

5.2. Amphibians and Reptiles

5.2.1. Eastern indigo snake

The federally-threatened eastern indigo snake (Drymarchon corais couperi) generally requires very large tracts of land to survive. Indigo snakes utilize a diverse range of habitats, from xeric scrub to wet prairies. They are considered commensals of the gopher tortoise, often wintering over in their burrows in the uplands, especially scrub and sandhill communities, but foraging in more mesic to hydric habitats. The eastern indigo snake is found throughout Florida, but is rare in most areas. Large expanses of pine flatwoods (FLUCFCS 4110) dominate the natural landscape in the study area and are represented in all the alternatives; additionally, conservation areas provide the necessary large tracts of natural land. All FNAI Element Occurrence data for the eastern indigo snake in the study area is restricted to managed areas not within any alternatives (Figure 6). Figure 7 depicts the "higher-potential" pine flatwood and conservation areas in the study area.

There is a high potential for the indigo snake in the study area with a moderate potential within the alternatives. Therefore, in accordance with the January 25, 2010 USFWS Eastern Indigo Snake Programmatic Effects Determination Key (see Appendix F), the proposed project "may affect, but is not likely to adversely affect" the Eastern indigo snake or its preferred habitat.

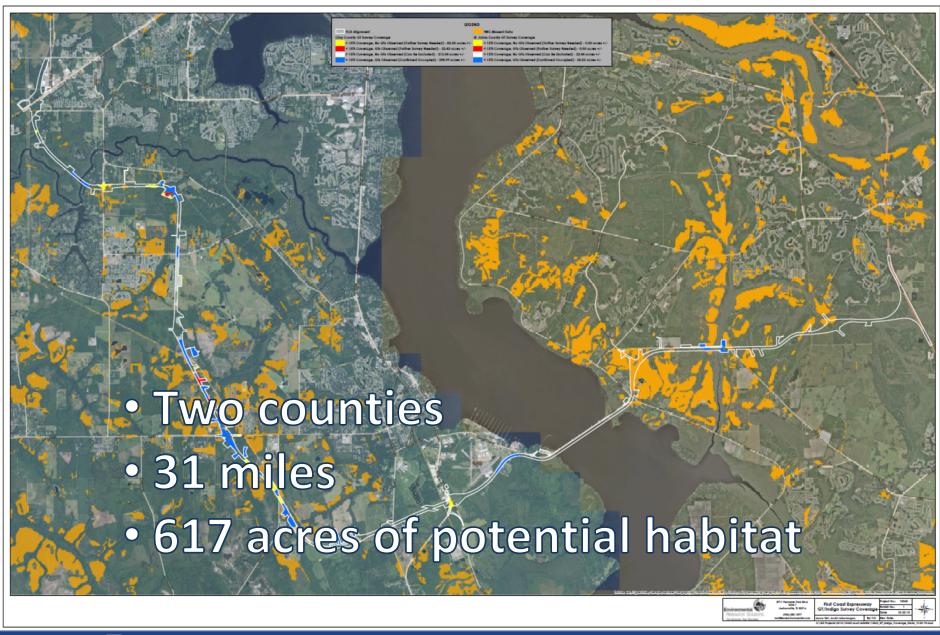
FDOT agrees to implement the USFWS standard protection measures for the Eastern indigo snake and an Eastern indigo snake education plan prior to and during construction (see *Appendix C*). In addition, FDOT is committed to the following

- Surveys for gopher tortoise burrows will be conducted within two years of the construction start date;
- FDOT will utilize the USFWS Survey Protocol for the Eastern Indigo Snake Drymarchon couperi, in North and Central America, if applicable;
- FDOT will conduct a detailed Eastern indigo snake habitat impact analysis during the Final Design and Permitting phases in close coordination with USFWS and FWC during this process; and
- FDOT will mitigate the impacts to Eastern indigo snake habitat through the purchase and conservation of appropriate upland habitat as determined by the aforementioned analysis during the Final Design/Permitting/Right-of-Way phases.

