United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
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Alan M. Dodd, Colonel
District Commander
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Federal Activity Code:	2002-FA-0002
Service Consultation Code:	4-1-02-F-014
Service Consultation Code:	2002-F-0003-R001
Corps Application No.:	SAJ-1996-02945 (IP-MJD)
Date Received:	October 4, 2013
Applicant:	DiVosta Homes, L.P.
Project:	Winding Cypress-Phase 2
County:	Collier

Dear Colonel Dodd:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers' (Corps) request to reinitiate consultation dated October 4, 2013, for the permit modification (SAJ-1996-02945 [IP-MJD]) listed above. This letter was submitted in accordance with Section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*) and the provisions of the Fish and Wildlife Coordination Act (FWCA) of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*).

Corps Permit No. SAJ-1996-02945 (IP-MJD) was originally issued on August 20, 2003, and it authorized the discharge of dredge or fill material into waters of the United States. The Service provided a Biological Opinion (BiOp) dated October 8, 2002, (4-1-02-F-014, renumbered in the current database as 2002-F-0003) which covered incidental take for the endangered Florida panther (*Puma concolor coryi*) and endangered red-cockaded woodpecker (RCW; *Picoides borealis*), and gave concurrence with the Corps' determinations of "may affect, but not likely to adversely affect" for the endangered wood stork (*Mycteria americana*) and threatened eastern indigo snake (*Drymarchon corais couperi*). A modification to extend the expiration date was issued on February 11, 2011, and the permit will expire on August 23, 2015.

The applicant is requesting a modification to Phase 2 of the project to remove the golf course, remove the southern portion of the loop road connecting the two large development pods, realign the Collier Boulevard entrance road, increase residential density (density change from 2,395 units to 2,854 units, an increase of 459 units), and increase lake area. The modification request also includes a 5-year time extension to complete Phase 2 development activities.

The project site is located east of and adjacent to a portion of Collier Boulevard (County Road [CR] 951), south of and adjacent to Sabal Palm Road, and north of and adjacent to a portion of Tamiami Trail (U.S. 41), in Sections 26 and 35, Township 50 South, Range 26 East, and Sections 2 and 3, Township 51 South, Range 26 East, in Collier County, Florida (Figure 1).

Consultation History

On December 17, 2012, a pre-application meeting was held at the South Florida Water Management District (SFWMD) - Fort Myers Service Center, with SFWMD, the Corps, DiVosta Homes, L.P. (DiVosta), Passarella & Associates, Inc. (PAI), Evans Engineering, and David Plummer & Associates, to discuss a proposed modification to Phase 2 of Winding Cypress. DiVosta explained that they currently have Phase 2 of the project under contract with Barron Collier Company, Ltd. A preliminary site plan was reviewed and the proposed modifications to Phase 2 were discussed. The proposed modifications include: removal of the golf course; removal of the southern portion of the loop road connecting the two large development pods; realignment of the Collier Boulevard entrance road; increasing the residential density; and increasing the lake area. The proposed Phase 2 footprint will generally be the same as the originally permitted footprint. Since the golf course design is being removed, the edges of the proposed project footprint will be re-configured to accommodate additional residential development. As a result, previously approved preserve areas will be swapped for development and new preserve areas will be added in other locations along the new footprint. No net loss of preserve area will occur as a result of this change.

On January 23, 2013, DiVosta and PAI met with the Service in Vero Beach, Florida, to discuss a proposed modification to Phase 2 of Winding Cypress. A preliminary site plan was reviewed and the proposed modifications to Phase 2 were discussed. Service staff stated if the updated traffic analysis for Phase 2 demonstrated no significant increase in traffic east on U.S. 41, then a new BiOp would not be required for the Project. Furthermore, Service staff stated the modification request could be processed as an amendment to the existing BiOp under the formal consultation process, provided the proposed preserve change is minimal and the traffic analysis demonstrates no significant increase in traffic east on U.S. 41. Service staff also stated the applicant would not be required to provide updated analyses for the Florida panther and wood stork, so long as the proposed modification results in a net gain in preserve area.

On February 26, 2013, DiVosta and PAI met with Florida Fish and Wildlife Conservation Commission (FWC) staff to discuss the proposed modification to Phase 2 of Winding Cypress. A preliminary site plan was reviewed and the proposed modifications to Phase 2 were discussed. FWC staff provided input on design components for the proposed project which could minimize human/panther interactions, including the use of perimeter lakes to buffer the development areas from the preserves and the use of physical barriers, such as a concrete wall or chain link fence, along the perimeter of the development.

On April 18, 2013, DiVosta submitted a permit modification application to the Corps for Phase 2 of Winding Cypress. The modification request was consistent with the pre-application discussions with the various agencies (as discussed above) and included the removal of the golf course, the removal of the southern portion of the loop road connecting the two large

development pods, the realignment of the Collier Boulevard entrance road, an increase in residential density, and increase in lake area. To accommodate additional residential units, previously approved preserve areas were swapped for development and new preserve areas were added in other locations along the new development footprint. This resulted in a net gain of 0.12 acre (ac) of preserve area for the project.

By letter dated May 24, 2013, the Corps acknowledged the applicant's request to modify the Project and requested reinitiation of formal consultation with the Service for the Florida panther, wood stork, and RCW.

On June 12, 2013, DiVosta, PAI, and Evans Engineering met with the Conservancy of Southwest Florida (CSWF) staff at the law office of Coleman, Yovanovich, and Koester to discuss the Phase 2 modification request. CSWF staff appreciated the invitation to meet and indicated the proposed modifications are an improvement to what is currently permitted.

On July 8, 2013, DiVosta (now the applicant) and PAI met with the Service in Vero Beach, Florida, to discuss the Corps permit modification submitted for Phase 2 of Winding Cypress. PAI explained that the applicant's representatives had a meeting with FWC since they last met with the Service. During the meeting, FWC staff recommended development buffers to minimize human-wildlife interactions, including the use of perimeter lakes and fencing. As such, the applicant revised the site plan previously reviewed with the Service on January 23, 2013, to include perimeter lakes and fencing along the development boundaries. In addition, PAI explained the proposed permit modification consolidates the nine smaller wading bird foraging areas previously permitted into one 9.24-ac area that is more appropriately located in the landscape. During the meeting, the applicant provided a revised traffic analysis to Service staff which demonstrated the proposed modifications to Phase 2 would not result in a significant increase in traffic eastbound on U.S. 41. Service staff agreed the proposed project modifications did not require a new BiOp, but stated the applicant will be required to provide a long-term management fund for the Phase 2 preserve areas. Also, the Service requested the applicant provide a habitat management plan for the RCW.

By letter dated August 16, 2013, PAI provided the Service with a revised set of Corps permit drawings depicting the development buffers and the single 9.24 ac wading bird foraging area. The letter also included a habitat management plan for the RCW.

By letter dated September 16, 2013, PAI provided the Corps with a revised set of Corps permit drawings and an updated Mitigation/Monitoring/Maintenance plan for the Corps' use in issuing the public notice.

On September 25, 2013, the applicant and PAI met with the Service in Vero Beach, Florida, to discuss the details of the long-term management fund. The Service stated the fund needed to be established prior to final sign-off of the Corps' 5-year mitigation and monitoring program and the amount of the fund be determined as part of the permit modification process for Phase 2. Service staff also stated the Florida bonneted bat (FBB; *Eumops floridanus*) would soon be federally listed as endangered and the project will require a survey for FBBs.

On October 4, 2013, the Corps issued a Public Notice for the proposed Phase 2 modifications. In the Public Notice, the Corps determined the proposed project "may affect, but is not likely to adversely affect" the FBB and requested the initiation of informal consultation with the Service. The Corps further stated critical habitat has not yet been designated for this species; therefore, none will be affected. The Corps also determined the project "may affect" the Florida panther, wood stork, and the RCW, but will not impact designated critical habitat (none designated).

On December 10, 2013, PAI provided a copy of the FBB survey report to the Service and the Corps.

By email dated April 7, 2014, PAI transmitted the applicant's agreement to conduct pre-construction and pre-burn roost site surveys to the Service. The applicant also agreed to implement fire management techniques, including the reduction of fuel loads around roost trees by hand clearing of vegetation, prior to burn activities.

THREATENED AND ENDANGERED SPECIES

In correspondence dated May 24, 2013, the Corps requested consultation with the Service for adverse effects to listed species from the proposed project reauthorization and site plan modification. The Corps completed an evaluation of the impacts the work may have on the endangered FBB and requested initiation of informal consultation for the species. The Corps also completed an evaluation of the endangered Florida panther, endangered wood stork, and endangered RCW, and requested re-initiation of formal consultation in correspondence dated October 4, 2013, pursuant to Section 7 of the Act, to determine if the revised project's impacts are consistent with the impacts considered in the Service's October 8, 2002, BiOp. The October 8, 2002, BiOp was issued for the Florida panther and RCW and provided concurrence with the Corps' determination of "may affect, not likely to adversely affect" for the wood stork and eastern indigo snake.

