N, C
<i>Albizia lebbek</i>	woman's tongue	I		C, S
<i>Ardisia crenata</i> (<i>A. crenulata</i> misapplied)	coral ardisia	I		N, C, S
<i>Ardisia elliptica</i> (<i>A. humilis</i> misapplied)	shoebutton ardisia	I	N	C, S
<i>Asparagus aethiopicus</i> (<i>A. sprengeri</i> ; <i>A. densiflorus</i> misapplied)	asparagus-fern	I		N, C, S
<i>Bauhinia variegata</i>	orchid tree	I		C, S
<i>Bischofia javanica</i>	bishopwood	I		C, S
<i>Calophyllum antillanum</i> (<i>C. calaba</i> and <i>C. inophyllum</i> misapplied)	santa maria (names "mast wood," "Alexandrian laurel" used in cultivation)	I		S
<i>Casuarina equisetifolia</i>	Australian-pine, beach sheoak	I	P, N	N, C, S
<i>Casuarina glauca</i>	suckering Australian-pine, gray sheoak	I	P, N	C, S
<i>Cinnamomum camphora</i>	camphor tree	I		N, C, S
<i>Colocasia esculenta</i>	wild taro	I		N, C, S
<i>Colubrina asiatica</i>	lather leaf	I	N	S
<i>Cupaniopsis anacardioides</i>	carrotwood	I	N	C, S
<i>Dioscorea alata</i>	winged yam	I	N	N, C, S
<i>Dioscorea bulbifera</i>	air-potato	I	N	N, C, S
<i>Eichhornia crassipes</i>	water-hyacinth	I	P	N, C, S
<i>Eugenia uniflora</i>	Surinam cherry	I		C, S
<i>Ficus microcarpa</i> (<i>F. nitida</i> and <i>F. retusa</i> var. <i>nitida</i> misapplied) ¹	laurel fig	I		C, S
<i>Hydrilla verticillata</i>	hydrilla	I	P, U	N, C, S
<i>Hygrophila polysperma</i>	green hygro	I	P, U	N, C, S
<i>Hymenachne amplexicaulis</i>	West Indian marsh grass	I		C, S
<i>Imperata cylindrica</i> (<i>I. brasiliensis</i> misapplied)	cogon grass	I	N, U	N, C, S
<i>Ipomoea aquatica</i>	water-spinach	I	P, U	C
<i>Jasminum dichotomum</i>	Gold Coast jasmine	I		C, S
<i>Jasminum fluminense</i>	Brazilian jasmine	I		C, S
<i>Lantana camara</i> (= <i>L. strigocamara</i>)	lantana, shrub verben	I		N, C, S
<i>Ligustrum lucidum</i>	glossy privet	I		N, C
<i>Ligustrum sinense</i>	Chinese privet, hedge privet	I		N, C, S
<i>Lonicera japonica</i>	Japanese honeysuckle	I		N, C, S
<i>Ludwigia peruviana</i>	Peruvian primrosewillow	I		N, C, S
<i>Luziola subintegra</i>	Tropical American water grass	I		S
<i>Lygodium japonicum</i>	Japanese climbing fern	I	N	N, C, S
<i>Lygodium microphyllum</i>	Old World climbing fern	I	N	C, S

¹Does not include *Ficus microcarpa* subsp. *fuyouensis*, which is sold as "Green Island Ficus"

FLEPPC List Definitions:

Exotic – a species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida.

Native – a species whose natural range includes Florida.

Naturalized exotic – an exotic that sustains itself outside cultivation (it is still exotic; it has not "become" native).

Invasive exotic – an exotic that not only has naturalized, but is expanding on its own in Florida native plant communities.

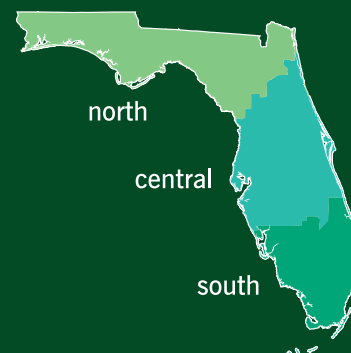
Abbreviations:

Government List (Gov. List):
P = Prohibited aquatic plant by the Florida Department of Agriculture and Consumer Services;

N = Noxious weed listed by Florida Department of Agriculture & Consumer Services;

U = Noxious weed listed by U.S. Department of Agriculture.

Regional Distribution (Reg. Dist.):
N = north, C = central, S = south, referring to each species' current distribution in general regions of Florida (not its potential range in the state). Please refer to the map below.



