

**THE VILLAGES  
PROTECTED SPECIES OF  
WILDLIFE GUIDE**



**February 2020**

## INTRODUCTION:

To assist maintenance, construction, community watch, or other staff at The Villages in identifying protected wildlife species, Breedlove, Dennis & Associates, Inc. (BDA) has compiled the enclosed list of protected species of wildlife. The Florida Fish and Wildlife Conservation Commission (FWC) maintains the state list of animals designated as Federal Endangered, Federal Threatened, Federal Threatened due to similarity of appearance, State Threatened, or State Species of Special Concern. The FWC adopted new rules for listing imperiled wildlife species on September 1, 2010, that became effective on November 15, 2010 (Chapter 68A-27). Based on the regulatory changes to Chapter 68A-27 in 2010, FWC officially adopted the imperiled species management system and initiated preparation of the Imperiled Species Management Plan (ISMP). The ISMP and supporting Species Action Plans (SAPs) were adopted by the FWC on November 16, 2016 (amended December 2018). The ISMP is a strategic, comprehensive plan designed to conserve 59 fish and wildlife species. The ISMP includes supporting SAPs addressing individual species needs and Integrated Conservation Strategies for multiple species and their shared habitats. These documents are available on the FWC web site (<https://myfwc.com/wildlifehabitats/wildlife/plan/>).

In December 2018, the following mammals were removed from the Florida Endangered and Threatened Species list: Southern Fox Squirrel (*Sciurus niger niger*) (formerly know as the Sherman's Fox Squirrel) and Homosassa shrew (*Sorex longirostris eionis*). However, a new rule on Regulations Relating to the Taking of Mammals (Chapter 68A-29.002) was approved on May 7, 2019 that prohibits the take of these mammals and other mammals not listed in Chapter 68A-27, F.A.C. or not regulated under 68A-24. Take is defined as the species or their young, homes, dens or nests shall not be taken, transported, stored, served, bought, sold or possessed in any manner at any time unless specifically permitted, except as authorized in the Commission's Species Conservation Measures and Permitting Guidelines or by permit from the executive director. The mammals protected by this proposed rule include: Florida mouse (*Podomys floridanus*), shrews (*Cryptotis* spp., *Blarina* spp., *Sorex* spp.), fox squirrels (*Sciurus niger* ssp.), bats (*Corynorhinus* spp., *Myotis* spp., *Perimyotis* spp., *Eptesicus* spp., *Lasiurus* spp., *Nycticeius* spp., *Tadarida* spp.), American mink (*Neovison vison* ssp.), Santa Rosa beach mouse (*Peromyscus polionotus leucocephalus*), pine vole (*Microtus pinetorum*), long-tailed weasel (*Mustela frenata* ssp.), and round-tailed muskrat (*Neofiber alleni*).

This guide includes a total of 16 protected wildlife species that are reported to occur in or around The Villages within Lake, Marion, or Sumter counties based on distribution information by the Florida Natural Areas Inventory. This guide is divided into two sections consisting of birds and reptiles/amphibians. Ten of these species are more likely to be seen or heard than others in the guide, and the common name for these species has been highlighted in yellow at the top of the page. The remaining five species may not be seen due to habitat requirements, their timid nature, or are nocturnal or fossorial (spending the majority of their time underground).

Each wildlife species is described on two pages. The first page provides information on the species status, description, a Florida distribution map (distribution shown in yellow), and a picture(s). The second page includes similar species, habitat, and management techniques. The similar species section describes other animals that may look similar to the species in question.

**Remember, these species are protected under federal and/or state law and regulations. As such, they should not be handled, harmed, harassed, disturbed, or killed. Violations of the Endangered Species Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, or State Wildlife Code are punishable under law.**

**NOTE:** Residents should report injured wildlife to the Community Watch. The Community Watch's report should be submitted to those below as appropriate.

Development Contractors Tommy McDonough	Village Center, Sumter Landing & Districts 1-13 Blair Bean
Home Construction Contractors Mike West	Villages Landscaping Areas Mike Harris and Blair Bean
Villages Championship Golf Courses Rickey Craig	Villages Executive District Golf Courses Mitch Leininger

**For Further information or guidance, please contact one of The Villages biologists listed below.**

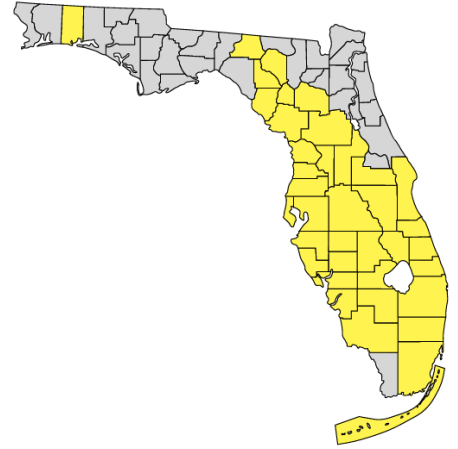
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# BIRDS



## FLORIDA BURROWING OWL

*Athene cunicularia floridana*

**Order:** Strigiformes  
**Family:** Strigidae  
**Federal Status:** Migratory Bird  
**FL Status:** State Threatened  
**Legal Protection:** U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** Small, ground-dwelling owl with long legs, white chin stripe, round head, and stubby tail. Adults are boldly spotted and barred with brown and white. Juveniles are plainer above with less spotting, and buffy below with little or no brown barring. Will often dig their own burrow and, prior to egg laying, will line burrow and entrance with various materials (e.g., grass clumps, palm fronds). After eggs are laid, entrance chamber is further adorned with more decorative and visible objects, such as paper scraps, plastics, tin foil, mirrors, graduation tassels, cigarette butts, and other non-natural materials.

**Similar Species:** Not likely to be confused with other owl species. Differs from western subspecies in having darker upper parts with less buffy brown and whiter spotting.

**Habitat:** High, sparsely vegetated, sandy ground. Natural habitats include dry prairie and sandhill. Makes extensive use of ruderal area such as pastures, airports, ball fields, parks, school grounds, university campuses, road right-of-ways, and vacant spaces in residential areas.

**Seasonal Occurrence:** Predominately non-migratory; maintains home ranges and territories while nesting.

**Florida Distribution:** Largest populations occur in southwest and southeast Florida. Depending on habitat availability, small, patchily distributed populations occur in the Florida Keys and along the

interior ridges of Florida from Highlands County to Madison County. A single disjunct population occurs at Eglin Air Force Base in Okaloosa County.

**Range-wide Distribution:** Resident in Florida and the Bahamas.

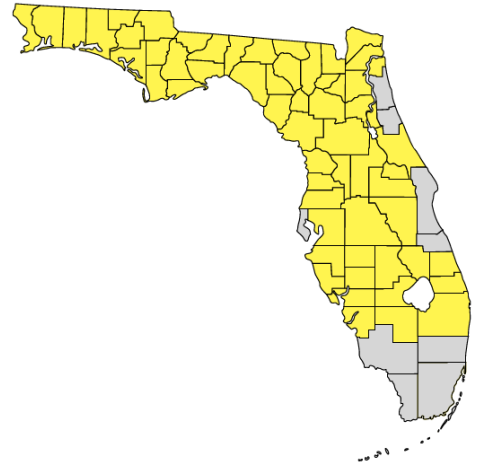
**Conservation Status:** Human activities have increased range in Florida but have exposed owls to additional threats. Largest concentrations of owls now reside in ruderal grasslands and lawns of residential and industrial areas. One of the largest populations is in Cape Coral, a large development in Lee County. Intensive cultivation and development of grasslands pose major threats. Permits for legal “take” of burrows are also a concern. Human harassment (generally by children), predation by domestic animals, and vehicle collisions take a toll on urban birds. Predation by fire ants is also implicated in owl mortality.

**Protection and Management:** Educate residents in developments and owners of industrial or farm lands where owls occur to help limit harassment. Maintain optimum condition of natural and ruderal sites where owls occur; will likely require fire in natural areas and mowing in ruderal areas. Establish buffer zones and development plans that consider the needs of the owl, which may allow them to persist under otherwise precarious circumstances. Studies in Cape Coral showed owls appeared to prefer sites with between 25 and 75 percent of developable lots occupied.

