Wading Birds

Multiple species

This profile is a short summary of information to introduce the species and does not summarize all available information on the species.

Listing status:	State	Federal
Great Egret (*Ardea alba*)	None	None
Snowy Egret (*Egretta thula*)	SSC	None
Reddish Egret (*Egretta rufescens*)	SSC	None
Tricolored Heron (*Egretta tricolor*)	SSC	None
Little Blue Heron (*Egretta caerulea*)	SSC	None
White Ibis (*Eudocimus albus*)	SSC	None
Roseate Spoonbill (*Platalea ajaja*)	SSC	None
Wood Stork (*Mycteria Americana*)	Endangered	Endangered

Trend: From Breeding Bird Survey (BBS) results, there has been a 1.9% decline in the Great Egret population in Florida (1966-2006), no change in Snowy Egret, no information on Reddish Egret, a 1.9% decline in Tricolored Heron, a 1.6% decline in Little Blue Heron, a 0.5% increase in White Ibis, a 21.2% increase in Rosette Spoonbill, and a 2.4% decline in Wood Stork. The USFWS Five Year Status Review indicates a positive trend in nesting population of Wood Stork.

Threats: Habitat loss is a major threat to populations of wading birds as wetlands are destroyed or hydrology is altered. A reduction in suitability and availability of nesting sites and colony also threaten populations. Many colonies are threatened by invasive exotics species. Invasive plant species may adversely alter vegetative structure and invasive animal species may prove to be efficient nest predators. Conflicts with aquaculture, whether perceived or real, also result in the killing of birds. Environmental contaminants once threatened populations of wading birds; however, research now suggests most effects of contaminants on wading birds are sub-lethal except for possible mercury contamination in certain regions of the Everglades.

Prioritization information:

PLCP PVA proportion of pops modeled to persist on public lands = 1.0

PLCP PVA probability of a 50% decline on public lands = 0

Species	Biological Score	Sup Score	Legacy trend	Legacy status
Great Egret (*Ardea alba*)	20.3	13	NA	NA
Snowy Egret (*Egretta thula*)	20.3	12	**Dec**	Med
Reddish Egret (*Egretta rufescens*)	**31.9**	12	Stable	**Low**
Tricolored Heron (*Egretta tricolor*)	20.6	13	**Unk**	Med
Little Blue Heron (*Egretta caerulea*)	**31.3**	**15**	**Dec**	Med
White Ibis (*Eudocimus albus*)	17.3	14	**Unk**	Abund

Species	Biological Score	Sup Score	Legacy trend	Legacy status
Roseate Spoonbill (*Platalea ajaja*)	21.9	12	**Dec**	**Low**
Wood Stork (*Mycteria Americana*)	**26.3**	14	Stable	Med

Summary: This group of species is of moderate priority based on these parameters. The wood stork is a high priority due to its status as a federally listed species. Wading birds are also a highly visible and popular part of Florida's fauna that should be considered in prioritization.

Life History: Great Egret: Breeding habitat includes marshes, swamps, irrigation ditches, estuaries, and fresh/brackish water margins. Constructs nests made of sticks and twigs that are unlined. Is a colonial nester in mixed-species colonies with 10 to 1,000s of other birds. 1 brood annually and young leave nest at 3 weeks. Birds can forage alone or in mixed flocks. Adult diet includes insects, amphibians, reptiles, fish, and small birds. Young are usually fed frogs, fish, and crayfish.

Snowy Egret: Breeding habitat includes marshes, lakes, ponds, and shallow coastal habitats. Builds a nest made of sticks and lined with finer twigs or rushes. Is a highly colonial nester and often nests in mixed colonies. Nest in flooded woody plants or vegetation on islands. Asynchronous hatching, 1 brood annually, and young leave nest at 5-6 weeks. Uses yellow feet to stir mud and flush prey. Roosts communally at night when not breeding. Diet includes fish, other small vertebrates and insects.

Reddish Egret: Breeding habitat includes brackish marshes and shallow coastal habitats, especially mangroves. Usually nests in small trees or shrubs and creates a flat platform of sticks, roots, and grasses. Nest in flooded woody plants or vegetation on islands. Territory where nest is located is defended by pair. 1 brood annually and young leave nest at 28-35 days, and leave the colony at 9-10 weeks. Diet includes aquatic invertebrates and small vertebrates like fish.

Tricolored Heron: Breeding habitat includes marshes, ponds, and rivers. Nests are created in shrubs and are flat platforms of sticks and twigs; lined with finer twigs, grasses, and leaves. Nest in flooded woody plants or vegetation on islands. Is a colonial nester and often nests with other species. Single brood annually and young are expert climbers at 3 weeks and are able to swim. Diet includes fish, small vertebrates, aquatic invertebrates, and insects.

Little Blue Heron: Breeding habitat includes marshes, ponds, lakes, meadows, streams, and mangroves. Often nests right above the water and nest is a small platform of sticks and with a slight depression to hold the eggs. Nests in multispecies colonies but often nests in close proximity with conspecifics. Single brood annually, and during egg laying males seldom leave nest for > 5 minutes. Diet includes a wide variety of prey primarily aquatic insects, shrimp and fish.

