1988

Colonial Bird Studies

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PERFORMANCE REPORT

STATE:	VIRGINIA	PROJECT NO.:	W-77-R-5
PROJECT TITLE:	NONGAME AND ENDANGERED SPECIES INVESTIGATIONS		
STUDY TITLE:	COLONIAL BIRD INVESTIGATIONS	STUDY NO.:	VI
JOB TITLE:	COLONIAL BIRD STUDIES	JOB NO.:	A-D
PERIOD COVERED:	July 1, 1987 - June 30, 1988		

JOB VI-A OBJECTIVE: To coordinate the protection and management of colonial birds in the state.

JOB VI-B OBJECTIVE: To conduct surveys of colonial breeding birds in Virginia in order to detect changes in population numbers as well as population shifts.

JOB VI-C OBJECTIVE: To sample nesting success in colonies of selected species each year.

JOB VI-D OBJECTIVE: To conduct preliminary studies on the effects and extent of predation on colonial breeders.

SUMMARY:

Censuses were conducted by aerial survey to locate colonies. About 90 percent were rechecked by ground and water to verify numbers. Management plans were implemented on a number of areas on the west side of Chesapeake Bay. Urban areas were again censused to determine the size and location of this population of herons.

JOB VI-A - To coordinate the protection and management of colonial birds in the state.

Numerous management problems occurred during the year relative to colonial birds. Specific problems relative to Craney Island, Grandview Beach, and the Hampton Roads Tunnel are addressed under Job VI-B of the report.

The barrier island colonies continue to receive some disturbance as a result of human intrusion. Project personnel assisted the Nature Conservancy by posting colony boundaries on a number of islands. One of the project personnel served as a warden on the Conservancy islands during the course of his work.

TABLE 1. Colonial bird colonies on the Eastern Shore of Virginia, 1987.

Species	Total No. of Colonies	No. of Seaside Colonies (No. of Individuals)			No. of Bayside Colonies (No. of Individuals)		Total No. of Individuals
		Barrier Island	Marsh Island	Spoil	Marsh Island	Wooded Island	
Laughing gull	63	(2)18,440	(59)12,314	(1)50	(1)300		31,104
Herring gull	13	(9) 3,652	(1) 350	(2)525	(1)30		4,557
Great black backed gull	9	(7) 386	(1) 30		(1)10		426
Royal tern	2	(2) 6,886					6,886
Forsters tern	31		(26) 1,350	(1)10	(4)305		1,665
Common tern	28	(24)2,234		(2)170	(2)325		2,729
Gull-billed tern	16	(13) 524		(3)280			804
Least tern	20	(20) 901					901
Sandwich tern	2	(2) 20					20
Caspian tern	2	(2) 8					8
Black skimmer	21	(19)3,316		(2)100			3,416
Yellow crowned night heron	5	(4) 40				(1)14	54
Black crowned night heron	9	(5) 540	(3) 433			(1)27	1,000
Blossy Ibis	11	(8) 373	(2) 94			(1)48	515
Snowy egret	9	(6) 728	(2) 2,110	(1)50		(1)37	2,925
Great egret	10	(6) 422	(3) 446			(1)31	899
Tri-colored heron	8	(5) 439	(2) 180			(1)14	633
Little blue heron	6	(3) 50	(2) 161			(1)13	230
Cattle egret	7	(4) 134	(2) 4,200			(1)69	4,403
Whit Ibis							
Green heron		(5) 147	(4) 76				223
Brown pelican	2	(2) 345					345
Totals	272	(48)39,240	(107)21,744	(12)1,185	(9)970	(8)253	63,743

The location of large great egret - great blue heron and yellow-crowned night heron colonies in urban environments continued to present major management problems. Project personnel met with Department of Agriculture and Federal Law Enforcement officials in an attempt to resolve these problems. Numerous meetings were held with individual landowners.

An experiment was attempted in which a large series of great egret decoys was placed in trees in suitable habitat on a military base near one of the major egret colonies. This experiment was unsuccessful, probably because of the high level of site fidelity usually exhibited by these birds.

JOB VI-B - To conduct surveys of colonial breeding birds in Virginia in order to detect changes in population numbers as well as population shifts.