Florida Panther

The original Corps permit for the overall Winding Cypress project authorized impacts to 1,088 ac of habitat suitable for use by the Florida panther. This includes lands located in both Phase 1 (724.8 ac) and Phase 2 (363.2 ac) of the project site. As compensation for impacts, the project provided 840 ac of onsite preserve area (257.11 ac in Phase 1 and 582.89 ac in Phase 2). In addition, 1,030.4 ac of offsite preserve was provided along State Road 29, between the Fakahatchee Strand State Preserve and the Big Cypress National Preserve. Phase 1 of Winding Cypress (VeronaWalk) has been constructed and the Phase 1 onsite mitigation (5 years of maintenance and monitoring) has been completed and is currently under conservation easement. The offsite panther mitigation area has been enhanced and transferred to the State of Florida.

The proposed project footprint is generally the same as the permitted development footprint. The outer edges of the proposed development footprint were re-configured to accommodate additional residential units after the golf course design was removed. As a result, the proposed project increases the onsite preserve acreage by 0.12 ac; thus, the proposed modification includes 583.01 ac of preserve in Phase 2 (582.89+.12=583.01). Since the proposed project footprint is

generally the same as the permitted footprint, and the proposed modification results in a net gain of onsite preserve area, the Service did not require the applicant to provide an updated habitat analysis for the Florida panther.

The golf course design originally permitted for the project provided a buffer between the onsite Phase 2 preserve areas and the residential development. Since the applicant proposes to remove the golf course as part of the permit modification request, lakes were incorporated along the perimeter of the proposed development footprint to buffer the adjacent preserve areas and minimize human-wildlife interactions. The locations of the lakes are depicted on the modified site plan (Figure 2). The applicant proposes to install fencing along the perimeter of the development footprint in areas where it is not feasible to use lakes.

According to the updated traffic analysis provided by the applicant, the proposed modification (residential density change of 459 units) results in an overall increase of 780 new daily trips and does not significantly increase traffic eastbound on U.S. 41. Winding Cypress is an approved Development of Regional Impact (DRI) and Planned Unit Development (PUD). The traffic data provided in support of the PUD amendment indicates that, while the project will not increase PM peak hour trips, the project will result in an increase in daily traffic on Collier Boulevard (CR 951), Grand Lely Drive, and U.S. 41/Tamiami Trail East. A traffic analysis provided by David Plummer & Associates, Inc., (April 30, 2013) estimates that the PUD amendment will generate about 780 new daily trips. Of these new daily trips, approximately 95 percent (741 trips) are expected to travel north, west, and south into more urban areas of Naples, with the following distribution: 65 percent (507 trips) north on Collier Boulevard; 11 percent (86 trips) south on Collier Boulevard; 12 percent (93 trips) west on Grand Lely Drive; 5 percent (39 trips) northwest on Tamiami Trail East; and 2 percent (16 trips) to adjacent destinations east of the Collier Boulevard/Tamiami Trail East intersection. According to the traffic study, the 16 trips east represent an increase of 5.4 percent over the previously evaluated traffic (240-224=16) and less than 2 percent of the overall traffic pattern increases. The Service concludes that, based on the above, the revised site plan will not result in impacts to panther habitat above and beyond those impacts analyzed in 2002, nor will the revisions result in increases in fragmentation not originally considered.

The applicant agrees to provide a non-wasting long-term management fund for the onsite Phase 2 preserve areas prior to successful completion of the Corps' 5-year maintenance and monitoring program, and prior to transferring the property to a Service-approved entity. The amount of the long-term management fund will be $748,196.17. The fund amount was calculated using a maintenance cost of $35 per acre with a three percent capitalization rate ([583.01(35)]/0.03 = $680,178.33). A 10 percent contingency category was applied to determine the final amount of the fund ($680,178.33*1.1 = $748,196.17). The monies generated from the non-wasting endowment funds will be sufficient to fund all land management costs, including: site fencing and fire break maintenance, taxes (if a non-government recipient), liability insurance (if site access is proposed and if non-government), site maintenance and monitoring actions, corresponding monitoring reports, and escrow holder handling fee.

Based on the information provided by the Corps and the applicant's commitments, the Service believes the conclusions provided in the October 8, 2002, BiOp are applicable to the project as modified and concludes the revised project will have no additional adverse impacts to the Florida

panther greater than those previously addressed by the Service. Thus, the Service recommends the Corps change their determination for the Florida panther from "may affect" to "may affect, not likely to adversely affect" for the proposed modification.

Wood Stork

The original Corps permit for the overall Winding Cypress project authorized impacts to approximately 197 ac of wetland habitat suitable for use by the wood stork. The project provided 764.5 ac of wetlands onsite and 922.2 ac of wetlands within the offsite preserve area. The proposed permit modification neither increases wetland impacts nor reduces the amount of wetland preserve. Additionally, the proposed project modification provides an enhanced wading bird foraging area by consolidating the nine smaller, previously permitted wading bird areas into a larger foraging pool that is more appropriately located in the landscape (away from the proposed development and existing power easement). The Service has reviewed the data provided and concludes the revised project does not propose adverse effects to the wood stork in a manner or extent not previously considered in the Service's October 8, 2002, BiOp. As such, the Service recommends the Corps change their determination for the wood stork from "may affect" to "may affect, not likely to adversely affect" for the proposed modification.

Red-Cockaded Woodpecker

The original Corps permit for the overall Winding Cypress project provided for preservation of 234 ac of pine habitats that could potentially be utilized by RCWs. The proposed modification provides approximately 292 ac of pine habitats that could potentially be used by RCWs. In addition, the applicant prepared and submitted a habitat management plan to the Service to address RCW habitat protection and enhancement, create nesting areas for potential future RCW clusters, and monitor the effects of these RCW management activities. A total of ten drilled starts will be installed in various locations on the east and west portions of the preserve lands. The Service has reviewed the data provided, as well as recent RCW data in our GIS database, and concludes the revised project does not propose adverse effects to the RCW in a manner or extent not previously considered in the Service's October 8, 2002, BiOp. As such, the Service recommends that the Corps change their determination for the RCW from "may affect" to "may affect, not likely to adversely affect" for the proposed modification.

Eastern Indigo Snake

Suitable habitat for the threatened eastern indigo snake includes a mosaic of habitats in which they establish home ranges of up to 183 ac on average for males, and up to 120 ac for females. Eastern indigo snakes appear to be associated with burrows excavated by other animals, as well as naturally occurring cavities. The original project site included 1,088 ac of habitats that could be used by the eastern indigo snake for essential behavior patterns if situated in an appropriate landscape. The Service provided concurrence with the Corps' determination of "may affect, not likely to adversely affect" for the original project with the inclusion of site specific protection measures for the indigo snake as Special Condition F in the Corps permit, dated August 29, 2003. Since issuance of the permit, the Service has provided to the Corps revised Standard Protection Measures for Eastern Indigo Snake (Service 2013b). In email correspondence dated

January 14, 2013, the Corps provided a determination of "may affect, not likely to adversely affect" for the eastern indigo snake, and agreed to include the "Standard Protection Measures for the Eastern Indigo Snake" (Service 2013b) during construction, as a permit condition. The Corps has received programmatic concurrence for their determination through the Eastern Indigo Snake Effect Determination Key (Service 2010a) (Key sequence: A>B>C>D>E>NLAA) and no further consultation is necessary.

In conclusion, the Service reviewed the information provided for the Florida panther, wood stork, RCW, and eastern indigo snake, and the determinations provided in the October 8, 2002, BiOp, and concludes that the effects resulting from the proposed project modifications do not exceed those effects originally evaluated in a manner or extent not previously considered. All reasonable and prudent measures and terms and conditions referenced in the October 8, 2002, BiOp are also applicable to this consultation. This concludes consultation for the Florida panther, wood stork, RCW, and eastern indigo snake.

Florida Bonneted Bat

The FBB was listed by the Service as a federally endangered species on October 2, 2013. Since the Phase 2 project site (946.21 ac) contains forested habitat types with permanent impacts proposed to 363.20 ac (development) and temporary impacts proposed to 583.01 ac (preserve enhancements), the Service requested that the applicant conduct a FBB survey. A FBB survey was conducted by PAI using the AnaBat SD1 Compact Flash Bat Detector (AnaBat), a zero-crossing acoustic bat detector with a directional microphone. The survey was conducted for five nights at various survey stations throughout the Phase 2 project site. According to the FBB survey report provided by PAI, no FBBs were heard, observed, or detected by the AnaBat acoustic bat detector during the field surveys. Based on the information provided, the Corps in correspondence dated October 4, 2013, provided a determination of "may affect, but is not likely to adversely affect" for the FBB.

However, since initiation of the requested surveys and the effect determination by the Corps, the Service has provided additional guidance documents (an Effects Determination Key [Key] and a consultation area map, both dated December 2013) to the Corps to assist in effect determinations. A review of the project using the FBB Key concludes with a "may affect" (Key sequence: 1> may affect) for portions of the project within the FBB Focus Area, and "may affect" (Key sequence: 1>2>c> may affect) for portions outside the FBB Focal Area. In conclusion, the Service has reviewed the information provided for the FBB and cannot concur with the Corps' determination of "may affect, but not likely to adversely affect" and is initiating Formal consultation for adverse effects to the FBB from the proposed modification (Phase 2 site plan revisions).

