



United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office



February 25, 2025

Brandon Bowman, Colonel
District Commander
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P.O. Box 4970
Jacksonville, Florida 32232-0019

Service Consultation Code: 2023-0009323
Date Received: October 2, 2024
Consultation Initiation Date: February 10, 2025
Project: Rural Lands West
Corps Permit Application Number: SAJ-2008-02431 (SP-MAO)
County: Collier

Dear Colonel Bowman:

The U.S. Fish and Wildlife Service (Service) has received the U.S. Army Corps of Engineers' (Corps) request for consultation dated October 2, 2024, for Tarpon Blue Silver King I, LLC's d/b/a Collier Enterprises (Applicant) on an application for a Corps Clean Water Act section 404 permit. The requested permit would authorize the discharge of fill material into approximately 274 acres of wetlands and other water features in connection with the Applicant's Rural Lands West (Project). This document transmits the Service's biological opinion based on our review of the proposed Project located in Collier County, Florida, and its effects on the threatened Audubon's crested caracara (*Caracara plancus audubonii*; caracara), threatened eastern indigo snake (*Drymarchon couperi*; indigo snake), endangered Florida bonneted bat (*Eumops floridanus*; FBB), endangered Florida panther (*Puma concolor coryi*), and proposed-listed endangered tricolored bat (*Perimyotis subflavus*; TCB). It also includes and summarizes our concurrences for the Corps' determinations for the Everglade snail kite (*Rostrhamus sociabilis plumbeus*), and wood stork (*Mycteria americana*). This document is 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.*).

This biological and conference opinion is based on information provided in the April 2024 biological assessment, the October 2, 2024, consultation request, and other sources of information. A complete record of this consultation is on file at the Florida Ecological Services Office in Vero Beach, Florida.

Consultation history

On October 2, 2024, the Corps submitted a request for consultation under section 7 for impacts to wetlands and waters of the U.S. associated with the development of a mixed-use development.

On January 29, 2025, the Service sent an email regarding the effects determinations for the indigo snake, tricolored bat, and wood stork. The Corps provided an email response on February 10, 2025, determining that the proposed Project is not likely to adversely affect the wood stork and is likely to adversely affect the indigo snake and tricolored bat. As of this date, the Service has received all the information necessary to initiate consultation on the proposed action as required in the regulations governing interagency consultations (50 CFR § 402.14).

BIOLOGICAL OPINION

This Biological and Conference Opinion provides the Service's opinion as to whether the proposed Project is likely to jeopardize the continued existence of the caracara, Florida bonneted bat, indigo snake, panther, and tricolored bat (50 CFR § 402.02). There is no designated critical habitat for these species onsite, and no offsite impacts to designated critical habitat are anticipated; therefore, this Biological Opinion will not address destruction or adverse modification of critical habitat.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATIONS

Jeopardy determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this Biological Opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determine the direct and indirect impacts of the proposed Federal action and the effects of other activities caused by the proposed action on the species; and (4) the Cumulative Effects, which evaluate the effects of future, non-federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the species, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

DESCRIPTION OF THE PROPOSED ACTION

The proposed Project consists of mixed-use residential and commercial development of approximately 4,909.1± acres and the conservation, land enhancement, and restoration of 5,241.86± acres. The Project site totals 10,264.63± acres and is located in Sections

1,2,3,10,11,12,13,14,15,22,23,24,25,26,27, 34, 35, and 36; Township 48 South; Range 28 East; Collier County (latitude 26.298903, longitude -81.489371) (Figure 1). The surrounding land uses include agricultural uses to the north and south; Camp Keais Strand, Ave Maria, and agricultural uses to the east; and single-family home sites to the west. Additionally, Oil Well Road bisects the property into north and south sections.

Nearly half of the Project site currently supports various agricultural operations including row crop and pastureland, while 46 percent of the site contains native vegetation with varying amounts of disturbance and exotic vegetation. The native wetland habitats include, but are not limited to, cypress, hydric pine, cypress/pine/cabbage palm, mixed wetland forest, freshwater marsh, and wet prairie habitats. Native upland habitats on the Project site include, but are not limited to, palmetto prairie, pine, and pine flatwoods habitat types. As part of the historical agricultural surface water management, an extensive network of ditches, berms, and reservoirs has been constructed on the property, which has led to the isolation of native wetland systems within the site and neighboring flooding.

The Rural Lands West Project is designed around the contours of natural areas on the site, directs construction to areas currently used for large-scale agricultural operations, and avoids higher value onsite wetland and upland habitats. The overall project will transform portions of large-scale agricultural areas into a residential community with a mix of commercial and recreational elements. The community is designed to feature preservation of natural areas in a rural setting and provide affordable and carefully planned housing in a portion of Collier County identified for future growth and resiliency. The site plan preserves 91 percent (4,101 acres) of the wetlands within the project site, which contain the majority of the highest quality onsite wetlands. In addition to minimizing impacts to and preserving higher quality onsite wetlands, the project preserves extensive areas of higher quality upland areas. A total of 4,526 acres of conservation areas will be established and permanently preserved within the project site.

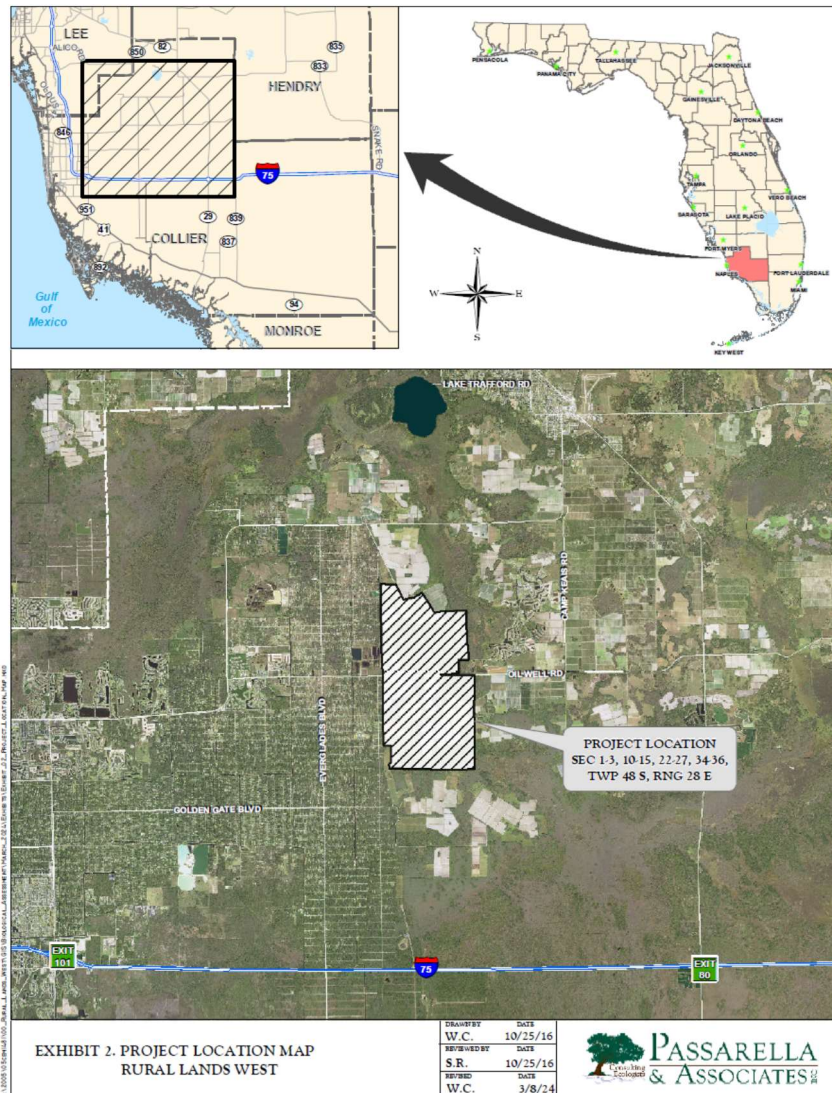


Figure 1. Location map of the Rural Lands West Project in Collier County, Florida (Map credit Applicant’s consultant).

Development

Land clearing and construction activities associated with the Project will result in the permanent loss of approximately 4,909.1± acres of habitat (Figure 2). Within these, the Project will impact 262.04± acres of wetlands and 14.04± acres of “Waters of the U.S.”.

The land restoration and mixed-use development will be implemented in phases in concert with the impacts within nine surface water management basins and corresponding nine mitigation areas. The developed areas will consist of commercial, residential, institutional, and recreational facilities, as well as all supporting infrastructure.

The estimated build-out for the entire Project will take roughly 15 to 20 years at minimum, subject to future economic conditions. Large and small wildlife crossings within the Project

footprint, as well as traffic control and speed reduction measures, are considered part of the infrastructure and will be installed in phases along with the construction of homes.

Enhancement and Restoration of Conservation Area

The proposed Project incorporates the conservation and restoration of approximately 4,525.89 acres of upland and wetland habitat (Figure 2). As mentioned above, the management of the onsite conservation lands will occur alongside the development phases. Wetland and upland preservation and enhancement of indigenous wetland and forested upland habitats will include the hand-removal/treatment of exotic and nuisance vegetation, including, but not limited to, Brazilian pepper and melaleuca.

Wetland and upland restoration will be conducted within existing forested and herbaceous habitats, as well as existing agricultural lands. In existing forested and herbaceous habitats, exotic vegetation will be removed via hand or mechanical methods. Following the removal of exotic vegetation, supplemental plantings may be installed in portions of the wetland and upland enhancement areas to ensure recruitment of desired vegetation. Project conservation areas will be placed under conservation easements granted to the South Florida Water Management District with third-party enforcement rights to the Service.

The Project also will designate Stewardship Sending Area (SSA) 15 to maintain and manage approximately 1,508 acres of suitable panther habitat adjacent to the Project.

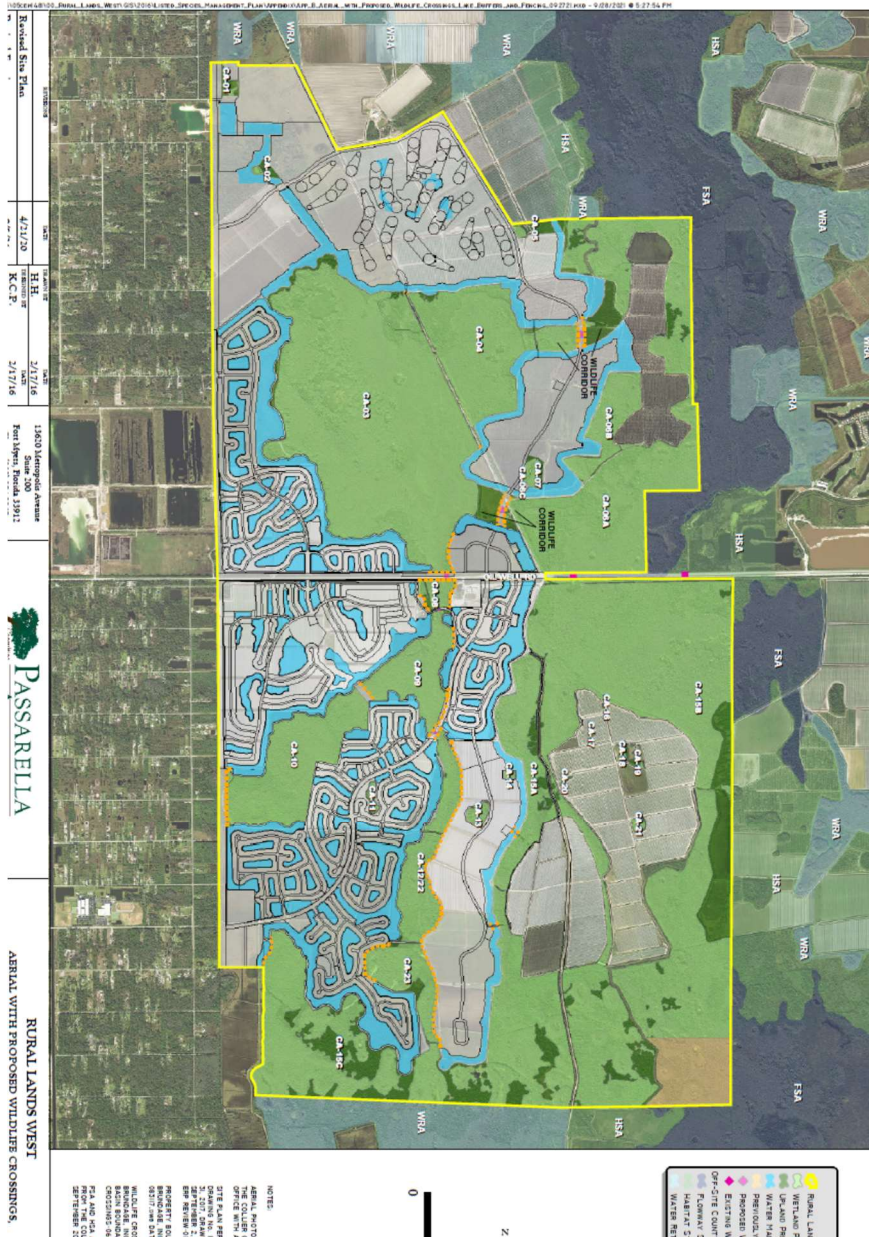


Figure 2. Site plan of the Rural Lands West Project with conservation areas (shaded green) in Collier County, Florida (Map credit Applicant’s consultant).