EASTERN SHORE COLONIAL BIRD SURVEYS

Colonial bird surveys were flown over Tidewater Virginia in May and in early June. Numbers for all colonies were estimated from aerial surveys and indicated on field copies of the 7 1/2 minute topographic sheets.

Colonial species nesting on Virginia barrier islands, salt marshes, and bay islands of Chesapeake Bay were also censused by boat and foot to verify colony numbers obtained by aerial survey. These colony data were recorded on the standard colonial bird data forms of the Colonial Bird Register of Cornell University. All colony data for 1987 are shown in Table 1.

Although some species show a reduction in numbers since 1986, these probably reflect only a seasonal change in numbers and are not a matter for concern.

WESTERN SHORE COLONIAL BIRD SURVEYS

Colonial bird colonies on the western shore were censused initially by air. Many colonies subsequently were checked by car, foot, and boat.

A number of the colonies on the western shore occur in urban environments or on man-created habitats. The major species involved on these unique environments are yellow-crowned night herons, great egrets, least terns, black skimmers, and common terns. In view of the unique nesting nature of these colonies in specific or restricted habitats, each is considered separately below. The unique management problems of each are commented on.

GREAT BLUE HERON - GREAT EGRET COLONIES

The locations of great blue heron colonies by topographic quadrangle, river or drainage system, county or city, number of pairs, and habitat, for 1987 are shown in Table 2. Data for 1988 are not complete but apparently show 8-10 new colonies.

Each colony was checked twice during the breeding season by aerial survey. Efforts continue to identify land ownership and to assist with the development of management strategies.

TABLE 2. Location of Great Blue Heron Colonies in Virginia 1987.

Topo Chart Name	Location By Terrain Feature & City/County	Great Blue Heron Pairs	Great Egret Pairs	Habitat Tree Type
Aylett	Mattaponi River King William Co.	26		Pine
Beulahville	Herring Creek King William Co.	7		Dead Bottomland
Brandon	Morris Creek Charles City Co.	40		Bottomland Hardwood
Claybank I	Catlett Islands York Co.	22	2	Pine
Claybank II	Queens Creek York Co.	36		Pine
Courtland	Nottaway River South Hampton	55	12	Bottomland Hardwood
Dendron I	Blackwater Sussex	24	8	Bottomland Hardwood
Dendron II	Blackwater	64		Bottomland Hardwood
Franktown	Barlow Creek Northampton	abandoned		Pine

TABLE 2 - continued

Topo Chart Name	Location By Terrain Feature & City/County	Great Blue Heron Pairs	Great Egret Pairs	Habitat Tree Type
Gloucester	Fox Mill Run Gloucester	60		Bottomland Hardwood
Hog Island I	Hog Island State Waterfowl Refuge Surry Co.	121	7	Pine
Hog Island II	College Run Surry Co.	27		Cyprus
Hylas	Tuckahoe Goochland	5		Dead trees Swamp
Indian Head	Mason Neck Fairfax	308		Hardwood Pine
Knots Island	Cedar Island Va Beach City	123	34	Pine
Lancaster I	Great Wicomico Northumberland	abandoned		Bottomland Hardwood
Lancaster II	Bush Mill Stream Northumberland	267		Swamp Bottomland
Lively	Lancaster Creek Richmond Co.	27		Dead snag & Hardwood
Milers Tavern		34		Cyprus & Snags
Montross I	Cat Point Creek	3		Snags
Montross II	Cat Point Creek	34		Pine & Snags
Mount Landing	Quioccasin Creek Essex	12		Hardwood
New Point Comfort	Peppers Creek Mathews	294		Pine
Norge	Longhill Swamp James City Co.	20		Snags

