1984

Colonial Bird Studies

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The Center for Conservation Biology

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PERFORMANCE REPORT

STATE:	VIRGINIA	PROJECT NO.:	W-77-R-1
PROJECT TYPE:	RESEARCH and/or SURVEY	STUDY NO.:	VI
PROJECT TITLE:	NON-GAME AND ENDANGERED SPECIES INVESTIGATIONS	JOBS NO.:	VI-A, B, C
PERIOD COVERED:	July 1, 1983 - June 30, 1984		
STUDY TITLE:	COLONIAL BIRD STUDIES		
JOB VI-A OBJECTIVE:	To make a complete survey of colonial breeding birds in Virginia every year in order to detect changes in population numbers as well as population shifts.		
JOB VI-B OBJECTIVE:	To sample nesting success in colonies of selected species each year.		
JOB VI-C OBJECTIVE:	To compare photographic, aerial and ground census techniques to establish limits of error with these techniques.		

SUMMARY:

Colonial bird surveys were conducted by air in April, May and June. Over 90 percent of the marsh and beach nesting colonies were subsequently visited on the ground for census comparisons. Nesting success was followed for a sample of nests for a number of colonial species.

COLONIAL BIRD SURVEYS:

Colonial bird surveys were flown over all of Tidewater Virginia during the first two weeks of May. Great blue heron colonies were resurveyed during June as previous experience has indicated that many colonies of this species continue to increase in size into late May and early June.

Numbers were estimated for all colonies as a result of the aerial surveys. Total numbers of individuals of each species were tabulated by colonies. All colony locations were plotted on field copies of 7-1/2 minute topographic sheets. Colony locations also have been plotted on a permanent set of 7-1/2 minute topographic sheets. All colony data have been recorded on the standard Colonial Bird Register Forms. Topographic sheets will be updated annually.

Colonial species nesting on Virginia's barrier islands and salt-marshes of the Eastern Shore were also censused by foot. A ground crew, which has consistently conducted the census for The Nature Conservancy's Virginia coast reserve since 1975, completed its 10th year of island surveys in June 1984. (Table 1).

Attention was also given to colonies discovered in the Hampton-Newport News peninsula area. Least Tern (Table 2), Common Tern, and Black Skimmer (Table 3) nesting was monitored for these areas of special interest due to their precarious locations.

The Grand View Beach area supports Virginia's largest Least Tern colony. Vehicular traffic is not allowed, although the beach area is prime habitat for human recreation. A specific problem of the Grand View Beach ternery is that it is open to intrusion of dogs and their owners. This type of disturbance is detrimental to the colony during all phases of the nesting cycle. A partial solution to the problem of human interference is the posting of sings along the periphery of the colony to indicate the bird nesting area and to inform the public of the consequences of prolonged visits to the colony.

Ten signs were posted around the colony during 1983 and 1984 nesting season and removed at the end of each breeding season.

Ideally, the entire area should be fenced and patrolled during the breeding season, but this is not necessary at this time. If the area should be further developed into a widely used recreation area than the implementation of such a program would be necessary to protect the colony.

Three pairs of Piping Plover (two nests with young - four young banded) and one pair of Oystercatchers (with nest and later one dead young found in mid June) were also observed here.

Common Terns and Black Skimmers were found nesting on the South end of the Hampton Roads Tunnel. This colony was visited twice each year. It is apparently a very successful colony. With limited vehicular traffic and essentially no land predators, the area is ideal for nesting.

A special study on the breeding behavior of the Royal Tern was conducted on Metompkin Island and details can be found in Ihle, 1984. Some conclusions of the study are as follows: 1) Intermediate fish sizes fed to young maximize the feeding efficiency ratio for parent Royal Terns. 2) Courtship feeding may act as a predictor of the males' performance in feeding young. 3) The creche-joining age is influenced by human disturbance and is older than two-three days. 4) Royal Terns may benefit from delayed creche formation. 5) Royal Terns have evolved several behavioral adaptations towards reducing food parasitism in the creche. 6) On Metompkin Island, due to their predatory behavior and competitive interaction, Herring Gulls are a serious threat to the diversity of smaller seabird species which share the nesting island with the large aggressive gulls.

