New Jersey Department of Environmental Protection
Division of Fish and Wildlife
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Peregrine Falcon Research and Management Program In New Jersey, 2019

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Nestlings gathered for banding at the Atlantic Club in Atlantic City, May 2019.
Photo courtesy of Northside Jim.

NEW JERSEY DIVISION OF
Fish and Wildlife

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 2019 New Jersey peregrine falcon population decreased slightly to 38 known pairs with 33 active (known to lay eggs), down from 40 and 37 last year. However, the same number of pairs (28) were successful in producing 78 young, for a productivity rate of 2.36 young per active nest and a success rate of 85% (Table 1). Accounting for known young lost around fledging, the productivity rate dropped to 2.21 young per active nest. A brief summary of data collected during the 2019 nesting season follows:

- Eighteen pairs nested on towers and buildings and continued to be the core of the nesting population, producing 52 young, for a productivity rate of 2.89 young per active nest. This is close to the long-term average. We used bird-lice spray at some nests pre-season, and treated <2-week old hatchlings at several sites to reduce infestations of parasitic flies (*Carnus hemapterus*). These flies were abundant at some nests (likely causing mortality of chicks at 1 site), and not necessarily the same nests as in 2018. Carnus flies were found in nearly all coastal nests.
- Nine pairs, six of which were known active, occupied territories in natural cliff habitat in northeastern NJ. Just two nests were successful in producing six chicks for a productivity rate of 1.00 young per active nest; accounting for known mortality (pre-fledging in this case), the rate dropped to 0.50. This was a setback compared to good results last year.
- 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 20 known young that fledged, for a productivity rate of 2.22 young per active nest. Bridges can be difficult to monitor and confirm nest results, as the nest sites are often located out of sight or on inaccessible sections of the bridge. Two recently occupied bridges are low to the water (~20-25 ft), and ENSP removed nestlings from one bridge to avoid fledging mortality (those nestlings fledged from their foster nest); two fledglings were rescued from the water at the other low bridge area, and fostered to a safe nest site. Other, urban bridges may have been occupied, but the project lacked monitors in urban locations to document all possible sites.

We were able to band 59 of the 78 young produced (though not all fledged), with an aluminum federal band and a bicolor (black over green) band engraved with an alpha-numeric code. The 19 young we were unable to band fledged from sites that could not be accessed at the appropriate time.

In 2017 and 2018 we documented two nestling mortalities that resulted from lead-poisoned prey. They prompted us to take blood samples at four nests in 2018 and eight nests in 2019, which Dr. Erica Miller tested for lead. The results ranged from <0.01 to 0.13 ppm; the lowest levels were found at coastal nests with one exception, the highest concentration found in a 2019 nestling in Manahawkin. Outside of this single high level, urban nests in Elizabeth, Burlington, and Jersey City were elevated at averages 0.92, 0.70, and 0.63 ppm, respectively. We will keep looking at this issue to understand the risk and possible sources of lead for urban peregrines.

The Conserve Wildlife Foundation of NJ operated the webcam at the Jersey City nest, where the seven-year-old female 41/AX and her unbanded mate were successful for a third year, raising three young. A disturbance to the nest area about a week before fledging caused two to fledge prematurely, but they were subsequently found, treated at The Raptor Trust, and successfully rejoined with the family group. The nest can be viewed online during the nesting season at: http://www.conservewildlifenj.org/education/falconcam/

The most interesting development in 2019 was finding two different pairs nesting on the Walt Whitman Bridge. The established pair, V/19 and 48/Y, both 12-year-olds, nested on the PA tower and failed; weeks later a nest was found on the NJ tower, which turned out to be BD/26 and 10/BP, both 3-year-olds. Even more amazing: 10/BP is the son of the older pair, and managed to carve out nest space on his natal bridge!

There were two new natural sites discovered in 2019, but their outcome could not be determined. At two other established natural sites, no nest attempt was made, perhaps a result of mate changes. The Newark pair, found in 2018, was thought to nest at 1180 Raymond Blvd, and we installed a nest box there in March; however, in late May a fledgling was found two blocks away, and the nest was likely at 810 Broad St, where the family group was observed post-fledging. Two other sites got new nest structures but went unoccupied, at Montclair State University and the J&J building in New Brunswick. In October, the nest structure in Tuckahoe got some needed maintenance, and we had an awesome assist from NJ Forest Fire Service, whose helicopter delivered the lumber out to the marsh, where our volunteer crew completed the repairs.