BIOLOGICAL OPINION
Florida Bonneted Bat

Action area

The action area is defined as all areas to be directly or indirectly affected by the Federal action, and not merely the immediate area involved in the action. The action area for the FBB is defined as the project lands and the lands within a buffer of 7 miles of the project lands. As limited information is available for the FBB foraging distances, the Service reviewed information on foraging area bouts for tracked individuals of a similar species. Information provided by Tibbitts et al. (2002) for a similar species ranged up to 15 miles or more, with most bats on most nights travelling between 12.4-18.6 miles. However, despite its capabilities, per G. Marks (pers. comm. [2012a] as cited by the Service [2013a]) the species likely does not travel farther than necessary to acquire food needed for survival. Therefore, for this assessment, the Service is applying the average flight distance as a total distance foraging bout with a mid-point flight of 7 miles around a species occurrence location or project boundary as the action area (Figure 3).

STATUS OF THE SPECIES/CRITICAL HABITAT

Florida bonneted bat

The FBB is a federally endangered species. A complete discussion of the status of this species, including the most current species assessment and the final rule to list the FBB as endangered, may be found at: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JB.

Species/critical habitat description

The FBB is a large, free-tailed bat, approximately 130 to 165 millimeters (mm) (5.1 to 6.5 in) in length (Timm and Genoways 2004). It is the largest bat in Florida (NatureServe 2009). The body mass of the species averages 39.7 grams (g) (1.4 ounces [oz]), with a range from 30.2 g (1.1 oz) to at least 55.4 g (2.0 oz) in pregnant females (Belwood 1981; Belwood 1992; Timm and Genoways 2004; NatureServe 2009). Timm and Genoways (2004) found that males and females are not significantly different in size, and there is no pattern of size-related geographic variation in this species. Fur is short and glossy with hairs sharply bicolored with a white base (Timm and Genoways 2004; NatureServe 2009). Color is highly variable from black to brown to brownish gray or cinnamon brown, with ventral pelage paler than dorsal (Timm and Genoways 2004; NatureServe 2009). Leathery rounded ears are joined at the midline and project forward (NatureServe 2009). Habitat for the FBB mainly consists of foraging areas and roosting sites, including artificial structures. Until the discovery of a roost site on Avon Park Air Force Range in late 2013, no active, natural roost sites were known, and only limited information on historical sites is available.

Currently there is no critical habitat designated for this species.

Life history

Relatively little is known of the ecology of the FBB, and long-term habitat requirements are poorly understood (Robson 1989; Robson et al. 1989; Belwood 1992; Timm and Genoways 2004). Recent information on foraging habitat has been obtained largely through acoustical surveys designed to detect and record bat echolocation calls (Marks and Marks 2008a).

In general, open fresh water and wetlands provide prime foraging areas for bats. Bats will forage over ponds, streams, and wetlands, and drink when flying over open water. During dry seasons, bats become more dependent on remaining ponds, streams, and wetland areas for foraging purposes. The presence of roosting habitat is critical for day roosts, protection from predators, and the rearing of young; South Florida bats roost primarily in trees and manmade structures (Marks and Marks 2008b). For most bats, the availability of suitable roosts is an important limiting factor (Humphrey 1975).

Major habitat types where this species is known to occur include wetland and upland shrub and forest, open water, and fresh water of South Florida. They have been known to roost in buildings, tree cavities, outcrops, and bat houses (Marks and Marks 2008a). The discovery of an adult for which the specimen tag reads "found under rocks when bull-dozing ground" suggests this species may also roost in rocky crevices and outcrops on the ground (Timm and Genoways 2004). It is not known to what extent such roost sites are suitable. Robson (1989) indicated FBBs are closely associated with forested areas because of their tree-roosting habits. They roost singly or in groups of up to a few dozen individuals (Belwood 1981, 1992). The FBB is not migratory (Timm and Genoways 2004;). However, there may be seasonal shifts in roosting sites because Belwood (1992) reported FBBs were found "during the winter months in people's houses."

FBBs feed on flying insects (*e.g.*, Coleoptera, Diptera, Hemiptera) (Belwood 1981; Belwood 1992; NatureServe 2009). They forage in open spaces and use echolocation to detect prey at relatively long range, roughly 3 to 5 m (10 to 16 ft) (Belwood 1992). Based upon information from G. T. Hubbell, Belwood (1992) indicates FBB leave their roosts to forage after dark, seldom occur below 10 m (33 ft) in the air, and produce loud calls, audible to humans, as they fly. Precise foraging and roosting habits and requirements are not known (Belwood 1992).

Population dynamics

The FBB has a fairly extensive breeding season during summer months (Timm and Genoways 2004; NatureServe 2009). Pregnant females have been found in June through September (Marks and Marks 2008a). Timm and Genoways' (2004) examination of limited data suggests that this species may be polyestrous, with a second birthing season possibly in January to February. However, the FBB has low fecundity, producing a litter size of one (FBC 2005, Timm and Arroyo-Cabrales 2008).

There is only one record of natural predation upon this species (Timm and Genoways 2004). A skull of one specimen was found in a regurgitated owl pellet in June 2000 at the FSPSP (Timm and Genoways 2004; Marks and Marks 2008a).

Status and distribution

The FBB is recognized in Florida's Comprehensive Wildlife Conservation Strategy as one of Florida's species of greatest conservation need (FWC 2005). This species is listed as endangered by the FWC as the Florida mastiff bat (*Eumops glaucinus floridanus*) (*i.e.*, the previously-accepted taxonomic designation). The FNAI and NatureServe consider the global status of the FBB to be G1, critically imperiled (FNAI 2010; NatureServe 2009). The 2009 International

Union for Conservation of Nature (IUCN) Red List of Threatened Species lists *Eumops floridanus* as critically endangered because "its population size is estimated to number fewer than 250 mature individuals, with no subpopulation greater than 50 individuals, and it is experiencing a continuing decline" (Timm and Arroyo-Cabrales 2008). On November 9, 2009, the Service added the FBB to the candidate species list. A final rule listing the species as endangered was published on October 2, 2013.

The FBB exists only in Florida (Timm and Genoways 2004; C. Marks and G. Marks, pers. comm. 2008). This species has one of the most restricted distributions of any bat species in the New World (Belwood 1992; Timm and Genoways 2004) and its global range is estimated at < 100 to 250 km^2 (40 to 100 square miles [mi^2]) (NatureServe 2009). Its current range includes Charlotte, Collier, Lee, Miami-Dade, Okeechobee, and Polk Counties (Timm and Genoways 2004; NatureServe 2009; Marks and Marks 2008c). Surveys conducted in the Kissimmee River area for the FWC recorded FBB calls at two locations (Marks and Marks 2008b; 2008c). The findings along the Kissimmee River are significant as it is the first time the species has been found north of Lake Okeechobee except in fossil records, and this effectively moves the known range 80 km (50 mi) north (Marks and Marks 2008c).

Although older literature lists Fort Lauderdale as an area where the species occurred (Belwood 1992), none of the recent specimens examined by Timm and Genoways (2004) were from Broward County. However, Hipes et al. (2001) included Broward County as part of the range. Marks and Marks (2008a) did not record any FBB calls in the Fort Lauderdale area; surveys were conducted in Long Key Park, Miramar Pinelands, and the Plantation area. No calls were recorded on the east coast of Florida north of Coral Gables (Marks and Marks 2008a). Overall, based upon all available historic and current surveys, the species exists within a very restricted range (Timm and Genoways 2004; Marks and Marks 2008a).

Results of 2006-2008 acoustical range-wide survey indicate that the FBB is a rare species with limited range and low abundance (Marks and Marks 2008a). Based upon these results and an additional survey of select public lands, the species has been found at 12 locations (Marks and Marks 2008c), but the number and status of the FBB at each location is unknown. The 2006-2008 acoustical range-wide survey recorded 5,016 calls; when these calls were later analyzed, it was determined that only 79 (1.6 percent) were from FBBs (Marks and Marks 2008c). Marks and Marks (2008a) stated total population size may be less than a few hundred individuals owing to the small number of locations where calls were recorded, the low numbers of calls recorded at each location, and the fact that the species forms small colonies. In his independent review of the FWC's biological status report, Ted Fleming, Emeritus Professor of biology at University of Miami, stated that the total State population numbers "in the hundreds or low thousands" (FWC 2011). Results of the 2010-2012 surveys and additional surveys by other researchers identified new occurrences within the established range (*i.e.*, within Miami area, areas of ENP and Big Cypress National Preserve [BCNP]) (S. Snow, pers. comm. 2011a, 2011b, 2012a-e; R. Arwood, pers. comm. 2012, 2013a; Marks and Marks 2012); however, the new occurrences were not in sufficient numbers to alter previous population estimates.

Habitat loss and alteration in forested and urban areas are substantial threats to the FBB (Belwood 1992; NatureServe 2009). In natural areas, this species may be impacted when forests are converted to other uses or when old trees with cavities are removed (Belwood 1992;

NatureServe 2009). In urban settings, this species may be impacted when buildings with suitable roosts are demolished (Robson 1989; NatureServe 2009) or when structures are modified to exclude bats. Small population size, restricted range, low fecundity, and few and isolated occurrences are considerable on-going threats. This species is also vulnerable to prolonged extreme cold weather events. The cold spell experienced in Florida in early 2010 may have caused a decline in the FBB population. A colony in Lee County once included approximately 20 to 24 individuals in two houses (S. Trokey, pers. comm. 2008a, 2008b), but only 9 remained after the prolonged cold temperatures in early 2010 (S. Trokey, pers. comm. 2010a, 2010b).

