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Peregrine Falcon Research and Management Program In New Jersey, 2014

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*September peregrine on Long Beach Island
by Northside Jim.
This juvenile fledged in July from a new nest in
Wildwood Crest.*

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 2014 New Jersey peregrine falcon population increased slightly from 26 to 29 pairs occupying nest sites across the state. Out of 27 pairs that laid eggs, 18 fledged at least one young and 8 failed; 1 had unknown outcome. The resulting 30% failure rate is higher than normal, and was attributable to parasitic flies (2), a storm event (1), suspected predation (1) and unknown causes (4). Eighteen pairs were successful in producing 49 young, for an overall productivity rate of 1.88 young per active nest. A brief summary of data collected during the 2014 nesting season follows:

- ❖ There were 18 pairs using tower and building sites and they continued to be the core of the nesting population, producing ≥ 32 young, for a productivity rate of 2.13 young per active nest. Two pairs (Atlantic City Hilton/Atlantic Club and Jersey City) that have females 16 years or older, failed to lay eggs. One site was new this year, on a condominium balcony in Wildwood Crest.
- ❖ Four pairs occupied nesting territories in the natural cliff habitat located in northeastern NJ. Only one of those pairs successfully fledged young, for a productivity rate of 0.75 young per active nest. Of the three failed nests, one had chicks nearly 3 weeks of age when they failed possibly due to an aerial predator; one nest probably failed when a rainstorm hit at hatching time; the third nest was out of sight and no data were known. It was very disappointing to see continued failures at the natural cliff habitat, and it's possible that building improvements into the nest ledges can improve survival of these nests to fledging.
- ❖ Seven pairs of falcons were known to nest on bridges this year. Four of those bridges lie completely within the boundaries of NJ, while three span the Delaware River between NJ and PA and are monitored by NJ (in addition, some data from PA-monitored bridges can be found in Table 1). Bridge pairs fledged 14 (known) young for a productivity rate of 2.00 young per active nest. As usual, nesting can be difficult to confirm on bridges as the nest sites are often located out of sight or on inaccessible sections of the bridge. The only bridge pair that fledged four was in New Brunswick, and other urban pairs also did well, on the Route 3 and Route 46 bridges. The pair on the Burlington-Bristol Bridge fledged just two young, while the Tacony-Palmyra and Betsy Ross bridges failed this year. A new pair nested on an old railroad bridge in the Meadowlands, having taken over an osprey nest from 2013: the site is known as Laurel Hill and the falcons can perch on a nearby cliff when not on the old bridge structure.

We were able to band 35 of the 49 young produced this year, fitting nestlings with an aluminum federal band and an auxiliary, bicolor band engraved with an alpha-numeric code unique to NJ. The 14 young we were unable to band fledged from four bridges and a building in northern NJ. However, we did capture and band the adult female guarding her chicks at the Paulsboro refinery nest!

We treated <2-week old hatchlings with bird lice spray at two tower nests (Marmora and Barnegat) to reduce infestations of parasitic flies (*Carnus hemapterus*), but failed to visit two sites (Swan Bay WMA and Tuckahoe WMA) shortly after hatching and we suspect all hatchlings were lost post-hatching. These flies have

caused mortality of one or all young hatchlings in recent years at some nests. It is not clear if the fly eggs are remaining viable through winter or if the infestation occurs in the early nesting season.

Six addled eggs were collected from five different nest sites this season. They will be held for future contaminant analysis. We are awaiting results from such analyses of eggs collected 1990-2013 being conducted by Dr. Da Chen of Southern Illinois University, whose research focuses on the accumulation and effects of flame retardants.

