

Sonny,
Here is the latest
draft. Thanks
Mario

Wading Bird Abundance (Foraging and Nesting) Everglades National Park Area

Methods: Systematic reconnaissance flights (SRF's) were performed monthly between Dec 2003 and May 2004. Flights were conducted over 3 consecutive days using a fixed-wing Cessna 182 at an altitude of 60 m. The area covered, included Everglades National Park and the southern region of Big Cypress National Preserve. The area was surveyed using transects oriented E to W and separated by 2Km (Figure 1). Wading birds were counted, identified and geographically located using GPS units. Changes in surface water patterns (hydropatterns) were also recorded. Five categories were used to describe the hydropatterns: DD - absence of surface water and no groundwater visible in solution holes or ponds; WD - absence of surface water but groundwater present in solution holes or ponds; DT - ground surface area mostly dry but small scattered pools of surface water present and groundwater visible in solution holes or ponds; WT - ground surface area mostly wet but small scattered dry areas; and WW - continuous surface water over the area.

Data obtained during each SRF were compiled into a database, which contains the information collected since 1985 to the present. During this period, SRF surveys were not conducted during Dec 1984, Dec 1987 and Jan 1998. Missing data for those months were estimated using a general-purpose multiple imputation model (King *et al.* 2001 and Honaker *et al.* 2001). Densities of birds were estimated using a 2X2 Km grid. The number of birds counted during the SRF inside the 300m stripe width were extrapolated to the rest of the 4Km² cell dividing the number of birds observed by 0.15.

Results:

During the survey period (December 2003 – May 2004) a decrease of ten-percent in the abundance of wading birds was observed, for all the species combined, in comparison to the previous year (Figure 2). Despite the decrease in the number of birds observed in 2004, an overall slight increase persists when numbers from 1985 to the present were compared using a linear regression model.

Figure 3 shows that the number of birds for six of the nine species declined in relation to those observed in 2003. Glossy ibis (GLIB) declined 49%, small dark herons (SMDH) 47%, great white heron (GWHE) 45%, wood stork (WOST) 37%, small white heron (SMWH) 29%, and white ibis (WHIB) 13%. The only species with an increase in the number of birds were roseate spoonbill (ROSP) 16%, and great egrets (GREG) and great blue herons (GBHE) with 7% respectively. Figure 3 also shows the annual estimates of the number of birds by species from 1985 to the present. Linear regression models were used to determine the general trend for each species. A tendency to increase in the number of birds estimated for GREG, GBHE, GLIB and WHIB was observed. Some species such as ROSP, WOST, and SMWH showed a stable trend; while only two species SMDH and GWHE, showed tendencies to decrease. Although these analysis can give us an idea of the general trends observed for each species or groups of birds through those years, additional studies and data analysis will be necessary in order to evaluate the significance of these observations and its relevance to the wading bird populations at the Everglades National Park.

The maximum density of birds occurred this year during the month of January (see Table 1), with seven of the nine species surveyed showing peak numbers, including those species with the largest number of individuals such as GREG and WHIB. Other species such as WOST and GLIB reached maximum densities in March and April respectively. The month of May, however, was the month with the overall lower number of individuals for all the species but for SMWH, GLIB and ROSP.

Table 2 shows the distribution and abundance of wading birds in the different drainage basins in what could be considered a year with normal precipitation throughout the survey season. Shark Slough (SS) was the basin where most of the birds (25%) were found, followed by Shark Slough Mangrove Estuary (SSME) with 16%, and Big Cypress Mangrove Estuary (BCME) and East Slough (ES) with 10% in each. These four basins combined, made up 61% of the total number of birds observed during the entire season. Most birds were concentrated in SSME and BCME during December. By January, as the water recedes, a great increase in the number of birds in the SS basin was noticed, despite that SSME still had the largest number of birds. In February, as water continues receding, a large number of birds moved to the SS basin where they remained until the end of the season.

Considerable changes in hydro patterns and birds distribution were observed throughout the season as shown in Figure 4. From December to May, a gradual reduction in surface water was observed, except in February and March. During February, a considerable rain episode increased the area covered by water with a subsequent reduction in the number of birds in those areas.

From December to March, highest densities of birds were observed in WT areas where water depth was suitable for them to forage successfully. As water depth decreases during

those months, densities at the WT areas began to decrease while densities at WW gradually increased. By May, highest densities were observed in WW areas. Despite the WW areas were covered completely by water, low water levels made these new territories accessible to foraging birds. During May, there still considerable densities of birds in the WW areas, however peak densities occurred mainly in areas with a DT hydropattern. The fact that high densities occurred in DT areas was probable do to the necessity of wading birds to forage in small ponds or alligator holes common in this type of hydropattern.

Figure 5 shows the relative water depth, using the mean stage at the Everglades hydrology station P33, for the time the SRF's were conducted from 1985 to present and the corresponding estimated number of birds. Series of fluctuations were observed for both water levels and number of birds. A detailed observation of the plotted data suggest the possibility to fit a quadratic regression in order to generate a parabola-shape model; since one can expect and observe that small number of birds will occurred at high water levels as well as low water levels. The regression coefficient indicates that this simple model could explain 50% of the total variance. This model may be used also to estimate the stage depth were one can expect to have the maximum number of birds. Even though this model does not pretend to solve the complex factors that determine wading bird abundance in the Everglades National Park, it may provide a starting point for more complex analysis using more stations to estimate actual water depth at the birds location and food availability among others.

Literature Cited

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Table 1: Estimated abundance of wading birds in the Everglades National Park and adjacent areas, Dec-2003 to May-2004.

Species	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04
GREG	21,633	25,134	21,973	16,761	13,727	13,190
GBHE	1,262	1,935	1,182	637	413	383
SMDH	1,107	1,558	757	685	960	448
SMWH	4,787	5,815	2,093	1,142	2,889	2,798
WHIB	21,179	41,059	27,072	27,633	19,903	12,033
GLIB	81	401	380	313	548	321
WOST	1,079	1,866	1,178	1,912	1,507	978
ROSP	1,122	1,313	448	175	906	513
GWHE	47	62	42	0	39	21
Total Abundance	52,297	79,143	55,125	49,258	40,892	30,685

Table 2: Estimated abundance of wading birds (all species combined) for the different drainage basins in the Everglades National Park, Dec-2003 to May-2004.

