

New Jersey Department of Environmental Protection
Division of Fish and Wildlife
Larry Herrighty, Director
C. David Jenkins, Chief
Endangered and Nongame Species Program

**Peregrine Falcon
Research and Management Program
In New Jersey, 2017**

Kathleen Clark, Endangered and Nongame Species Program
Ben Wurst, Conserve Wildlife Foundation of New Jersey
John Heilferty, Endangered and Nongame Species Program
Michael Bisignano, Endangered and Nongame Species Program



Juvenile falcons learn while playing near the Hackensack River in Carlstadt.
Photo by Mike Girone.



Program Objective: *To enhance the population of the peregrine falcon (Falco peregrinus anatum), restoring them to a self-sustaining level throughout their range in New Jersey.*

Summary of Results

The 2017 New Jersey peregrine falcon population remained stable with 34 known pairs (32 active) occupying suitable nesting habitat across the state. There was average success overall with 22 pairs successful in producing 52 young, for a productivity rate of 1.72 young per active nest and a success rate of 69% (Table 1). However, when we account for known young lost around fledging, the productivity rate dropped to 1.59 young per active nest. A brief summary of data collected during the 2017 nesting season follows:

- ❖ Seventeen pairs nesting on towers and buildings continued to be the core of the nesting population, producing 31 young, for a productivity rate of 1.82 young per active nest (1.76 fledged young/nest). This is close to the long term average. We used bird-lice spray at nests pre-season, and treated <2-week old hatchlings at two sites to reduce infestations of parasitic flies (*Carnus hemapterus*), but suspect that these flies were responsible for chick mortality at ≥ 1 nest. These flies have caused mortality of young hatchlings in recent years.
- ❖ Six pairs were known to occupy territories in natural cliff habitat in northeastern NJ. Four young were produced but just two fledged for a productivity rate of 0.67 (0.33 fledged) young per active nest.
- ❖ Nine pairs of falcons were known to nest on bridges this year. Five of those bridges lie completely within the boundaries of NJ, while four span the Delaware River between NJ and PA and were monitored by NJ. All bridge pairs produced a total of 20 young (19 fledged) for a productivity rate of 1.75 (1.59 fledged) young per active nest. Nest results can be difficult to confirm, as the nest sites are often located out of sight or on inaccessible sections of the bridge. Some previously occupied bridges (e.g., Trenton and Newark Bay) were not tracked due to insufficient staff or volunteers. Other bridges may have been occupied, but the program lacked monitors in northern NJ to document all possible sites.

We were able to band 40 of the 51 young produced this year, fitting nestlings with an aluminum federal band and a bicolor (black over green) band engraved with an alpha-numeric code. The 11 young we were unable to band fledged from sites that could not be accessed at the appropriate time.

There was high drama caught on webcam at the Union County court house nest: the resident pair was in the midst of egg-laying when an intruder female (a 2-year-old, banded 91/BA) fought with the resident female over a period of a week. The intruder won, and within two weeks began laying her own eggs and brooding the first female's two eggs, ending up incubating five eggs total. Two of her eggs hatched, but only the first hatchling survived, before succumbing to lead poisoning at 10 days of age, likely the result of a lead-contaminated pigeon meal. This is the first time we have observed this kind of mortality at a peregrine falcon nest. The freshly-dead nestling was examined and tested by Dr. Erica Miller with NJDFW and UPenn. The webcam is provided by Union County Parks & Recreation Department and co-hosted by the Conserve Wildlife Foundation of NJ.

The Conserve Wildlife Foundation of NJ operated the webcam at the Jersey City nest, where the five-year-old female 41/AX and her unbanded mate raised one chick, after two unsuccessful years. The nest can be viewed online during the nesting season at: <http://www.conservewildlifenj.org/education/falconcam/>

In November, ENSP staff removed the nest tower that stood adjacent to the wildlife drive inside Forsythe National Wildlife Refuge since 1975. Several factors went into this decision: cracked joists would require a major repair effort, and the US Fish and Wildlife Service requested it be removed because the presence of resident peregrines could deter use of the impoundments by migrating waterfowl and shorebirds that are the refuge's target species. ENSP staff found an alternative nest location on nearby private property and installed a nest box the same day the refuge nest was removed. The refuge peregrines were known individuals, so we will hope to find them at the new Seaview nest in 2018.

New nest structures are planned for sites where peregrines have attempted to nest at the APM Terminal in the Port of Elizabeth, and the new Hard Rock Café (the old Taj Mahal building) in Atlantic City.