Analysis of the species likely to be affected

The proposed action has the potential to adversely affect the FBB's ability to forage and/or roost within suitable habitats within the proposed project area and the preserve lands. Potential effects include injury, mortality, habitat loss or degradation, and disturbance resulting from the construction of the proposed Phase 2 of Winding Cypress and habitat disturbance resulting from the restoration actions on the preserve lands. Although no FBBs have been documented on the project site, occurrences have been documented in the action area. Therefore, the Service believes that the FBB may roost and will forage on the project site and in the adjacent lands within the action area as records exist (Figure 3) for species occurrences east, northeast, and southeast of the project site within similar habitats to those on the project site.

The Service has reviewed the information provided by the Corps and occurrence records of FBBs in the action area and surrounding lands and finds that the project will result in adverse effects to the FBB. The project's adverse effects to the FBB will be discussed in the remainder of this BO. Critical habitat has not yet been designated for the FBB, and, therefore, will not be affected.

ENVIRONMENTAL BASELINE

Climate change

Climate change is evident from observations of increases in average global air and ocean temperatures, widespread melting of snow and ice, and rising sea level, according to the Intergovernmental Panel on Climate Change (IPCC) Report (2007). The IPCC Report describes natural ecosystem changes with potential wide-spread effects on organisms from marine mammals to migratory birds. The potential for rapid climate change poses a significant challenge for fish and wildlife conservation. Species' abundance and distribution are dynamic, relative to a variety of factors, including climate. As climate changes, the abundance and distribution of fish and wildlife will also change. Highly specialized or endemic species are likely to be most susceptible to the stresses of changing climate. Based on these findings and other similar studies, the Department of the Interior requires agencies under its direction to consider potential climate change effects as part of their long-range planning activities (Service 2007).

Climate change at the global level drives change in weather at the regional level, though weather is also strongly affected by season and by local factors, such as elevation, topography, latitude, and proximity to the ocean. Temperatures are predicted to rise from 2°C to 5°C for North America by the end of this century (IPCC 2007). Other processes to be affected by this projected

warming include rainfall (amount, seasonal timing and distribution), storms (frequency and intensity), and sea level rise. The exact magnitude, direction and distribution of these changes at the regional level are not well understood or easy to predict. Seasonal change and local geography make prediction of the effects of climate change at any location variable. Current predictive models offer a wide range of predicted changes.

Prior to the 2007 IPCC Report, Titus and Narayanan (1995) modeled the probability of sea level rise based on global warming. They estimated that the increase in global temperatures could likely raise sea level 6 in by 2050 and 13 in by 2100. While these estimates are lower than the estimates described in the IPCC Report (2007), Titus and Narayanan's (1995) modeling efforts developed probability-based projections that can be added to local tide-gauge trends to estimate future sea level at specific locations.

Whittle et al. (2008) applied several prominent climate change models to panther habitat in southwest Florida. Their review indicated a climate change-induced sea level rise of 1 m (3 ft) will reduce southwest Florida panther habitat by 29 percent, at 3 m (9.8 ft) by 62 percent, and at 5 m (16.4 ft) by 90 percent. The consequences would be particularly dire for the panther, which has no other populations outside of low-lying south Florida. Their cost surface analyses identified likely migration routes that would link the south Florida panther population to suitable habitat to the north. However, without rapid conservation actions that establish a population to the north, they predict the Florida panther may go extinct in the wild due to climate change effects.

Climatic changes in south Florida could exacerbate current land management challenges involving habitat fragmentation, urbanization, invasive species, disease, parasites, and water management (Pearlstine 2008). The Southwest Florida Regional Planning Council projected sea level rise in southwest Florida by 2200 based on Titus and Narayanan's (1995) worst-case scenario of a 4-m (13-ft) rise in 200 years. Global warming will be a particular challenge for endangered, threatened, and other "at risk" species. It is difficult to estimate, with any degree of precision, which species will be affected by climate change or exactly how they will be affected. The Service will use Strategic Habitat Conservation planning, an adaptive science-driven process that begins with explicit trust resource population objectives, as the framework for adjusting our management strategies in response to climate change (Service 2006).

General environmental baseline

As defined in Service regulations, "the environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process."

In addition, under the Act's regulatory approach, future Federal actions are not included in neither the environmental baseline nor the cumulative effects analysis of a biological opinion, because they will be subjected to consultation when they occur. See 51 Fed. Reg. 19,926, 19,933 (June 3, 1986) (preamble to FWS consultation regulations).

As stated previously, the Service has determined, for the purposes of this BiOp, the action area is considered to include the project site and a 7-mi radius surrounding the site, with the I-75 corridor forming the westernmost boundary of the action area (Figure 3).

Status of the species/critical habitat within the action area

The FBB appears to be restricted to south and southwest Florida. Within the project action area and surrounding lands, the FBB was recorded acoustically about 4.6 mi northeast, 2.7 and 6.7 mi east-northeast, 7.5 mi east, and 9.1 mi southeast of the project lands in the Picayune Strand State Forest (PSSF). Although the project lands are separated by I-75 to the south and mixed amounts of urban development to the east and north, habitats within the action area and onsite are similar in composition to habitats in the PSSF and are within foraging distances for the FBB.

Factors affecting the species habitat within the action area

The action area contains appropriate habitat for the FBB; however, many of the remaining pine flatwood forests and cypress swamps and sloughs contain various levels of exotic species that produce mid-story and canopy vegetative densities detrimental to rookery suitability for the FBB. In addition, many of the remaining native habitats are fragmented by urban development and agricultural lands (open pastures and row crops) and, therefore, do not provide contiguous roosting habitat for the FBB. Also, surrounding areas are fragmented by moderately urbanized and suburban areas, making it difficult to manage these parcels; as such, breeding and foraging opportunities may be affected. Other factors affecting the species within the action area include ongoing restoration projects for privately- and publically-owned forested lands which will benefit the species.

Federal actions - formal and informal consultations

Federal actions implemented within the action area over the last 12 years that may have adversely affected FBB habitat include 30 actions (Table 1). These actions affected 6,413 ac and were associated primarily with residential developments. This loss represents 6.3 percent of lands within the action area (101,247 ac). Concurrent with these adverse effects, about 7,612 ac of habitat restoration and preservation were also provided. Over this 12-year period, there were an average of 2.5 projects per year, with adverse effects to 241 ac/year and preservation of 254 ac/year.

Non-Federal actions - State of Florida Environmental Resource Permit (ERP)

Although the Corps of Engineers and the State of Florida, since 1982, have had a joint wetland permit application process, where all permit applications submitted to the State are copied to the Corps and vice-versa, the State also reviews projects that have no wetland impacts. To determine which of these projects would likely be exempt from Federal CWA section 404 wetland regulatory reviews by the Corps, we identified the percentage of the project site that was classified as wetland habitat, based on the FLUCCS mapping units. The mapping units relied on by the Service included the 600 series (wetland classifications) and the 411 and 419 pine flatwood classifications (hydric pine systems). For listing purposes, properties with less than 5 percent wetlands were considered by the Service to be generally exempt from Federal regulatory review as these quantities of wetlands could be avoided by project design.

Within the 7-mi action area, based on data provided to the Service, the District has issued ERP permits (August 2010 to August 2013) for eight projects (Table 2), including modifications. Permits and/or modifications were issued for two projects in 2011, 1 in 2012, and 5 in 2013, affecting a total of 6,179 ac. Based on CWA 404 permit reviews known to the Service, only one of these projects (Vincentian ERP Permit 11-03454-P), affecting 31.09 ac, could be expected to be subject to development without Federal permit involvement through the CWA section 404. The remaining seven projects have been or are under review by the Service. This loss represents 0.02 percent of lands within the action area (31.09/101,247=0.0002).

Florida Department of Environmental Protection Resource Mining Permits

Within the action area, the Service has identified a type of State permit (Florida Department of Environmental Protection [DEP] Resource Mining Permits) that may or may not be administered by the District and may or may not require a corresponding Federal permit (Table 3). The Service has identified these projects as resource mining projects. These projects vary in size and duration, with permit expiration dates ranging from 10 to 30 years from date of issuance. As also noted in Table 3, depending on the project, DEP permits may or may not have been issued, Corps permits may or may not have been issued, and/or the Corps permit application may have been withdrawn by the applicant (1 of 5). Also noted in Table 3 is the Service's current action associated with each particular project. Table 3 lists five projects; the Service has completed consultation on two of these projects, which concluded in BiOps providing incidental take coverage for listed species affected by the project. These two projects were assessed by the Service and considered part of the environmental baseline; they were also considered in the project assessment referenced above under the evaluation of "Federal Actions" within the 7-mi action area. One project (APEC Mine) was reviewed by the DEP and Corps in 1994 and, based on current aerials, is an active mine. This project is also considered by the Service to be a component of the baseline. The remaining projects, as reviewed by the Service, are considered as either future Federal actions (East Naples Mine) or components assessed as cumulative effects (HHH Mine), depending on whether they have a Federal nexus. The projects associated with the environmental baseline represent impacts to 1,485 ac (572+546+667=1,785) or 1.76 percent of the lands in the action area (1,785/101,247=0.0176).

EFFECTS OF THE ACTION

Factors to be considered

This project will result in the loss of 363.2 ac of habitat that may provide foraging and roosting opportunities for the FBB. The action will also restore 583.01 ac of degraded habitat that may support the establishment of new foraging habitat and/or roosts sites for the FBB.