We turned over the webcam operation at 101 Hudson Street in Jersey City to the Conserve Wildlife Foundation of NJ, and Ben Wurst replaced the analog system with a digital one. The pictures were great, and when the falcons made it clear they were not going to lay eggs, the webcam caught the drama of chick-fostering. We introduced eggs to the adults on April 23, which spurred them to incubate, and replaced the eggs with a chick from the Ocean Gate nest on May 21. The adults continued to be fine parents and the chick grew well and fledged without a hitch. The nesting season was documented online at:

<http://www.conservewildlifenj.org/education/falconcam/>

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 18 breeding adults at 11 nest sites. An additional 16 adults were identified using optics. A minimum of 6 adults (12%) were unbanded. The oldest female identified was a 16-year old that nests in Atlantic City, a bird that failed to lay eggs a second consecutive year and may be beyond her reproductive age. The oldest known male was 11 years. The median age of both males and females was 6. 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. A male banded 15/AM in Atlantic City in 2012 was resighted twice in Stone Harbor and may be nesting in an unknown location in that area. A female banded A/06 in Ocean Gate in 2006 was found nesting on the Rappahannock Bridge in VA in 2013 and 2014. A female banded 01/AE in Jersey City in 2010 was found nesting on a bridge in Westchester County, NY in 2014.

Conclusions

The peregrine population increased slightly in 2014, with average nest success and productivity. Across all sites – towers, buildings, bridges and cliffs – nest success was 71% and produced 1.88 young per active site, figures that are about average. The tower and building nest sites are the consistent center 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 in a stable and productive population.

Nest success at cliff sites returned to a disappointing level, with the known loss of three chicks about 2.5 weeks of age to suspected avian predation. It continued to be difficult to get thorough observations and identify sources of failures; two sites could not be viewed directly at all. The highly variable nest success at the cliff territories continues to be a problem if we consider occupancy of historic habitat important to a fully recovered population. Targeted investigation of the cause of those losses is necessary to guide future 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.

Our Thanks To: Volunteers who protect and watch over peregrine falcons in New Jersey, including McDuffy Barrow, Mike Girone, Ray Gilbert, Bonnie Talluto, Rick Weiman, Keith and Jackie Parker, Hans Toft, Elmer & Bunny Clegg, Dan Brill, Frank Budney; Forsythe NWR staff and volunteers; Delaware River Port Authority staff (Larry Walton, Chuck Wadding, Steve James); Palisades Interstate Park Commission and the Palisades Interstate Parkway Police; Betty Ann Kelly, Thomas MacDermant and John Salerno at the Union County Court House; the Burlington County Bridge Commission and their engineers Jack DiGiovanna and Mike Ott; Palmyra Nature Center and Kristina Merola; Don DeRogatis; Mary Kramer 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; and the staff at The Grand in Wildwood Crest. Thanks to caregivers Dr. Erica Miller, Don and Karen Bonica at Toms River Avian Care, The Raptor Trust, Tri-State Bird Rescue & Research, and Barnegat Animal Clinic. Special thanks to the climbing crew at the Cliffs: John Gumbs and Mitzi Kaiura.

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We remember these dedicated professionals lost in 2014:
Pete McLain, an icon of New Jersey conservation
Len Soucy, an icon of raptor rehabilitation
Dr. Stephen Wurst, longtime wildlife veterinarian for Toms River Avian Care

