

New Jersey Department of Environmental Protection

Division of Fish and Wildlife

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New Jersey Bald Eagle Project, 2017

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Cover photo of Bald Eagle E/07, banded in 2014 at the Merrill Creek nest in Warren County. She was photographed in Purcellville, VA, in October 2017, by Annie Ware.

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Summary

The Division of Fish and Wildlife's Endangered and Nongame Species Program (ENSP) biologists, Conserve Wildlife Foundation (CWF) staff, and volunteer observers located and monitored bald eagle nests and territories. One hundred seventy-eight nest sites were monitored during the nesting season, of which 153 were documented to be active (with eggs) and 25 were territorial or housekeeping pairs. Twenty-one new eagle pairs were found this season, fourteen in the south, four in central and three in northern NJ. One hundred eighteen nests (78%) of the 152 known-outcome nests produced 190 young, for a productivity rate of 1.25 young per active and known-outcome nest. Thirty-four (22%) nests failed to fledge young. The Delaware Bay region remained the state's eagle stronghold, with roughly half of nests located in Cumberland and Salem counties and the bayside of Cape May County.

The state's eagle population would not be thriving without the efforts of the dedicated eagle volunteers who observe nests, report sightings, and help protect critical habitat.

Introduction

Historic records are incomplete, but one study indicated New Jersey hosted more than 20 pairs of nesting bald eagles in the Delaware Bay region of the state (Holstrom 1985). As a result of the use of the pesticide dichloro-diphenyl-trichloroethane, commonly known as DDT, the number of nesting pairs of bald eagles in the state declined to only one by 1970 and remained there into the early 1980s. Use of DDT was banned in the United States in 1972. That ban, combined with restoration and management efforts by the Division of Fish and Wildlife's Endangered and Nongame Species Program (ENSP), resulted in population increases to 23 pairs by 2000, 48 pairs by 2005, 82 pairs by 2010, and 150 pairs by 2015. ENSP recovery efforts – implemented since the early 1980's – have resulted in a steady recovery as New Jersey's eagle population has rebounded from the edge of extirpation.

Recovery efforts were multifaceted. In 1982, after New Jersey's only remaining nest (located in Cumberland County's Bear Swamp) had failed at least six consecutive years, ENSP biologists removed the egg for artificial incubation at Patuxent Wildlife Research Center in Maryland, and fostered the young nestling back to the nest. As a result of residual DDT contamination, the Bear Swamp eggs were too thin to withstand normal incubation. Artificial incubation and fostering chicks continued with success until 1989, when the female of the pair was replaced and the pair was able to hatch their own eggs.

Increasing the production from a single nest, however, was not enough to boost the state's population in a reasonable period of time. Mortality rates are high in young eagles (as high as 80%), and eagles do not reproduce until about five years of age. ENSP instituted a hacking project in 1983 that resulted in the release of 60 young eagles in NJ over an eight-year period (Niles et al. 1991). These eagles contributed to the increase in nesting pairs since 1990.

Bald eagles nesting in NJ face many threats, with disturbance and habitat loss the greatest threats in our state. In addition, contaminants in the food web may negatively affect the eagles nesting in some areas of NJ.

Disturbance is defined as any human activity that causes eagles to change their behavior, and takes many forms, including mere presence of people in nesting or foraging areas. In general, people on foot evoke the strongest negative reaction (Buehler 2000). When eagles change their behavior in reaction to people, they cease doing what is best for their survival and the well-being of their eggs and young. Ultimately, that reduces the survival of individuals and the population. ENSP biologists work to manage and reduce disturbance in eagle habitats, especially around nest sites. A corps of experienced volunteer observers, as well as education and safe viewing areas, are essential to this effort. Viewing eagles from safe distances, where eagles continue to act normally, is best for eagles and satisfies our natural desire to see them. Biologists also protect habitat in a variety of ways, including working with landowners, land acquisition and management, and applying the state's land use regulations. ENSP is continuing to investigate the impacts of organochlorines and heavy metals in eagles and other raptors nesting in the Delaware Bay region. Bald eagles, ospreys, and peregrine falcons nesting in the region exhibited some reproductive impairment relative to other areas (Steidl et al. 1991, Clark et al. 1998), but recent research indicates problems may be limited to very local areas of contamination (Clark et al. 2001). ENSP biologists collect samples that allow monitoring of contaminants in eagles during the nesting season, and monitoring nest success is an integral part of this research.

ENSP biologists, with the Division's Bureau of Law Enforcement staff and project volunteers, work year round to protect bald eagle nest sites. However, with increasing competition for space in the most densely populated state in the nation, it is clear that critical habitat needs to be identified and, where possible, protected. Critical habitat for eagles includes areas used for foraging, roosting and nesting, and is included in the program's Landscape Project mapping of critical wildlife habitats.

The population of wintering bald eagles has grown along with the nesting population, especially in the last ten years. This growth reflects increasing populations in NJ and the northeast, as each state's recovery efforts continue to pay off for eagles.

The federal government removed the bald eagle from its list of Endangered Species in August, 2007, in recognition of the national resurgence in the eagle population in the lower 48 states. The U.S. Fish and Wildlife Service oversees a 20-year monitoring period (through 2027) to watch for and investigate any problems that could compromise the eagle recovery. In addition, a revised version of the Bald and Golden Eagle Protection Act remains in effect to protect nest and roost sites for bald eagles nationwide. The bald eagle's official New Jersey status remains state-endangered for the breeding season and state-threatened for the non-breeding season, and state

regulatory protection remained unchanged by the federal action.

Objectives of the New Jersey bald eagle program:

- 1) monitor the recovery of the bald eagle in the state by documenting the status, distribution, and productivity of breeding bald eagles in NJ;
- 2) enhance nest success by protecting bald eagles and their nest sites;
- 3) monitor wintering areas and other concentration areas and plan for their protection;
- 4) document locational data in the Biotics database and apply it to identify critical habitat using the Landscape Project mapping;
- 5) provide information and guidance to landowners and managers with regard to bald eagles on their properties;
- 6) increase our understanding of bald eagle natural history in New Jersey.

Methods

Nest Survey

All known nest sites are monitored January through July or through fledging. Volunteer observers watch most nests from a distance of 1,000 feet, using binoculars and spotting scopes, for periods of two or more hours each week. Observers record all data including number of birds, courtship or nesting behaviors, incubation, feeding, and other parental care behaviors that provide essential information on nesting status. ENSP or CWF staff contact volunteers weekly with an update and are available to discuss observer questions and data. Dates are recorded for incubation, hatching, banding, fledging, and, if applicable, nest failure. A nesting territory is considered “occupied” if a pair of eagles is observed in association with the nest and there is some evidence of recent nest maintenance. Nests are considered “active” if a bird is observed in an incubating position or if eggs or young are detected in the nest.

Observers report other bald eagle sightings to ENSP or CWF biologists, who review the information for clues to potential new nest locations. ENSP staff and volunteers investigate territorial bald eagles for possible nests through field observations. When evidence suggests a probable location, biologists may conduct aerial surveys of the region to locate a nest. Following guidance from the US Fish and Wildlife Service’s post-delisting monitoring plan (USFWS 2009), we maintain a list of occupied nests and territories for population monitoring.