Month	SBC	BCME	SS	NESS	ES	SSME	NTS	LPK/STS	EP	CS	LPK/STSM	EPME	Total
Dec-03	1,770	11,651	4,239	1,297	2,510	14,177	897	2,614	2,610	6,470	2,589	1,473	52,297
Jan-04	7,967	6,771	14,546	1,992	8,285	15,092	861	1,711	2,531	8,609	9,412	1,366	79,143
Feb-04	6,484	3,908	17,175	1,738	7,077	4,174	1,453	3,714	2,392	3,777	1,925	1,308	55,125
Mar-04	3,982	4,430	18,607	2,111	6,383	6,771	702	1,542	1,179	1,684	1,172	695	49,258
Apr-04	2,302	2,565	10,682	2,225	4,314	6,560	80	2,304	745	941	7,949	225	40,892
May-04	1,392	2,236	11,202	2,440	2,828	2,132	53	2,209	60	1,792	4,300	41	30,685
Total	23,897	31,561	76,451	11,803	31,397	48,906	4,046	14,094	9,517	23,273	27,347	5,108	307,400

SBC = Southern Big Cypress (South of US 41)

BCME = Big Cypress Mangrove Estuary (South of US 41)

SS = Shark Slough

NESS = Northeast Shark Slough

ES = East Slough

SSME = Shark Slough Mangrove Estuary

NTS = Northern Taylor Slough

LPK/STS = Long Pine Key / South Taylor Slough

EP = Eastern Panhandle

CS = Cape Sable

LPK/STSM = Long Pine Key / South Taylor Slough Mangrove Estuary

EPME = Eastern Panhandle Mangrove Estuary

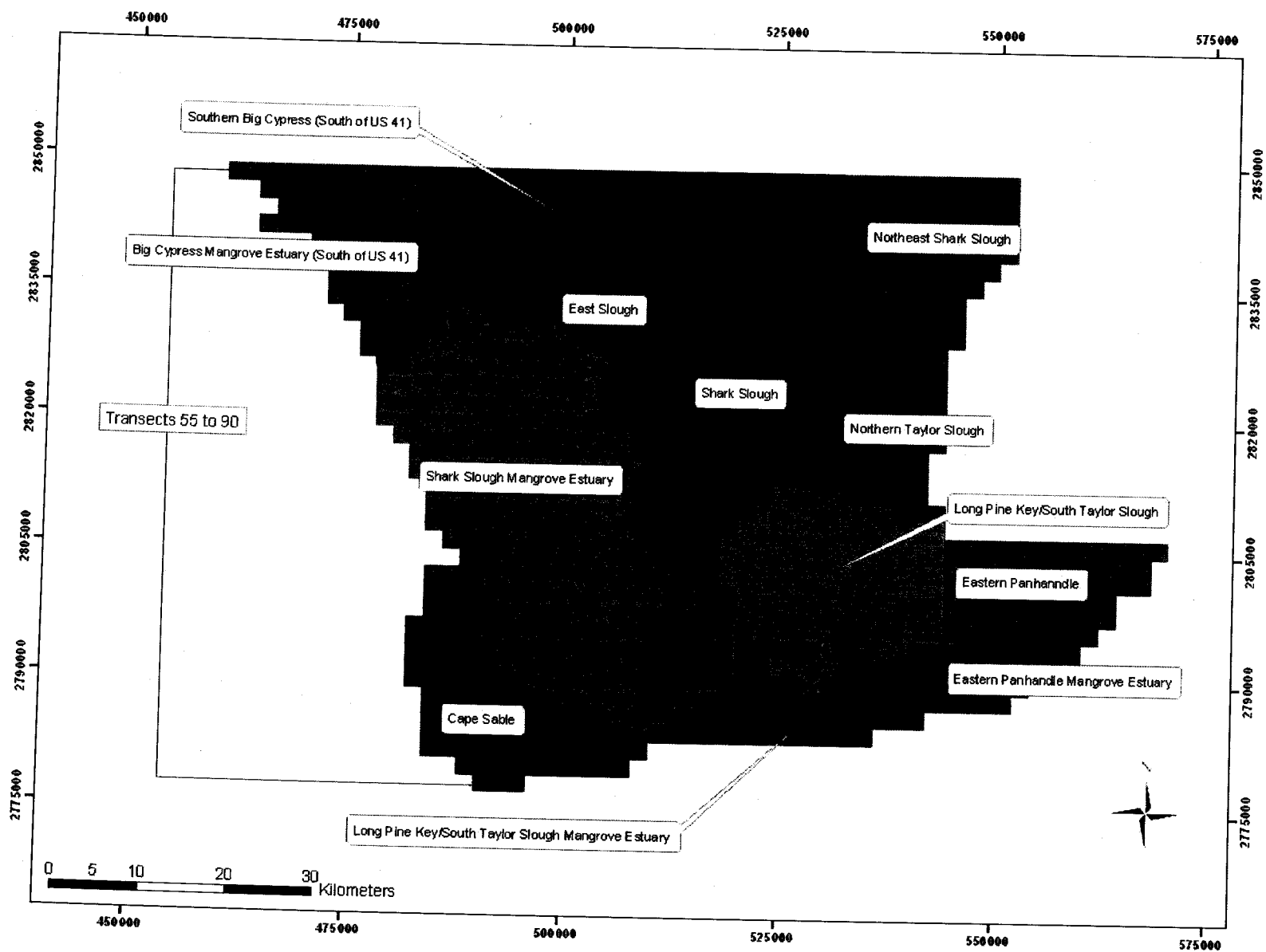


Figure 1: Map of Everglades National Park and southern Big Cypress National Preserved with sampling transects and drainage basins.

