

1983

## Osprey Population Studies

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## PERFORMANCE REPORT

STATE:	<u>Virginia</u>	PROJECT NUMBER:	<u>W-74-R -1</u>
PROJECT TITLE:	<u>Non-Game</u>	STUDY NUMBER:	<u>XXI-C</u>
STUDY TITLE:	<u>Osprey Population Studies</u>	JOBS NUMBER:	<u>1,2,3</u>
PERIOD COVERED:	<u>February 1, 1982 - June 30, 1983</u>		
C-1 OBJECTIVE:	<u>To make a complete aerial and ground survey of active osprey nests in Virginia to determine total breeding population size.</u>		
C-2 OBJECTIVE:	<u>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.</u>		
C-3 OBJECTIVE:	<u>To coordinate all transfer of young ospreys from Virginia to other states involved in reintroduction programs for this species.</u>		

### SUMMARY:

Aerial and ground surveys to locate active osprey nests were conducted during April and May. The surveys resulted in the location of over 700 active nests of which 450 were monitored at least three times each to determine productivity. Eleven young were provided each of the states of Tennessee and Pennsylvania for use in hacking programs. Preliminary trapping of banded adults was begun to gather data on age structure and dispersal within the population.

### AERIAL AND GROUND SURVEYS:

Aerial surveys to locate active osprey nests were conducted on the Eastern Shore Peninsula of Virginia and in the lower Tidewater area including Back Bay during the last two weeks of April. A repeat flight was made during the middle of May. Previous studies of ospreys in the state have indicated that the peak of egg laying occurs about April 15 and that essentially all birds are incubating by May 10. Flights were conducted in accordance with that schedule.

Surveys of the western side of Chesapeake Bay were conducted by boat. About 90 per cent of the nests in this area are visible from a boat. Additional nests which could not be viewed from the water were located during the course of bald eagle nest surveys.

An active nest was defined as a nest on which there was a bird in incubating position. Each active nest was plotted on the appropriate 7-1/2 minute field topographic sheet. All nest locations have also been plotted

Data on the total number of nests are incomplete for the breeding season of 1983 which is still in progress. Preliminary data suggest a total population of 700-800 pairs. Data have also been tabulated on the type of structure on which each nest is located. Preliminary data indicate that over 90 per cent of all nests are located on man-made structures.

#### HATCHING AND FLEDGING SUCCESS:

Data on hatching and fledging success are still being tabulated as many pairs still have young in the nest. For purposes of comparison, the state has been divided into a number of study areas as follows:

Eastern Shore - Ocean side

Eastern Shore - Bay side

James-Chickahominy River Systems

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 Point to Great Wicomico River, including the latter

Potomac River - Little Wicomico River west to Potomac Creek

Data on productivity for each of these areas presently are being compiled. A total of 450 active nests was visited on the west side of Chesapeake Bay a minimum of three times each during the breeding season. Activity was noted on the first visit, success and status of young on subsequent visits.

Data have been compiled for the York River system from which young were removed for hatching in Tennessee (see below). The York River system contained 50 active nests of which 31 were successful and 19 were unsuccessful. Thus, 62 per cent of the nests were successful and 38 per cent unsuccessful. Production on this river was 58 known young with two additional successful nests with unknown number of young. Average production was 1.16 young per active nest based on the 58 known young. If the two additional nests contained at least the average production, young per active nest would increase to 1.21 young per active nest and 1.95 per productive nest. These figures compare respectively with 0.66 and 1.67 young in the 1971 when eggshell thinning was at its greatest point.

The removal of eleven young for transfer to Pennsylvania reduced the effective production rate to 0.99 young per active nest. The York River has one of the highest levels of productivity among the study areas.

Although data on productivity of the total sample of 450 nests have not been completely tabulated, it appears there was a relatively high loss of young between 3-1/2 weeks of age and 7 weeks of age. In some study areas the loss was quite substantial. The reasons for loss of older chicks was not clear but may have been a food stress situation. Total productivity data will appear in the next progress report.

#### TRANSFER OF YOUNG:

Eleven young each were collected from the York River and the New Point Comfort area for transfer to Pennsylvania and Tennessee for hacking purposes. Each state received eleven young of 5-5-1/2 weeks of age. Sites were selected for collection of young on the basis of preliminary data which indicated the two areas as having a high level of productivity.

#### ADULT TRAPPING:

The Chesapeake Bay Region supports one of the largest breeding populations of ospreys in the world. Between 1970 and 1980, a total of 6,031 osprey nestlings were banded in Virginia and Maryland. An additional 1,416 were banded between 1955-1969.

The survivors of those banded young are now individuals of known age and origin, thus providing access to considerable data for studies of population dynamics, depending on the number which can be trapped as adults.

A large portion of the nests are easily accessible. Trapping of the breeding adults permits a measurement of fledging to breeding dispersal, an estimate of annual survivorship and ages at first breeding, and investigation of sexual differences in these parameters.

Annual survivorship is a difficult variable to measure directly and this population will allow two approaches: A direct sample of breeding survivors, and eventually a classic composite dynamic life table compiled from band recoveries. Many authorities think this second approach is seriously biased because young, inexperienced birds tend to die in ways that render them more likely to be recovered. A third survivorship estimate might become available if follow-up checks of the trapped sample (which will receive color bands) are possible.

Preliminary trapping was begun in the summer on the western side of Chesapeake Bay. Adults which had been banded as nestlings were located by visual search for bands. Once such breeding adults were located, they were trapped on the nest using a conventional noose carpet. A total of 50 banded adults was captured. Data presently are being analyzed and will be reported upon in the next annual report.

TARGET DATE FOR COMPLETION: Continuing

STATUS OF PROGRESS: On Schedule - Will be reported under W-77-R in the future.

SIGNIFICANT DEVIATIONS IN PROGRESS: None

RECOMMENDATIONS: Continue Study

COST THIS SEGMENT: Federal \$3,750.00 : State \$1,250.00 Total \$5,000.00 :

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DATE: August 1, 1983

R. H. Cross, Jr.  
Executive Director