Changes to the 2009 List:

Luziola subintegra, added to list as Category I

Luziola subintegra (rice grass) was first discovered in Lake Okeechobee by Mike Bodle in 2007. This aquatic grass is spreading in the lake. It grows in water 2-3 m deep, spreads vegetatively and by seed, and aggressively outcompetes other native and exotic species. To date, 2,000 acres have been treated.

Nymphoides cristata, moved from Category II to Category I

Snowflake (*Nymphoides cristata*) is an Asian aquatic that became problematic in southwest Florida in the 1990s. It is now an abundant weed in canals and ponds in southwest Florida, and has spread throughout the peninsula where it has been documented in seven counties, from Collier to St. Johns. It has colonized the Big Cypress National Preserve where it is invading several strand swamps along Tamiami Trail, presumably introduced by fisherman using cast nets infested from waters outside of the preserve.

Salvinia minima, added to list as Category I

Water spangles (*Salvinia minima*), first found in Florida in 1928, remained a cryptic species during a period when opinions differed on its status as native or introduced in Florida. In 2001, a study of early herbarium voucher data revealed the introduction points and systematic spread of this free-floating fern into and throughout Florida. *S. minima* outcompetes more nutritive native duckweeds by overtopping their thinner fronds, which float flat upon the water surface.

Scleria lacustris, moved from Category II to Category I

Wright’s nutrush (*Scleria lacustris*) is an annual tropical sedge that was first collected in Florida in 1988. In Florida, its distribution extends to more than 20 distinct natural areas in eight counties within four major drainage regions of the central and southern peninsula. Its unique growth habit obscures open water and drastically alters the naturally sparse and upright structure of preexisting native vegetation. Such domination may even displace native prey for the endangered Florida snail kite, a sight feeder inhabiting many locations where invasive colonization occurs.

Scientific Name	Common Name	FLEPPC Cat.	Gov. List	Reg. Dist.
<i>Macfadyena unguis-cati</i>	cat's claw vine	I		N, C, S
<i>Manilkara zapota</i>	sapodilla	I		S
<i>Melaleuca quinquenervia</i>	melaleuca, paper bark	I	P, N, U	C, S
<i>Melinis repens</i> (= <i>Rhynchelytrum repens</i>)	Natal grass	I		N, C, S
<i>Mimosa pigra</i>	catclaw mimosa	I	P, N, U	C, S
<i>Nandina domestica</i>	nandina, heavenly bamboo	I		N, C
<i>Nephrolepis cordifolia</i>	sword fern	I		N, C, S
<i>Nephrolepis brownii</i> (= <i>N. multiflora</i>)	Asian sword fern	I		C, S
<i>Neyraudia reynaudiana</i>	Burma reed, cane grass	I	N	S
<i>Nymphoides cristata</i>	snowflake	I		C, S
<i>Paederia cruddasiana</i>	sewer vine, onion vine	I	N	S
<i>Paederia foetida</i>	skunk vine	I	N	N, C, S
<i>Panicum repens</i>	torpedo grass	I		N, C, S
<i>Pennisetum purpureum</i>	Napier grass	I		N, C, S
<i>Pistia stratiotes</i>	water-lettuce	I	P	N, C, S
<i>Psidium cattleianum</i> (= <i>P. littorale</i>)	strawberry guava	I		C, S
<i>Psidium guajava</i>	guava	I		C, S
<i>Pueraria montana</i> var. <i>lobata</i> (= <i>P. lobata</i>)	kudzu	I	N	N, C, S
<i>Rhodomyrtus tomentosa</i>	downy rose-myrtle	I	N	C, S
<i>Rhynchelytrum repens</i> (See <i>Melinis repens</i>)				
<i>Ruellia brittoniana</i> ² (<i>R. tweediana</i> misapplied)	Mexican petunia	I		N, C, S
<i>Salvinia minima</i>	water spangles	I		N, C, S
<i>Sapium sebiferum</i> (= <i>Triadica sebifera</i>)	popcorn tree, Chinese tallow tree	I	N	N, C, S
<i>Scaevola taccada</i> (= <i>Scaevola sericea</i> , <i>S. frutescens</i>)	scaevola, half-flower, beach naupaka	I	N	C, S
<i>Schefflera actinophylla</i> (= <i>Brassaia actinophylla</i>)	schefflera, Queensland umbrella tree	I		C, S
<i>Schinus terebinthifolius</i>	Brazilian pepper	I	P, N	N, C, S
<i>Scleria lacustris</i>	Wright's nutrush	I		C, S
<i>Senna pendula</i> var. <i>glabrata</i> (= <i>Cassia coluteoides</i>)	climbing cassia, Christmas cassia, Christmas senna	I		C, S
<i>Solanum tampicense</i> (= <i>S. houstonii</i>)	wetland nightshade, aquatic soda apple	I	N, U	C, S
<i>Solanum viarum</i>	tropical soda apple	I	N, U	N, C, S
<i>Syngonium podophyllum</i>	arrowhead vine	I		N, C, S
<i>Syzygium cumini</i>	jambolan plum, Java plum	I		C, S
<i>Tectaria incisa</i>	incised halberd fern	I		S
<i>Thespesia populnea</i>	seaside mahoe	I		C, S
<i>Tradescantia fluminensis</i>	small-leaf spiderwort	I		N, C
<i>Urochloa mutica</i> (= <i>Brachiaria mutica</i>)	Para grass	I		C, S

