



APPENDIX Q

DESIRED FUTURE CONDITIONS

Appendix Q: Desired Future Conditions

Contents

GENERAL DESIRED FUTURE CONDITION FOR RESTORATION SUCCESS283

DESIRED FUTURE CONDITIONS FOR SPECIFIC VEGETATION CATEGORIES283

REFERENCES295

Tables

Q -1: HYDROPHYTIC CANOPY AND SUBCANOPY SPECIES APPROPRIATE FOR WETLAND FOREST RESTORATION284

Q-2: CANOPY AND SUBCANOPY SPECIES APPROPRIATE FOR UPLAND DRY / MESIC FOREST RESTORATION285

Q-3: SPECIES APPROPRIATE FOR GRASSLAND/COSTAL STRAND AND BEACH/DUNE RESTORATION.....288

Q-4: SPECIES APPROPRIATE FOR COASTAL MARSH OR SALT FLAT RESTORATION289

Q-5: SPECIES APPROPRIATE FOR SAWGRASS MARSH/WET PRAIRIE/FRESHWATER MARSH RESTORATION290

Q-6: SPECIES APPROPRIATE FOR MANGROVE RESTORATION291

Q-7: SPECIES APPROPRIATE FOR SHRUBLAND RESTORATION292

Q-8: TIMEFRAME FOR ACHIEVING DESIRED FUTURE CONDITION THROUGH PASSIVE AND ACTIVE RESTORATION294

APPENDIX Q: DESIRED FUTURE CONDITIONS

The following provides a detailed description of the management objectives for each vegetation category assessed in this environmental impact statement. The conditions identified below for each category would provide managers with an indication of the success or failure of exotic plant treatments and restoration activities, passive or active, in restoring vegetation categories. For each vegetation category, the desired future condition is described in terms of the degree of recovery of native plants, the timeframe to achieve native vegetation recover to that level, and a list of native plant species that would be most likely to reestablish in that particular habitat.

As described in the “Alternatives” chapter of this EPMP/EIS, the determination of the desired future condition of each treatment area would be determined during site-specific evaluations. At this time, park resource managers and exotic plant management program managers would identify the community to be restored, the species composition that is desired, and the native species which would be used for active restoration of sites. This evaluation and determination of desired future conditions would be based on historical data, aerial or photographic histories, soil maps, observations of remnant flora, etc. The lists of species provided in this section are cursory lists of appropriate native species and not inclusive of all appropriate species. The appropriate native species that would represent a vegetative community would be decided on park-by-park basis.

General Desired Future Condition for Restoration Success

For all vegetation categories the restoration process would be considered successful when:

There is a functioning, stable vegetation category that supports a relative dominance of the native species.

The restoration monitoring program indicates that natural succession is occurring in a manner that indicates the long-term success of the restoration project.

Invasive exotic species have been reduced to less than 5% cover within the treatment area without human intervention (treatment) for one full year of exotic species monitoring.

For sites that have been actively restored, 85% of the planted species have survived for one year without human intervention.

Desired Future Conditions for Specific Vegetation Categories

Wetland Forest. The desired future conditions for a restored forested wetland would consist of a canopy of trees, a subcanopy or shrub layer, and ground cover species. The relative composition and densities of each of these layers would depend upon the desired future condition.

The desired future conditions for a forested wetland that is passively restored would exhibit a trend toward the relative dominance of the tree and shrub species listed in table Q-1 within 12 years.

Within seven years after planting, the targeted conditions for an actively restored forested wetland would include a cover of at least 30% native hydrophytic trees and shrubs (canopy and subcanopy), and at least 55% cover of native herbaceous hydrophytes (ground cover) for a total cover of at least 85%.

Table Q-1 provides a list of the trees and understory species appropriate for the forested wetland category. The list is not exhaustive, but provides a base for defining restoration success.

The woody species listed above are typically found in the different forested wetland systems in south Florida.

**TABLE Q -1: HYDROPHYTIC CANOPY AND SUBCANOPY SPECIES
APPROPRIATE FOR WETLAND FOREST RESTORATION**

Common Name	Scientific Name
Canopy Species	
Red maple	<i>Acer rubrum</i>
Loblolly bay	<i>Gordonia lasianthus</i>
Sweet bay	<i>Magnolia virginiana</i>
Slash pine	<i>Pinus elliottii</i>
Red bay	<i>Persea borbonia</i>
Swamp bay	<i>Persea palustris</i>
Pond pine	<i>Pinus serotina</i>
Laurel Oak	<i>Quercus laurifolia</i>
Water oak	<i>Quercus nigra</i>
Bald Cypress	<i>Taxodium distichum</i>
Pond Cypress	<i>Taxodium ascendens</i>
Understory/Subcanopy Species	
Saplings of canopy species	<i>All species above</i>
Pond apple	<i>Annona glabra</i>
Buttonbush	<i>Cephalanthus occidentalis</i>
Coco plum	<i>Chrysobalanus icaco</i>
Pop ash	<i>Fraxinus caroliniana</i>
Virginia willow	<i>Itea virginica</i>
Wax myrtle	<i>Myrica cerifera</i>
Wild coffee	<i>Psychotria sulzneri</i>
Myrsine	<i>Rapanea punctata</i>
Cabbage palm	<i>Sabal palmetto</i>
Carolina willow	<i>Salix caroliniana</i>

With respect to the groundcover species, given the rapid succession that occurs with naturally recruiting herbaceous species in disturbed sites, enforcing a certain combination of herbaceous species is not practical unless active restoration in the form of planting ground cover species is undertaken.

If active restoration is proposed, the species listed in the table, with the exception of Carolina willow, are available from native plant nurseries throughout south Florida. Depending upon the timing and quantities needed, the plants can also be contract grown by nurseries or park staff.

Upland Dry/Mesic Forest. The desired future conditions for a restored forested upland category would consist of a canopy of trees, a subcanopy or shrub layer, and ground cover species. The relative composition and densities of each of these layers would depend upon the category that characterizes the desired future condition. The communities included in this category are tropical hardwood hammock, mixed hardwood/pine forests, xeric oak scrub, pine flatwoods, south Florida pine rocklands, and the tropical forests of the Virgin Islands, including drought deciduous tropical forest and woodland, semi-deciduous tropical forest, semi-evergreen tropical forest, evergreen tropical woodland, upland mesic tropical forest, and gallery mesic tropical forest. For the purposes of this study, we have combined the tropical forest terminologies into two separate classifications, following the lead of the University of Virgin Islands (UVI 1998): the upland mesic tropical forest classification and the upland dry tropical forests classification.

The desired future conditions for forested upland communities that are passively restored would exhibit a trend toward the relative dominance of the tree and shrub species listed in table Q-2 within 12 years.



TABLE Q-2: CANOPY AND SUBCANOPY SPECIES APPROPRIATE FOR UPLAND DRY / MESIC FOREST RESTORATION

Common Name	Scientific Name	Pine Rocklands	Pine Flatwoods	Mesic Tropical Forest	Dry Tropical Forest	Tropical Hardwood Hammock	Xeric Oak Scrub	Subtropical Hardwood hammock
Canopy Species								
Cabbage bark tree	<i>Andira inermis</i>			X				
Guadeloupe malberry	<i>Ardisia obovata</i>			X				
Yellow sanders	<i>Buchenavia capitata</i>			X				
Gregorywood	<i>Bucida buceras</i>			X	X			
Gumbo-limbo	<i>Bursera simaruba</i>	X			X	X		
Guyanese wild coffee	<i>Casearia guianensis</i>			X				
Kapok	<i>Ceiba pentandra</i>			X				
Hackberry	<i>Celtis laevigata</i>	X						X
Scotch attorney	<i>Clusia rosea</i>			X				
Fiddlewood	<i>Citharexylum fruticosum</i>	X			X			
Pigeon plum	<i>Coccoloba diversifolia</i>	X			X	X		
Satin leaf	<i>Chrysophyllum oliviforme</i>	X				X		
Caimito de perro	<i>Chrysophyllum pauciflorum</i>			X				
Strangler fig	<i>Ficus aurea</i>	X				X		
Short-leaved fig	<i>Ficus citrifolia</i>	X			X	X		
Jaguey blanco	<i>Ficus trigonata</i>			X				
Lignum-vitae	<i>Guaiaacum sanctum</i>					X		
Sandbox tree	<i>Hura crepitans</i>			X				
Krug's holly	<i>Ilex krugiana</i>					X		
Sacky sac bean	<i>Inga fagifolia</i>			X				
S. red cedar	<i>Juniperus silicicola</i>							X
Wild tamarind	<i>Lysiloma latisiliquum</i>					X		
Southern magnolia	<i>Magnolia grandiflora</i>							X
Mammee	<i>Mammea americana</i>			X				
Smooth Johnny berry	<i>Miconia laevigata</i>			X				
Red rodwood	<i>Myrica citrifolia</i>			X				
Red bay	<i>Persea borbonia</i>		X					X
Bay rum tree	<i>Pimenta racemosa</i>				X			
Slash pine	<i>Pinus elliottii</i>		X					





TABLE Q-2: CANOPY AND SUBCANOPY SPECIES APPROPRIATE FOR UPLAND DRY / MESIC FOREST RESTORATION (CONTINUED)