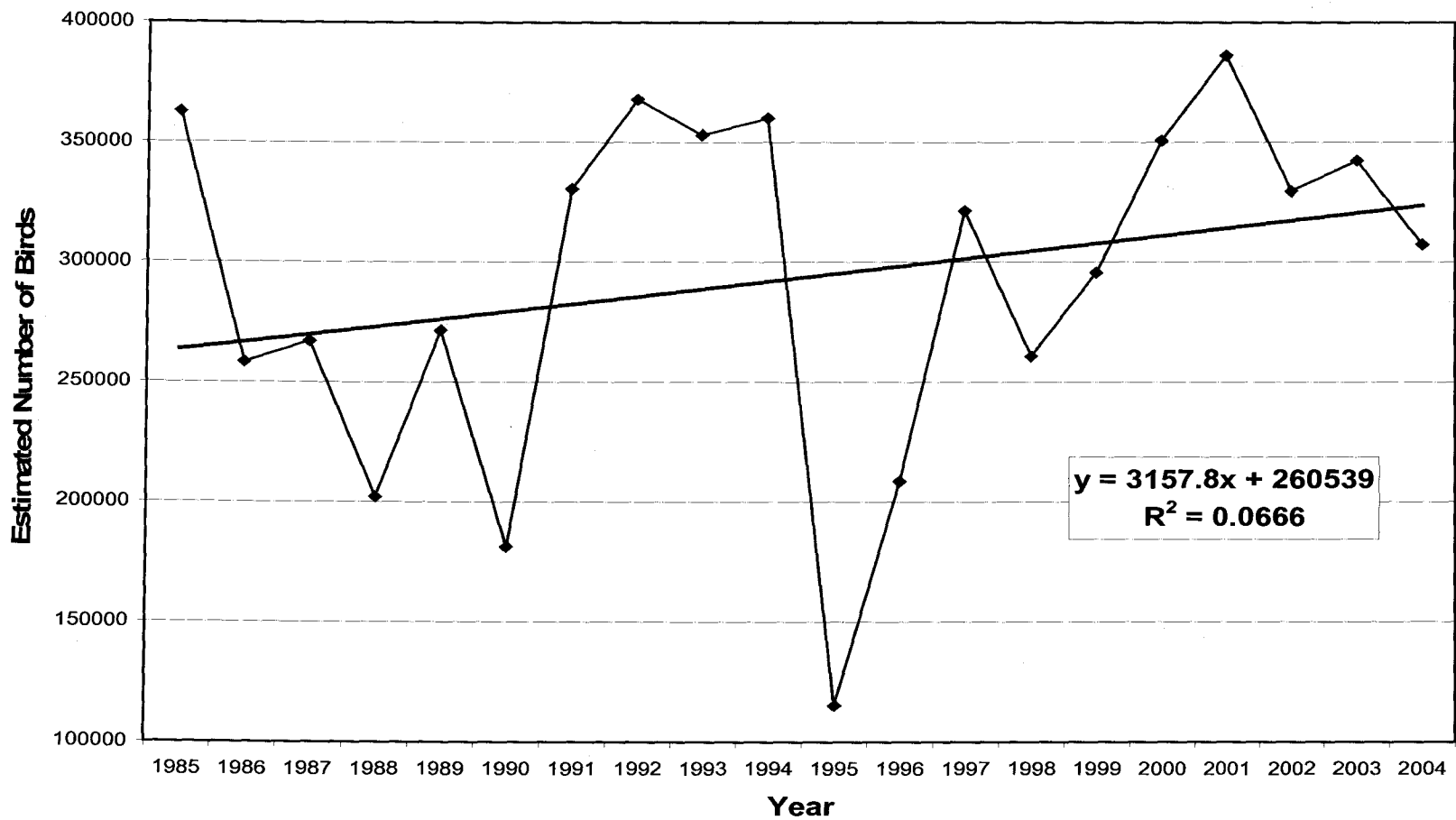


Figure 2: Estimated number of wading birds (all species pooled) observed from the months of December to May 1985-2004. Red marks represent years with estimated missing data.

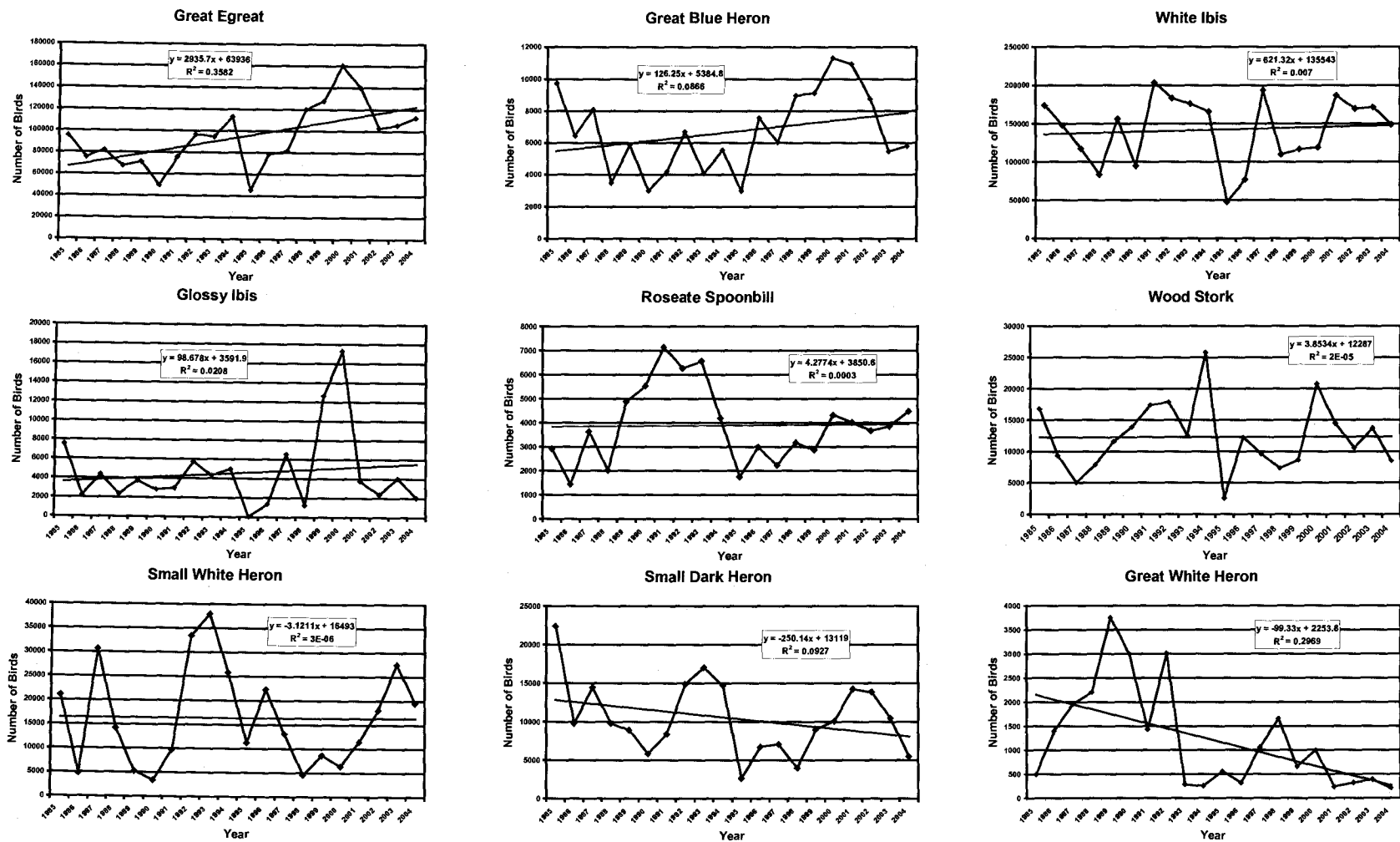


Figure 3: General trends in wading bird populations based on the total number of birds estimated during the surveys performed each year in the Everglades National Park from 1985 to the present.