When necessary, nests are protected from disturbance with barriers or posted signs. Staff works in partnership with landowners and land managers to cooperatively protect each nest. Volunteers notify ENSP staff immediately if any unusual or threatening activities are seen around the nest site. The Division’s Bureau of Law Enforcement conservation officers act to enforce protection measures as needed, and provide routine assistance as well.

At select sites, ENSP biologists enter the nest site to band young when nestlings are between five and eight weeks old. A biologist climbs the tree and places nestlings into a large duffel bag and lowers them, one at a time, to the ground. A team records measurements (bill depth and length, eighth primary length, tarsal width, and weight) and bands each eaglet with a federal band and a

green state color band with an alpha-numeric code. A veterinarian examines each bird and takes a blood sample for contaminant analysis. Blood is collected and stored following techniques in Bowerman et al. (1994). Samples are stored frozen pending analysis by a technical lab. Nest trees are generally not climbed the first season to avoid associating disturbance with the new site.

Wintering Eagle Survey

In recent years, we in New Jersey did not participate in the National Mid-Winter Eagle survey in January. As eagle numbers have increased in NJ we found that the standardized count no longer covered all important eagle areas, and that volunteer efforts could be put to better use. Biologists asked eagle project volunteers to search for locations where eagles roost and otherwise concentrate in the winter months of January and February.

Results

Nest Survey

The statewide population increased to 178 territorial pairs in 2017, a slight increase from 172 last year. One hundred fifty-three pairs were known active (meaning they laid eggs), just three more than last year (Figure 1). One hundred eighteen nests (78%) were known to be successful in producing 190 young, for a productivity rate of 1.25 young per known-outcome, active nest, which is slightly above the required range of 0.9 to 1.1 young per nest for population maintenance. Thirty-four (22%) nests failed to fledge young, a rate that is about average for New Jersey. Twenty-five pairs maintained territories but did not lay eggs.

Most nests were located in the southern portion of the state, particularly within 20 km of Delaware River and Bay (Figure 2). The majority of nests were located on private land, while the rest were on state, federal, county and conservation-dedicated lands. Disturbance was a management issue at many nests, and posting and regular surveillance by staff and nest observers remained essential to increase the chance of success.

All documented nests and significant dates of the nesting season are listed in Table 1. Excluded from our nesting population data are 37 previously documented nest sites that were unoccupied and where no new nest could be found, or search effort was lacking (Table 2).

