



March 23, 2012

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(850) 488-3831
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Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: (850) 488-4676

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(800) 955-8771 (T)
(800) 955-8770 (V)

MyFWC.com

Ms. Cindy Mulkey, Administrator
Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, FL 32399

Re: Site Certification Application, Florida Power and Light, Turkey Point Nuclear Units 6 and 7, Miami-Dade County, Florida; PA03-45A3, Agency Report, Turkey Point Units 6 & 7 Site Portion

Dear Ms. Mulkey:

Florida Fish and Wildlife Conservation Commission (FWC) staff have coordinated our agency's review of the Site Certification Application, Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities portion of the Florida Power and Light Company(FPL) Turkey Point Nuclear Plant Units 6 and 7 project and provides the attached Agency Report and Recommendations for Conditions to be included in the Turkey Point Nuclear Units 6 and 7 Certification in accordance with 403.507(2)(a)4, Florida Statues.

FPL will need to comply with the State of Florida's listed species requirements found in Chapter 68-27A, Florida Administrative Code (F.A.C.), prior to construction of the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities. This also includes requirements specified in the Bald Eagle Management Plan.

We recommend approval of the FPL Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities with the inclusion of recommended conditions related to listed species and their habitat; biological survey and monitoring (pre- and post-construction); and mitigation for impacts.

We appreciate the opportunity to review this project. If you would like to coordinate further, please contact Ms. Jane Chabre at (850) 410-5367 or by email to FWCConservationPlanningServices@myfwc.com, and she will be glad to make the necessary arrangements. If you should have technical questions regarding the information in the attached report, please contact Jennifer Goff at (561) 882-5711 or by email at jennifer.goff@myfwc.com.

Sincerely,

Scott Sanders, Director
Office of Conservation Planning Services

SS/jdg
FPL Turkey Point Nuclear Units 6 and 7_1241_032312
ENV 1-3-2

cc: Jena Mier, FPL
700 Universe Blvd
Juno Beach, FL 33408
Jena.Mier@fpl.com

Ms. Cindy Mulkey
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Marister Ruiz
700 Universe Blvd
Juno Beach, FL 33408
Marister.Ruiz@fpl.com

John Wrublik
John.Wrublik@fws.gov

Patrick Pitts
Patrick.Pitts@fws.gov

Agency Report and Proposed Conditions to be Included in the State Certification

Project Description

Florida Power and Light Company (FPL) proposes to build and operate two new nuclear generating units (Units 6 & 7), each with an approximate electrical output of 1,100 megawatts; and supporting buildings, facilities, and equipment at a site within the existing Turkey Point plant property boundaries. The project includes Turkey Point Units 6 & 7, associated non-linear facilities, and associated non-transmission linear facilities including: nuclear administration building, training building and parking area; an FPL reclaimed water treatment facility and treated reclaimed water delivery pipelines; radial collector wells and delivery pipelines; and equipment barge unloading area.

Affected Resources

Effects on State-Listed Species

The Turkey Point Nuclear Power Plant Units 6 & 7, associated non-linear facilities, and associated linear facilities will likely impact federally- and state-listed species, as described in the application. A listing of all the state- and federally listed species potentially impacted by the proposal and their listing status is included in the proposed conditions.

There are a number of listed species either observed within the Turkey Point Unit 6 & 7 Site, associated non-linear and linear non-transmission facilities or with a moderate to high likelihood of occurring including least terns, black skimmers, Florida panther, eastern indigo snake, and several listed wading bird species.

On a case-by-case basis, either a relocation or incidental take permit may be required for each impacted species. If there is evidence that any individuals of these species are present, then the applicant must report the findings to the FWC. If impacts to these species cannot be avoided, then the applicant must contact the FWC before taking any action that might result in an impact to those species.

There is also potential for the construction and operation of the radial collector wells to impact the Biscayne Bay (Bay) seagrass and benthic resources, which could affect the fish and wildlife resources of the Bay. Preconstruction, construction, and post-construction monitoring, data reporting, and data comparison will be required to assess impacts to the seagrass and benthic resources of the Bay. If there is evidence that construction or operation of the radial collector wells are impacting fish and wildlife resources of the Bay, minimization and mitigation activities will be necessary.

Proposed Conditions

We recommend approval of the FPL Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities with the following proposed conditions to be included in the special conditions as part of the certification process related to specific listed species and their habitat; biological survey and monitoring (pre- and post-construction); and mitigation for impacts.

**TURKEY POINT UNITS 6 AND 7
CONDITIONS OF CERTIFICATION**

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

A. Listed Species Conditions

The following table contains state and federally listed species that occur in the State of Florida and may occur within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. The table contains species that are potentially impacted by the activities proposed on the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. Therefore, these conditions of certification apply to the species listed in this table that are found within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. Listed Species Occurring or Potentially Occurring in the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way as of October 2011:

Common Name	Scientific Name	Status
American alligator	<i>Alligator mississippiensis</i>	FT
American crocodile	<i>Crocodylus acutus</i>	FT
American oystercatcher	<i>Haematopus palliatus</i>	SSC
Bald eagle	<i>Haliaeetus leucocephalus</i>	**
Black skimmer	<i>Rhynchops niger</i>	SSC
Brown pelican	<i>Pelecanus occidentalis carolinensis</i>	SSC
Eastern indigo snake	<i>Drymarchon couperi</i>	FT
Everglades mink	<i>Mustela vison evergladensis</i>	ST
Florida manatee	<i>Trichechus manatus latirostris</i>	FE
Florida Panther	<i>Puma concolor coryi</i>	FE
Least tern	<i>Sterna antillarum</i>	ST
Little blue heron	<i>Egretta caerulea</i>	SSC
Limpkin	<i>Aramus guarauna</i>	SSC
Piping plover	<i>Charadrius melodus</i>	FT
Reddish egret	<i>Egretta rufescens</i>	SSC
Rivulus	<i>Rivulus marmoratus</i>	SSC
Roseate spoonbill	<i>Platalea ajaja</i>	SSC
Snowy egret	<i>Egretta thula</i>	SSC
Tricolored heron	<i>Egretta tricolor</i>	SSC
White-crowned pigeon	<i>Patagioenas leucocephala</i>	ST

White ibis	<i>Eudocimus albus</i>	SSC
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FE = Federally-designated Endangered; FT = Federally-designated Threatened; ST = State-designated Threatened; SSC = State Species of Special Concern

* Due to similarity to another federally threatened species

** While the bald eagle has been both state and federally delisted, it is still governed by the state bald eagle management plan and the federal Bald and Golden Eagle Protection Act.