Common Name	Scientific Name	Pine Rocklands	Pine Flatwoods	Mesic Tropical Forest	Dry Tropical Forest	Tropical Hardwood Hammock	Xeric Oak Scrub	Subtropical Hardwood hammock
Water mampoo	<i>Pisonia subcordata</i>				X			
Frangipani	<i>Plumeria alba</i>				X			
Laurel oak	<i>Quercus laurifolia</i>		X					X
Live oak	<i>Quercus virginiana</i>	X				X	X	X
Tabaiba	<i>Sapium laurocerasus</i>			X				
Willow-bustic	<i>Sideroxylon salicifolium</i>	X				X		
Paradise tree	<i>Simarouba glauca</i>	X				X		
Yellow mombin	<i>Spondias mombin</i>			X				
W. Indian mahogany	<i>Swietenia mahogoni</i>				X	X		
White prickly ash	<i>Zanthoxylum martinicense</i>				X			
Understory/Subcanopy Species								
Saplings of all canopy species listed above								
Spineless wattle	<i>Acacia muricata</i>				X			
Marlberry	<i>Ardisia escallonioides</i>	X				X		X
Strongback	<i>Bouyeria cassinifolia</i>				X		X	
Bahama strongbark	<i>Bouyeria succulenta</i>				X	X		
Beauty berry	<i>Callicarpa americana</i>	X				X		
Spicewood	<i>Calyptanthus pallens</i>					X		
Jamaica caper	<i>Capparis cynophallophora</i>				X	X		
Limber caper	<i>Capparis flexuosa</i>					X		
Lingum	<i>Capparis indica</i>				X			
Common snowberry	<i>Chiococco alba</i>	X				X		
Poison ash	<i>Comocladia dodonea</i>				X			
Buttonwood	<i>Conocarpus erecta</i>	X				X		
San Bartoleme	<i>Cordia rickseckeri</i>				X			
Geiger tree	<i>Cordia sebestina</i>					X		
Persimmon	<i>Diospyros virginiana</i>	X						
Milkbark	<i>Drypetes diversifolia</i>					X		
Coral bean	<i>Erythrina herbacea</i>							
White stopper	<i>Eugenia axillaris</i>	X				X		X
Black rodwood	<i>Eugenia biflora</i>				X			

TABLE Q-2: CANOPY AND SUBCANOPY SPECIES APPROPRIATE FOR UPLAND DRY / MESIC FOREST RESTORATION (CONTINUED)

Common Name	Scientific Name	Pine Rocklands	Pine Flatwoods	Mesic Tropical Forest	Dry Tropical Forest	Tropical Hardwood Hammock	Xeric Oak Scrub	Subtropical Hardwood hammock
Spanish stopper	<i>Eugenia foetida</i>					X		
Rock myrtle	<i>Eugenia procera</i>			X				
Christmas cherry	<i>Eugenia pseudopsidium</i>			X	X			
Red stopper	<i>Eugenia rhombea</i>					X		
Inkwood	<i>Exothea paniculata</i>	X				X		
Princewood	<i>Exostema caribea</i>					X		

Within seven years after planting, the targeted conditions for an actively restored forested uplands would include a cover of at least 30% native trees and shrubs (canopy and subcanopy), and at least 65% cover of native herbaceous (ground cover) for a total cover of at least 95%.

Table Q-2 provides a list of the canopy and subcanopy species appropriate for the forested upland category. The list is not exhaustive, but provides a base for defining restoration success.

The woody species listed above are typically found in the different forested wetland systems in south Florida and the U.S. Virgin Islands. The combination of species that will ultimately flourish and identify whether the system is a pine flatwoods, hardwood hammock, or other vegetation category will define the desired future conditions.

With respect to the groundcover species, given the rapid succession that occurs with naturally recruiting herbaceous species in disturbed sites, enforcing a certain combination of herbaceous species is not practical unless active restoration in the form of planting ground cover species is undertaken.

If active restoration is proposed, the majority of the Florida species listed in the table are available from native plant nurseries throughout south Florida, or they can be contract grown by the nurseries or park staff. The species from the Virgin Islands will probably require a contract grower in the Virgin Islands. Under no circumstances should plants be contract grown in Florida for planting in the Virgin Islands.

Grassland/Coastal Strand and Beach/Dune. Grasslands and coastal strands are upland areas that support a dominance of graminoid species. Dunes are typically restored by active restoration. Once a dune is disturbed, it is difficult to allow passive restoration to take place because the harsh conditions of the coastal dunes do not allow significant germination to take place. Active restoration projects have been successful on both coasts of Florida and simply require the mounding of beach sand and planting species from the list below. Dune vegetation should be planted in the rainy season to ensure that they get occasional hydration, and beach fencing may be required for protection from winds and erosion. The dunes are usually separated into three distinct zones, the upper beach and foredune, the transitional zone, and the stable dune area. The stable dune area supports shrubs and trees that are described in the forested uplands section.

Within five years after planting, the dune vegetation should be stabilized and reproducing vegetatively throughout. If a cover of approximately 95% has not been achieved, supplemental planting should be undertaken. Table Q-3 provides a list of the species appropriate for dune restoration (Myers1990).

**TABLE Q-3: SPECIES APPROPRIATE FOR
GRASSLAND/COSTAL STRAND AND BEACH/DUNE RESTORATION**

Common Name	Scientific Name
Sea oats	<i>Uniola paniculata</i>
Beach sunflower	<i>Helianthus debilis</i>
Sand cherry	<i>Physalis walteri</i>
Sea purslane	<i>Sesuvium portulacastrum</i>
Beach dropseed	<i>Sporobolus virginicus</i>
West Indian sedge	<i>Remirea maritima</i>
Railroad vine	<i>Ipomea pes-caprae</i>
Seashore paspalum	<i>Paspalum distichum</i>
Purple muhly grass	<i>Muhlenbergia capillaris</i>
Beard grasses	<i>Andropogon virginicus</i>
Broomsedge	<i>Andropogon glomeratus</i>
Sedge	<i>Fimbristylis caroliniana</i>



Some of the species listed above have become popular in Florida as landscape plants due to their ability to tolerate drought and harsh weather. These include beach sunflower, sea oats, sea purslane, railroad vine and purple muhly grass. These species are readily available in retail and wholesale nurseries. The remaining species would need to be contract grown or grown in park nurseries.

Coastal Marsh. This category includes salt marshes, salt flats, and seagrass communities and may be directly or indirectly affected as a result of exotic plant management activities. These communities all occur in coastal areas and are rapidly disappearing due to the demand for waterfront property for development. Salt flat communities are usually characterized by a very sparse cover of herbaceous halophytes, likely due to the high salinity levels. No restoration of salt flat communities is proposed in this plan because they are seldom vegetated, and they are rarely invaded by exotic plants.

Salt marshes are usually less diverse than freshwater marshes, and often support only one or two species. Site conditions such as water elevations, wave energy, salinity levels, and substrate composition vary significantly throughout south Florida and the Virgin Islands and the species composition is determined by the site conditions. Although salt marshes are not often invaded by exotic plants, Brazilian pepper and melaleuca can often be found in the interface between the salt marsh and the adjacent uplands. Removal of the exotic plants may require restoration of the salt marsh community.

Passive restoration for salt marshes can occur within three to five years if the site conditions are ideal and a seed source is present. Targeted conditions would include a minimum of 95% cover of halophytic species such as those listed below in table Q-4.

TABLE Q-4: SPECIES APPROPRIATE FOR COASTAL MARSH OR SALT FLAT RESTORATION

Common Name	Scientific Name	Common Name	Scientific Name
Leather fern	<i>Acrostichum aureum</i>	Salt jointgrass	<i>Paspalum vaginatum</i>
Spreading amaranth	<i>Amaranthus crassipes</i>	Silverhead	<i>Phloxeris vermicularis</i>
Pond apple	<i>Annona glabra</i>	Sea purslane	<i>Portulaca</i> spp.
Salt marsh aster	<i>Aster tenuifolius</i>	Annual glasswort	<i>Salicornia bigelovii</i>
Smooth water hyssop	<i>Bacopa monnieri</i>	Perennial glasswort	<i>Salicornia virginica</i>
Salt bush	<i>Baccharis halimifolia</i>	Sea purslane	<i>Sesuvium portulacastrum</i>
Saltwort	<i>Batis maritima</i>	Seaside goldenrod	<i>Solidago sempervirens</i>
Sea oxeye	<i>Borrchia arborescens</i>	Smooth cordgrass	<i>Spartina alterniflora</i>
Sea oxeye	<i>Borrchia frutescens</i>	Cordgrass	<i>Spartina bakeri</i>
Spurge	<i>Chamaesyce</i> spp.	Salt meadow cordgrass	<i>Spartina patens</i>
No common name	<i>Cypselia humifusa</i>	Coastal dropseed	<i>Sporobolus virginicus</i>
Salt grass	<i>Distichlis spicata</i>	Sea blight	<i>Sueda linearis</i>
Seaside heliotrope	<i>Heliotropium curassavicum</i>	Sea blight	<i>Sueda maritima</i>
Marsh elder	<i>Iva frutescens</i>	Seagrass – Turtle grass	<i>Thalassia testudinum</i>
Black rush	<i>Juncus roemerianus</i>	Seagrass – Shoal grass	<i>Halodule wrightii</i>
Sea lavender	<i>Limonium carolinianum</i>	Seagrass – Manatee grass	<i>Syringodium filiforme</i>
Christmas berry	<i>Lycium carolinianum</i>	Seagrass – Paddle grass	<i>Halophila decipiens</i>
Palo de hoz	<i>Machaerium lunatum</i>	Seagrass – Star grass	<i>Halophila englemanni</i>
Key grass	<i>Monanthochloe littoralis</i>	Seagrass – Widgeon grass	<i>Ruppia maritima</i>

Seagrass communities are lost due to physical impacts from boat hulls and propellers, as well as from pollution, turbidity, and other factors. Passive restoration of these communities can take years and in many cases, the seagrasses may not return unless some form of active restoration takes place. Active restoration may be in the form of water quality improvements, removing a turbidity source, or improving the substrate so that it is suitable for seagrass colonization. Seagrasses can be planted for active restoration, but success is highly variable. Harvesting seagrasses for transplanting is labor-intensive, often creates turbidity, and many of the harvested plantlets are lost in transportation. Recently scientists have been using micro-propagation to develop plantlets for installation in restoration sites. The early successional species for seagrasses is shoal grass (*Halodule wrightii*), which is planted to stabilize the substrate. Then PVC poles are inserted into the water to provide perches for birds. The droppings from the birds fertilize the shoal grass that can achieve full coverage in three years. Since shoal grass can out-compete the desired species, turtle grass (*Thalassia testudinum*) in a fertilized environment, the roosting poles are removed after the shoal grass has become established. It may take another 15 years for the turtle grass to re-establish due to its much slower rate of growth. (Boyd 2001).

