

WOOD STORK

The Issue

Degradation of the wood stork's primary habitat, the extensive wetlands of south Florida, forced the birds to nest further north in Florida and into Georgia, South Carolina and North Carolina. Restoration efforts in south Florida habitat and favorable environmental conditions are bringing back the birds, with record nesting numbers in recent years and the possibility of downlisting or even delisting in the near future.

Natural History

The wood stork is a large, long-legged wading bird that stands about 4 feet tall at maturity with a wingspan of 60 to 65 inches. It is white except for black wingtips and rear wing edges, a short black tail, a black beak and a naked, dark gray head and neck. Immature birds are dingy gray and have a yellowish bill.

Population numbers are difficult to estimate, but biologists put the species at more than 11,000 nesting pairs, with U.S. breeding restricted to Florida, Georgia, South Carolina and North Carolina. In the past, the birds bred across the Southeast and Texas. Presently, a second distinct, non-endangered population breeds from Mexico to northern Argentina.

Storks from both populations move into the Lower Mississippi River basin after breeding, winging into Louisiana, Mississippi, Arkansas and Tennessee. Occasional sightings occur in all states east of the Mississippi River, and sporadic sightings have been reported west of the Mississippi and up the river to Lake Ontario. Storks prefer freshwater and brackish wetlands, nesting primarily in cypress or mangrove swamps and feeding in freshwater marshes, narrow tidal



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creeks or flooded tidal pools. Particularly attractive feeding sites are depressions in marshes or swamps in which fish become concentrated during periods of falling water levels.

The wood stork's primary food is fish 1 to 6 inches long, especially topminnows and sunfish. The bird captures prey by a specialized technique known as grope-feeding or tacto-location. Feeding in water 6 to 10 inches deep, the stork probes with the bill partly open. When a fish touches the bill, the bird snaps

it shut on average within 25 milliseconds, one of the fastest reflexes known among vertebrates. Using thermal air currents, wood storks may soar as far as 80 miles from nesting to feeding areas, although most foraging occurs within 20 miles of the colony.

An average nesting stork pair and their young require an estimated 443 pounds of fish during the breeding season.

Highly colonial, the wood stork usually nests in large rookeries and feeds in flocks when prey is concentrated. Pairs produce two to five eggs, with an average of two young fledged under good conditions. The birds do not breed until four years old. In south Florida, wood storks historically laid eggs as early as October and fledged in February or March. Currently, in Georgia, South Carolina and Florida, storks lay eggs from March to late May, with fledging in July and August. This shift in nesting poses a problem for south Florida storks, which are forced to fledge chicks during the rainy season, which begins in May. Nests are often built in the upper branches of large cypress trees or in island mangroves, with several nests in each tree.

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The U.S. wood stork breeding population declined from an estimated 20,000 pairs in the 1930s to about 10,000 pairs by 1960. Between 1978 and into the 1990s, fewer than 5,000 pairs bred each year, a trend that, had it continued, would have put the U.S. breeding population near extinction by 2000.

Biologists believed the decline was due primarily to loss of suitable feeding habitat, especially in south Florida rookeries, where feeding areas had decreased by about 35 percent since 1900 due to human alteration of wetlands.

Older birds continued to nest there, but younger birds shifted north to northern Florida and on to South Carolina, seeking new nesting sites. Loss of nesting habitat may have affected wood storks in central Florida, too. Without the stronger protections that wetlands have received in recent years, the belt of nesting colonies stretching across central Florida today probably would not have survived.

Large, fully protected colonies in south Florida's Everglades National Park and the National Audubon Society's Corkscrew Swamp Sanctuary have experienced frequent nesting failures in recent years due to adverse water management practices throughout the region.

The Corkscrew Sanctuary supports one of the last big colonies in Florida, some 300 to 1,700 nesting pairs yearly, but the sanctuary faces a tremendous threat from development on surrounding lands.

Water-level management may be crucial. Periodic flooding is needed to stimulate nesting and to prevent predators from destroying nests, and periodic drying is needed to prevent trees from dying and to allow recruitment of new trees. Less significant threats known to affect nesting success include prolonged drought and flooding, raccoon predation on nests and human disturbance of rookeries.

In 2006, surveys tallied 11,223 nesting pairs, the first year since the 1960s in which biologists located

more than 11,000 pairs. Because the young of 2006 will not begin breeding for several years, this bumper crop season could begin to produce significant effects around 2010. The birds are nearing the downlisting goal of 6,000 nesting pairs average for three years throughout the range. If they sustain the current trend in nesting numbers, the birds could be delisted in the near future.

Listing

The U.S. Fish and Wildlife Service listed the wood stork in 1984 as endangered.

Management

The U.S. Fish and Wildlife Service views the wood stork as a "sentinel species," one that indicates the general health of its wetlands habitats because of its dependence on specific wetlands conditions. The success of the multi-billion-dollar Everglades restoration project can be measured in part by recovery of wood storks in the area and by their return to former nesting areas.

The Service is focused in part on working with private and public water impoundments and wetlands throughout the bird's range to ensure water levels that enhance wood stork survival. The agency also conducts or helps state agencies to census nesting colonies.

Funding

Funding for wood stork recovery is coming in part from money for Everglades restoration. The U.S. Fish and Wildlife Service uses its own funds mainly for monitoring the bird. Money is needed to develop population models, to monitor chick survival and for satellite tagging so biologists can study how the birds travel in wet and dry seasons and how they use core foraging areas and nest sites. The Service provides seed money in four figures to the states for surveys and monitoring. The Service also is creating wetland units in a coastal Georgia national wildlife refuge specifically to provide nesting habitat and food for wood storks.

Funding from all government sources for wood stork recovery ranks the species at 95 out of 1,311 species, according to the U.S. Fish and Wildlife Service fiscal year 2004 report (the most recent available) to Congress, *Federal and State Endangered and Threatened*

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*Species Expenditures.** Total wood stork recovery funding from all government sources that year was about \$1.2 million, with \$450,000 coming from the Service.

“The wood stork is an indicator species for Everglades restoration,” says John Kostyack, director of Wildlife Conservation Campaigns at the National Wildlife Federation.

“As such, it should be managed for recovery in the most efficient way possible. Congress needs to put more funding for this species into Fish and Wildlife Service hands to ensure that monitoring and management for this species, and particularly protection of habitat, can move apace in an area where development is rapidly squeezing out wildlife.”



Local Contacts

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Other Threats

Development of stork habitat, including the loss of wetlands, is a persistent threat.

* The U.S. Fish and Wildlife *Federal and State Endangered and Threatened Species Expenditures* report incorporates subjective estimates provided by regulated entities without any independent verification and without effort to segregate Endangered Species Act expenditures from other related expenditures. However, for most listed species, no other funding data is available.

THREATS FROM GLOBAL WARMING

Because the wood stork favors warm areas for nesting, global warming may extend the bird's range northward as temperatures heat up. On the other hand, climate scientists predict that rising sea levels will inundate the Everglades, destroying the wood stork's premiere nesting and wintering habitat.

A significant increase in the rate of sea-level rise due to melting glaciers and ice caps and to thermal expansion of the oceans is one of the most direct consequences of global warming. Scientists project an average sea level rise of 7 to 23 inches before this century ends and perhaps as much as 31 inches if the rate of ice melt from Greenland and Antarctica increases as some models predict. Along coasts with gradually sloped shores, such as Florida and the Gulf Coast, a 31-inch sea level rise translates into an advance of water inland by as much as 500 feet.