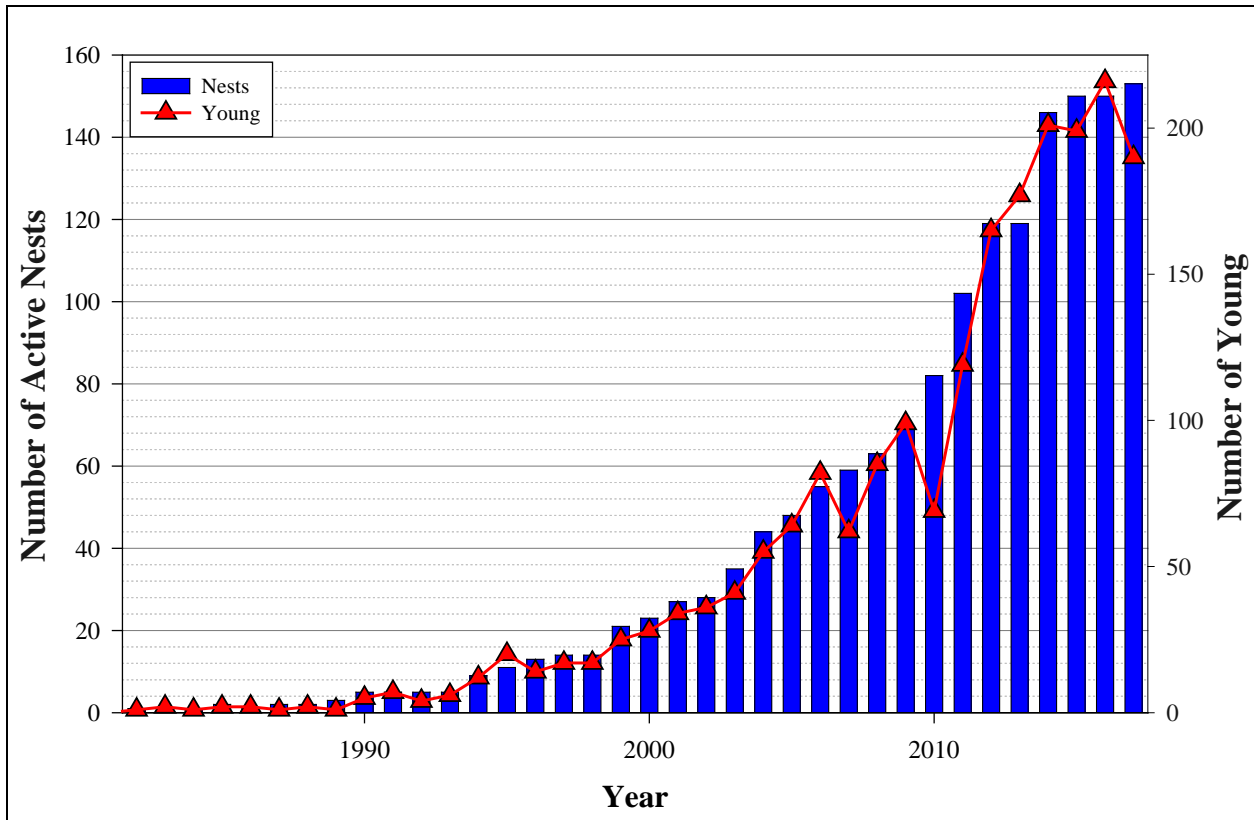


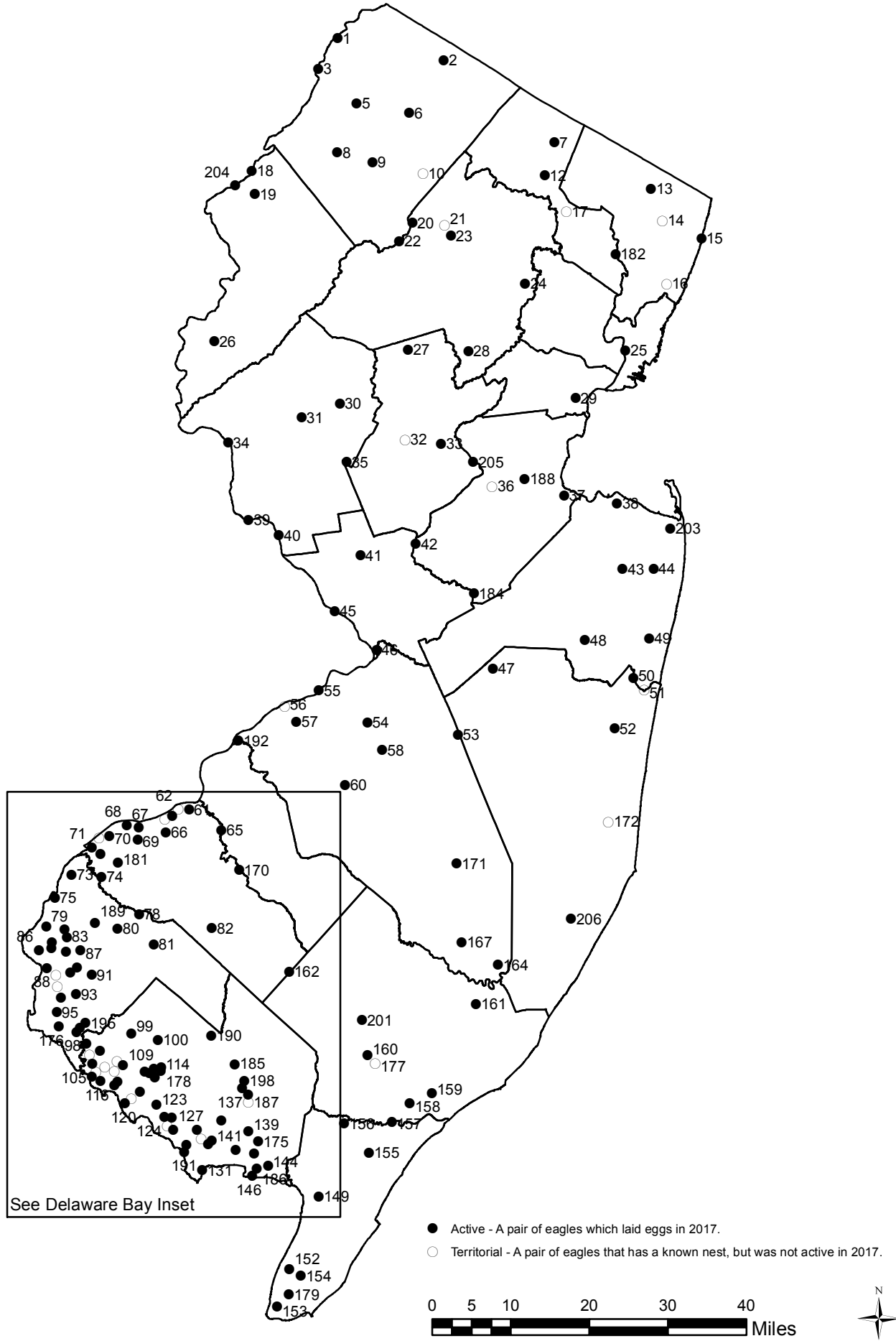
Figure 1. Number of bald eagle nests and young fledged in New Jersey, 1985 – 2017. Blue bars=number of nests and red triangles=number of young produced each year. In 2017, 153 pairs were active and 190 young were produced.

Figure 2. Bald Eagle nest sites, 2017.

01 Minisink Island	52 Kettle Creek	108 Cohansey (Greenwich B)	174 Stathems Neck
02 Bassetts Bridge	53 Fort Dix	109 Cohansey (Sheppards Mill)	175 Maurice River-Leesburg
03 Dingmans Ferry	54 Fairgrounds	111 Cohansey (Hopewell West)	176 Mad Horse WMA (Tower)
05 Culvers Gap	55 Burlington Island	112 Cohansey (Hopewell Central)	177 Miry Run
06 Lewisburg-Wantage	56 Delanco	113 Cohansey (Hopewell East)	178 Cohansey CC B
07 Wanaque A	57 Rancocas Creek A	114 Cohansey CC	179 Cold Springs
08 Little Swartwood	58 Pemberton	115 Cohansey (Tindalls Landing)	180 Salem (Chestnut)
09 Hyper Humus	60 Medford	116 Tindall Island	181 Stone Meeting House
10 Newton Reservoir	61 Eagle Point	117 Cohansey (Middle Marsh C)	182 Paterson
12 Wanaque B	62 National Park	118 Cohansey (Middle Marsh A)	184 Upper Millstone
13 Woodcliff Lake	64 Mantua Creek A	120 Sea Breeze B	185 Maurice River-Millville North
14 Oradell Reservoir	65 Timber Creek	121 Sea Breeze A	186 Sadie Lane
15 Palisades B	66 Mantua Creek B	122 Hustedts Landing	187 Maurice River-Somes Drive
16 Overpeck Creek	67 Dupont/Raccoon Creek	123 Sayres Neck	188 Edison Tower
17 Point View Reservoir	68 Monds Island	124 Bay Point Road	189 Pilesgrove
18 Poxono Island	69 Gibbstown	125 Nantuxent Creek A	190 Cumberland Co. IA
19 Yards Creek	70 Bridgeport	126 Nantuxent Creek D	191 Fortescue B
20 Lake Hopatcong A	71 Birch Creek B	127 Nantuxent Creek B	192 Palmyra Cove
21 Picatinny/Lake Denmark	72 Swedesboro-Birch Creek	128 Fortescue	193 Woodbury Creek
22 Lake Hopatcong B	73 Penns Grove	129 Turkey Point A	195 Canton Sheep Farm/Canton
23 Mount Hope Lake	74 Oldmans Creek	130 Turkey Point B	196 Dividing Creek B
24 Parsippany	75 Deepwater	131 Egg Island	197 Marshalltown C
25 Kearny	78 Upper Oldmans	132 Dividing Creek	198 Peek Preserve
26 Merrill Creek Reservoir	79 Pennsville	133 Bear Swamp	199 Penns Neck B (Lower)
27 Far Hills/Ravine Lake	80 Salem River	137 Maurice River-Bluffs	200 Cohansey (Teaburner)
28 Great Swamp	81 Daretown	138 Maurice River-Burcham	201 Lake Lenape
29 Linden	82 Silver Lake	139 Maurice River-Mauricetown	202 Ferry Road (Tower)
30 Round Valley	83 Mannington Meadows A	141 Port Norris	203 Hartshorne Woods Park
31 Stanton Station	84 Penns Neck A	142 Matts Landing	204 Tocks Island
32 Duke (Raritan River)	86 Supawna Meadows B	144 Riggins Ditch	205 Johnson Park
33 Manville	87 Mannington Meadows B	146 East Point	206 Cedar Run (Ocean)
34 Milford Tower	88 Supawna Meadows A	149 Dennis Creek	
35 Three Bridges	89 Fenwick Creek	152 Fishing Creek	
36 Westons Mill Pond	90 Keasbeys Creek	153 Higbee Beach	
37 Cheesquake Creek	91 Quinton	154 Rio Grande	
38 Keansburg Cell	92 Elsinboro	155 Cedar Swamp Creek	
39 Bulls Island	93 Alloways Creek C	156 Tuckahoe A	
40 Lambertville Tower	94 Alloways Creek F	157 Tuckahoe B	
41 Pennington	95 Grossup	158 Patcong (Lower)	
42 Princeton	97 Stow Creek A	159 Patcong Creek B	
43 Navesink River	98 Stow Creek C	160 South River-Atlantic	
44 Oceanport (Parkers Cr)	99 Shiloh Tower	161 Galloway	
45 Trenton	100 Sunset	162 Cedar Lake (Gloucester)	
46 Crosswicks Creek	101 Newport Meadows	164 Ballanger Creek West	
47 Prospertown	102 Davis Mill	167 Wading River A	
48 Manasquan Reservoir	104 Wheaton Island	170 Turnersville	
49 Shark River	105 Bayside A	171 Chatsworth	
50 Manasquan River	106 Bayside B	172 Forked River	
51 Brielle (Tr. Is.)	107 Cohansey (Greenwich A)	173 Harris (Salem)	

Nest numbers are not sequential but are identifiers for the maps.