**Nesting Season:** February 15 – July 15

**Selected References:** Bowen 2000, Poole and Gill (eds.) 1993, Robertson and Woolfenden 1992, Rodgers et al. (eds.) 1996, Stevenson and Anderson 1994, Wood 2001.





## **SOUTHEASTERN AMERICAN KESTREL**

*Falco sparverius paulus*

**Order:** Falconiformes  
**Family:** Falconidae  
**Federal Status:** Migratory Bird  
**FL Status:** State Threatened  
**Legal Protection:** U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** Smallest falcon in U.S. and similar in size to the familiar mourning dove (*Zenaida macroura*). Sexes distinctive: male has blue-gray wings, while female is larger and has more uniformly rufous back and wings. Both sexes have a mustached black-and-white facial pattern with strong perpendicular lines extending below eye and near ear, and a black band at base of rufous tail. Falcons in general have long, pointed wings and long tails, similar to doves. The alarm call, given frequently in flight, is *killy, killy, killy*.

**Similar Species:** Two subspecies of American kestrels (*Falco sparverius*) occur in Florida during the winter, the eastern American kestrel (*Falco sparverius sparverius*) and the southeastern American kestrel, and are virtually indistinguishable in the field. The merlin (*Falco columbaris*), another falcon occurring in Florida, is larger and lacks the rufous back and tail. The sharp-shinned hawk (*Accipiter striatus*) has rounded wings and also lacks the rufous tail and back. Both the merlin and sharp-shinned hawk are generally not found in Florida during summer (May – early September).

**Habitat:** Occurs in open pine habitats, woodland edges, prairies, and pastures throughout much of Florida. Availability of suitable nesting sites is important during the breeding season. Nest sites are cavities in tall dead trees or utility poles generally with an unobstructed view of surroundings. Open patches of grass or bare ground are preferred in flatwoods settings, since thick palmettos prevent detection of prey.

**Seasonal Occurrence:** The southeastern American kestrel is a permanent resident in Florida and occurs throughout Florida year-round. Southeastern American kestrels and eastern American kestrels co-occur in Florida during the winter, and are virtually indistinguishable in the field. The eastern American kestrel winters in Florida, arriving in September and leaving during March/April. All birds found in the breeding season (March - June) should be assumed to be the listed subspecies. Surveys intended to determine the presence of resident southeastern American kestrels should be conducted between April and August, and surveys for nesting American kestrels ideally would be conducted in April or May.

**Florida Distribution:** Wintering birds occur throughout Florida (including the Keys), but the breeding subspecies is non-migratory and most common in peninsular Florida, rare in the panhandle.

**Range-wide Distribution:** The species occurs throughout most of North and South America, but the listed subspecies is restricted to the southeastern U.S., occurring from Louisiana east to South Carolina and south through the Florida peninsula.

**Conservation Status:** Population trends cannot be determined from available survey programs. Natural nesting and foraging habitats have certainly declined, as sandhill and open flatwoods habitats are converted to intensive agricultural lands and residential development. Pasture lands may be used by the breeding species but often lack snags used for nesting sites.

**Protection and Management:** A key habitat feature necessary for breeding is a suitable cavity tree. Kestrels are secondary cavity nesters that depend upon cavities that are usually excavated in large pines and, less frequently, oaks by species of woodpeckers. Manage for dead tree snags on public lands. Nest-box programs have been used to augment populations in many areas. Protect large blocks of natural habitats with snag trees; open fields and pastures also are needed to provide adequate foraging habitat.

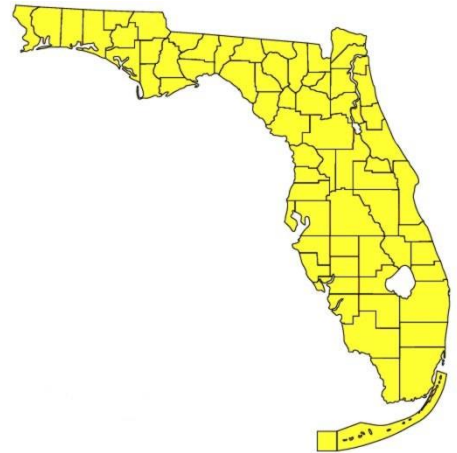
**Nesting Season:** January – early August with most of the nesting occurring from mid-March through early June.

**Selected References:** Loftin 1992, Robertson and Woolfenden 1992, Rodgers et al. (eds.) 1996, Stevenson and Anderson 1994, Stys 1993, Wood et al. 1988, Wood 2001.

## BALD EAGLE

*Haliaeetus leucocephalus*

**Order:** Falconiformes  
**Family:** Accipitridae  
**Federal Status:** Migratory Bird  
**FL Status:** Migratory Bird  
**Legal Protection:** The Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act and state Wildlife Code generally prohibit the disturbance, harassment, harm or take of eagles, their nest, or eggs.



**Description:** Adult has white head, white tail, and large, bright yellow bill; other plumage is dark. Immature eagles are dark with variable amounts of light splotching on body, wings, and tail; head and bill are dark. Wings are broad and wide and held horizontally in flight, presenting a flat profile when soaring and gliding. Bald eagles fly with slow, powerful wing-beats.

**Similar Species:** The eagle's size and lack of white in wings should help differentiate it from the crested caracara (*Caracara cheriway*; see species account) when seen at a distance in flight. The caracara also has a white head. Flattened aspect of the eagle's wings is unlike the teetering, V-shaped flight of the turkey vulture (*Cathartes aura*).

**Habitat:** Most commonly includes areas close to coastal areas, bays, rivers, lakes, or other inland bodies of water that provide concentrations of food sources, including fish, waterfowl, and wading birds. Usually nests in tall trees (primarily live pines) that provide clear views of surrounding area. Eagles nest in crowns of mangroves and even on the ground in Florida Bay, where there are few predators and few tall trees for nesting.

**Seasonal Occurrence:** Adults are non-migratory, remaining as year-around residents, but juveniles and sub-adult birds may migrate north in summer and may range as far as Canada but return to natal areas in Florida to breed and nest as adults. Also, some birds from northern populations migrate to northern Florida in winter.

**Florida Distribution:** Florida supports the largest breeding population of any state outside of Alaska. The eagle breeds throughout most of peninsular Florida and the Keys, mainly along the coast in eastern panhandle, and is rare in western panhandle. Greatest concentrations of nesting eagles occur around Lake Kissimmee in Polk and Osceola counties; around Lake George in Putnam, Volusia, and Lake counties; lakes Jessup, Monroe, and Harney in Seminole and Volusia counties; along Gulf coast north of Tampa and southwest Florida; and in Florida Bay.

**Conservation Status:** Historic population in Florida occurred throughout the state and likely numbered over 1,000 breeding pairs. Population declined sharply after late 1940s, reaching a low of 88 documented active nests in 1973, and by 1978 was considered rare as a breeder. Use of the pesticide DDT and related compounds are chief causes of their decline. Numbers have steadily increased, especially since 1989. The recovery goal of 1,000 breeding pairs in Florida was met by the late 1990s and the nesting population currently is estimated near 1,400 pairs. Protection of nesting sites remains a management priority.

**Protection and Management:** The bald eagle is protected by the USFWS under provisions of the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (effective August 9, 2007). Recovery goals have been achieved for this species; therefore, the bald eagle is no longer listed or protected as a “threatened” species under the Endangered Species Act of 1973, as amended. The USFWS has implemented National Bald Eagle Management Guidelines (May 2007) to assist private landowners and others plan land-use activities in proximity to active bald eagle nests by measures that will minimize the likelihood of causing “disturbance” to nesting bald eagles, as defined under the BGEPA. The FWC also removed the bald eagle from classification and protection as a “threatened” species under Florida Rule and implemented a Florida Bald Eagle Management Plan (Florida Plan) (effective May 9, 2008). The Florida Plan includes Florida Bald Eagle Management Guidelines and permit provisions.

