



# Wood Stork Report

A newsletter dedicated to sharing information about the wood stork



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## Welcome to the First Edition!

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As with most endangered and threatened species, the wood stork has a network of people that have mutual goals, missions, mandates, and inherent partnerships to promote and monitor this endangered species' recovery. This web-based newsletter is an effort to recognize the dedication of these people and their agency's/organization's efforts in wood stork recovery. This newsletter also serves as a location to exchange information on wood stork recovery, research, monitoring, and management. It is our goal to publish this newsletter annually in November following the Wood Stork Research and Monitoring Working Group annual meeting. Email/contact information for our recovery partners is noted in the newsletter. To submit an article or other information regarding wood stork recovery, please email [billy\\_brooks@fws.gov](mailto:billy_brooks@fws.gov).

This first edition of the Wood Stork Report focuses on the 2001 aerial survey counts at nesting colonies, but also includes some historical information regarding surveys. The next edition is scheduled for November 2002. The newsletter will have a similar format to this issue but will also address other ongoing wood stork recovery projects and issues. It will include summaries of the nesting season from regional perspectives and from individual colonies; information on current wood stork research (satellite tagging and genetics); and will update us on wood stork issues outside of Florida, Georgia, and South Carolina (particularly Mississippi and Louisiana).

## Summary Of Synoptic Aerial Surveys

The USFWS acknowledges the limitations involved in relying on aerial surveys for developing population estimates. However, storks are a long-lived species that demonstrate considerable variation in population numbers in response to changing hydrological conditions. Over the long-term, aerial surveys are the most cost-effective method for estimating population trends. Ground surveys, while providing greater individual colony accuracy, are more time-consuming and expensive on a region-wide basis.

Replication of surveys and ground counts at selected index colonies will help to minimize variability and will also provide information regarding the second component of the recovery criteria, productivity (chicks per nest).

A series of aerial surveys to locate all wood stork nesting colonies was first initiated in 1957. This effort was re-initiated in 1975 by the Audubon Society and other partners. These surveys were flown by JOHN OGDEN ([jogden@sfwmd.gov](mailto:jogden@sfwmd.gov)) and others. The results of this decade-worth of monitoring are presented in the following table:

SC, GA, and FL Wood Stork Nests											
Year	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total Nests	5110	5275	2520	4984	4827	4146	3990	6075	6040	5215	5835
#of Colonies	17	24	16	23	23	23	22	26	29	26	36

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## Federal Classification Of Wood Storks

On February 28, 1984, the U.S. Fish and Wildlife Service (USFWS) listed the United States breeding population of the wood stork as endangered in the states of Florida, Georgia, South Carolina, and Alabama, under the Endangered Species Act of 1973, as amended. A recovery plan for this species was approved in 1986 and was revised and approved in 1997. The biological aspect of the recovery criteria indicate that reclassification from endangered to threatened could be considered when there are 6,000 nesting pairs **and** annual regional productivity is greater than 1.5 chicks per nest/year (calculated over a 3-year average). Delisting could be considered when there are 10,000 nesting pairs (calculated over a 5-year period beginning at the time of reclassification) **and** annual regional productivity is greater than 1.5 chicks per nest/year (calculated over a 5-year average). As a subset of the 10,000 nesting pairs, a minimum of 2,500 nesting pairs must occur in the Everglades and Big Cypress systems in South Florida. In 1999, the USFWS also approved the South Florida Multi-Species Recovery Plan which addresses wood storks in South Florida only. This plan reflects the above-mentioned criteria.

## Wood Stork Recovery Plan Available

To receive a copy of the Wood Stork Recovery Plan, email your request to [billy\\_brooks@fws.gov](mailto:billy_brooks@fws.gov). To receive a copy of the South Florida Multi-Species Recovery Plan, email your request to [dawn\\_jennings@fws.gov](mailto:dawn_jennings@fws.gov).