2017 Bald Eagle Nest Status



2017 Bald Eagle Nest Status

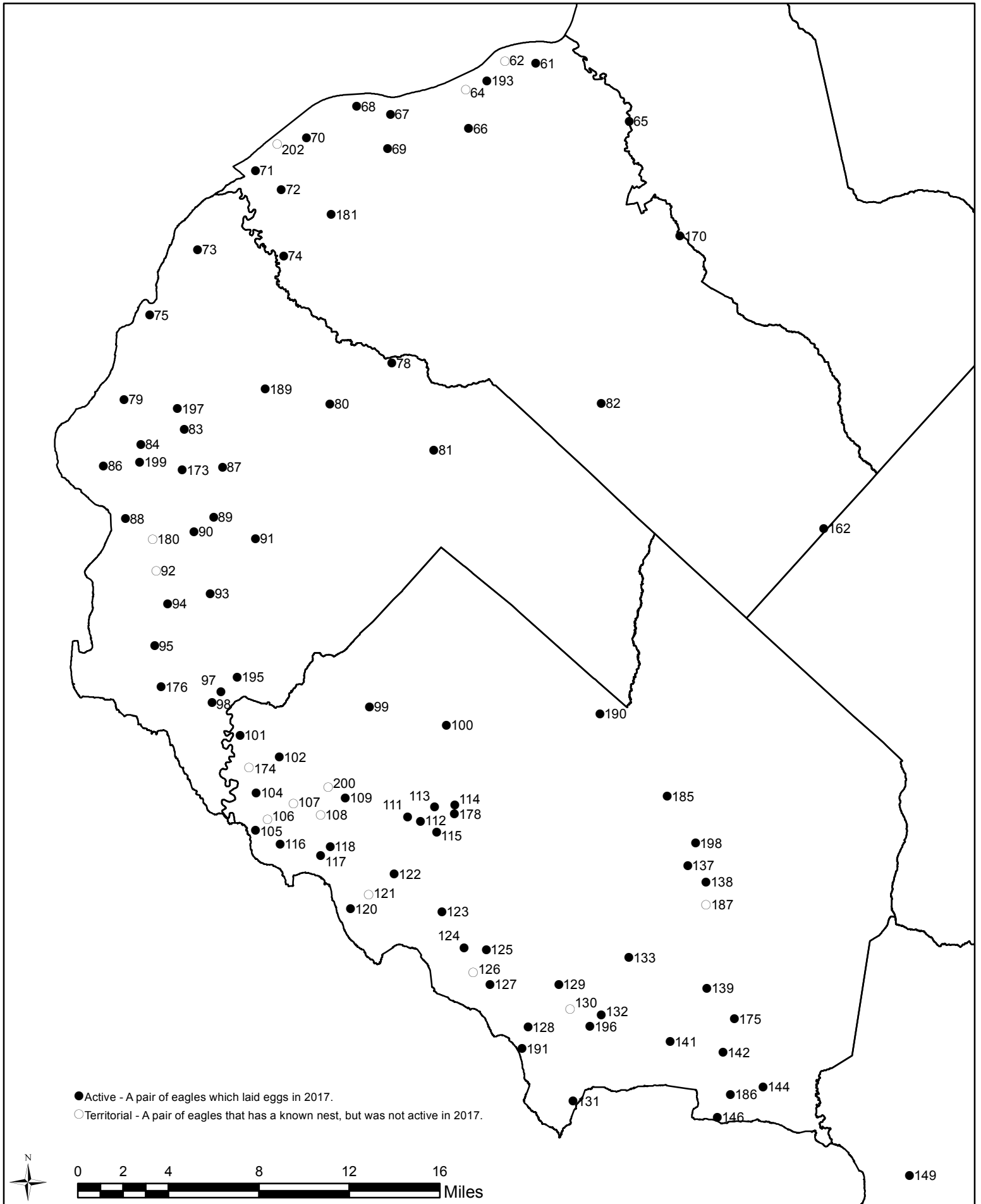


Table 1. Production and estimated dates for bald eagle nests in NJ, 2017. Fledging and other dates are not always known and thus left blank. T=Territorial

NEST SITE	Incubation	Hatching	Banding	Fledging	No. Fledged	Failed date	Notes
Alloways Creek C	3/12				0	5/5	
Alloways Creek F	1/24	3/5		5/26	1		
Ballanger Creek West	3/3	4/7			1		
Bassett's Bridge	2/8	3/24		6/16	1		
Bay Point Road	2/24	4/1			0	4/4	
Bayside A	?				1		
Bayside B	T						
Bear Swamp	4/3	3/20		6/12	1		
Birch Creek B	3/12				0	3/?	
Bridgeport	2/16	3/22		6/10	1		
Brielle (Tr. Is.)	T						
Bulls Island	2/19				2		
Burlington Island	2/14	3/22		6/14	1		
Canton Sheep Farm/Canton	2/23	3/25		6/2	2		New tree
Cedar Lake (Gloucester)	2/26	3/2		5/25	1		
Cedar Run (Ocean)	1/26	3/2		5/28	1		
Cedar Swamp Creek	2/21				0	3/13	
Chatsworth	3/1	4/5		6/28	1		
Cheesequake Creek	1/29	3/19			0	4/9	Ospreys involved in failure?
Cohansey (Greenwich A)	T						
Cohansey (Greenwich B)	T						
Cohansey(Hopewell Central)	~3/12	~4/16		7/2	2		New tree
Cohansey (Hopewell East)	3/11	4/1		6/11	2		
Cohansey(Hopewell West)	2/5				0	3/24	3 adults tending nest
Cohansey (Middle Marsh A)	2/10	3/16		6/8	2		
Cohansey (Middle Marsh C)	2/19	3/26		6/18	1		
Cohansey(Sheppards Mill)	?				2		
Cohansey (Teaburner)	T						
Cohansey(Tindells Landing)	2/15	3/23		6/15	2		
Cohansey CC A	1/24	3/4		5/26	2		
Cohansey CC B	2/20	4/1		6/8	1		New pair
Cold Springs	2/10	3/24		6/6	1		New pair
Crosswicks Creek	2/20	3/31			0	4/30	
Culvers Gap	2/27	4/7		6/29	2		
Cumberland Co Imp Auth	~3/19	~4/23		~7/11	1		New pair
Daretown	2/6	3/15		6/3	2		
Davis Mill	2/1	3/8		5/31	1		