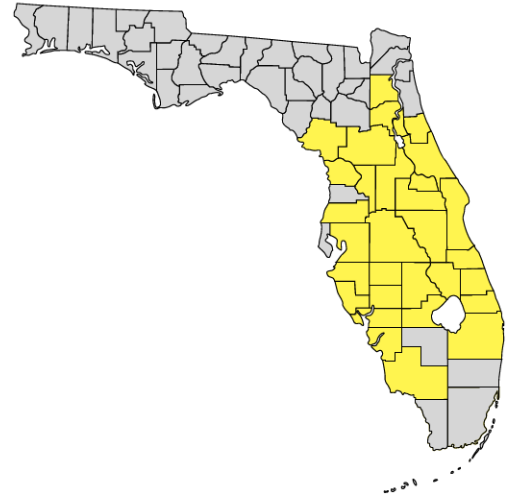
**Nesting Season:** October 1 – May 15.

**Selected References:** FFWCC 2001, Kale (ed.) 1978, Poole and Gill (eds.) 2000, Robertson and Woolfenden 1992, Rodgers et. al. (eds.) 1996, Stevenson and Anderson 1994, Wood 2001.

## FLORIDA SCRUB-JAY

*Aphelocoma coerulescens*

**Order:** Passeriformes  
**Family:** Corvidae  
**Federal Status:** Threatened  
**FL Status:** Federal Threatened  
**Legal Protection:** U.S. Endangered Species Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** Similar in size and shape to the familiar blue jay (*Cyanocitta cristata*). Crestless head, nape, wings, and tail are pale blue, and the back and belly are pale gray. Juveniles have fluffy brown heads.

**Similar Species:** The scrub-jay lacks the crest and white spotting on wings and tail that are characteristic of the blue jay.

**Habitat:** Inhabits fire-dominated, low-growing, oak scrub habitat found on well-drained sandy soils. May persist in areas with sparser oaks or scrub areas that are overgrown, but at much lower densities and with reduced survivorship.

**Seasonal Occurrence:** Non-migratory and remains on established territories as family groups.

**Florida Distribution:** Restricted to peninsular Florida, with largest populations occurring in Brevard, Highlands, Polk, and Marion counties.

**Range-wide Distribution:** Same as Florida distribution.

**Conservation Status:** Recognized in 1995 as a distinct species from the scrub-jays in the western U.S., making it the only bird species whose entire range is restricted to Florida. Continuing loss, fragmentation, and degradation of scrub habitat has resulted in a decline of greater than 90 percent of the original pre-settlement population of Florida scrub-jays. Precipitous decline since the 1980s. A 1992 range-wide study estimated an overall population of approximately 10,000 birds. Largest populations occur on federal lands (Merritt Island National Wildlife Refuge and Ocala National Forest), but are declining. Land management practices on these lands are of concern, as is the reduced use of prescribed fire to maintain optimum habitat conditions. Smaller populations are found scattered along Lake Wales Ridge in Polk and Highlands counties, with a major protected population at Archbold Biological Station. Cars and cats take a toll on the scrub-jay population in developed areas. Scrub-jays are susceptible to population crashes because of catastrophic fires or disease, so protection of secure populations is essential.

**Protection and Management:** Acquire suitable xeric habitat in strategic locations among existing scrub-jay preserves to help mitigate the extensive fragmentation of this habitat. Continued existence of this species will depend on preservation and long-term management of suitable scrub habitat. Prescribed fire every 8–15 years that burns in patchy mosaics, where few territories are burned completely, is optimal. Mechanical treatments, at least initially, may be required where fire cannot be used, although the long-term effects of this management practice are unknown.

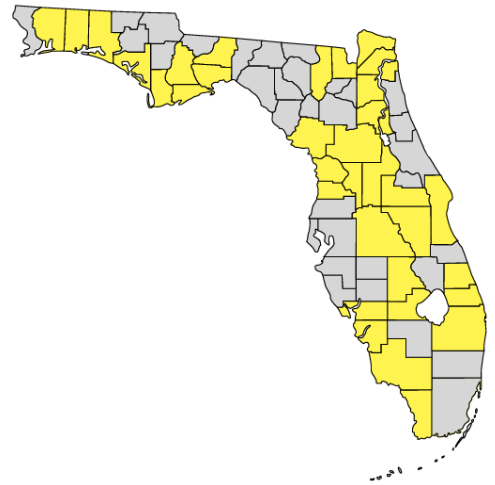
**Nesting Season:** March – June

**Selected References:** Fitzpatrick et al. 1991, Poole and Gill (eds.) 1996, Robertson and Woolfenden 1992, Rodgers et al. (eds.) 1996, Stevenson and Anderson 1994, Thaxton and Hingtgen 1996, Wood 2001.

## RED-COCKADED WOODPECKER

*Picoides borealis*

**Order:** Piciformes  
**Family:** Picidae  
**Federal Status:** Endangered  
**FL Status:** Federal Endangered  
**Legal Protection:** U.S. Endangered Species Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** This small woodpecker can be distinguished by its barred, black and white back and wings, black cap and nape, and white cheek patches on each side of the head. Sexes of adults are difficult to distinguish. Red streaks or “cockades” on either side of head of adult males are rarely visible. Juvenile

males can be identified by a small, circular patch of red on top of the head that is visible until early fall. This is absent in juvenile females.

**Similar Species:** No other Florida woodpecker has a barred “ladder” or “zebra” back and the large, unbroken white cheek patches. Downy (*Picoides pubescens*) and hairy (*P. villosus*) woodpeckers are most likely to be confused, but these species have solid white down the middle of the back and a black triangular patch that covers much of the cheek.

**Habitat:** Inhabits open, mature pine woodlands that have a diversity of grass, forb, and shrub species. Generally occupies longleaf pine flatwoods in north and central Florida, mixed longleaf pine and slash pine in south-central Florida, and slash pine in south Florida outside the range of longleaf pine. Forages in several forested habitat types that include pines of various ages, but prefers more mature pines.

**Seasonal Occurrence:** Non-migratory. Maintains territories in family groups throughout the year. They are cooperative breeders with young males characteristically remaining in many natal territories. Young females and non-helper males typically disperse a limited distance during their first winter in search of breeding opportunities elsewhere. Social groups, families, or clans generally constrict the use of their home range when nestlings are present and expand their use during fall and winter after young have fledged.

**Florida Distribution:** Occurs locally from the western panhandle through the peninsula to south Florida. Distribution tied to remaining areas of old-growth pine forests. Southernmost occurrence is the Big Cypress National Preserve in Collier and Monroe counties.

**Range-wide Distribution:** Primarily Southeastern Coastal Plain from North Carolina to Texas and southern Arkansas. Currently, populations are highly fragmented and most are small. Nearly 90 percent of active sites were in Florida, Georgia, the Carolinas, Louisiana, and Texas by 1990. More than half of the remaining population (9,300 birds) occurs on just six sites, while the remaining birds are scattered across more than 100 sites.

**Conservation Status:** Florida has the largest number of active sites in the world, but increasing fragmentation and poor management of old-growth forest pine habitat is a cause for concern. Largest concentrations occur on federally managed lands (ca. 80 percent of active sites); with state-owned and private lands supporting a significant number of smaller populations. Two of the largest populations, comprising 70 percent of active sites, occur on Eglin Air Force Base and Apalachicola National Forest, and there is evidence of decline in the latter.

**Protection and Management:** Federal and state agencies must aggressively manage their extensive tracts of pine forests. Habitat quality in such areas depends on fire for maintaining open, park-like conditions in old-growth pine forests. Considerable variation exists in habitat parameters range-wide, resulting in variable home-range sizes depending on amount and quality of available habitat. Focus management actions on both nesting and foraging requirements. Protect additional populations on private lands to help guard against catastrophic events (e.g., hurricanes).