Analysis for effects of the action

Injury and Mortality: FBB within the project area may be harmed or killed by land clearing and preserve management activities. Land clearing activities may crush roosting FFB or cause them to leave refugia and become more vulnerable to predation.

The use of prescribed fire to manage the preserve may cause direct mortality of FBB. Because bats roost in tree hollows and in dead palm fronds, individuals may be injured or killed during prescribed fires or fire-related activities. Removal of old or live trees with cavities during restoration activities may inadvertently remove roost sites. Loss of an active roost during critical life history stags (*e.g.,* when females are pregnant or rearing young) can result in the loss of individuals and have severe ramifications considering the species' low fecundity and population size.

The applicant's agreement to conduct pre-construction and pre-burn roost surveys, as well as to reduce fuel loads around roost sites pre-burn, should minimize the potential for injury and mortality.

Permanent Loss of Roosting and Foraging Habitat: This adverse effect is a result of permanent removal and development of 363.2 ac of roosting and foraging habitat. This can lead to a decline in populations of the covered species. However, any permanent loss of habitat is expected to be small in scale (0.36 percent of lands in the action area) and will not substantially affect population trends or result in quantifiable additional habitat fragmentation effects.

Temporary habitat degradation: Temporary soil disturbance and vegetation removal are expected from the implementation of the proposed activities onsite and in the proposed preserve. This disturbance may result in loss or temporary change in habitat conditions for the FBB. Sources of the disturbance include use of equipment (tractors and other machinery) as well as practices that involve manipulation of vegetation (*e.g.,* fire break installation and maintenance, mechanical treatment, and prescribed burning at the preserve site). The ground disturbance may involve minor surface disturbance such as tracked vehicles or tires. Common potential adverse effects identified by the Service include short-term degradation of habitat conditions and the potential to create opportunities for colonization of these disturbed sites by invasive plants.

Physical disturbance (including noise): All of the covered actions, either directly or indirectly, have the potential to produce some additional level of physical disturbance because they involve the physical presence of humans and/or associated equipment, vehicles, or machinery. Harvey et al. (1999) indicated disturbance to summer maternity colonies of bats is extremely detrimental. In general, maternity colonies of bats do not tolerate disturbance, especially when flightless newborns are present. Newborns or immature bats may be dropped or abandoned by adults if disturbed (Harvey et al. 1999). Disturbance to maternity colonies of the FBB may be particularly damaging because of this species' low fecundity and low abundance.

The net effect of the physical disturbance, including sustained sources of noise, may be a localized reduction of survival or productivity, avoidance of otherwise suitable habitat, and/or reduction of breeding and/or foraging frequency. These effects are expected to rarely occur and are not expected to produce substantial changes in species distribution and abundance. However, some small level of adverse effect is expected.

Temporary adverse effects on individuals can include increased levels of stress hormones, increased recesses during incubation (*i.e.,* may increase detection by predators and predation risk), or disturbance/flushing of young. If these risks are realized, individual fitness is reduced and may have population level effects if disturbance is over a broad enough spatial or temporal scale.

Interrelated and interdependent actions

An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. No interrelated or interdependent actions are expected to result from the project.

Species response to the proposed action

The FBB is known to forage along wetlands and open water and roost within pine flatwoods and other habitats. Potential effects to FBB due to the proposed action include a number of direct and indirect effects on the bat and its habitat. Potential direct effects to the bat or its habitat include: (1) direct mortality from land clearing and preserve management activities as bats may roost in tree hollows and in foliage of palm trees; (2) destruction of unknown roosting sites on the 363.2 ac of habitat to be cleared; and (3) harassment by proposed activities associated with preserve management (exotic removal and fire management (4) Permanent and temporary loss of foraging habitat. Potential indirect effects include beneficial long-term improvements in habitat quality. Bats may be disturbed by fire pre-treatment and may be injured or killed during prescribed fire or fire-related activities.

Habitat loss and alteration in forested and urban areas are threats to the FBB (Belwood 1992; NatureServe 2009). In natural areas, this species may be impacted when forests are converted to other uses or when old trees with cavities are removed (Belwood 1992; NatureServe 2009). In urban settings, this species may be impacted when buildings with suitable roosts are demolished (Robson 1989; NatureServe 2009) or when structures are modified to exclude bats. Small population size, restricted range, low fecundity, and few and isolated occurrences are considerable on-going threats.

The proposed action includes onsite restoration and preservation of 583.01 acres of habitat. This area will continue to provide foraging and roosting opportunities for FBB.

Limited information is available on FBB territory size and foraging ranges, nightly and seasonal movements, dispersal capabilities, and dietary requirements, and locations of key roost sites are not known, making it difficult to estimate how many bats may be disturbed by the loss of 363.2 ac of foraging and/or roosting habitat. The Service anticipates one colony of FBB may be adversely affected by the proposed action, in the form of harassment.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions reasonably certain to occur in the action area considered in this BiOp.

To estimate cumulative effects in the FBB action area, the Service chose to identify and tabulate recent past non-Federal actions and project this level of development as representative of future non-Federal actions.

The Service notes the District has issued permits for 8 ERP applications affecting 5,494 ac within the action area (Table 2), one of which is unknown to the Service to have had CWA 404 permit review. This action, Vincentian Development, may adversely affect 31 acres and is considered a cumulative effect. The remaining actions either have been previously reviewed by

the Service (part of the environmental baseline) or are being reviewed currently (future Federal action). The Service has also identified one project (Hussey Mine - Table 3) that is known to the Service as a potential future non-Federal action (Corps application withdrawn); this is being included in the cumulative effects assessment.

The Service's cumulative effects analysis has identified about 994 ac (31.09+963=994.09) within the action area that could be developed without Federal review. This level of development, which the Service believes is representative of future non-federal actions, may occur and, therefore, meets the definition of cumulative effect. This level of development represents 0.98 percent of the lands in the FBB action area (994.09/101,248=0.0098). As limited information is available on FBB territory size and foraging ranges, nightly and seasonal movements, dispersal capabilities, dietary requirements, and locations of key roost sites, it is difficult to estimate how many bats may be disturbed by future non-federal actions. Therefore, the Service anticipates one colony of FBB may be adversely affected by the non-Federal actions. The Service accounts for some habitat loss and changes in habitat quality through habitat restoration associated with reviewed projects, and encourages State and County entities responsible for permitting to pursue the section 10 (HCP) process to account and mitigate for adverse effects to the FBB.

CONCLUSION

Habitat loss and compensation

The project will result in impacts to 363.2 ac of foraging and/or roosting habitat for the FBB, and we anticipate that up to one colony of FBBs may be adversely affected by the proposed action. In addition, about 583.01 ac onsite will be restored and will remain available for use by the FBB.

Cumulative analysis

In the cumulative analysis, the Service identified the potential loss of about 994.09 ac of FBB habitat that may be developed without Federal review; we believe this level of development represents future non-federal actions. This acreage of impact, represents 0.98 percent of the available FBB habitat in the action area and, although the suitability of these lands for use may be affected, based on the status of species discussed previously and the status of the species in the action area, we believe the loss/reduction associated with these lands is not significant (0.98 percent) (994.09/101,247=0.0098).

Conservation land acquisitions

The acquisition of high quality habitat through land acquisition programs by Federal, State, County, and private organizations has resulted in benefits to the FBB. For example, since its inception in 1995, Lee County's Conservation Lands Program purchased a total of 23,820 ac, with the most recent acquisition being the 1,213 ac adjacent to the Bob Janes Preserve in eastern Lee County. A similar program in Collier County, the Conservation Collier Program, recently purchased 368 ac (Caracara Prairie Preserve) near Corkscrew Sanctuary and the 2,500-ac Pepper Ranch. As of 2010, conservation lands represent about 67 percent of the lands in Collier County and 31 percent of the lands in Lee County (FNAI 2010). Table 4 provides a representative

distribution of land ownerships by county. These lands are intended to be actively managed for the benefit of many wildlife species, including the FBB. The preservation of these lands will have a beneficial effect on the FBB and further the Service's goals for this species.

In summary, the Service believes, based on the applicant's agreement to survey all cavity trees for presence or absence of FBB roosts pre-construction and prior to prescribed burns, and to implement the recommended fire management techniques during prescribed burns, there will be no direct take in the form of mortality or injury of FBB resulting from this project. After reviewing the current status of the FBB, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion the development of Phase 2 of Winding Cypress, as proposed, is not likely to jeopardize the continued existence of the FBB. No critical habitat has been designated for this species; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." "Harm" is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking, that is incidental to and not intended as part of the agency action, is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are nondiscretionary and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to DiVosta for Phase 2 of the Winding Cypress development, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require DiVosta to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protection coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps or DiVosta must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service anticipates incidental take of the FBB will be difficult to detect for the following reasons: (1) patchy distribution within suitable habitats; (2) suitable habitat may not be occupied; (3) only one known location of a natural roost site; and (4) limited information on movements,

dispersal capabilities, diet, and prey base. Roosting and foraging areas appear varied, with the species occurring in forested, suburban, and urban areas. This species roosts in trees, foliage, and other structures. It may use tree cavities, palm fronds, other vegetation, rocky crevices and outcrops on the ground, and other natural or artificial structures.