# Summary Of Synoptic Aerial Surveys

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In 1991, the USFWS reinitiated this synoptic aerial survey to monitor the nesting pair aspect of the wood stork recovery criteria. The USFWS partnered with the South Carolina Department of Natural Resources (SCDNR), Georgia Department of Natural Resources (GDNR), The Audubon Society and Florida Game and Freshwater Fish Commission (now the Florida Fish and Wildlife Conservation Commission, FWC) to fly five years of surveys (1991 to 1995). The results are presented in the following table:

SC, GA, and FL					
Year	1991	1992	1993	1994	1995
Total Nests	4073		6729	5523	7853
# of Colonies	37		43	47	56

As lead agency to monitor wood stork recovery, the USFWS split federal recovery funding between monitoring, research and management. Monitoring is initiated every other 5-year period. Thus, from 1991-1995, funding went towards monitoring. During the 1996-2000 time period, the funding was focused on research questions and management needs. In 2001, the USFWS reinitiated funding and encouraged projects to monitor the entire breeding population.

There was one synoptic aerial survey during the 1996-2000 period. In 1999, the FWC conducted surveys to

update the Florida Atlas of Breeding Sites for Herons and Their Allies. **JIM RODGERS** ([james.rodgers@fwc.state.fl.us](mailto:james.rodgers@fwc.state.fl.us)) from the FWC reports that there were 42 active wood stork colonies in Florida in 1999. Based upon the FWC, GDNR, and SCDNR surveys from 1999, it is estimated that there were between 7,000-9,000 nesting pairs of wood storks in the southeast U.S.

In 2001, the USFWS reinitiated the 5-year synoptic aerial survey and these monitoring efforts are described later, regionally for South Carolina, Georgia, and Florida and then for individual colonies. (It should be noted that many of the wood stork colonies, such as those in the Everglades and Corkscrew Swamp in Florida, and many of the colonies in Georgia and South Carolina, have been continuously monitored since the early 1980s or even earlier.) Based upon the 2001 surveys and information from monitoring individual colonies, it is estimated that there were 5,131 nesting pairs of wood storks at 44 active colonies in Florida, Georgia, and South Carolina during 2001, even though this was the third year of a severe drought in the southeastern United States.

SC, GA, and FL			
Year	1999	2000	2001
Total Nests	7000-9000		5131
# of Colonies	62		44

**Wood Stork Report** is published regularly to provide a forum for sharing information about the endangered wood stork. The newsletter is distributed free to anyone interested in obtaining a copy. Comments, suggestions, and article submissions should be directed to the editor. The editor and the U.S. Fish and Wildlife Service assume no responsibility for information contained herein, or for injury or damage resulting from use of such information. Information herein will be used at the reader's own discretion and risk. Views and opinions expressed herein are those of the author or source of material and do not necessarily reflect the opinions, views, or endorsements of the U.S. Fish and Wildlife Service.

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# In The News...

**WOOD STORK NEXT COUNT TO HELP SCIENTISTS GAUGE BIRD'S RECOVERY**  
<http://www.naplesnews.com/02/04/naples/d660168a.htm>

**COMMISSION TO CONSIDER PAYING CONSULTANT TO STUDY COMMUNICATION TOWERS**  
<http://www.naplesnews.com/02/03/bonita/d720353a.htm>

**UF RESEARCHERS: WADING BIRDS FLOURISH AFTER EXTREME DROUGHTS**  
<http://www.naplesnews.com/02/01/florida/d733014a.htm>

**ENDANGERED WOOD STORK NESTS RETURN TO SOUTHWEST FLORIDA**  
<http://www.naplesnews.com/02/02/naples/d752468a.htm>

**SWFIA EXPANSION TO PROVIDE KEY HABITAT FOR THREATENED SPECIES**  
<http://www.naplesnews.com/02/03/bonita/d760586a.htm>

**WOOD STORK POPULATIONS STILL FALLING BECAUSE OF LOSS OF FEEDING HABITAT, EXPERTS SAY**  
<http://www.naplesnews.com/02/01/naples/d697671a.htm>

## Private Lands Brochure Is Now Available!

Through a contract with the SREL, Larry Bryan developed a 12-page color brochure that addresses wood stork conservation and management for private landowners. To receive copies of this brochure, email your request to Billy Brooks ([billy\\_brooks@fws.gov](mailto:billy_brooks@fws.gov)).