Minimization and conservation measures

In order to avoid and minimize impacts to listed species and their associated habitats, the Applicant will implement the following measures:

1. Adhere to the Service’s Standard Protection Measures (SPMs) for the Eastern Indigo Snake (Service 2021a).
2. In any year, prior to conducting any clearing activities within 4,920 feet (1,500 meters) of any previously documented or newly discovered caracara nest site, the Applicant shall

conduct a survey during the caracara nesting season (January 1 through April 30) to determine if the documented or discovered nest is active and if other caracara nests are present. The survey area shall include potential nesting and foraging habitat located in land adjacent to the Project site that is under the Applicant's ownership or neighboring areas where access is allowed.

3. To minimize the potential for disturbance to nesting caracaras, the Applicant shall conduct land-clearing activities outside the nesting season for areas that occur within the primary zone (984 feet or 300 meters) of any documented caracara nest site. Should it be necessary to conduct land-clearing activities during the nesting season, land-clearing within 984 feet (300 meters) of any nest identified during the survey referenced above will not occur until monitoring has determined that the nest has been abandoned or that the chicks within the nest have fledged and left the nest site. Once the nest is empty, clearing of that primary zone and nest tree can proceed.
4. If construction activities are to occur within 984 feet (300 meters) of an active caracara nest identified in the most recent nesting season, the Applicant shall conduct restoration of caracara nesting and foraging habitat on a scale equal to the portion of the breeding territory that is impacted by construction activities. Restoration activities will be conducted by restoring native dry or wet prairie with scattered cabbage palms or creating improved pasture and planting scattered cabbage palms. Restoration activities will occur on existing agricultural lands located within the Project site or on agricultural lands adjacent to the Project site that are under the Applicant's ownership. The Applicant shall contact the Service's Florida Ecological Services Office (FESO) at FW4FLESRegs@fws.gov for technical assistance prior to the start of the construction activities and shall provide the location and extent of proposed restoration activities. Once restoration activities have been completed, the restored habitat will be maintained in perpetuity and managed in a state that supports use by the crested caracara. The Applicant shall report the final location and extent of restored habitat to the Service's FESO upon completion of restoration activities.
5. In any year, a cavity tree and roost survey will be conducted on the Project site within 30 days prior to the removal of trees, snags, or structures. When possible, structures will be removed outside the breeding season (e.g. January 1 through April 15 for the Florida bonneted bat, May through July for the tricolored bat). If evidence of use by either Florida bonneted bats or tricolored bats is observed, the removal efforts will be discontinued, and the Service will be contacted on how to proceed.
6. A 250-foot buffer will be maintained around known or suspected Florida bonneted bat or tricolored bat roosts when using heavy equipment to limit disturbance to roosting bats.
7. The creation of the Project's buffer lake system and the preservation, enhancement, restoration and creation of 4,194.05± acres of on-site wetlands and surface waters will promote Florida bonneted bat and tricolored bat foraging opportunities.
8. Widespread application of insecticides will be avoided in areas where Florida bonneted and tricolored bats are known or expected to forage or roost.
9. Mature trees and snags that could provide roosting habitat for Florida bonneted and tricolored bats will be retained within the conservation areas.
10. International Dark-Sky Association lighting initiatives to minimize use of artificial light and retain natural light conditions will be implemented to the greatest extent practicable.

11. Prescribed fire will be implemented as a management tool within the on-site conservation areas to the greatest extent practicable to promote foraging habitat for the Florida bonneted bat and tricolored bat.
12. Riparian habitat will be enhanced by the planting of native vegetation along the lake shorelines (i.e., littoral zone plantings).
13. Native trees and shrubs will be planted within open space and buffer areas to promote insect diversity, availability, and abundance.
14. On-site preserve enhancement activities will include the removal of exotic and nuisance vegetation, and restoration activities will include the removal/treatment of exotic vegetation and the planting of supplemental native vegetation. The proposed restoration plan also includes creation of upland and wetland habitat from existing agriculture fields. Following enhancement and restoration, 5,241.86± acres of on-site restoration lands will provide habitat within the Florida panther Primary and Secondary Zones that panthers could potentially utilize for prey base and for wildlife movement.
15. The Applicant shall provide documentation confirming contributions to the Paul J. Marinelli Fund (Fund) (or, in the case of the per-acre contribution described in [15.a] below, to the Fish and Wildlife Foundation of Florida Fund) confirming contributions for panther conservation and research have been provided as described below. Documentation for each contribution shall be sent to the FESO by e-mail (FW4FLESRegs@fws.gov). The Applicant shall ensure the following is completed and reflected in the documentation provided:
 - a. The Applicant will deposit \$350 per acre of land within the development footprint of the Project no later than 30 days after permit issuance.
 - b. The Applicant will establish transfer fee provisions in the deed for each residential unit constructed and sold within the Project that specify that \$200 will be deposited to the Fund each time the unit is sold (including the initial sale and each re-sale).
 - c. The Applicant shall provide an annual report confirming the sale and contribution to the Fund to FESO by e-mail (FW4FLESRegs@fws.gov).
16. The Applicant will, at its sole cost and expense, construct or fund the construction of five wildlife crossings within the geographic region where the project is located, including one on Oil Well Road, to maintain intra-preserve connectivity and hydrologic flow throughout the Project site. The wildlife crossings shall be constructed as per the approved maps, drawings, and specifications in this permit. Prior to the start of construction of each crossing, the Applicant shall contact the FESO by e-mail (FW4FLESRegs@fws.gov) for technical assistance and shall provide the location and plans of the proposed wildlife crossings for review. The Applicant shall report the final location and provide as-built plans of wildlife crossings to the FESO.
17. The Applicant shall provide documentation confirming contributions of approximately \$50,825,949 to Collier County for roadway funding to be used as the discretion of Collier County for roadway modifications and improvements, including fencing access of panther and other wildlife from roadways and towards wildlife crossings.
18. The Applicant shall ensure that Homeowners Association (HOA) and/or homeowners' documents for the Project community state that pets within the community should be kept indoors on leash and supervised when outdoors in common areas, or secured within a covered kennel. Residents shall be informed that vaccinating cats for feline leukemia virus (FLV) can prevent disease transmission from house cats to Florida panthers. The Applicant

shall ensure that the HOA and/or homeowners' documents inform residents of the importance of community-wide vaccination of all pet cats for FLV since it protects homeowners' pets from illness, as there is no definitive cure, and assists in preventing illness in Florida panthers.

19. Project residents, community association managers, and maintenance staff will be provided with an educational brochure prepared by the USFWS and the Florida Fish and Wildlife Conservation Commission titled "A Guide to Living with Florida Panthers."

Action area

The Action Area is defined as all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action. For this Project, the Service considers the action area as all lands within the footprint of the Project, and all lands within 25 miles of the Project footprint (Figure 3). The 25-mile buffer around the Project footprint is designed to encompass mean dispersal distance of sub-adult male panthers, which was reported by Maehr et al. (2002) to be 23.2 miles and by Comiskey et al. (2002) to be 24.9 miles. The 25-mile buffer distance encompasses the dispersal distance of both male and female panthers because male panther dispersal distances are known to exceed those reported for female panthers (Comiskey et al. 2002; Maehr et al. 2002). The size of the Action Area for this consultation is consistent with action areas defined in our recent biological opinions for the panther, and it accounts for the large movements and home ranges of panthers as well as sufficiently consider cumulative effects and impacts to panther baseline conditions. While the Action Area is a 25-mile buffer around the Project footprint, effects to species other than panthers are not expected to extend beyond the Project boundaries.

Based on the proposed on-site mitigation plan, the Corps has programmatic concurrence through the use of the South Florida Programmatic Concurrence Key for wood stork (Service 2010, 41420-2007-I-0964) with the sequence A>B>C>E> may affect, but not likely to adversely affect the wood stork.

STATUS OF THE SPECIES

Audubon's caracara

Please see Enclosure A for the Status of the Species for the caracara.

Eastern indigo snake

Please see Enclosure B for the current Species Status Assessment for the indigo snake.

Florida bonneted bat

Please see Enclosure C for the Status of the Species for the Florida bonneted bat.

Florida panther

Please see Enclosure D the status of the species for the panther. Critical habitat has not been designated for the panther.

The Florida Fish and Wildlife Conservation Commission (FWC), Service, National Park Service, and other partners used a minimum count index of panthers to determine trends in the panther population from the 1980s through 2015 (McBride et al. 2008). This method provided an estimate of panther numbers for managers to assess changes in the population. However, this technique did not provide a true population estimate because it did not have an associated measure of variance, and it did not consider changes in detectability or sampling effort. In addition, the minimum count index was used with the understanding that a portion of the population was not counted. Based on this minimum count method, the Service and FWC reported that as of 2015 there were 120 to 230 adult and subadult panthers in the Primary Zone (Kautz et al. 2006, FWC and Service 2017). The last annual count was completed in 2015 and has since been discontinued.

To describe the current population size of the panther, we present the population estimates from 2000 through 2018 provided in Appendix 6 of Onorato et al. 2024 (Figure 4). Onorato et al. (2024) revised the model used by McClintock et al. (2015) with additional panther road mortality and radio collar monitoring data collected from 2013–2018 to estimate the annual, range-wide, size of the panther population. To allow for more flexible (and potentially more parsimonious) population trend models, the revised analysis included multiple spline-based models of abundance. Using this technique, the subadult and adult panther population was predicted to range from 128 individuals in 2000 to 414 individuals in 2016 and 2017 and was predicted as 407 individuals in 2018 (Figure 4). Onorato et al. 2024 acknowledged that the model averaged confidence intervals (Figure 4) were large and in some years the upper bounds of the confidence intervals for their population estimates exceeded reasonable population estimates that could likely be supported within the breeding range of South Florida (e.g., 821 panthers in 2018).

Onorato et al. (2024) noted the elevated upper bounds are likely related to: the small sample of radio-collared individuals used in the modelling, the overall low probability of a panther motor vehicle mortality in their study, and the lack of (biologically informed) prior constraints on population size being incorporated into the modeling. Given these issues, Onorato et al. (2024) recommend caution when interpreting the upper bounds of the confidence intervals (Figure 4) and noted that the most informative outputs of this model are the lower bounds for the panther population size, indicating the population may never have exceeded 235 individuals from 2000–2018. Results from the two most recent Population Viability Analysis models (Hostetler et al. [2013] and van de Kerk et al. [2019]) reveal that the South Florida panther population is viable for the next 100 years, although when the impacts of genetic erosion are considered, the population remains at risk, especially if genetic introgression initiatives are not implemented in the future.

Although survival rates for Florida panthers were described by Benson et al. (2011), those values are model-averaged and categorized by sex and age cohort, making them difficult to apply to a panther population of unknown demographics. Specifically, the survival rate for a subadult panther is 0.951 for a female (1 to 2.5 years old), in comparison to 0.713 for a male (1 to 3.5 years old). Similarly, survival rate of a prime adult female (2.5 to 10 years old) panther is 0.872 and 0.799 for a male (3.5 to 10 years old). Given the challenges using these estimated survival rates, coupled with known variability in number of breeding females in the population and litter size, the Service will use the population count description above, the lower bounds depicted in Figure 4.