TABLE 2 - continued

Topo Chart Name	Location By Terrain Feature & City/County	Great Blue Heron Pairs	Great Egret Pairs	Habitat Tree Type
Passapatanzy	Potomac Creek Stafford Co.	219		Bottomland Hardwood
Pleasant	Pocaty River Va. Beach	10	2	Bottomland Hardwood
Pleasant	Intracoastal Waterway Va. Beach City	299	18	Bottomland Hardwood
Port Royal	Mill Creek-A.P. Hill Caroline Co.	26		Bottomland Hardwood
Providence Forge	Collins Run New Kent Co.	92		Bottomland Hardwood
Richmond	Chickahominy River Hanover	3		Dead Snag
Richmond	Chickahominy River Hanover	35		Bottomland Hardwood
Roxbury	White Oak Swamp Chickahominy River New Kent Co.	454	53	Bottomland Hardwood
Seven Pines	Mechanicsville	121	14	Bottomland Hardwood
Schackelfords I	Burnt Mill Creek King and Queen	487		Bottomland Hardwood
Shackelfords II	Poropotank River Gloucester/King & Queen Line	9		Dead snags
Surry I	Jamestown Island James City Co.	14		Pine
Surry II	Black Duck Gut Surry Co.	16		Dead snags

TABLE 2 - continued

Topo Chart Name	Location By Terrrain Feature & City/County	Great Blue Heron Pairs	Great Egret Pairs	Habitat Tree Type
Tangier	Watts Island	204	71	Hardwood
Toano	Frances Swamp York River James City Co.	61		Bottomland Hardwood
Tunstall	Elsing Green New Kent Co.	62		Pine & Bottomland
Ware Neck	Burke Mill Stream Gloucester	47		Bottomland Hardwood
Yorktown	Beaver Dam Creek York Co.	415	6	Pine
	Total Pairs of Adults:	4183	227	

LEAST TERN POPULATIONS WESTERN SIDE OF CHESAPEAKE BAY

The least tern populations at Craney Island, Portsmouth, and Grandview Beach, Hampton, were active and productive during the 1988 breeding season. Due to the lower temperatures and spring storms during April and early May, these colonies were delayed by sixteen days. Each colony was visited weekly from April 15 through May 15. A minimum of two visits per week were conducted during the peak hatching dates, May 20 - July 1. Both colonies at Grandview Beach and Craney Island were asynchronous. Grandview Beach had three peak hatching dates, and Craney Island had two peak hatching dates. The nesting success of the New Point Comfort colony was limited. A summary of the number of adults and a nest count for the colonies is found in Table 3.

TABLE 3. LEAST TERN POPULATIONS AT GRANDVIEW BEACH, CRANEY ISLAND AND NEW POINT COMFORT.

Location	Number of Adults	Nest Count
Grandview Beach Hampton, Va	650	307
Craney Island Portsmouth, VA	510	244
New Point Comfort Mathews County, VA	75	30
Totals	1235	581

Grandview Beach:

At Grandview Beach, nesting habitat was protected immediately prior to the arrival of the least terns at the breeding grounds and throughout the nesting season to eliminate direct disturbance during nesting activities. Before the breeding season began, the boundaries of the colony, located at the North end of Grandview Beach Preserve, were posted with 25 least tern signs attached to eight foot, salt-treated posts. The manpower was provided by volunteers from the Tabb High School Science Club, interested members of the Virginia Society of Ornithology, and graduate and undergraduate students from the College of William and Mary. During the course of the breeding season, eleven signs were removed through vandalism. Remaining piles of sawdust indicated the removal of the posts by chain saw. Additional signs were posted bringing the total to 30 signs. Since the onset of breeding was delayed, and the colony still has young least terns and black skimmers, the area will remain posted an additional 15 days. The signs will be removed by August 30.

Besides providing habitat for a large least tern colony, the area attracts other beach nesting species (Table 4). Four pairs of piping plovers were observed. On May 22, 1988, eleven adults were observed at Grandview Beach. Eight adults (four pairs) were defending territories. Two of the pairs had nest with eggs. By May 28, 1988 all four pairs had eggs or young. A total of eleven young hatched, and a total of nine fledged young was observed.

TABLE 4. Beach nesting species at Grandview Beach, Hampton, Virginia.

Species	Number of Adults	Number of Nests	Number of Fledged Young
Least Tern	650	307	200 plus (estimated)
Common Tern	14	6	0
Black Skimmer	80	19	10
Piping Plover	8	4	11
Oystercatcher	4	1	2

During three of the twelve visits in June and early July, 23 adult least tern carcasses were observed, many with a notched sternum indicating peregrine falcon predation. An adult peregrine falcon was observed on two occasions harassing the Tern colony.

Brown pelicans were regularly observed feeding off-shore. One immature pelican was found injured by a gunshot wound through the chest and wing.