Active restoration of a salt marsh community can be successful within one year of planting if conditions are conducive to survival. Installing the plants closer together will speed the success of the restoration. Planting on one-foot centers is recommended.

Table Q-4 provides a list of the species appropriate for the different vegetation communities in this category. The list is not exhaustive, but provides a base for defining restoration success. Most of these species are ubiquitous to saline habitats in south Florida and the Caribbean.

Nursery stock for planting salt marsh sites are difficult to obtain because the plants require acclimation to saline environments. Typically the plants are harvested from approved sites and planted bare root.

Sawgrass Marsh/Wet Prairie/Freshwater Marsh. This category includes the freshwater marshes, wet prairies, and other freshwater herbaceous wetlands within the national parks of south Florida and the Caribbean. Freshwater marsh systems in Everglades National Park and Big Cypress National Preserve consist largely of sawgrass marshes and wet prairies..

Herbaceous wetlands are usually among the easiest and quickest areas to restore, as long as the hydrology is appropriate to the site. Herbaceous species will colonize a disturbed area fairly readily if the invasive exotic species are prevented from becoming dominant. Herbaceous wetlands are usually only planted to hasten the benefits these wetlands provide, or as a deterrent for the colonization of invasive exotic species.

Species present will often be a mixture of grasses, sedges, and other emergent species, depending upon the hydrological gradient. While most recently created freshwater marsh or prairie will be highly diverse with respect to the vegetation present, a mature, stable system will often have fewer than 10 species present.

Table Q-5 provides a list of the species appropriate for the freshwater herbaceous wetland category. The list is not exhaustive, but provides a base for defining restoration success.

TABLE Q-5: SPECIES APPROPRIATE FOR SAWGRASS MARSH/WET PRAIRIE/FRESHWATER MARSH RESTORATION

Common Name	Scientific Name	Common Name	Scientific Name
Water hyssop	<i>Bacopa monnieri</i>	Maidencane	<i>Panicum hemitomon</i>
Lemon bacopa	<i>Bacopa caroliniana</i>	Pickerelweed	<i>Pontederia cordata</i>
Sawgrass	<i>Cladium jamaicense</i>	Beakrush	<i>Rhynchospora</i> spp.
Spike rush	<i>Eleocharis</i> spp.	Arrowhead	<i>Sagittaria lancifolia</i>
Love grass	<i>Eragrostis</i> spp.	Black rush	<i>Schoenus nigricans</i>
Plume grass	<i>Erianthus</i> spp.	Bulrush	<i>Scirpus</i> spp.
Soft rush	<i>Juncus effusus</i>	Foxtail grass	<i>Setaria</i> spp.
Muhly grass	<i>Muhlenbergia fillipes</i>	Cordgrass	<i>Spartina bakeri</i>
Spatterdock	<i>Nuphar lutea</i>	Alligator flag	<i>Thalia geniculata</i>
Fragrant water lily	<i>Nymphaea odorata</i>	Cattail	<i>Typha</i> spp.



With passive restoration, the species composition may change over time as the early and mid-successional species give way to the more permanent species (Myers 1990). This process can take as little as two years if a seed source is readily available and the hydrology is stable.

If active restoration is proposed, the majority of the Florida species listed in the table are available from native plant nurseries throughout south Florida, or they can be contract grown by the nurseries or park staff.

Mangrove. Although mangroves are not often invaded by exotic plants, Brazilian pepper can often be found in the interface between mangroves and upland adjacent areas. The desired future conditions for mangroves would be dependent upon the topography of the site, salinity levels, tidal fluctuation, nutrients in the terrestrial runoff, the substrate, and the amount of wave energy (Myer 1990). The species composition and density will be dependent upon these factors.

In areas with favorable conditions, mangroves will recruit naturally and can become well established within three to five years. However, in areas with high-energy waves, significant wrack accumulation, or unstable substrates, mangroves will not likely recruit readily and planting may be required. In these cases, the Riley encasement method is recommended (Riley 1999) to ensure the adaptation and survival of the planted propagules in their new environment.

The desired future conditions for a mangrove community that is passively restored would exhibit a trend toward the relative dominance of one or more of the three mangrove species listed in table Q-6 within five years. If the site does not exhibit the desired conditions in that period of time, then active restoration would be implemented. Within seven years after planting, the targeted conditions for an actively restored mangrove would include at least 85% survival of the planted mangroves and all plants showing evidence of reproducing.

Table Q-6 provides a list of the species appropriate for the mangrove community. One or more of the three mangrove species are the targeted dominant species, and the minimum requirements of the desired future conditions. The other associated species will indicate the development of a more diverse, successful community. The list is not exhaustive, but provides a base for defining restoration success.

Not all species of mangrove need to be present in order for the restoration to be considered successful. In passive restoration, the site conditions will determine which species will recruit. In active restoration, Riley (1999) recommends planting red mangrove and then after they have become established and can act as buffers against the wave action, other species can be planted between the red mangrove and the shoreline.

If active restoration is proposed, mangrove propagules can easily be harvested (with permission from the state or landowner) and immediately planted. Harvesting must be undertaken when the propagules have matured. In areas where conditions are favorable, the propagules may be simply inserted into the ground. In areas where conditions are somewhat difficult for the survival of planted propagules, the Riley encasement method is recommended (1999). In some cases, propagules may be planted in containers and grown to maturity and acclimated to salt water by contract growers. Under no circumstances should plants be grown in Florida for planting in the Virgin Islands.

TABLE Q-6: SPECIES APPROPRIATE FOR MANGROVE RESTORATION

Common Name	Scientific Name
Mangrove Species	
Red mangrove	<i>Rhizophora mangle</i>
White mangrove	<i>Laguncularia racemosa</i>
Black mangrove	<i>Avicennia germinans</i>
Associated Species	
Buttonwood	<i>Conocarpus erecta</i>
Black rush	<i>Juncus roemarianus</i>
Glass wort	<i>Salicornia</i> spp.
Salt wort	<i>Batis maritima</i>

Shrubland. The shrublands category includes sclerophyllous evergreen shrublands, mixed dry shrublands, gallery shrublands, thicket scrub, coastal scrub, thorn scrub, and coastal hedge. These vegetation communities are all located in dry elevations on all of the parks in the Virgin Islands and are characterized as 0.5 to 5 meters in height, with a dense, interlocking growth habit. In Florida parks it is found in both dry and moist habitats. The vegetation composition varies, with protected areas such as the gallery shrublands with the taller vegetation, to the hostile environment of the coastal hedge with vegetation generally under 3 meters (UVI no date).

Passive restoration of these vegetation communities would likely take a considerable amount of time due to the harshness of the environmental conditions. The thin soils and extremely strong winds may make the germination of native species difficult. Some have suggested that the dispersal of the seeds from some of the species is dependent upon hurricanes (Kraus 2002). If the area is actively restored, some protection from the harsh conditions, fertilizer, and occasional irrigation would be required in most cases to ensure the success of the planting.

Table Q-7 provides a list of the species appropriate for the different vegetation communities in this category. The list is not exhaustive, but provides a base for defining restoration success.

Table Q-8 provides a summary achieving desired future conditions according to vegetation category.

TABLE Q-7: SPECIES APPROPRIATE FOR SHRUBLAND RESTORATION

Common Name	Scientific Name	Common Name	Scientific Name
	<i>Agave missionum</i>	Bois bande	<i>Jacquinia berteroi</i>
Spineless wattle	<i>Acacia muricata</i>	Cowhage cheery	<i>Malpighia infestissima</i>
Broombrush	<i>Baccharis dioica</i>	Woodbury's stinging bush	<i>Malpighia woodburyana</i>
Lady of the night	<i>Brunfelsia americana</i>	Turk's head cactus	<i>Melocactus intortus</i>
Gumbo-limbo	<i>Bursera simaruba</i>		<i>Oplonia spinosa</i>
Locust berry	<i>Byrsonima lucida</i>	Bahama dildo	<i>Pilocereus royenii</i>
Marble tree/wild nutmeg	<i>Cassine xylocarpa</i>	Antilles velvetshrub	<i>Piptocoma antillana</i>
Sea grape	<i>Coccoloba uvifera</i>	Fish poison tree	<i>Piscidia carthagenensis</i>
Poison ash	<i>Comocladia dodonaea</i>	Water mampoo	<i>Pisonia subcordata</i>
Buttonwood	<i>Conocarpus erectus</i>	Cat claw	<i>Pithecellobium unguis-cati</i>
	<i>Cordia dentata</i>	Inkberry	<i>Scaevola plumeri</i>
Black torch	<i>Erithalis fruticosa</i>	Florida boxwood	<i>Schaefferia frutescens</i>
Short leafed fig	<i>Ficus citrifolia</i>	Bay cedar	<i>Suriana maritima</i>
Crabwood	<i>Gymnanthes lucida</i>	Box briar	<i>Rocheportia acanthophora</i>
Manchineel	<i>Hippomane mancinella</i>	Sea lavender	<i>Tournefortia gnaphalodes</i>
	<i>Jacquinea arborea</i>	St. Thomas prickly ash	<i>Zanthoxylum thomasianum</i>