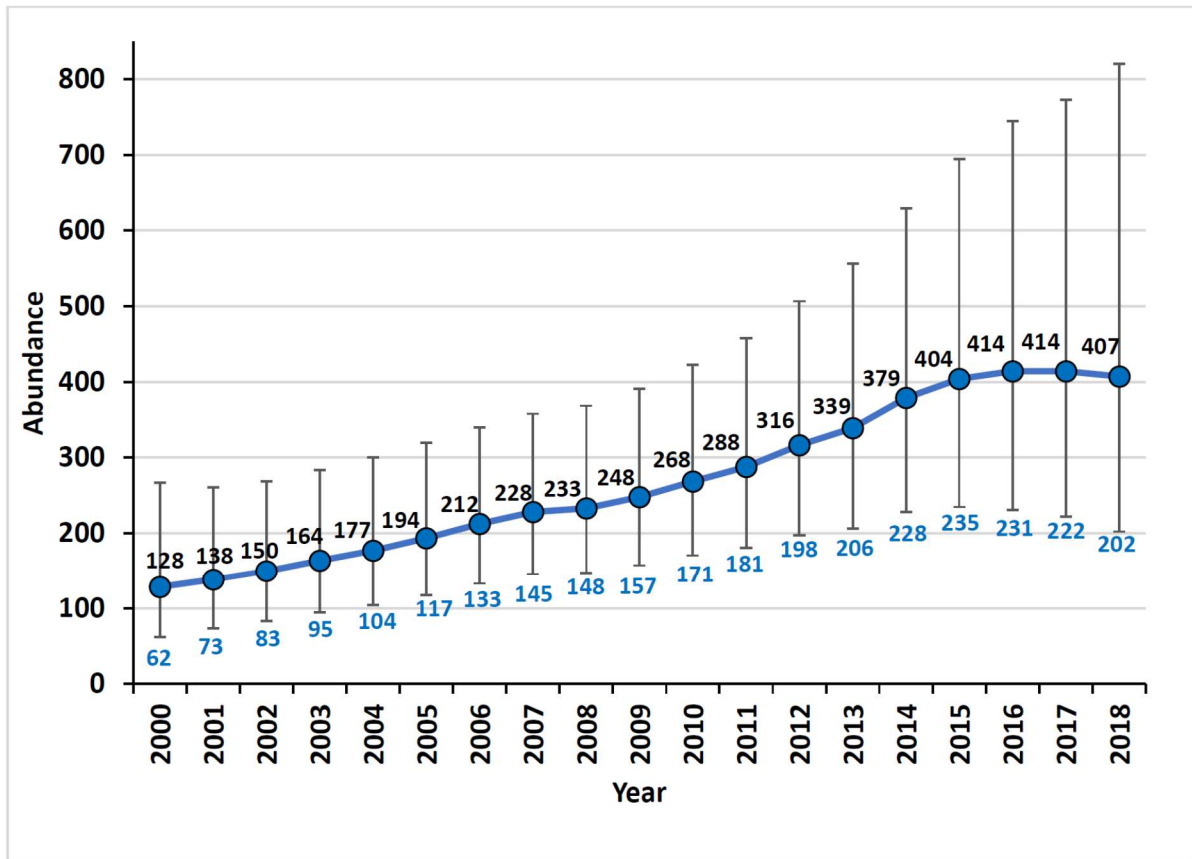


Figure 4. Estimates of the range-wide population size of adult and subadult Florida panthers from 2000–2018 using the motor vehicle mortality (MVM) model of McClintock et al. 2015. Model-averaged abundance estimates (as indicated by blue dots) are presented with 95% confidence intervals. The lower 95% confidence interval values are presented in blue text. Source of figure: Appendix A6.1 in Appendix A of Onorato et al. 2024.

Tricolored bat

Please see <https://ecos.fws.gov/ServCat/DownloadFile/221212> for the current Species Status Assessment for the tricolored bat.

Summary of threats to the species

Audubon’s crested caracara

The modification and destruction of native wet and dry prairie, pasture lands and isolated wetlands in south Florida were a primary consideration in listing caracara. The conversion of prairie and pasture to citrus grove, sugarcane, and residential/commercial development alters habitat making it unusable by caracara. Based on the 2021 National Land Cover Database, approximately 8,151,711.16 acres of suitable habitat remain within the range of the caracara, with approximately 2,008,073 acres in conservation (Figure 5). Suitable habitat was identified

by, among other factors, the surrounding landcover of known caracara nests. Alteration or filling of wetlands destroys important foraging habitat. Lack of habitat management, including prescribed fire, can result in habitat degradation to the point where it is no longer suitable for occupancy or foraging. The ongoing threats relevant to this Project would be the additional conversion/reduction of habitat. The proposed Project would reduce the amount of suitable habitat within the overall range of caracara in Florida and also the territory of the documented nesting pair on the adjacent property. The Project's adverse effects to the caracara will be discussed in the remainder of this Biological Opinion.

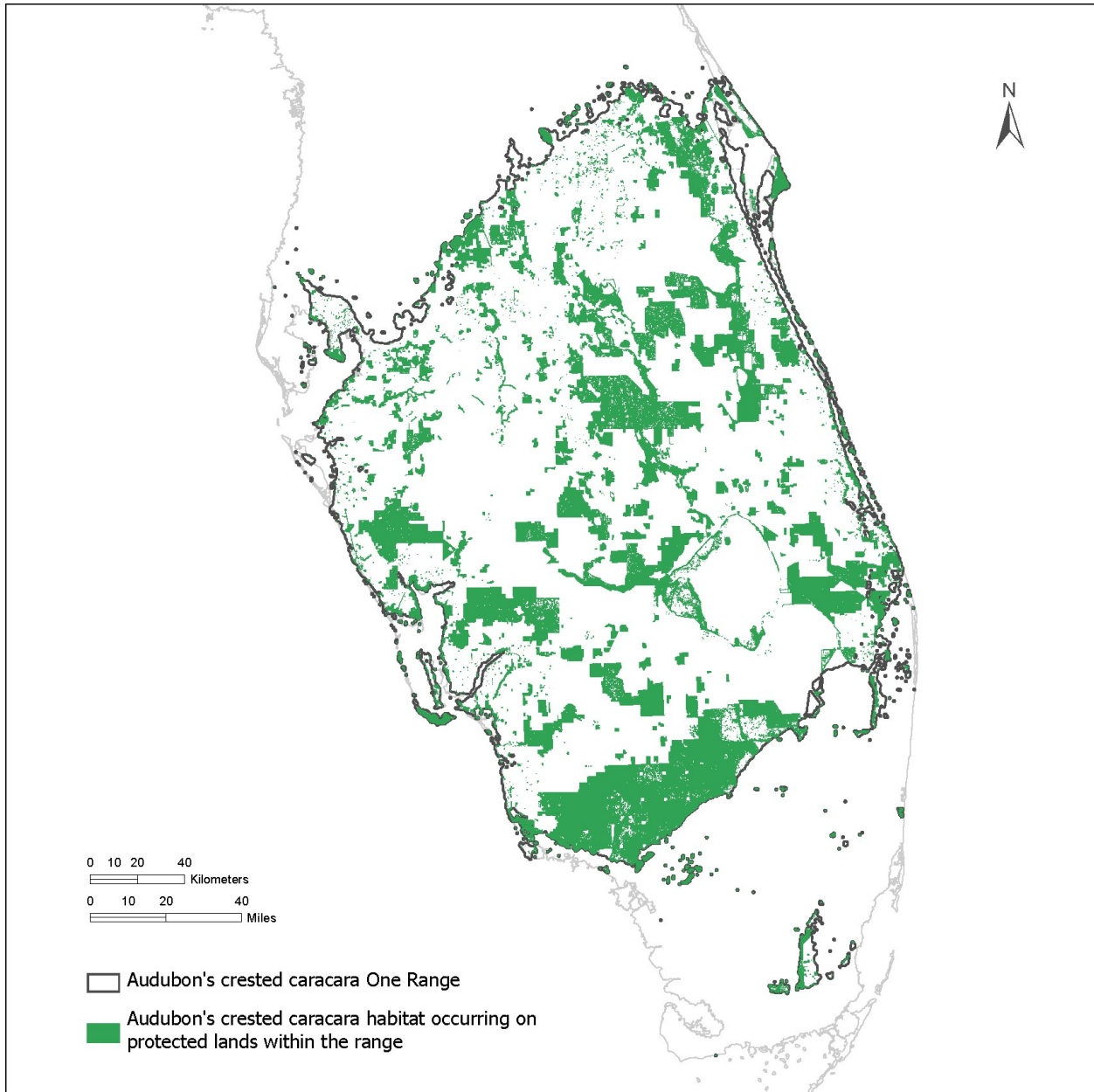


Figure 5. Protected caracara habitat within the species' range, composed of cultivated crops, pasture, hay, developed open space, and woody wetland.

Eastern indigo snake

The modification and destruction of natural upland and freshwater wetland communities in south Florida were a primary consideration in listing the indigo snake as threatened. Another threat to the indigo snake is loss of converted habitat, such as citrus orchard and canals, where the species is known to occur. Collisions with motor vehicles on Florida's extensive roadway system may also be a significant source of indigo snake injury and mortality. Additionally, habitat degradation due to lack of management, including prescribed fire, is a threat to indigo snakes. The Project's adverse effects to indigo snakes will be discussed in the remainder of this biological opinion.

Florida bonneted bat

The loss, degradation, and modification of native forested habitat and roost sites were primary considerations in listing the FBB as endangered. Other threats include loss of foraging habitat, competition for tree cavities, pesticides and contaminants, ecological light pollution, climate change, sea level rise, and other anthropogenic factors. Threats to the FBB that are relevant to the proposed Project, and will be discussed in the remaining sections of this Biological Opinion, are the loss of habitat and other anthropogenic factors.

Florida panther

The panther is a wide-ranging species that requires large areas of diverse landscape to survive. Dispersing sub adult males wander widely through unforested and disturbed habitat. Habitat loss from residential, commercial, and agricultural development and other human related activities associated with the continually increasing human population in Florida represents the primary threat to the long-term viability of the panther. The human population in South Florida has dramatically increased, from 1 million in 1950 to 6.6 million in 2010, resulting in secondary disturbances such as increased human presence and noise, light, air, and water pollution. In southwest Florida, where the reproducing panther population is primarily located, human population has increased from 833,892 in 2000, to an estimate of 1,231,100 in 2010, representing an increase of 47.6 percent over the 10-year period (University of Florida 2015). Over that same period, the estimated minimum population of adult and subadult Florida panthers increased from 62 to 171, representing a 175.8 percent increase (Appendix A6.1 in Appendix A of Onorato et al. 2024). Increasing human population has resulted in increasing impacts on native habitat, and flora and fauna. Resulting threats to panthers include human disturbance during Project construction, habitat loss and fragmentation, road mortality, human disturbance following construction, exposure to toxins, and intra-specific aggression. Vehicle collisions with panthers appears to be one of the primary threats to the species. Range-wide, as shown in Figure 6 (below), between 1 and 35 panthers are known to have been killed annually via panther-vehicle mortality (PVM). Quantifying the exact number of PVM is not possible because not all animals are recovered. Further, as described in the remainder of this BO/CO (below) estimating the likelihood of PVM relies on multiple variables that all contain substantial uncertainty.

The threats posed by human disturbance during and after Project construction, habitat loss and fragmentation, road mortality, and intra-specific aggression are relevant to this Project and will be discussed in the remainder of this Biological Opinion.

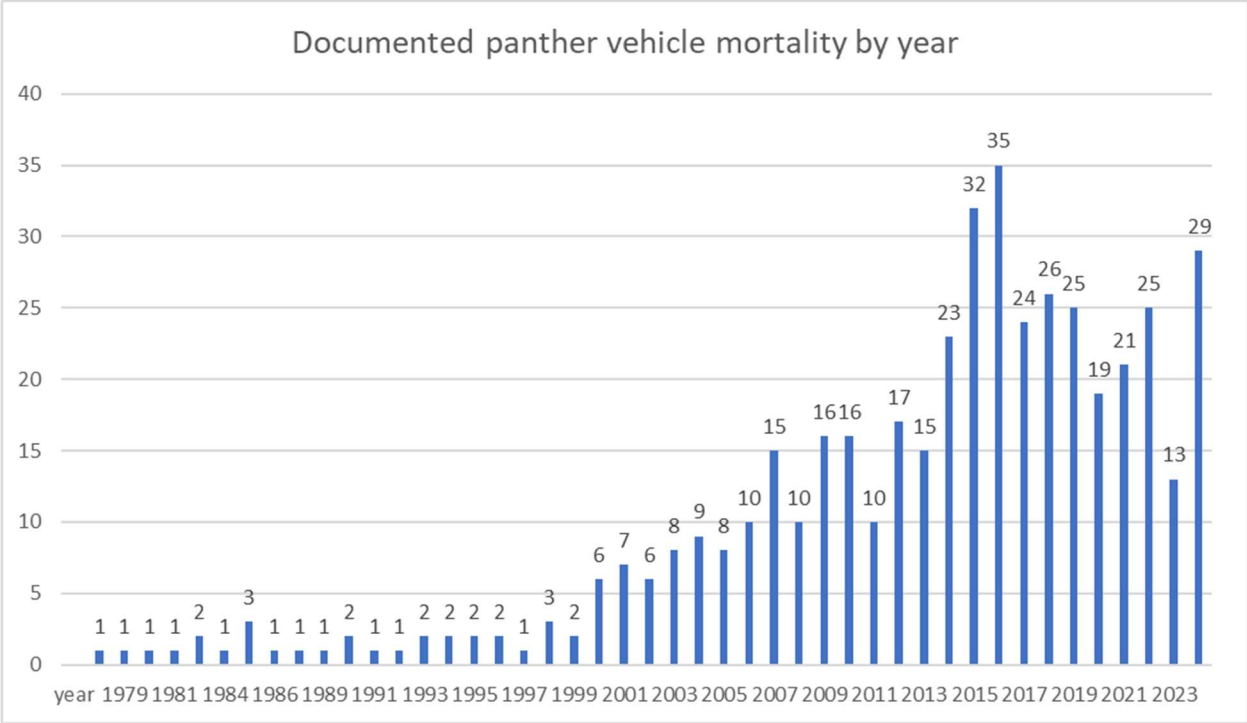


Figure 6. Yearly PVM counts for the state from 1978 through 2024.