Note: Florida's Endangered and Threatened species rule changed in November 2010. The list is now comprised of federally designated endangered and threatened species or state designated threatened species. Additionally, the Species of Special Concern (SSC) designation has been retained in the rule until those species designated as SSC are evaluated for listing as state designated threatened species.

[Chapters 68A-27 and 68A-16, Florida Administrative Code (F.A.C.)]

B. General Listed Species Survey

1. The Licensee shall coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) to obtain and follow the current survey protocols for all listed species that may occur within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, as well as accessible appropriate buffers within FPL property or rights of way as defined by the listed species' survey protocols, prior to conducting detailed surveys.

2. Surveys shall be conducted prior to clearing and construction in accordance with the survey protocols. The results of those detailed surveys shall be provided to FWC in a report, and coordination shall occur with the FWC on appropriate impact avoidance, minimization, or mitigation methodologies.

[Article IV, Sec. 9, Fla. Constitution; Section 379.2291, F.S., Sections 403.507 and 403.5113(2), F.S., and Chapter 68A-27, F.A.C..]

C. Specific Listed Species Surveys

Before land clearing and construction activities within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way occur, the Licensee shall conduct an assessment for listed species which shall note all habitat, occurrence or evidence of listed species. Listed species to be included in this survey shall include the bald eagle and those species listed as threatened, or species of special concern by the FWC or those listed as endangered or threatened by U.S. Fish and Wildlife Service (USFWS). Wildlife surveys shall be conducted during the reproductive or "active" season for each species that falls before the projected clearing activity schedule unless otherwise approved by the FWC or USFWS. For species that are difficult to detect, the Licensee may make the assumption that the species is present and plan appropriate avoidance/mitigation measures after consultation with FWC. The Licensee will submit avoidance/mitigation measures for FWC post-certification review and approval at least 60 days prior to commencing clearing or construction activities within the surveyed area.

1. This survey shall be conducted in accordance with USFWS/FWC guidelines and methodologies by a person or firm that is knowledgeable and experienced in conducting flora and fauna surveys for each potentially occurring listed species.
2. This survey shall identify any wading bird colonies within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way that may be affected.
3. This survey shall identify locations of breeding sites, nests, and burrows for listed wildlife species. Nests and burrows shall be recorded with GPS coordinates, identified on an aerial photograph, and submitted with the final listed species report. Although nests and burrows may be recorded individually with GPS, the FWC prefers that any applicable protection radii surrounding groups of nest sites and burrows be included on a site specific basis, rather than around individual nests and burrows, and be physically marked so that clearing and construction shall avoid impacting them.
4. This survey shall include an estimate of the acreage and percent cover of each existing vegetation community (Florida Land Use, Cover and Forms Classification System, or FLUCFCS, at the third degree of detail) of each community that is contained within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way prior to land clearing and construction activities using GIS. Examples of such wildlife-based habitat classification schemes include Florida's State Wildlife Action Plan (FWC 2005), Descriptions of Vegetation and Land Cover Types (FWC 2004), or Natural Communities Guide (FNAI 1990).

[Article IV, Sec. 9, Fla. Constitution; Sections 379.2291, 403.526 and 403.5317, F.S.); and Chapters 68A-27, 68A-4, 68A-16, F.A.C.]

D. Listed Species Locations

Where any suitable habitat or evidence is found of the presence of listed species, including but not limited to those specified in E-L below, within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, the Licensee shall report those locations to, and confer with, the FWC or FWS as appropriate to determine whether additional pre-clearing surveys are warranted, and to identify potential mitigation, or avoidance recommendations. If pre-clearing surveys are required by FWC and FWS as appropriate and as specified in these conditions of certification, they shall occur in the reproductive season prior to the anticipated date for the start of construction within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. The Licensee shall not construct in areas where evidence of listed species was identified during the initial survey until the particular listed species issues have been resolved as follows:

1. **Listed Wildlife Species:**

If listed wildlife species are found, their presence shall be reported to the DEP Siting Coordination Office, the FWC, and the USFWS.

2. Species Management Plan:

If total avoidance of state-listed wildlife species is not feasible, the Licensee shall consult with the FWC to determine the steps appropriate for the species involved to avoid, minimize, mitigate, or otherwise appropriately address potential impacts. For wildlife species, these steps shall be memorialized in a Species Management Plan and submitted to the FWC for review and approval.

[Article IV, Sec. 9, Fla. Constitution; Sections 379.2291, 403.507 and 403.5113(2), F.S.; and Chapter 68A-27, F.A.C.]

E. Bald Eagle

1. The Licensee shall avoid impacts to bald eagle (*Haliaeetus leucocephalus*) nests where possible. If construction activities cannot be avoided within a 660-foot nest buffer zone, construction activities shall be conducted consistent with the FWC Eagle Management Guidelines as outlined in the FWC-approved Bald Eagle Management Plan dated April 9, 2008 (or any subsequent FWC-approved versions). In areas where bald eagle nests are present, all reasonable and practicable efforts shall be made to avoid construction activities during the nesting season (October 1 - May 15, or when eagles are present before October 1 or after May 15).