CATEGORY II

Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species. *These species may become ranked Category I, if ecological damage is demonstrated.*

Scientific Name	Common Name	FLEPPC Cat.	Gov. List	Reg. Dist.
<i>Adenanthera pavonina</i>	red sandalwood	II		S
<i>Agave sisalana</i>	sisal hemp	II		C, S
<i>Aleurites fordii</i> (= <i>Vernicia fordii</i>)	tung oil tree	II		N, C
<i>Alstonia macrophylla</i>	devil tree	II		S
<i>Alternanthera philoxeroides</i>	alligator weed	II	P	N, C, S
<i>Antigonon leptopus</i>	coral vine	II		N, C, S
<i>Aristolochia littoralis</i>	calico flower	II		N, C, S
<i>Asystasia gangetica</i>	Ganges primrose	II		C, S

²The Plant List Committee is uncertain as to the correct name for this species. Plants cultivated in Florida, all representing the same invasive species, have in the past been referred to as *Ruellia brittoniana*, *R. tweediana*, *R. caerulea*, and *R. simplex*.

Scientific Name	Common Name	FLEPPC Cat.	Gov. List	Reg. Dist.
<i>Begonia cucullata</i>	wax begonia	II		N, C, S
<i>Blechum pyramidatum</i>	green shrimp plant, Browne's blechum	II		N, C, S
<i>Broussonetia papyrifera</i>	paper mulberry	II		N, C, S
<i>Callisia fragrans</i>	inch plant, spironema	II		C, S
<i>Callistemon viminalis</i>	bottlebrush, weeping bottlebrush	II		S
<i>Casuarina cunninghamiana</i>	river sheoak, Australian-pine	II	P	C, S
<i>Cecropia palmata</i>	trumpet tree	II		S
<i>Cestrum diurnum</i>	day jessamine	II		C, S
<i>Chamaedorea seifrizii</i>	bamboo palm	II		S
<i>Clematis terniflora</i>	Japanese clematis	II		N, C
<i>Cryptostegia madagascariensis</i>	rubber vine	II		C, S
<i>Cyperus involucratus</i> (<i>C. alternifolius</i> misapplied)	umbrella plant	II		C, S
<i>Cyperus prolifer</i>	dwarf papyrus	II		C, S
<i>Dactyloctenium aegyptium</i>	Durban crowfootgrass	II		N, C, S
<i>Dalbergia sissoo</i>	Indian rosewood, sissoo	II		C, S
<i>Elaeagnus umbellata</i>	silverberry, autumn olive	II		N
<i>Elaeagnus pungens</i>	silverthorn, thorny olive	II		N, C
<i>Epipremnum pinnatum</i> cv. Aureum	pothos	II		C, S
<i>Ficus altissima</i>	false banyan, council tree	II		S
<i>Flacourtia indica</i>	governor's plum	II		S
<i>Hemarthria altissima</i>	limpo grass	II		C, S
<i>Hibiscus tiliaceus</i> (See <i>Talipariti tiliaceum</i>)				
<i>Hyparrhenia rufa</i>	jaragua	II		N, C, S
<i>Ipomoea carnea</i> ssp. <i>fistulosa</i> (= <i>I. fistulosa</i>)	shrub morning-glory	II	P	C, S
<i>Jasminum sambac</i>	Arabian jasmine	II		S
<i>Kalanchoe pinnata</i>	life plant	II		C, S
<i>Koeleruteria elegans</i> ssp. <i>formosana</i> (= <i>K. formosana</i> ; <i>K. paniculata</i> misapplied)	flamegold tree	II		C, S
<i>Leucaena leucocephala</i>	lead tree	II	N	N, C, S
<i>Landoltia punctata</i> (= <i>Spirodela punctata</i>)	Spotted duckweed	II		N, C, S
<i>Limnophila sessiliflora</i>	Asian marshweed	II	P, U	N, C, S
<i>Livistona chinensis</i>	Chinese fan palm	II		C, S
<i>Melia azedarach</i>	Chinaberry	II		N, C, S
<i>Melinis minutiflora</i>	Molassesgrass	II		C, S
<i>Merremia tuberosa</i>	wood-rose	II		S
<i>Murraya paniculata</i>	orange-jessamine	II		S
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	II	P	N, C, S
<i>Panicum maximum</i> (= <i>Urochloa maxima</i> , <i>Megathyrus maximus</i>)	Guinea grass	II		N, C, S
<i>Passiflora biflora</i>	two-flowered passion vine	II		S
<i>Pennisetum setaceum</i>	green fountain grass	II		S
<i>Phoenix reclinata</i>	Senegal date palm	II		C, S
<i>Phyllostachys aurea</i>	golden bamboo	II		N, C
<i>Pittosporum pentandrum</i>	Philippine pittosporum, Taiwanese cheesewood	II		S
<i>Pteris vittata</i>	Chinese brake fern	II		N, C, S
<i>Ptychosperma elegans</i>	solitaire palm	II		S
<i>Rhoeo spathacea</i> (see <i>Tradescantia spathacea</i>)				
<i>Ricinus communis</i>	castor bean	II		N, C, S
<i>Rotala rotundifolia</i>	roundleaf toothcup, dwarf Rotala	II		S
<i>Sansevieria hyacinthoides</i>	bowstring hemp	II		C, S
<i>Sesbania punicea</i>	purple sesban, rattlebox	II		N, C, S
<i>Solanum diphyllum</i>	two-leaf nightshade	II		N, C, S
<i>Solanum jamaicense</i>	Jamaica nightshade	II		C
<i>Solanum torvum</i>	susumber, turkey berry	II	N, U	N, C, S