Tricolored bat

The primary threat to this species is the disease white-nose syndrome, but TCB is also adversely affected by the loss of suitable foraging and roosting habitat. Threats to the survival and recovery of the tricolored bat that are relevant to this consultation are conversion and degradation of suitable roosting and foraging habitat. The Project’s adverse effects to TCB will be discussed in the remainder of this biological opinion.

ENVIRONMENTAL BASELINE

Environmental baseline refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. 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. The impacts to listed species or designated critical habitat from Federal agency activities or existing Federal agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.

Status of the species within the action area

Audubon's caracara

The Project lies within the consultation area for the Audubon's crested caracara (caracara) and contains approximately 5,206.29 acres of foraging and/or nesting habitat, dominated by row crop (4,174.76 acres). Numerous caracara surveys have been conducted on the Project site since 2007, with nests identified in 2009, 2016, and 2023. These nests were located at various locations and indicated no strong site fidelity to a tree or area. Caracaras are routinely observed in the area and the Project site will be monitored for nesting activity as described in the *Minimization and conservation measures* section above. Because the Service's survey protocol is designed to determine caracara presence and nesting activity only, the shape and size of any of the previously documented pairs' territory is unknown. Caracara home ranges are known to vary from approximately 1,000 ac to approximately 5,000 ac, with an average home range of approximately 3,000 ac (Morrison 2001). Using the average territory size of 3,000 ac, the Service expects that the Project site could support the territory of one caracara pair and a partial territory of another pair.

Eastern indigo snake

The indigo snake is a habitat generalist with a large home range (Layne and Steiner 1996, Service 1999), and is known to use most of the habitat types found within the Project footprint. Though indigo snakes have been found in all available habitats of South Florida, it is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner *et al.* 1983). The Services' Geographic Information System (GIS) database contains multiple records of indigo snakes located from 2 miles west to 3.62 miles south of the Project. Although these observations are outside of the typical 0.62-mile consultation buffer for this species, contiguous habitat has remained unchanged between the southern recorded occurrence and the Project footprint. Provided the proximity of confirmed presence of the species and abundance of suitable habitat onsite, the Service considers all suitable habitat onsite to be occupied by the indigo snake, encompassing a total of 10,174.76 acres.

It is difficult to estimate the density of indigo snakes occurring within the Project site due to the lack of reliable survey methods for the species. In Bauder *et al.* (2016), indigo snake radio telemetry data was summarized to provide an estimated mean annual home-range size of 369 acres for males and 121 acres for females. Considering overlap between the sexes, we estimate the 10,174.76 acres of suitable habitat within the Project site could support up to 85 females ($10,174.76 / 121 = 84.08$, rounded to 85) and 28 males ($10,174.76 / 369 = 27.57$, rounded to 28) if all suitable habitat was occupied. In addition, we expect each female snake to be active during breeding season, accounting for up to 85 nests with eggs.

The Project site has experienced varying levels of land conversion and habitat degradation over the last 50 years. Of the 10,174.76-ac indigo snake habitat onsite, approximately 5,163.17 ac have been used for agricultural pursuits, largely converted to row crop (4,174.76 ac). To facilitate this land use, ditches and swales were created throughout the Project site, drastically altering the hydrology of the site. Additionally, fire was suppressed to maintain the viability of

the commercial operations, contributing to the degradation of the remaining natural habitat on the property. Collectively, this human activity has adversely affected the amount and quality of the available indigo snake habitat in the action area.

Florida bonneted bat

This Project lies within the consultation area for the Florida bonneted bat (FBB). The entire 10,264.63 ac Project site contains suitable FBB foraging and/or roosting habitat. The nearest documented FBB roost is located approximately 5.05 miles southeast of the Project site. Acoustic surveys identified FBBs flying above the Project site, with four calls occurring in close proximity to sunrise or sunset, indicating that roosting is likely nearby (Service 2019). As the location of any roosts is unknown, the Service cannot estimate the number of individuals within the Action Area. The Project is not located within FBB critical habitat. The closest FBB critical habitat to the Project site is located over 3.5 miles south.

Panther

This Project contains approximately 10,174.76 acres of Florida panther (panther) habitat and is within the Primary and Secondary Zones of the focus area (Service 2007). Collectively, the Primary and Secondary zones comprise approximately 3,082,600 acres of land in south Florida, with approximately 2,183,721.38 acres in conservation. Panther and panther sign have been observed onsite during site assessments conducted by the Applicant's consultant. The closest identified panther den is approximately 0.45 miles west of the Project site. The number of panthers that may use the Project site is not known but based on varying density estimates of between 1.37 and 4.03 panthers per 100 square kilometers (Onorato et al. 2011), between 0.56 and 1.65 panthers could include the Project site as part of their home territory. Furthermore, using estimated home range sizes (Lotz et al. 2005), roughly 16.27 to 35.01 percent of an individual male (62,542 acres) or female (29,059) panther's home range, respectively, is within the Project site. For context, the 2,183,721.38 acres within the primary and secondary zones under conservation could account for the home ranges of 34 male and 75 female panthers. Male and female panther home range size is inversely related to habitat quality, the greater the extent of agricultural land and wetland habitats, the larger the home range, and the greater the extent of mixed hardwood forests and dry pine forests, the smaller the home range. High-quality habitat produces abundant prey and promotes female panther reproductive success (Maehr 1992b; Maehr et al. 1989). We assume panthers are present within the action area and will be affected by the project from habitat loss, but a population estimate cannot be made. Based on average home range size, no more than 1 or 2 panthers are likely to be present on the Project site at any given time.

According to the Service's GIS database, there have been 478 documented panther deaths within the Action Area (e.g. within 25 miles of the proposed Project) through January 10, 2025 (Figure 7). Specifically, 330 of those deaths were attributed to motor vehicles, 66 were due to intraspecific aggression, 5 were illegally killed, and 77 were due to other causes (disease, starvation, etc.). We acknowledge that these totals are a snapshot of a dynamic statistic and may not reflect the most up to the minute information; however, we provide this data insofar as, based on population size, these causes represent the variety of ways that panthers are most often killed. Based on the data above, the majority of panther deaths within the Action Area occurring since

1982 have been attributed to motor vehicle collision. However, evaluation of both the Action Area and range-wide 2014 through 2022 datasets (FWC 2023) indicates no clear trend in panther deaths, while traffic has increased statewide and by more than 50 percent on Corkscrew Road and State Road 82 alone since 2018 (FDOT 2023). The Service acknowledges there may be a lag effect in terms of species response to an external stressor such as vehicle traffic but also acknowledges the potential biases of documenting a panther killed by a motor vehicle as opposed to another cause.

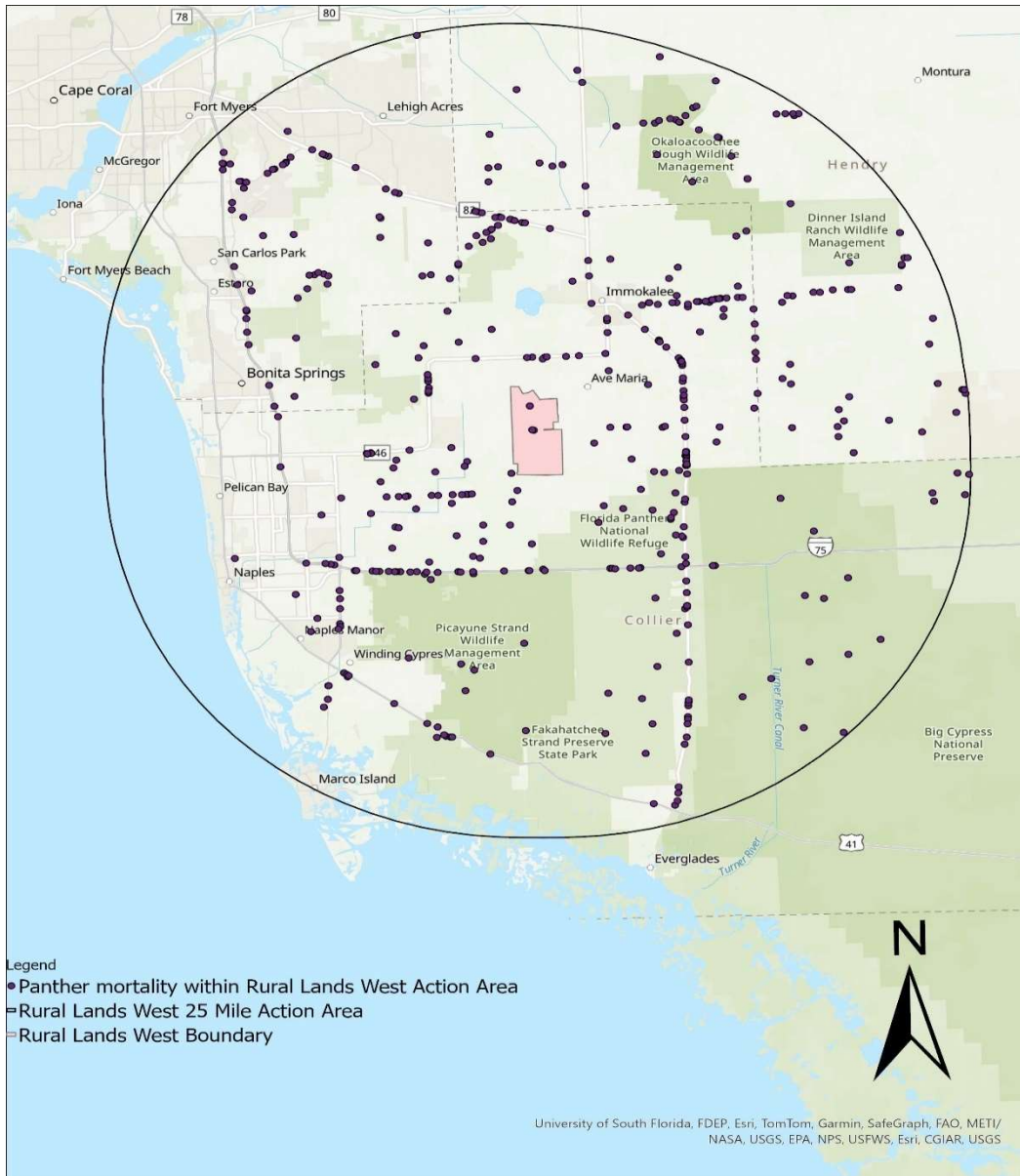


Figure 7. Approximate locations of documented panther mortality from all causes within the Action Area of the Rural Lands West Project.

Tricolored bat

This Project lies within the range of the proposed Federally endangered tricolored bat (TCB). The entire Project site contains suitable TCB foraging and/or roosting habitat, which commonly forage along waterways and forest edges, and roost primarily in deciduous hardwood trees (Service 2021b). According to data available through the U.S. Geological Survey North American Bat Monitoring Program, the TCB was detected via acoustic surveys in the area of Golden Gate Estates and Florida Panther National Wildlife Refuge in 2006 and 2020 (USGS 2023). TCB will use leaf clusters, moss, lichens, and some evergreen trees to roost during the non-hibernating season, and move to more robust shelter (caves, mines, etc.) to hibernate. In the southern portions of its range where caves are limited, TCB typically hibernate in road-associated culverts (Service 2021b). A recent study on TCB by Smith et al. (2022) found evidence that suggests TCB at the southern edge of its range (i.e. south Florida) may move north to find cooler hibernacula to support torpor and reproductive success. Furthermore, as TCB generally move between winter hibernacula and summer roosting sites, up to 151 miles (Samoray et al. 2019), this species may only use the Project site seasonally. There are no density estimates for TCB within this portion of the species' range, therefore the number of individuals within the Action Area is unknown.

Climate Change

Our analyses under the Act include consideration of observed or likely environmental effects related to ongoing and projected changes in climate. As defined by the Intergovernmental Panel on Climate Change (IPCC), "climate" refers to average weather, typically measured in terms of the mean and variability of temperature, precipitation, or other relevant properties over time; thus, "climate change" refers to a change in such a measure which persists for an extended period, typically decades or longer, due to natural conditions (*e.g.*, solar cycles) or human-caused changes in the composition of the atmosphere or in land use (IPCC 2013, p. 1450). Because observed and projected changes in climate at regional and local levels vary from global average conditions, rather than using global scale projections, we use "downscaled" projections when they are available. In our analysis, we use our expert judgment to weigh the best scientific and commercial data available in our consideration of relevant aspects of climate change and related effects. Based on the observed trends in the climate record gathered from thousands of temperature and precipitation recording stations around the world and changes observed in physical and biological systems, the scientific community is certain that the earth's climate is changing and a warming trend in the climate is occurring (USGS 2019).

