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Colonial Bird Studies

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PERFORMANCE REPORT

STATE:	Virginia	PROJECT NO.:	W-74-R-1
PROJECT TYPE:	Research and/or Survey	STUDY NO.:	XXI-A
PROJECT TITLE:	Non-Game	JOBS NO.:	1, 2, 3
PERIOD COVERED:	February 1, 1983 - June 30, 1983		
STUDY TITLE:	Colonial Bird Studies		
A-1 OBJECTIVE:	To make a complete survey of colonial breeding birds in Virginia every year to detect changes in population numbers as well as population shifts.		
A-2 OBJECTIVE:	To sample nesting success in colonies of selected species each year.		
A-3 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 per cent 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.

Data for the complete survey are presently being tabulated and will be reported on in the next progress report.

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. (Figure 1.) 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 1 for comparative purposes.

The data shown in Table I 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 these 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 determined for 6 species of waders at the Northern Metomkin heronry (Fig 2, Table 2). 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. Results indicate a relatively synchronous hatch with high success (average for all species was 97.7%). No renesting attempts were observed. Of a total of 311 eggs, 9 were observed not to hatch and out of 302 total young, only 4 were found dead. No further analysis has been done due to small species sample sizes. Overall, the results at the Metomkin heronry indicate a very successful year for these colonial nesters. Nest samples were marked for several species in beach-nesting colonies. These studies were not continued when it became evident that studies appeared to be causing undue disturbance. In general, colonial bird nesting success was outstanding in 1983.

COMPARISON OF CENSUS TECHNIQUES:

Data are being compiled on census comparisons and will be reported later. As indicated above, 68 per cent of the great blue heron colonies were visited on the ground. Over 90 per cent 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.

TABLE 1. Location of great blue heron colonies in Virginia, 1982 and 1983.

Topographic Quadrangle	Location on Quadrangle	County or City	Great Blue Heron		Great Egret	
			1982	1983	1982	1983
Knotts Island	Cedar Island	Virginia Beach	67**	71**	2	6
Pleasant Ridge	North Landing River	Virginia Beach	250**	202		15
Moyock*	Northwest River	Chesapeake		21**		6
Manry	Blackwater River	Sussex	18	25		
Yorktown	Newport News Park	York	355	368		5
Norge	Powhatan Swamp 1	James City	9	12		
Norge	Powhatan Swamp 2	James City	85	69		
Toano*	France Swamp	James City		60		
Clay Bank	Queen Creek	York County	19	23		
Clay Bank*	Catlett Islands	York County		25		
Gloucester	Fox Mill Run	Gloucester	40	35		
Ware Neck	Burkes Pond	Gloucester	140	133		
New Point Comfort	Peppers Creek	Mathews	230	380		
Franktown	Mattawoman Creek	Northampton	7**	15**		
Nandua Creek	Butcher Creek	Accomac	5**	7**		
Tangier Island	Watts Island	Accomac	216**	197**		
Shackelford	Burnt Mill Creek	King and Queen	420	407		
Lancaster	Great Wicomico	Northumberland	60	54		
Montross	Cat Point Creek	Richmond	41	36		
Passapatanzy	Potomac Creek	Stafford	175	392		
Indian Head	Mason Neck	Fairfax	147**	318**		
Beulahville	Herring Creek	King William	100	14		
Tunstall	Little Island	New Kent	54	41	11	13
Tunstall*	Big Island	New Kent		18**		
Richmond	Chickahominy River, Route 360	Hanover	78	37		
Roxbury	White Oak Swamp Chickahominy River	New Kent	280	266	30	6
Mount Landing*	Quioccasin Creek	Essex		14**		
Loretto*	Stillwater Creek	Essex		15**		
Total Pairs			2796	3255	43	51

* Found in 1983

** Indicates colony was not visited on ground

TARGET DATE FOR COMPLETION:

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 $6,750.00 : State $2,250.00 : Total $9,000.00

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APPROVED BY: Jack W. Raybourne
Chief, Division of Game

R. H. Cross, Jr.
Executive Director

DATE: August , 1983

Figure 1.


DISTRIBUTION OF GREAT BLUE HERONS
IN VIRGINIA (1982)
LOUDOUN
FAIRFAX
PRINCE WILLIAM
147
FAUQUIER
STAFFORD
175
KING GEORGE
SPOTSYLVANIA
Potomac River
WESTMORELAND
41
CAROLINE
NORTHUMBERLAND
60
RICHMOND
ESSEX
LANCASTER
Rappahannock River
KING AND QUEEN
100
KING WILLIAM
MIDDLESEX
HANOVER
78
HENRICO
420
54
City of RICHMOND
NEW KENT
140
40
MATHEWS
GLOUCESTER
280
CHESTERFIELD
CHARLES CITY
JAMES CITY
YORK
York River
19
230
355
PRINCE GEORGE
85
9
SURRY
City of Newport News
City of Hampton
James River
DINWIDDIE
18
ISLE OF WIGHT
SUSSEX
City of VIRGINIA BEACH
250
67
BRUNSWICK
SOUTHAMPTON
City of SUFFOLK
City of CHESAPEAKE
GREENSVILLE
NORTH CAROLINA
Chesapeake Bay
216
ACCOMACK
5
7
NORTHAMPTON
Atlantic Ocean

Figure 2. Nesting Success of Six Wading Species on N. Metomkin Island

The two curves for each species represent the number of eggs (left) and then number of young (right) as they hatch for each week of the breeding season.

