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Breeding Status of Bald Eagle in New Jersey

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Introduction

The Bald Eagle suffered serious population declines in New Jersey in the 1950's and 1960's (McLaughlin 1964). Twenty-two pairs were known to nest prior to 1960, and by 1970 the population had dwindled to just one nest (Holstrum 1986, Niles 1984). The accumulation of chlorinated hydrocarbons, particularly DDT, was the major factor in the decline (Wiemeyer *et al.* 1984).

From 1976 to 1982, the single pair in Bear Swamp, Cumberland County failed to rear young. In 1982, a single egg was removed, and a captive-bred chick from the USFWS Patuxent Wildlife Research Center was placed in the nest. Since then, we have successfully fostered a total of 12 chicks into the nest, eleven of which fledged (Niles 1989a). In order to augment natural production, a hacking project was started in 1983 (Niles *et al.* 1984). With birds taken from nests in Manitoba, we have successfully released 56 eagles into the Dividing Creek area on Delaware Bay. The project was completed in 1988, but in 1989 we began a new hacking project to continue the release of birds orphaned in Manitoba through either nest or adult destruction (Niles 1989b). We have released a total of four birds from a site located in an historic nesting area on the Atlantic coast.

In 1989 we found four pairs of eagles regularly using drainages on the Atlantic and Delaware Bay coasts (Niles 1989a). Two new nests were located, one in Cape May County and one in Salem County, but no additional production was found. The goal of the eagle restoration project is ten nests.

Methods

The search for nesting pairs starts in December and January and continues until July. We review all reports of eagles from previous seasons to determine potential locations. Individuals sighting eagles are interviewed to determine authenticity and more precise locations. We search all locations from an aircraft in January, and ground-search if no nests are located. Once a nest is located, we determine the owner of the nest site property, who is visited and asked to cooperate in the protection of the nest. No restrictions are placed on normal farming activities, but visits are kept to a minimum and limited to the owner and Endangered and Nongame Species Program personnel or assigned volunteers. Activities are restricted in this way from January to July.

Occupied nests are monitored using binoculars and/or spotting scopes from a distance of at least 500 meters. Observers

note the beginning of incubation, egg hatching, fledging and any other important events in or around the nest. Observations are summarized and submitted weekly.

We study intensively all new nests to determine the habitats important to the newly fledged birds. Budget and time permitting, eight-week young in nests are outfitted with a backpack transmitter weighing about 24 grams. The harness for the backpack is made of teflon tape which is sewn together at the rear of the sternum with cotton thread following procedures of D. Buhler (pers. comm.). Birds are tracked for one full day each week until dispersal from the nest area.

Results

Five pairs of eagles built nests this year (Table 2). Additionally we located three pairs establishing territories. Here we review the nests individually.

Bear Swamp

Winter observations of the Bear Swamp pair indicated the female of the pair had been replaced. Intense courtship behavior at the nest during January substantiated the change so we decided not to replace the eggs for artificial incubation for the first time since the egg fostering project began in 1982. The pair laid egg(s) on 3/5/90 and incubated until 4/16/90. We observed the pair feeding young within several days. Upon climbing the nest for banding we found only one chick, which eventually fledged on 7/2/90. This nest was observed by Mark Hedden and staff.

Stow Creek

The Stow Creek pair nested in the same tree, a large sycamore, used last year. The tree is located in the center of a large grain field on the edge of the Stow Creek tidal drainage. The site is surrounded by tidal marsh on two sides and the owner agreed to restrict access on the other two sides. The field was farmed as it had been in the past. The pair was first observed in and around the nest in late January. They were first observed incubating on 2/18/90, the first pair with eggs in the state. The pair incubated until 3/25/90 and were observed feeding the two young within a few days. We did not band these young for fear the nest would be damaged in a climb. The two birds fledged on 6/10/90 and remained in the area of the nest for the next five weeks. The nest was observed by John Healy and ENSP staff.

Mannington Meadow

The Mannington pair used an entirely new location this year about one mile upstream from the nest they used unsuccessfully the last two seasons. The new tree was a large hickory located on the edge of wooded wetland and cattle pasture. The farmer/owner actively protected the nest from disturbance and continued normal operations on the field, sometimes within a hundred feet of the incubating birds. The pair started incubation on 3/9/90 and stopped approximately forty days later. We flew over the nest five days after the birds stopped and saw no eggs. The nest was observed by staff.