Florida is vulnerable to pulse events and sea level rise as well as to changes in rainfall and temperatures expected due to changes in environmental trends. National Oceanic and Atmospheric Administration (NOAA) (2017) model simulations using the more recent Coupled Model Intercomparison Project Phase 5 (CMIP5) predicts changes in precipitation seasonally for South Florida with increases in dry season rainfall up to 20 percent and decreases in wet season rainfall up to 30 percent. The change in timing of rainfall will likely stress ecosystems and cause changes in vegetation types. Increased rainfall associated with climate change could reduce the ability to effectively use prescribed burning to manage habitat in optimal conditions for panthers and their prey, bat roost trees, and caracara foraging areas. Increased rainfall could also reduce the amount of area suitable for caracara, indigo snakes, panther denning, and bat roosting by increasing the area covered with standing water or the duration of inundation of seasonally wet

areas. A decrease in precipitation or prolonged drought could affect food availability for these species and ultimately affect their productivity and survivorship.

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).

EFFECTS OF THE ACTION

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action but that are not part of the action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (50 CFR 402.02).

Audubon's crested caracara

Development

The Applicant proposes to develop a mixed-use community, as well as preserve and enhance native upland and wetland habitats on an approximately 10,264.63 acres site. Through these actions, approximately 4,230.4 acres of suitable caracara habitat will be converted to development. Of the 4,230.4 acres of development, approximately 4,001.9 acres is current row crops in various stages of production. Caracara home ranges are known to vary from approximately 1,000 acres to approximately 5,000 acres, depending on habitat suitability and proximity to other caracara territories (Morrison 2001). To account for this variation in home range size and lack of more specific data, we will use an average home range of approximately 3,000 acres for our analysis. Based on the results of the caracara surveys, unknown nest locations, observations of adult caracara, and average home range sizes, the Project site could support portions of two caracara territories. Accordingly, the development of 4,230.4 acres would constitute a complete loss of an average caracara territory. However, this conversion of habitat is expected to occur across the Project footprint and is not anticipated to be located within any one caracara territory. In addition, most of this available habitat is row crop and is expected to shift in suitability for caracara depending on crop production stages. Nevertheless, this habitat loss could result in increased intraspecific aggression with adjacent caracaras if the pair(s) move into neighboring territories in search of forage and nesting sites. This aggression and/or decrease in foraging area could also ultimately result in a lower reproductive potential for the displaced pair as well as the pair occupying the area receiving the displaced pair. As we do not know the territory boundaries of any affected caracara, overall resource availability, or an individual bird's tolerance of another, the Service cannot reliably predict how the Project will affect caracara aside from acknowledging the caracara nesting onsite are anticipated to experience a shift in foraging area.

In addition to habitat loss, we anticipate the noise and activity from personnel and vehicles during site preparation and construction would disturb foraging or nesting caracara, potentially leading birds to change their behavior and abandon a foraging or nesting area. The degree of disturbance is related to the distance of these activities from the nest, as well as the nesting pairs' tolerance to human activities. Adverse effects could range from abandoning a nesting attempt, if construction is close to the nest during breeding season, to general avoidance of the area for foraging. The avoidance and minimization measure of maintaining a 984-foot exclusion buffer around an active nest is expected to reduce this risk of abandoning a nest attempt; however, avoidance of the Project site for foraging could still adversely affect the breeding pair through lowering the adult fitness and/or reproductive success of a nest (via lower adult fitness or decreased food availability for young). Because we expect the caracara that use the Project site to also utilize suitable habitat offsite, we anticipate that these caracaras may be less disturbed by noise, equipment, and human activity. Furthermore, the suitable caracara habitat onsite will be ultimately converted to development, eliminating suitability for use by caracara. Therefore, the effect of disturbance is expected to be superseded by the habitat loss described above.

Conservation and Restoration

Intense habitat restoration work will take place on portions of the 5,241.86 acres within the conservation areas on the Project site. Activities associated with the restoration and management have the potential to adversely affect the caracara. Restoration work includes conversion of cropland to native land cover types via clearing, earth moving, and planting of appropriate vegetation, converting approximately 20.68 acres of cropland and exotics to wet prairie, resulting in approximately 996.91 acres of managed habitat for caracara. In addition, existing areas of native land cover types would undergo mechanical and chemical invasive vegetation treatment. Disturbance due to noise and vibration from personnel and equipment during restoration activities could adversely affect caracara by causing them to temporarily avoid the area. Conversely, the clearing of citrus and other crops may expose prey items that could attract caracara. Because of the temporary nature of the disturbance and expected improvement of habitat suitability for caracara, the conservation and restoration actions proposed are not expected to increase risk factors to this species and are anticipated to be beneficial to caracara.

Eastern indigo snake

Residential Development

Due to the nature of the proposed action (i.e., vegetation removal, earth moving and piling, earth scraping, grading, transport of construction materials by trucks), the Service finds that indigo snakes present on the Project site at the time of the action could be incidentally injured or killed. Motorized vehicles and heavy equipment used during land clearing have the potential to crush indigo snakes, their nests, and eggs. Indigo snakes can also be buried in their burrows and other refugia. The Service notes that the Standard Protection Measures (SPMs) (Service 2021) will be implemented during construction of the Project. The SPMs require: the education of contractors and equipment operators; posting of speed limit signs on all roadways during Project construction and operation; on-site signs explaining the penalties of intentionally running over indigo snakes; and that construction will cease if indigo snakes are observed. Further, any observations of indigo snakes shall be reported to the Service both during construction and in

final report submitted at the completion of construction activities. Reports shall be sent via email to FW4FLESRegs@fws.gov within 48 hours of observing a live, injured, or dead indigo snake and notice of completion within 30 days following construction. Based on the implementation of these protective measures, we find that the potential for injuries and deaths of indigo snakes due to land clearing will be reduced, but injuries and mortalities could occur. The permanent loss of habitat resulting from the proposed Project will adversely affect the indigo snake by reducing the amount of habitat available for breeding and feeding. The Project will result in the loss of approximately 4,820.1 acres of suitable indigo snake habitat within the development footprint, of which is comprised of 4,001.09 acres of row crop that may shift in suitability to indigo snakes. The land will be converted to land uses (i.e., commercial and residential development) that are not expected to be used by indigo snakes or their prey. The acreage lost represents a small portion of habitat remaining for the indigo snake in Florida. Habitat lost due to the Project will also result in a minor reduction in the geographic range of the species, as well as the fragmentation of existing indigo snake habitat in the region.

Disturbance due to noise and vibration from personnel and equipment during site preparation, clearing, and construction activities will likely adversely affect indigo snakes by causing them to vacate their territory. Some snakes may move into the Project's interior preserve areas, though they are likely too small and isolated to support indigo snakes long-term. The loss of habitat within the development footprint could force indigo snakes to leave the Project site, or move into the Project's conservation area, and establish new home ranges. Individuals that move into the Project's conservation area would be affected by the restoration and management activities described below. Indigo snakes may be killed or injured while crossing the major roads along the central and western borders of the Project site, Oil Well Road and Desoto Boulevard, while attempting to leave the area. Individuals that successfully cross the road or leave the Project site would be more vulnerable to predation and intraspecific aggression as they attempt to establish new home ranges. The loss of a home range would be expected to impair the indigo snake's ability to feed, breed, and shelter until a new home range is established.

Individuals that leave an established territory may miss foraging and mating opportunities and these individuals may be more vulnerable to predation as they are forced into other areas. We anticipate that some of the snakes that leave the development footprint because of the disturbance from construction would establish new territories or modify existing territories. However, others may die of predation or lack of food. It is difficult to determine the exact number of indigo snakes (adults, juveniles, hatchlings and nests) that would be affected by disturbance due to the Project. Using the methodology previously described, we estimate that at least 14 male ($4,820.1 / 369 = 13.06$, rounded to 14) and 40 female ($4,820.1 / 121 = 39.83$, rounded to 40) indigo snakes and 40 nests could be present within the development footprint and would be affected by land clearing and construction activities.

The activities of humans living in the residential development following completion of the Project may indirectly adversely affect indigo snakes. The presence of humans and their pets will increase the potential for injuries or mortalities of any indigo snakes remaining in the conservation area or migrating into the development area. Some humans fear snakes and may indiscriminately attack or kill indigo snakes when encountered. Free-roaming pets of residents may also injure or kill snakes. Finally, collisions from motor vehicles using the roads in and near the new development will increase the potential that any indigo snakes remaining in the

Project area will be injured or killed. The number of indigo snakes injured or killed resulting from these activities is expected to be small.

Conservation and Restoration

Intense habitat restoration work will take place on portions of the 5,241.86 acres within the conservation areas on the Project site. Activities associated with the restoration and management have the potential to adversely affect the indigo snake. Due to the nature of the proposed restoration work (i.e., vegetation removal, earth moving and piling, earth scraping, grading, transport of construction materials by trucks), the Service estimates that indigo snakes present at the time of the action could be adversely affected by the Project. The earth moving, scraping, and piling have the potential to crush indigo snakes, their nests, and eggs. Snakes can also be buried in their burrows and other refugia. To help minimize the potential for injuries and mortalities of indigo snakes during the restoration work all personnel involved in the restoration effort will follow the indigo snake SPMs. The Service finds that the protection measures to be employed by the Applicant will reduce the potential that injuries and mortalities of indigo snakes will occur during the restoration work. However, injuries and mortalities of indigo snakes could still occur.

Disturbance due to noise and vibration from personnel and equipment during restoration activities will likely adversely affect indigo snakes by causing them to temporarily vacate their territory. This temporary disturbance may cause them to miss foraging and mating opportunities, and these individuals may be more vulnerable to predation and intraspecific aggression as they are forced into other areas. Once restoration is complete, the conservation area will provide improved habitat for the indigo snake, supporting up to 15 male ($5,241.86/369=14.2$, rounded to 15) and 44 ($5,241.86/121=43.32$, rounded to 44) female indigo snakes. Periodic monitoring and management (such as exotic plant treatment and prescribed fires) may also cause temporary disturbances to indigo snakes. However, the number of indigo snakes injured or killed due to these activities is expected to be small.

Florida bonneted bat

Development

The FBB is expected to occur within the Project footprint and, like many bat species, is known to forage along wetlands and open water and roost within pine flatwoods and other forested habitats (Belwood 1981, Robson 1989, Belwood 1992, Eger 1999). Potential effects to the FBB due to the proposed action include a number of direct and indirect effects on the bat and its habitat. Potential direct effects include: (1) direct mortality from conversion of 4,909.1 acres, of which 230.53 acres are forested areas and potential roosting sites; (2) harassment by construction activities; and (3) disruption of normal behaviors from the conversion of available habitat for roosting, foraging, breeding, and dispersing. Potential indirect effects include reduced foraging and roosting opportunities due to habitat loss. The timing for construction of this project, relative to sensitive periods in the life history of the FBB, is unknown.

Any actions that occur in areas occupied by the FBB and result in the removal of potential roost sites (i.e., snags, trees, utility poles, buildings, etc.) or impact foraging habitat (i.e., filling in of

canals and ditches) are likely to have direct and indirect adverse effects to the FBB and its habitat. FBB that occupy a removed roost may be able to flee to nearby refugia, though flightless young would be expected to be lost. Fleeing FBB could be exposed to additional predators as well as elevated body temperatures as a result of daytime flight. The Service evaluated the project in the context of how the action has the potential to result in both beneficial and adverse effects to the FBB, at the individual, population, and landscape scales. The use of specific minimization measures as part of the action such as pre-construction acoustical and roost surveys, preservation of roost trees, the use of avoidance buffers around known roosts, and retention of potential roosting habitat (wherever possible) are expected to significantly reduce the potential adverse effects to the FBB as a result of construction activities. However, some adverse effects to the FBB are likely to occur despite the inclusion of these measures into the proposed action.

Following development, the Project site is expected to be a source of light pollution as well as insecticide use which could limit the future use of the area by FBB. As described in the 'Avoidance and Minimization Measures' section above, lighting initiatives and insecticide best practices will be implemented to minimize the effects of these stressors.

Conservation and Restoration

Restoration activities within the 5,241.86 acres conservation area will include the removal of potential FBB roosts if present in exotic vegetation or hazardous trees, as well as contribute to disturbance of any FBB in the area. Effects of these actions are expected to be similar to those discussed in the 'Development' section above, ranging from temporary harassment to injury or mortality. Reclamation of agricultural lands to native land cover types and habitat enhancement via treatment of exotic vegetation is anticipated to be beneficial to the species.

Florida panther

Development

The proposed Project incorporates the conversion of approximately 4,909.1 acres of panther habitat to commercial and residential development. More specifically, habitat loss would amount to 3,709.07 acres in the Primary Zone and 1,200.03 acres in the Secondary Zone of the Service's Panther Focus Area. Most of the developed area (4,001.9 acres of 4,909.1 acres) consists of row crops that provide only minimal habitat value to the panther. The remaining 908.01 acres of the development areas consists of disturbed lands/urban/exotic vegetation (485.39 acres), open water (60.01 acres), pasture (96.07), and scattered native cover types (266.54 acres). The land will be converted to residential and commercial development and is not expected to be used by panthers or their prey following construction of the Project.