**Nesting Season:** April – June

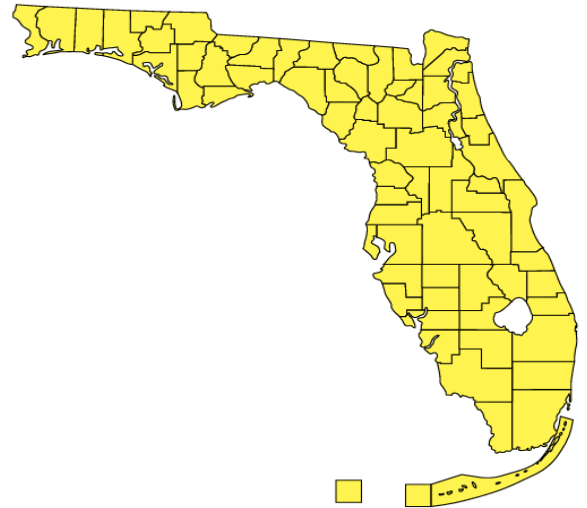
**Selected References:** James 1991, Kulhavy et al. (eds.) 1995, Poole and Gill (eds.) 1994, Robertson and Woolfenden 1992, Rodgers et al. (eds.) 1996, Stevenson and Anderson 1994, Wood 2001.



## LITTLE BLUE HERON

*Egretta caerulea*

**Order:** Ciconiiformes  
**Family:** Ardeidae  
**Federal Status:** Migratory Bird  
**FL Status:** State Threatened  
**Legal Protection:** U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** Medium-sized heron, with purplish to maroon-brown head and neck; small white patch on throat and upper neck; and slate-blue body. Bill is black towards tip, especially during breeding season, with other exposed areas on the head appearing dark gray to cobalt blue. Legs are grayish to green, becoming black in breeding season. Immature birds are mostly white with pale slategray tips on primary

wing feathers. Legs of young birds are yellowish-green. Immature birds move into adult plumage during first spring and may be boldly white/blue, looking like tie-dyed shirts. Immature birds retain yellowish legs during second year.

**Similar Species:** Plumage and eye of reddish egret (*Egretta rufescens*; see species account) are lighter in color, and base of bill is pinkish. Reddish egret has distinctive foraging behavior. Snowy egret (*E. thula*; see species account) and cattle egret (*Bubulcus ibis*) may look like juvenile little blue herons, but the little blue heron has dark primary tips. Bill of snowy egret (*E. thula*) is solid black; snowy egret may have yellowish stripe up the back of the leg.

**Habitat:** Feeds in shallow freshwater, brackish, and saltwater habitats. Largest nesting colonies occur in coastal areas, but prefers foraging in freshwater lakes, marshes, swamps, and streams. Nests in a variety of woody vegetation types, including cypress, willow, maple, black mangrove, and cabbage palm. Usually breeds in mixed-species colonies in flooded vegetation or on islands.

**Seasonal Occurrence:** Mostly resident throughout year, but numbers in north Florida during winter are lower than numbers during spring, summer, and fall. Is becoming less abundant in Florida Keys.

**Florida Distribution:** Most recent population estimate is approximately 17,000 birds distributed among 240+ breeding colonies. Colonies are found nearly statewide, except rare in western panhandle and southern Florida Keys.

**Range-wide Distribution:** Breeds from Kansas, Missouri, and Tennessee to coastal Maine and south to Peru and central Brazil; range extends west to southern California and Sonora; winter range includes these areas and north to coastal Virginia; may wander to Canada after breeding season.

**Conservation Status:** The little blue heron lacks the showy plumes found on many other herons and egrets; therefore, this species did not suffer as much during the plume-hunting trade a century ago. Primary threats are alteration of natural hydroperiods in wetlands used for foraging and exposure to pesticides and heavy metal contamination. Population trends are downward, and breeding colonies have become smaller and more numerous. Illegal killings may occur since this species regularly forages at tropical fish farms, commercial fish farms, and hatcheries. Long-term studies are needed on the possible adverse effects of cattle egrets, environmental contamination, and other threats.

**Protection and Management:** Protect breeding and foraging habitats through establishment of preserves and regulation of wetlands. Restore and maintain natural hydroperiods in degraded wetland areas. The FWC and the Department of Environmental Protection have developed setback distances around wading bird colonies of 330 ft. (100 m) to prevent human disturbance.

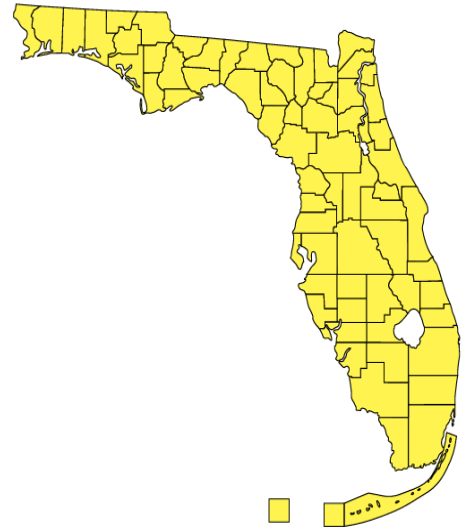
**Nesting Season:** April – September

**Selected References:** Poole and Gill (eds.) 1995, Robertson and Woolfenden 1992, Rodgers and Smith 1995, Rodgers et al. (eds.) 1996, Runde et al. 1991, Stevenson and Anderson 1994.

## TRICOLORED HERON

*Egretta tricolor*

**Order:** Ciconiiformes  
**Family:** Ardeidae  
**Federal Status:** Migratory Bird  
**FL Status:** State Threatened  
**Legal Protection:** U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** Medium-sized heron with a slender neck. Body color appears two-toned with dark slate coloration on head, neck, and body that contrasts with white rump, belly, and undertail. A reddish-brown and white streak extends along the front of the neck. During breeding season, adults have white head plumes and rufous to whitish shoulders. Young birds (<1 year) have more reddish-brown on head, neck, and mantle; otherwise similar to adults.

**Similar Species:** Little blue heron (*Egretta caerulea*; see species account) and reddish egret (*E. rufescens*; see species account) have solid dark colors; great blue heron (*Ardea herodias*) is larger and has white streak down neck but dark belly and underparts. Great blue heron also has a dark swath that extends back from eye and contrasts with lighter-colored top of head.

**Habitat:** Most nesting colonies occur on mangrove islands or in willow thickets in fresh water, but nesting sites include other woody thickets on islands or over standing water. Prefers coastal environments. Feeds in a variety of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and edges of ponds and lakes. Seasonal variation in water levels are particularly critical to nesting success, so alteration of wetlands used during breeding season can have negative consequences.

**Seasonal Occurrence:** Permanent resident, found throughout Florida in all seasons, except rare in winter in western Panhandle. Also, somewhat less common inland in recent years, particularly during winter.

**Florida Distribution:** Most numerous along coast. Generally becoming less numerous in northern tier of counties (Alachua County northward). Nesting in panhandle and northern interior more variable and restricted leading to few inland reports in panhandle.

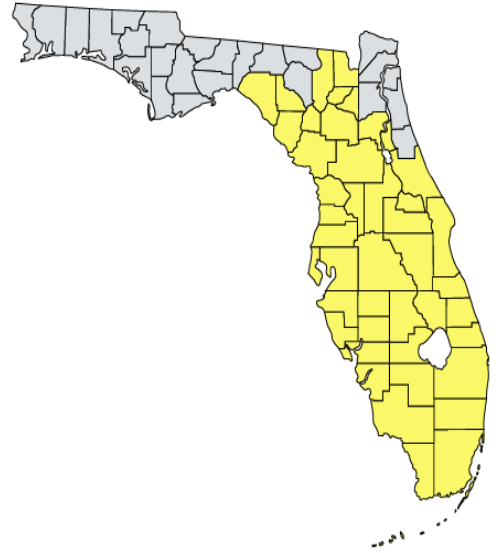
**Range-wide Distribution:** Occurs during breeding season from California to Texas and along northern Gulf coast; along Atlantic coast to Maine; south to central Brazil; leaves northern portion of range in winter.

**Conservation Status:** Once described as the most abundant heron in the state, but now much less common in interior. Long-term population trends are uncertain but apparently declining. Need information on marked individuals to document the species' movement and wetland utilization patterns in more detail.

**Protection and Management:** Approximately 25 percent of nesting colonies occur in disturbed water impoundments or dredge-material islands, so management opportunities exist. Create new nesting sites or stabilize established sites through management. Survey and monitor to document population trends.