TABLE Q-8: TIMEFRAME FOR ACHIEVING DESIRED FUTURE CONDITION THROUGH PASSIVE AND ACTIVE RESTORATION

Vegetation Category	Estimated Time for Achieving Desired Future Conditions through Passive Restoration ^a (years)	Estimated Time for Achieving Desired Future Conditions through Active Restoration ^a (years)	Most Effective Species for Planting in Active Restoration ^b
Coastal Marsh	3 to 5	1	<i>Juncus roemerianus</i> <i>Salicornia virginica</i> <i>Batis maritima</i> <i>Spartina patens</i>
Sawgrass Marsh / Wet Prairie / Freshwater Marsh	3 to 5	1 to 2	<i>Cladium jamaicense</i> <i>Eleocharis</i> spp. <i>Sagittaria lancifolia</i> <i>Thalia geniculata</i> <i>Pontederia cordata</i> <i>Rhynchospora</i> spp. <i>Spartina bakeri</i> <i>Scirpus</i> spp.
Mangrove	5 to 7	3 to 5	<i>Rhizophora mangle</i> <i>Laguncularia racemosa</i> <i>Avicennia germinans</i> <i>Conocarpus erectus</i>
Grassland / Coastal Strand	3 to 5	1 to 3	<i>Uniola paniculata</i> <i>Ipomea pes-caprae</i> <i>Helianthus debilis</i> <i>Muhlenbergia capillaris</i> <i>Paspalum distichum</i> <i>Remirea maritima</i>
Shrubland	10 to 15	5 to 7	<i>Malpighia woodburyana</i> <i>Melocactus intortus</i> <i>Zanthoxylum thomsonianum</i> <i>Erithalis fruticosa</i> <i>Jacquinea arborea</i> <i>Hippomane mancinella</i> <i>Piptocoma antillana</i> <i>Pilocereus royerii</i> <i>Byrsonima lucida</i> <i>Bursera simaruba</i>
Wetland Forest	7 to 12	5 to 7	<i>Taxodium distichum</i> <i>Gordonia lasianthus</i> <i>Magnolia virginiana</i> <i>Cephalanthus occidentalis</i> <i>Itea virginica</i> <i>Psychotria sulzneri</i>
Wetland Forest Hardwood Swamps	7 to 12	5 to 7	<i>Acer rubrum</i> <i>Gordonia lasianthus</i> <i>Magnolia virginiana</i> <i>Itea virginica</i> <i>Psychotria sulzneri</i> <i>Myrica cerifera</i>
Upland Dry / Mesic Forest Pine Rocklands	7 to 12	5 to 7	<i>Coccoloba diversifolia</i> <i>Citharexylum fruticosum</i> <i>Chrysophyllum oliviforme</i> <i>Tetrazygia bicolor</i> <i>Bursera simaruba</i> <i>Eugenia axillaris</i> <i>Randia aculeata</i> <i>Rapanea punctata</i>

**TABLE Q-8: TIMEFRAME FOR ACHIEVING DESIRED FUTURE CONDITION
THROUGH PASSIVE AND ACTIVE RESTORATION (CONTINUED)**

Vegetation Category	Estimated Time for Achieving Desired Future Conditions through Passive Restoration^a (years)	Estimated Time for Achieving Desired Future Conditions through Active Restoration^a (years)	Most Effective Species for Planting in Active Restoration^b
Upland Dry / Mesic Forest Pine Flatwoods	7 to 12	5 to 7	<i>Pinus elliottii</i> <i>Persea borbonia</i> <i>Quercus laurifolia</i> <i>Myrica cerifera</i> <i>Ilex glabra</i> <i>Lyonia fruticosa</i> <i>Lyonia lucida</i> <i>Sabal palmetto</i>
Upland Dry / Mesic Forest Mesic Tropical Forest	7 to 12	5 to 7	<i>Buchenavia capitata</i> <i>Bucida buceras</i> <i>Ceiba pentandra</i> <i>Inga fagifolia</i> <i>Eugenia procera</i> <i>Miconia laevigata</i> <i>Mammea americana</i> <i>Spondias mombin</i> <i>Sapium laurocerasus</i> <i>Exothea paniculata</i>
Upland Dry / Mesic Forest Dry Tropical Forest	7 to 12	5 to 7	<i>Pisonia subcordata</i> <i>Plumeria alba</i> <i>Swietenia mahogoni</i> <i>Zanthoxylum martinicense</i> <i>Bursera simaruba</i> <i>Coccoloba diversifolia</i> <i>Citharexylum fruticosum</i> <i>Bourreria cassinifolia</i>
Upland Dry / Mesic Forest Tropical Hardwood Hammock	7 to 12	5 to 7	<i>Sideroxylon salicifolium</i> <i>Simarouba glauca</i> <i>Chrysophyllum oliviforme</i> <i>Swietenia mahogoni</i> <i>Eugenia foetida</i> <i>Guaiacum sanctum</i> <i>Ilex krugiana</i> <i>Bourreria succulenta</i> <i>Calyptanthus pallens</i> <i>Capparis cynophallophora</i>
Upland Dry / Mesic Forest Xeric Oak Scrub	7 to 12	5 to 7	<i>Quercus virginiana</i> <i>Bourreria cassinifolia</i> <i>Quercus chapmanii</i> <i>Quercus myrtifolia</i> <i>Quercus geminata</i> <i>Serenoa repens</i>
Upland Dry / Mesic Forest Subtropical Hardwood Hammock	7 to 12	5 to 7	<i>Celtis laevigata</i> <i>Juniperus silicicola</i> <i>Magnolia grandiflora</i> <i>Persea borbonia</i> <i>Quercus laurifolia</i> <i>Ardisia escallonioides</i> <i>Eugenia axillaris</i> <i>Myrcianthes fragrans</i> <i>Sabal palmetto</i> <i>Quercus virginiana</i>

Notes:

- a. Desired future conditions are defined as the time that native vegetative communities are stable within treated areas.
- b. Additional Species Lists are provided previously in this appendix.



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APPENDIX R

NATIONAL PARK SERVICE

ENVIRONMENTAL SCREENING FORMS

Appendix R: National Park Service
Environmental Screening Forms

Contents _____

A.	PROJECT INFORMATION	299
B.	PROJECT DESCRIPTION/LOCATIONS.....	299
C.	RESOURCE EFFECTS TO CONSIDER	299
D.	MANDATORY CRITERIA	301
E.	OTHER INFORMATION	302
F.	INSTRUCTIONS FOR DETERMINING APPROPRIATE NEPA PATHWAY	302
G.	INTERDISCIPLINARY TEAM SIGNATORIES.....	304
H.	SUPERVISORY SIGNATORIES	304

This form should be attached to all NEPA documents sent to the regional director's office for signature. Sections A and B should be filled out by the project initiator (may be coupled with other park project initiation forms). Sections C, D, E, and G are to be completed by the interdisciplinary team members. While you may modify this form to fit your needs, you must ensure that the form includes information detailed below and must have your modifications reviewed and approved by the regional environmental coordinator. To access this form and other compliance project information, go to <http://pepc.nps.gov>.

A. PROJECT INFORMATION

Park Name _____ Project/PMIS Number _____
 Project Location _____
 Project Originator/Coordinator _____
 Project Title _____
 Contract # _____ Contractor Name _____
 Administrative Record Location _____
 Administrative Record Contact _____

B. PROJECT DESCRIPTION/LOCATION *(To begin the statutory compliance file, attach to this form, maps, site visit notes, agency consultation, data, reports, categorical exclusion form (if relevant), or other relevant materials.)*

Need for Project _____

Vegetative Community Type Affected _____

Treatment Methods _____
 Species to Treat _____
 Density of Exotics _____

Mitigation Measures *(Insert appropriate mitigation measures from EPMP/EIS and/or any additional)* _____

Treatment area map attached? ☐ Yes ☐ No Background info attached? ☐ Yes ☐ No
 Date form initiated _____ Anticipated compliance completion date _____
 Projected advertisement/Day labor start _____ Projected treatment project start _____
 Is project a hot topic (controversial or sensitive issues that should be brought to attention of Regional Director)?
☐ Yes ☐ No

C. RESOURCE EFFECTS TO CONSIDER *(Please see section F, Instructions for Determining Appropriate NEPA Pathway, prior to completing this section. Also use the process described in DO-12, 2.9 and 2.10; 3.5(G) to (G)(5) and 5.4(F) to help determine the context, duration, and intensity of effects on resources.)*

	Identify potential effects to the following physical, natural, or cultural resources	No Effect	Negligible Effects	Minor Effects	Exceeds Minor Effects	Data Needed to Determine	Reference page in plan/EIS
1	Geological resources – soils, bedrock, streambeds, etc.						
2	Air quality						
3	Soundscapes						
4	Water quality or quantity						
5	Streamflow characteristics						
6	Marine or estuarine resources (includes corals)						
7	Floodplains or wetlands						
8	Land use, including occupancy, income, values, ownership, type of use						
9	Rare or unusual vegetation, or community types – pine rockland						
10	Species of special concern (plant or animal; state or federal listed or proposed for listing) of their habitat						
11	Unique ecosystems, biosphere reserves, World Heritage Sites (Everglades National Park)						
12	Unique or important wildlife or wildlife habitat						
13	Unique, essential or important fish or fish habitat (includes seagrasses and corals)						
14	Recreation resources, including supply, demand, visitation, activities, etc.						
15	Visitor experience, aesthetic resources						
16	Archeological resources						
17	Prehistoric/historic structures						
18	Cultural landscapes						
19	Ethnographic resources						
20	Minority and low income populations, ethnography, size, migration patterns, etc.						
21	Other agency or tribal use plans or policies						
22	Urban quality, gateway communities, etc.						
23	Long-term management of resources or land/resource productivity						
24	Other important environmental resources?						

Comments _____



D. MANDATORY CRITERIA

Mandatory Criteria: If implemented, would the proposal:	Yes	No	Comment or Data Needed to Determine
A. Have significant impacts on public health or safety?			
B. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); and other ecologically significant or critical areas?			
C. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA section 102(2)(E))?			
D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?			
E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?			
F. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?			
G. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office?			
H. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?			
I. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?			
J. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?			
K. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?			
L. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?			

For the purposes of interpreting these procedures within the NPS, any action that has the potential to violate the NPS Organic Act by impairing park resources or values would constitute an action that triggers the DOI exception for actions that threaten to violate a federal law for protection of the environment.

E. OTHER INFORMATION *(Please answer the following questions/provide requested information.)*

Are personnel preparing this form familiar with the site? ☐ Yes ☐ No

Did personnel visit site? ☐ Yes ☐ No *(If yes, attach meeting notes re: when site visit took place, who attended, etc.)*

Is the project and/or effects in the approved Exotic Plant Management Plan/Environmental Impact Statement? ☐ Yes
☐ No If Yes, reference pages in plan/EIS and attach to form.