Grandview Beach is an area that will continue to have disturbance from boat traffic, pedestrians, and unleashed pets. As plans for the development of the Grandview Beach area progress, it is essential again to emphasize the importance of limiting and regulating visitors. A reiteration of the 1987 recommendations for the protection and preservation of the nesting area at the north end of Grandview Beach is in order:

1) Post boundaries around the colony (Post signs by April 15; remove signs by August 15).
2) Rope off boundaries of the colony during the breeding season.
3) Use the area for educational purposes by posting 4 large signs indicating the nesting species and the delicate nature of the area. These signs should be posted at the North, South, East, and West edges of the colony.
4) Set up a volunteer council that would patrol the area and inform people approaching the area about the sensitive nature of the colony.
5) Establish an arm band or some appropriate ensign for the volunteer group to show its official affiliation.
6) If human disturbance increases, total blockage of the area from beach and shoreline approach by appropriate barricades will be necessary during the breeding season, April 15 - August 15.

The cooperation of the Hampton Parks Department, U.S. Fish and Wildlife Service, Virginia Department of Game and Inland Fisheries, and biologists involved in research of the species is necessary to reach an agreement on the appropriate steps to implement management strategies.

Craney Island:

In February 1988, Hank Williamson, site manager of Craney Island, and Ruth Beck met to determine potential nesting habitat within Craney Island. These areas would be prepared with shell and pebble to create least tern habitat. Three areas were prepared and decoyed with wooden least tern look-a-likes. Two of these areas were used by the least terns.

There were five different least tern colonies on Craney Island during the 1988 breeding season:

Colony 1 was located at the southwest corner of the North Division dike. By May 15, the establishment of this colony required the complete blockage of the North Division Dike by piles of dirt to restrict vehicular access. The colony was successful with 200 adults, 98 nests, and fledged young.

Colony 2 was located at the Southeast corner of the North Division Dike. It was one of the artificially prepared sites. A colony of 150 adults with 68 nests was formed, but heavy spring storms destroyed the nests. Abandoned nests were destroyed by the gull population on the island.

Colony 3 was located at the Northwest corner of the North Division Dike. The colony was posted and was successful with 100 adults and 50 nests. Young hatched which were banded and successfully fledged.

Colony 4 was located midway on the North perimeter of the South Division Dike. It was one of the artificially prepared sites. It was successful with 50 adults and 23 nests. Young hatched and fledged. In early May two piping plovers were observed at this site. They remained for three weeks, but no sign of territory formation or nesting activity followed.

Colony 5 was located at the Northwest corner of the South Division Dike. It was a small, scattered colony of 10 adults and 5 nests with limited success due to the close proximity to the road. The young fledged successfully

Visits by reporters and photographers from the Daily press and Ledger Star were set up by Diane Bailey, Army Corps of Engineers, Department of the Army, Norfolk District. Representatives from the Virginia Department of Game and Inland Fisheries also visited Craney Island. Several articles were featured about the cooperative agreement between the Army Corps of Engineers and the Virginia

Department of Game and Inland Fisheries, implemented by Ruth A. Beck, College of William and mary, and Hank Williamson, Army Corps of Engineers, Craney Island.

Brown pelicans were regularly observed along the West Perimeter Dike. The highest count was 193 total, 41 adults and 152 immatures. Herring gulls and great black-backed gulls were observed during each visit around the boundaries of each least tern colony. The number of gulls has been continuously increasing during the past five years. Observations were made of adult great black-backed gulls walking into the tern colony and taking least tern chicks.

Royal terns were observed on the West Perimeter Dike mixed in with the brown pelicans. Fifty to seventy-five adult royal terns were observed weekly. No signs of nesting activity were observed.

New Point Comfort:

The New Point Comfort site was checked by air in May and July along with two ground visits. Nesting was again confirmed for the 1988 breeding season. A colony count in early June revealed 30 adults and a few eggs. In early July, the least tern colony appeared abandoned with 26 boats counted around the West end of New Point Comfort where the terns had nested. Boaters and visitors were picnicking. One tent was erected, indicating overnight camping activity.