Callistemon viminalis, added to list as Category II

Bottlebrush (*Callistemon viminalis*), a popular landscape tree, is now invading undisturbed short hydroperiod wetland communities in Miami-Dade, Collier, and Martin Counties, including those in Big Cypress National Preserve and Everglades National Park.

Dactyloctenium aegyptium, added to list as Category II

Durban crowfootgrass (*Dactyloctenium aegyptium*) is an annual grass that is a widely distributed weed throughout the southeastern US. In Florida, this species has been documented in 54 counties. While it is primarily a weed of disturbed areas, it also invades beach dune communities in southern Florida, including those located within Everglades and Dry Tortugas National Parks. Dense growth of this species interferes with ground nesting birds in Dry Tortugas and competes with state and federally listed plant species on the mainland.

Elaeagnus umbellata, added to list as Category II

Autumn-olive (*Elaeagnus umbellata*) is an aggressive shrub capable of replacing entire native ecosystems, which it has done in numerous locations in other states. There are three known native locations in the eastern Florida panhandle; two are local escapes from cultivation. The third is a mixture of mature upland sand hill and pine communities where a wildlife planting has escaped. The entire 2,081 acre site is infested. The infestation ranges from 100% (12.5 acres), to 50% (49.9 acres), to 25% (38.3 acres), to 10% or less (1,683.4 acres).

Hyparrhenia rufa, added to list as Category II

Jaragua (*Hyparrhenia rufa*) is an annual grass that is known from 14 Florida counties. In Miami-Dade County it has been found in intact habitat in at least 12 pine rockland fragments, outcompeting native plant species.

Landoltia punctata, added to list as Category II

Spotted duckweed (*Landoltia punctata*) is a small floating aquatic plant that is native to Australia and Southeast Asia. Since it was first found in Missouri in the 1930s, it has spread to 22 states and been documented in 36 Florida counties. It invades a wide range of undisturbed aquatic habitats and outcompetes native species.

Syzygium jambos, formerly Category II, removed from List

The Committee has not been able to locate data showing this species behaves as a Category II invasive.