## Across The Southeast...

### SOUTH CAROLINA

**TOM MURPHY** ([murphyt@scdnr.state.sc.us](mailto:murphyt@scdnr.state.sc.us)) of the SCDNR Division of Wildlife reports that there were 9 active wood stork colonies during the 2001 nesting season with an estimated 1,383 nests. Their research on productivity estimated a value higher than the 1.5 chicks called for in the recovery plan. South Carolina has developed very strong partnerships with the landowners, as many of the South Carolina colonies are located on private lands. The SCDNR has now been closely monitoring their wood stork colonies since 1981 (20 years!), and have an extensive data base that is extremely valuable to monitoring wood stork recovery. For information regarding specific wood stork colonies in South Carolina, you should contact **TOM MURPHY**.

### GEORGIA

**BRAD WINN** ([brad.winn@gadnr.state.ga.us](mailto:brad.winn@gadnr.state.ga.us)) of the GDNR Non-Game Endangered Wildlife Program reports that there were 12 active colonies in Georgia during the 2001 nesting season, with an estimated 1,168 wood stork nests. The GDNR also has a long-term data base on nesting pairs of wood storks in Georgia which dates back to 1980 and is extremely valuable in monitoring wood stork recovery.

**JOHN ROBINETTE** of the USFWS Harris Neck National Wildlife Refuge, ([john\\_robinette@fws.gov](mailto:john_robinette@fws.gov)) reports that there were 249 successful nests at the HARRIS NECK NWR in 2001. He intensively monitored 57 individual nests every 3-7 days from a twenty-four-foot-high observation platform located outside the colony. From these observations, he estimated that 2.17 chicks fledged from each of the successful nests.

**LARRY BRYAN** ([bryan@srel.edu](mailto:bryan@srel.edu)) of the Savannah River Ecology Lab (SREL) reports that the BIRDSVILLE COLONY site had a maximum of 50 nests, but due to the drought and subsequent drying under the trees, racoon predation, and reduced food sources, this colony was not reproductively successful. The

CHEW MILL POND COLONY had an estimated 170 nests, and again due to the drought conditions, the colony had a very low reproductive success (<1 chick fledged per nest out of 95 observation nests).

For information regarding other wood stork colonies in Georgia, you should contact **BRAD WINN** at the address above.

### FLORIDA

**BILLY BROOKS** ([billy\\_brooks@fws.gov](mailto:billy_brooks@fws.gov)) of the USFWS Endangered Species Recovery Program, contracted with **CHRIS SLAY** ([cslay@att.net](mailto:cslay@att.net)) of Coastwise Consulting, Inc. to fly most of Florida's wood stork colonies known to be active during the 1991-95 surveys and during the FWC 1999 Florida Atlas of Breeding Sites for Herons Surveys. The Everglades National Park and Everglades Water Conservation Areas 2 and 3 were not covered under this contract, because they are monitored by others (those results are described below). During May 2001, Chris and **LARRY BRYAN** ([bryan@srel.edu](mailto:bryan@srel.edu)) of the SREL flew 80 locations and documented that a majority of the sites were dry. They documented only 15 active colonies in Florida north of the Everglades, with an estimated 418 nests. Combined with south Florida colonies not covered under this contract and other small colonies, there were a total of 22 active colonies and an estimated 2,055 wood stork nests in Florida during 2001; however, it should be noted that several of the south Florida colonies were not successful at fledging chicks.