In 2019, we expanded our use of *NestStory* to document nest activity, band identities, photos and resightings, enabling us to connect our many databases on individual birds, their populations, and movements.

Resightings and Recoveries

We continued to use remote, motion-activated cameras to photograph peregrines at nests, which allowed us to read the leg bands on 17 breeding adults at ten nest sites. An additional 12 adults were identified using optics. A minimum of eight adults were unbanded and therefore unidentifiable to origin and age. The oldest female identified was a 14-year old who nested successfully at Tacony-Palmyra Bridge. The median age of both males and females was 7.0. 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 recorded at NJ nest sites, we received reports of peregrines sighted here and elsewhere:

- BD/42 Walt Whitman Bridge 2017 female was recovered injured 12/3/19 in Baltimore, MD; in Owl River rehab.
- BD/44 Drag Island 2017 female was found dead in Queens, NY on 4/24/19.
- BD/48 Logan 2017 female was resighted in Bronx, NY on 10/31/19 (and previously in 2017 and 2018).
- BD/83 Stone Harbor 2018 female was resighted on Metompkin Island, VA, 7/15/19.
- BM/00 Atlantic Club 2019 female was resighted in Ocean City, MD, 10/28/19.
- BM/01 Atlantic Club 2019 female was resighted at Forsythe refuge, NJ, on 7/19/19.
- BM/12 Sedge Island 2019 female was recaptured at a banding station on Assateague Island, MD, 9/24/19.
- BM/14 Sedge Island 2019 female was recaptured at a banding station on Assateague Island, MD, 10/14/19.
- BM/21 Bonnet Island 2019 female was killed by vehicle strike on the nearby bridge, 7/1/19.
- BM/26 Walt Whitman Bridge 2019 female was injured on the bridge roadway at fledging and later euthanized.
- BM/29 Bonnet Island 2019 female was killed by vehicle strike on Pea Island NWR, NC, 10/17/19.
- BE/25 Manahawkin 2017 male was resighted in Manahawkin, 9/11/19.
- BE/40 Manahawkin 2018 male was resighted 12/19/18 and 1/3/19 in Long Beach Twp.
- BE/45 Stone Harbor 2018 male was resighted 9/25/19 and 10/5/19 in Manahawkin.
- BE/50 Brig-Seaview 2018 male was resighted in Sept and Nov, 2018, and 12/10/19, all at Forsythe.
- BE/70 Bonnet Island 2019 male was killed by vehicle strike on nearby bridge, 7/16/19.
- 56/AM Sedge Island 2014 male nested at Swan Bay.
- 39/BC, a 2016 female from NY City, nested at Ocean Gate.
- 40/BC, a 2016 female from NY City, nested at Heislerville water tower site.
- 31/AM Sea Isle 2012 male, nested at the Heislerville water tower site.
- 15/AM, a 2012 Atlantic City male nested in Stone Harbor; he previously nested on Delaware Bay.
- Y/46 Brigantine 2008 female nested at Atlantic Club; 11 years old but was never sighted prior to this.
- 45/BP, a Commodore Barry Bridge male, nested at the Burlington Bristol Bridge with 14/AV, a 2012 VA bird.
- BD/26 (2016 Logan) and 10/BP (2016 Comm Barry Br) nested on the Walt Whitman Bridge, creating a second nest territory on this bridge for the first time.

Conclusions

The peregrine population returned to a slightly lower level in 2019, but had overall good nest success. The exception was poor success at natural cliff nests, with several pairs not nesting and one nest depredated before fledging. Across all sites – towers, buildings, bridges, and cliffs – nest success was 85% and 2.36 (2.21 fledged) young per active site. 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 and quarry sites was poor; while nine sites were occupied, only six were known active (with eggs) and just one site was known to fledge young. Some sites are difficult to observe after leaf-out, and we need more frequent observations at all natural sites. New site occupations are good news, but nest success continues to be highly variable.