Deepwater	2/27				0	3/14	Nest destroyed in storm; moved to new nest tree, possible 2 nd clutch
Delanco	T						
Dennis Creek	2/7	3/14		6/6	2		
Dingman's Ferry	2/21	3/28		6/20	1		
Dividing Creek	2/24	4/1		6/23	1		
Dividing Creek B	2/18				0	4/1	New pair
Duke (Raritan River)	T						
Dupont/Raccoon Creek	2/22				0	3/20	
Eagle Point	3/9				0	5/5	New nest (cell tower)
East Point	3/5	3/30		6/29	2		
Edison Tower	2/25	4/4		6/30	2		New pair
Egg Island	2/28	3/10	4/26	6/2	2		
Elsinboro	T						
Fairgrounds	2/2	3/9			0		Nest fell 6/19; fledgling retrieved.
Far Hills/Ravine Lake	2/7	4/3		6/26	2		
Fenwick Creek	3/4	4/9		6/10	3		
Ferry Road Tower	T						New pair
Fishing Creek	2/8	3/15		6/7	2		
Forked River	T						
Fort Dix	2/14			6/1	2		
Fortescue	2/15	3/16		6/23	1		
Fortescue B	2/27	4/3			0	4/28	New pair; osprey platform
Galloway	2/19	3/8	4/21	6/2	1		
Gibbstown	2/3	3/15		6/12	1		
Great Swamp	1/23	2/27		5/16	2		
Grossup	3/4				0	3/25	
Harris (Salem)	3/12	4/16		6/25	2		New pair
Hartshorne Woods Park	1/25				0	3/17	New pair
Higbee Beach	3/6	4/16		7/9	2		
Husted's Landing	2/24	4/1			0	4/14	
Hyper Humus	3/27	4/29		7/22	2		
Johnson Park	3/9	4/17		7/8	1		New pair
Keansburg Cell	2/25				0	4/6	
Kearny	2/26	4/2		7/9	2		
Keasbeys Creek	2/11	3/14		6/16	3		
Kettle Creek	2/9				0	4/16	
Lake Hopatcong A					2		
Lake Hopatcong B	2/27	4/10		7/3	1		
Lake Lenape	4/3				1		Aerial survey 4/3; adult on nest
Lambertville Tower	3/11	4/11		7/4	3		
Lewisburg-Wantage	2/23	4/11		7/4	1		

Linden	2/15	4/4		6/27	2		
Little Swartswood	1/31	3/7		5/30	2		
Mad Horse WMA (tower)	2/18	3/26			0	4/16	New pair
Manasquan Reservoir	1/27	3/7		5/21	2		
Manasquan River	2/8	3/16	4/28	5/27	1		
Mannington Meadows A	2/24	4/9		6/11	2		
Mannington Meadows B	2/24	4/9		6/4	2		
Mantua Creek A	T						
Mantua Creek B	2/3	3/12			0		
Manville	2/15	3/25		6/16	2		
Marshalltown	1/25	2/28		5/26	1		New tree
Matts Landing	2/11	3/19		6/16	2		
Maurice River- Bluffs	2/12	3/19		6/11	2		
Maurice River- Burcham	2/9	3/16		6/7	3		
Maurice River-Leesburg	3/19				0	5/4	New pair; osprey platform
Maurice River-Mauricetown					0		Aerial survey 4/3
Maurice River-Millville North	3/7	4/12		7/1	2		
Maurice River-Somes Drive	T						New pair
Medford	2/12	3/23	5/4	6/1	1		Chick grounded 7/7; euthanized
Merrill Creek Res.	3/21	4/20		7/20	2		New tree
Milford Tower	2/18	3/24		6/7	2		
Minisink Island	2/28				0	3/9	
Miry Run	T						New pair
Mond's Island	3/2	4/6		~6/23	1		
Mount Hope Lake	unk				2		
Nantuxent Creek A	3/4	4/14		6/23	2		
Nantuxent Creek B	2/15	3/16		6/16	3		
Nantuxent Creek D	T						
National Park	T						Nest destroyed in storm
Navesink River	2/11	3/16		6/20	2		
Newport Meadows	2/23	4/1		6/3	1		
Newton Reservoir	T						New tree
Oceanport (Parkers Creek)	3/16	4/24		7/23	1		New tree
Oldmans Creek	1/29	3/9		5/26	2		
Oradell Reservoir	T						
Overpeck Creek	T						
Palisades B	2/15	3/22		6/14	1		
Palmyra Cove	2/26	4/2		6/27	2		New pair
Parsippany	3/4				0	3/25	
Patcong Creek B	1/30	3/6		6/4	2		
Patcong (Lower)	4/3	3/20		6/12	1		
Patterson	2/17				0	3/25	New pair

Peek Preserve	2/16	3/23		6/15	1		New pair
Pemberton	1/12	2/16		5/15	2		
Pennington	2/27	4/3		6/3	1		
Penns Grove	3/12				0	5/1	
Penns Neck A	3/12	4/28			1		
Penns Neck B (Lower)	3/12	4/28			1		New tree
Pennsville	3/17	4/12		6/15	2		
Picatinny/Lake Denmark	T						
Pilesgrove	2/16				0	3/16	New tree
Point View Reservoir	T						
Port Norris	2/2	3/19		6/8	3		
Poxono Island	2/21	3/28		6/20	2		
Princeton	2/16				0	4/3	
Prosperstown	1/29	3/1			0	4/9	
Quinton	3/4	4/9		6/10	1		
Rancocas Creek	2/7	3/13		6/24	2		
Riggins Ditch	2/1	3/8		5/18	2		
Rio Grande	2/2	3/10		6/2	1		
Round Valley	2/24	3/31			1		
Sadie Lane	2/11	3/19			0		New tree
Salem (Chestnut)	T						New pair
Salem River	1/24	2/28		6/4	2		
Sayres Neck	1/19	2/24		5/27	2		
Sea Breeze A	T						
Sea Breeze B	3/5	4/9		7/2	1		
Shark River	4/3(2 nd)	5/8		7/29	1		After failure; 2 nd clutch successful
Shiloh Tower	1/17	2/25		5/17	1		
Silver Lake	2/6	3/14		6/10	1		
South River-Atlantic	2/22	3/17		6/5	1		
Stanton Station	3/19	4/23		7/9	2		
Stathems Neck	T						New pair
Stone Meeting House	2/24	3/31		6/23	2		New pair
Stow Creek A (North)	1/25	3/14		6/1	3		
Stow Creek C	1/20	3/3		4/19	2		
Sunset	2/7	3/14		6/6	2		
Supawna Meadows A	2/24	4/2		6/28	2		
Supawna Meadows B	2/19				0	5/1	
Swedesboro-Birch Creek	1/26	3/1		5/27	1		
Three Bridges	2/22	4/1	5/12	6/21	2		
Timber Creek	2/15	3/22		6/14	2		
Tindall Island	?				1		
Tocks Island	2/17	4/4		6/27	1		

Trenton	2/16				1		
Tuckahoe A	3/9	4/13		7/6	2		
Tuckahoe B	3/29				0	4/27	
Turkey Point A	2/15	3/25		6/23	2		
Turkey Point B	T						
Turnersville	2/1				0	3/17	
Upper Millstone	1/25				1		New pair
Upper Oldmans	2/18	3/26		6/21	2		
Wading River A	2/18				0	3/18	
Wanaque A					1		
Wanaque B					2		
Westons Mill Pond	T						
Wheaton Island					1		
Woodbury Creek	3/9	4/14			1		New tree
Woodcliff Lake	unk				1		
Yards Creek	3/20						Outcome unknown
Total Nests Monitored	178						
Total Nests Active & Known Outcome	152						
Successful Nests	118						
Failed Nests	34						
Young Fledged	190						
Total Nests Active & Unknown Outcome	1						

Table 2. Previously documented eagle nests that were not used, or could not be documented, in 2017.