A severe thunderstorm with winds in access of 75 mph passed through the eastern part of Virginia on May 8, 1974. Colonies of Great Blue Herons on the James, York, and Rappahannock Rivers suffered high nest and nestling losses. The heron colony located in Newport News Park, York County, lost 13 trees, 47 nests, and 27 young. A new Great Blue Heron colony was located in Goochland County. This colony constitutes the first confirmation of nesting Great Blue Heron west of the fall line. In spite of heavy spring winds and rain, inclement weather did not significantly affect nesting success in the barrier island colonies. Hatching success for two Metompkin rookeries was again reported to be greater than 95%.

Because of loss of bottomland habitat in use by Great Blue Herons for nesting, this species has been of particular concern among the colonial birds of the state. A survey of Great Blue Heron colonies was conducted in 1982 under another project. In 1983, a more complete survey was done under this project, resulting in the discovery of four additional colonies. Data for both 1982 and 1983 have been compiled and are indicated in Table 4 for comparative purposes.

The data shown in Table 4 indicate that colonies frequently change in size although no locations changed. Of particular interest is the substantial change in colony size at Mason Neck and Potomac Creek. Both of these colonies are reasonably close to an extremely large colony on Nanjemoy Creek in Maryland. This large colony may have the source of these additional pairs.

Of the 22 colonies located in 1982, 16 were visited on the ground for active nest counts and to characterize the vegetative structure of the colony. In 1983, 19 of 28 colonies were visited on the ground for thse purposes.

NESTING SUCCESS:

Nesting success was determined for a large sample of Great Blue Heron nests and for a smaller sample of nests in mixed heron colonies. Nesting success was monitored for seabirds and waders on Metompkin Island. Nests were monitored from egg laying through hatching, up until the young were 10-15 days of age. Monitoring of chicks greater than 10-15 days was avoided, since young were able to climb out of nests, resulting in inaccurate counts as well as unnecessary disturbance. Observations indicate a relatively synchronous hatch with high success (in spite of the inclement spring weather). No renesting attempts were observed. In general, colonial bird nesting success was outstanding in 1983 and 1984. Signs to protect critical colony areas were put up on the barrier islands in conjunction with The Nature Conservancy and the United States Fish and Wildlife Service.

COMPARISON OF CENSUS TECHNIQUES:

Data are being compiled on census comparisons and will be reported in a later report. Sixty-eight percent of the Great Blue Heron colonies were visited on the ground. Over 90 percent of the marsh and beach nesting colonies were visited for ground census counts.

Photographs were taken of several Great Blue Heron colonies for comparative purposes. The photographs were not of sufficient quality to provide information on the number of active nests. This technique will be repeated using better photographic equipment.

LITERATURE CITED:

Ihle, W.J.
1984. Aspects of Breeding Behavior of The Royal Tern (Sterna maxima) with particular emphasis on prey size selectivity. MS Thesis, College of William and Mary, Williamsburg, Virginia.

TARGET DATE FOR COMPLETION: July 8, 1985

STATUS OF PROGRESS: On Schedule. The target date will be continued under W-77-R-1.

SIGNIFICANT DEVIATIONS IN PROGRESS: None

RECOMMENDATIONS: Continue with remaining project plans

COST THIS SEGMENT:

Federal: $12,750. State: $4,250. Total: $17,000.

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DATE: August 1, 1984

APPROVED BY: Jack W. Raybourne
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TABLE 1
NESTING COLONIAL BIRD SUMMARY TOTALS - ALL ISLANDS