The habitat lost due to the Project may adversely affect the panther by decreasing the spatial extent of lands available to the panther and its prey. According to the most current home range estimates of the panther (Lotz et al. 2005), the 4,909.1 acres of habitat lost represents 16.89 percent of a single female panther's average home range (29,059 acres) and 7.85 percent of a male panther's average home range (62,542 acres). Based on the habitat preference values in Onorato et al. 2011, the loss of approximately 4,909.1 acres of panther habitat approximates the

loss of habitat carrying capacity for between 0.27 and 0.8 panthers, based on varying density estimates of between 1.37 and 4.03 panthers per 100 square kilometers. Using the higher end of the range (0.8), the anticipated level of take-associated habitat loss on the Project is 0.8 (rounded to 1). Therefore, we expect no more than 1 female and 1 male panther to be adversely affected by this habitat loss. We do not expect direct mortality of panthers to result from the habitat lost due to the Project. The Consultant used the Service's Panther Habitat Assessment Methodology (2012) to determine the amount of panther habitat units (PHUs) needed to compensate for the panther habitat lost on the Project site (Enclosure E). Based on the use of this methodology, it is the Service's judgement that the PHUs provided by the conservation and restoration of the onsite and offsite preservation areas adequately compensate for the habitat lost to development and any resulting harm to panthers.

Habitat loss due to the Project has the potential to increase intraspecific aggression among panthers in the Project area. As discussed in the section entitled "Status of the species in the action area," panther mortalities resulting from attacks of conspecifics are known to occur in the panther population (e.g., males may kill other rival males when defending a territory). Habitat loss may increase the potential for intraspecific aggression among panthers in the action area by reducing the amount of land available to a panther for its territory. A reduction in territory size due to habitat lost due to the Project may cause a panther to attempt to expand its territory in search of a requisite resource (e.g., prey, mates, etc.) and increase the potential for interactions with conspecifics (i.e., other panthers). Such interactions usually result in a fight that often ends in the death of one of the participants. We acknowledge that we currently do not have a method to estimate the future number of panther mortalities in the action area resulting from intraspecific aggression due to habitat lost. However, because the development area is only expected to support a portion of a panther's territory, we do not anticipate any change in the potential for intraspecific aggression due to habitat lost from the Project to translate into a measurable increase in panther deaths in the action area.

The operation of heavy equipment (e.g., bulldozers, graders, skip loaders, etc.) and other motor vehicles in the construction footprint have the potential to injure or kill panthers (i.e., panthers could be crushed due to collisions with construction vehicles). Panthers are intelligent and highly vagile. Moreover, construction vehicles are likely to move at relatively slow speeds, and operate when panthers are less active (i.e., daytime). Therefore, we expect that panthers will be able to avoid construction vehicles during construction of the Project and find that injuries and mortalities of panthers resulting from construction vehicles are unlikely to occur.

The increase in noise and human activities due to construction activities will increase disturbance to panthers in the Project vicinity during construction of the Project. Consequently, the Service notes that these activities may cause resident or dispersing panthers to avoid the Project site during construction. Moreover, resident panthers may adjust their territories due to the disturbance. The effect of the disturbance to the panther due to construction activities is expected to be temporary and will not result in permanent changes in the use of lands by panthers adjacent to the Project footprint.

Motor vehicles use the main roadways adjacent to the Project footprint (Oil Well Road and Golden Gate Boulevard) and the principal highways and roads in the action area (i.e., State Road 29, Interstate 75, Immokalee Road) currently, and will continue to, provide a threat to panthers in

the Action Area. Injuries and mortalities of panthers due to collisions with motor vehicles can result when panthers have access to and attempt to crossroads that contain cars and trucks travelling at high speeds. This risk may be increased when panthers attempt to cross a roadway at night because they can be easily blinded and disoriented by motor vehicle lights and may misjudge the speed and location of moving vehicles. As indicated above, panther injuries and mortalities due to motor vehicle strikes are commonly documented in the Action Area (330 panther deaths resulting from vehicle collisions have been recorded in the Action Area by the FWC from December 23, 1979, through January 10, 2025 [Figure 7]).

Motor vehicle traffic associated with new residences, commercial establishments and recreational facilities associated with the Project is expected to contribute additional motor vehicle traffic on roadways near the Project site and in the action area. The increase in motor vehicle traffic is expected to result from: 1) motor vehicles of new residents that purchase and live in the newly constructed homes associated with the Project; 2) motor vehicles operated by workers commuting to jobs established at the newly constructed office space for commercial and civic/institutional developments; 3) delivery or service vehicles travelling to the newly constructed Rural Lands West development; 4) workers traveling to and from the development sites during construction; and 5) visitors to Project facilities. All internal roads constructed as a component of the Project will be fenced or separated from preserved areas and native habitat by water features. These internal roads have been designed to be inaccessible to panthers. Therefore, any increase in traffic associated with the Project that could pose a risk to panthers will join existing vehicles on existing roads external to the Project and controlled by separate authorities.

Although vehicle traffic is a prominent risk to panthers and other wildlife, the Service is unable to describe, with any certainty, how the project would alter (increase or decrease) the likelihood of motor vehicle strikes regardless of any traffic changes expected from the Project. Many factors, including the number of panthers in proximity to roadways, the vagaries of panther movement, the availability of suitable panther habitat near roadways, traffic speed, driver error, and road design (Schwab and Zandbergen, 2011), influence the probability of motor vehicle strikes and subsequent injuries or deaths of panthers when attempting to cross a roadway. Moreover, panthers may change their behavior in response to increased traffic density in unpredictable ways. In addition, non-construction traffic generated by the Project would occur incrementally as houses are built and become occupied over a 20-year time period, possibly changing behavior patterns resulting in panther avoiding the area and congested roadways. Regardless, to minimize any potential traffic related effects on panthers and other wildlife, the proposed Project will provide funds for roadway improvements (fencing, wildlife crossing, signage, etc.) within the Action Area. Indirectly, the Project will also reduce the length of roadway accessible to panthers which may lower risk of vehicle collision as the individual may be directed towards a wildlife crossing.

The Service has given this issue extensive consideration. When providing “Technical Assistance” documents for other proposed developments, in compliance with a process set forth in FWS’s Biological Opinion for EPA’s approval of the Florida State 404 permitting program which was subsequently vacated, the Service has previously attempted to use the past number of panther vehicle-related injuries and mortalities documented either within segments of roadways in or near a project site or range wide coupled with modeled future traffic numbers to describe the future number of panther motor vehicle strikes anticipated from a development project.

However, through defending this technical assistance, the Service recognized that the variability of the estimates calculated with these methods was substantial and, in fact not plausible based on existing information about the number and distribution of panthers on the landscape. Further, additional studies show that an increase in panther vehicle mortality does not directly correlate with an increase in traffic volume (see figures 8 and 9 below). Accordingly, we find that the best scientific and commercial data available does not allow us to reasonably conclude how traffic associated with the project would correlate with panther vehicular injuries and mortality, nor attribute such cases to the proposed Project. Instead, as it relates to developments such as this, the Service believes that general traffic impacts to panther are more appropriately addressed in the environmental baseline and cumulative effects sections, as appropriate. The Service will continue to consider this issue in the context of the best scientific and commercial data available.

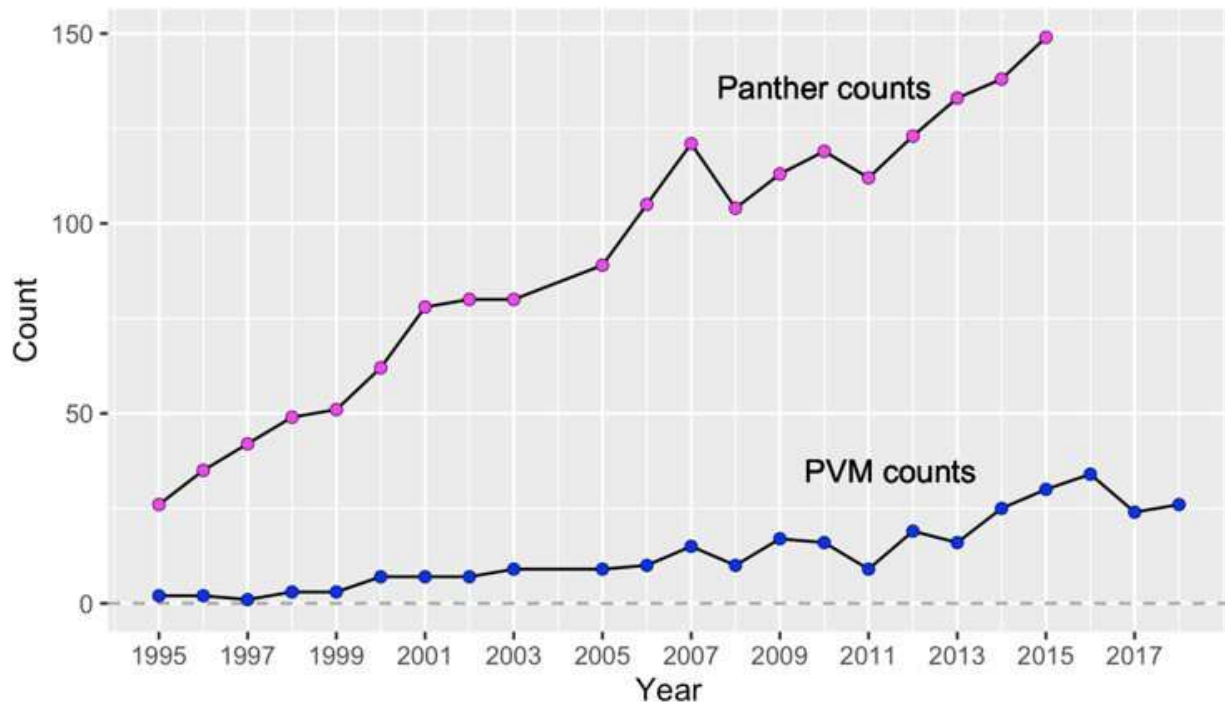


Figure 8. Showing relationship between the minimum number of adult and subadult panthers known alive in each year and the recorded number of panther vehicle collisions in the corresponding year (Higgs 2020 Technical Memorandum).

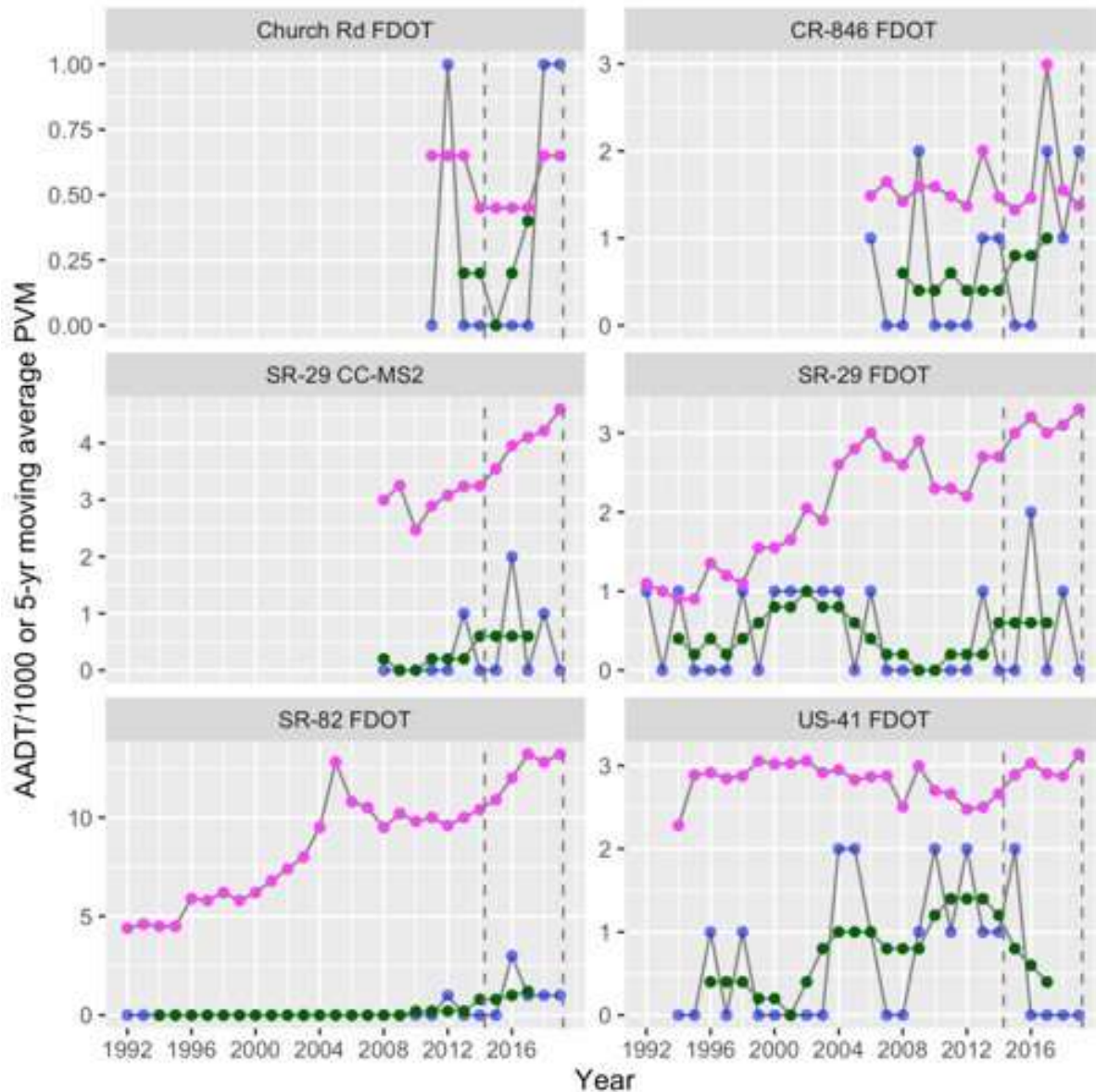


Figure 9. 5-yearly AADT divided by 1000 (pink data points), yearly PVM (blue data points), and the 5-year moving averages plotted at the midpoint year (green data points). SR-29 has AADT data from Collier County (CC-MS2) and FDOT starting in 2008, and these are shown in two different panels. Note the y-axis scales differ across panels (Higgs 2020 Technical Memorandum).