Management of nesting pairs and nest sites is essential to maintain peregrines in New Jersey. Bridge-nesting birds can be especially vulnerable to nest-site problems, and many other pairs occupy human-dominated sites. Human activities on bridges and other types of nest sites can quickly end nesting and cause failures. With proper attention to potential nest sites and the cooperation of bridge and building staff, man-made sites can contribute to population viability and stability, but proper site management takes staff time and attention. Managers are key partners in improving some nest sites and expanding the peregrine population.

We are excited about our online data management system, called *NestStory*™, and are grateful to Jim Verhagen and the Little Egg Foundation. NestStory started as a way to track individual nests through each nesting season, and is expanding to help us manage the large amount of data generated when people report their resightings of individually-marked birds at nests and elsewhere. We also thank the many people who report banded birds to the USGS Bird Banding Lab at www.reportband.gov.

Our Thanks To: Volunteers who protect and watch over peregrine falcons in New Jersey, including Beth Balbierz, McDuffy Barrow, Dan Brill, Frank Budney, Bonnie Coe (especially during fledge-watch!), Kelly Connolly, Anita Coogan, Dave Demsey, Muhammad Faizan, Greg Gard, Mike Girone, Len Greer, Jill Homcy, Herb Houghton, Kevin Keith, Betty Ann Kelly, Mary Kostus, Kristina Merola, Peter Monti, Kristen Nicholas, Martin Rapp, Steve Sachs, Frank Sencher, Chris Takacs, Don Torino, Matt Tribulski, Rick Weiman; Forsythe NWR volunteers; Delaware River Port Authority staff (Bill Stricker, Joe McAroy, Joe Riehs); Palisades Interstate Park Commission and the Palisades Interstate Parkway Police; Betty Ann Kelly, Thomas MacDermant and Steve Caruso at Union County; the Burlington County Bridge Commission and their engineers Mike Ott and Glen Miller; Palmyra Cove Nature Center; Don DeRogatis; Diane Joraskie at the Atlantic Club; the Port Authority of NY/NJ; Barbara Deen and Mack-Cali engineers at 101 Hudson Street; Dave Demsey and staff at PBF Energy; Lois Knowlson at Sewaren Generating Station; Stan Kupsey and David Hinton & staff at Logan Generating Plant; Tina Shutz and Bruce Hawkinson of NJDOT; the Hard Rock Café in Atlantic City; Karl Schurr and staff at the Seaview Resort in Galloway; Atlantic City Water Authority; NJ Natural Lands Trust; Montclair State University; Johnson & Johnson, New Brunswick. We thank Northside Jim for telling the many stories of coastal falcons at www.exit63.wordpress.com. We also thank all those who photograph and report banded birds to www.reportband.gov !

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Photos:

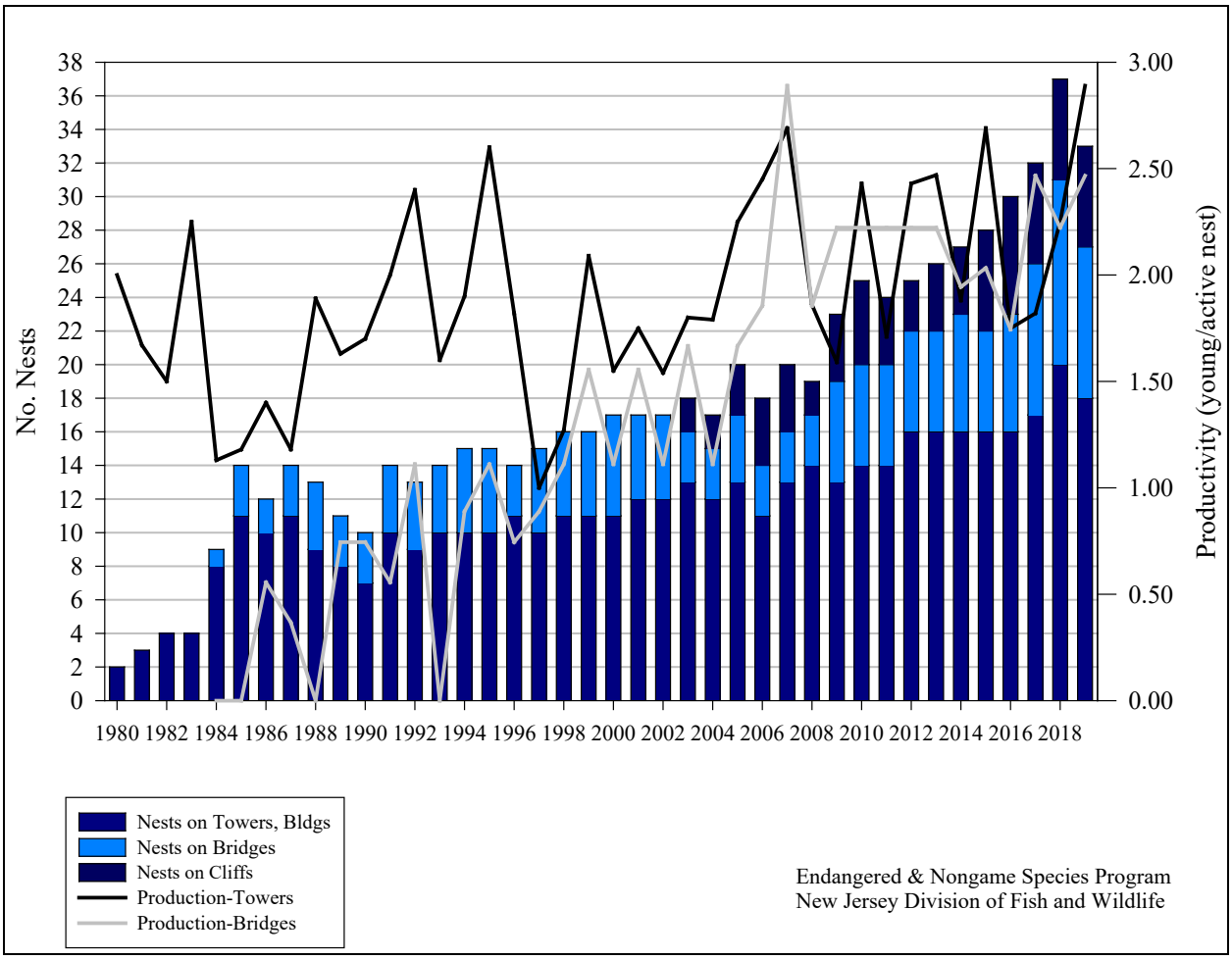
In 2019, staff handled a number of near-fledglings that needed help. Two males fledged early in Atlantic City and were fostered into the family group in Stafford Twp. Two female fledglings fledged off an unknown bridge nest and were recovered after swimming onto an Ocean City beach; after some time at Tri-State Bird Rescue, they were fostered into the Stafford Twp. nest group as well. One young falcon was recovered after apparently fledging off the Rumson-Oceanic Bridge; with no falcons sighted there, the fledgling was fostered into a family group in Manahawkin. When fledglings are fostered, they are wet-down to prevent immediate flight and provided with food, which helps them accommodate to their new site (along with new siblings and parents). Below: BE/70 from Atlantic City fostered to his new nest, joining native fledgling BM/20. Photos and fledge-watch by Northside Jim.

Resightings:

Clockwise from top left: BM/28 at Forsythe NWR by Manish Sharma; BD/48 in Bronx, NY, by Greg St. John; BM/01 at Forsythe by Alice Sikora; fledgling BE/59 in Marmora; BE/45 in Tuckerton by Anthony Ferraina; 85/BD in Fair Lawn by Len Greer.

