

1986

Bald Eagle Investigations

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PERFORMANCE REPORT

STATE: VIRGINIA PROJECT NO.: W-77-R-3
PROJECT TYPE: Research and/or Survey STUDY NO.: I
PROJECT TITLE: NONGAME AND ENDANGERED JOB NOS.: I-A,B,C,
SPECIES INVESTIGATIONS D,E,F

STUDY TITLE: BALD EAGLE INVESTIGATIONS

JOB TITLE: BALD EAGLE INVESTIGATIONS

PERIOD COVERED: July 1, 1985 - June 30, 1986

JOB I-A
OBJECTIVE: To make a winter inventory of bald eagle numbers including age composition of this population.

JOB I-B
OBJECTIVE: To determine hatching and fledging success of eagles in Virginia.

JOB I-C
OBJECTIVE: To determine post nesting dispersal of young eagles and movements of summering birds through use of radio- telemetry.

JOB I-D
OBJECTIVE: To band and color-mark a major proportion of each year's cohort of young eagles.

JOB I-E
OBJECTIVE: To locate and regularly monitor concentrations of eagles in the state.

JOB I-F
OBJECTIVE: To monitor Bald Eagle populations at the Caledon State Park.

SUMMARY:

Aerial and ground surveys resulted in the location of 66 active bald eagle nests and two additional occupied territories. A total of 84 young hatched, of which 83 reached fledgling age. This resulted in a production of 1.26 fledglings per active nest and 1.93 fledglings per productive nest.

Sixty-five of 83 eaglets which reached fledgling age were banded and also marked with white plastic bands with alpha-numeric codes.

Shoreline surveys were conducted regularly of three summering populations, one each on the James, Potomac, and Rappahannock Rivers.

An aerial mid-winter survey of eagles was conducted in January, resulting in the location of 287 birds. The mid-winter population consisted of 152 adults and 135 immatures.

Two eight-week old eagles were transferred to North Carolina for use in that state's hacking program.

HATCHING AND FLEDGING SUCCESS

Aerial surveys were conducted during March, April and May to locate active nests and to monitor the fate of each located nest. Surveys covered the entire Tidewater section of the state, Kerr Reservoir, and Lake Anna.

Aerial surveys resulted in the location of 66 active nests. In addition, there were two territories with pairs which apparently failed to produce eggs. All active nest locations were plotted on 7 1/2 minute topographic sheets. The location and fate of each active nest - is shown in Table 1.

Table 1. Location and Productivity of Active Bald Eagle Nests in Virginia, 1986.

County	Nest Number	Reproductive Success	
		Number of Young Hatched	Number of Young Fledged
Caroline	Ca.86-01	0	0
Charles City	C.C.85-01	2	2
Charles City	C.C.85-02	2	2
Essex	Es.84-01	3	3
Fairfax	F.F.80-01	2	2
Gloucester	Gl.83-01	2	2
Gloucester	Gl.84-01	3	3 ¹
Halifax	Hf.85-01	0	0
Henrico	He.83-01	2	2
Isle of Wight	I.W.86-01	1	1
James City	J.C.83-01	0	0
James City	J.C.82-01(J.C.84-01)	3	3
James City	J.C.86-01	2	2
James City	J.C.86-02	0	0
King George	K.G.82-02	1	1
King George	K.G.82-03	2	2
King George	K.G.83-02	0	0
King George	K.G.84-02	2	2
King George	K.G.85-04	3	3 ²
King George	K.G.86-01	3	3
King George	K.G.86-02	0	0
King William	K.W.79-01	3	3
King William	K.W.80-01	3	3
King William	K.W.85-01	2	2
Lancaster	La.86-01	0	0
Middlesex	Mi.77-01	0	0
Middlesex	Mi.84-01	2	2
Middlesex	Mi.84-02	1	1

Table 1 (cont.)

Middlesex	Mi.85-01	1	1
Middlesex	Mi.86-01	2	2
Northumberland	Nd.86-01	0	0
Northumberland	Nd.86-02	0	0
New Kent	N.K.79-04	0	0
New Kent	N.K.86-01	2	2
New Kent	N.K.83-01(N.K.85-02)	0	0
Northampton	Nt.82-01	1	1
Northampton	Nt.86-01	1	1
Prince George	P.G.61-01	2	2
Prince George	P.G.86-01	0	0
Prince William	P.W.83-01	1	1
Richmond	Ri.84-02	2	2
Richmond	Ri.84-03	2	1
Richmond	Ri.85-02	2	2
Richmond	Ri.85-03	0	0
Richmond	Ri.86-01	0	0
Richmond	Ri.86-02	3	3
Richmond	Ri.86-03	0	0
Richmond	Ri.86-04	0	0
Stafford	St.82-01(St.86-02)	1	1
Stafford	St.84-02	0	0
Stafford	St.85-01	0	0 ³
Stafford	St.86-01	0	0
Suffolk	Sk.86-01	1	1
Surry	Su.81-01	2	2
Surry	Su.82-01	2	2
Surry	Su.84-01	0	0
Westmoreland	We.81-01	3	3
Westmoreland	We.83-01	1	1
Westmoreland	We.83-02	0	0
Westmoreland	We.83-03	2	2
Westmoreland	We.83-04	2	2
Westmoreland	We.84-01	1	1
Westmoreland	We.84-04	2	2
Westmoreland	We.86-01	2	2
Westmoreland	We.86-02	0	0
York	Yk.86-01	2	2
Totals	66	84	83