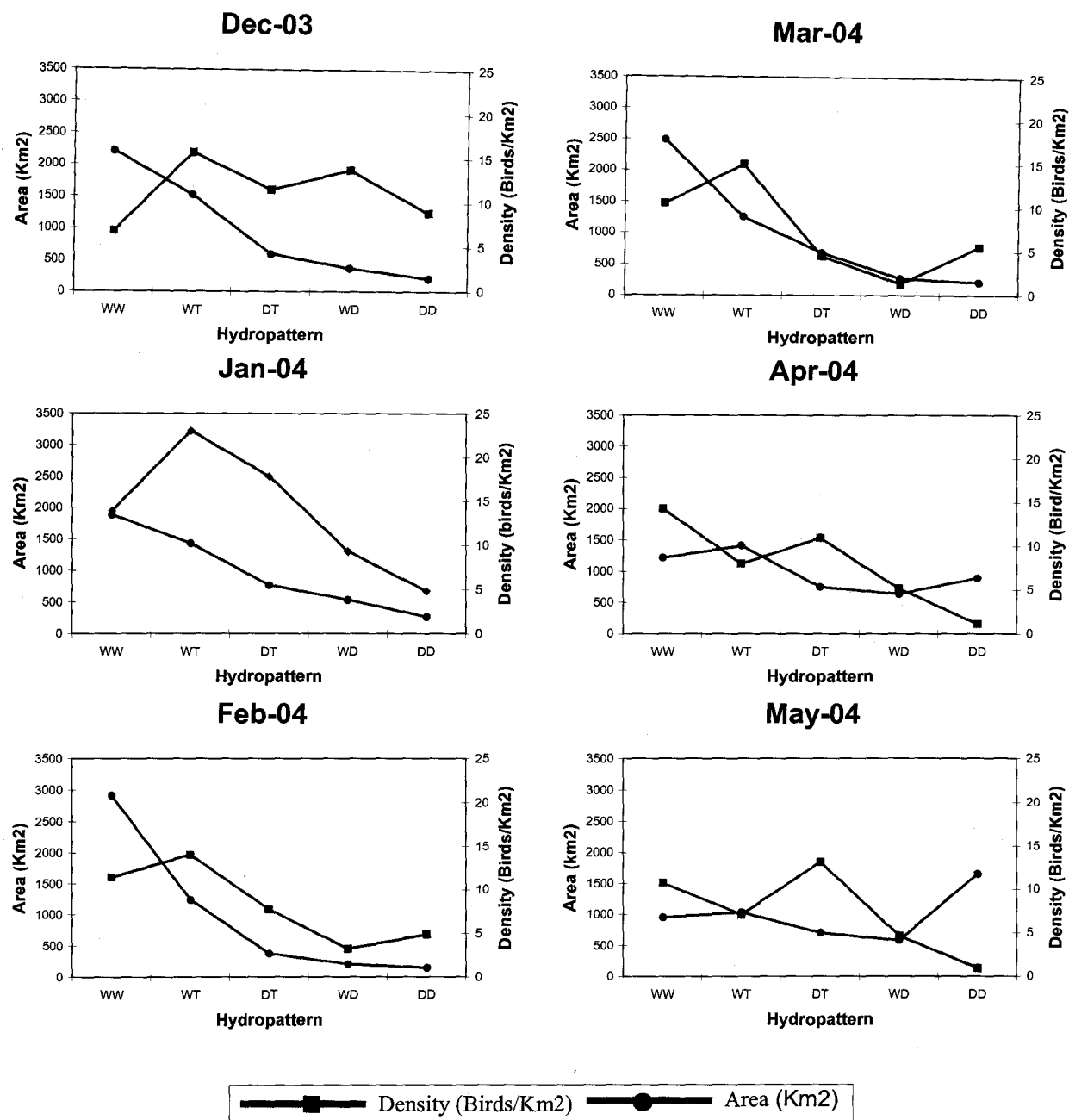


Figure 4: The areal extent and density of wading birds (all species pooled) for each surface water category. WW = continuous surface water; WT = mostly wet with scattered dry areas; DT = mostly dry with small scattered pools of water; WD = dry with water only in solution holes; DD = dry surface.

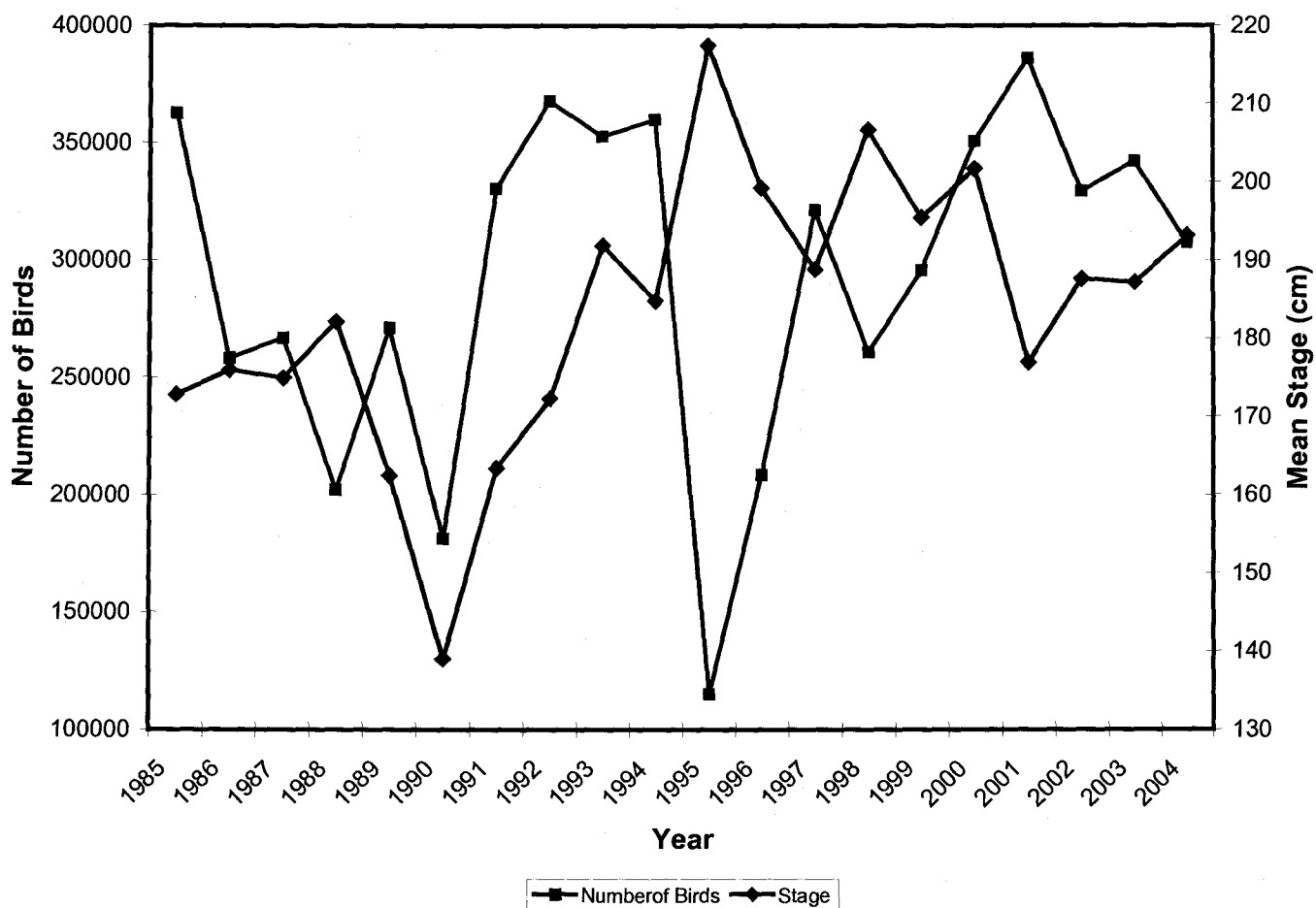


Figure 5: Mean water depth (mean stage at P33 hydrology station) and total number of birds estimated yearly during SRF's at the Everglades National Park since 1985 to present.