**Nesting Season:** February – August

**Selected References:** Poole and Gill (eds.) 1997, Robertson and Woolfenden 1992, Rodgers et al. (eds.) 1996, Runde et al. 1991, Stevenson and Anderson 1994.



## FLORIDA SANDHILL CRANE

*Antigone canadensis pratensis*

**Order:** Gruiformes  
**Family:** Gruidae  
**Federal Status:** Migratory Bird  
**FL Status:** State Threatened  
**Legal Protection:** U.S. Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** A tall, long-necked, long-legged bird with a clump of feathers that droops over the rump. Adult is gray overall, with a whitish chin, cheek, and upper throat, and dull red skin on the crown and lores (lacking in immatures); feathers may have brownish red staining resulting from preening with muddy bill. Immature Florida sandhill crane has pale to tawny feathers on head and neck and a gray body with brownish-red mottling. Flies with neck extended. Their distinctive bugling or trumpeting call can be heard from far away.

**Similar Species:** Indistinguishable from greater sandhill crane (*Antigone canadensis tabida*), which winters in Florida. Greater sandhill crane generally arrives in Florida in October and leaves in March, so the date observed or definite evidence of reproduction may be used to differentiate the two. Great blue heron (*Ardea herodias*) is sometimes mistakenly identified as a crane. This heron lacks the bald, red

crown of the sandhill and flies with its neck tucked in, typical of herons and egrets. Whooping crane (*G. americana*) is white.

**Habitat:** Prairies, freshwater marshes, and pasture lands. Avoids forests and deep marshes but uses transition zones and edges between these and prairies or pasture lands. Will frequent agricultural areas like feed lots and crop fields, and also golf courses and other open lawns, especially in winter and early spring. Nest is a mound of herbaceous plant material in shallow water or on the ground in marshy areas. Favors wetlands dominated by pickerelweed (*Pontederia cordata*) and maidencane (*Panicum hemitomon*).

**Seasonal Occurrence:** Non-migratory. Very sedentary, although may forage widely. Large influx of northern migratory subspecies in winter (October – March).

**Florida Distribution:** Most of peninsular Florida is within appropriate habitat, though not as common south of Lake Okeechobee. Rarely reported west of Taylor County.

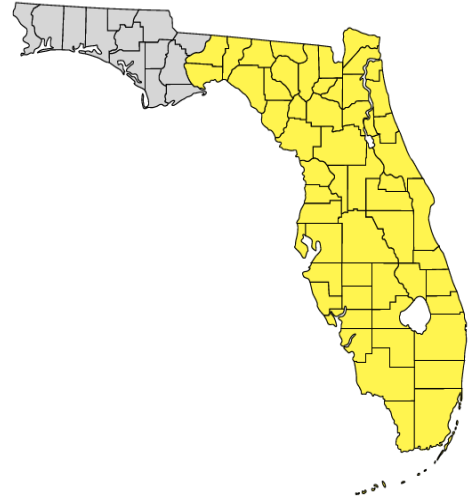
**Range-wide Distribution:** Florida and extreme southeastern Georgia (Okefenokee Swamp).

**Conservation Status:** Population estimate in 1975 of approximately 4,000 birds (25 percent are nonbreeding subadults) is still considered accurate. Habitat availability will become more and more of concern as Florida continues to lose open rangeland and native prairie to development and more intensive agricultural uses (e.g., citrus, row crops). Nesting success in human-altered areas is well below that of native areas. Shallow wetlands used by cranes are easily affected by drainage of adjacent uplands even if they are not directly disturbed. Florida sandhill cranes are found on federal and state lands and on local government lands (e.g., wellfields).

**Protection and Management:** Public lands do not protect large populations of cranes due to large home range requirements. Acquire land, through fee-simple acquisition and conservation easements on suitable ranchlands, in areas that bolster existing protected populations. Periodic fire is important to retard invasion of woody vegetation in crane habitat. Filling drainage ditches to restore natural hydrological conditions is important in some areas.

**Nesting Season:** Late December – June

**Selected References:** Poole and Gill (eds.) 1992, Robertson and Woolfenden 1992, Rodgers et al. (eds.) 1996, Stevenson and Anderson 1994, Toland 1999a, Wood 2001.



## WOOD STORK

*Mycteria americana*

**Order:** Ciconiiformes  
**Family:** Ciconiidae  
**Federal Status:** Threatened  
**FL Status:** Federal Threatened  
**Legal Protection:** U.S. Endangered Species Act, Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** Very large, white wader with black in wings and a short black tail. Soars with neck and legs extended, displaying its long, broad wings; black flight feathers contrast with white along length of wings. Legs are dark; feet are beige. Adults have bare, scaly, dark-gray heads and necks, and long, heavy, decurved bills. Head and neck of immature storks have grayish-brown feathering and their bills are yellowish.

**Similar Species:** American white pelicans (*Pelecanus erythrorhynchos*) have a similar wing pattern and also soar but have short legs, white tail, and do not fly with necks extended. White ibis (*Eudocimus albus*; see species account) is much smaller and only has black on wing tips. Great egret (*Ardea alba*) lacks black on wings.

**Habitat:** Nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves. Increasingly nesting in artificial habitats (e.g., impoundments and dredged areas with native or exotic vegetation) in north and central Florida. Forages mainly in shallow water in freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches, where they are attracted to falling water levels that concentrate food sources (mainly fish).

**Seasonal Occurrence:** Post-breeding dispersal carries large numbers from more southern locales to more northern parts of range; in winter, northern birds move south. Annual and long-term use of nesting sites is very dependent on feeding conditions, which may be affected dramatically by altered hydrologic patterns. Colonies may form late November – early March in south Florida and February – March in central and northern Florida.

**Florida Distribution:** Locally rare to abundant in the peninsula and Big Bend, but generally rare or lacking in panhandle and the Florida Keys. Uncommon to rare in winter in north.

**Range-wide Distribution:** Breeds locally in South Carolina, Georgia, and Florida (formerly west to Texas), in lowlands from Mexico and northern Central America to South America (to western Ecuador, eastern Peru, Bolivia, northern Argentina), and rarely in Cuba and the Dominican Republic. Winters are spent throughout breeding range except in South Carolina and Georgia.

**Conservation Status:** Many known breeding sites occur within public and private conservation lands. Dramatic decline in the large colonies (>500 individuals) formerly occurring in south Florida, and trend toward fewer birds distributed among smaller, more numerous colonies in central and northern Florida. Very sensitive to manipulation of water regimes and loss of wetland habitat, which affect both nesting sites and feeding areas.

**Protection and Management:** Survey colony sites and important feeding areas regularly. Essential to protect wetland areas. Closely monitor water quality, and manage hydrologic patterns that consider the needs of the wood stork.

**Nesting Season:** October through June in Florida

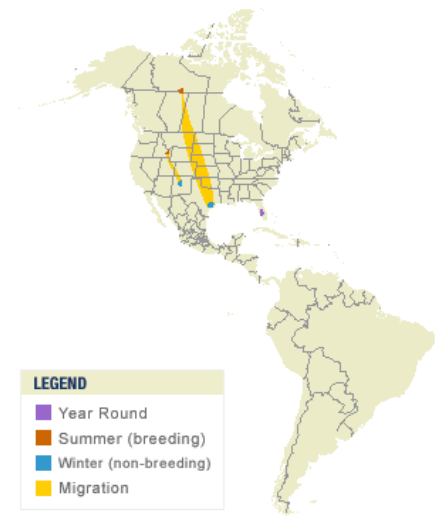
**Selected References:** Rodgers 1990, Poole and Gill (eds.) 1999, Robertson and Woolfenden 1992, Rodgers et al. (eds.) 1996, Runde et al. 1991, Stevenson and Anderson 1994, Wood 2001.



## WHOOPING CRANE

*Grus americana*

**Order:** Gruiformes  
**Family:** Gruidae  
**Federal Status:** Endangered  
**FL Status:** Federal Endangered  
**Legal Protection:** U.S. Endangered Species Act, Migratory Bird Treaty Act and state Wildlife Code prohibit take of birds, nests, or eggs.