Footnotes:

1. One young transferred to North Carolina
2. One young transferred to North Carolina
3. Three eggs collected

Of 66 active nests, 43 were successful and 23 were unsuccessful. Total number of young known to have been hatched was 84 of which one was lost prior to fledging. Two pre-fledglings were sent to North Carolina for hacking and successfully fledged there. These two young, therefore, are included in the number of fledglings in Table 1. Eighty three young apparently reached fledgling age for an average of

1.26 fledglings per active nest. This production rate is almost identical to that (1.29) of 1985.

The number of fledglings per productive nest was 1.93, the highest recorded in 10 years. Overall production per active nest did not reflect this rate because of the 40 percent nest failure on the Potomac River. Of the 23 nests which failed, nine were located on this river. Conversely, production on the Maryland side of the Potomac River was excellent.

A total of nine pairs produced three young each compared with ten pairs in 1985. No pairs with three young are known to have lost young prior to their fledging.

Data on productivity trends for the period, 1977-1986, are summarized in Table 2.

Table 2. Bald Eagle Productivity in Virginia for the Period 1977-1986.

Year	Total Active Nests	Total Prod. Nests	Total Unprod. Nests	Percent Nest Prod.	Total Young Fledged	Fledglings Productive Nest	Fledglings Per Active Nest
1977	33	13	20	39	18	1.38	0.54
1978	37	14	23	38	18	1.29	0.54
1979	33	15	18	45	20	1.33	0.61
1980	35	23	12	66	35	1.52	1.00
1981	39	27	12	69	40	1.48	1.02
1982	45	28	17	62	41	1.52	0.93
1983	52	31	21	60	51	1.68	0.98
1984	60	34	26	57	58	1.68	0.97
1985	65	47	18	72	84	1.79	1.29
1986	66	43	23	65	83	1.93	1.26

WINTER SURVEYS

Personnel on the project, in conjunction with cooperators, participated in the mid-winter survey sponsored by the National Wildlife Federation. All major tributaries of the state were covered by aerial survey by project personnel. Ground parties participated in

coverage of the Piankatank and Potomac Rivers, and the inland impoundments. Data on the mid-winter survey are shown in Table 3.

Table 3. Bald Eagles observed during Mid-winter survey, January, 1985.

Area	Adults	Immatures	Total Eagles
James-Chickahominy River	36	34	70
Rappahannock River	58	54	112
Potomac River	37	34	71
York, Pamunkey, Mattaponi Rivers	8	1	9
Eastern Shore, Chesapeake, Norfolk, Va. beach	5	3	8
Inland Impoundments	8	9	17
Totals	152	135	287

The mid-winter count of bald eagles in Virginia was the highest since the inception of this survey. The observed percentage of adults and immatures was 57 and 43 respectively. In view of the lower level of visibility of immatures, both the number and percentage of this group likely are higher. The mid-winter surveys in conjunction with summer censuses are further defining those areas of significant importance to these population groups. Both the Rappahannock River and James River are emerging as areas of significant importance for wintering and summering eagles.

SUMMERING CONCENTRATIONS

Potomac River

The eagle concentration along the Potomac River in the region of the Caledon Natural Area was monitored for a number of years prior to the formal opening of the Natural Area in May.

In the summer of 1986, this population has been censused several times by project personnel and by personnel from the Division of Parks. An evaluation of possible impacts of Natural Area use on the eagle population will be made at the end of the summer season. Field trips by Parks Division naturalists also are being monitored for possible impact on the eagle population.

Rappahannock River

A population of eagles on the Rappahannock River between Lands End and Fones Cliffs has been censused during the summer. The size of this summering population has not previously been documented. Results of these censuses will be included in the next annual report.

James River

The James River summer eagle population reached peak numbers in the summer of 1986. Birds began to arrive at the roost of this concentration in April. The shoreline census adjacent to the roost was censused regularly from May 1 to through July. The peak count along the shoreline census route was 72 eagles on July 8.

On the basis of shoreline and roost counts, this summering population is estimated to number 100-125 eagles at the peak period of concentration.

This eagle population is located on the river in an area of intensive agricultural use. Corn is a significant crop of the area. In view of recent eagle mortalities as a result of carbofuran poisoning, this population should be monitored as extensively as possible.