Table 1. Site-specific results of peregrine falcon nesting in New Jersey, 2014

Site Name	Occupied	Active	Eggs	Young Hatched	Young @ Band Age	Young Fledged	Comments
101 Hudson, Jersey City	Y	N	0	--	--	0/1	We fostered 1 chick from O.G. on 5/21
Atlantic City – North end water tower	Y	Y	U	U	U	U	No data
Bayside Prison Water Tower	Y	Y	3	1 (5/12)	1	1	Coll 1 whole, 1 cracked egg
Drag Island	Y	Y	3	3 (5/27)	2	2	Tower built 2/2013
Egg Island WMA/Dividing Creek	Y	Y	4	3 (5/10)	3	3	4 th egg on ground/cracked
Elizabeth-Union County Court House	Y	Y	3	3 (5/1)	3	3	
Forsythe NWR/Barneget Tower	Y	Y	4	4 (5/12)	3	3	Likely 1 hatchling died (flies)
Forsythe NWR/Brigantine Tower	Y	Y	1	0	0	0	Collected 1 egg
Great Bay WMA/Water Tower	N	N	-	-	-	-	
Heislerville WMA Tower	Nest box removed (2012), box installed at Bayside water tower						
Hilton/The Grand Casino	Y	N	0	-	-	-	Female is 17 years old
Margate Marsh	N	N	-	-	-	-	
Marmora WMA/Sea Isle Tower	Y	Y	4	4 (5/12)	2	2	Likely 2 died (flies heavy)
Ocean Gate (AT&T) Tower	Y	Y	4	3 (5/11)	3	3/2	1 egg, 1 chick to J.C. foster
Paulsboro Refinery	Y	Y	4	3 (5/2)	3	3	
Sedge Island WMA Tower	Y	Y	U	2 (5/12)	2	2	
Sewaren Generating Station	Y	Y	U	2	2	2	Not banded; nest in duct.
Stone Harbor Marsh (new platform '14)	Y	Y	4	4 (5/21)	4	4	No flies.
Swan Bay WMA Tower	Y	Y	4	0	0	0	Flies caused mortality? 1 egg
Tuckahoe WMA Tower	Y	Y	4	0	0	0	Flies caused mortality? 1 egg
Wildwood Crest-Grand Condo	Y	Y	4	4	4	4	New site; flowerpot on balcony
<i>SUBTOTAL: TOWERS & BUILDINGS</i>	18	16	>46	>36	32	32	<i>Total of 4 eggs collected</i>
Delaware Water Gap (NJ Side)	U	U	-	-	-	-	
Natural Site C-1 (Alpine)	Y	Y	U	F (4/30)	0	0	Failed ~4/29-30 NE storm
Natural Site C-2 (Englewood)	Y	Y	U	3 (5/5)	3	3	Inc. 3/31
Natural Site C-3 (Carpenter Cir-Ross Dock)	N	N	-	-	-	-	
Natural Site C-4 (Bombay Hook area)	Y	Y	U	U	0	0	Heard only
Natural Site C-4 (Ruckman-State Line)	Y	Y	3	3 (5/6)	0	0	Failed 5/24-28
Natural Site C-5 (Tenafly-Greenbrook)	N	N	-	-	-	-	
<i>SUBTOTAL: NATURAL SITES</i>	4	4	U	6	3	3	
Ben Franklin Br. (Delaware River)*	Y	Y	4	4	4	4	PA side/PA monitored; 1 d PF
Betsy Ross Bridge (Delaware River)	Y	Y	U	0	0	0	1 egg coll. late
Brigantine Bridge (Atlantic City)	U	U	-	-	-	-	Rumor of pair on Harrah's
Burlington-Bristol Br. (Delaware River)	Y	Y	3	2	2	2	
Commodore Barry Br. (Delaware River)*	Y	Y	U	3	3	3	PA side/PA monitored
Geo. Washington Bridge (Hudson River)*	U	U	-	-	-	-	NY side/NY monitored
Great Egg Harbor-Parkway Bridge	Pair now nesting on the Drag Island tower						
Laurel Hill RR Bridge-Meadowlands	Y	Y	U	U	2	2	1 died post-fledging
Newark Bay Bridge (NJTP or Conrail)	U	U	-	-	-	-	
NJ-PA Turnpike Br. (Delaware River)*	Y	Y	5	5	5	5	PA side/PA monitored; 1 in PF
Scudders Falls Bridge*	Y	N?	U				PA side/PA monitored
Ocean City-Longport Bridge	N	N					
Route 1 Br./Raritan-New Brunswick	Y	Y	U	4 (4/26)	4	4	Not banded; fledgling observed
Route 3 Br./Hackensack (NJDOT)	Y	Y	U	3	3	3	Not banded; nestlings observed
Route 35 Bridge/Belmar	U	U	-	-	-	-	
Route 46 Br./Little Ferry-Ridgefield Pk	Y	Y	U	3 (5/11)	3	3	Unable to band; didn't use box provided in Br Tenders Tower
Secaucus-Kearny NJTP Bridge	U	U	-	-	-	-	
Tacony-Palmyra Br. (Delaware River)	Y	Y	3	0	0	0	1 cracked egg coll. 6/2
Trenton RR Bridge	U	U	-	-	-	-	
Vince Lombardi – NJTP Bridge	U	U	-	-	-	-	