Table 1. Site-specific results of peregrine falcon nesting in New Jersey, 2019

Site Name	Occupied	Active	Young Hatched	Young @ Band Age	Young Fledged	2019 Comments
101 Hudson, Jersey City	Y	Y	3	3	3	Disturbance > early fledging by 2 but all successful.
Atlantic City – ACUA water tower	Y	Y	4	4	4	2 to TSBR that fledged at BOIS
Atlantic City –Hard Rock-new	Y	N				Nest box provided in 2018.
Bayside Prison Water Tower	Y	Y	0	0	0	Suspect early failure and renest.
Drag Island	Y	Y	4	4	4	Moved to new structure at BP
Egg Island WMA/Dividing Cr	Y	Y	1	1	1	
Elizabeth-Union County C.H.	Y	Y	3	3	3	
Forsythe NWR/Barnegat	Y	Y	3	3	3	Plus 1 fostered from Rumson
Forsythe NWR/Brig/Seaview Roof	Y	N				Construction going on.
Hilton/Casino/Atl Club	Y	Y	4	4	4	New (11 yo) female in pair.
Logan Generating Plant	Y	Y	3	3	3	
Ocean City marsh (osp nest)	Y	Y	4	4	4	Discovered late. Assumed fledged/unbanded
Marmora WMA	Y	Y	4	4	4	
Newark (~Hotel Indigo)	Y	Y	?	3	3	1 to TRT, banded and released at site. Igloo installed at 1180 Raymond; nest likely on/near 810 Broad St.
Ocean Gate	Y	Y	4	4	4	
Paulsboro Refinery	N	N				Pair still off-site at unk location.
Rt 72/Bonnet Island	Y	Y	3	3	3	Plus fosters from ACUA-2 and OCLP-2
Sewaren Generating Station	N	N				No sign of nesting adults.
Sedge Island WMA	Y	Y	?	1	1	Plus fosters from CMOD bridge.
Stone Harbor	Y	Y	4	2	2	Suspect flies causing nestling mortality.
Swan Bay WMA	Y	Y	4	2	2	Suspect flies causing nestling mortality.
Trenton-Roebling Bldg (box 2015)	N	N				
Tuckahoe WMA	Y	Y	4	4	4	
Wildwood Crest-Grand Condo	Y	N				
SUBTOTAL: TOWERS & BUILDINGS	***20***	***18***	***52***	***52***	***52***	***Young/Active=2.89, Fledged/Active=2.89***
Delaware Water Gap	N	N				
Natural Site C-1	Y	Y		3	0	Suspected predation by GHOW
Natural Site C-2	Y	Y		0	0	Failed
Natural Site C-3	N	N				
Natural Site C-4	Y	Y		0	0	Lost during incubation
Natural Site C-5	Y	Y		3	3	
Natural Site C-6	N	N				
Natural Site C-7	N	N				
Natural Site C-8	N	N				
Natural Site C-9	Y	N				Subadult female
Natural Site C-10	Y	Y		0	0	
Natural Site C-11	Y	Y		0	0	
Natural Site C-12	Y	U				Pair obs in April 2019
SUBTOTAL: NATURAL SITES	***9***	***6***		***6***	***3***	***Young/Active=1.00 Fledged/Active=0.50***
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	2	2	2	
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	Y	Y	?	2	2	2 recovered in OC, fostered at BOIS
Pulaski Skyway Bridge	U	U				
Route 1/Raritan-New Brunswick	Y	Y	?	3	3	
Route 3/Hackensack NJDOT	Y	Y	3	3	3	
Route 35 Bridge-Belmar	N	N				
Route 46 Br./Little Ferry-Ridgefield	N	N				
Secaucus-Kearny NJTP Bridge	U	U				
Tacony-Palmyra Br. (Del R)	Y	Y	1	1	1	1 died just after fledging.
Vince Lombardi – NJTP Bridge	U	U				
Walt Whitman Bridge	Y	Y	3	3	2	On NJ tower. One injured/died at fledging.
NJTP Bridge/Rahway River	U	U				
CM Ocean Drive Bridge	Y	Y	3	3	3	Chicks moved to Sedge to avoid fledging loss.
Rumson Oceanic Drive Bridge	Y	Y	?	1+	1	Recovered and fostered to Mana.
SUBTOTAL: NJ BRIDGES	***9***	***9***		***20***	***20***	***Young/Active=2.22 Fledged/Active=2.00***
TOTALS (NJ Only)	**38**	**33**		**78**	**75**	***Young/Active=2.36*, Fledged/Active=2.21**


No. Nests
Productivity (young/active nest)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
0.00
0.50
1.00
1.50
2.00
2.50
3.00
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018
Nests on Towers, Bldgs
Nests on Bridges
Nests on Cliffs
Production-Towers
Production-Bridges
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