It is recommended that the Virginia Department of Game and Inland Fisheries post the area with appropriate signs from April 15 to August 15 to inform boaters of the sensitive nature of the area and the nesting tern colony. Mathews County authorities should be notified of the active tern colony by the Game Department.

COMMON TERN AND BLACK SKIMMER POPULATIONS AT THE HAMPTON ROAD TUNNEL

The south end of the Hampton Roads tunnel continues to be one of the largest common tern colonies in Virginia. In 1988, the area was first visited in early April. At this time, a group of volunteers pulled out vegetation in selected areas to provide habitat suitable for black skimmers. Black skimmers usually prefer sparsely vegetated areas. The area was posted with 13 signs indicating the sensitive nature of this area for colonial nesting species. Weekly visits were made during the breeding season. The number of adult common terns was 2,178 individuals. The black skimmer total was 348 individuals. The common terns and black skimmers were about 16 days later than usual in arriving at the tunnel area.

During the early visits, some evidence of mammalian predation within the colony was observed. Rat activity was confirmed by observation of active rat tunnels and dead rats. Removal of rats through conventional methods was not recommended because of the timing within the breeding cycle. It was felt that control methods might have detrimental effects on the avian populations.

The adult black skimmer population nesting on the tunnel island decreased by 54 percent. Part of this decrease may be due to a shift of approximately 160 black skimmers to the Grandview Beach area and other natural shifts to the Barrier Islands of Virginia. Part of the decrease may also be due to the increased vegetation on the tunnel island.

Since the common tern colony is increasing and productivity is high, many young common terns sit in the roadway directly exposed to vehicular traffic. On two field surveys a total of 68 dead, flattened chicks were counted.

The management recommendations of posting the boundaries, limiting mowing during the breeding season, and rat control have been effective. Additional recommendations include posting a large sign at the entrance of the Hampton Roads Tunnel access road informing all approaching vehicular traffic to drive slowly (5 mph) and also indicating caution due to birds in the road. Also recommended is the removal of vegetation either by physical or chemical means within specific areas to provide continued suitable habitat for common terns and black skimmers. This removal should be done between September 1 and March 1.

The cooperation between the Virginia Department of Highways, Ruth Beck, College of William and Mary, and the Virginia Department of Game and Inland Fisheries will continue to provide the protection necessary for appropriate nesting habitat for this large colony of colonial nesters.

COLONIAL BIRD COLONIES IN URBAN ENVIRONMENTS

Surveys were conducted again this year in the Hampton Roads and Tidewater areas to monitor urban heron and egret colonies and address citizen concerns. Survey results and population data for 1988 are given in Tables 5,6, and 7.

Prior to the nesting season, the Department of Game and Inland Fisheries together with the Department of Agriculture and Consumer Services sent out approximately two dozen letters to homeowners who were requesting assistance with the upcoming problem. Homeowners were urged to recognize the environmental sensitivity of the issue but it was agreed that harassment would be acceptable prior to nest construction to prevent nesting in certain areas.

Great egrets - As witnessed by events this spring great egrets seem to exhibit a tremendous amount of site fidelity. Even with the removal of the last nest tree from the historical Thoroughgood colony, in conjunction with a full-scale decoying attempt, almost 250 pairs of great egrets still chose to nest less than 1/4 mile away in what appeared to be sub-optimal habitat. Noise and sanitation problems were even worse this year in addition to physical damage to homes. Nest trees involved were directly over 3 residences and affected 4

others. All homeowners involved intend to modify the habitat to prevent the birds' return again next year.

Continued harassment at one colony site last year resulted in its complete lack of use this year. However, there were noticeable increases in two other colonies where we feel displaced pairs may have relocated. The Game Department intends to work with landowners of these two colony sites to insure their preservation. If displaced egrets depend on finding an existing colony in which to relocate, the best management strategy may be the maintenance and protection of existing sites where possible.

One additional great egret colony was located this spring in Hampton. At 241 pairs, it comprises the largest known colony in mainland Virginia and boosts the urban population of great egrets to 50% of the entire state's population. Residents say it began as two pairs in the late 1960's. Efforts are under way to insure its protection.

Table 5. Status of urban great egret colonies.