2. In accordance with the FWC Eagle Management Guidelines, for construction areas that fall within 330 feet of an active or alternate bald eagle nest, as defined in the Bald Eagle Monitoring Guidelines, construction activities shall be conducted only during the non-nesting season (May 16 - September 30). Any construction activities that fall within 660 feet of the nest during the nesting season shall be conducted following USFWS-approved Bald Eagle Monitoring Guidelines, dated 2007, or subsequent USFWS-approved versions.

3. In areas where adverse impacts to nests cannot be avoided, resulting in nest disturbance, the information required for an FWC Eagle Permit shall be obtained from the FWC, as authorized by Rule 68A-16.002, F.A.C., and minimization and conservation measures outlined in the FWC Bald Eagle Management Plan shall be followed, as applicable.

[Article IV, Sec. 9, Fla. Const.; Section 403.507, F.S., and Rule 62-17.191, F.A.C.; Chapter 68A-27, F.A.C., and Rule 68A-16.002, F.A.C.]

F. Shorebirds

1. Surveys shall be conducted in potential shorebird nesting habitat within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way to identify and document the presence of nesting seabirds and shorebirds (shorebird) included in the attached list. Nesting shorebird surveys shall be conducted by trained individuals (Shorebird Observer) with proven shorebird identification skills and avian survey experience. Credentials of the Shorebird Observer will be submitted to the FWC Regional Species Conservation Biologist

(Regional Biologist) (**Attachment A**) for review and approval at least 2 weeks before commencing clearing or construction activities. Shorebird Observers will use the following survey protocols:

a. Shorebird Observers must review and become familiar with the general information and data collection protocol outlined on the FWC's Florida Shorebird Database website (www.FLShorebirdDatabase.org). An outline of data to be collected, including downloadable field data sheets, is available on the website.

b. The nesting season is April 1 – September 1 for seabirds, but flightless young may be present through September. The American oystercatcher may initiate nesting as early as March 15. Nesting season surveys must begin on the first day of nesting season (March 15 in areas where American oystercatchers have historically nested, or April 1 elsewhere) or 10 days prior to commencing clearing or construction activities (including surveying activities and other pre-construction presence), whichever is later. Surveys must be conducted through August or until all nesting activity has concluded, whichever is later. If the survey results determine that no listed species are found and no nesting is occurring, and clearing or construction commences prior to the next nesting season, then no additional surveys are required in the survey area, with the exception of ground nesting species, which must be surveyed for daily pursuant to the remainder of these conditions.

Nesting season surveys shall be conducted in all potential shorebird nesting habitat within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way boundaries that may be impacted by construction or pre-construction activities during the nesting season.

c. During the pre-construction and construction surveys for detecting new nesting activity in shorebird nesting habitat will be completed on a daily basis prior to movement of equipment, operation of construction vehicles, or other activities that could potentially disrupt nesting behavior or cause harm to the birds or their eggs or young.

d. Surveys shall be conducted by walking the length of all nesting habitat within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way and visually inspecting, using binoculars or spotting scope, for the presence of shorebirds exhibiting nesting behavior.

i.) If an ATV or other vehicle is needed to cover large project areas, operators will adhere to the FWC's Best Management Practices for Operating Vehicles on the Beach (**Attachment B**). The vehicle must be operated at a speed <6 mph and be run at or below the high-tide line. The Shorebird Observer will stop at no greater than 200 meter intervals to visually inspect for nesting activity.

e. Once any nest is confirmed by the presence of a scrape, eggs, or young, the Shorebird Observer will notify the Regional Biologist (**Attachment A**) within 24 hours. All breeding and nesting activity will be reported to the Florida Shorebird Database website within one week of data collection.

2. If nesting behavior is observed within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, the Licensee shall establish a 300 ft-wide buffer zone around any location within FPL property or rights of way where shorebirds have been engaged in nesting behavior, including territory defense. All construction-related disturbances shall be prohibited in this buffer zone.

a. The width of the buffer zone shall be increased if birds appear agitated or disturbed by construction.

b. Any modifications to the 300 ft-wide buffer must be approved by the Regional Biologist (**Attachment A**) before being implemented.

c. No construction activities, movement of construction vehicles, or stockpiling of equipment shall be allowed within a buffer zone.

d. Heavy equipment and other construction vehicles shall not be operated near nest locations when flightless chicks are present outside a buffer zone. If movement of construction vehicles or equipment is necessary, it must be accompanied by the shorebird observer who will insure no flightless birds are in the path of a moving construction vehicle and no tracks capable of trapping flightless young remain.

3. Where practicable, the Licensee will mitigate for loss of shorebird habitat in consultation with FWC.

a. For least terns, areas of gravel substrate throughout the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, including significantly disturbed areas, may provide suitable nesting habitat. Least terns are known to use artificial nesting sites such as dredged material deposits. The existing cooling canals as part of the industrial wastewater system may contain such habitat. As mitigation for loss of least tern habitat, the Licensee will consider identifying and enhancing/creating least tern habitat in appropriate areas within the Turkey Point Turkey Point Site, such as, but not limited to, areas in the industrial wastewater facility. The Licensee may contact the appropriate FWC Regional Biologist when considering location and appropriate methods of enhancement or restoration as needed.

b. For shorebirds utilizing mudflat habitat, the Licensee will consider mitigation through preservation, restoration, enhancement, or a combination

thereof, of similar habitat within the Everglades Mitigation Bank or other location deemed as appropriate in consultation with the U.S. Fish and Wildlife Service.

[Article IV, Sec. 9, Fla. Const.; Section 403.507, F.S., and Rule 62-17.191, F.A.C.; Chapter 68A-27, F.A.C., and Rule 68A-16.001, F.A.C.]