**Description:** The tallest bird in North America, 132 cm. Large white crane. Adults are white with red crown and black forehead, lores and moustache (tipped red), and red facial skin around large, horn-coloured bill. Shows black primaries in flight. Immature cranes are whitish with scattered brown feathers over wings and paler, reddish-brown head and neck.

**Similar Species:** Sandhill Crane has gray and rust-colored plumage, not white, with gray primaries, and red only on crown. American White Pelican similarly colored, but has black extending along length of wings, and short legs that do not extend beyond the body in flight. Snow Goose is smaller, and does not have long bill and long legs extending far behind body in flight. Some herons and egrets are white, but are smaller, have completely white wings, and fly with folded necks.

**Habitat:** Uses grain fields, shallow lakes and lagoons, and saltwater marshes during migration and in winter.

**Distribution:** Breeds at Wood Buffalo National Park in the Northwest Territories, Canada. Natural population winters at Aransas National Wildlife Refuge on Texas coast. Experimental population was established in Wisconsin and the Wisconsin population will winter in central Florida. No known nesting occurs in this region of Florida.

**Conservation Status:** Endangered. Reduced to 16 individuals in 1941. Captive breeding established a captive population and efforts have been made to establish additional wild populations in Florida and Wisconsin; neither of which is yet self-sustaining. Probably safe from imminent extinction, but threats remain. Limited habitat, though protected, leaves the birds vulnerable to catastrophic weather events or contaminant spills. Development near wintering sites also poses a concern. Collisions with power lines have killed or injured at least 19 Whooping Cranes since 1956. Two Whooping Cranes were killed by hunters in Kansas in November 2004, mistaken for Sandhill Cranes, a game species. Continued intensive management of habitat, captive breeding and reintroduction programs, and population monitoring will be essential to the well-being of the species.

**Protection and Management:** The self-sustaining wild population is protected on public lands in the nesting area at Wood Buffalo National Park in Canada and on the principal wintering area at Aransas National Wildlife Refuge in Texas. A major traditional migratory stopover is at Salt Plains National Wildlife Refuge in Oklahoma. This population is closely monitored throughout the nesting season, on the wintering grounds, and during migration. The Canadian Wildlife Service and the U.S. Fish and Wildlife Service are involved in recovery efforts under a 1990 Memorandum of Understanding, "Conservation of the Whooping Crane Related to Coordinated Management Activities." All cranes within the Rocky Mountain, Florida non-migratory and proposed eastern migratory non-essential, experimental population areas are fully protected as a threatened species (instead of endangered), but other provisions of the Endangered Species Act are relaxed to allow for greater management flexibility as well as positive public support.

**Nesting:** Breeds at Wood Buffalo National Park in the Northwest Territories, Canada. Nests in early spring, adults display elaborate courtship rituals, bobbing, weaving, jumping, and calling with their mates. The female lays two large eggs and both adults incubate them for the next month.

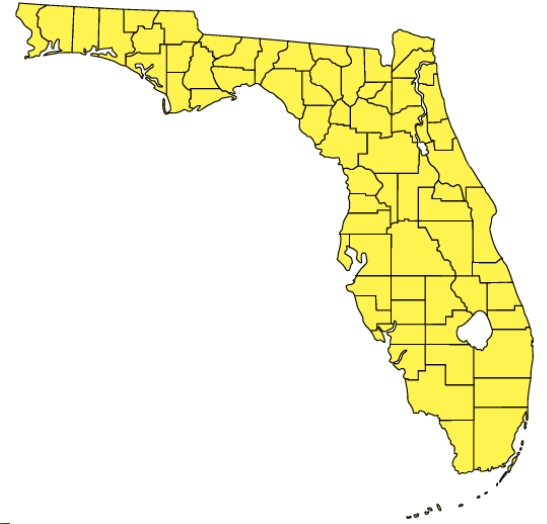
**Selected References:** International Crane Foundation. 2004. Whooping Crane. <http://www.savingcranes.org/species/whooping.cfm>. Lewis, J. C. 1995. Whooping Crane (*Grus americana*). In *The Birds of North America*, No. 153 (A. Poole and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists' Union.

# REPTILES / AMPHIBIANS

## GOPHER TORTOISE

*Gopherus polyphemus*

**Order:** Testudines  
**Family:** Testudinidae  
**Federal Status:** Not Listed in Florida  
**FL Status:** State Threatened  
**Legal Protection:** Florida State Wildlife Code prohibits take, possession, sale, transport, molestation, harassment, or purchase of tortoises or their parts except by permit.



**Description:** A medium-sized turtle (to 10 in. = 254 mm) fully adapted for life on land. Upper shell is brown and relatively flat above; lower shell is yellowish, without hinge, and projecting forward, especially in male; skin brown to dark gray. Forelimbs greatly expanded for digging; hind limbs reduced, stumpy, lacking any form of webbing between toes. Lower shell of male somewhat concave. Young: scales of carapace often with yellow centers, skin yellowish to tan; approximately 2 in. (51 mm) shell length at hatching.

**Similar Species:** The only other native land turtle in Florida, the box turtle (*Terrapene carolina*), is distinguished by its smaller size (to 8 in. = 203 mm), less stout feet, moveable hinge on lower shell, and often but not always by black and yellow upper shell. Tortoise burrows, which are useful in determining species' presence, typically have lower, flatter profile than more rounded burrows of armadillos; this reflects differences in cross-sectional shapes of the two animals.

**Habitat:** Typically found in dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; also commonly uses disturbed habitats such as pastures, old fields, and road shoulders. Tortoises excavate deep burrows for refuge from predators, weather, and fire; more than 300 other species of animals have been recorded sharing these burrows.

**Seasonal Occurrence:** Above-ground activity is greatly reduced during cold weather, with tortoises in northern Florida remaining below ground for months. Nonetheless, burrows are relatively conspicuous year-round.

**Florida Distribution:** State-wide except absent from the Everglades and Keys.

**Range-wide Distribution:** Lower Southeastern Coastal Plain, extending from southern South Carolina southward through lower Georgia and Florida, and westward through southern Alabama, Mississippi, and extreme southeastern Louisiana.

**Conservation Status:** Despite its widespread occurrence throughout Florida, there is considerable concern about the declining abundance of this species. Much of its native habitat has been lost to agriculture, citriculture, forestry, mining, and urban and residential development. Although protected populations occur on many state, federal, and private conservation lands, recent development of a severe respiratory disease threatens even those.

**Protection and Management:** The FWC approved reclassification of the gopher tortoise from “Species of Special Concern” to “Threatened” status at their regular meeting in September 2007. That reclassification was effective November 7, 2007. The FWC also approved implementation of a *Gopher Tortoise Management Plan* (Management Plan) at that meeting, pending development of *Gopher Tortoise Permit Guidelines* (Permit Guidelines). Those Permit Guidelines were approved and fully implemented effective April 2009. The new permits that are described in the Permit Guidelines and replace the former “special” and “standard” gopher tortoise permits are now available online. All survey, capture, and relocation activities associated with permits must be conducted by an “Authorized Gopher Tortoise Agent”. Land use planning that anticipates need to accommodate the conservation needs of gopher tortoises should be designed consistent with the Permit Guidelines.

The FWC generally recommends the following options for avoiding, minimizing, and/or compensating the potential for take of gopher tortoises or their burrows to occur on lands that are proposed for development:

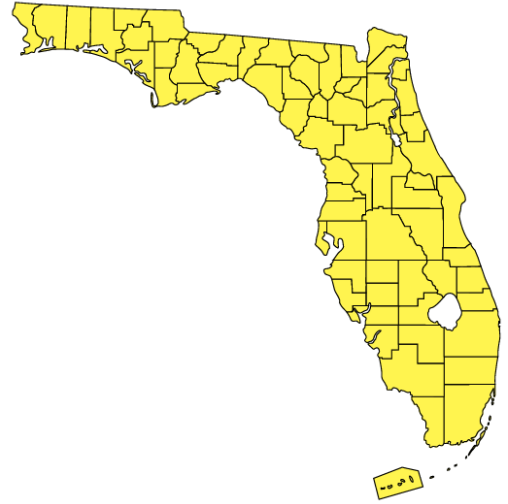
- 1) Avoid developing in the area occupied by gopher tortoises;
- 2) Develop so as to avoid gopher tortoise burrows by avoiding concentrations of burrows altogether and/or staying at least 25 feet from entrances of individual burrows; or
- 3) Relocate gopher tortoises that would otherwise be “taken” to an approved recipient site that is either on or off the development site (a 10 or Fewer Burrows Permit or Conservation Permit will be required).

