1987

Osprey Population Studies

M. A. Byrd
The Center for Conservation Biology

K. Terwilliger

D. S. Bradshaw
The Center for Conservation Biology

PERFORMANCE REPORT

STATE:	VIRGINIA	PROJECT NO.	W-77-R-4
PROJECT TITLE:	NONGAME AND ENDANGERED SPECIES INVESTIGATIONS	STUDY NO.	VII
STUDY TITLE:	OSPREY POPULATION STUDIES	JOB NO.	A-D
PERIOD COVERED:	July 1, 1986 - June 30, 1987		

JOB VII-A OBJECTIVE: To make a complete aerial and ground survey of active osprey nests in Virginia to determine total breeding population size.

JOB VII-B OBJECTIVE: To measure hatching and fledging success of a sample of osprey nests representative of all of the major estuaries as well as the Eastern Shore of Virginia.

JOB VII-C OBJECTIVE: To coordinate all transfer of young ospreys from Virginia to other states involved in reintroduction programs for this species.

JOB VII-D OBJECTIVE: To make detailed studies at nests in areas of high pre-fledgling mortality and areas of low pre-fledgling mortality to determine causes of differential rates of survival.

SUMMARY:

A complete nesting survey was conducted in the state, resulting in the location of 1052 active nests. Detailed reproductive data were obtained on a sample of 377 nests from the west side of Chesapeake Bay. Production of this sample of nests was 1.16 young per active nest. Detailed studies of factors affecting productivity were continued. Chicks and eggs from areas with moderate brood reduction were collected for analysis.

JOB VII-A - To make a complete aerial and ground survey of active osprey nests in Virginia to determine total breeding population size.

Surveys by air and by boat were conducted during April and the first half of May to locate active osprey nests. An active nest was defined as one in which there was a bird in incubating position. Additional active nests were located during the course of bald eagle nesting surveys. Other nests were located as a result of reports received from interested parties.

Nest locations have been plotted on 7 1/2 minute topographic sheets and transferred to the Breeding Bird Atlas Project forms. The

Director of that program will transfer these data to the BOVA program.

Results of osprey surveys are shown below in Table 1.

Table 1. Active Osprey Nests in Virginia, 1987, as determined by Aerial and Boat Survey.

Area	No. of Active Nests
James - Chickahominy Rivers	52
York, Pamunkey, Mattaponi Rivers	67
Mobjack Bay - New Point Comfort	114
Fleets Bay - Great Wicomico River	65
Rappahannock River	176
Potomac River	204
Lower Tidewater	161
Eastern Shore	207
Inland Impoundments	6
Total	1052

This figure of 1052 breeding pairs is probably within 10 per cent of the total breeding population which has doubled since 1975. These numbers do not reflect the non-breeding adults which are in the population.

JOB VII-B - To measure hatching and fledging success of a sample of osprey nests representative of all of the major estuaries as well as the Eastern Shore of Virginia.

The productivity of ospreys in Virginia has been followed for the past 18 years. In 1985, all data for this time period were standardized on the basis of a new set of criteria and the data entered into the William and Mary computer.

Data for the breeding season of 1987 are incomplete at this time. Data for 1986 are presented in Table 2. For comparative purposes, data for 1983-1985 are included. Nest sample size is based only on

nests of known outcome, hence does not reflect total number of nests for any area. Nest sample size in 1984 is smaller because of heavy nest destruction by a severe storm.

For purposes of comparison, the state has been divided into a number of study areas as follows:

York River System - mouth of river to West Point

Mobjack Bay - York River to Piankatank River, including the latter

Rappahannock River - mouth of river to Leedstown

Fleets Bay - Fleets Bay to Great Wicomico River, including the latter

Potomac River - Little Wicomico River west to Nomini Bay

Table 2. Productivity of ospreys from a sample of nests on the western side of Chesapeake Bay 1983-1986.

Study Area	No. of Active Nests				No. of Young Fledged				No. of Young Fledged per Active Nest			
	1983	1984	1985	1986	1983	1984	1985	1986	1983	1984	1985	1986
York River	50	37	57	50	58	38	52	92	1.16	1.02	1.48	1.84
Mobjack Bay	92	54	102	93	122	81	96	99	1.33	1.50	0.94	1.06
Rappahannock River	96	73	98	109	125	85	106	107	1.09	1.16	1.08	0.98
Potomac River	77	53	84	77	105	50	87	100	1.36	0.94	1.04	1.29
Fleets Bay	45	16	48	48	49	17	39	40	1.09	1.06	0.81	0.83
Totals	360	233	389	377	459	271	380	438	1.28	1.16	0.98	1.16

Average production of fledglings per active nest as indicated is probably an over estimate of true fledging rates. Young have been counted as fledglings for this tabulation if they had reached 3 1/2 weeks of age at the time of last nest visitation.

The productivity of ospreys in 1986 showed slight improvement from 1985 although probably still below the level considered adequate for population maintenance.

JOB VII-C - To coordinate all transfer of young ospreys from Virginia to other states involved in reintroduction programs for this species.

Osprey nests were monitored for possible donor nests from which young could be taken for transfer to other states. Because of nesting asynchrony and logistical problems, it was difficult to provide all young requested. Five six-week old young were sent to West Virginia for hacking. Other states declined to come for a group of birds of this size.

JOB VII-D - To make detailed studies of nests in areas of high pre-fledgling mortality and areas of low pre-fledgling mortality to determine causes of differential rate of survival.

A comprehensive study was completed at the end of the summer 1986 which dealt with food delivery rates and chick growth. Complete data are available in McLean, Peter K., 1986. The Feeding Ecology of Chesapeake Bay ospreys and the Growth and Behavior of Their Young. M.A. Thesis, College of William and Mary, Williamsburg, Va., 83 pages.

Data derived in this study support the original contention that ospreys in Virginia suffer from a food stress problem which has lowered reproductive output. This stress manifests itself in a number of ways including sibling aggression, brood reduction, empty crops of young, non-sequential feeding of young, adult males feeding young, adult females hunting during the early nesting period, and food delivery rates which are significantly lower than in previous years.

A number of chicks have been observed which show abnormal feather development. This condition is characterized by no feather development on the body and fairly typical feather development on the wings and head. The basic cause for this anomaly has not been determined. It may reflect a contaminant problem or perhaps something as simple as total protein deficiency. One chick exhibiting this syndrome was collected for necropsy at the National Wildlife Diseases Laboratory and for subsequent tissue analysis at the Patuxent Wildlife Research Center. Ten eggs also were collected for contaminant analysis.

MANAGEMENT ACTIVITIES

The expanding osprey population in the state is creating a number of management problems such as ospreys nesting on power poles, docks, boats, and the chimneys of houses. Project personnel responded to a large number of inquiries and calls relative to problem nestings. Eight site visits were made to examine problem nests which were subsequently monitored throughout the nesting season.

Twelve additional osprey nesting platforms were erected by project personnel. Plans for nesting platforms were mailed to 23 individuals.

Six young ospreys found floating in the water by game wardens were fostered to adults in the wild where both were readily accepted.

TARGET DATE FOR COMPLETION: Continuing

STATUS OF PROGRESS: On Schedule

SIGNIFICANT DEVIATIONS IN PROGRESS: None

RECOMMENDATIONS: Continue Study

COST THIS SEGMENT: Federal 8,488 : State 2,829 Total 11,317

PREPARED BY: Mitchell A. Byrd
Karen Terwilliger
Dana Bradshaw

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

Robert W. Duncan
P.R. Coordinator

DATE: AUGUST 1, 1987