

1978

Bald Eagle Investigations

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PERFORMANCE REPORT

STATE: Virginia

PROJECT NUMBER: E-3

PROJECT TYPE: Research and/or Inventory

STUDY NUMBER: VI

PROJECT TITLE: Endangered Species Investigations

JOB NUMBER: VI-E1, VI-E2,
VI-E3

PERIOD COVERED: July 1, 1977 to June 30, 1978

JOB VI-E1

OBJECTIVE: To obtain a winter inventory of Bald Eagle numbers and determine range of these birds in Virginia.

JOB VI-E2

OBJECTIVE: To determine hatching and rearing success of Bald Eagles in Virginia.

JOB VI-E3

OBJECTIVE: To develop and utilize techniques to introduce Bald Eagles into formerly occupied habitat through hacking techniques and to introduce captivity reared bald eagle young into foster parent nests.

SUMMARY:

Aerial surveys resulted in the location of 37 active bald eagle nests in which 18 fledglings were produced for an average production of 0.49 young per active nest and 1.29 young per productive nest. Fifteen of the known 18 young were banded and marked with colored vinyl streamers on the bands. In addition, 4 fledglings also were marked with numbered, white patagial markers. Two manipulations of young were made successfully. Habitat analyses of active bald eagle nesting sites were continued and an eagle management plan for the Caledon State Park was completed.

SURVEYS:

Aerial surveys were conducted during March, April, May, and early June to locate active bald eagle nests and to determine fate of each nest. Several flights were made to follow the fate of young in manipulation and transplant experiments.

Although reports of wintering eagles on some of the inland lakes were received, these areas were not covered by aerial survey in the breeding season of 1978. Intensive survey of inland lakes in 1977 failed to reveal any evidence of nesting eagles.

Surveys in the Tidewater area resulted in the location of 37 active nests. Location by county and the fate of each nest are indicated in Table 1. All nest locations were plotted on 7-1/2 minute series topographic sheets.

TABLE 1. LOCATION AND PRODUCTIVITY OF ACTIVE BALD EAGLE
NESTS IN VIRGINIA, 1978

COUNTY	(NEST NO.)	REPRODUCTIVE SUCCESS	NO. OF YOUNG
Accomac	70-1	Unproductive	0 ¹
Essex	78-1	Productive	1
Fairfax	78-1	Unproductive	0 ²
James City	78-1	Unproductive	0
King George	75-1	Unproductive	0
	75-2	Unproductive	0
	74-4	Productive	1
	78-1	Unproductive	0
	78-2	Unproductive	0
	78-3	Unproductive	0
	78-4	Unproductive	0
King William	71-1	Unproductive	0
	77-1	Unproductive	0
Lancaster	75-1	Unproductive	0
	75-2	Unproductive	0
Mathews	75-1	Unproductive	0 ³
Middlesex	77-1	Productive	2
	78-1	Productive	1
	78-2	Unproductive	0
New Kent	77-1	Unproductive	0
	78-1	Unproductive	0
	74-1	Unproductive	0
Northumberland	70-1	Productive	2
	75-2	Unproductive	0
	78-1	Unproductive	0
Richmond	70-1	Productive	2
	78-1	Productive	1
	78-2	Productive	1
	74-1	Productive	1
Stafford	75-1	Productive	1
Westmoreland	77-3	Unproductive	0
	71-1	Productive	1
	77-1	Unproductive	0
	71-2	Productive	1 ⁴
	73-4	Unproductive	0
	78-1	Productive	2

TABLE 1. LOCATION AND PRODUCTIVITY OF ACTIVE BALD EAGLE
NESTS IN VIRGINIA, 1978

COUNTY	(NEST NO.)	REPRODUCTIVE SUCCESS	NO. OF YOUNG
York	78-1	Productive	5 1

Totals

37 Active Nests
14 Productive Nests
23 Unproductive Nests
18 Fledglings

1

Two young hatched but were killed in nest by undetermined predator.

2

Nest received one egg produced by captive bird at the Patuxent Wildlife Research Center. The natural egg was collected and incubated at Patuxent. Chick subsequently hatched in the laboratory from natural egg but died of undetermined causes.

3

Adults were observed at nest site from December through April but were never seen positively to be incubating.

4

Single young from 71-2 was introduced at eight weeks of age into King George 74-4. Two young of three weeks of age from the Patuxent Wildlife Research Center were introduced into Westmoreland 71-2. All three manipulated young apparently fledged successfully. The two captivity-hatched chicks are not included in the above production totals.

5

Young in very weak condition found on ground some distance from nest and delivered to Patuxent Wildlife Research Center for rehabilitation.

On the 37 active nests, 14 were productive and 23 were unproductive for a success rate of 38 per cent. Total production was 18 young or an average of 0.49 young per active nest and 1.29 young per productive nest.

These figures compare with a 39 per cent success rate in 1977 and a production of 0.54 young per active nest and 1.38 young per productive nest. This production in 1977 represented an increase from a total of 6 young in 1976.

It appears, therefore, that productivity has remained essentially the same for both 1977 and 1978. At least three hatched young were lost in 1978 and aerial observations revealed three additional nests on which females appeared to be brooding but which subsequently were abandoned. It is believed that the young in these nests may have been lost during severe storms in the latter part of April. One active nest was blown down during these storms.

There were a number of nest relocations between 1977 and 1978 and at least four pair on the Potomac River could not be located in 1978. Several nests in previously unoccupied areas were located and several nests which were unoccupied in 1977 were reoccupied in 1978. The total of 37 active nests probably reflects these various changes.

In view of a probable requirement of 1.0 young per active nest to sustain a population, it is likely that little or no increase in the breeding population will take place in the immediate future. The slight increase in total nests between 1977 and 1978 probably reflects much more intensive survey coverage in 1978.