Conservation and Restoration

The proposed Project incorporates the conservation and restoration of approximately 5,241.86 acres of panther habitat, with approximately 5,235.03 acres located in the Primary Zone and approximately 6.83 acres in the Secondary Zone. According to the home range estimates described above, this conservation area could support 18.04 percent of a female panther's territory and 8.4 percent of a male panthers. These lands will be comprised of forested wetland (3,171.58 acres), pine forest (685.49 acres), and other native cover types. The Project has been

designed to conserve and restore native habitat that maintains and improves existing wildlife corridors. Restoration and habitat management activities within the conservation areas may temporarily disturb panthers but this disruption is not expected to significantly alter panther behavior and is anticipated to benefit panther and their prey.

As described above in the *Minimization and conservation measures* section, the Project will also provide funding to the Paul J. Marinelli Fund, and in the case of the per-acre contribution, may contribute to the Fish and Wildlife Foundation of Florida Fund. In addition, the Applicant will, at its sole cost and expense, construct or fund the construction of five wildlife crossings within the geographic region where the Project is located, including one on Oil Well Road, to maintain intra-preserve connectivity and hydrologic flow throughout the Project site, and will contribute approximately \$50,825,949 to Collier County for roadway funding to be used at the discretion of Collier County for roadway modifications and improvements, including fencing to restrict access of panthers and other wildlife from roadways. Collectively, Project implementation will contribute to roadway improvements to provide safer travel of panther on the landscape as well as conserve and manage panther habitat in perpetuity.

Tricolored bat

Development

Potential effects to the TCB due to the proposed development include a number of direct and indirect effects on the bat and its habitat. Potential direct effects include: (1) direct mortality from conversion of 4,909.1 acres, of which 591.02 acres contain potential roosting sites; (2) harassment by construction activities; and (3) disruption of normal behaviors from the conversion of available habitat for roosting, foraging, breeding, and dispersing. Potential indirect effects include reduced foraging and roosting opportunities due to habitat loss. The timing for construction of this Project, relative to sensitive periods in the life history of the TCB, is unknown.

Any actions that occur in areas occupied by the TCB and result in the removal of potential roost sites (i.e., snags, trees, utility poles, buildings, etc.) or impact foraging habitat (i.e., filling in of canals and ditches) are likely to have direct and indirect adverse effects to the TCB and its habitat. The Service evaluated the Project in the context of how the action has the potential to result in both beneficial and adverse effects to the TCB, at the individual, population, and landscape scales. The use of specific minimization measures as part of the action such as pre-construction roost surveys, preservation of roost trees, the use of avoidance buffers around known roosts, and retention of potential roosting habitat (wherever possible) are expected to significantly reduce the potential adverse effects to the TCB as a result of construction activities. However, some adverse effects to the TCB are likely to occur despite the inclusion of these measures into the proposed action.

TCB that occupy a removed roost may be able to flee to nearby refugia, though flightless young would be expected to be lost. Fleeing TCB could be exposed to additional predators as well as elevated body temperatures as a result of daytime flight. With limited roost size data and no site-specific roost locations, there is no reliable method to estimate how many TCB may be affected

by this action. However, based on the life history of the species, we expect that the majority of TCB affected by construction activities would be limited to harassment of bats capable of flight.

Following development, the Project site is expected to be a source of light pollution as well as insecticide use which could limit the future use of the area by TCB. As described in the 'Avoidance and Minimization Measures' section above, lighting initiatives and insecticide best practices will be implemented to minimize the effects of these stressors.

Conservation and Restoration

Restoration activities within the 5,241.86 acres conservation area will include the removal of potential TCB roosts if present in exotic vegetation or hazardous trees, as well as contribute to disturbance of any TCB in the area. Effects of these actions are expected to be similar to those discussed in the 'Development' section above, ranging from temporary harassment to injury or mortality. Reclamation of agricultural lands to native land cover types and habitat enhancement via treatment of exotic vegetation is anticipated to be beneficial to the species.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions unrelated to the proposed action, such as future Corps permits, are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The following section includes an analysis of the potential cumulative effects on the Florida panther from known projects located within the action area.

The panther action area has been defined to include the portion of the current panther range in which panthers are likely to be directly or indirectly affected by the proposed action. The Service action area includes the Project site and all lands within a 25-mile radius of the Project site.

Our projection of non-Federal actions (*i.e.*, cumulative effects) in the Action Area incorporates Florida Land Use Cover and Forms Classification System (FLUCCS) mapping to decide if a property may be exempt from Federal Clean Water Act, section 404 wetland regulatory review by the Corps. We acknowledge it is difficult to forecast development related to non-Federal actions in the Action Area and it comes with unknown uncertainty. To assess if a development project would likely be exempt from regulatory review, we identified the percentage of the project site that was classified as wetland habitat based on FLUCCS 600 series (wetland), and the 411 and 419 (hydric pine flatwood) mapping unit classifications. Projects on properties with less than 5 percent wetlands were considered exempt from the Corps' regulatory review because impacts to wetlands could likely be avoided by project design.

Based on this approach, and information provided by the Applicant's consultant, the Service finds that from 2020 through 2023, 156 projects in the Action Area affecting approximately 4,667.56 acres were exempt from regulatory review. Therefore, the Service estimates approximately 1,166.89 acres per year ($4,667.56 \text{ acres} / 4 \text{ years} = 1,166.89 \text{ acres per year}$) would be exempt from regulatory review in the Action Area. We find this value is representative of future yearly development likely to occur in the Action Area. The Service notes many unforeseen factors can affect development in the Action Area. However, the Service believes the rate of

development based on 2020-2023 development provides a reasonable approximation of non-Federal actions reasonably certain to occur and meets our definition of a cumulative effect. This level of development represents 4.02 percent of a female panther's average home range (29,059 acres) and 1.87 percent of a male panther's average home range (62,542 acres), annually. However, we expect the development to be spread over multiple home ranges instead of that belonging only to one female and one male Florida panther. This level of development also represents 0.13 percent of the approximately 895,574.174 acres of non-urban private lands at risk of development in the panther primary and secondary zones in the Service's focus area. In relation to the anticipated buildout timeline of the proposed Project, non-Federal actions could develop approximately 23,337.8 acres (1,166.89 acres per year multiplied by 20 years) without regulatory review. In conjunction with the project, this would amount to 27,046.87 acres or 3.02 percent of the estimated 895,574.174 acres of non-urban private lands at risk of development in panther primary and secondary zones in the Service's focus area by 2045. It should be noted that lands within the panther focus area are not the only areas available for development and we would expect a subset to occur within those 895,574.174. In addition, it is also expected that as this Project is built out, there will be a reduced likelihood that smaller, non-Federally reviewed actions will be needed to meet the commercial and residential needs of the rapidly growing human population in this area.

Based on the above analysis, we believe the effects to the panther due to habitat loss associated with these lands will be minor in the short term but may increase as development continues to occur in the future in the Action Area. Consequently, the Service continues to monitor the effects of habitat loss to the panther throughout its range, and we encourage project proponents to develop Habitat Conservation Plans and seek Incidental Take Permits under section 10 of the Act to receive take coverage and minimize and mitigate any adverse effects to the panther resulting from non-Federal actions if not covered under Section 404 permitting.

In addition to land development, these non-Federal projects have contributed, and are expected to continue to contribute, to additional motor vehicle traffic in the Action Area as a cumulative effect. As discussed in the Effects of the Action section above, there have been 330 documented panther-vehicle collisions within the 25-mile action area between December 1979 and January 10, 2025. Non-federal projects are typically small, isolated developments that contribute to the risk of panther vehicle mortality but provide little to no mitigating efforts. All vehicles that operate on roadways where and when panthers may be present have the potential to strike an animal, regardless of Federal involvement in a project. Time of day, travel route, speed, attentiveness, and many other factors contributing to the possibility of hitting a panther are decided by the vehicle's driver. The Service continues to engage with local and county governments, the Florida Department of Transportation, and other stakeholders to educate drivers and fund projects that contribute to a panther's ability to safely cross a roadway and minimize any potential cumulative effects. As outlined in the Effects of the Action section, the Service does not have a reliable method to predict the number of panthers that may be hit by vehicles in a given time period, irrespective of a project's implementation. However, the value of mitigation measures such as fencing and wildlife crossings along roads is well documented (Rytwinski et al. 2016) and will continue to be pursued by the Service in concert with Federal and non-Federal actions. We will continue to monitor the panther population and investigate panther vehicle strikes. If there are efforts that can be implemented to prevent future strikes, we will work with appropriate partners to implement them. Such activities could include repairing

any damaged fences, adding additional signs alerting drivers of the presence of panthers in the area, installing or improving crossings, or clearing vegetation near the road margins.

Successful implementation of the Project is expected to reduce the likelihood that smaller, non-federally reviewed actions such as those referenced in this section will be needed to meet the commercial and residential needs of the rapidly growing human population in this area. The Service has been very clear in its position that the conservation measures included in larger, well-regulated projects such as the proposed Project will provide greater benefits to panthers compared to smaller non-federally reviewed projects because they include measures to maintain high-quality habitats that are strategically connected, install fencing and crossings to reduce roadway mortality, and are planned to reduce human and wildlife conflicts.

CONCLUSION

After reviewing the current status of the caracara, indigo snake, FBB, panther, and tricolored bat, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Rural Lands West project, as proposed, is not likely to jeopardize the continued existence of the caracara, indigo snake, FBB, panther, or tricolored bat. We have reached this conclusion because:

Caracara

1. Disturbance from site preparation and construction activities is anticipated to cause caracara to permanently shift their territory; however, as the development is not expected to occur wholly in one caracara territory, these caracaras likely use suitable habitat offsite, and development will occur in phases, we expect the caracara to acclimate and resume normal behavior following the first year of construction. A reduction in breeding success during this time is expected to occur, but abandonment of this territory by caracara is not anticipated.
2. The habitat loss (4,230.4 acres) is a small (0.18%) reduction in the approximately 2,387,201 acres of suitable habitat within the overall range of the species.
3. The reduction of the breeding success is only expected for a short period, while birds adjust, and given that the number of breeding pairs is believed to be near carrying capacity, this loss in breeding is expected to have minimal effect on the overall population.
4. The permanent loss of approximately 4,230.4 acres of suitable caracara habitat could lead to increased competition for suitable foraging habitat and a reduction in nest productivity, but as discussed above the loss in breeding is not expected to measurably affect the overall population.

Indigo snake

1. The number of indigo snakes and their nests that are expected to be injured or killed due to land clearing associated with the Project's development and restoration activities is expected to be small as snakes are able to move to adjacent suitable habitat.
2. Although 4,820.1 acres of occupied indigo snake habitat will be permanently lost, this amount represents a small reduction in the geographic range of the species.

3. The loss of this indigo snake habitat is expected to be minimized by the restoration and preservation of 5,241.86 acres onsite.
4. The Applicant will implement the SPMs for the indigo snake (Service 2021a) during land clearing, construction, and operation of the proposed Project, which should reduce mortality caused by vehicles, equipment, or if a snake is encountered by workers or residents.
5. The likelihood of an indigo snake to be killed due to interactions from humans and their pets living in the new residential development is expected to be discountable.
6. Motor vehicles use and the potential for injuries and deaths of indigo snakes due to collisions will increase on the Project site and in the Action Area, but the Service does not expect this increase to jeopardize the species. Indigo snakes are not expected to frequent the developed portion of the Project, and the construction of wildlife crossing will provide safe passage across roadways if snakes use them.