White Ibis: Breeding habitat includes marshes, mangroves, lakes, and estuaries. Nest in flooded woody plants or vegetation on islands. Nests are constructed of loosely overlaid dry sticks, live twigs, roots and leaves; continually added to during breeding. Colonial nester and forms dense colonies with thousands of birds. Single (possibly more) brood annually and young leave nests

around to 6-8 weeks. Fish Crow is a major nest predator and usually destroy entire clutch. Diet includes crabs, crayfish, snails, snakes, and insects.

Roseate Spoonbill: Breeding habitat includes marshes, swamps, ponds, rivers, and lagoons. Nests in branches of dense vegetation above water. Nests are well-constructed, deeply cupped and made of sticks and twigs; lined with green and dry finer materials. Males present nest materials to females who constructs it. Nests in small colonies that are often mixed with herons and egrets. Single brood annually; young usually leave nests after 6-8 weeks. Diet includes fish, crustaceans, and insects that are detected by feel. Wood Stork: Breeding habitat includes marshes, swamps, mangroves, and adjacent streams. Prefers to nest on the top of large cypresses in standing water at freshwater colonies. Nest is a platform of large sticks that are added to continually; lined sparsely with green materials and leaves. A highly colonial nester with 5-25 nests per tree and nest numbers as high as 1,200 nests. Single brood annually and young leave nest around 55-60 days. Colonies may not initiate breeding due to lack of flooded nesting trees or due to lack of food, and will desert eggs/young if prolonged rains during dry season do not cause water table (and efficient foraging habitat) to drop. Diet includes amphibians, fish, and aquatic invertebrates.

Preferred Habitat Parameters: none identified, though see Collopy & Jelks, 1989.

Minimum Habitat Requirement:

From PVA: Populations of at least 200 females; ideally more than 15,000 females
From Literature: Depends on species; but protection and adequate interspersion of nesting sites and foraging habitat is essential.

Best Management Practices:

- Protect and restore coastal/freshwater wetlands, ponds, lakes, and marshes from siltation and non-point source pollution by fencing livestock and stabilizing banks through plantings of native aquatic and shoreline vegetation. Reduce herbicide use in areas near water, particularly when application will reduce availability of invertebrates used for food.
- Restore/maintain natural hydrology to degraded wetlands; promote seasonal draw-downs when appropriate.
- To promote cover for colonial nesters, protect and maintain large forested tracts.
- Enhance the interspersion of various habitat components in a focal area given the foraging and dispersal potential of many wading bird species.
- Habitat conservation guidelines for wood storks are available at http://www.fws.gov/northflorida/WoodStorks/Documents/Wood-stork-habitat-guidelines-1990.pdf. These include limiting activities close to known colonies.
- A 100 m buffer around colonies should be maintained during nesting.

Monitoring Protocol: Wading bird breeding colonies have been surveyed statewide using fixed wing aircraft. Wading bird colonies are often sensitive to human

disturbance. On the ground monitoring efforts should be conducted in a manner that minimizes visits and disturbance.

For more information on monitoring: http://myfwc.com/waders/
http://sfwmd.gov/org/erd/coastal/wading/99syst.html

PVA Summary: The Wildlife Habitat Conservation Needs in Florida project created a PVA (http://research.myfwc.com/features/view_article.asp?id=29815) for wading birds under two statewide scenarios; one considerate of all potential habitat and one that only considered managed (i.e., public) lands. The potential habitat for wading birds was estimated nearly 7.5 million acres (3 million ha) of which 4.7 million (1.9 million ha) occurred on managed. Since most of these species are migratory and all are highly mobile they were treated as a single statewide population in both all potential habitat and on managed lands only. The initial abundance and carrying capacity was modeled at three population levels (low ~200, moderate ~15000, high ~35000 females) to mimic the range of abundance among different species. A five-stage model was developed with survival and fecundity increasing with each stage. Availability of data for various demographic parameters varied for each species and was incomplete for all species. The general model was derived from the demographic data available for all eight species and presumes similarity in demographics due to similarity in habitat use and life history strategies. First breeding effort is at 3 years for most species although some breeding occurs at 2 years and most wood stork and reddish egret delay the onset to year 4. Clutch size range varied by species, but mean size was 3-4 eggs and productivity was between 0.5-2 fledglings/nest. Survival in the model ranged from 0.35 in the youngest age class (0-1) to 0.84 at the oldest (4+). Breeding initiated with the 2 year class in a small percentage of females, so the fecundity was estimated at 0.105 and increased to 0.9975 at 4+ years. This demographic information produced a population growth rate of 1.0129.