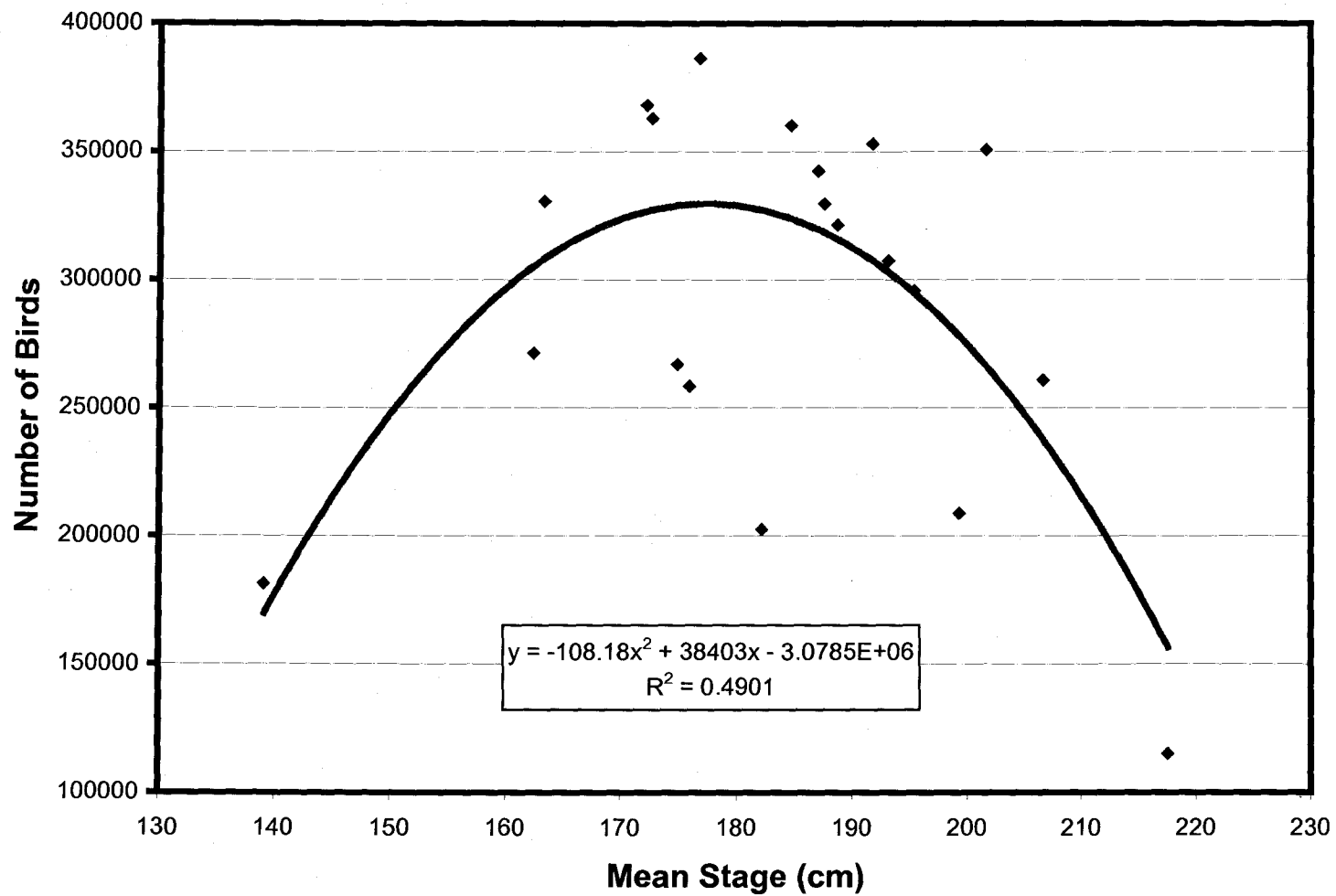
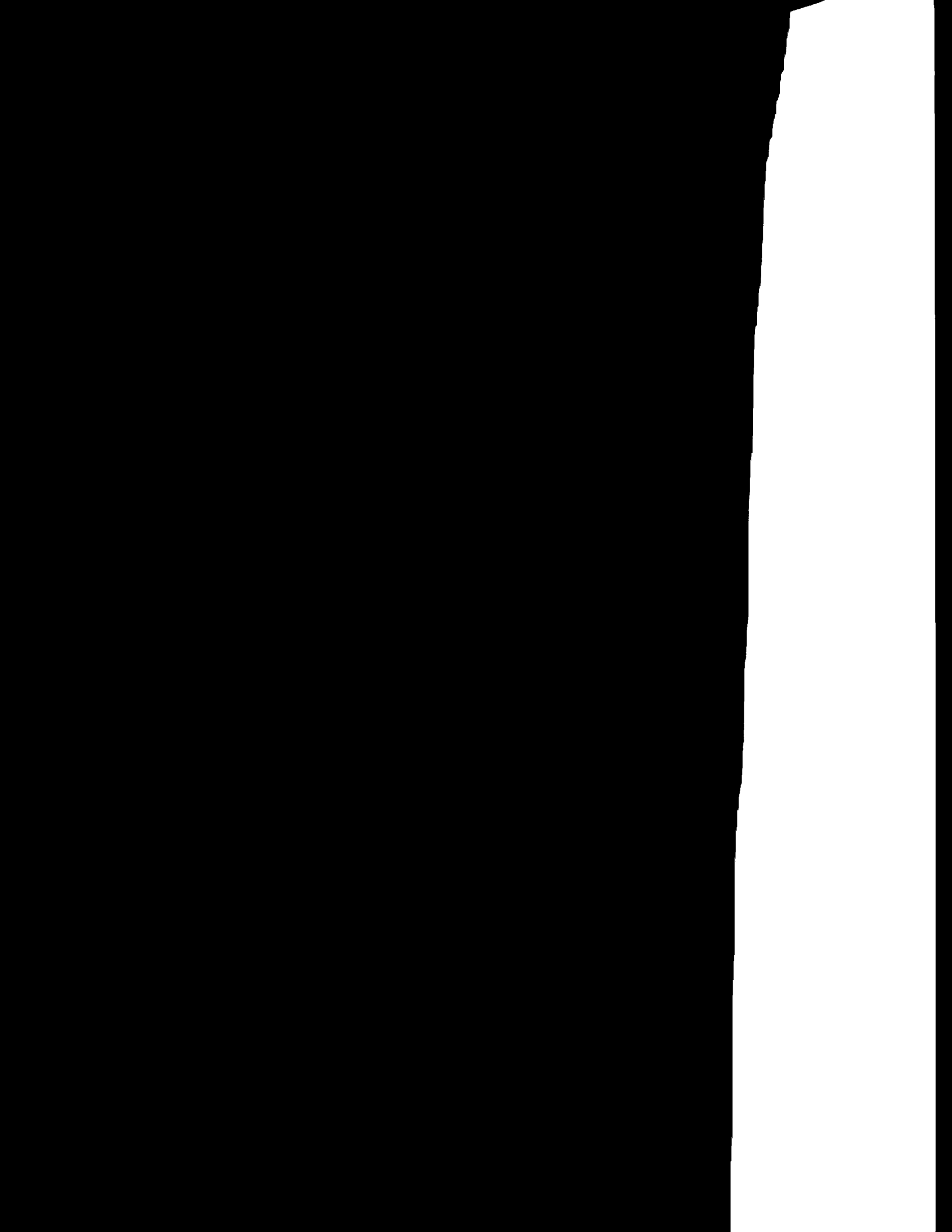


Figure 6: Quadratic regression use to fit a parabola-shape model to water depth (stage at P33 Hydrological station) and total number of birds estimated yearly since 1985 to present.