G. Everglades Mink

1. A survey by an experienced biologist (individual or firm with documented experience with Everglades mink or other mustelids) shall be conducted in the reproductive season prior to the initiation of clearing activity in areas where suitable potential habitat exists within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities rights of way, to determine whether any mink are present, and if any den areas are present. To the extent practicable, the survey shall be conducted during the mink mating season, which extends from September through November. Although chalkdusted trackboards and anal scent attractant has proven effective in detecting the Everglades mink (Humphrey and Zinn 1982), camera traps are another option.

References: Humphrey, S.R. and T.R. Zinno 1982. Seasonal habitat use by river otters and Everglades mink in Florida. *Journal of Wildlife Management* 46:375- 381.

2. In the event that surveys determine presence of Everglades Mink within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities, the following measures shall be used to minimize and mitigate for potential impacts.

- a. Licensee and FWC will meet to discuss the specific issues and mitigation alternatives.
- b. Licensee will then provide a detailed mitigation plan to address the specific impacts, which must be reviewed and approved by FWC, and be consistent with all other COCs or federal permit conditions.
- c. Licensee will provide a monitoring report after a designated period to document effectiveness of the mitigation plan.
- d. Corrective action alternatives will be determined in consultation with FWC and implemented if necessary.

[Article IV, Sec. 9, Fla. Const.; Section 403.507 and 379.2291, F.S., Section 403.5317, F.S., and Rule 62-17.660, F.A.C.; Section 379.2291, F.S.; Chapter 68A-27, F.A.C.]

H. Florida Manatee

With respect to construction, maintenance and operation within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities rights of way:

1. The Standard Manatee Conditions for In-Water Work (revision 2012) shall be followed for all in-water activity located where waters are accessible to manatees. These are listed in **Attachment C**. Blasting as a dredge method shall be prohibited in or adjacent to waters accessible to manatees, unless no other alternative exists, in which case the Licensee may request approval by FWC. An adequate Blast and Protected Species Watch Plan must be submitted to the Imperiled Species Management Section of the FWC for post-certification review prior to these methodologies being used.

2. At least 60 days prior to the beginning of in-water construction located where waters are accessible to manatees, the Licensee shall contact the FWC to determine whether observers shall be required, how many observers will be needed and who those observers will be. If observers are recommended, manatee observers must be on site during all in-water construction activities and will advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity. Any in-water work associated with construction or demolition activities shall not be performed after sunset. Movement of a work barge other associated vessels is permitted after sunset. Following project completion, a report summarizing manatee sightings, collisions or injuries shall be prepared by FPL. This report shall be submitted within 30 days following construction completion to the FWC's Imperiled Species Management Section at imperiledspecies@myfwc.com

3. If a cofferdam or sheet piling is used during in-water construction to minimize release of sediment, the area inside (behind) the cofferdam must be checked for the presence of manatees during and after installation of the barrier before further work occurs to determine that manatees have not been entrapped. Manatee observers are required during installation and removal of the barrier but are not required during landward construction.

[Article IV, Sec. 9, Fla. Const.; Section 403.507, F.S., Section 403.5317, F.S., and Rule 62-17.660, F.A.C.; Sections 379.2291 and 379.2431, F.S.; and Chapter 68A-27, F.A.C.]

I. Florida Panther

1. The Licensee shall take proper precautions during clearing and construction to protect panthers from accidental injury due to conditions within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way during construction.

a. Construction policies and practices identified by the FWC to protect panthers shall be used by the Licensee whenever feasible. These include:

- Limiting speeds on access roads to 45 mph or less and adjust trucking activities and material delivery schedule within the panther consultation area to reduce speeds at dawn and dusk.
- Conducting frequent and unannounced site inspections to monitor for compliance with the above.

b. Any panther observations (dead or alive) made by Licensee's employees or contractors shall be verified by a qualified expert agreed to by FWC and reported to FWC within 24 hours.

2. The Licensee shall take proper precautions during construction and plant operations to protect panthers from accidental injury due to vehicle collisions along access roadways in the panther consultation area as defined by the USFWS (**Attachment D**), including SW 359th Street, SW 137th Avenue, and SW 117th Avenue.

a. Speeds on access roads shall be limited to 45 mph or less. Passive measures shall be implemented to enforce slower speeds and shall include lighted speed signage, speed bumps, and slow speed zones at dawn and dusk, and panther crossing signage.

b. In lieu of the passive measures identified in this condition, the Licensee may choose to use exclusionary fencing along the length of SW 359th Street between SW 117th Avenue and SW 137th Avenue to prevent accidental injury and/or panther mortality due to vehicle collisions.

c. Any panther observations (dead or alive) made by Licensee's employees or contractors shall be verified by a qualified expert agreed to by FWC and reported to FWC within 24 hours.

3. The Licensee shall construct at least one (1) wildlife underpass and associated fencing to facilitate north-south movement across SW 359th Street.

a. The underpass shall be located between 117th Avenue and 137th Avenue in an appropriate location for use by panthers. The Licensee shall consult with FWC during placement of the underpass.

b. The underpass shall be of appropriate size and design to facilitate panther movement. The Licensee shall consult with FWC during design of the underpass.

[Article IV, Sec. 9, Fla. Const.; Section 403.507 and 379.2291, F.S., Rule 62-17.660, F.A.C.; Chapter 68A-27, F.A.C.]

J. Rivulus

1. Prior to clearing, the Licensee shall conduct surveys for rivulus using modified bottomless lift nets (McIvor and Silverman 2010) or other approved methodology in potentially impacted mangrove habitats within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities.

Reference: McIvor, C. C. and N. L. Silverman 2010. Modifications to the bottomless lift net for sampling nekton in tidal mangrove forests. Wetlands Ecology and Management (published on-line)

2. If surveys determine the presence of Rivulus within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission

facilities, the following measures shall be used to minimize and mitigate for potential impacts.

e. Licensee and FWC will meet to discuss the specific issues and mitigation alternatives.

f. Licensee will then provide a detailed mitigation plan to address the specific impacts, which must be reviewed and approved by FWC, and be consistent with all other COCs or federal permit conditions.

g. Licensee will provide a monitoring report after a designated period to document effectiveness of the mitigation plan.

h. Corrective action alternatives will be determined in consultation with FWC and implemented if necessary.