Uncertainty regarding the location of natural and artificial roost sites may contribute to the species' vulnerability. Since the location of key roost sites is not known, inadvertent impacts to and losses of roosts may be more likely to occur, placing the species at greater risk. Removal of old or live trees with cavities during activities associated with forest management (*e.g.*, thinning, pruning), prescribed fire, or exotic species treatment may inadvertently remove roost sites, if such sites are not known. Loss of an active roost or removal during critical life-history stages (*e.g.*, when females are pregnant or rearing young) can have severe ramifications, considering the species' small population size and low fecundity.

Where roost sites occur in natural habitat, adults and especially young may be vulnerable to fire. Roost sites may be destroyed by fire and bats may be injured or killed during prescribed fire or fire-related activities. Harassment to FBB may occur during herbicide application, prescribed fires, mechanical treatment, human activity, and smoke, fire, heat, and noise from activities. However, it is difficult to estimate how many bats may be disturbed because little is known about their natural or artificial roost sites, nightly and seasonal movements, dispersal capabilities, and dietary requirements. Therefore, the Service anticipates one colony of FBB may be adversely affected during construction of the Winding Cypress - Phase 2 development associated with the removal of 363.2 ac of pine flatwoods, mixed pine/cypress, and cabbage palm that may be used for foraging and roosting by FBB. The incidental take is expected to be in the form of harassment and will be monitored by the acres of habitat removed for project development and acres treated for exotic removal and habitat restoration.

We also anticipate the FBB may continue to occur on areas within the action area that have not been developed, including the 583.01-ac onsite preserve. The Service finds the level of incidental take exempted by this action will not result in jeopardy of the species.

EFFECT OF THE TAKE

In the accompanying BiOp, the Service determined this level of anticipated take is not likely to result in jeopardy to listed species or the destruction or adverse modification of critical habitat for each species.

REASONABLE AND PRUDENT MEASURES

The Service believes the Corps and the applicant have developed a project that has conservation measures necessary and appropriate to minimize the effect of incidental take of the Florida panther, FBB, RCW, and eastern indigo snake, as outlined in the original BiOp dated October 8, 2002, and as outlined above for the re-initiation. In summary, to compensate for impacts to 363.20 ac of habitat for the construction of Winding Cypress - Phase 2 development, the applicant proposes to enhance and preserve 583.01 ac of wetlands and uplands on the project site. The applicant has also provided mitigation and monitoring plans that include management actions for the onsite preserve area and the establishment of funds for the enhancement and perpetual preservation of the offsite mitigation lands. Annual reports to the Service are a component of the management plans.

To minimize take of FBB, RCW, panthers, wood storks, and eastern indigo snakes, the Service considers it necessary and appropriate to collect hydrological and biological data as referenced in the mitigation and monitoring plans to ensure hydrological and habitat impacts do not occur to the mitigation lands.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline reporting/monitoring requirements. The terms and conditions are non-discretionary.

1. The preservation sites will be managed in perpetuity for the control of invasive exotic vegetation as defined by the Florida Exotic Pest Plant Council's Pest Plant List Committee's 2011 (or most recent) List of Invasive Species (Category 1) and managed for the benefit of the RCW, FBB, Florida panther, and eastern indigo snake in accordance with the management and monitoring plans provided as part of this action;

2. The method of preservation for the proposed mitigation parcels shall be a conservation easement for the 583.01 ac onsite, with enforcement rights granted to the Service and Corps for the onsite parcel. The conservation easements for these areas will be filed and recorded within 90 days of commencement of project or prior to any onsite land clearing, whichever is earlier. It is also the responsibility of the applicant and or permittee to reach the success criteria outlined in the Mitigation and Monitoring Plans for all species. Once the exotic vegetation has been removed and the native vegetation restored, the preserve lands are to be donated to the State of Florida or another appropriate public entity capable of providing such services and approved by the Service and the Corps. In addition to the donation of the property to an appropriate public entity, the applicant will also establish a non-wasting escrow fund for the perpetual maintenance and monitoring of the donated preserve. The applicant agrees to provide a non-wasting, long-term management fund in the amount of $748,196.17 for the onsite Phase 2 preserve areas prior to successful completion of the Corps' 5-year maintenance and monitoring program, and prior to transferring the property to a Service-approved entity. The monies generated from the non-wasting endowment funds will be sufficient to fund all land management costs, including: site fencing and fire break maintenance, taxes (if a non-government recipient), liability insurance (if site access is proposed and if non-government), site maintenance and monitoring actions, corresponding monitoring reports, and escrow holder handling fee.

3. The Corps will provide a copy of the final permit to the Service upon issuance. The Corps will monitor the permit conditions regarding conservation measures to minimize incidental take of panthers, FBBs, RCWs, wood storks, and eastern indigo snakes. The Permittee shall provide the Service and the Corps a report on implementation and compliance with the conservation measures within 1 year of the issuance date of the permit.

4. The Permittee will provide documentation to the Service and the Corps of all proposed onsite and offsite restoration and verification of the execution and terms of the conservation easements and the development and execution of the land transfer and endowment funds prior to release by the Corps of the applicants requirements to monitor the mitigation area.

The Corps shall require completion of the endowment and land transfer as outlined in condition #2, above, as part of the permit success criteria. The establishment of the escrow fund for perpetual management or other suitable payment mechanism shall be a success criterion for release and release cannot be sought/obtained until the funding mechanism is in place. This provides assurance for establishment of the escrow fund, or other suitable payment mechanism, for perpetual management of the onsite and offsite preserve lands.

5. The Permittee will rake and/or clear vegetation around the base suspected roost sites to reduce fuel loads before conducting prescribed burns. Potential roost sites may be located based on one or more of the following: FBB are observed emerging from a tree cavity, bat vocalizations (chattering) have been heard from a tree/snag cavity, large bats (> 5 inches in length) have been seen flying or bats have been heard vocalizing in the vicinity, the tree/snag exudes an "ammonia"-like smell, or bat guano has been seen around the base of a tree/snag.

6. The Permittee will visually examine all potential bat roosting cavities in live and dead trees with a video probe ("peeper"). The "peeper" camera will be adjustable, so cavities can be fully inspected in all directions. Surveys will be conducted within the development footprint (363.20 ac) before any land clearing operations. If bat roosts are located, cease clearing activities within 50 ft of the roost site and notify the Service.

7. Upon locating a dead, injured, or sick threatened or endangered species, initial notification must be made to the nearest Service Law Enforcement Office; Fish and Wildlife Service; 9549 Koger Boulevard, Suite 111; St. Petersburg, Florida 33702; 727-570-5398. Secondary notification should be made to the FWC; South Region; 3900 Drane Field Road; Lakeland, Florida; 33811-1299; 1-800-282-8002; and

   Care should be taken in handling sick or injured specimens to ensure effective treatment and care or in the handling of dead specimens to preserve biological material in the best possible state for later analysis as to the cause of death. In conjunction with the care of the sick or injured individuals, or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommends the Corps continue to closely coordinate with us on the implementation of their Federal CWA section 404 permit program in areas where panthers, RCWs, FBBs, wood storks, and indigo snakes may be affected, so that, where applicable, compensation can be designed in such a manner that it provides benefits to these species. Additional guidance can be found in the Florida panther SLOPES (Service 2000) and the Eastern Indigo Snake Effects Determination Key (Service 2010).

The Service is not proposing any further conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the Winding Cypress Phase 2 development. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this BiOp; (3) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation in the effort to protect fish and wildlife resources. If you have any questions regarding this project, please contact Victoria Foster at 772-469-4269.

Sincerely yours,

Craig Aubrey

Craig Aubrey
Field Supervisor
South Florida Ecological Services Office

cc: electronic copy only
Corps, Fort Myers, Florida (Krista Sabin)
EPA, West Palm Beach, Florida (Ron Meidema)
FWC, Naples, Florida (Darrell Land)
FWC, Tallahassee, Florida (FWC-CPS, Kipp Frohlich)
Service, Florida Panther NWR, Naples, Florida (Kevin Godsea)
Service, Tallahassee, Florida (Jerry Ziewitz)
Service, Vero Beach, Florida (Anthony Sowers, Brian Powell, Marilyn Knight, Paula Halupa)

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Table 1. Habitat preservation efforts resulting from formal and informal consultations with the Service for projects affecting Florida panther habitat from July 2001 to January 2014.