Belleplain State Forest

The Belleplain State Forest pair were seen repeatedly in the general area of two lakes, but we could not find a nest until shortly after the pair began incubation on 3/5/90. The nest is in a loblolly pine located approximately 500 yards from the water's edge in an oak-pine upland. Although the area was largely inaccessible, a park-maintained trail was located within 100 yards of the tree. The park superintendent Tom Keck agreed to a trail closure through July to protect the birds from disturbance.

The two young hatched the week of 4/13/90. We climbed the nest and instrumented one bird with a transmitter and banded both. The birds fledged the week of 7/2/90 and the transmittered bird was followed for the next five weeks. It spent most of that time within a mile of the nest. The nest was observed by Paul Totten and ENSP staff.

Cohansey River

The Cohansey pair was observed at over ten locations along the Cohansey River and adjacent Back Creek. We observed the pair at four different nests, one near Lanings Wharf, two located on the Back Creek side of the Fairton peninsula, and a final nest on the Cohansey near Greenwich. Last year the pair was observed in a small nest in an upland pine stand adjacent to the river. The first nest this year was apparently pirated from a pair of Red-tailed Hawks which eventually regained control of the nest. The second nest was located on an island in the Back Creek drainage that measured approximately 4-5 feet in diameter and 4-5 feet deep. The nest could have been abandoned because of the noise from carbide guns used to keep Snow Geese off the surrounding salt hay marsh. The pair was sighted a number of times along the Cohansey throughout February and March. We flew the area in March to locate the nest and located an adult on the river but could not find a nest. We ground-searched the area the following day and found nothing. Finally a new nest was reported by E. Zirkle on 4/08/90 directly across the river from the March sighting. We observed the pair in the nest on the following day. They were seen several times in the area afterwards but failed to lay eggs. Observations were made by ENSP staff, Johanna Biggs, and E. Zirkle.

Tuckahoe River

A pair of eagles was observed February through April on the Tuckahoe River between Head of River and Tuckahoe and on the Corbin City Wildlife Management Area impoundments. We flew the area surrounding the river and impoundments on two occasions but could not locate a nest. We will continue searching next year. Observations were made by staff and P. Totten.

Mullica River

Eagles were sighted repeatedly in a large area of the lower Mullica and Wading Rivers. Additional sightings were made on Oswego Lake just east of the Wading. We searched potential areas on the ground and once from the air and found nothing. Searching will continue next year. Observations were made primarily by staff using call-in reports from various individuals.

Oldman's Creek

We received a late report of a pair of Bald Eagles on Oldman's Creek in Salem County. The report included sightings made between 3/26/90 and 3/28/90, and described a nest in a dead tree near Pedricktown and Oldman's Creek. The nest report was not verified by staff although several verified reports have been made of eagles on Oldman's Creek.

Discussion

The Bald Eagle population is well on its way to recovery. The results this year indicate that a recovery goal of 10 nests is attainable within the next five yars. We now have at least six pairs on territory, possibly as many as eight. As of this year, we still have three more cohorts of eagles released from our hacking program that will come into sexual maturity, so along with growing production, future prospects for nesting are still growing.

Our growing population has stressed the resources of Restoration Project. Whereas in the past our job was building the population, the job now is maintenance, and for disturbance- and contaminant-sensitive eagles this will be difficult, especially since the small federal grant for the project had been completely withdrawn this year.

Our experience with new pairs establishing territories and nest is not encouraging. Two nesting pairs, Mannington and Cohansey, have moved their nests at least two times, and the most likely cause is disturbance. The Mannington nest was located too close to a road, inviting a constant stream of onlookers, and too close to the home of a landowner who openly stated he was not happy they were there. The Cohansey birds were moved by construction of a nearby building and use of crop protection devices by farmers who were unaware of the impact on the birds.

As our experience grows, it apperars that unintentional disturbance will be a very difficult problem, requiring a high priority on early protection measures. It is absolutely imperative we quickly locate nests and establish a relationship with the landowners to provide the best possible protection, without limiting current uses of the land. So far we have been able to do this. In the two cases where birds have used farmland, we cooperated with the farmer to limit all activities except farming. On the state forest, we restricted use of a portion of the forest, but reopened it to recreational use as soon as the birds left the nest site.

As we find new nests, the chance of development conflicts will grow. To date, eagles have been the center of two major

Bald Eagle nest at Stow Creek, photo by ENSP, color.

Table 1. Bald Eagle egg and chick production in New Jersey from 1959 to 1990.