FINAL PERFORMANCE REPORT

State: Georgia

Project No: E-1-27

Study No: XI

Project Title: Statewide Endangered Wildlife Project

Section Title: Endangered Wildlife Research and Surveys

Period Covered: 1 July 2003 - 30 June 2004

Study Title: Wood Stork Surveys

Study Objectives: A. To survey all known Wood Stork (*Mycteria americana*) nesting rookeries from the air and ground to determine reproductive success and identify potential threats.

B. To conduct aerial searches of suitable habitat in the Coastal Plain to locate new wood stork nesting colonies.

C. To determine ownership of wood stork rookeries and contact the landowners to enhance their awareness of the sites and discuss future status and protection.

D. To prepare a final report.

1. Activity:

Job A. Most Wood Stork nesting colony locations known to have been used within the period 1990, through 2002 were surveyed from aircraft to determine activity in the 2004 nesting season. Other known heronries that might be used by Wood Storks were also surveyed using aircraft.

The majority of sites were surveyed from a GDNR Belljet Ranger but the colony sites in Jenkins and Screven counties, and the new Warrior Creek site were surveyed from a Cessna 172 fixed wing aircraft. Two observers (not including the pilot) flew during all helicopter surveys, estimating numbers of nesting storks and other wading birds. Presence of nesting wading birds species that could not be accurately counted (typically small, dark wading birds) was also noted. Surveys of 62 wading bird rookeries including 36 that have been used historically by Wood Storks, were flown on 11 May, 12 May, 17 May, 1 July and 23 July. Airspace restrictions, the Global 8 Summit Meeting, and bad flying weather delayed or

An estimated 1595 stork nests were observed during the 2004 surveys, slightly lower than 2003 estimates (1653 nests) but higher than 2002 (1258). Harris Neck dropped from 431 nests in 2003 to 213 nests this year. Colonies in the interior of the state tended to have more nests in 2004 (approx. 60% of GA nests) than in 2003 (approx. 35% of GA nests). Shifts in colony usage and/or stork nest numbers were likely due to regional differences in rainfall amounts over the preceding 12+ months. It appeared that the interior of the state had much more rainfall during that period, resulting in "wet" colony sites (sufficient water under nest trees to prevent raccoon predation) and more available freshwater foraging habitat.

Eight colonies were re-surveyed approximately 50 days after the initial surveys. The second surveys were generally within ± 20 of the initial survey (Table 3), and most indicated declines in nest numbers. These declines were thought to be result of the lateness in the season of the 2nd surveys in that many of the young were of fledging age and thus not on their nests. Our observations at Harris Neck and Gilman Paper suggested minor underestimates in our initial survey. We believe the differences in the two observations fall within the expected range of observation error.

- Job B. No new stork colonies were found this year, and no new wading bird rookeries were discovered.
- Job C. Eleven of 16 (69%) active Wood Stork colonies in Georgia in 2004 were located on private land. Three colonies (19%) were on state properties, and two (12%) were on federal property. Although most of the landowners appear interested in protecting rookeries, acquisition of additional sites into public ownership would increase the security of this species in Georgia.
- Job D. The Annual Report was completed in September 2004.

5. Recommendations:

- Job A. Surveys and monitoring of known colonies should be continued.
- Job B. Searches for new colonies should be continued with a systematic survey in the near future to locate potential colonies outside of the normal flight path flown to complete this survey.
- Job C. Efforts to acquire and protect existing colonies through public ownership should be continued. Increased efforts should be made to provide technical assistance to landowners to properly manage colonies.

Table 1. Known wading bird colonies surveyed for Wood Storks in 2004. Wood Storks in bold, nest numbers in parentheses.

Site Name	County	Latitude Longitude	Dates Checked	Species Observed (Number Nests) & Comments
Hall's Pond below Heard's*	Thomas		11-May-04	WS (60) GB (70) GE (50) AN (present)
Thomasville Airport	Thomas	30 52.94 83 53.87	11-May-04	no nesting birds observed
Paulks Pond?	Turner?	31 43.31 83 29.34	not surveyed	
Sand Creek Pond**	Turner/Irwin	31 49.960 83 29.75	not surveyed	
Red Rock*	Worth	31 37.27 83 57.77	11-May-04	WS (120) GB (5) GE (40) LB (present) AN (present)
Jenkins Lake	Worth	31 23.26 83 58.31	11-May-04	GB (40) GE (80) AN (30)
Warrior Creek	Worth		20-May-04	GB (9) - site drying out (new site from 03 data, Robert Brooks)

*Historical or present wood stork rookery site

WS-wood stork, GB-great blue heron, GE-great egret, CE-cattle egret, LB-little blue heron, TH-tricolored heron, SE-snowy egret, WI-white ibis, AN-anhinga, CO-de cormorant

Table 1. Known wading bird colonies surveyed for Wood Storks in 2004. Wood Storks in bold, nest numbers in parentheses.

Site Name	County	Latitude Longitude	Dates Checked	Species Observed (Number Nests) & Comments
Durden's Pond	Emanuel	32 30.16 82 11.50	not surveyed	
Brunswick Alligator Farm	Glynn	31 15.15 81 33.16	12-May-04	WS (75) GE (20)
St. Simons Island*	Glynn	31 14.71 81 22.52	11-May-04	no nesting birds observed (site dry)
St. Simons II*	Glynn	31 14.184 81 20.844	11-May-04	GB (25) GE (20)
Harrington Pond*	Glynn	31 12.55 81 22.01	11-May-04	GB (1)
Little St. Simons Island*	Glynn	31 16.19 81 71.65	11-May-04	no nesting birds observed
Jekyll Island Golf Course*	Glynn	31 04.04 81 25.17	11-May-04	WS (10) GE (15)
Spivey Pond	Glynn	lawrence rd. ssi	not surveyed	
Big Dukes Pond* ¹	Jenkins	32 51.40 82 02.42	17-May-04	WS (80) GB (70) GE (180) AN (present)
Chew Millpond* ¹	Jenkins	32 49.76 82 05.92	17-May-04	WS (150) GB (50) GE (50) AN (present)
River Bend WMA	Laurens		not surveyed	
Colonel's Island Youman's Pond	Liberty	31 43.39 81 14.64	12-May-04	no nesting birds observed
Colonel's Island Drum Point	Liberty	31 41.07 81 16.23	12-May-04	no nesting birds observed
Riceboro	Liberty	31 44.44 81 25.27	12-May-04	GE (120) SE/CE (250) WI (30) TH (present) AN (present) CO (present)
St. Catherines Windmill Pond*	Liberty	31 40.58 81 09.04	12-May-04	GE (15) SE/CE (60)
St. Catherines Wamassees Pond	Liberty	31 77.88 81 10.20	12-May-04	WS (5)
Sunbury-A*	Liberty	31 46.68 81 19.05	12-May-04	no nesting birds observed
Malcolm's Rookery*	Long	31 44.29 81 45.48	23-Jul-04	Active WOST colony with an estimated 80 nests . Mostly fledged with many juv birds in the air and surrounding trees (DNR flight)
Jumping Gully	Lowndes	30 39.41 83 17.31	not surveyed	bad weather on 5/11/04

*Historical or present wood stork rookery site

WS-wood stork, GB-great blue heron, GE-great egret, CE-cattle egret, LB-little blue heron, TH-tricolored heron, SE-snowy egret, WI-white ibis, AN-anhinga, CO-dc cormorant

Table 1. Known wading bird colonies surveyed for Wood Storks in 2004. Wood Storks in bold, nest numbers in parentheses.