Nesting Season: April – July.

## AMERICAN ALLIGATOR

*Alligator mississippiensis*

**Order:** Crocodylia  
**Family:** Alligatoridae  
**Federal Status:** Threatened by Similarity of Appearance  
**FL Status:** Federal Threatened Similarity of Appearance  
**Legal Protection:** U.S. Endangered Species Act and State Wildlife Code prohibits take, possession, sale, or purchase of individuals except by permit. Harvest of alligators and eggs is regulated by the Florida Fish and Wildlife Conservation Commission.



**Description:** A large, mostly black crocodylian body with a broadly rounded snout. Young alligators have yellow crossbands on back, tail, and sides; throat and belly are white to creamy yellow at all ages. Head is smooth in front of eyes; no prominently visible teeth in lower jaw when mouth is closed. Adults 6–15 ft. (1.8 - 4.6 m); hatchlings about 9 in. (230 mm).

**Similar Species:** Spectacled caiman (*Caiman crocodylus*), introduced in southern Florida, shares broadly rounded snout but rarely exceeds 6 ft. (1.8 m) and has curved bony crosswise ridge in front of eyes; varies from yellow-green to gray-brown with dark crossbands. American crocodile (*Crocodylus acutus*; see species account) is gray to brown and has long, tapered snout with prominently projecting fourth lower tooth when mouth is closed (except in very young).

**Habitat:** Most permanent bodies of fresh water, including marshes, swamps, lakes, and rivers. Occasionally wanders into brackish and salt water but rarely remains there.

**Seasonal Occurrence:** Most active from spring through fall, with nesting in late spring and hatching in summer. Inactive during cold weather, though some may bask on sunny winter days.

**Florida Distribution:** Statewide, though rare in Florida Keys.

**Range-wide Distribution:** Southeastern Coastal Plain from North Carolina to Texas.

**Conservation Status:** Has recovered dramatically since 1960s. Populations are present on most federal, state, and private conservation lands where there is permanent fresh water. Several populations are now large enough to support controlled harvest. Threats include destruction and pollution of wetlands, including lakes and rivers. The species remains classified under the Endangered Species Act as Threatened Due the Similarity of Appearance to more endangered crocodylians that are marketed illegally throughout the world.

**Protection and Management:** Protect wetlands of all types from ditching, filling, and pollution.

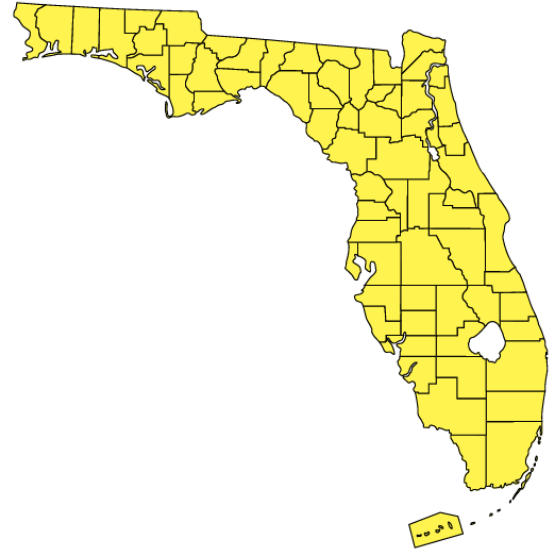
**Nesting Season:** April – May

**Selected References:** Ashton and Ashton 1991, Bartlett and Bartlett 1999, Conant and Collins 1991, Deitz and Hines 1980, Delany and Abercrombie 1986, Kushlan 1974, Lazell 1989, Mount 1975, Neill 1971.

## EASTERN INDIGO SNAKE

*Drymarchon corais couperi*

**Order:** Squamata  
**Family:** Colubridae  
**Federal Status:** Threatened  
**FL Status:** Federal Threatened  
**Legal Protection:** U.S. Endangered Species Act and State Wildlife Code prohibit take, possession, sale, transport, molestation, harassment, or purchase of individuals except by permit.



**Description:** A very large, stout-bodied, shiny, black snake reaching lengths as great as 8 ft. (244 cm). Black ventrally, but chin, throat, and sides of head may be reddish or (rarely) white. Scales typically smooth (no ridges), though adult males have keel on front half of some scales along back; anal scale undivided. Young are similar to adults though often more reddish anteriorly, 17 – 24 in. (430 – 610 mm) at hatching. When encountered, often hisses, flattens neck vertically (from side to side), and vibrates tail, but rarely bites.



**Similar Species:** Black racer (*Coluber constrictor*), which rarely exceeds 5 ft. (152 cm), is more slender, a duller sooty black usually with a white chin and throat, and has a divided anal scale. The mostly aquatic mud snake (*Farancia abacura*) is glossy black above and can grow to 6 ft. (183 cm), but has a reddish, rarely white, belly, with coloration encroaching on the sides, and a sharp-pointed tail tip.

**Habitat:** Broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. Often winters in gopher tortoise burrows in sandy uplands but forages in more hydric habitats in northern part of range. Requires very large tracts to survive.

**Seasonal Occurrence:** Active nearly year-round in southern Florida but winters underground farther north. Lays eggs in May and June.

**Florida Distribution:** Statewide, including Upper and Lower Keys, but rare in panhandle.

**Range-wide Distribution:** Florida and southern Georgia; formerly extended from southern South Carolina to southeastern Mississippi.

**Conservation Status:** Rare in most areas, though species has been recorded from many public lands statewide; however, whether most of these support viable populations is uncertain. Major threats are habitat loss, degradation, and fragmentation, with associated highway mortality. Other threats include gassing of tortoise burrows for rattlesnakes, collection for pets, and deliberate persecution, all of which are illegal.

**Protection and Management:** Protect very large tracts (> 5000 acres = 2025 ha) of appropriate natural habitat un-fragmented by roads; use prescribed fire as needed. Maintain gopher tortoise populations and dead stumps to provide natural subterranean refugia. Enforce bans on tortoise burrow gassing and on collection or molestation of snake. Avoid construction of roads through un-fragmented habitat. Educate public to avoid wanton destruction of large snakes.

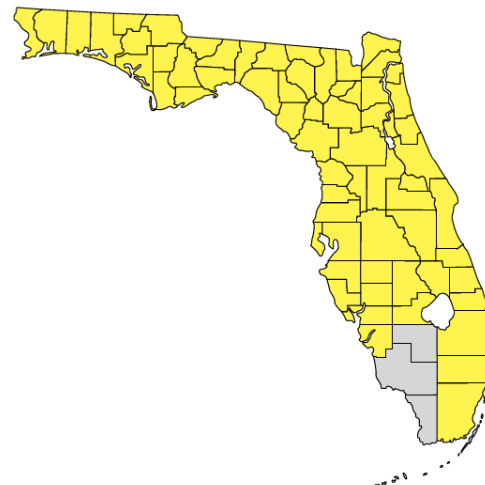
**Nesting Season:** Breeding November – April, Lay eggs in May and June

**Selected References:** Ashton and Ashton 1988b, Conant and Collins 1991, Ernst and Barbour 1989, Georgia DNR 1999, Lazell 1989, Moler (ed.) 1992, Mount 1975, Tenant 1997.

## FLORIDA PINE SNAKE

*Pituophis melanoleucus mugitus*

**Order:** Squamata  
**Family:** Clubridae  
**Federal Status:** Not Listed  
**FL Status:** State Threatened  
**Legal Protection:** State Wildlife Code prohibits take, possession, sale, or purchase of individuals except by permit. State possession limit of one snake per person.