Are there any other connected, cumulative, or similar actions as part of the proposed action that are not discussed in the EPMP/EIS? ☐ Yes ☐ No

Are there any interested or affected agencies or parties? ☐ Yes ☐ No

Did you make a diligent effort to contact them? ☐ Yes ☐ No ☐ NA

Are there any cooperating agencies? ☐ Yes ☐ No ☐ NA

If so, agency name _____

Has consultation with all affected agencies or tribes been completed? *(If yes, attach additional pages re: consultations, including the name, dates, and a summary of comments from other agencies or tribal contacts.)*

State Historic Preservation Officer (SHPO) ☐ Yes ☐ No ☐ NA

U.S. Fish and Wildlife Service ☐ Yes ☐ No ☐ NA

Miccosukee Tribe ☐ Yes ☐ No ☐ NA

Seminole Tribe of Florida ☐ Yes ☐ No ☐ NA

Seminole Nation of Oklahoma ☐ Yes ☐ No ☐ NA

Other natural resource agencies (e.g. FDEP) ☐ Yes ☐ No ☐ NA

If yes, include names of agencies _____

F. INSTRUCTIONS FOR DETERMINING APPROPRIATE NEPA PATHWAY

First, consult with the NEPA Compliance Pathway in the EPMP/EIS to determine the appropriate NEPA pathway.

Always check DO-12, section 3.2, "Process to Follow," in determining whether the action is categorically excluded from additional NEPA analyses. Other sections within DO-12, including sections 2.9 and 2.10; 3.5; 4.5(G) and (G)(5); and 5.4(F), should also be consulted in determining the appropriate NEPA pathway. Complete the following tasks: conduct a site visit or ensure that staff is familiar with the site's specifics; consult with affected agencies, and/or tribes, and interested public; and complete this environmental screening form.

DO-12 section 3.4 provides categories that may be candidate for a categorical exclusion for which a record is needed. Categories specifically related to exotic plant management listed in section 3.4 include the following:

Section 3.4 E (2): *"Restoration of noncontroversial native species into suitable habitats within their historic range."*

Section 3.4 E (3): *"Removal of individual members of a non-threatened/endangered species or populations of pests and exotic plants that pose an imminent danger to visitors, an immediate threat to park resources, or for which removal would have no or minor impacts."*

Section 3.4 E (9): *"The planting of native seeds or seedlings and other minor revegetation actions."*



If your action is not described in DO-12, section 3.3, and IS described in section 3.4, AND you checked YES or identified “data needed to determine” impacts in any block in section D (Mandatory Criteria), this is an indication that there is potential for significant impacts to the human environment, therefore you must prepare an EA or EIS or supply missing information to determine context, duration, and intensity of impacts.

If your action is described in section 3.4 and NO is checked for all boxes in section D (Mandatory Criteria), AND there are either no effects or **all** of the potential effects identified in Section C (Resource Effects to Consider) are no more than minor intensity, usually there is no potential for significant impacts and an EA or EIS is not required. If, however, during internal scoping and further investigation, resource effects still remain unknown, or are at the minor to moderate level of intensity, and the potential for significant impacts may be likely, an EA or EIS is required.

In all cases, data collected to determine the appropriate NEPA pathway must be included in the administrative record.

G. INTERDISCIPLINARY TEAM SIGNATORIES *(All interdisciplinary team members must sign.) By signing this form, you affirm the following: you have either completed a site visit or are familiar with the specifics of the site; you have consulted with affected agencies and tribes; and you, to the best of your knowledge, have answered the questions posed in the checklist correctly.*

Interdisciplinary Team Leader Name	Discipline/Field of Expertise	Date
Technical Specialists Names	Discipline/Field of Expertise	Date
Exotic Plant Management Team Coordinator	Discipline/Field of Expertise	Date

Interdisciplinary Team Internal Meetings *(List dates of all meetings held)* _____

H. SUPERVISORY SIGNATORY

Based on the environmental impact information contained in the statutory compliance files and in this environmental screening form, environmental documentation for the subject project is complete. If the project involves hot topics or sensitive issues, I have briefed the deputy or regional director.

Recommended:

Compliance Specialist	Telephone Number	Date

Approved:

Superintendent	Telephone Number	Date





APPENDIX S

FEDERALLY MANAGED FISH SPECIES KNOWN
TO OCCUR OR RECORDED WITHIN PARK UNITS

**Appendix S: Federally Managed Fish Species
Known to Occur or Recorded within Park Units**

Tables _____

S-1: FEDERALLY MANAGED FISH SPECIES USING ESSENTIAL FISH HABITATS WITHIN THE U.S. VIRGIN ISLAND PARKS..... 307

S-2: LIST OF STONY CORALS FOUND WITHIN THE VIRGIN ISLANDS NATIONAL PARK, BUCK ISLAND REEF NATIONAL MONUMENT, AND SALT RIVER BAY NATIONAL HISTORIC PARK AND ECOLOGICAL PRESERVE 307

S-3: FEDERALLY MANAGED FISH SPECIES USING ESSENTIAL FISH HABITATS WITHIN EVERGLADES NATIONAL PARK AND CANAVERAL NATIONAL SEASHORE 308

APPENDIX S: FEDERALLY MANAGED FISH SPECIES KNOWN TO OCCUR OR RECORDED WITHIN PARK UNITS

**TABLE S-1: FEDERALLY MANAGED FISH SPECIES
USING ESSENTIAL FISH HABITATS WITHIN THE U.S. VIRGIN ISLAND PARKS**

	Common Name	Scientific Name
Reef fish	Coney	<i>Epinephelus fulvus</i>
	Red hind	<i>Epinephelus guttatus</i>
	Nassau grouper	<i>Epinephelus striatus</i>
	Mutton snapper	<i>Lutjanus analis</i>
	Schoolmaster	<i>Lutjanus apodus</i>
	Gray snapper	<i>Lutjanus griseus</i>
	Silk snapper	<i>Lutjanus vivanus</i>
	Yellowtail snapper	<i>Ocyurus chrysurus</i>
	White grunt	<i>Haemulon plumieri</i>
	Banded butterfly fish	<i>Chaetodon striatus</i>
	Queen triggerfish	<i>Balistes vetula</i>
	Squirrelfish	<i>Holocentrus ascensionis</i>
	Sand tilefish	<i>Malacanthus plumieri</i>
	Redtail parrotfish	<i>Sparisoma chrysotum</i>
	Trunkfish	<i>Lactophrys quadricornis</i>
Spiny lobster	Spiny lobster	<i>Panulirus argus</i>
Queen conch	Queen conch	<i>Strombus gigas</i>
Coral and coral reefs	Coral and coral reefs	All corals

**TABLE S-2: LIST OF STONY CORALS FOUND WITHIN THE VIRGIN ISLANDS NATIONAL PARK,
BUCK ISLAND REEF NATIONAL MONUMENT, AND SALT RIVER BAY NATIONAL HISTORIC PARK AND ECOLOGICAL PRESERVE**

Stony Corals		
<i>Acropora cervicornis</i>	<i>Diploria strigosa</i>	<i>Mussa angulosa</i>
<i>Acropora palmata</i>	<i>Eusmilia fastigiata</i>	<i>Mycetophyllia aliciae</i>
<i>Acropora prolifera</i>	<i>Favia fragum</i>	<i>Mycetophyllia ferox</i>
<i>Agaricia agaricites</i> (several different forms)	<i>Helioseris cucullata</i> (= <i>Leptoseris cucullata</i>)	<i>Mycetophyllia lamarckiana</i>
<i>Agaricia fragilis</i>	<i>Isophyllastrea rigida</i>	<i>Oculina diffusa</i>
<i>Agaricia grahamae</i>	<i>Isophyllia sinuosa</i>	<i>Porites astreoides</i>
<i>Agaricia lamarcki</i>	<i>Madracis decactis</i>	<i>Porites branneri</i>
<i>Agaricia tenuifolia</i>	<i>Madracis mirabilis</i>	<i>Porites divaricata</i>
<i>Agaricia undata</i>	<i>Manicina areolata</i>	<i>Porites furcata</i>
<i>Cladocora arbuscula</i>	<i>Meandrina meandrites</i>	<i>Porites porites</i>
<i>Colpophyllia breviserialis</i>	<i>Millepora alcicornis</i>	<i>Scolymia lacera</i>
<i>Colpophyllia natans</i>	<i>Millepora complanata</i>	<i>Siderastrea radians</i>
<i>Dendrogyra cylindrus</i>	<i>Millepora squarrosa</i>	<i>Siderastrea siderea</i>
<i>Dichocoenia stellaris</i>	<i>Montastraea annularis</i>	<i>Solenastrea boumtoni</i>
<i>Dichocoenia stokesi</i>	<i>Montastraea cavernosa</i>	<i>Stephanocoenia michelinii</i>
<i>Diploria clivosa</i>	<i>Montastraea faveolata</i> (more platelike)	<i>Tubastraea aurea</i>
<i>Diploria labyrinthiformis</i>	<i>Montastraea franksi</i> (bumpier)	

**TABLE S-3: FEDERALLY MANAGED FISH SPECIES USING ESSENTIAL FISH HABITATS
WITHIN EVERGLADES NATIONAL PARK AND CANAVERAL NATIONAL SEASHORE**