Allows Creek-B CE	Devil's Gut	Mannington Meadow C	Pequest
Ballanger Creek East	Dias Creek West	Maurice River- Bowkers	Pompton lakes
Belleplain	Egg Harbor River	Maurice River-Millville	Silver Lake Tower
Bidwell Creek	Goshen	Mullica River	South Dennis
Blue Anchor	Harrisonville	Nantuxent C	Stipson Island
Camden County	Heislerville	Old Bridge	Stow Creek B
Cedar Pond (Passaic)	Humphrey's (Salem)	Oyster Creek	Union Lake
Charlottesville (Rockaway)	Lake Musconetcong	Palisades A	
Cohansey(Loatman)	Liberty Loop	Parker's Creek	
Cohansey (Middle Marsh B)	Mad Horse Creek	Patcong Creek A	

2017 Season Highlights

Telemetry

Endangered and Nongame Species Program biologists, with the Conserve Wildlife Foundation, have attached satellite transmitters on several eagle fledglings over the past four years. “EagleTrax” mapping showing tagged eagle movements in New Jersey and across the region can be viewed on the CWF website.

“Nacote” was banded as a nestling in the summer of 2014 and fledged in July. Just weeks after fledging he made a big northern movement in August, 2014, heading due north and out of transmission range. He returned to northern New York where his transmitter’s data downloaded to our computers, showing he’d spent most of the fall in a remote area of Quebec. He returned to southern NJ in November, 2014, and has spent the rest of 2015, 2016 and 2017 in Atlantic, Cape May and Cumberland counties. He has been photographed several times at Forsythe NWR in Atlantic County.

In 2012 and 2013, we tagged other eagle nestlings with satellite tags, two of which are still actively transmitting. “Harmony 2” (banded D/64) fledged in 2012 and spent her first winter on lower Chesapeake Bay before traveling to Maine. She has spent the last five years in a 100-mile swath of western Connecticut and Massachusetts, making us suspect she will end up nesting there.

In 2013, we tagged “Haliae” (D/88) as a Merrill Creek nestling. She fledged and spent the winter of 2013-14 ranging around northern Chesapeake Bay in MD. In April, 2014, she headed through PA and NY and into Canada. In June she was back in NJ’s Warren County, though she continued to wander and spent that summer in northern Maine and Canada. In fall, 2014, she headed to eastern PA, and has spent most of 2015, 2016 and part of 2017 on Maryland’s eastern shore. She has spent the fall ranging around eastern PA and northern MD, generally around the Susquehanna River.

These tagged eagles are helping us to identify good eagle habitat and overnight roost areas with more precision. Depending on funding, we will continue to use satellite tags on NJ eagles to help us understand habitat use and eagle distribution.

“EagleTrax” mapping showing the movements of all three eagles can be found on the Conserve Wildlife Foundation of NJ’s website, <http://www.conservewildlifenj.org/protecting/eagle-trax/>

Potential Nest Sites

Biologists and observers actively searched for possible nesting eagles in several locations. The searches were in response to reports of eagles engaging in breeding behaviors. Areas that remain promising are Batsto Lake, Oswego Lake, Indian Mills Lake, Williamstown, Evesham, Flemington/Raritan River, Canoe Brook Reservoir, White Lake, Musconetcong River and middle Delaware River, all of which have year-round eagle activity. In addition, several inland reservoirs in the north hold promise for eagle nesting.

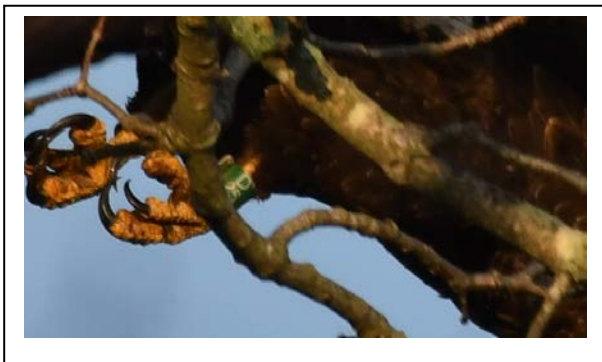
Resightings of Banded Eagles

Resightings of NJ (green) banded eagles have increased over the years, as well as eagles seen in NJ that were banded in other states. In table 3, we listed the eagles resighted in recent years in New Jersey and, in some cases, sighted in surrounding states. These resightings, accumulated with the help of many photographers and birders, provide insight into eagle movements during the years between fledging and settling into a territory, as well as adult birds at a nest site.

The list of resightings in table 3 is ordered by the bird's identifier, mostly the color band code. For some individuals, we have multiple resightings that provide some history and a story of that bird's movements.

New Jersey-banded eagles have been observed at nests in Pennsylvania, New York and Connecticut. There are six cases of New York-banded eagles at NJ nests, and one of a Connecticut-banded eagle. There are at least five known NJ-banded eagles documented at nests within our state. The nesting pair at New Jersey's Ravine Lake includes a green-banded NJ female (unknown code) and a red/black-banded NY male (A/18). This male was released as part of a hacking project in New York City, banded in 2005.

The resighted eagles from all the surrounding states clearly show that eagles move around the mid-Atlantic and northeast states. The majority of eagles are not marked with bands, and many states don't maintain a banding program, so the small proportion of banded birds are a sampling by which we can interpret eagle survival and movements in and around our state.



Clockwise from above: C/96 by Kevin Smith, E/01 by Ami Shecter, and D/25 by Rich Owner.

Table 3. Resightings of marked Bald Eagles in New Jersey and elsewhere, 2003-2017.

Band #	Color Band (green unless otherwise noted)	Date Resighted	Reported	Resight Location	Resight State	Band Origin	Band Date	Comments
0629-45456	A/06 red/black	5/1/10	Alice	Overpeck Creek	NJ	Hacked in NYC	6/10/04	Nesting F at Overpeck Cr
0629-46295	A/12 red/black	3/29/17		Pleasantdale	NJ	Hacked in NYC	6/9/05	
	A/18 red/black	5/7/17	Dallas Hetherington	Ravine Lake	NJ	Hacked in NYC	6/28/05	Nesting at Ravine Lake with NJ banded female
0629-05438	A-83?	8/20/13	Lori Borda	Promised Land St Park	PA	Camp Edge	5/18/01	
0629-45841	B/36	5/1/15	Richard Clifton	Prime Hook Beach Rd.	DE	Dividing Creek	4/25/03	
0629-45841	B/36	10/10/15	Arthur Weidner	Prime Hook Beach Rd.	DE	Dividing Creek	4/25/03	
0629-45842	B/37	9/13/09	Roger Horn	Villas WMA	NJ	Dividing Creek	4/25/03	
0629-45870	B/64	4/7/13	Justin Pursell	Perkiomen Creek	PA	Hopewell-West	5/10/04	Nesting in PA since 2010
0629-45870	B/64	5/28/14	Linda Oughton	Montgomery	PA	Hopewell-West	6/26/05	Nesting in PA since 2010
0629-45878	B/74	4/10/14	John Fox	Woodstown	NJ	Mannington A	4/10/04	Nesting at Salem nest
0629-45882	B/77	2/22/15	K & K Buynie	Crosswicks Creek	NJ	Navesink	5/19/04	Female nesting at Crosswicks Creek
0629-45887	B/82	1/7/16	Lynne Falterbauer	Peace Valley Park	PA	Walpack	6/3/14	
0629-45894	B/87	2/22/15	K & K Buynie	Crosswicks Creek	NJ	Fort Dix	5/13/05	Male nesting at Crosswicks since 2009
	blue	1/26/15	Don Torino	Hackensack River	NJ	NY		
0629-46811	C/04	2/16/15	Rich Owner	Oyster Creek/Lacy	NJ	Fort Dix	5/5/06	
0629-46812	C/05	4/14/13	Holly Rtella	Cohanzick Zoo	NJ	Lake Lenape	5/10/06	
0629-46816	C/09	2/8/15	Oak Duke	6 mi E. Wellsville	NY	Merrill Creek	5/12/06	
0629-46819	C/11	3/8/15	Nina VanDeleur	Lambertville	NJ	Princeton	5/17/06	Nesting at Stanton Station nest
0679-0156x	C/2 black	4/20/15	Joe Koscielny	Wayne	NJ	Middletown, CT	6/1/09	Female nesting-Point View
0679-01701	C/67	8/3/16	Michael Arter	SSW Dingmans Ferry	PA	Newton Res	5/19/08	
0679-01718	C/84	4/5/13	Pete Stegemann	Cold Spring Harbor	NY	Princeton	5/8/09	Obs with male; possibly on territory
0679-01728	C/94	3/11/15	Cyndi Pratt Didan	Vernon	CT	Duke Farms	5/18/09	Male nesting in CT
0679-01729	C/96	12/1/13	Kevin Smith	Conowingo Dam	MD	Duke Farms	5/18/09	
0670-01732	C/98	5/19/12	Chuck Hantis	Millburn	NJ	Newton Res	5/18/09	
0679-01732	C/98	11/2/13	David Holsten	Conowingo Dam	MD	Newton Res	5/18/09	
0679-01732	C/98	3/7/14	Deborah Kral	Conowingo Dam	MD	Newton Res	5/18/09	
0679-01732	C/98	1/24/16	Abigail Birnbryer	Salisbury Mills	NY	Newton Res	5/18/09	