[Article IV, Sec. 9, Fla. Const.; Section 403.507 and 379.2291, F.S., Rule 62-17.660, F.A.C.; Chapter 68A-27, F.A.C.]

K. Radial Collector Well System Biological Monitoring

1. The “Radial Collector Well System Monitoring Plan” (RCWSMP) being required by the Department of Environmental Protection’s Siting Certification Office under these conditions shall be submitted to the FWC and shall be consistent with the provisions below for the purposes of determining whether there are impacts to the fish and wildlife resources of Biscayne Bay resulting from construction and operation of the radial collector well system (RCW).

2. In order to accurately assess potential impacts to listed species dependent on resources within Biscayne Bay, monitoring of seagrass cover and benthic fauna for potential impacts to state listed species in the vicinity of the proposed construction and operation of the RCW shall be conducted by the Licensee prior to RCW construction, during RCW construction and post-RCW construction as follows:

a. Pre-construction (baseline) monitoring shall be conducted for a period of two years prior to the onset of RCW system construction.

b. Construction monitoring shall be conducted from the onset of RCW construction through completion of RCW construction.

c. Post-construction monitoring shall be conducted for two years after Turkey Point Units 6 & 7 commercial operation date (COD) and including the first two RCW operational events. If two RCW operational events do not occur within the two year post-construction monitoring period, one year of quarterly monitoring shall be conducted following the first two RCW operational events.

3. In order to accurately assess potential impacts to listed species dependent on resources within Biscayne Bay, pre-construction (baseline) monitoring, construction monitoring, and post-construction monitoring, as defined above, of seagrass cover and benthic fauna shall be conducted within the area surrounding the Turkey Point peninsula encompassed by the extent of the RCW laterals. Two monitoring control sites shall be located in seagrass beds within five miles of the Turkey Point peninsula.

a. Seagrass and benthic monitoring shall be conducted quarterly during the pre-construction, construction, and post-construction monitoring periods. The following methodologies shall be used during pre-construction, construction, and post-construction monitoring.

b. **Seagrass Monitoring Methodology:** A series of 30 linear transects surrounding the Turkey Point peninsula shall be established, evenly spaced within the area encompassed by the extent of the RCW laterals. Each transect shall be 300 meters in length, with sampling stations at the shoreward and seaward ends of each transect and at 25-meter intervals in between for a total of twelve sampling locations per transect. Within each control site, ten 300-meter transects shall be established with sampling stations at 50-meter intervals for a total of seven sampling locations per transect. At each sampling station, a 0.25-m² PVC quadrat shall be randomly placed on the bottom three times. All seagrass species present within the quadrats shall be identified, and their percent cover visually estimated using Braun Blanquet or another approved methodology. All in-water observations shall be conducted by biologists with considerable practicable experience working in the seagrass communities of south Florida.

c. **Benthic Fauna Monitoring Methodology:** Ten benthic fauna sampling stations shall be established within the area encompassed by the RCW laterals, and 10 sampling stations shall be located within the control sites. Three replicate benthic samples shall be collected at each station, using a diver-operated core sampler with a surface area of 225 cm. Each sample shall be rinsed in the field using a 0.5 mm mesh bucket sieve and preserved in separate sample containers with a 10 percent buffered formalin solution. Laboratory taxonomic analysis shall include organism enumeration and identification to the lowest practicable taxon.

4. The Licensee shall be required to submit regular monitoring reports. All reports shall include all data and statistical analyses resulting from the monitoring requirements.

a. **Timing.** During the pre-construction monitoring period, the construction monitoring period, and the post-construction monitoring period, as defined above, the Licensee shall prepare a report after each year (365 days) of monitoring

activity (“annual reports”). Reports shall be submitted to the DEP SCO and FWC for review within 90 days following the completion of the annual monitoring periods.

b. Additional requirement for post construction monitoring. During the post-construction monitoring period, the reports shall summarize all data and statistical analyses collected to date and provide an analysis comparing those monitoring data to the control data and to the pre-construction monitoring (baseline) data.

5. If the DEP SCO and FWC determines that the comparison of pre-construction (baseline) monitoring and construction monitoring or post-construction monitoring data indicate statistically significant adverse impact to the fish and wildlife resources of Biscayne Bay resulting from RCW construction and/or operation activities, then additional measures shall be required to evaluate or to abate such impacts. These measures may include enhanced monitoring, modeling, or mitigative measures.

[Article IV, Sec. 9, Fla. Const.; Section 403.507, F.S., Rule 62-17.660, F.A.C.; Section 379.2291, and 379.2431, F.S.; Chapter 68A-27, F.A.C.]

**Florida Fish and Wildlife Conservation Commission
Regional Species Biologist - Contacts for Shorebird Issues
January 2012**

Northwest Region

Dr. John Himes
FL Fish and Wildlife Conservation
Commission
3911 Highway 2321
Panama City, FL 32409-1658
(850) 265-3676

North Central Region

Dr. Terry Doonan
FL Fish and Wildlife Conservation
Commission
P.O. Box 177
Oluatee, FL 32072
(904) 758-5767