Common Name	Scientific Name	Eggs	Larvae	Juvenile	Adults
Reef fish					
Red grouper	<i>Epinephelus morio</i>	Marine planktonic		Hard bottoms; SAV; reefs	Reefs, ledges, outcrops
Gag grouper	<i>Mycteroperca microlepis</i>	Marine planktonic		SAV; oyster beds	Hard bottoms, reefs, coral
Scamp grouper	<i>Mycteroperca phenax</i>			Hard bottom; reefs	Hard bottoms
Red snapper	<i>Lutjanus campechanus</i>			Structure; sand/mud	Reefs; rock outcrops; gravel
Gray snapper	<i>Lutjanus griseus</i>		Marine planktonic	SAV; mangrove, mud	SAV, mangrove, mud, sand
Yellowtail snapper	<i>Ocyurus chrysurus</i>			SAV, mangrove, mud, sand	Reefs
Lane snapper	<i>Lutjanus synagris</i>			SAV, mangrove, mud, sand	Reefs, sand
Greater amberjack	<i>Seriola dumerili</i>			Floating plants	Pelagic over reefs
Lesser amberjack	<i>Seriola fasciata</i>			Floating plants	Irregular bottom features
Tilefish	<i>Lopholatilus chamaeleonticeps</i>			Burrows	Rough bottom
Gray triggerfish	<i>Balistes capriscus</i>	Marine sand		Floating plants, mangrove	Reefs
Red Drum					
Red Drum*	<i>Sciaenops ocellatus</i>	Marine planktonic	SAV; mud bottom, marsh	Mud bottom	Sciaenops ocellatus
Mackerels					
King mackerel	<i>Scomberomorus cavalla</i>			Pelagic	Pelagic
Spanish mackerel	<i>Scomberomorus maculatus</i>		Marine isobath	Offshore, beach, estuarine	Pelagic
Cobia	<i>Rachycentron canadum</i>	Marine pelagic	Estuarine, shelf	Coastal, shelf	Coastal, shelf
Dolphin	<i>Coryphaena hippurus</i>				
Spiny lobster					
Spiny lobster	<i>Panulirus argus</i>		Algae, SAV	Sponge, coral	Hard bottoms
Shrimp					
Brown shrimp*	<i>Penaeus aztecus</i>		Marine planktonic	Marsh, mud	Silt, sand, muddy sand
White shrimp*	<i>Penaeus setiferus</i>		Marine planktonic	Marsh, oyster reefs	Silt, soft mud
Pink shrimp*	<i>Penaeus duorarum</i>		Marine planktonic	Sand/shell	Sand/shell
Stone Crab					
Stone crab	<i>Menippe mercenaria</i>		Marine planktonic	SAV, shell	SAV, shell, coral

SAV = Submerged aquatic vegetation

* indicates that the species is known to occur within Canaveral National Seashore. Data summarized from Essential Fish Habitat: A Marine Fish Habitat Conservation Mandate for Federal Agencies, Gulf of Mexico Region (2002) and the Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region (1998) and the Gulf of Mexico (1998).





APPENDIX T

CONSULTATION LETTERS

Appendix T: Consultation Letters

Contents

GOVERNMENT TO GOVERNMENT CONSULTATION	311
LIST OF AGENCIES INVITED TO GOVERNMENT PARTNERS MEETING	315
US FISH AND WILDLIFE SERVICE CONSULTATION	318



United States Department of the Interior

NATIONAL PARK SERVICE

Southeast Regional Office
Sam Nunn Atlanta Federal Center, 1924 Building
100 Alabama Street, S.W.
Atlanta, Georgia 30303

SER-PC

Dear ,

The National Park Service, Southeast Region, and nine units of the National Park System (parks) are beginning an important new project, the development of an Exotic Plant Management Plan/Environmental Impact Statement (Plan/EIS) for South Florida and Caribbean parks. These parks are:

- 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 Historical Park and Ecological Preserve
- Virgin Islands National Park

The purpose of this Plan/EIS is to provide a programmatic framework for the management and control of invasive exotic plants in these South Florida and Caribbean parks. It would also provide for restoration of native species and habitat conditions in ecosystems that have been invaded; for protection of park resources and values from impairment resulting from exotic plant invasion and control activities; and for consistency in planning for exotic vegetation management among the participating parks.

At this early stage of the process, called scoping, our goal is to establish a meaningful, ongoing conversation with you and other governmental leaders. During scoping we would work with you and the public to determine the scope of issues and a range of alternatives to be considered and analyzed in the Plan/EIS, including areas of mutual interest between your office and the parks. A successful Plan/EIS would support efforts with partners and neighbors to achieve compatible goals for control of exotic plants and restoration of native species and ecosystems. We hope, through the planning process, to build on and enhance our ongoing joint efforts, such as the Florida Partnership with the Florida Department of Environmental Protection, and other cooperative exotic plant control projects with the parks' neighbors.

We invite you and/or your colleagues to attend a governmental partnership meeting scheduled for December 17, 2003, from 9:00 a.m. to 12:00 p.m. at the South Florida Water Management District Headquarters, 3301 Gun Club Road, West Palm Beach, Florida. Please note that you and other American Indian tribes with ties to the Florida parks will be receiving a separate



correspondence initiating formal Government-to-Government consultation as required by law and National Park Service policy. Driving directions are attached. At this meeting we will discuss the Plan/EIS project in more detail, identify issues and areas of mutual interest, and discuss opportunities for participation in the planning process.

We value your participation in this effort. Please return the enclosed response form by December 10, 2003. The form can be returned by mail to Tony Pernas, South Florida Ecosystem Office, 950 North Krome Avenue, 1st Floor, Homestead, Florida 33030, or by fax at 305-224-4148.

Sincerely,

Patricia A. Hooks
Acting Regional Director
Southeast Region

Enclosure

Mailed to attached list
bcc:
RD
Planning
Reading
Jhammond:





United States Department of the Interior

NATIONAL PARK SERVICE

Southeast Regional Office
Sam Nunn Atlanta Federal Center, 1924 Building
100 Alabama Street, S.W.
Atlanta, Georgia 30303

SER-PC

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Sincerely,

Patricia A. Hooks
Acting Regional Director
Southeast Region

Enclosure

Mailed to attached list
bcc:
RD
Planning
Reading
Jhammond:



List of Agencies Invited to Government Partners Meeting

Arthur R Marshall Loxhatchee NWR
Big Cypress Water Resources
Bill Baggs Cape Florida
Biscayne Bay Aquatic Preserve
Bouqueron Field Office, U.S. Fish and Wildlife Service
Brevard County Mosquito Control District
Brevard County, Natural Resources
Broward County Commission, Department of Planning & Environmental Protection
Bureau of Invasive Plant Management
City of Cocoa Beach
City of Coral Gables
City of Florida City
City of Ft. Myers, Planning Division
City of Homestead
City of Key West, Planning Division
City of Marco Island, Community Development
City of Miami
City of Miami Beach
City of Miami-Dade
City of Naples Natural Resources Department
City of Plantation
City of Pompano Beach, Planning Division
Coe – Jacksonville District
Collier County
Crocodile Lakes National Wildlife Refuge
Dade County Parks and Recreation
Department of Interior – U S Fish & Wildlife Service - Ecological Services
Department of Interior – U S Fish & Wildlife Service - Sandy Point NWR
Department of Agriculture, NRCS
Division of Marine Resources
Doc / NOAA/Policy & Planning
EPA, Region 4
Fisheries Management, Division Marine RES
Florida Inland Navigation District



Florida Department of State, Historic Preservation

Florida Department of Environmental Protection, Office of Intergovernmental Prog

Florida Department of Transportation, Env Mgmt Office

Florida Fish & Wildlife Cons Comm

Florida FWCC, Div. Marine Fisheries

Florida Game & Freshwater Fish Comm

Florida Department of Transportation, Env Mgmt Office

Florida Dep/Bur of Parks Division 5, Parks & Recreation

Florida Dep/Bur of Parks Division 5, Parks & Recreation

Florida Department of Agriculture

Florida Department of Agriculture And Consumer Services Division Of Administration

Florida Department of Environmental Protections - Banana River & Mosquito Lagoon Aquatic Preserves,
FDEP

Florida Department of Environmental Protection

Florida Department of Environmental Protection

Florida Department of State, Historic Preservation

Florida Department of Agriculture, NRCS

Florida Department of Transportation

Florida Division of Forestry

Florida Fish and Wildlife Conservation Commission

Florida Fish and Wildlife Conservation Commission, Division of Wildlife

Florida Inland Navigation District

Florida Panther NWR

J. N. "Ding" Darling NWR Complex

Merritt Island Wildlife Refuge

Miami-Dade Co Env Res Mgmt

Miami-Dade Co Historic Preservation Division

Miami-Dade Co.Park & Rec. Dept.

Miccosukee Tribe

Monroe County P&Z Dept

NASA

National Key Deer Refuge NWR

National Marine Fisheries Service

Natural Resource Dept. Collier County

Natural Resource Management



NOAA
 Planning And Environmental Resources Monroe County
 Seminole Nation of Oklahoma
 Seminole Tribe of Florida
 SFWMD
 St. John Island Administration
 St. Johns River Water Management District
 St. Johns River Water Management District, Division of Land Management
 St. Johns River Water Management District, Indian River Lagoon National Estuary Program
 SW Fla Reg Plann Council
 U.S. Army Corp. of Engineers
 U.S. Geological Survey
 University of The Virgin Islands - Virgin Island Marine Advisory Service
 University of The Virgin Islands-Cooperative Extension Service
 University of Virgin Islands
 US Army Corps of Engineers
 US Fish And Wildlife, Crocodile Lake NWR
 US Geological Survey
 USDA Natural Resources, Conservation Service
 USEPA, South Florida Office
 USGS - Biological Resource Division
 VI Department of Planning & Natural Resources - Division Of Fish & Wildlife
 Virgin Islands Department of Planning & Natural Resources - Coastal Zone Management
 Virgin Islands Department of Planning & Natural Resources - Water Pollution Control
 Program-Ambient Monitoring
 Virgin Islands Department of Planning and Natural Resources
 Virgin Islands Division of Fish and Wildlife
 Volusia County Environmental Management
 Volusia County Mosquito Control District

SERO-D

DATE

ADDRESS

Dear _____

The National Park Service, Southeast Region, and eight units of the National Park System (parks) are beginning an important new project, the development of an Exotic Plant Management Plan/Environmental Impact Statement (EIS) for South Florida and Caribbean Parks. These parks are:

- Virgin Islands National Park
- Buck Island Reef National Monument
- Christiansted National Historic Site
- Salt River Bay National Historic Park and Ecological Preserve
- Big Cypress National Preserve
- Biscayne National Park
- Canaveral National Seashore
- Dry Tortugas National Park
- Everglades National Park

The purpose of this Plan is to provide a programmatic framework for the management and control of invasive exotic plants in these South Florida and the Caribbean parks. It would also provide for restoration of native species and habitat conditions in ecosystems that have been invaded and would provide for protection of park resources and values from impairment resulting from exotic plant invasion and control activities. The Plan would provide consistency in planning for exotic vegetation management between the participating parks.