Site Name	County	Latitude Longitude	Dates Checked	Species Observed (Number Nests) & Comments
Featherbed Bay A	Atkinson	31 12.55 82 59.62	11-May-04	GB (35) GE (125) LB (30) CE (1200)
Featherbed Bay B	Atkinson	31 12.29 82 59.97	11-May-04	no nesting birds observed
Hog Lot Pond	Atkinson	31 20.98 82 45.60	11-May-04	GB (35) GE (200) CE (700) AN (present)
Alma Pond	Bacon	31 37.28 82 23.04	not surveyed	
Avers Mill Pond	Berrien	31 13.99 83 11.33	11-May-04	GB (25) GE (25) CE (20) AN (20)
Raybon*	Brantley	31 15.54 81 58.17	11-May-04	WS (10) CE (30)
Laura Walker Park	Brantley	31 08.72 82 13.48	not surveyed	
Bentley*	Brooks	30 54.46 83 34.72	11-May-04	GB (25) GE (30) LB (present) AN (present)
Barwick*	Brooks	30 53.90 83 44.45	11-May-04	WS (150) GB (40) GE (10) CE (100) AN (present)
Blackwater*	Brooks	30 40.60 83 37.30	11-May-04	WS (260) GE (60)
Purdy Lake*	Brooks	30 42.30 83 31.90	11-May-04	GB (5)
Turner Bay	Brooks	30 50.92 83 31.16	11-May-04	no nesting birds observed
Black Hammock*	Camden	31 02.23 81 30.82	11-May-04	no nesting birds observed (site dry)
Brailey Swamp*	Camden	31 08.40 81 44.85	not surveyed	[WS (105) , data provided by Brad Winn, GDNR]
Cumberland Sweetwater*	Camden	30 52.03 81 24.93	11-May-04	no nesting birds observed (site dry)
Rayland*	Camden	30 48.40 81 36.70	11-May-04	GB (12) GE (15) TH (40)
Satilla Marsh Island	Camden	30 58.10 81 29.70	28-May-04	BP (400+) GE (150)
Gilman Paper*	Camden	30 44.81 81 33.05	11-May-04	WS (120) GE (150) TH (100) LB (present) AN (present)
Kings Bay Sub BASE*	Camden	30 47.31 81 30.31	1-Jul-04	WS (65) GE (100) SE (300) WI (400) TH (present) AN (present)

*Historical or present wood stork rookery site

WS-wood stork, GB-great blue heron, GE-great egret, CE-cattle egret, LB-little blue heron, TH-tricolored heron, SE-snowy egret, WI-white ibis, AN-anhinga, CO-de cormorant

Table 3. Wading bird counts at Wood Stork colonies surveyed twice in 2004.

Site Name	County	Dates Checked	Wading Bird Count/Presence ^{a,b}								
			WS	GB	GE	LB	CA	WI	TH	SE	AN
Gilman Paper	Camden	5/11/2004	120	0	150	P	0	P	100	0	P
		7/1/2004	133	0	100	P	P	700	P	500	P
Brunswick Alligator Farm	Glynn	5/11/2004	75	0	20	0	0	0	0	0	0
		7/1/2004	63	0	50	0	0	0	0	0	0
Jekyl Is. Golf Course	Glynn	5/11/2004	10	0	15	0	0	0	0	0	0
		7/1/2004	4	0	10	0	0	0	0	0	0
Big Dukes Pond	Jenkins	5/17/2004	80	70	180	0	0	0	0	0	P
		7/6/2004	65	0	P	0	P	0	0	0	P
Chew Mill Pond	Jenkins	5/17/2004	150	50	50	0	0	0	0	0	P
		7/6/2004	120	0	P	0	0	0	0	0	0
Harris Neck NWR	McIntosh	5/12/2004	172	0	200	P	0	0	P	0	P
		7/1/2004	193	0	150	0	P	500	P	P	P
Sapelo S. End Creek	McIntosh	5/12/2004	13	0	0	0	0	0	0	0	0
		7/1/2004	11	0	0	0	0	0	0	0	0
Jacobson's Landing	Screven	5/17/2004	80	P	120	0	0	0	0	0	0
		6/28/2004	63	0	42	0	0	0	0	0	0

^aP = birds present, but could not be counted accurately

^bWading Birds: WS-wood stork, GB-great blue heron, GE-great egret, LB-little blue heron, CE-cattle egret, WI-white ibis, TH-tricolored herons, SE-snowy egrets, AN-anhinga

Wood Stork

Mycteria americana

Contributors: Thomas M. Murphy (SCDNR)

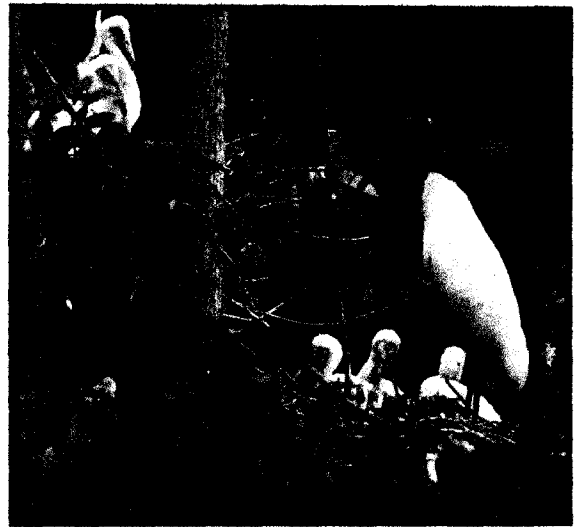
DESCRIPTION

Taxonomy

The wood stork is one of 19 species in the family Ciconiidae. Wood storks are one of four species in the genus *Mycteria*. They are morphologically indistinguishable across the species' range and no subspecies have been proposed. Likewise, genetic studies on 15 nesting colonies in Florida showed little genetic variation (Stangel et al. 1990).

Basic Description

Wood storks are the only stork species and the largest wading bird that breeds in the United States. They are large, long-legged birds with a head to tail length of 85-115 cm (33-45 in) and a wingspan of 150-165 cm (59-65 in). Adults are white except for their primary and secondary wing and tail feathers, which are black with a greenish sheen. Adults have an unfeathered head and neck with a long, thick black bill. Legs and feet are dark. Toes are pink during the breeding season. Subadults are similar except the head and neck have grayish feathers that are gradually lost as a bird matures. Subadults also have a pale yellow bill.



Photograph by Thomas M. Murphy.