	1975	1976	1977	1978	1979	1980	1981	1982	1983
Green Heron	34	32	24	4	13	43	80	44	75
Little Blue	148	296	276	173	57	110	206	326	100
Cattle Egret	482	476	540	93	278	278	306	89	35
Great Egret	252	364	330	99	291	255	406	551	606
Snowy Egret	1192	2330	1196	245	364	332	722	776	376
Louisiana Heron	860	1364	956	293	497	382	700	1004	275
Black-Crowned Night Heron	1138	2780	2317	765	1143	836	840	1456	639
Yellow-Crowned Night Heron	46	108	78	68	105	74	113	75	119
Glossy Ibis	772	2534	628	320	481	389	705	964	578
White Ibis	--	--	4	--	6	2	2	2	2
Herring Gully	1320	3932	2950	936	1429	2785	2312	3772	3489
Laughing Gull	3720	9810	10920	9151	17027	4920	13068	18188	9466
Greater Black-Backed Gull	--	6	--	6	13	24	56	74	128
Gull-Billed Tern	2228	2000	1092	955	737	959	1122	970	712
Common Tern	5218	6710	8496	3605	3347	5003	5260	3001	5219
Least Tern	766	886	1013	429	407	795	1869	550	1381
Royal Tern	4800	1330	9360	5962	3866	7326	5738	5200	8500
Sandwich Tern	18	28	30	80	2	34	34	4	140
Caspian Tern	2	2	2	2	2	4	2	6	4
Black Skimmer	7520	8811	10708	4824	5577	6970	9598	6303	5809
Forester's Tern	--	436	294	6	139	96	234	166	292
Oyster Catcher	528	--	--	81	1239	746	1151	1184	1223
Piping Plover	78	--	--	42	121	68	88	129	125
Wilson's Plover	58	--	--	21	51	20	41	61	52
Nighthawk	--	--	--	--	15	5	5	5	2
Horned Lark	--	--	--	--	--	--	9	25	10

Table 2

Virginia's Least Tern population 1983-1984

Location	Total number of adults 1983	1984
Eastern Shore Barrier Islands	2,354	1,517
Craney Island	220	222
Grand View Beach	900	600
Total	3,474	2,339

Table 3

Common Tern and Black Skimmer

South end of Hampton Roads Tunnel

Species	Total number of adults 1983	1984
Common Tern	700	900
Black Skimmer	118	122
Total	818	1,022

Table 4. Location of great blue heron colonies in Virginia, 1982, 1983, 1984

Tropographic Quadrangle	Location on Quadrangle	County or City	Great Blue Heron			Great Egret		
			1982	1983	1984	1982	1983	1984
Knotts Island	Cedar Island	Virginia Beach	67**	71**	73	2	6	31
Pleasant Ridge	North Landing River	Virginia Beach	250**	202	287		15	
Moyock*	Northwest River	Chesapeake		21**	24		6	
Manry	Blackwater River	Sussex	18	25	21			
Yorktown	Newport News Park	York	355	368	335		5	8
Norge	Powhatan Swamp 1	James City	9	12	85			
Norge	Powhatan Swamp 2	James City	85	69	93			
Toano*	France Swamp	James City		60	81			
Clay Bank	Queen Creek	York County	19	23	22			
Clay Bank*	Catlett Islands	York County		25	18			
Gloucester	Fox Mill Run	Gloucester	40	35	38			
Ware Neck	Burkes Pond	Gloucester	140	133	165			
New Point Comfort	Peppers Creek	Mathews	230	380	190			
Franktown	Mattawoman Creek	Northampton	7**	15**	15			1
Nandua Creek	Butcher Creek	Accomac	5**	7**				
Tangier Island	Watts Island	Accomac	216**	197**	185			
Shackelford	Burnt Mill Creek	King and Queen	420	407	410			
Lancaster	Great Wicomico	Northumberland	60	54	68			
Montross	Cat Point Creek	Richmond	41	36	46			10
Passapatanzy	Potomac Creek	Stafford	175	392	410			
Indian Head	Mason Neck	Fairfax	147**	318**	252			
Beulahville	Herring Creek	King William	100	14				
Tunstall	Little Island	New Kent	54	41	37	11	13	15
Tunstall*	Big Island	New Kent		18**	32			
Richmond	Chickahominy River, Route 360	Hanover	78	37	48			
Roxbury	White Oak Swamp Chickahominy River	New Kent	280	266	300	30	6	18
Mount Landing*	Quioccasin Creek	Essex		14**	18			
Loretto*	Stillwater Creek	Essex		15**	2 (area cut)			
Hylas***	Tuckahoe Creek Big Swamp	Goochland			5 (first record west of fall line)			
Providence Forge***	Collins Run	New Kent County			65			
Beulahville***	Webb Creek	King Williams Co.			4			
Hog Island***	Jamestown Island "Goose Hill"	James City			19			
Lancaster***	Bush Mill Run	Northumberland			260			
Total Pairs	* New-1983 ** No ground visit *** New-1984		2796	3255	3593	43	51	82