Northeast Region

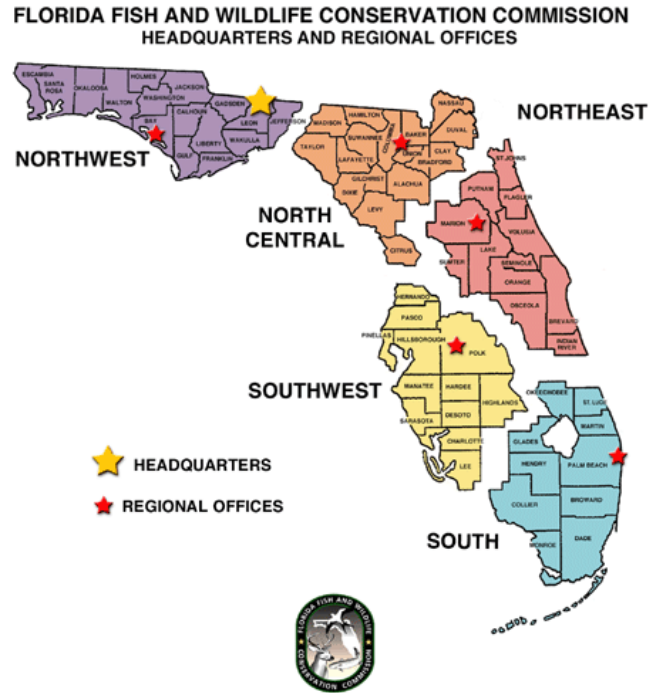
Mr. Alex Kropp
FL Fish and Wildlife Conservation
Commission
1239 S.W. 10th Street
Ocala, FL 34474-2797
(352) 732-1225

Southwest Region

Ms. Nancy Douglass
FL Fish and Wildlife Conservation
Commission
3900 Drane Field Road
Lakeland, FL 33811-1299
(863) 648-3200

South Region

Mr. Ricardo Zambrano
FL Fish and Wildlife
Conservation Commission
8535 Northlake Boulevard
West Palm Beach, FL 33412
(561) 625-5122



Best management practices for operating vehicles *on the beach*



Operating vehicles, including ATVs, on the beach can destroy wildlife habitat and be harmful or fatal to wildlife. This is one reason that, in many areas, beach-driving is strictly prohibited year-round to all but authorized personnel. The eggs and flightless young of beach-nesting birds can be virtually invisible, especially from a vehicle. Sea turtles coming ashore to nest may be scared away by vehicles and hatchlings are vulnerable to being run over. Both adult and hatchling sea turtles can be disoriented by any form of artificial light, including headlights. Ruts made by vehicles can trap and disorient turtle hatchlings and baby birds. May through October is considered sea turtle nesting season. However, some species of sea turtles have been known to nest as early as February, and hatchlings can emerge from their nests as late as the mid-winter months. Beach-nesting birds may be active from mid-February through the end of August. Therefore it is best to avoid beach-driving whenever feasible and critical that everyone authorized to operate a vehicle on the beach during these periods of the year take the following precautions:

- Enter the beach only at designated access points and proceed directly to the hard-packed sand near or below the high tide line. Avoid driving on the upper beach whenever possible, and never drive over any dunes or over beach vegetation. If beach conditions require driving above the high tide line, avoid those areas with known sea turtle nests or shorebird breeding areas.
- Avoid the wrack line or areas of dense seaweed, which may contain sea turtle hatchlings or baby birds.
- Minimize ruts on the dry sandy beach by lowering tire pressure and using 4WD, particularly in front of sea turtle or bird nests.
- Drive slowly. Movement should be slow enough to observe any bird eggs, chicks, or sea turtle hatchlings in the vehicle's line of travel. Please be aware that recently hatched chicks often feed along the water's edge. They may freeze in place rather than run away when ATVs or other vehicles approach.
- Whenever possible, avoid driving on the beach at night.
- Do not park vehicles adjacent to nests or posted areas, and, if you must drive on the beach at night, turn headlights off when parking.
- If you observe a sea turtle crawling out of the surf, stop the vehicle and turn off all lights. No additional movement should occur until the turtle moves across the beach and begins digging her nest or moves into deeper water.



STANDARD MANATEE AND MARINE TURTLE CONSTRUCTION CONDITIONS FOR IN-WATER WORK

March 2012

The permittee shall comply with the following conditions intended to protect manatees and marine turtles from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of marine turtles, manatees and manatee speed zones, and the need to avoid collisions with (and injury to) these protected marine species. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees and marine turtles cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee or marine turtle movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of marine turtles and manatee(s). All in-water operations, including vessels, must be shutdown if a marine turtle or manatee comes within 50 feet of the operation. Activities will not resume until the animal(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the animal(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a marine turtle or manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922, and to FWC at ImperiledSpecies@myFWC.com. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service (for north Florida, Jacksonville 1-904-731-3336 or for south Florida Vero Beach 1-772-562-3909).
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.
- g. Lighting on offshore or onshore equipment including dredge, crew boats, and all ancillary vessels shall be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the water's surface and visibility from adjacent marine turtle nesting beaches while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity of all fixtures on the vessels shall be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect marine turtles. Lights used to survey nearshore or inlet waters for manatees and sea turtles shall be mounted as low as possible and aimed to minimize visibility from adjacent nesting beaches. Shields shall be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area.

CAUTION: MANATEE HABITAT

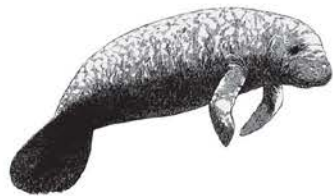
All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

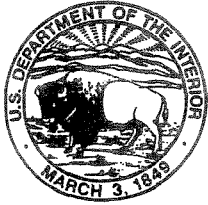
Report any collision with or injury to a manatee:



Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC



United States Department of the Interior

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



February 19, 2007

David S. Hobbie
Chief, Regulatory Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Hobbie:

The Fish and Wildlife Service (Service) has reviewed your letter dated December 20, 2006, referencing the development of a revised Panther Key, which will assist the Corps project managers in their effect determinations as prescribed under Section 7(a) (2) of the Endangered Species Act of 1973 as amended (Act) (87 Stat 884 16 U S C 1531 *et seq*) and its implementing regulations at 50 CFR Section 402. The original Panther Key has been used since August 8, 2003, by the Corps to evaluate all applications for a Department of Army permit under Section 404 of the Clean Water Act for projects in the consultation area. The Florida panther consultation area was depicted in the Service's interim Standard Local Operating Procedures for Endangered Species (SLOPES) for the Florida Panther (Service 2000).