All model scenarios at low, moderate and high carrying capacity indicated no risk of extinction for all potential habitats or managed habitat. A small risk of population decline (3% probability of a 30% decline) in the next 100 years was indicated for potential and managed habitat at the high or moderate carrying capacity model and increased to 16% in the low carrying capacity model. Adult survival was the most influential parameter in the model. A 5% reduction in survival led to a 93% chance of a 20% population decline in the next 100 years. A 5% reduction in fecundity increased the risk of a 20% decline to 20%. Since this is a generalized model for eight species making assumptions about the security of individual species based on this model is not warranted. Species such as the wood stork or roseate spoonbill which have a more limited distribution are likely not well represented by this model.

2003 Landcover used for model:

- Freshwater Marsh / Wet Prairie
- Sawgrass Marsh
- Cattail Marsh
- Shrub Swamp
- Bay Swamp
- Cypress Swamp
- Cypress/Pine/Cabbage Palm
- Mixed Wetland Forest
- Hardwood Swamp
- Salt Marsh
- Mangrove Swamp
- Scrub Mangrove
- Tidal Flat
- Open Water

FNAI Natural Communities used:

- Hydric Hammock
- Basin Marsh
- Marl Prairie
- Basin Swamp
- Wet Flatwoods
- Bog
- Wet Prairie
- Coastal Interdunal Swale
- Baygall
- Depression Marsh
- Seepage Slope
- Dome Swamp
- Floodplain Forest
- Classic Upland Lake
- Floodplain Marsh
- Coastal Dune Lake
- Floodplain Swamp
- Flatwoods/Prairie/Marsh Lake
- Freshwater Tidal Swamp
- Sandhill Upland Lake
- Slough
- Sinkhole Lake
- Strand Swamp
- Blackwater Stream
- Swale
- Seepage Stream
- Alluvial Stream
- Spring-run Stream
- Tidal Marsh
- Tidal Swamp

FNAI field guide description of habitat: Mixed-species nesting colonies occur in coastal areas, in a variety of woody vegetation types, including cypress, willow, maple, black mangrove, and cabbage palm over shallow waters or on islands that are separated from shoreline by extensive open water. Usually near suitable foraging habitat. Forages in shallow water of variable salinity, including marine tidal flats and ponds, coastal marshes, mangrove-dominated inlets and pools, and freshwater sloughs and marshes. A wide variety of wetland types must be available within 5 - 7 mi. (8 - 11 km) to support breeding colonies. Breeding success is tied to water-level fluctuations. Seasonal variation in water levels are particularly critical to nesting success, so alteration of wetlands used during breeding season can have negative consequences.

Important Links:

http://www.fws.gov/northflorida/WoodStorks/Documents/110107-WOST-Nest-Colonies-Forag-Areas-w-buffers.pdf
http://www.myfwc.com/waders/
Great Egret:
http://bna.birds.cornell.edu/bna/species/570/articles/introduction
Snowy Egret:
http://bna.birds.cornell.edu/bna/species/489/articles/introduction
Reddish Egret:

http://bna.birds.cornell.edu/bna/species/633/articles/introduction
Tricolored Heron:
http://bna.birds.cornell.edu/bna/species/306/articles/introduction
Little Blue Heron:
http://bna.birds.cornell.edu/bna/species/145/articles/introduction
White Ibis:
http://bna.birds.cornell.edu/bna/species/009/articles/introduction
Roseate Spoonbill:
http://bna.birds.cornell.edu/bna/species/490/articles/introduction
Wood Stork:
http://bna.birds.cornell.edu/bna/species/409/articles/introduction

Pertinent Documents/Literature:

USFWS Wood Stork Recovery Plan:
http://www.fws.gov/northflorida/WoodStorks/Documents/Wood-stork-recovery-plan-1997.pdf

http://www.fws.gov/northflorida/WoodStorks/wood-storks.htm#Tools.

Collopy, M.W.; Jelks, H.L. 1989. Distribution of foraging wading birds in relation to the physical and biological characters of freshwater wetlands in southwest Florida. FG&FWFC, Nongame Wildlife Program Final Report, 102 pg. (available for download at http://research.myfwc.com/publications/publication_info.asp?id=46815)

Rodgers, Jr., James A.; Kubilis, Paul S.; Nesbitt, Stephen A. 2005. Accuracy of Aerial Surveys of Waterbird Colonies. Waterbirds Vol. 28, No. 2. pp. 230-237

Rodgers, Jr., James A.; Linda, Stephen B.; Nesbitt, Stephen A. 1995. Comparing Aerial Estimates with Ground Counts of Nests in Wood Stork Colonies. The Journal of Wildlife Management, Vol. 59, No. 4. pp. 656-666.

Rodgers, Jr., James A. and Schwikert, Stephen T. 2003. Buffer Zone Distances to Protect Foraging and Loafing Waterbirds from Disturbance by Airboats in Florida. Waterbirds Vol. 26, No. 4. pp. 437-443

Rodgers, Jr., James A. and Smith, Henry T. 1995. Set-Back Distances to Protect Nesting Bird Colonies from Human Disturbance in Florida. Conservation Biology, Vol. 9, No. 1. pp. 89-99.