Year	*Number of Nests*	*Number of Fledged Young*	*Number of Eggs*	*Eggshell Thickness*	*Hatched Yes/No*
1959	10	4	—		
1960	8	1	—		
1961	7	1	—		
1962	6	1	—		
1963	8	2	—		
1964	6	0	—		
1965	5	0	—		
1966	6	1	—		
1967	3	0	—		
1968	1	0	—		
1969	1	0	—		
1970	2	0	—		
1974	1	2	—		
1975	1	1	—		
1976	1	1	—		
1977	1	0	—		
1978	1	0	—		
1979	1	0	—		
1980	1	0	—		
1981	1	0	—	17%	No
1982	1	1	1	25%	No
1983	1	2	2	17%	Yes
1984	1	1	1	20%	Yes
1985	1	2	2	17-30%	Yes
1986	1	2	1	16%	Yes
1987	1	2	1	24-27%	Yes
1988	2	2	2	12-17%	Yes
1989	4	1	2	20-21%	Yes
1990	5	5	—	N/A	Yes

controversies; the siting of a hazardous waste facility on the Maurice River (Niles 1987), and a project to mine sand and gravel in the area of Bear Swamp (Niles 1988). This year, eagles will very likely be one of the major issues in the proposal to accelerate commercial barging on the Cohansey River. Until now the eagle has been of minor consideration in development applications, mostly on the basis of wintering sightings and historic nest locations. Cooperation between the regulatory agencies and the developers has been good, because our estimate of what is suitable has been vague. But with nesting pairs and fledging young, the conflict with human use and development will become more apparent and development denials more likely. As the number of nests grow, the conflicts will become more numerous and probably more difficult to resolve.

The ENSP research on contaminants in Peregrine Falcons and Ospreys indicates the eagles may face recontamination. Peregrine Falcons are now reaching near damaging levels of DDE, PCBs and several heavy metals (Clark 1990, USFWS 1990). Analysis of avian prey indicates high levels in both migratory and non-migratory birds, indicating New Jersey may be a source. Similar results were found in Ospreys and their prey (Griffin and Steidl 1989, Steidl *et al*, Clark 1990). The most alarming result of this work is that both species are showing shell-thinning, the Peregrines averaging 14% and the Ospreys about 10%. Recontamination and shell thinning in eagles is a real possibility because it lives the longest of the three, and has already proven very susceptible.

The recovery of Bald Eagle in New Jersey has been the most expensive and time-consumptive project in the ENSP. As the number of nests grows, it appears now that the job of protection

will be no less so. Our goals over the next few years will be to determine quickly the location of each new pair's nest, and through telemetry to determine the approximate area important to the newly fledged young. We will continue our surveillance of possible sites through volunteers and staff. We will insure a fair review by all regulatory agencies.

Table 2. Production and significant dates of bald eagles nesting in NJ, 1990.

Nest	*Egg Laying*	*Egg Hatching*	*Fledging*	*# Fledged*
Bear Swamp	3/05/90	4/16/90	7/02/90	1
Belleplain	3/02/90	4/13/90	6/30/90	2
Cohansey R.	—	—	—	—
Mannington	3/09/90	4/20/90*	—	0
Stow Creek	2/16/90	3/25/90	6/10/90	2

*Abandoned incubation

Summary

Five pairs of eagles nested in New Jersey in 1990, four laying eggs, three fledging young. Two young fledged from both the Belleplain State Forest nest in Cape May County and the Stow Creek nest in Cumberland County. One young fledged from the Bear Swamp nest which was not fostered this year. The Mannington Meadow pair in Salem County incubated eggs that failed to hatch. A fifth pair on the Cohansey built a nest in late February but failed to lay eggs. We observed additional pairs on the Tuckahoe River in Cape May County, the Mullica River in Atlantic County, and Oldman's Creek in Salem County. This year was the first since 1959 that we have had more than one productive eagle nest in New Jersey. This was also the first time since 1976 the Bear Swamp pair produced young without the eggs being artificially incubated.

Acknowledgments

The protection of Bald Eagles is a major undertaking depending on a great many people. We particularly thank John Healy, Paul Totten, Bill McDermott and Johanna Biggs for their patient and effective observations and protection. Mark and Dawn Hedden continued watching the Bear Swamp nest as they have for nearly a decade. Pat Sutton of CMBO kept us up to date on all new sightings. I especially thank the landowners/-farmers, Mr. and Mrs. Weldon of Salem County and Mr. and Mrs. Trullender of Cumberland County, for their diligent protection. Also Superintendent Tom Keck and Chief Ranger Lin Sheldon acted quickly to protect the nest on Belleplain State Forest. We also thank George Conover and the Cape May County Mosquito Commission for help in searching for nests.

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