In our original 2000 evaluation we provided a consultation area map (MAP) to assist the Corps in determining which projects may have an effect of the Florida panther. The MAP was generated by the Service by overlaying existing and historical panther telemetry data on a profile of Florida and providing a connecting boundary surrounding most of these points. Since the development of the MAP, we have received more accurate and up-to-date information on Florida panther habitat usage. Specifically we have received two documents that the Service believes reflect the common panther habitat usage profiles. These documents are the publications by Kautz et al. (2006) and Thatcher et al. (2006). Based on the information in these documents, we changed the boundaries of the MAP to better reflect areas where we believe project may have an effect on the Florida panther and provided this map to you in correspondence dated December 8, 2006. Upon receipt of this information, you provided a revised Panther Key and Rationale, dated December 20, 2006, and labeled as Panther Key and Rationale-January 2007. You also requested concurrence from the Service that the utilization of the Panther Key-January 2007 may affect but is not likely to adversely affect the Florida panther.

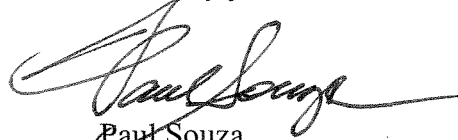
To assist the Corps in developing a Panther Key that fully reflects the Service's desire to identify those projects that may have an effect on the Florida panther and the need for consultation with the Service, we are providing a revised Panther Key and Rationale – February 19, 2007, that we believe meets this objective (enclosed).



We have used Kautz et al. (2006) and Thatcher et al. (2006) to outline a Panther Focus Area, where we believe sufficient data are present that, in most cases, warrants consultation with the Service. In addition, panther research data, including scientific publications, telemetry, photographs, tracks, prey kills, and other verifiable evidence, provide direct evidence of the presence of, and use of areas by panthers, in locations that may or may not be within the Panther Focus Area or original MAP. For example, panther mortality by vehicle interactions is a significant threat; although a proposed project may not be within the Panther Focus Area, traffic generated by the project in or adjacent to the Panther Focus Area may increase risk of panther-vehicle mortality, warranting consultation with the Service.

The key and rationale provide guidelines to help us identify when proposals may affect the panther. As always, information obtained in the future will help us refine these guidelines further, or possibly identify additional issues for consideration. As an important partner in our program to conserve and the Florida panther, your cooperation and assistance are greatly appreciated. Again, thank you for your cooperation and effort in protecting federally listed species. If you have any questions, please do not hesitate to contact either myself or Allen Webb at 772-562-3909.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Paul Souza", with a long horizontal flourish extending to the right.

Paul Souza

Field Supervisor

South Florida Ecological Services Office

Enclosure

cc: Noreen Walsh, ARD-Ecological Services, U.S. FWS

Kautz, R., R. Kawula, T. Hctor, J. Comiskey, D. Jansen, D. Jennings, J. Kasbohm, F. Mazzotti, R. McBride, L. Richardson, and K. Root. 2006. How Much Is Enough? Landscape-scale Conservation for the Florida Panther. Biological Conservation.

Thatcher, C., F.T. van Manen, and J.D. Clark. 2006. An assessment of habitat north of the Calssoahatchee River for Florida panthers. Final Report to U.S. Fish and Wildlife Service. University of Tennessee; Knoxville, Tennessee.

U.S. Fish and Wildlife Service (Service). 2000. Florida panther final interim standard local operating procedures (SLOPES) for endangered species. Fish and Wildlife Service; Vero Beach, Florida.

Enclosure

Florida Panther Effect Determination Key
February 19, 2007

- A. Project is not within Panther Focus Area B
- Project is within Panther Focus Area..... C

- B. Project will have no increase and/or change in vehicle traffic patterns or other identifiable effects to panthers or their habitat..... *No effect*
- Project is greater than 1 acre in size and will have a net increase and/or change in vehicle traffic patterns or other identifiable effects to panthers or their habitat *May affect*
Consultation with the Service is requested¹

- C. Project is less than 1 acre.....*May affect, not likely to adversely affect*
- Project is greater than 1 acre.....*May affect*
Consultation with the Service is requested¹

¹ Consultation may be concluded informally or formally depending on project effects.

Rationale for the
Florida Panther Effect Determination Key
February 19, 2007

The following discussion provides background for terms used in the key and areas delineated on the accompanying map.

Panther Focus Area (see accompanying map)

The Panther Focus Area was based on results from recent panther habitat models south of the Caloosahatchee River and north of the Caloosahatchee River (Kautz et al. 2006 and Thatcher et al. 2006). In addition, marked panthers have been found throughout the delineated area.

The Kautz et al. (2006) model of landscape components important to Florida panther habitat conservation was based on an analysis of panther habitat use and forest patch size south of the Caloosahatchee River. This model was used in combination with radio-telemetry records, home range overlaps, land use/land cover data, and satellite imagery to delineate primary and secondary areas that would comprise a landscape mosaic of cover types that are especially important to support the current panther breeding population south of the Caloosahatchee River.

Thatcher et al. (2006) developed a habitat model using Florida panther home ranges in south Florida to identified landscape conditions (land-cover types, habitat patch size and configuration, road density and other human development activities, and other similar metrics) north of the Caloosahatchee River that were similar to those associated with the current panther breeding population south of the Caloosahatchee River.

The Panther Focus Area south of the Caloosahatchee River is divided into Primary, Secondary, and Dispersal Zones. North of the Caloosahatchee River it is named the Primary Dispersal/Expansion Area.