Table 3. Resightings, continued

Band #	Color Band (green unless otherwise noted)	Date Resighted	Reported	Resight Location	Resight State	Band Origin	Band Date	Comments
0679-01745	D/10	10/22/17	Christine Alber	Highland Lakes	NJ	L. Swartswood	5/5/10	Male nesting, since 2013
0679-01754	D/18	1/21/17	Laurie Glasser	Spring Lake Heights	NJ	Manasquan Res	3/25/11	
0679-01754	D/18	4/15/17	Mary Dunham	Lake Como, Belmar	NJ	Manasquan Res		
0679-01754	D/18	8/6/17	John Shea	Bombay	NY	Manasquan Res	3/1/11	
0679-01760	D/24	12/6/15	Theresa Anderson	Browns Mill	NJ	Swedesboro	4/18/11	
0679-01761	D/25	1/16/16	Justine Lee	Rossmoor	NJ	Manasquan Rvr	4/20/11	
0679-01761	D/25	11/25/16	Rich Owner	Forked River	NJ	Manasquan Rvr	4/20/11	Obs with mate
0679-01765	D/28	9/28/16	osprey webcam	Forsythe NWR	NJ	Fort Dix	5/6/11	Obs on osprey cam
0679-01766	D/29	11/3/14	osprey webcam	Forsythe NWR	NJ	Fort Dix	5/6/11	
0679-01766	D/29	4/12/16	Elizabeth Henzel	Tinton Falls	NJ	Fort Dix	5/6/11	
0679-01767	D/30	11/16/15	Katie Steward	Germantown	NY	Navesink	5/6/11	
	D/30 blue	12/3/16	Herb Houghton	Paterson	NJ	Coxsackie, NY	6/5/08	Obs with another eagle Passaic River
0679-01776	D/39	3/20/13	Kristen Nicholas	Lake Tappan	NJ	Oradell Res	5/23/11	
0679-01778	D/40	1/25/15	Kristen Nicholas	Haverstraw	NY	Newton Res	5/23/11	
0679-01778	D/40	3/31/17	Reid Hoffer	Nyack	NY	Newton Res	5/23/11	Nesting at reservoir in NY
	D/41? R leg	9/1/16	Margaret Fowle	Waterbury	VT	Duke Farms?		Possibly D/41, female; uncertain band read
0679-01782	D/44	10/20/16	osprey webcam	Forsythe NWR	NJ	Tuckahoe River	4/11/12	Obs on osprey cam
0679-01786	D/47	3/22/15	Eric Wagner	Enfield	CT	Prospertown	4/13/12	
0679-01788	D/49	3/24/16	Max Garfinkle	Harriman Park	NY	Manasquan Rvr	4/20/12	Federal band missing
0709-01554	D/65	11/19/16	Timothy Shaheen	Hartshorne Co. Park	NJ	Merrill Creek	5/29/12	Obs with another eagle at Navesink nest
0709-01560	D/70	12/12/14	Brian Kushner	Forsythe NWR	NJ	Manasquan Rvr	5/1/13	
0709-01562	D/72	11/25/16	Bob Kane	Cranbury	NJ	Navesink	5/3/13	
0709-01583	D/93	2/5/17	Bob Kane	Plainsboro	NJ	Manasquan Rvr	5/2/14	Obs on wildlife cam
0709-01585	D/95	4/8/16	Kelly Hunt	Forsythe NWR	NJ	Galloway	5/6/14	
0709-01591	E/01	11/22/16	Ami Shecter	Paulinskill, Blairstown	NJ	L. Swartswood	5/12/14	
0709-01591	E/01	2/15/17	Greg Zanoni	Mercer Co. Park	NJ	L. Swartswood	5/12/14	
0709-01491	E/01	4/26/17	Bob Yeager	Greentown	PA	L. Swartswood	5/12/14	
0709-01597	E/07	10/16/17	Amie Ware	Purcellville	VA	Merrill Creek	6/10/14	Photographed on dead deer
0709-01615	E/25	2/25/17	Michael Rucci	Octoraro Reservoir	PA	Merrill Creek	6/18/15	
0709-01622	E/32	11/17/16	Diane Henry	Forsythe NWR	NJ	Galloway	4/21/16	

Table 3. Resightings, continued

Band #	Color Band (green unless otherwise noted)	Date Resighted	Reported	Resight Location	Resight State	Band Origin	Band Date	Comments
	E/80 blue	10/14/15	Rob Leigh	Swartwood Lake	NJ	Sullivan, NY	5/9/01	
0709-02117	M/K orange	10/20/16	Greg Zanoni	Rt 206, Columbus	NJ	Waltham, MA	5/25/16	Obs feeding
0679-04100	R/9 orange	4/18/13	via T. French	Oradell Res. Dam	NJ	Fall River, MA	5/23/12	
	W/34 blue	10/22/17	Randy Lubischer	Asbury Park	NJ	Onondaga Co NY	10/7/11	Male in pair, Asbury Park
	W/73 blue	4/1/13	Kumar Patel	Palisades B	NJ	NY	6/30/05	Nesting at Palisades B
	W/73 blue	4/13/15	Kumar Patel	Palisades B	NJ	NY	6/30/05	Nesting at Palisades B
	W/73 blue	3/24/16	Kumar Patel	Palisades B	NJ	NY	6/30/05	Nesting at Palisades B
	green	7/8/17	Arthur Gurmankin	Albrightsville	PA			NJ green: no band read
	L leg green	10/13/13	Chad Rachman	Staten Island	NY	unk		Adult w/some brown tail feathers
	L leg green	3/3/14	Bob Grimm	Haddonfield Twp	NJ	unk, >2002		Adult
	L leg green	11/30/15	Eileen Palmer	Elkton	MD	unk, >2002		Adult photographed w/unbanded adult male
	L leg green	9/13/15	Jim Yates	Hudson River	NY	unk, >2002		5th yr bird
	R leg green	10/15/13	Mark Johnson	Elkton	MD	unk, older band		
	R leg green	8/29/14	Logan Parker	Augusta	ME	unk, >2002		Adult
	R leg green	9/5/14	Mike	Lake Shohola	PA	unk, >2002		Adult
	R leg green	7/2/15	Vic Godley	Bayshore Floodgates	NJ	unk, >2002		Adult
	R leg green	11/14/15	Peggy Cadigan	Manasquan Inlet	NJ	unk, >2002		5th yr bird
	R leg green	1/14/17	Dawn	Fallsington	PA	unk, >2002		3rd yr bird; no band read
	R leg green C/?	7/12/14	Mike Busch	Carmans Rvr, Brookhaven	NY	unk, >2002		Adult