Walt Whitman Bridge (Delaware R.)	Y	U	U				NJ side? but no data.
<i>SUBTOTAL: BRIDGES (NJ only)</i>	7	7	≥6	≥12	14	14	
TOTALS (NJ Only)	29	27	≥52	≥54	49	49	49 yng/26 known-outcome nests=1.88 young per nest

U = Unknown

*denotes bridges not monitored by New Jersey

Table 2. Peregrine falcons banded in 2014. Auxiliary color bands are black over green.

Band Number	Aux Color Band	Date	Location	Sex	Comments
2206-75873	51/AM	21-May-14	Union Co. Courthouse	M	
2206-75874	52/AM	23-May-14	PB Paulsboro Refinery	M	
2206-75875	75/AN	23-May-14	PB Paulsboro Refinery	M	M w/F color band
2206-75876	53/AM	29-May-14	Palisades-Englewood	M	
2206-75877	54/AM	29-May-14	Palisades-Englewood	M	
2206-75878	55/AM	1-Jun-14	Sea Isle City	M	
2206-75879	56/AM	2-Jun-14	Sedge Island	M	
2206-75880	57/AM	2-Jun-14	Sedge Island	M	
2206-75881	58/AM	2-Jun-14	Grand-Wildwood Crest	M	
2206-75882	59/AM	2-Jun-14	Grand-Wildwood Crest	M	
2206-75883	60/AM	4-Jun-14	Ocean Gate	M	
2206-75884	61/AM	4-Jun-14	Ocean Gate	M	
2206-75885	62/AM	4-Jun-14	Forsythe-Manahawkin	M	
2206-75886	63/AM	5-Jun-14	Dividing Creek	M	
2206-75887	64/AM	5-Jun-14	Dividing Creek	M	
2206-75888	65/AM	11-Jun-14	Bayside Water Tower-Heislerville	M	
2206-75889	66/AM	14-Jun-14	Stone Harbor	M	
2206-75890	67/AM	14-Jun-14	Stone Harbor	M	
2206-75891	68/AM	14-Jun-14	Stone Harbor	M	
2206-75892	69/AM	18-Jun-14	Burlington-Bristol Br	M	
1687-02935	73/AN	21-May-14	Union Co. Courthouse	F	
1687-02936	74/AN	21-May-14	Union Co. Courthouse	F	
1687-02937	none	23-May-14	PB Paulsboro Refinery	Ad-F	Adult female at nest
1687-02938	76/AN	23-May-14	PB Paulsboro Refinery	F	
1687-02939	77/AN	29-May-14	Palisades-Englewood	F	
1687-02940	78/AN	1-Jun-14	Sea Isle City	F	
1687-02941	79/AN	3-Jun-14	Jersey City	F	
1687-02942	80/AN	5-Jun-14	Dividing Creek	F	
1687-02943	81/AN	2-Jun-14	Grand-Wildwood Crest	U	
1687-02945	82/AN	2-Jun-14	Grand-Wildwood Crest	F	
1687-02946	83/AN	4-Jun-14	Forsythe-Manahawkin	F	
1687-02947	84/AN	4-Jun-14	Forsythe-Manahawkin	F	
1687-02948	85/AN	14-Jun-14	Stone Harbor	F	
1687-02949	86/AN	18-Jun-14	Burlington-Bristol Br	F	
1687-02950	87/AN	20-Jun-14	Drag Island	U	
1687-02951	88/AN	20-Jun-14	Drag Island	F	