Florida bonneted bat

1. The FBB consultation area encompasses approximately 5,691,000 acres of land in South Florida. Construction activities for the Project will result in the conversion of 4,909.1 acres of potential roosting and foraging habitat in the consultation area. This is less than 0.1 percent of the FBB consultation area;
2. The project will result in the preservation of approximately 5,241.86 acres of suitable FBB roosting and foraging habitat in the FBB consultation area;
3. The Corps permit, if issued, will include conditions to implement a FBB roost survey prior to tree removal, reducing the likelihood that individual bats that use the roost will be injured or killed.
4. The FBB is expected to be able to forage over the development area following construction completion.

Panther

1. Due to their mobility and large home ranges, panthers are not expected to be killed or injured during land clearing associated with the project's development and restoration activities.
2. Although 4,909.1 acres that are currently used by the panther and their prey will be permanently lost, this acreage represents a small portion (less than a tenth of one percent) of panther habitat available in south Florida. Also, the loss of 4,909.1 acres of panther habitat would reduce carrying capacity in this area for between 0.27 and 0.8 panthers, depending on panther densities of between 1.37 and 4.03 panthers per 100 square kilometers.
3. The small reduction in panther habitat from the Project is not expected to affect more than 2 panthers via intraspecific aggression because of the small proportion of any individual panther's home range that will be impacted in the Action Area.
4. The effect of the loss of this habitat is expected to be minimized by the restoration and perpetual preservation of 5,241.86 acres of habitat onsite and 1,508.85 acres offsite (SSA 15) that will remain available to the panther. In the absence of the Project and the conservation measures included, this area would likely be divided into smaller isolated projects that may not require Service review. Habitat retention in large contiguous blocks

and the significant financial contributions aimed at promoting panther recovery would likely not occur.

5. This project is in an area where panther movement to the west is limited by existing development and is not crucial to the anticipated range expansion. Intact habitat areas of public conservation lands further to the south and east will continue to support the existing panther population.
6. Any potential for an increase in vehicle-related panther deaths from traffic in the action area is expected to be minimized through the Applicant's funding of wildlife crossings and fencing on area roads and increased understanding and maintenance of permanent wildlife corridors. We cannot conclude with certainty that increases in vehicle traffic will necessarily result in increases in panther vehicle collisions for the reasons described in previous sections and reiterated below.
7. Any potential increase in panther mortality due to vehicle strikes cannot be quantified due to the multiple factors that are related to the likelihood of a panther – vehicle collision. While the Service has found that future PVM cannot be attributed to the action, if the Service subsequently determines that future PVM can be attributed to the Project (e.g., evidence demonstrates a causal relationship between the project and one or more PVM), the Service will take steps necessary to reduce PVM. These steps may include construction of additional fencing, recommending installation of additional crossings, reducing speed limits, adding signage or other methods to increase driver awareness.

With respect to reason 2, the Service notes that many thousands of acres of panther habitat remain in Florida. Therefore, we do not expect this minor loss of habitat resulting from the project to substantially affect the range-wide population size of this species. However, we acknowledge that collectively over time, habitat loss could threaten the survival and recovery of this species. Therefore, we will continue to monitor the effects of habitat loss on the panther throughout its range. With respect to reason 5, the Service also acknowledges that motor vehicle-related injuries and mortalities of panthers, in concert with other threats to the panther, could collectively threaten the survival and recovery of this species. Therefore, we will continue to monitor the effects of motor vehicle-related injuries and mortalities on the panther throughout its range. Actions specifically aimed at reducing traffic impacts, such as those included in the design for this project, will continue to be high-priority recommendations and permit conditions for projects moving forward.

Tricolored bat

1. Although construction activities for the Project will result in the conversion of 4,909.1 acres of potential TCB roosting and foraging habitat, only 591.02 acres consists of forested area. Because of the wide range, habitat generalist, and semi-migratory nature of the species, this loss is not expected to have a measurable impact on the species as a whole.
2. The Project will result in the preservation of approximately 5,241.86 acres of suitable TCB roosting and foraging habitat in the TCB consultation area.
3. The Corps permit, if issued, will include conditions to implement a bat roost survey prior to tree removal, reducing the likelihood that individual bats that use the roost will be injured or killed.
4. The TCB is expected to be able to forage over the development area following construction completion.

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 such taking is in compliance with the terms and conditions of this incidental take statement. The terms and conditions described below are nondiscretionary and must be undertaken by the Corps so they become binding conditions of any grant or permit issued to the Tarpon Blue Silver King I, LLC d/b/a Collier Enterprises, 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 the Tarpon Blue Silver King I, LLC d/b/a Collier Enterprises 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 protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps and the applicant 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 ANTICIPATED

Caracara

The Service has reviewed the biological information for caracara, information presented by the Applicant's consultant, and other available information relevant to this action. The Project will result in take of caracara in the form of harm due to the disturbance from development and construction activities, as well as loss of foraging and nesting habitat in the Project footprint that is expected to result in a loss of reproductive success. Therefore, the Service expresses the amount of incidental take from the Project as: 1) the loss of caracara reproductive success for the known breeding pair for the first year of the Project conducting land clearing or construction work within its territory; and 2) loss of 4,230.4 acres of suitable caracara foraging and nesting habitat in the Project footprint.

Indigo snake

The Service has reviewed the biological information for the indigo snake, information presented by the Applicant's consultant, and other available information relevant to this action. The Project will result in take of indigo snakes in the form of harm due to the disturbance from development and construction activities, as well as loss of foraging and nesting habitat in the Project footprint.

Direct mortality could result from the operation of construction equipment in occupied habitat. Based on the calculations above, up to 113 indigo snakes and 85 nests may be present on the Project site, with 54 snakes potentially occupying the development area. Because of the nonuniform and disjointed configuration of development and unknown distribution of the snakes on the landscape, it is not expected that each snake would be affected equally. The Service anticipates incidental take of the EIS will be difficult to detect for the following reasons: 1) indigo snakes have limited detectability due to their cryptic behavior including, but not limited to, their use of burrows or holes for shelter; 2) juveniles have limited detectability due to their affinity for thick vegetation; 3) individuals that die from starvation or intraspecific aggression once leaving a disturbed area would not be found; and 4) nests will not be identified prior to development. Additionally, individual calculations above assume suitable habitat is saturated with EIS, which is not supported by their population status. Therefore, the Service will use habitat as a surrogate for the number of individuals lost. As such, take will be considered exceeded if more than 4,820.1 acres of indigo snake habitat is lost.

Florida bonneted bat

The Service has reviewed the biological information for the FBB presented by the Applicant's consultant, and other available information relevant to this action. Incidental take in the form of harm (i.e., the loss of, degradation and fragmentation of 4,909.1 acres of habitat, and the direct injury or mortality of 11 FBBs and one roost), and harassment is expected to result from the action. The Service bases the amount of take (11 individuals and one roost) on findings of the Status of the Species report by Marks and Marks (2012).

The Service anticipates incidental take of FBB will be difficult to detect and quantify for the following reasons: 1) FBB roost sites are difficult to identify; 2) tree cavities used by the FBB as roost sites are not easily located or examined; 3) the small size of individual FBB make finding an injured or dead specimen unlikely; and 4) FBB are patchily distributed within suitable habitat. Incidental take of FBBs is anticipated for one FBB roost containing up to 11 individual FBBs, and 4,909.1 acres of roosting and foraging habitat within the construction footprint. The Service believes all individuals occurring within this portion of the project footprint will be incidentally taken. In addition, disturbance to FBBs may occur from increased human activity and noise from the proposed action.

Florida panther

The increase in noise and human activities due to construction activities may increase disturbance to panthers in the Project vicinity during construction. Consequently, the Service notes that these activities may cause resident or dispersing panthers to avoid the Project site during construction. Moreover, resident panthers may adjust their territories to avoid the disturbance. To quantify the effect of habitat lost due to the Project, we considered the reduction of panther habitat carrying capacity due to the loss of 4,909.1 acres of panther habitat. We used panther habitat selection ranking (Onorato et al. 2011) to estimate the loss of panther habitat carrying capacity. Based on the habitat preference values in Onorato et al. 2011, the loss of 4,909.1 acres of panther habitat approximates the loss of habitat carrying capacity for between 0.27 and 0.8 panthers based on varying density estimates of between 1.37 and 4.03 panthers per 100 square kilometers. Therefore, the Service expects no more than two (2) Florida panther to

be harmed by this loss in habitat carrying capacity and a potential increase in intraspecific aggression.

In addition to habitat loss, the Service has evaluated the potential impacts to panthers based on an increase in traffic in the Action Area. Based on our analysis and the lack of any responsible method to quantify risk of PVM, we treat these impacts to the panther population as part of the environmental baseline condition or cumulative effects within the Action Area.

Tricolored bat

The Service anticipates that incidental take will be in the form of harm as well as injury and mortality for any TCB that occupy a roost(s) within the Action Area as a result of mechanical vegetation removal. If an occupied roost is lost, we expect a subset of the affected bats will be injured or killed, while the remaining bats may experience only a temporary disturbance and escape to another available roost. Any flightless young present when the roost is lost are expected to be killed. Since the locations of any roosts within the Action Area are unknown, they could be lost as a result of mechanical removal or otherwise natural causes without knowledge of its contents, and we will not be able to document how many bats escaped or were killed. Furthermore, we have no means to monitor the loss in fitness and productivity of the disturbed TCBs, because the location of the roosts may continue to be unknown for the duration of the proposed action. Therefore, the Service will use habitat as a surrogate for the number of individuals lost and take will be considered exceeded if more than 4,909.1 acres of suitable TCB habitat is subject to mechanical treatment as a result of the proposed Project. If, during the course of this action, this level of take is exceeded, such take would represent new information requiring review of the reasonable and prudent measures provided, the Corps must immediately reinitiate consultation with the Service.

EFFECT OF THE TAKE

In the accompanying Biological and Conference Opinion, the Service determined that this level of expected take is not likely to result in jeopardy to the caracara, indigo snake, Florida bonneted bat, panther, or tricolored bat. Critical habitat has not been designated for these species and will not be affected.

REASONABLE AND PRUDENT MEASURES

Reasonable and prudent measures refer to those actions the Director considers necessary or appropriate to minimize the impact of the incidental take on the species. When providing an incidental take statement, the Service is required to give reasonable and prudent measures it considers necessary or appropriate to minimize the take along with terms and conditions that must be complied with, to implement the reasonable and prudent measures. Because the Conservation Measures included as part of the proposed action serve to minimize and mitigate potential adverse effects to the listed species that may be present within the Action Area, no additional reasonable and prudent measure(s) are necessary and appropriate to minimize effects of the project on the species covered in this Biological/Conference Opinion.

TERMS AND CONDITIONS

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

As described in the Minimization and Conservation Measures and Description of the Proposed Action, the applicant and the Corps shall ensure and demonstrate that each measure is implemented at the time it occurs. Annual reporting and funding assurances shall be transmitted to the Service as described.

MONITORING AND REPORTING REQUIREMENTS

Pursuant to 50 CFR § 402.14(i)(3), the Corps must provide adequate monitoring and reporting to determine if the amount or extent of take is approached or exceeded. In addition to the species-specific survey and monitoring described in the *Minimization and conservation measures* section above, the Applicants and Corps shall provide a report notifying the Service as to the acreage of each habitat or land cover type cleared within the Project footprint annually. Reports should be sent by February 28th to FW4FLESRegs@fws.gov and the ECOSphere Project Code (2023-0009323) must be included in the email subject line.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead, injured, or sick threatened or endangered species, initial notification must be made to the nearest Service Law Enforcement Office: 20501 Independence Blvd., Groveland, Florida 34736; 352-429-1037, as well as the Florida Fish and Wildlife Conservation Commission's Wildlife Alert number; 888-404-3922. Secondary notification should be made to the biologist identified below at FW4FLESRegs@fws.gov. Care should be taken in handling sick or injured specimens to ensure effective treatment and 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 sick or injured specimens, 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 following:

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the conservation recommendation carried out.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the Project consultation request. As written in 50 CFR § 402.16, reinitiation of consultation is required and shall be requested by the Federal agency, where discretionary Federal 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) new information reveals effects of the Corps action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the Corps action is subsequently modified in a manner that causes an effect to the listed species or critical habitat 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 until reinitiation is complete.

Thank you for your cooperation and effort in protecting federally listed species and fish and wildlife resources. If you have any questions regarding this project, please contact Adam Knutson at adam_knutson@fws.gov or 772-226-8152.

Sincerely,

Robert L. Carey
Manager, Division of Environmental Review
Florida Ecological Services Office
Gainesville

Enclosures

cc: electronic only
Corps, Fort Myers, Florida (Michael Ornella)
FWC, Tallahassee, Florida (FWC-CPS)
NOAA Fisheries, St. Petersburg, Florida (David Rydene)
Service, Vero Beach, Florida (David Shindle)

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