Recoveries of Eagles in New Jersey

During this reporting period, 20 eagles were recovered, and of those, two were treated and released after injuries. The remaining birds were found dead, died while in care, or were euthanized for these reasons: electrocution (6), impacts with vehicles (2), wires (2), fence (1); eagle-eagle fighting (3), poor condition or injury (5), and unknown circumstances (1) (Table 4). Electrocution is a significant risk for bald eagles everywhere, because power distribution relies on smaller poles where “hot” wires are strung close enough that an eagle’s wingspan can cause the bird to make wire connections. ENSP works with the electric suppliers (Atlantic Electric, PSE&G, and JCP&L) to retrofit poles and mark lines wherever possible, and we use data on eagle nests, roosts, and foraging areas to identify priority sites for those corrections.

Table 4. Bald eagles recovered injured or found dead in this project year.

Date Found	Location Found	Facility	Origin & Date	Age-Sex	Details
summer 2016	Rio Grande, NJ	NJDFW Tuckahoe		Juv-U	Recent fledgling from nest on property; electrocution. Power poles fixed in 2017.
2/2/17	Richmond, RI	RI DEP	D/11, Swartswood 5/5/10	Ad-F	Found next to RR tracks. Possible electrocution.
2/9/17	Lower Alloways Cr.	NJDFW Tuckahoe		Ad-M	Vehicle impact
2/28/17	Rt. 72, Vincentown	Mercer/Tri-State Bird Rescue		Ad-F	Adult found 11/28/16 Plumsted: treated, banded & released 11/30/16. Vehicle strike, died 3/2/17.
3/10/17	W. Nyack, Rockland Co, NY	NY DEC	D/58, Newton Res 5/11/12	Ad-F	Found on power line right of way; electrocuted.
3/22/17	Middletown, NJ	Assunpink		Ad-F	Female with brood patch and sign of recent egg laying; may be F from Keansburg nest. Found dead due to impact or electrocution.
4/9/17	Poxono, Del Water Gap	Raptor Trust/Mercer Wildlife		Ad-M	Found grounded, unknown cause. Died 4/15/17
4/11/17	Westchester Co, NY	NY DEC	D/01, Merrill Cr 6/8/08	Ad-M	Likely fighting with another eagle.
4/14/17	Oyster Creek Nuclear	NJDFW Tuckahoe	C/81, Manasquan River 6/2009	Ad-M	Found dead, electrocuted.
4/14/17	Oyster Creek Nuclear	Toms River Avian Care		Ad-M	Injury to wing; euthanized 6/20/17
4/27/17	Crosswicks Creek	Mercer County Wildlife	B/77, Navesink 5/19/04	Ad-F	Injured due to fighting; euthanized 5/1/17.
6/12/17	Cumberland Landfill	NJDFW Tuckahoe		Ad-F	Found dead near nest; collision with wires.
6/13/17	Octagon Rd, Camden	Medford/Mercer Wildlife		Juv-F	Found grounded; treated & released 6/29/17.
6/16/17	Fairgrounds eagle nest	Mercer County Wildlife		Juv-F	Nest fell, chick was grounded; wing & feet deformities; euthanized 6/19/17.
7/7/17	Southampton, NJ	Mercer County Wildlife	Medford 5/4/17	Juv-M	Found grounded/injured near nest. Euthanized 7/7/17. Likely fledged too early.
7/15/17	Cape May Co Landfill	NJDFW Tuckahoe		Ad-M	Found dead, likely wire collision.
9/8/17	Duke Farms	Mercer County Wildlife		Ad-F	Remains found @Duke Farms eagle nest; possibly result of fighting.
9/28/17	Millington	Raptor Trust/Mercer Co		Ad-M	Found caught in fence in yard; euthanized.
10/23/17	Pennsville	NJDFW Tuckahoe		Ad-M	Found dead under power line; electrocuted. Power poles fixed as a result.
11/10/17	Bayonne	Raptor Trust	E/E (purple) PG Co, VA, 2009	Ad-F	Found grounded; in treatment for infection.

Photo-resightings of New Jersey eagles

E/01 in Mercer
County Park



Greg Zaroni

W/34 (NY) Asbury Park



Randy Lubischer

D/10 in Highland Lake



Christine Alber

D/93 in Plainsboro



Bob Kane



Ravine Lake pair, Dallas Hetherington

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Literature Cited

- Bowerman, W., D.A. Best, J.P. Giesy, T.J. Kubiak, and J.G. Sikarskie. 1994. The influence of environmental contaminants on bald eagle (*Haliaeetus leucocephalus*) populations in the Laurentian Great Lakes, North America. P 703-791 in BU Meyburg & RD Chancellor, eds, Raptor Conservation Today. Pica Press, London.
- Buehler, D. A. 2000. Bald Eagle (*Haliaeetus leucocephalus*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/506>.
- Clark, K.E., W. Stansley, and L.J. Niles. 2001. Changes in contaminant levels in New Jersey osprey eggs and prey, 1989 to 1998. Archives of Environ. Contam. Toxicol. 40:277-284.
- Clark, K.E., L.J. Niles, and W. Stansley. 1998. Environmental contaminants associated with reproductive failure in bald eagle (*Haliaeetus leucocephalus*) eggs in New Jersey. Bull. Environ. Contam. Toxicol. 61:247-254.
- Holstrom, C. 1985. Bald Eagle nesting habitat in southern New Jersey. M.S. Thesis, Rutgers University, New Brunswick. 18pp.
- Niles, L., K. Clark and D. Ely. 1991. Status of bald eagle nesting in New Jersey. Records of NJ Birds 17(1):2-5.
- Steidl, R.J., C.R. Griffin, and L.J. Niles. 1991. Contaminant levels in osprey eggs and prey reflect regional differences in reproductive success. J. Wildl. Manage. 55:601-608.
- U.S. Fish and Wildlife Service. 2009. Post-delisting Monitoring Plan for the Bald Eagle (*Haliaeetus leucocephalus*) in the Contiguous 48 States. U.S. Fish and Wildlife Service, Divisions of Endangered Species and Migratory Birds and State Programs, Midwest Regional Office, Twin Cities, Minnesota. 75 pp.