At this early stage of the process, called scoping, our goal is to establish a meaningful, ongoing conversation with you and other government leaders that will last through this process. During scoping we will work with you and the public to determine the scope of issues and a range of alternatives to be considered and analyzed in the Exotic Plant Management Plan/EIS, including areas of mutual interest between your office and the parks. A successful Plan would support coordinating efforts with partners and neighbors to achieve compatible goals for control of exotic plants and restoration of native species and ecosystems. We hope, through the planning process, to build on and enhance our ongoing joint efforts, such as the Florida Partnership with the Florida Department of Environmental Protection, and other cooperative exotic plant control projects with the parks' neighbors.

We invite you and/or your agency colleagues to attend a government partnership meeting scheduled for the morning of Dec. 2, 2003, 9:30 – 12:30, at Virgin Islands National Park, Multipurpose Room, 1300 Cruz Bay Creek, St. John, VI. At this meeting we will discuss the Exotic Plant Management Plan/EIS project in more detail, identify issues and areas of mutual interest, and discuss opportunities for participation in the planning process.



We value your participation in this effort. Please return the attached response form by November 25 to Dan Clark, Exotic Plant Specialist, Virgin Islands National Park, 1300 Cruz Bay Creek, St. John, VI, 00830, or FAX (340) 693-9500 by November 25, 2003. Thank you.

Sincerely,

Pat Hooks
Acting Regional Director

Attachment



United States Department of the Interior

NATIONAL PARK SERVICE

Environmental Quality Division

P.O. Box 25287

Denver, CO 80225-0287

IN REPLY REFER TO:

(2310)

November 15, 2005

Jay Slack, Field Supervisor
South Florida Ecological Services Field Office
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960

RE: National Park Service Proposed Exotic Plant Management

Dear Mr. Slack:

The National Park Service is proposing to implement an exotic plant management plan/EIS in five Florida Parks. The preferred alternative (proposed action) calls for focusing exotic plant treatment efforts in known threatened and endangered species habitat, resulting in long-term benefits for the species. The potential project area includes the entire boundary of each park listed below.

The following is a list of the parks included in this proposal:

Big Cypress National Preserve (BICY)
Biscayne National Park (BISC)
Canaveral National Seashore (CANA)
Dry Tortugas National Park (DRTO)
Everglades National Park (EVER)

As required by Section 7 of the Endangered Species Act, I am requesting verification of the following list of threatened and endangered species that may occur in the proposed project area. Species that may occur in the project area according to the NPS Biological Resources Division include:

BICY

<i>Ammodramus maritimus mirabilis</i>	Cape Sable seaside sparrow	E
<i>Puma concolor coryi</i>	Florida panther	E
<i>Mycteria americana</i>	wood stork	E
<i>Picoides borealis</i>	red-cockaded woodpecker	E
<i>Rostrhamus sociabilis plumbeus</i>	Everglade snail kite	E
<i>Haliaeetus leucocephalus</i>	bald eagle	T
<i>Drymarchon corais couperi</i>	eastern indigo snake	T



BISC

<i>Acropora cervicornis</i>	staghorn coral	C
<i>Opuntia corallicola</i>	semiphore prickly pear cactus	C
<i>Chelonia mydas</i>	green sea turtle	E
<i>Crocodylus acutus</i>	American crocodile	E
<i>Heraclides aristodemus ponceanus</i>	Schaus swallowtail butterfly	E
<i>Eretmochelys imbricata</i>	hawksbill sea turtle	E
<i>Mycteria americana</i>	wood stork	E
<i>Neotoma floridana smalli</i>	Key Largo woodrat	E
<i>Peromyscus gossypinus allapaticola</i>	Key Largo cotton mouse	E
<i>Pristis pectinata</i>	smalltooth sawfish	E
<i>Sterna antillarum</i>	least tern	E
<i>Sterna dougallii dougallii</i>	roseate tern	E
<i>Caretta caretta</i>	loggerhead sea turtle	T
<i>Haliaeetus leucocephalus</i>	bald eagle	T
<i>Charadrius melodus</i>	piping plover	T
<i>Drymarchon corais couperi</i>	eastern indigo snake	T
<i>Alligator mississippiensis</i>	American alligator	T
<i>Acropora palmata</i>	elkhorn coral	C
<i>Jacquemontia reclinata</i>	Beach jacquemontia	E

CANA

<i>Dendroica kitlandii</i>	Kirtland's Warbler	E
<i>Picoides borealis</i>	Red-cockaded woodpecker	E
<i>Haliaeetus leucocephalus</i>	Bald eagle	T
<i>Charadrius melodus</i>	Piping plover	T
<i>Mycteria americana</i>	Wood stork	E
<i>Aphelocoma coerulescens</i>	Florida scrub jay	T
<i>Peromyscus polionotus niveiventris</i>	Southeastern beach mouse	T
<i>Drymarchon corais couperi</i>	Eastern indigo snake	T
<i>Chelonia mydas</i>	Green sea turtle	E
<i>Eretmochelys imbricata</i>	hawksbill sea turtle	E
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	E
<i>Nerodia clarkia taeniata</i>	Atlantic salt marsh snake	T

<i>Caretta caretta</i>	Loggerhead sea turtle	T
<i>Dermochelys coriacea</i>	Leatherback sea turtle	E
<i>Canis rufus</i>	Red wolf	E

DRTO

<i>Chelonia mydas</i>	green sea turtle	E
<i>Sterna dougallii dougallii</i>	Roseate tern	E
<i>Caretta caretta</i>	Loggerhead sea turtle	T
<i>Charadrius melodus</i>	Piping plover	T

EVER

<i>Digitaria pauciflora</i>	twospike crabgrass	C
<i>Hemiargus thomasi bethunebakeri</i>	Miami blue butterfly	C
<i>Chamaesyce deltoidea pinetorum</i>	Pineland sandmat	C
<i>Dalea carthagenensis floridana</i>	Florida prairie-flower	C
<i>Eupatorium frustratum</i> (syn.), <i>Chromolaena frustrata</i>	Cape Sable thoroughwort	C
<i>Sideroxylon reclinatum</i> ssp. <i>austrofloridense</i>	Everglades bully	C
<i>Argythamnia blodgettii</i>	blodgett's silverbrush	C
<i>Ammodramus maritimus mirabilis</i>	Cape Sable seaside sparrow	E
<i>Crocodylus acutus</i>	American crocodile	E
<i>Puma concolor coryi</i>	florida panther	E
<i>Amorpha crenulata</i>	crenulate lead-plant	E
<i>Mycteria americana</i>	wood stork	E
<i>Rostrhamus sociabilis plumbeus</i>	everglade snail kite	E
<i>Cereus eriophorus</i> var. <i>fragrans</i> (<i>Harrisia fragrans</i>)	fragrant pricklyapples	E
<i>Chamaesyce deltoidea deltoidea</i>	deltoid spurge, Redland sandmat	E
<i>Chelonia mydas</i>	green sea turtle	E
<i>Dermochelys coriacea</i>	leatherback sea turtle	E
<i>Eretmochelys imbricata</i>	hawksbill sea turtle	E
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	E
<i>Sterna dougallii dougallii</i>	roseate tern	E
<i>Picoides borealis</i>	red-cockaded woodpecker	E



Sciurus niger	mangrove fox squirrel	C
Haliaeetus leucocephalus	bald eagle	T
Caretta caretta	loggerhead sea turtle	T
Chamaesyce garberi	Garber's spurge	T
Charadrius melodus	piping plover	T
Drymarchon corais couperi	eastern indigo snake	T
Orthalicus reses	stock island tree snail	T

If you have any questions or need additional information, please do not hesitate to contact me at (303) 987-6970 or Michael_Mayer@nps.gov. Thank you for your help.

Sincerely,

Michael Mayer



United States Department of the Interior

NATIONAL PARK SERVICE
Environmental Quality Division
P.O. Box 25287
Denver, CO 80225-0287

IN REPLY REFER TO:

(2310)

November 22, 2005

Edwin Muníz
Field Supervisor
Boquerón Ecological Services Field Office
P.O. Box 491
Boquerón, PR 00622

RE: National Park Service Proposed Exotic Plant Management

Dear Mr. Muníz:

The National Park Service is proposing to implement an exotic plant management plan in four Caribbean Parks. The preferred alternative (proposed action) calls for focusing exotic plant treatment efforts in known threatened and endangered species habitat, resulting in long-term benefits for the species. The potential project area includes the entire boundary of each park listed below.