**PAM LEWIS** ([lewisp@jaxzoo.com](mailto:lewisp@jaxzoo.com)), a bird keeper at the JACKSONVILLE ZOOLOGICAL GARDENS, reports that their 3rd-year colony grew in size and had 21 nesting pairs of wood storks, which successfully fledged 45 chicks in 2001.

**AMANDA WHITIKER**, the bird and mammal curator at the ST. AUGUSTINE ALLIGATOR FARM ZOOLOGICAL PARK, reports that more than a half dozen pairs of wood storks attempted to nest Alligator Farm's multi-species wading bird colony. However,

after a severe thunderstorm they abandoned this site.

**PAUL ELLIOT** of the Southwest Florida Water Management District ([paul.elliott@swfwmd.state.fl.us](mailto:paul.elliott@swfwmd.state.fl.us)) reports that he keeps an eye on the Devils Creek Swamp colony in the GREEN SWAMP COLONY in Pasco County. Due to the drought conditions wood storks did not nest in 2001.

**RICH AND ANN PAUL** of Audubon of Florida's Coastal Islands Sanctuaries ([rpaul@audubon.org](mailto:rpaul@audubon.org) and [apaul@audubon.org](mailto:apaul@audubon.org)), monitor several wading bird colonies in the Tampa Bay region. They documented 32 nesting pairs at the ALAFIA CORRIDOR ELAPP COLONY in Hillsborough County on May 7, 2001, and 117 nesting pairs at the DOT DASH DIT COLONY, in Manatee County's Braden River. They also documented 4 wood stork nests with large downy chicks on the WEEKI WACHI RIVER in Hernando County on July 12, 2001.

Refuge Biologist **MARK GRAHAM** ([mark\\_graham@fws.gov](mailto:mark_graham@fws.gov)) of the Pelican Island National Wildlife Refuge, reports that 90 nesting pairs of wood storks utilized the PELICAN ISLAND COLONY during the 2001 nesting season, but the colony only fledged 38 chicks.

For information regarding other wood stork colonies in North and Central Florida, you should contact **JIM RODGERS** or **BILLY BROOKS** at the addresses above.

**JASON LAURITSON** ([jlauritsen@audubon.org](mailto:jlauritsen@audubon.org)) and **ED CARLSON** ([ecarlson@audubon.org](mailto:ecarlson@audubon.org)) of AUDUBON'S CORKSCREW SWAMP SANCTUARY, report that wood storks did not attempt to nest there during the 2001 nesting season due to extreme dry conditions.

**DEBORAH JANSEN** of the BIG CYPRESS NATIONAL PRESERVE ([deborah\\_jansen@nps.org](mailto:deborah_jansen@nps.org)), reports that there were no documented wood storks nesting in the Preserve during the 2001 nesting season.

The South Florida Wading Bird Report, edited by **DALE E. GAWLIK** ([dale.gawlik@swfwmd.gov](mailto:dale.gawlik@swfwmd.gov)) of the South

## Across The Southeast...

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Florida Water Management District, is a great resource about wading bird ecology in south Florida. The 2001 edition (<http://glacier.sfwmd.gov/org/erd/coastal/wading/>) is the sixth compilation of this report, with the first being published in 1997 (the earlier reports can be found at the same website). The following reports on wood stork colonies in south Florida are excerpts from the October 2001 edition.

**PETER FREDERICK** ([pcf@gmv.ifas.ufl.edu](mailto:pcf@gmv.ifas.ufl.edu)) from the University of Florida's Department of Wildlife Ecology and Conservation, monitors wading bird colonies in WATER CONSERVATION AREAS 2 AND 3. He reports that wood storks held on at the TAMAMI WEST COLONY and produced young. There were an estimated 1,400 nesting pairs, but only about 450 survived to produce young. He estimated that at least 900 young storks fledged from the TAMAMI WEST colony. It was estimated that there were 50 nesting pairs at the 2B MELALEUCA COLONY and 400 nesting pairs at the CROSSOVER COLONY.