Resightings and Recoveries

We continued to use remote, motion-activated cameras to photograph peregrines at nests. Using this method we read the leg bands on 16 breeding adults at nine nest sites. An additional 15 adults were identified using optics. A minimum of nine adults (29%) were unbanded. The oldest female identified was a 19-year old Atlantic City bird that failed to lay eggs a fifth consecutive year, and we fostered one nestling successfully at this site. The oldest known male was 13 years, at the Burlington-Bristol Bridge where he routinely perches closely to people near the nest. The median age of males and females was 8.0 and 6.0, respectively. The information that these identifications provide is valuable for relating peregrine origin and age to nest success, site fidelity, and turnover rate in the population.

In addition to the resightings we recorded at NJ nest sites, we received reports of peregrines sighted here and elsewhere:

- *8/*D Betsy Ross Bridge 2005 male was confirmed nesting at the Commodore Barry Bridge in 2017 (and likely, earlier years).
- 09/AC Brigantine 2010 male nested in Atlantic City-Taj Mahal/Hard Rock in 2017. He was photographed last year at the Atlantic City water tower site.
- 08/AM Stone Harbor 2011 male nested at Marmora WMA. He had previously nested in Wildwood Crest.
- 10/AM Brigantine 2011 male nested in Atlantic City (Atl Club) in 2017, as he has since 2014.
- 14/AM Atlantic City 2012 male nested on the Rt. 72 Bridge in Manahawkin in 2017.
- 36/AM Drag Island 2013 male was resighted at an Absecon Bay channel marker in June 2017.
- 37/AM Drag Island 2013 male nested on an osprey nest near Ocean City in 2017.
- 42/AM Burlington-Bristol Bridge 2013 male was resighted in Columbus, NJ in January 2016, and at a bridge nest site on I-95 in Bristol, PA in 2016-2017.
- 74/AM Logan Generating Plant 2015 male was resighted at U. Penn Hospital in Phila, PA in Aug-Sept 2017.
- 86/AM Sedge Island 2015 male was found dead of unknown causes in Toms River in spring 2017.
- 96/AM Burlington-Bristol Bridge 2016 male was resighted in Thornbury, PA, in July 2017.
- BE/13 Tuckahoe 2017 male was resighted at Great Bay Blvd, Tuckerton, in July 2017.
- BE/26 Forsythe 2017 male was resighted at the ACUA landfill in Sept 2017.

- *Y/*4 Betsy Ross Bridge 2006 female continued to nest at Possum Point power plant in VA.
- A/15 Dividing Creek 2009 female continued to nest on a marsh in VA, where she's been since 2013.
- 42/AN Manahawkin 2012 female nested at Tuckahoe in 2017 for the first time.
- 82/AN Wildwood Crest 2014 female nested on the Rt. 72 Bridge in Manahawkin for the first time.
- 83/AN Manahawkin 2014 female nested in Atlantic City-Taj Mahal/Hard Rock building in 2017.
- 90/AN Marmora WMA 2015 female nested unsuccessfully on an osprey platform in Ocean City.
- 76/AN Paulsboro Refinery 2014 female was resighted in Middlesex in November 2016.
- BD/47 Logan 2017 female was recaptured at the Assateague banding station in October 2017.
- BD/48 Logan 2017 female was resighted in Bronx, NY in November 2017.
- BD/61 Stone Harbor 2017 female was recaptured at the Assateague banding station in Sept 2017.
- BD/62 Jersey City 2017 female was resighted in DeKorte Park, Meadowlands, in Sept 2017.

Conclusions

The peregrine population remained stable in 2017 with just average nest success and productivity, but dismal success at natural/cliff nest sites. Across all sites – towers, buildings, bridges and cliffs – nest success was 69% and 1.72 (1.59 fledged) young per active site, figures that are average and below recent years' results. The tower and building nest sites are the consistent core of the population in NJ, without which the population would fluctuate widely year to year. Management of nest sites, mainly to provide safe, undisturbed nesting environments for the birds, continues to be the predominant factor for a stable and productive population.

Nest success at cliff sites declined in 2017, where just two of six sites fledged young, and another site may have lost its fledgling two weeks later. We had documentation on six occupied territories and just two fledged young for a dismal 0.33 productivity rate. Observations continued to be difficult in the more remote locations and where nest sites cannot be viewed after leaf-out. The highly variable nest success at the cliff territories is a problem if we consider occupancy of historic habitat important to a fully recovered population. Targeted investigations and site improvements are necessary to improved management.

Management of nesting pairs and nest sites is essential to maintain peregrines in New Jersey. Bridge-nesting birds are especially vulnerable to nest-site problems, and many other pairs occupy human-constructed sites. With site management and the cooperation of bridge and building staff, these sites can contribute to population viability and stability, but proper site management takes staff time and attention. Managers of buildings, in particular, are key partners in improving some nest sites and expanding the potential peregrine population.