The following is a list of the parks included in this proposal:

Buck Island Reef National Monument (BUIS)
Christiansted National Historic Site (CHRI)
Salt River Bay National Historic Park and Ecological Preserve (SARI)
Virgin Islands National Park (VIIS)

As required by Section 7 of the Endangered Species Act, I am requesting verification of the following list of threatened and endangered species that may occur in the proposed project area. Species that may occur in the project area according to the NPS Biological Resources Division include:

BUIS

<i>Sterna antillarum</i>	Least tern	E
<i>Pelecanus occidentalis</i>	brown pelican	E
<i>Caretta caretta</i>	Loggerhead sea turtle	T
<i>Dermochelys coriacea</i>	leatherback sea turtle	E
<i>Eretmochelys imbricata</i>	hawksbill sea turtle	E
<i>Chelonia mydas</i>	green sea turtle	T
<i>Ameiva polops</i>	St. Croix ground lizard	E



CHRI

No known threatened or endangered species

SARI

No known threatened or endangered species

VIIS

<i>Pelecanus occidentalis</i>	brown pelican	E
<i>Calypttranthes thomasiona</i>	NCN	E
<i>Dermochelys coriacea</i>	leatherback sea turtle	E
<i>Eretmochelys imbricata</i>	hawksbill sea turtle	E
<i>Zanthoxylum thomasionum</i>	St. Thomas pricklyash	E
<i>Dendroica kirtlandii</i>	Kirtland's warbler	E
<i>Charadrius melodus</i>	piping plover	T
<i>Chelonia mydas</i>	green sea turtle	T
<i>Sterna dougallii dougallii</i>	roseate tern	T

NPS is hoping to develop a programmatic process for ensuring compliance with its ESA responsibilities. If you have any questions or need additional information, please do not hesitate to contact me at (303) 987-6970 or Michael_Mayer@nps.gov. Thank you for your help.

Sincerely,

Michael Mayer



United States Department of the Interior

NATIONAL PARK SERVICE

Southeast Regional Office
Sam Nunn Atlanta Federal Center, 1924 Building
100 Alabama Street, S.W.
Atlanta, Georgia 30303

SER-PC

Dear Ms. Kojis:

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- Big Cypress National Preserve
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Sincerely,

Patricia A. Hooks
Acting Regional Director
Southeast Region

Enclosure

Mailed to attached list

bcc:

RD

Planning

Reading

Jhammond:



United States Department of the Interior

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



January 3, 2006

Michael Mayer
National Park Service
Environmental Quality Division
Post Office Box 25287
Denver, Colorado 80225-0287

Service Log No.: 4-1-06-TR-13621
Date Received: November 16, 2005
Project: National Park Service Proposed
Exotic Plant Management
County: Multi-County

Dear Mr. Mayer:

Thank you for your letter dated November 15, 2005, in which you requested the Fish and Wildlife Service's (Service) technical assistance. This letter provides the Service's comments on the above referenced project.

PROJECT DESCRIPTION

The National Park Service (NPS) is developing an Exotic Plant Management Plan and Environmental Impact Statement for five Florida National Parks: Big Cypress National Preserve, Biscayne National Park, Canaveral National Seashore, Dry Tortugas National Park, and Everglades National Park. These parks encompass an area of approximately 3,944 square miles of varied habitat in Monroe, Collier, Miami-Dade, and Volusia Counties, Florida.

THREATENED AND ENDANGERED SPECIES

On November 16, 2005, the Service received a request from the NPS to review and verify a list of species potentially occurring in these five National Parks. Several of the species that are on that list are not regulated by the Service. Additionally, species in Volusia County are under the jurisdiction of the Service's Jacksonville, Florida field office. To simplify this and future procedures related to the NPS's Exotic Plant Management Plan consultation, the Service's Jacksonville field office has deferred action regarding this consultation to the Service's South Florida Ecological Services Office (by email dated December 6, 2005). To clarify the matter of species under Service jurisdiction, below is a list of federally listed, proposed, and candidate species that could potentially occupy the 3,944 square-mile project area, or that could be affected by the actions planned therein.



Michael Mayer

Page 2

Mammals

Species	Status ¹
Florida panther (<i>Puma concolor coryi</i>)	E
Key deer (<i>Odocoileus virginianus clavium</i>)	E
Key Largo cotton mouse (<i>Peromyscus gossypinus allapaticola</i>)	E
Key Largo woodrat (<i>Neotoma floridana smalli</i>)	E
Lower Keys rabbit (<i>Sylvilagus palustris hefneri</i>)	E
Rice rat (<i>Oryzomys palustris natator</i>)	E
West Indian manatee (<i>Trichechus manatus</i>)	E, CH

Birds

Species	Status
Audubon's crested caracara (<i>Polyborus plancus audubonii</i>)	T
Bald eagle (<i>Haliaeetus leucocephalus</i>)	T
Cape Sable Seaside Sparrow (<i>Ammodramus maritimus mirabilis</i>)	E, CH
Everglade snail kite (<i>Rostrhamus sociabilis plumbeus</i>)	E, CH
Florida scrub-jay (<i>Aphelocoma coerulescens</i>)	T
Piping plover (<i>Charadrius melodus</i>)	T, CH
Red-cockaded woodpecker (<i>Dendrocopos borealis</i>)	E
Roseate tern (<i>Sterna dougallii dougallii</i>)	T
Wood stork (<i>Mycteria americana</i>)	E

Reptiles

Species	Status
American crocodile (<i>Crocodylus acutus</i>)	E, CH
Atlantic salt marsh snake (<i>Nerodia fasciata taeniata</i>)	T
Eastern indigo snake (<i>Drymarchon corais couperi</i>)	T
Green sea turtle (<i>Chelonia mydas</i>)	E
Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	E
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	E
Loggerhead sea turtle (<i>Caretta caretta</i>)	T

Invertebrates

Species	Status
Miami blue butterfly (<i>Cyclargus thomasi bethunebakeri</i>)	C
Schaus swallowtail butterfly (<i>Heraclides aristodemus ponceanus</i>)	E
Stock Island tree snail (<i>Orthalicus reses</i>)	T

Plants

Species	Status
Beach jacquemontia (<i>Jacquemontia reclinata</i>)	E
Big Pine partridge pea (<i>Chamaecrista keyensis</i>)	C
Blodgett's silverbush (<i>Argythamnia blodgettii</i>)	C

Michael Mayer

Page 3

Cape Sable thoroughwort (<i>Chromolaena frustrate</i>)	C
Carter's small-flowered flax (<i>Linum carteri carteri</i>)	C
Crenulate lead-plant (<i>Amorpha crenulata</i>)	E
Deltoid spurge (<i>Chamaesyce deltoidea deltoidea</i>)	E
Florida brickell-bush (<i>Brickellia mosieri</i>)	C
Florida indigo (<i>Indigofera mucronata keyensis</i>)	C
Florida pineland crabgrass (<i>Digitaria pauciflora</i>)	C
Florida prairie clover (<i>Dalea carthagenensis floridana</i>)	C
Florida semaphore cactus (<i>Consolea corallicola</i>)	C
Garber's spurge (<i>Chamaesyce garberi</i>)	T
Key tree-cactus (<i>Pilosocereus robinii</i>)	E
Pineland sandmat (<i>Chamaesyce deltoidea pinetorum</i>)	C
Sand flax (<i>Linum arenicola</i>)	C
Scrub lupine (<i>Lupinus aridorum</i>)	E
Small's milkpea (<i>Galactia smallii</i>)	E
Tiny polygala (<i>Polygala lewtonii</i>)	E
Wedge spurge (<i>Chamaesyce deltoidea serpyllum</i>)	C
Rugel's Pawpaw (<i>Deeringothamus rugelii</i>)	E
Okeechobee gourd (<i>Cucurbita okeechobeensis okeechobeensis</i>)	E

¹STATUS: E=endangered, T=threatened, PE=proposed endangered, CH=critical habitat, PCH=proposed critical habitat, C=candidate.

The Service has not conducted a site inspection to verify species occurrence information. However, we assume listed species occur in suitable ecological communities and recommend site surveys to determine the presence or absence of listed species. While the Service acknowledges that all of the aforementioned species may not occur in the project area or be affected by activities occurring in the project area, we suggest the NPS justify, at the time it requests initiation of consultation, why it has excluded certain species from consideration. Ecological communities suitable for listed species can be found in the species accounts in the *South Florida Multi-Species Recovery Plan* (Service 1999). This document is available on the internet at <http://www.fws.gov/verobeach/Programs/Recovery/vbms5.html>.

We have also provided for your consideration two Internet links: (1)<http://www.fws.gov/verobeach/Programs/Permits/Section7.html> and (2) <http://migratorybirds.fws.gov/>. The first link provides a table of species by county in south Florida that are protected as either threatened or endangered under the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The table does not include State-listed species. Please contact the Florida Fish and Wildlife Conservation Commission at 561-625-5122 to identify potential State-listed species occurring in the vicinity of your project. The second link provides information on species the Service is required to protect and conserve under other authorities, such as the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*) and the Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 701 *et seq.*).

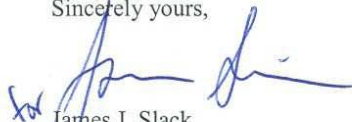


Michael Mayer

Page 4

Thank you for the opportunity to provide you with this information. We look forward to providing additional comments on the Exotic Management Plan and Environmental Impact Statement when they become available for review. If you have questions, please contact Mike Carlson at 772-562-3909, extension 296.

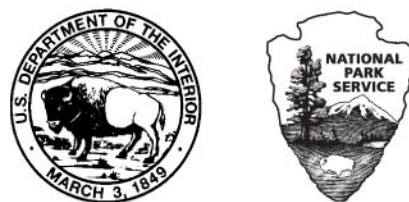
Sincerely yours,



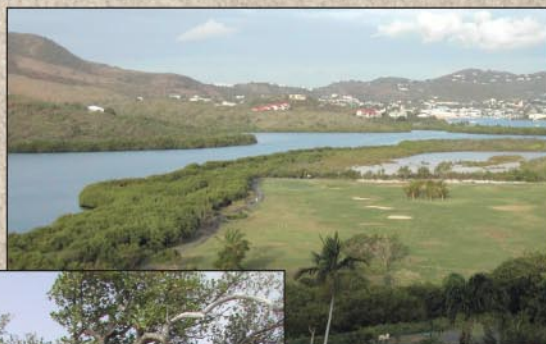
James J. Slack
Field Supervisor
South Florida Ecological Services Office

LITERATURE CITED

U.S. Fish and Wildlife Service (Service). 1999. South Florida multi-species recovery plan. Fish and Wildlife Service; Atlanta, Georgia.



As the nation's principal conservation agency, the Department of the Interior has responsibilities 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 American Indian reservation communities and for people who live in island territories under U.S. administration.



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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