Primary Zone is currently occupied and supports the only known breeding population of Florida panthers in the world. These lands are important to the long-term viability and persistence of the panther in the wild.

Secondary Zone lands are contiguous with the Primary Zone and although these lands are used to a lesser extent by panthers, they are important to the long-term viability and persistence of the panther in the wild. Panthers use these lands in a much lower density than in the Primary Zone.

Dispersal Zone is a known corridor between the Panther Focus Area south of the

Caloosahatchee River to the Panther Focus Area north of the Caloosahatchee River. This zone is necessary to facilitate the dispersal of panthers and future panther population expansion to areas north of the Caloosahatchee River. Marked panthers have been known to use this zone.

Primary Dispersal/Expansion Area is the Fisheating Creek/Babcock-Webb Wildlife Management Area region. These are lands identified by Thatcher et al. (2006) as potential panther habitat with the shortest habitat connection to the Panther Focus Area in south Florida. Several collared and uncollared male panthers have been documented in this area since 1973, and the last female documented north of the Caloosahatchee River was found in this area.

In addition, the Thatcher Model Dispersal Pathways delineate model locations that show some areas where panthers have historically moved to areas further north.

Thatcher Model Dispersal Pathways are the most likely dispersal routes, based on Thatcher's (2006) least-cost pathways model, to potential habitats to the north. Panthers have historically been documented in this area.

Project Analysis

Projects within the Panther Focus Area can negatively affect panthers in different ways, such as loss and fragmentation of habitat, loss of available prey, increase potential for traffic related mortalities, and increase potential for human/panther interactions.

In addition, projects outside the Panther Focus Area, depending on type and size, can affect panthers and habitat used by panthers in different ways such as increasing traffic within or adjacent to the Panther Focus Area, changing hydrological conditions that affect the habitats that support panther or panther prey in the Panther Focus Area, increasing potential for human/panther interactions, and modifying habitat that provides some functional value for panthers.

Net Increase in Traffic

A net increase in traffic in or adjacent to the Panther Focus Area such as an increase in the number of trips per day averaged over a week is considered a traffic increase that may lead to adverse effects for purposes of this key.

Other Identifiable Effects

Dispersing panthers are known to occur outside of the Panther Focus Area. South of the Caloosahatchee River, where the only breeding population of panthers is known to exist, a project is considered to potentially have an effect on panthers if it occurs in

non-urbanized lands in areas adjacent to the Panther Focus Area (e.g., agricultural lands) where panthers have been documented.

Although non-urban lands outside of the Panther Focus Area do not provide the same habitat value as natural lands within the Panther Focus Area, they do provide important buffers between urban developments and the Panther Focus Area, dispersal and travel routes between higher quality habitats, refugia areas for sub-adult males, and foraging habitat for panther prey species. Generally, areas adjacent to the Panther Focus Area are defined as areas within the Service's 2000 consultation boundary (Service 2000) where urbanization has not replaced lower intensity land uses. Areas that have become urbanized no longer have habitat that can sustain panthers, although additional traffic generated in or adjacent to the Panther Focus Area from development in these locations may affect panthers.

Two-Mile Radius Buffer

A project is also considered to potentially have an effect on panthers if there has been documented physical evidence of panther occurrence within a two-mile radius of a project within the past two years. Documented physical evidence of panther occurrence includes telemetry locations, as well as photographs, tracks, prey kills, and other verifiable evidence that may be available.

Comiskey et al (2000) in the article "Panthers and Forests in South Florida: an Ecological Perspective" referenced that the mean movement distance between sequential telemetry locations was 6.6 km (4.1 miles) for males and 3.2 km (1.99 miles) for females. If flights to monitor panther telemetry are normally three times a week, generally every other day, the travel distance between two points per day would be roughly half the distance between the two points, roughly 2 miles for the male panther. In their habitat analysis, Comiskey et al (2000) considered lands within a circle where the radius is equal to the mean movement distance between sequential telemetry locations, as panther habitat. Following this approach, we believe land alterations within a two-mile radius of a verified panther occurrence, both north and south of the Caloosahatchee River, may potentially have an effect on the panther.

Projects Less than One Acre

On an individual basis, single-family residential developments on lots no larger than one acre will not have a measurable effect on panthers. Panthers are a wide ranging species, and individually, a one acre habitat change is not likely to adversely affect panthers. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

Monitoring and Reporting Effects

For the Service to monitor effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued that were determined “may affect, not likely to adversely affect.” It is requested that information on date, Corps identification number, project acreage, project wetland acreage, latitude and longitude in decimal degrees, and county parcel identification number of these projects be sent to the Service quarterly.

Determination

With a determination of “no effect” or “may affect, not likely to adversely affect” (“NLAA”) as outlined in this key, the requirements of section 7 of the Endangered Species Act are fulfilled and no further action is required.

A determination of “may affect” in the key may be concluded in either a “may affect, not likely to adversely affect” and written concurrence or “may adversely affect” and formal consultation with the Service is requested.

Literature Cited

- Comiskey, E. J., O. L. Bass, Jr., L. J. Gross, R. T. McBride, and R. Salinas. 2002. Panthers and forests in south Florida: an ecological perspective. *Conservation Ecology* 6:18.
- Kautz, R., R. Kawula, T. Hctor, J. Comiskey, D. Jansen, D. Jennings, J. Kasbohm, F. Mazzotti, R. McBride, L. Richardson, and K. Root. 2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation* 130:118-133.
- Thatcher, C. A., F. T. van Manen, and J. D. Clark. 2006. An assessment of habitat north of the Caloosahatchee River for Florida panthers. Leetown Science Center, Southern Appalachian Research Branch, U.S. Geological survey, Knoxville, Tennessee, USA.
- U.S. Fish and Wildlife Service (Service). 2000. Florida panther final interim standard local operating procedures (SLOPES) for endangered species. Fish and Wildlife Service; Vero Beach, Florida.