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We remember Ed Konopka of PSE&G at the Sewaren Generating Station for his fondness – and accommodation – for peregrine falcons during his long career.



Tiercel at Forsythe Refuge, by K. Clark

Table 1. Site-specific results of peregrine falcon nesting in New Jersey, 2017

Site Name	Occupied	Active	Eggs	Young Hatched	Young @ Band Age	Young Fledged	2017 Comments
101 Hudson, Jersey City	Y	Y	3	1	1	1	
Atlantic City – ACUA water tower	Y	N	0				New nest box available.
Atlantic City –Hard Rock-new	Y	Y	?	2	2	1	One died at fledging.
Bayside Prison Water Tower	Y	Y	?	2	2	2	Box amended for space.
Drag Island	Y	Y	4	4	3	3	
Egg Island WMA/Dividing Cr	Y	Y	4	0	0	0	Eggs lost during incubation.
Elizabeth-Union County C.H.	Y	Y	2+3	2	0	0	1 st female replaced; 2 nd female laid +3 eggs. Two hatched but both died in the nest.
Forsythe NWR/Barnegat	Y	Y	4	4	4	4	
Forsythe NWR/Brigantine	Y	Y	?	1	1	1	Box and tower removed 11/20/17
Great Bay WMA/Water Twr	N	N	-	-	-	-	
Hilton/Casino/Atl Club	Y	N	0	0	1	1	19 year old F. Fake eggs provided; 1 fostered chick.
Logan Generating Plant	Y	Y	4	4	4	4	
Ocean City marsh (osp nest)	Y	Y	4	3	0	0	Rain caused death of <1 wk old nestlings.
Marmora WMA	Y	Y	5	4	4	4	
Newark: Unknown site	U	U					
Ocean Gate	Y	Y	?	?	0	0	Apparently eggs hatched then failed.
Paulsboro Refinery	N	N					Pair moved off-site to unk location.
Sedge Island WMA	Y	Y	4	4	0	0	Failed by 5/19, unk cause.
Sewaren Generating Station	N	N					No sign of nesting adults.
Stone Harbor	Y	Y	3	3	2	2	One of 3 hatched was fostered to AC.
Swan Bay WMA	Y	Y	3	3	3	3	
Trenton-Roebling Bldg (box 2015)	N						Wintering falcon only
Tuckahoe WMA	Y	Y	4	4	4	4	New female.
Wildwood Crest-Grand Condo	Y	N					
SUBTOTAL: TOWERS & BUILDINGS	19	17			31	30	Young/Active=1.82, Fledged/Active=1.76
Delaware Water Gap	N	N					
Natural Site C-1	Y	Y	?	?	1	1	
Natural Site C-2	Y	Y	?	?	0	0	
Natural Site C-3	N	N					
Natural Site C-4	N	N					
Natural Site C-5	Y	Y	?	?	?	0	
Natural Site C-6	Y	Y	?	?	?	?	
Natural Site C-7	N	N					
Natural Site C-8	Y	Y	?	?	0	0	
Natural Site C-9	Y	Y	?	0	0	0	
Natural Site C-10	Y	Y	?	?	1	1	
Natural Site C-11	Y	Y	?	?	2	0	
SUBTOTAL: NATURAL SITES	6	6			4	2	Young/Active=0.67 Fledged/Active=0.33
Ben Franklin Br. (Del R)	PA						
Betsy Ross Bridge (Del R)	Y	Y	?	2	2	2	
Brigantine Bridge (A.C.)	U	U					
Burlington-Bristol (Del R)	Y	Y	4	4	4	4	In west tower
Commodore Barry (Del R)	PA						
G. Washington Br (Hudson R)	NY						
Newark Bay Br. (NJTP or Conrail)	U	U					
NJ-PA Turnpike Br. (Del R)	PA						
Ocean City-Longport Bridge	U	U					
Pulaski Skyway Bridge	Y	Y	?	?	1	1	Activity obs by NJDOT
Route 1/Raritan-New Brunswick	Y	Y	?	3	3	3	
Route 3/Hackensack NJDOT	Y	Y	?	4	4	3	One died at fledging.
Route 35 Bridge-Belmar	Y	Y	?	?	0	0	Failed in May.
Route 46 Br./Little Ferry-Ridgefield	N	N					
Route 72 Br (2015 old, 2016 new)	Y	Y	3	0	0	0	Eggs removed by NJDFW 5/15.
Scudders Falls Bridge	PA						
Secaucus-Kearny NJTP Bridge	U	U					
Tacony-Palmyra Br. (Del R)	Y	Y	4	2	1	1	
Trenton RR Br	U	U					
Vince Lombardi – NJTP Bridge	U	U					
Walt Whitman Bridge	Y	Y	?	3	3	3	On NJ tower during PA construction.
NJTP Bridge/Rahway River	Y	Y	?	?	3	3	Found 2017, possibly active since 2015.
SUBTOTAL: NJ BRIDGES	9	9			20	19	Young/Active=2.22 Fledged/Active=2.11
TOTALS (NJ Only)	34	32			55	51	Young/Active=1.72, Fledged/Active=1.59