Use of the FLEPPC List

FLEPPC encourages use of the Invasive Species List for prioritizing and implementing management efforts in natural areas, for educating lay audiences about environmental issues, and for supporting voluntary invasive plant removal programs. When a non-native plant species is to be restricted in some way by law, FLEPPC encourages use of the List as a first step in identifying species worth considering for particular types of restriction. For more information on using the FLEPPC List of Invasive Plant Species, see *Wildland Weeds* Summer 2002 issue (Vol. 5, No. 3), pp. 16-17, or <http://www.fleppc.org/list/list.htm>

NOTE: Not all exotic plants brought into Florida become pest plants in natural areas. The FLEPPC List of Invasive Plant Species represents only about 10% of the nearly 1,400 exotic species that have been introduced into Florida and have subsequently established outside of cultivation. Most escaped exotics usually present only minor problems in highly disturbed areas (such as roadsides). And there are other exotics cultivated in Florida that are “well-behaved” — that is, they don’t escape cultivation at all.



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Scientific Name	Common Name	FLEPPC Cat.	Gov. List	Reg. Dist.
<i>Sphagneticola trilobata</i> (= <i>Wedelia trilobata</i>)	wedelia	II		N, C, S
<i>Stachytarpheta cayennensis</i> (= <i>S. urticifolia</i>)	nettle-leaf porterweed	II		S
<i>Syagrus romanzoffiana</i> (= <i>Arecastrum romanzoffianum</i>)	queen palm	II		C, S
<i>Talipariti tiliaceum</i> (= <i>Hibiscus tiliaceus</i>)	mahoe, sea hibiscus	II		C, S
<i>Terminalia catappa</i>	tropical-almond	II		C, S
<i>Terminalia muelleri</i>	Australian-almond	II		C, S
<i>Tradescantia spathacea</i> (= <i>Rhoeo spathacea</i> , <i>Rhoeo discolor</i>)	oyster plant	II		S
<i>Tribulus cistoides</i>	puncture vine, burr-nut	II		N, C, S
<i>Urena lobata</i>	Caesar's weed	II		N, C, S
<i>Vitex trifolia</i>	simple-leaf chaste tree	II		C, S
<i>Washingtonia robusta</i>	Washington fan palm	II		C, S
<i>Wedelia</i> (see <i>Sphagneticola</i> above)				
<i>Wisteria sinensis</i>	Chinese wisteria	II		N, C
<i>Xanthosoma sagittifolium</i>	malanga, elephant ear	II		N, C, S

Citation example:

FLEPPC. 2009. List of Invasive Plant Species. Florida Exotic Pest Plant Council. Internet: <http://www.fleppc.org/list/list.htm> or *Wildland Weeds* Vol. 12(4): 13-16. Fall 2009.

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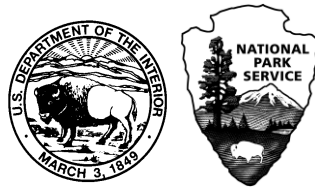
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FLEPPC Database – The Florida Exotic Pest Plant Database contains over 75,000 sight records of infestations of FLEPPC Category I and Category II species in Florida public lands and waters. 211 species are recorded. Nearly all of the records are from local, state, and federal parks and preserves; a few records document infestations in regularly disturbed public lands such as highways or utility rights-of-way. Natural area managers and other veteran observers of Florida's natural landscapes submit these records, with many supported further by voucher specimens housed in local or regional herbaria for future reference and verification. New and updated observations can be submitted online at www.eddmaps.org/florida/. This database, along with other plant-data resources such as the University of South Florida Atlas of Florida Vascular Plants at www.plantatlas.usf.edu, the Florida Natural Areas Inventory database at www.fnai.org, and The Institute for Regional Conservation Floristic Inventory of South Florida database at www.regionalconservation.org, provides important basic supporting information for the FLEPPC List of Invasive Plant Species.

Images and/or distributional data of FLEPPC-listed species may be found at one or more of the following websites: University of South Florida Atlas of Florida Vascular Plants, www.plantatlas.usf.edu; the University of Florida Herbarium collection catalog, <http://www.flmnh.ufl.edu/herbarium/cat/>, and image gallery, <http://www.flmnh.ufl.edu/herbarium/cat/imagesearch.asp>; at Fairchild Tropical Botanic Garden's Virtual Herbarium, www.virtualherbarium.org/vhportal.html, The Robert K. Godfrey Herbarium at Florida State University, <http://herbarium.bio.fsu.edu/index.php>; the University of Florida's IFAS Center for Aquatic and Invasive Plants, <http://plants.ifas.ufl.edu>, and the USDA PLANTS database, <http://plants.usda.gov/>. Please note that greater success and accuracy in searching for plant images is likely if you search by scientific name rather than a common name. Common names often vary in cultivation and across regions. For additional information on plants included in this list, see related links and pages at www.fleppc.org.



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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