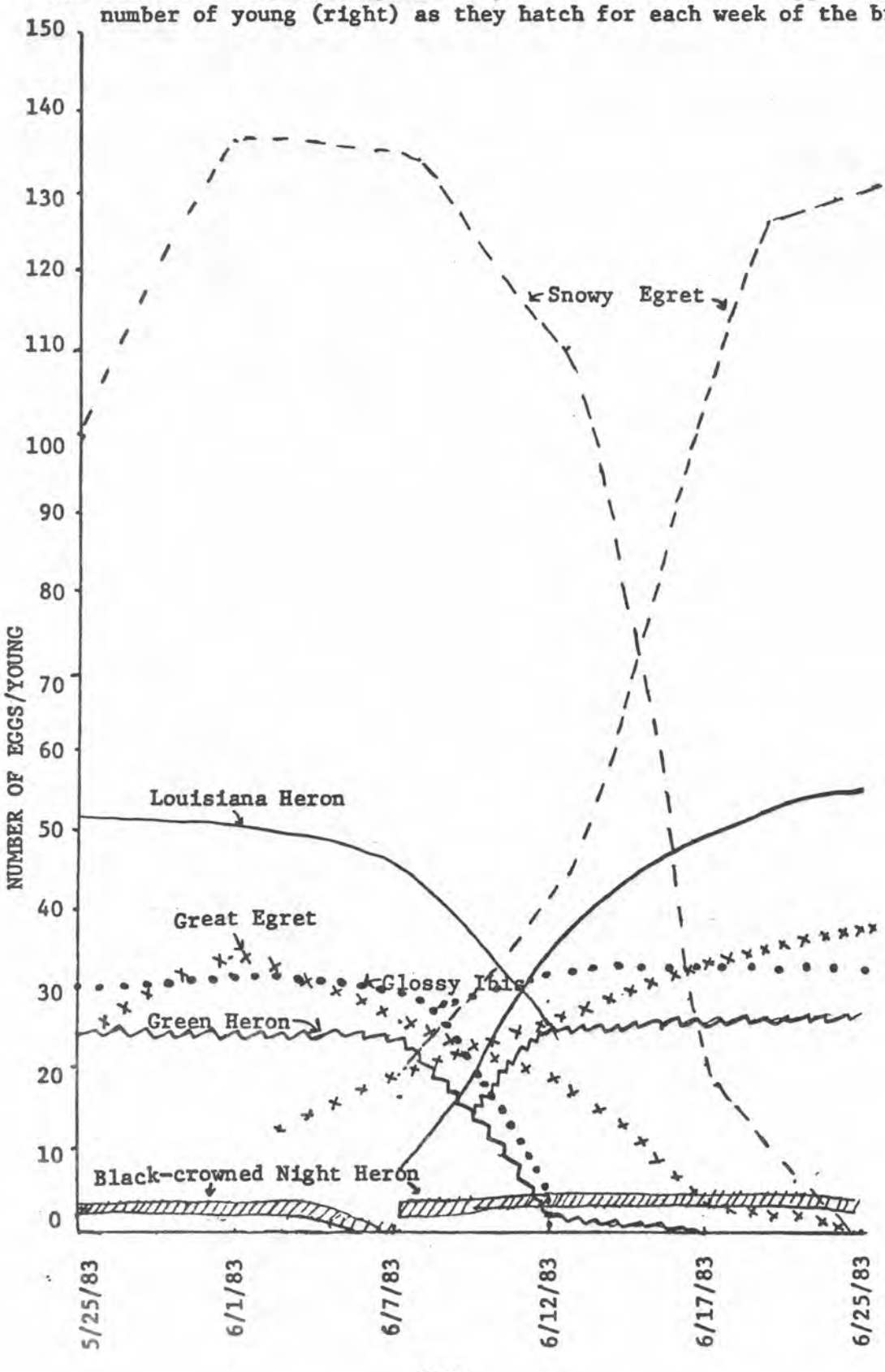

Table 2.

Nesting success results for 6 species at the Northern Metomkin heronry

Great Egret = 95%

Snowy Egret = 93.5%

Louisiana Heron = 98.2%

Glossy Ibis = 100%

Green Heron = 100%

Black-crowned Night Heron = 100%

Overall average nesting success for 6 species of the Northern Metomkin heronry = 97.7%.