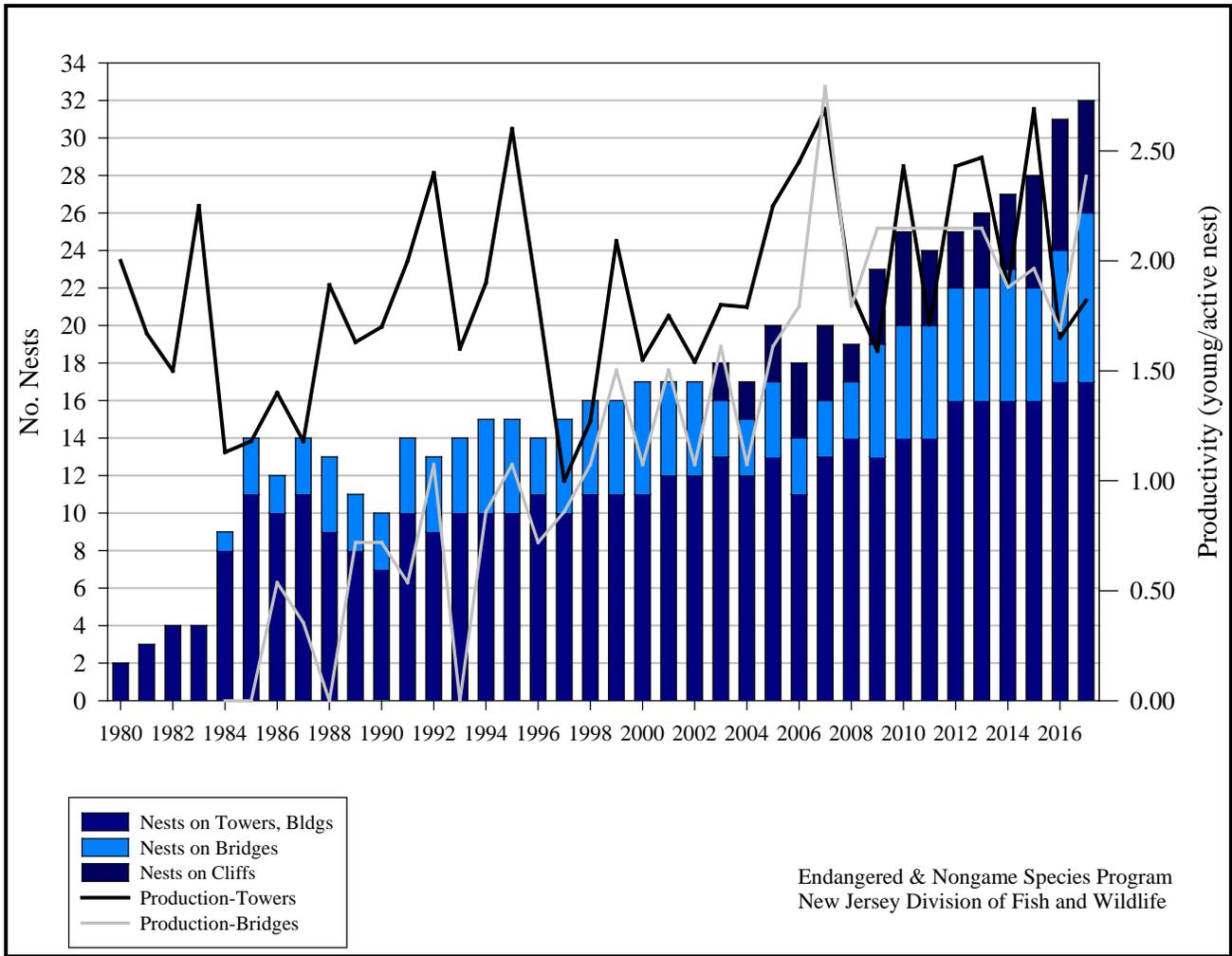


Figure 1. Nesting and productivity of peregrine falcons in New Jersey, with comparisons between towers/buildings, cliffs, and bridges.

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