**Description:** A large, stocky, tan or rusty colored snake with an indistinct pattern of large blotches on a lighter background; blotches more distinct posteriorly; venter white. May be dark brown in far western panhandle, where it integrates with another subspecies. The body is muscular, with keeled scales and undivided anal scale. The head is relatively small, snout somewhat pointed, four prefrontal scales, rostral scale extending upward between internasal scales. Adults 4 – 7 ft. (122 – 213 cm) or longer; young 15 – 24 in. (380 – 610 mm) at hatching. May hiss loudly and vibrate tail when encountered.

**Similar Species:** Most Florida snakes have only two prefrontal scales, and the rostral scale does not split the two internasals. Blotches of red rat snakes (*Elaphe guttata*) are smaller, more numerous (nearly 40), and more distinct. Eastern coachwhip (*Masticophis flagellum*) is more slender, usually darker anteriorly, lacks blotches, and has smooth scales and divided anal scale.

**Habitat:** Prefers habitats with relatively open canopies and dry sandy soils, in which it burrows. Especially sandhill and former sandhill, including old fields and pastures, but also sand pine scrub and scrubby flatwoods. Often co-exists with pocket gophers and gopher tortoises.

**Seasonal Occurrence:** Spends most of their time below ground; occasional surface activity from spring through fall, especially May – October. Eggs are laid June – August; hatch in September and October.

**Florida Distribution:** Most of panhandle and peninsula south to Lake Okeechobee, extending southward along eastern ridge to Dade County, but absent from Keys. Possibly extirpated from more heavily developed counties such as Pinellas.

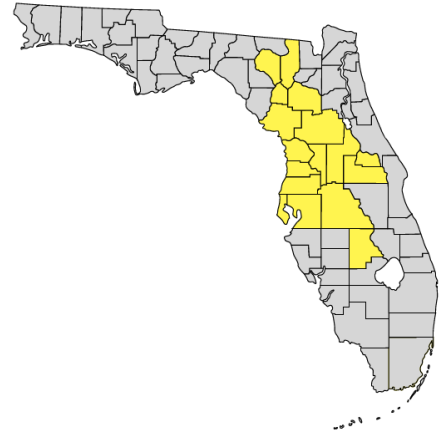
**Range-wide Distribution:** Southern South Carolina, southern Georgia, and most of Florida.

**Conservation Status:** Occurs on many state and federal lands in Florida. Threats include collection for pets (now restricted); highway mortality; and habitat loss and fragmentation from development, intensive agriculture, and mining.

**Protection and Management:** Maintain large, unfragmented blocks of xeric natural communities; can tolerate some habitat degradation. Manage habitats with fire to prevent succession to closed canopy forests.

**Nesting Season:** Lay eggs June – August and hatch in September and October.

**Selected References:** Ashton and Ashton 1988b, Conant and Collins 1991, Ernst and Barbour 1989, Franz 1986, Moler (ed.) 1992, Mount 1975, Tenant 1997.



## SHORT-TAILED SNAKE

*Stilosoma extenuatum*

**Order:** Squamata  
**Family:** Colubridae  
**Federal Status:** Not Listed  
**FL Status:** State Threatened  
**Legal Protection:** State Wildlife Code prohibits take, possession, sale, transport, molestation, harassment, or purchase of individuals except by permit.



**Description:** An extremely slender, spotted snake with a cylindrical body rarely exceeding 20 in. (510 mm) total length; even very large specimens two ft. (61 cm) long are only the diameter of a pencil. Grayish ground color with 50–80 dark brown blotches lacking darker edges and often separated by areas of yellow to red along back, and alternating with a series of smaller blotches on sides; belly with many dark blotches. Tail, as measured posteriorly to the anal scale, comprises only 7–10 percent of total length. The head is small, no wider than body; scales smooth (no keels); anal scale undivided.

**Similar Species:** All other Florida snakes have tails greater than 10 percent of total length. Young rat snakes (*Elaphe*) and black racers (*Coluber*) are strongly blotched but have heads substantially wider than neck. Anal scale of racer is divided, while most scales on back and upper sides of rat snakes bear a single low keel. Kingsnake (*Lampropeltis getula*) may have large black blotches but is more heavy-bodied and grows much larger. Mole kingsnake (*L. calligaster*) is similar but lacks areas of orange or yellow between blotches, which are dark-edged.

**Habitat:** Dry upland habitats, principally sandhill, xeric hammock, and sand pine scrub. A secretive burrower, only rarely seen above ground or under cover objects.

**Seasonal Occurrence:** Most above-ground activity occurs in October and November, with a few sightings in March and April.

**Florida Distribution:** Northern and central peninsula, from the Suwannee River to Highlands County.

**Range-wide Distribution:** Restricted to Florida.

**Conservation Status:** Occurs on some state and federal lands, including Ocala National Forest. Decline directly related to loss and conversion of habitat for citrus, mining, silviculture, and development.

**Protection and Management:** Maintain upland longleaf pine and sand pine scrub habitats with prescribed fire as needed. Able to tolerate some disturbance, including limited harvest of longleaf pine and low-density development.

**Nesting Season:** Unknown

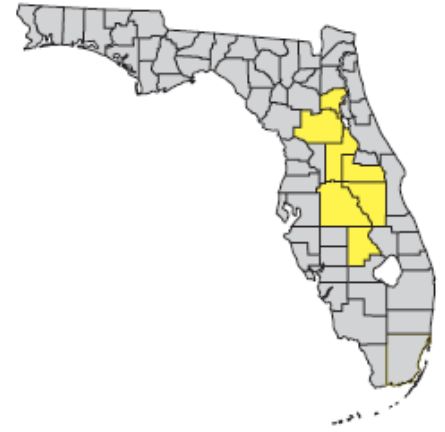
**Selected References:** Ashton and Ashton 1988b, Conant and Collins 1991, Ernst and Barbour 1989, Moler (ed.) 1992, Tenant 1997.

## SAND SKINK

*Neoseps reynoldsi*

**Order:** Squamata  
**Family:** Scincidae  
**Federal Status:** Threatened  
**FL Status:** Federal Threatened  
**Legal Protection:** U.S Endangered Species act and State Wildlife

Code prohibit take, possession, sale, transport, molestation, harassment, or purchase of individuals except by permit.



**Description:** A small, cylindrical, beige to grayish, nearly legless lizard with smooth, shiny scales. Adults 4-5 inches (100-300 mm) total length. Forelegs tiny, each with only a single toe, fitting into a groove on lower body; hind legs slightly larger and with two toes. Snout wedge-shaped, eyes tiny, ear opening absent. Species' presence readily detected by distinctive sine-wave trails left in sand as lizard "swims" just beneath surface.

**Similar Species:** Two other small skinks, the ground skink (*Scincella lateralis*) and two subspecies of the mole skink (*Eumeces egregius lividus*) [see species account] and *E. e. onocrepis*, occur within or near the range of the sand skink. Both have relatively small but fully developed limbs, with five toes on each foot. The ground skink is widespread and is bronze to brown, with a dark lateral stripe and light belly. Mole skinks vary geographically, but typically have light dorsolateral stripes and a tail that is different in color (e.g., red, yellow, blue) from the body. All salamanders lack scales.

**Habitat:** Principally rosemary scrub, but also in sand pine and oak scrubs, scrubby flatwoods, turkey oak ridges within scrub, and even along edges of citrus groves occupying former scrub. Requires loose sand (for burrowing) with large patches of sparse to no groundcover or canopy; scattered shrubs and lichens often present.

**Seasonal Occurrence:** Present year-round, but difficult to observe. Most active in March – June.

**Florida Distribution:** Central Ridge, from Marion to Highlands County. Most abundant on Lake Wales and Winter Haven ridges in Polk and Highlands counties; relatively rare and localized on Mount Dora in Marion and Lake counties.

**Range-wide Distribution:** Same as Florida distribution.

**Conservation Status:** Occurs within a series of disjunct state, federal, and private conservation lands. Most original habitat destroyed for citrus and development.

**Protection and Management:** Protect all remaining patches of Central Ridge scrub. Management may entail infrequent prescribed fire. Include protection of native scrub as major a management objective of Ocala National Forest.

**Selected References:** Ashton and Ashton 1991, Bartlett and Bartlett 1999, Conant and Collins 1991, Moler (ed.) 1992, Telford 1959, U.S. Fish and Wildlife Service 1987.