**BILL THOMAS, JR.**, a refuge biologist at the A.R.M. LOXAHATCHEE NATIONAL WILDLIFE REFUGE (LNWR) ([william\\_thomas@fws.gov](mailto:william_thomas@fws.gov)), reports

that for only the second time in LNWR history, wood storks nested on the refuge. On June 16, 2001, 16 active nests were located in a colony adjacent to the western-most loop of the refuge's canoe trail. Young storks appeared to be about two weeks from fledging (D. Gawlik, SFWMD, pers. comm.). Over 7,000 nests of 7 species of wading birds nested in this colony, which was comprised of 15 to 25 bayhead tree islands of various sizes. The only other documented wood stork nesting occurred in 1990, when 7 nests produced 15 fledglings (M. Maaffei and H. Jelks, 1991).

**MARY BETH MIHALIK** ([mmihalik@swa.org](mailto:mmihalik@swa.org)) and **TODD SANDT** of the Solid Waste Authority of Palm Beach County, reported a 36% increase of wood stork nests from the previous year. During their Breeding Bird Census on March 9, 2001, they documented a peak of 267 wood stork nests at the SWA COLONY. This colony is located on spoil islands in abandoned shell pits that were mined in the early 1960's. Dominant vegetation is Brazilian pepper, Australian pine, and melaleuca, all non-native species. Wood storks first started nesting at this colony in 1995.

**MARIO ALVARADO** and **SONNY BASS** ([sonny.bass@nps.gov](mailto:sonny.bass@nps.gov)) from the EVERGLADES NATIONAL PARK, flew three colony surveys during the 2001 nesting season. They report that nesting began in late January and increased through early March. The numbers of wading birds nesting in ENP continues to remain at an all-time low. Species nesting in the highest numbers were the great egret (with 510 nests) and the wood stork (with 1585 nests). For the first time in decades, wood stork nesting effort exceeded that of all other wading bird species in the ENP mainland colonies. Wood storks nested in four colonies, the largest being TAMAMI WEST (containing 1000-1400 nests). For the first time since 1992, Wood storks nested at the traditional CUTHBERT LAKE COLONY. Unfortunately, the rapid draw-down in 2001 caused abandonment by wood storks at the CUTHBERT LAKE COLONY (20 nests), PAUROTIS POND COLONY (125 nests) and RODGERS RIVER COLONY (40 nests) by early April, with few young successfully fledged. However, wood storks nesting at TAMAMI WEST COLONY did successfully fledge young.

## Georgia Banding Project Continues in 2001

**LARRY BRYAN** of SREL has continued a leg-banding project that began back in the 1980s at the BIRDSVILLE COLONY in Georgia. Over the past several years Larry and **JOHN ROBINETTE** of the USFWS have annually banded between 70 and 90 chicks at the HARRIS NECK NWR COLONY. Larry and other SREL staffers also annually have banded between 25-45 chicks at CHEW MILL POND COLONY and at BIRDSVILLE COLONY when active. From 1996 through 2001, 689 wood storks have been banded at these Georgia colonies. Sightings typically come from coastal Georgia and South Carolina. There also have been

sightings of these birds in Mississippi, Alabama and down into Florida. The wood storks are banded with a USFWS band on the left leg and a colored numbered band on the right leg. Yellow bands with black numbering are from the south Georgia coastal colonies; orange bands with black numbering are from east-central Georgia (BIRDSVILLE and CHEW MILL POND COLONIES); red bands with white numbering are from northern coastal Georgia (HARRIS NECK NWR); and blue bands with black numbers are from south-central Georgia (BLACKWATER COLONY).

## Wood Stork Research and Monitoring Working Group

The annual meeting of the wood stork research and monitoring working group was held at the USFWS Jacksonville Field Office on March 21, 2002. It was attended by most of those who contributed the above information either in person or by conference call. The USFWS is very appreciative of the efforts of those who participated in this meeting and shared information about wood stork recovery.