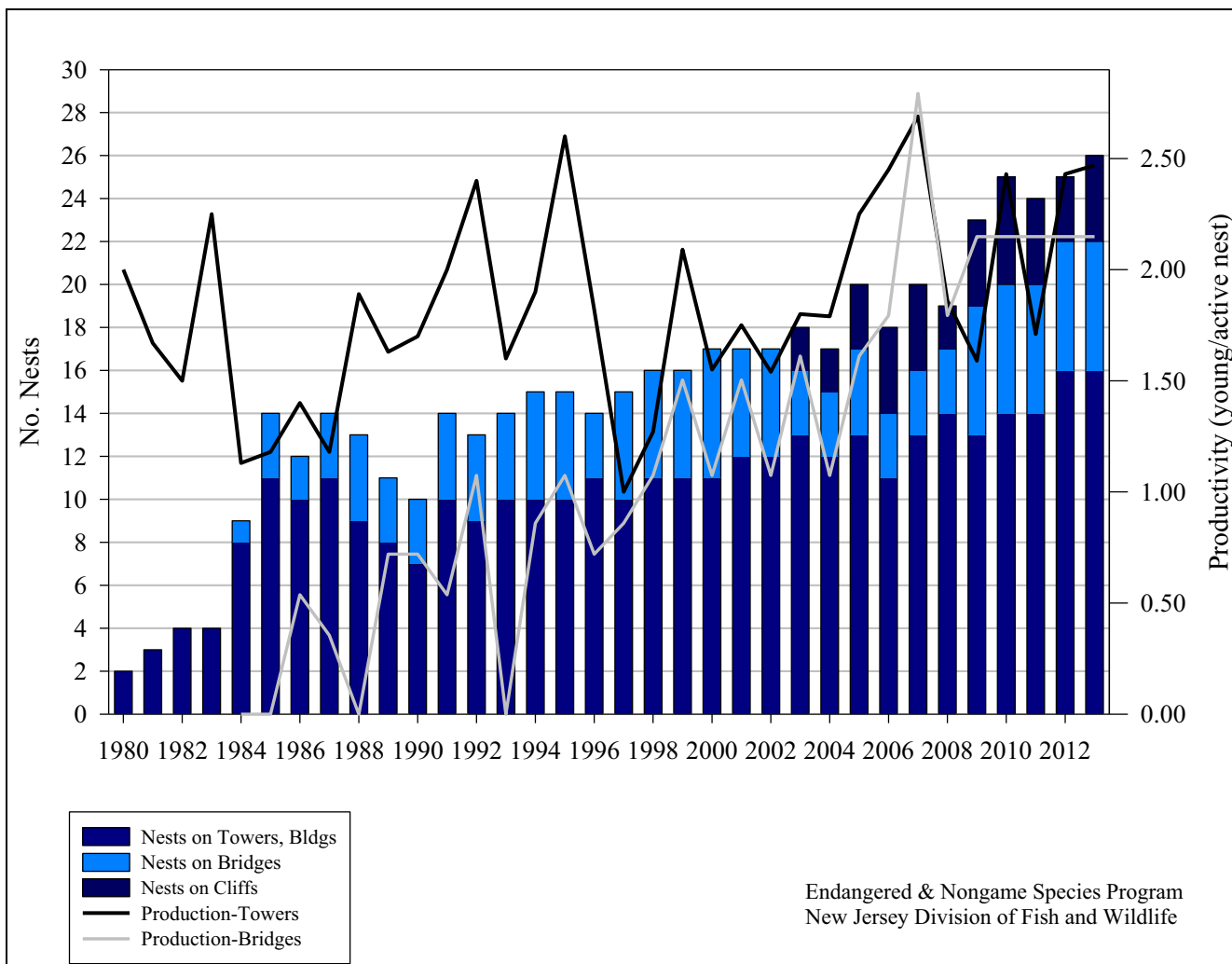


Figure 1. Nesting and productivity of peregrine falcons in New Jersey, with comparisons between towers/buildings, cliffs, and bridges

~ End ~