BANDING AND MARKING PROGRAM

An attempt was made to band and color mark all young eaglets in Virginia (see separate report). Ownership was determined for all land on which an active nest was located. Where permission of the landowner was granted, each nest was visited regardless of its success or failure. Permission was denied to visit two nests and one nest was located after the efforts of the banding team were terminated.

A total of fifteen young was banded with Fish and Wildlife Service aluminum bands with blue vinyl tags attached. In addition, 2 young which were introduced into nest We-71-2 were marked in the same way. Three young on the Potomac River (Nests K.G. 74-4, We-71-1, and We 71-2) were also marked with white, numbered patagial markers on each wing. The young from We-71-2 was moved to K.G. 74-4 (see section on transplants).

Patagial markers were applied to four young in an attempt to utilize a marker of high visibility. It was not felt advisable to use this technique on an entire cohort of young until it could be further evaluated. Two birds with a patagial marker were observed after they had fledged. Both birds were observed about one-quarter of a mile from the nest from which they fledged. The patagial markers were in good condition and the numbers easily read.

Photographs were taken of each nest visited. The species of the nest tree was recorded as well as measurements of the tree and nest. Prey remains were collected in and under nests for later identification.

Juveniles are being monitored during the summer for both colored leg bands and patagial markers to try to gain information on movements and post nesting dispersal. Particular efforts are being made during the summer at the site of the proposed Caledon State Park where the only known late summer concentration of adult and juvenile eagles exists in the state. These efforts will be continued throughout the winter.

EGG AND YOUNG TRANSPLANTS

Two eggs from a captive bald eagle at the Patuxent Wildlife Research Center were introduced into a nest at the Mason's Neck National Wildlife Refuge. A successful egg transplant was made in this nest in 1977. The introduction was unsuccessful as apparently no adult bird returned to incubate. The single natural egg was collected and subsequently hatched at the Patuxent Wildlife Research Center. The chick later died of undetermined causes. In view of the very high contaminant levels in eggs collected from this nest in 1977, it appears unlikely that the 1978 egg was produced by the same female.

One transplant was made of young from the Patuxent Wildlife Research Center to an active nest in the wild. Two young, three weeks of age, produced from a second clutch of eggs were introduced into a nest in Westmoreland County nest which contained an eight-week-old young. This young was transferred to a nest in King George County. Both the introduced young and the natural young fledged successfully. Both birds bore patagial markers which have been easily read in the field. The young which were introduced into the Westmoreland County nest were accepted by the adults and had reached eight weeks of age at the time of preparation of this report.

The young and egg transplant program has been an activity of the Patuxent Wildlife Research Center with cooperation through this project. Future activities under the program will be determined by that agency. It would appear, however, that transfer of young is a more desirable procedure than transfer of eggs, given approximate synchrony of recipient nests with the nests of captive birds.

HABITAT ANALYSIS

An analysis was begun of each bald eagle nest site, utilizing the attached data form (Figure 1). Ten sites were completed in 1977-1978. The additional 27 active sites located in the 1978 survey will be completed in 1978-1979. It is also intended that known inactive sites will be analyzed in the same way.

Data derived in these analyses will be utilized in developing management plans for each active bald eagle nest site in the state. Data also will serve as a developing cooperative agreements with landowners on whose property nest sites are located.

BEHAVIORAL STUDIES

Extensive observations were made on eagle foraging behavior and postfledging behavior at the only known summer concentration site in the state. All foraging behavior data were tabulated on a special form (Figure 2). At least 14 eagles of various age groups were utilizing the summering area in mid-July. This summering

area is located on the site of the proposed Caledon State Park in King George County. The master plan for the development of this park currently is being prepared.

Although behavioral studies are part of the bald eagle project, the data collected at Caledon have been incorporated into a management plan for eagles at the Caledon area in order to minimize disturbance as a result of park development. A special report has been submitted to the Virginia Division of State Parks.

HACKING OF EAGLES

A special amendment to the bald eagle project to include hacking was submitted during the Fiscal Year. Because of logistical problems, a hacking program was not initiated this year. Young eagles which would have been used in the hacking program were introduced directly into nests (see section on egg and young transplants).

SEASONAL INVENTORY

Records were compiled of sightings of eagles at all seasons throughout the state. Records were solicited from individuals and organizations likely to make eagle observations.

These records indicate a relatively large number of subadults individuals in the state particularly during the winter. A mid-winter survey by boat of the James River revealed nine subadult and four adult eagles. Since there are no longer active eagle nests on the James River, this estuary appears regularly to attract a number of wintering birds, possibly from other states. In view of the high level of contamination of the James River with Kepone, it appears highly desirable to learn more about movements of birds within the state as well as about movements of birds into and out of the state. The latter objective will require a coordinated program of marking birds in breeding areas from which dispersal to Virginia is likely to occur.

CONTAMINANT ANALYSES

No eggs were acquired during the fiscal year. One injured eagle was found in Stafford County on December 1, 1977, and delivered to the Patuxent Wildlife Research Center. Examination revealed that the bird had been shot and that it subsequently died of hepatic necrosis.

TARGET DATE FOR COMPLETION: June 30, 1981

STATUS OF PROGRESS: On Schedule

SIGNIFICANT DEVIATIONS IN PROGRESS: None

RECOMMENDATIONS: Continue with Remaining Projects Plans

COST THIS SEGMENT: FEDERAL: STATE: TOTAL:

PREPARED BY: Mitchell A. Byrd

APPROVED BY: R. H. Cross, Jr.

DATE: July 15, 1978

Chief, Division of Game

Chester F. Phelps
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