RADIO-TELEMETRY STUDIES

No studies were conducted during the reporting period. Ten days were spent at known concentration areas during the winter to monitor for telemetered birds hatched in other states. No birds with radios were located.

CONTAMINANT ANALYSIS

Three unhatched eggs were collected from one nest on the Potomac River. Analysis of these eggs has not been completed.

BANDING AND MARKING PROGRAM

In collaboration with the Raptor Information Center, National Wildlife Federation, banding and color-marking activities were conducted. All eaglets were banded with Fish and Wildlife Service aluminum bands and white plastic bands with alpha-numeric codes. Of 83 young which reached fledgling age, 65 (78.3 percent) were banded. More complete data on banding activities appears in a separate report.

SUMMARY:

The tenth field season of the bald eagle banding project was completed on June 14, 1986. Between May 2 and June 14, 50 of the 66 (76%) active bald eagle nests in Virginia were visited and 65 of the 83 (78%) nestlings were banded. In addition to the U.S. Fish and Wildlife Service aluminum bands, 63 of the 65 banded nestlings were color marked with white plastic tarsal bands. During the ten years of the project, 376 eaglets have been banded in Virginia — approximately 80% of the young fledged.

Nest visits continued to increase the accuracy of nest success and productivity information supplied by the aerial observers. Preliminary results show a slight decrease in nest success and productivity for Virginia's breeding bald eagles (see Findings below). The field research team continued to collect prey remains at nest sites and to recover addled eggs and eggshell fragments in the nests.

Attached are copies of the 1985 project progress report and the preliminary results of the field research and productivity information for the 1986 breeding season. A detailed progress report will be submitted to the Game Commission in September, 1986.

TECHNIQUES USED:

On July 29, 1985, thank you letters were sent to each landowner in Virginia notifying them of the results of the bald eagle nest(s) visited on their property. A photograph of an eaglet in a nest accompanied each letter. Prey remains collected at nest sites in 1985 were identified to species and recorded. Two addled eggs collected from Virginia nests were submitted to the U.S. Fish and Wildlife Service in Patuxent, Maryland for eggshell thickness measurements and contaminant analysis. A detailed progress report was completed and submitted to the Game Commission in October 1985.

February - April 1986 bald eagle nest flight survey information was compiled and letters were sent to landowners requesting permission

to visit nests on their property. Follow-up phone calls were made when necessary. From May 2 - June 14, 1986 the field research team visited each active nest. Each nest tree was climbed, and in successful nests, the young were banded. Nest and nest tree measurements and observations of possible disturbance were recorded, the nest lining was searched for evidence of eggs or eggshell fragments, prey remains were collected in the nest or on the ground, and habitat changes were noted on topographic maps. All active nests were visited except when the landowner denied permission, the nest tree was known to be dead and too dangerous to climb, or the nest could not be located after a lengthy ground search. On June 20, 1986 thank you letters and eaglet photographs were sent to each cooperating landowner.

On May 30, the field research team assisted the Game Commission in the translocation of two nestlings from Virginia for release at Mattamuskeet NWR, North Carolina. The team identified appropriate three-chick nests, provided landowner information, removed young from the nests, and assisted in transporting the eaglets.

Techniques and tasks in addition to those listed above included the reporting of adult and nestling mortality, identifying banded adults at nest sites, and recording all recoveries and sightings of banded and color-marked eagles. As in past years, this information will be included in the 1986 progress report.

FINDINGS:

Occupied nests were located in 25 Virginia counties, an increase of three counties over 1985. Occupied nests increased slightly from 65 in 1985 to 68 in 1986. Nest success (63%) and productivity (1.2 young/occupied nest), however, were slightly down from 1985, with one less young (83) fledged in 1986. Five fewer nests (50) were visited this year, primarily due to difficulties of locating several new but abandoned nests.

Of the 311 eaglets banded in Virginia (excluding this year's 65 banded and only recently fledged young), 30 have been sighted or recovered: 3 outside the Chesapeake Bay region (Maine [1], South Carolina [2]) and 27 within the Bay region. This is a recovery rate of 9.6%.

RECOMMENDATIONS:

The Institute for Wildlife Research recommends that a thorough analysis and reporting of the ten years of banding project data, including detailed management and future research recommendations, be completed before the banding of bald eagle nestlings is continued. This analysis will help to guide the Game Commission to efficiently direct their limited personnel and financial resources to best manage and protect this endangered species.

TRANSLOCATION AND RELOCATION

No eagles were moved into or within the state. One eight-week old eagle was removed from each of two, three young nests and flown to North Carolina for use in that state's bald eagle reintroduction program. The donor nests were located in Gloucester and King George Counties.

TARGET DATE FOR COMPLETION: Continuing

STATUS OF PROGRESS: On Schedule

SIGNIFICANT DEVIATIONS IN PROGRESS: None

RECOMMENDATIONS: Continue study

COST THIS SEGMENT: Federal \$40,002.00 State \$13,334.00
Total \$53,336.00

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