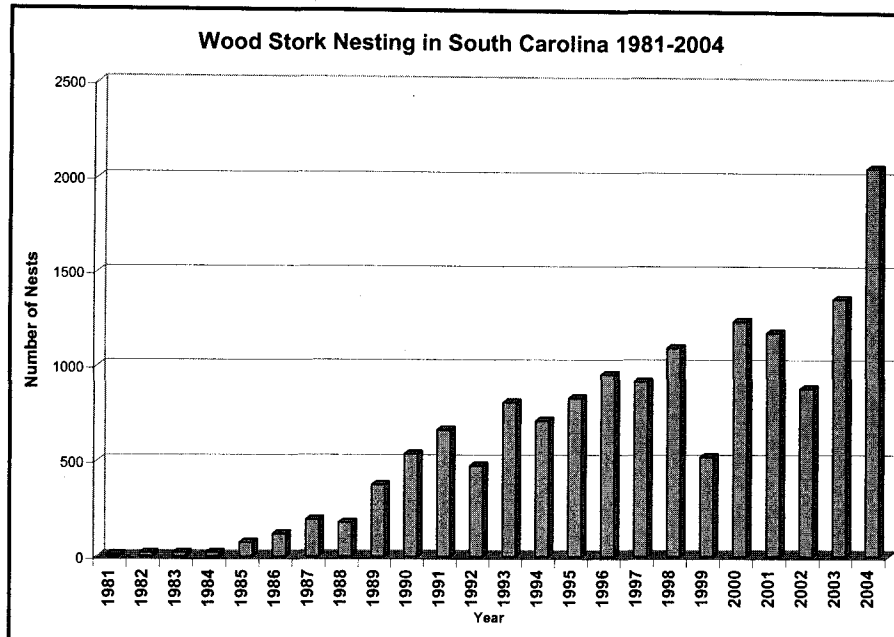
Status

Wood storks nesting were listed as endangered on February 28, 1984, pursuant to the Endangered Species Act of 1973, as amended (U.S. Fish and Wildlife Service 1984). They are also listed as endangered under the South Carolina Nongame and Endangered Species Conservation Act.

POPULATION DISTRIBUTION AND SIZE

The United States breeding population of wood storks was listed as endangered after nesting pairs declined from 15,000 to 20,000 in the 1930's to 2,500 pairs (1978). The low number in 1978 was a combination of a decrease in the regional population and poor conditions for nesting that particular year (U.S. Fish and Wildlife Service 1996). Historically, wood storks have used South Carolina as a post-nesting foraging area during the summer and fall (Murphy 1995). In 1981, the first successful wood stork nests were

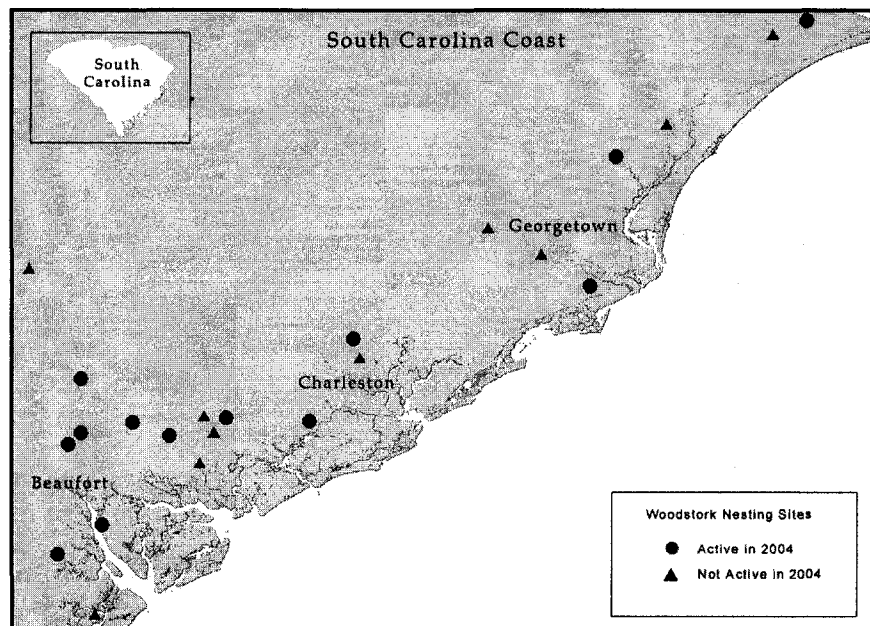
documented in South Carolina (11 nests). By 2004, the population had grown to 2,057 nests at 14 sites.



HABITAT(S)/NATURAL COMMUNITY REQUIREMENTS

Nesting Habitat

Storks typically nest in the upper branches of black gum (*Nyssa biflora*) or cypress (*Taxodium distichum*) trees that are in standing water. Standing water deters mammalian predators and is an essential element of colony sites. Storks require open access to nest trees and are frequently found in



trees adjacent to open water areas. Range-wide, there has been a trend towards the use of manmade wetlands as colony sites in recent years as these sites are not totally dependent on rainfall for water (Rodgers 1996). In South Carolina, colony sites are surrounded by extensive wetlands, in particular palustrine forested wetlands (Mitchell 2002).



Foraging Habitat

Wood storks are tactile feeders. They frequently feed in large groups in open wetlands where prey species are available and water depths are less than 50 cm (20 in). Forested riverine floodplain habitats are frequently used, but a variety of ponds, ditches and diked marsh impoundments are important habitats. Use of these habitats is enhanced by receding water. Storks also forage around low tide along many coastal tidal creeks. Photograph by Thomas M. Murphy

THREATS

Loss of feeding habitat from alteration of natural hydroperiods has resulted in abandonment of nesting colonies or widespread nesting failures in south Florida. Development, lowered water tables and disturbance also degrade nesting sites.

CONSERVATION ACCOMPLISHMENTS

- Standardized surveys of nesting effort have been completed for the southeastern United States.
- A regional wood stork working group has been organized to facilitate information exchange and to set research and management priorities.
- Regional management guidelines for wood stork nesting, feeding and roosting habitats have been developed.
- A wood stork recovery plan has been completed.
- An information brochure to inform landowners of conservation and management needs of storks has been completed.
- A general information pamphlet for distribution to the public has been completed.
- Techniques for management of fresh water ponds to enhanced stork use have been developed and implemented at the National Audubon Society's Silver Bluff Plantation Sanctuary in Jackson, South Carolina.
- Artificial nesting platforms have been developed to enhance stork nesting at colony sites with limited vegetation for nest construction.

CONSERVATION OBJECTIVES AND IMPLEMENTATION RECOMMENDATIONS/OPPORTUNITIES

Priority research

1. Determine survivorship of fledgling, immature and adult storks.
2. Document important winter habitats and determine if they limit species recovery.

Monitoring

1. Conduct complete ground counts of nests at colony sites in South Carolina.
2. Estimate nesting success by counting chicks in a sample of nests.
3. Conduct aerial surveys to locate new nesting colonies.

Education, public outreach and cooperative efforts

1. Participate in and contribute to the regional wood stork working group.
2. Provide technical guidance and assistance to landowners where wood storks occur.
3. Develop a South Carolina Department of Natural Resources web page on wood storks.
4. Protect storks and their habitats through interagency permit review system.

EVALUATION OF ASSUMPTIONS

Efforts to restore wetlands in south Florida may significantly impact wintering and nesting wood storks in the future. In addition, during the past several decades, wood stork nesting has shifted north and is significantly changing management of the species. Both of these activities will require responsive and adaptive management. Goals of the recovery plan set numerical population numbers.

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