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
07/30/01	4-1-94-357	199003460 (IP-TB)	Naples Golf Estates	Collier	439	175	0	175
03/07/02	4-1-00-F-178	199901251 (IP-MH)	Benton, Charles (Southern Marsh GC)	Collier	121	75	80	155
10/08/02	4-1-02-F-014	199602945 (IP-DY)	Barron Collier Company (Winding Cypress)	Collier	1,088	840	1,030	1,870
06/10/03	4-1-01-F-1955	200003795 (IP-DY)	Walnut Lakes	Collier	157	21	145	166
03/31/05	4-1-04-F-5656	200306759 (NW-MAE)	Gateway Shoppes II	Collier	82	0	122	122
04/08/05	4-1-04-F-8176	2004-5312 (AEK)	Big Cypress Rock Mine	Broward	110	0	220	220
06/06/05	4-1-03-F-7855	2003-11156 (IP-RMT)	Collier Regional Medical Center	Collier	44	0	64	64
06/29/05	4-1-03-F-3915	199806220 (IP-MAE)	Wenthworth Estates - V.K. Development	Collier	917	0	458	458
07/15/05	4-1-04-F-5786	199405829 (IP-CDC)	Land's End Preserve	Collier	231	0	61	61
12/6/05	4-1-04-F-6691	200310689	Rattlesnake Hammock Road	Collier	47	0	23	23
01/13/06	4-1-04-F-6707	20042404	Journey's End	Collier	66	0	34	34
02/09/06	4-1-05-11724	2005384	Firano at Naples	Collier	24	0	19	19
05/05/06	2006-I-0274	2005-6176	Santa Barbara , Davis to Radio Road, Widening	Collier	6	0	3	3
05/16/06 04/30/08	4-1-05-F-10309	19971924	Sabal Bay/Isles of Collier Preserve	Collier	1,017	1,313	223	1,536
06/05/06	2006-FA-0402	20041688	Seacrest School	Collier	31	0	16	16
06/15/06	2006-I-0362	20056176	Collier County Wellfield	Collier	29	0	36	36
08/15/06	2006-I-0151	20031963	Naples Custom Homes	Collier	10	0	9	9
08/21/06	2006-I-0540	20041813	ASGM Business Park	Dade	41	0	25	25
12/07/06	2006-FA-0781	20041689	Cypress Landing	Collier	46	0	18	18
05/04/07	2007-TA-0623	NA	Abercia North	Collier	25	0	31	31
07/14/08	2008-I-0508	2005-6488	Amerimed Medical Center	Collier	19	0	14	14
07/14/08	2008-I-0509	2007-4314	Gridley Medical Building	Collier	4	0	2	2
09/25/08	2008-FA-0702 I-0806	1988-1061	Alligator Alley Commercial Center	Collier	41	0	18	18
12/17/08	2006-FA-0023 2008-F-0018	1999-4926	Sembler Partnership McMullen Parcel	Collier	40	0	49	49
3/30/2009	2006-FA-1342	HCP - 2009	City Gate Development	Collier	240	0	102	102

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
06/29/09	2007-FA-1534 I-1186	2007-1676	Tamiami Crossing Commercial Development	Collier	25	0	19	19
07/10/09	2007-FA-0283 I-0367	2008-4470	Home Center Plaza	Collier	16	0	5	5
03/03/10	2010-CPA-0154 I-0129	2009-03450	Naples Landfill Gas to Energy	Collier	1	0	2	2
06/09/00 06/06/12	4-1-99-F-553-R001	199900619 (IP-SB)	Vineyards Development Corp. (Naples Reserve GC)	Collier	748	75	346	421
07/18/12	2006-F-0204	2003-11158 (IP-MJD)	Hacienda Lakes	Collier	728	1,534	0	1,534
02/19/14	2012-CPA-0176, F-0324	2011-00626	Collier County RRP	Collier	154	176	446	622
				Total	**6,413**	**4,209**	**3,400**	**7,612**

30 Actions: 17 Biological Opinions, 12 NLAA, 1 TA

Table 2 – ERP Permits

APPLICATION ID	PERMIT NO.	APPROVED DATE	NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS ON PROJECT
121009-11	11-03312-P	April 8, 2013	HACIENDA LAKES OF NAPLES PHASE 1	2263.58	1469.14	425.01	1315.44	63.93	64.90%
120814-14	11-03462-P	July 1, 2013	LORDS WAY 30	91.53	25.88	22.37	45.49	18.73	28.27%
110829-1	11-00090-S-02	December 22, 2011	NAPLES RESERVE	685.11	77.49	0.00	80.07	5.24	11.31%
121120-1	11-00090-S-02	April 29, 2013	NAPLES RESERVE	685.11	77.47	0.00	80.07	5.24	11.31%
100827-1	11-03043-P	August 22, 2011	S R-84 WEST (DAVIS BLVD)	24.86	2.23	2.23	0.00	0.00	8.97%
110701-7	11-02003-P-06	January 9, 2013	SABAL BAY	2331.13	6.72	2.63	4.09	9.40	0.29%
111205-7	11-03368-P	October 22, 2012	U S 41 FROM C R 951 TO GREENWAY ROAD	66.46	16.54	16.54	0.00	0.00	24.89%
120425-9	11-03454-P	June 2, 2013	VINCENTIAN	31.09	12.66	10.80	0.00	0.00	40.72%

Note: South Florida Water Management District (SFWMD) applications from 2010 through 2013 were acquired from the SFWMD website (http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=unq_id=1128) on August 2013. The SFWMD ePermitting website was then researched to determine the data for the Environmental Resource Permits issued from August 2010 through August 2013.

Table 3 – FDEP Resource Mining Permits

Mine	Applicant	County	Permit Number		Date Issued	Acreage										Service Number	Service Status	
						Mine							Offsite Preserve				Action	Date
						Site	Acres to be Mined			Onsite Preserve			Lands					
						Total	Total	Wetland	Uplands	Total	Wetland	Uplands	Total	Wetland	Uplands			
East Naples Mine (Federal Action)	Florida Rock	Collier	FDEP	258805-001	12/4/2012	**716**	**345**	**61**	**284**	**371**	**262**	**109**				2007 FA 0893	Under Review	
			Corps	2005-11354	In Review	837	329	60	269	405	290	**116**	**223**	Bank				
Section 20 Mine (Baseline)	Lennar Homes, Inc.	Collier	FDEP	299965-001	9/7/2011	**671**	**572**	**83**	**489**	**9**	**9**	**1**	**928**	426	503	2010 CPA 0367	BO	4/30/2013
			Corps	2010-00491	NWP Pending	671	616	30	585	55	49	**7**	1,309	380 ac bank plus FDEP				
Willow Run Quarry (Baseline)		Collier	FDEP	134951	?	**546**	**162**			**190**						4-1-97-F-635	BO	3/27/1998
			Corp	1996-04158		549	135	104	30	190	136	54						
APAC Golden Gate		Collier	FDEP	11-00256	6/16/2006	**667**										4-1-94-403	RAI	7/05/1994
			Corps	1994-01323														
H H H (H&H) Mine (Cumulative)	Hussey	Collier	FDEP	Unknown												2006 FA 0945	RAI HCP	6/26/2006 2/09/2010
			Corps	2004-05091	Withdrawn	**963**	**963**	**610**	**353**									
Values in bold are totaled						**3,563**	**2,042**	**858**	**1,156**	**570**	**407**	**287**	**1,151**					

Table 4. Conservation lands Collier and Lee Counties (Acres) (FNAI 2010).

Ownership	Acreages	Percent Total
Collier County – Total Land Acreage - 1,296,640		
County	4,410	0.3%
State	209,820	16.2%
Federal	647,260	49.9%
Private	11,070	0.9%
Total Conservation Lands	872,560	67.3%
Lee County – Total Land Acreage - 347,520		
County	24,460	7.0%
State	49,650	14.3%
Federal	5,270	1.5%
Private	9,050	2.6%
Total Conservation Lands	108,810	31.3%