Colony	Drainage	Status/Cause
01 Thoroughgood Colony Virginia Beach	Lynhaven River	Relocated & decreasing - habitat loss (87)
02 Giordano Colony Virginia Beach	Eastern Branch Elizabeth River	Abandoned- harrassment (87)
03 Mariner Colony Portsmouth	Western Branch Elizabeth River	Abandoned- habitat loss (87)
04 Winston Colony Portsmouth	Western Branch - Elizabeth River	Increasing
05 Brown Colony Norfolk	Lafayette River	Increasing
06 Hampton Colony	Hampton River	Discovered (5/88)

TABLE 6. Colony size of great egrets over time.

Time	Colony Size (pairs) 01	02	03	04	05	06	Total
1986	80	110	110+	70	8	-	368

TABLE 6 - continued

Time	01	02	03	04	05	06	Total
1987	320	30	0	73	26	-	449
1988	237	0	0	121	55	241	554

Yellow crowned night herons - Although the entire Tidewater area was surveyed, Hampton and Norfolk have emerged as the most productive areas for yellow-crowns and have been selected as study areas for population trend analyses. Only one yellow-crowned night heron survey was conducted this summer, which was carried out just prior to time of fledging. However, a number of abandoned nests discovered highlights the need for multiple visits during the nesting season. More information is necessary to determine the timing and causes of nest abandonment. Results of this survey are shown below.

TABLE 7. Yellow-crowned night heron nesting trends.

	Active nest sites		% Reduction	Abandoned nests
	1987	1988		
Hampton	79	64	19%	15
Norfolk	62	42	32%	13
	141	106	25%	28

The greater percent reduction in active nests in Norfolk probably represents the increased knowledge and availability of harassment techniques as a means to discourage nesting. These negative homeowner atttitudes are expecially unfortunate for colonial nesters in urban environments. With 50% of the State's great egrets and over 75% of the yellow-crowned night heron population in the urban Tidewater area, homeowner apathy and development pressures are having a significant impact. Even though these population surveys are a recent event, downward trends in population numbers are already evident. As a result, the Game Department is placing more emphasis on environmental education and long term land protection as a means to combat this trend.

JOB VI-C - To sample nesting success in colonies of selected species each year.

General nesting success of several least tern colonies is commented upon in Job VI-B. Thirty-six nests of great blue herons in 3 colonies were followed through the breeding season. Average number of pre-fledgling young was 2.9 per nest. Severe wind storms in June did not appear to do great damage to nesting great blue herons, perhaps because the most severe winds tended to be localized. Winds in excess of 100 miles per hour were registered at places on the upper Eastern Shore.

Breeding success of colonial beach nesters on the barrier islands may have been the poorest in ten years. A very cool spring coupled with a series of high tides was apparently responsible for the poor success rate. It made following specific nest success very difficult. Many of the beach nesters were still laying eggs toward the latter part of July. It is unlikely that these late nesters will be successful in producing young.

JOB VI-D - To conduct preliminary studies on the effects and extent of predation on colonial birds.

Systematic studies of predation were not implemented but numerous observations to detect predation were made.

Observations were again made of a number least terns being killed at Grandview Beach by a peregrine falcon. The origin of this falcon has not yet been identified.

Extensive observations were made to document herring gull predation on Metomkin Island in 1987. Harassment and food pilfering appeared to be the major impact of predation of gulls on colonial beach nesters. It was suggested that movement of 400 black skimmers from Metomkin Island to an adjacent, off-shore sand bar may have been precipitated by herring gull harassment. It was recommended that this expanding herring gull population be controlled.

In 1988, evidence of mammalian predation was noted early on Metomkin Island. Several adult egrets were killed and eaten by a mammalian predator. The colony ultimately was abandoned. All of the beach nesting birds abandoned the island as the season progressed. This abandonment cannot be correlated with predation but it would appear to be an influence.

During the summer, it was noted that foxes have now become established on most of the islands and raccoons on a number. It is recommended that these mammalian predators as well as herring gulls be controlled now.

TARGET DATE FOR COMPLETION: Continuing

STATUS OF PROGRESS: On Schedule

SIGNIFICANT DEVIATIONS IN PROGRESS: None

RECOMMENDATIONS: Continue Study

COST THIS SEGMENT: Federal $13,452.75 State $4,484.25 Total $17,937

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