HAPTER

Commitments and Recommendation

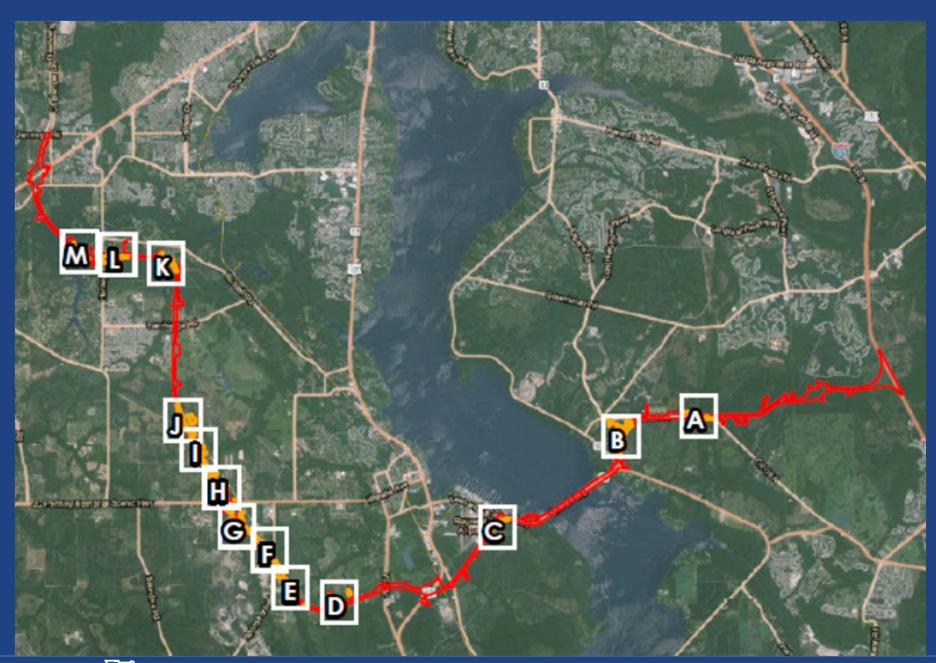
- Conduct a detailed Eastern indigo snake habitat impact analysis during the Final Design and Permitting phases in close coordination with USFWS and FWC during this process.
- Mitigate the impacts to Eastern indigo snake habitat through the purchase and conservation of appropriate upland habitat as determined by the aforementioned analysis during the Final Design/Permitting/Right-of-Way phases. Furthermore, the Department is committed to close coordination with USFWS and FWC during this process.
- Us special provisions for the protection of manatees during construction to sure that no manatees are harmonic rained personnel will conduct surveillance of in-water work areas during construction. Erosion and turbidity control measures will be installed and maintained around in-water work area.
- Follow the Standard Manatee Protection Construction Conditions for In-Water Work (FWC 2009) for the Floada manatee during implementation of the project, and TSPs will be incorporated into the contractor's bid documents.
- Develop and utilize a manatee watch plan specific to this project during the Permitting phase, at which time the USFWS will be provided the opportunity to provide input and approval.
- Implement water quality improvement initiatives as an additional mitigation option for impacts to submerged aquatic vegetation. A draft plan is contained in Appendix D of the Endangered Species Biological Assessment.
- Restore near-shore areas upon the removal of the existing Shands
 Reiden
- Should the striped newt or gopher tortoise be listed prior to the time construction commences, an effects determination will be made in coordination with USFWS. Furthermore, compliance with all applicable state and Federal regulations, guidelines, survey protocol, etc., will be adhered to.
- Where the proposed project will alter wetlands, wetland compensation will include a temporal-lag factor to account for time required for successful mitigation with type-for type-mitigation and comparable hydroperiod, to compensate for potential adverse effects to the wood stork foraging area.
- Design and construct the proposed project to provide wildlife passage across the project considor to reduce habitat fragmentation, prevent genetic isolation, and limit direct mortality on the roadway. Wildlife passage will be accomplished by designing appropriate bridge lengths, culvert locations, signage, and construc-