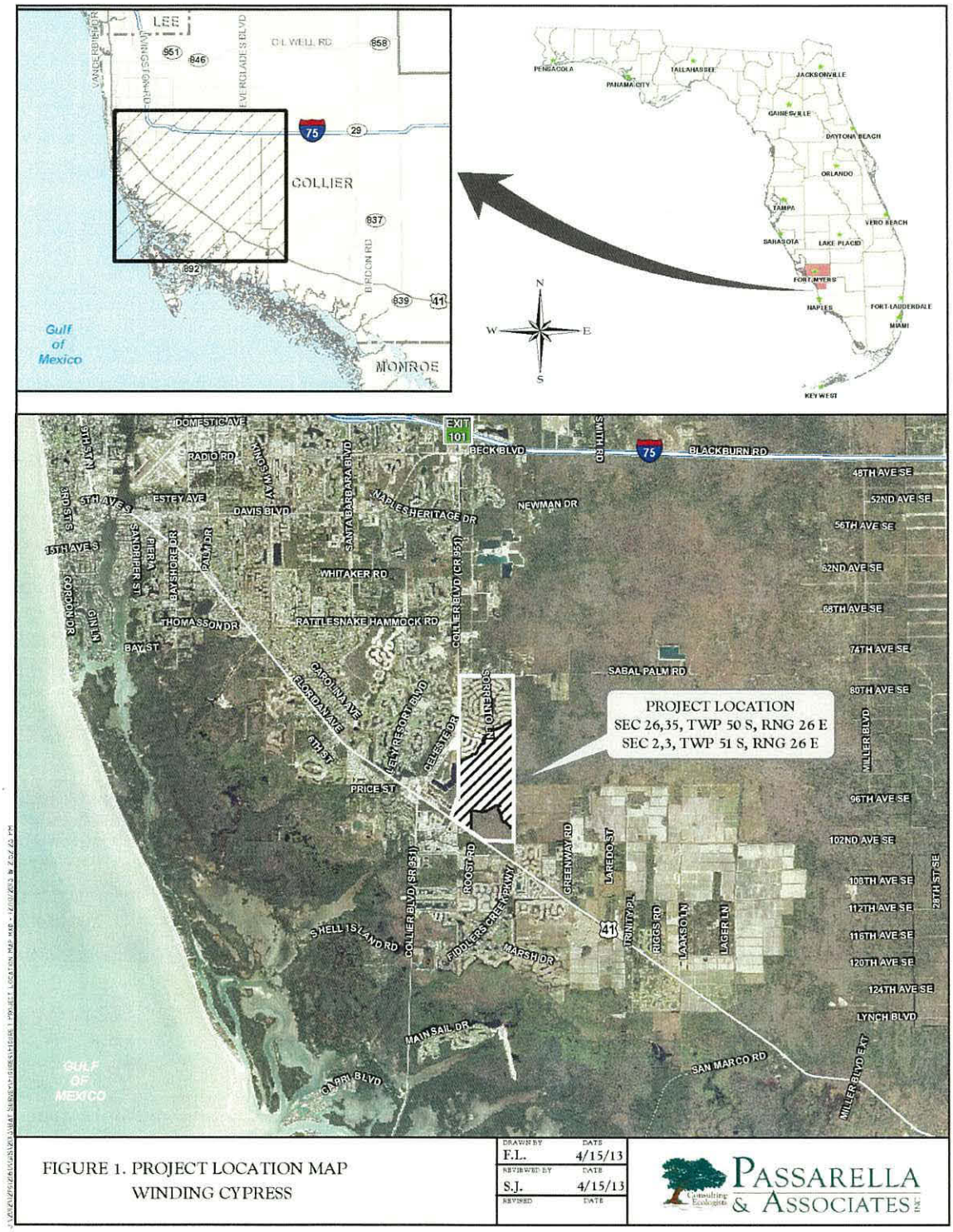

FIGURE 1. PROJECT LOCATION MAP
WINDING CYPRESS

Figure 1. Project Location Map

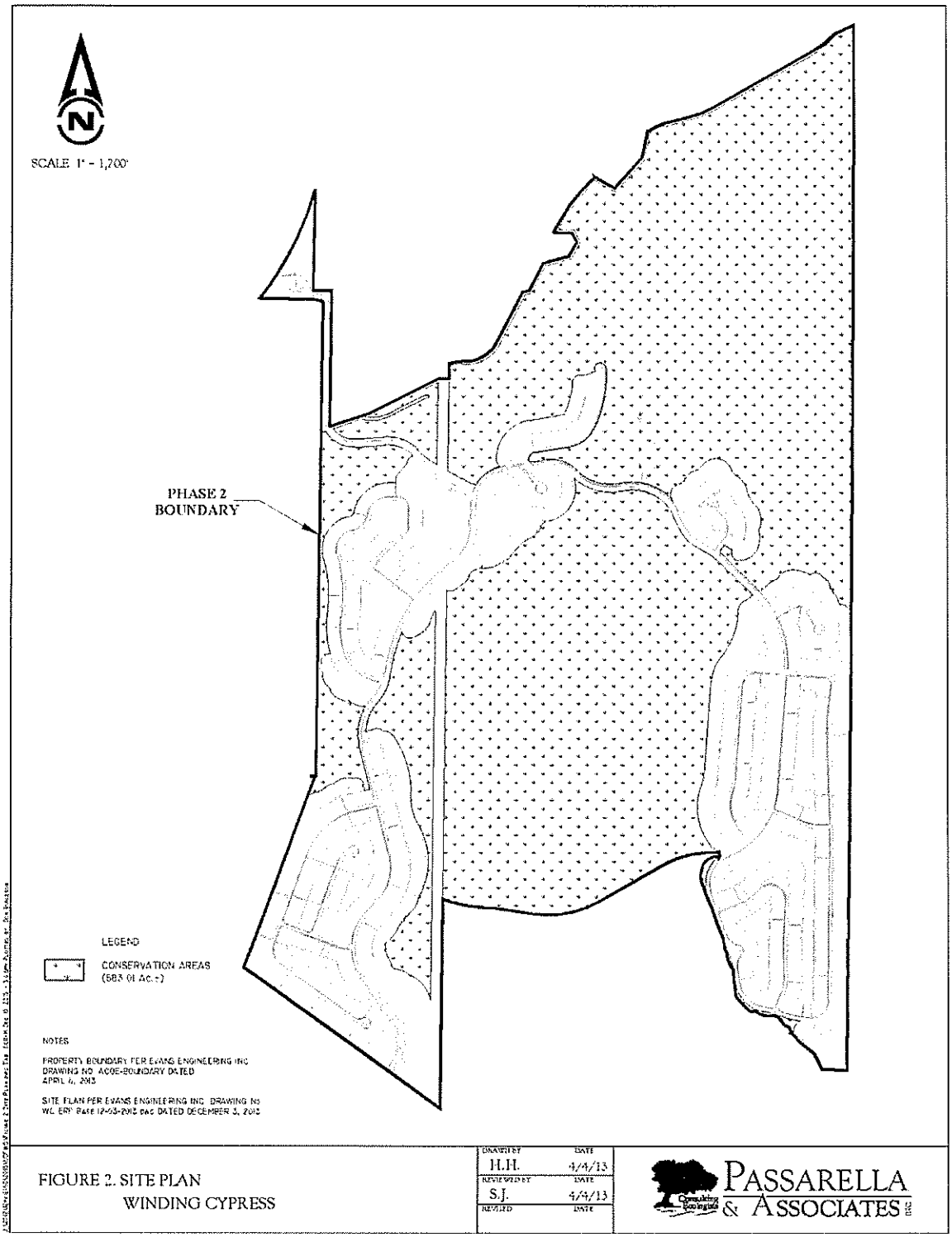

Figure 2. Site Plan

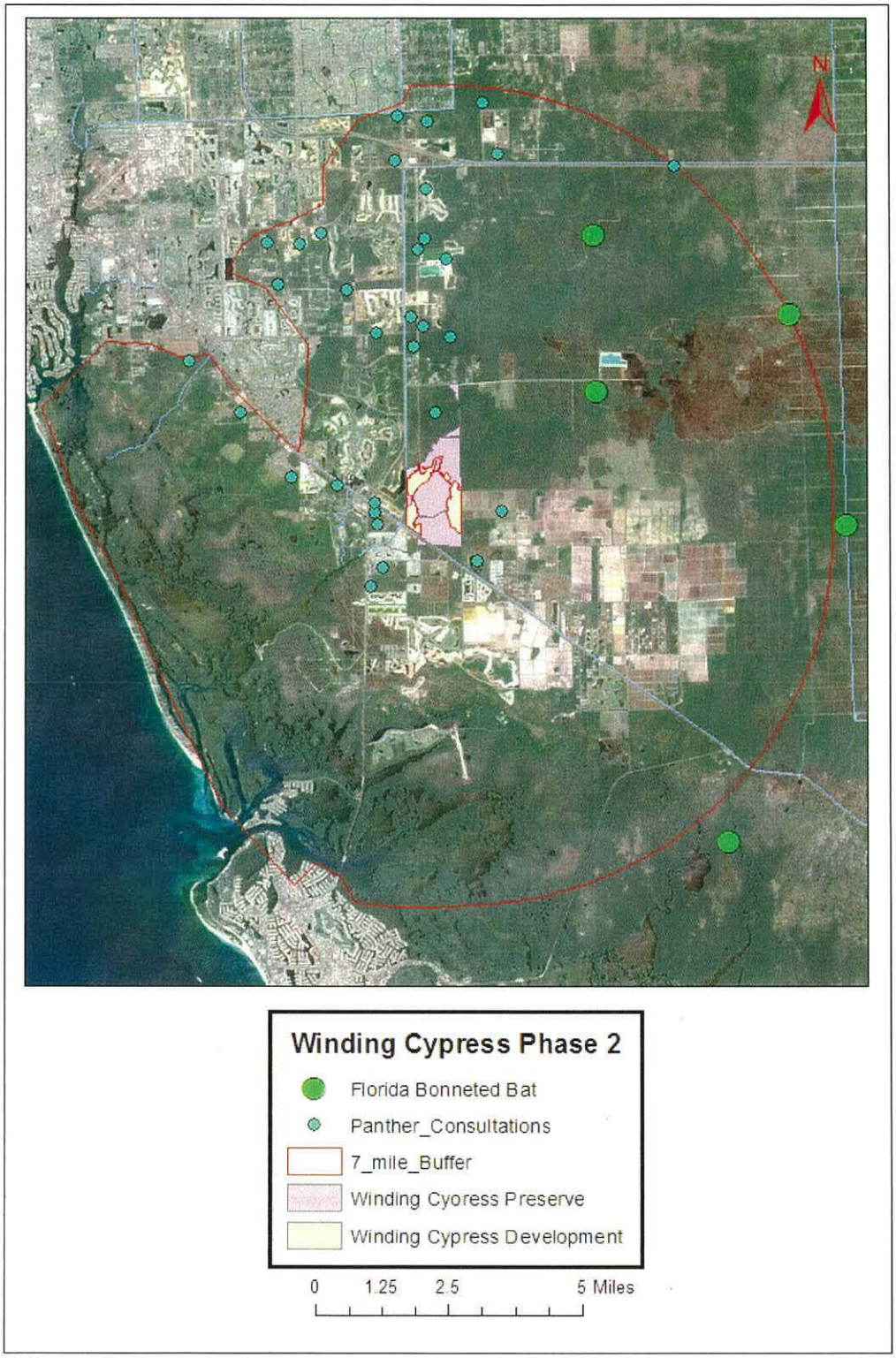

Figure 3. Species Occurrence Data and Action Area for the Florida Bonneted Bat