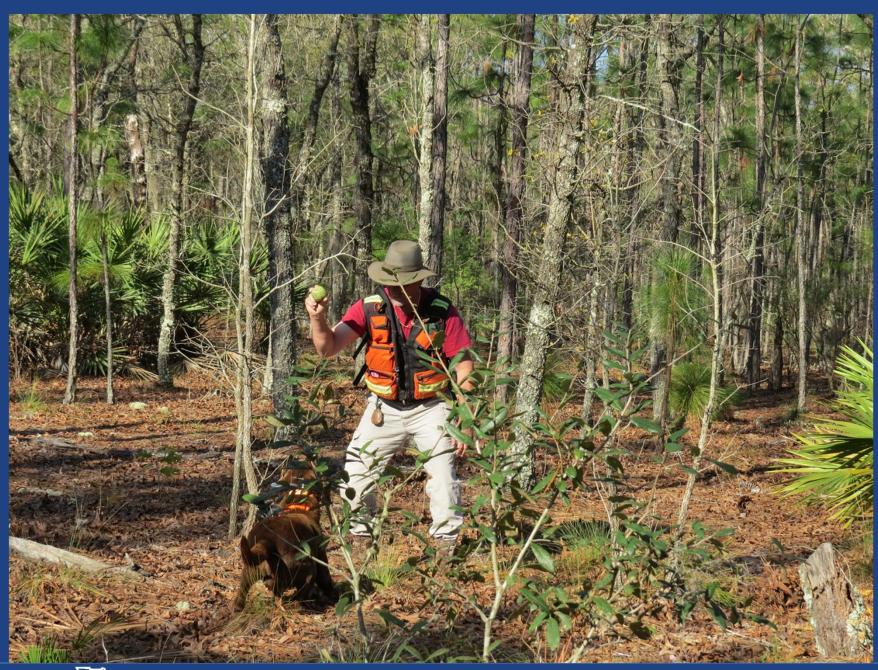


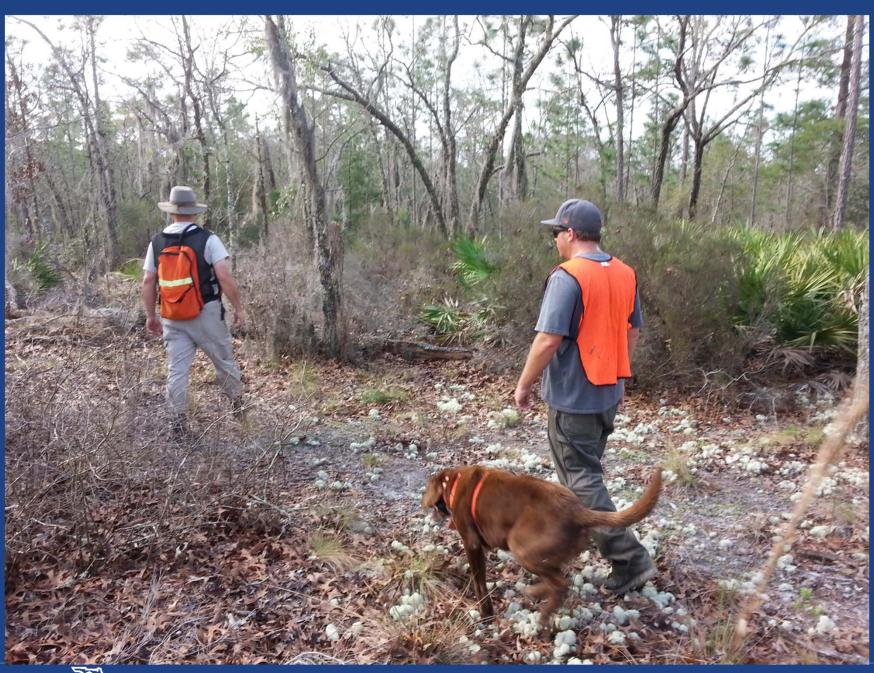








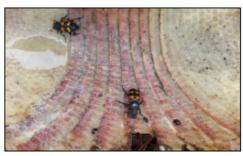




FDOT Florida Department of Transportation









Photograph 9, left. Sexton beetles feeding on the remains of a nine-banded armadillo. Photograph 10, right. Neonate slimy salamander.





Photograph 11, left. Fence lizard. Photograph 12, right. Juvenile gopher tortoise.





Photograph 13, left. Juvenile dusky pygmy rattlesnake. Photograph 14, right. White-tailed deer fawn.

Species	during the indigo snake s Common Name	Observation	Method of Detection
Cicindela sp.	Tiger beetle	Observed in logged	Observed by biologist
ololiucia sp.	I Igor books	area	Observed by biologist
Phanaeus vindex	Rainbow scarab	Observed on sand	Observed by biologist
	Transcri Social	substrate	Control by biologist
Nicrophorus sp.	Sexton Beetle	Several observed	Observed by biologist
		feeding	
Plethodon grobmani	Slimy Salamander	Two living specimens	Found by biologist
	,	found under separate	, ,
		logs	
Sceloporus undulatus	Eastern Fence Lizard	Visual	Observed by biologist
Coluber constrictor	Black Racer	Two individuals	Observed by biologist
priapus		observed in separate	
		areas	
Coluber constrictor	Southern Black Racer	Two shed skins found in	Found by biologist
priapus		separate areas	
Micrurus fulvius	Coral Snake	Two individuals in	Observed by biologist
		separate areas	
Pantherophis	Yellow Rat Snake	Shed skin pieces	Dog found but did not
alleghaniensis			"indicate"
Crotalus adamanteus	Eastern Diamondback	Shed skin	Dog found but did not
	Rattlesnake		"indicate"
Sistrurus miliaris	Dusky Pygmy	Juvenile found	Found by biologist
barbouri	Rattlesnake		
Gopherus polyphemus	Gopher tortoise	Juvenile found	Found by biologist
Gopherus polyphemus	Gopher Tortoise	Burrows, tracks, and scat	Observed by biologist
Dasypus novemcinctus	Nine-banded Armadillo	Burrows observed in	Observed by biologist
Dadypus novembiliotus	Nille-Dariueu Arriidullo	many locations	Observed by biologist
Dasypus novencinctus	Nine-banded Armadillo	Skeletal remains	Observed by biologist
Meleagris gallopavo	Turkey	Visual and auditory	Observed by biologist
Meleagris gallopavo	Turkey	Feathers	Found by biologist
Colinus virginianus	Bobwhite	Visual and auditory	Flushed by dog
Odocoileus virginianus	White-tailed Deer	Fawn found	Found by biologist
Odocoileus virginianus	White-tailed Deer	Shed antiers	Found by biologist
Sciurus niger shermani	Sherman's Fox Squirrel	Visual	Observed by biologist
Glaucomys volans		Visual	
	Southern Flying Squirrel	VISUAI	Dog found but did not "indicate"



