The Peregrine Falcon in New Jersey
Report for 2005

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*Project Objective: To maintain, monitor and protect the Peregrine Falcon (*Falco peregrinus anatum*) population in New Jersey.*

Summary:

In 2005 the New Jersey peregrine falcon population grew slightly to 20 pairs. It was heartening to see the natural cliff population grow to three pairs and all three were successful in fledging young. Two other new nesting or territorial pairs were found on buildings in the cities of Newark and Elizabeth. In the rest of the state, 12 pairs nested on towers and buildings and three on bridges. Of 13 pairs on towers and buildings, ten nested successfully, producing 29 young for a rate of 2.23 young per active nest. This is above the average of 1.70 recorded since 1986, when the population became stable. New Jersey monitored four pairs on bridges spanning the NJ-PA border. Other bridges entirely in New Jersey were not monitored to the extent that we could report results. Bridge sites remain inconsistent year to year and are difficult to track; even so, productivity was 1.50 for four known-outcome nests due to the efforts of bridge managers. We banded 37 young at 12 nests, applying both the federal band and a bicolor band with an alpha-numeric code. We collected two addled eggs from two sites, and stored the contents for contaminant analysis.

In 2005 we continued to use a remote, motion-activated camera to photograph peregrine legs as the adults entered their nests. In this way we were able to read the legbands on 16 breeding adults at nine nest sites. This is a tool we plan to continue using to identify nesting adults and record their origin, age and site fidelity, additional information that will help us judge the stability and viability of the population. We identified five additional birds by reading their color bands using optics.

Background: The decline of the peregrine falcon in the eastern U.S. has been linked to persistent organochlorine pesticide contamination. The eastern population plunged from an estimated 350 active sites in the 1930's and 1940's to no active breeding birds in 1964 or 1975. Recovery efforts began in 1975 after DDT was banned in the U.S. The NJ Division of Fish and Wildlife and the Peregrine Fund first hacked falcons in 1975 at Sedge Islands Wildlife Management Area in Barnegat Bay. Hacking continued at several sites until pairs established territories. Wild nesting began at Forsythe National Wildlife Refuge in 1980, and expanded slowly until 1993, when the population reached its present level. In New Jersey, the recovery goal is *consistent, successful nesting by eight to ten pairs.* While there have been 8-10 pairs successful since 1999 (disregarding the variable bridges), we seek longer-term success and expansion into *historic* and well-protected nest sites to achieve full recovery. Further, we are still concerned about the effects of persistent organochlorine contaminants on the population. We took part in a recent study of contaminants in eggs of mid-Atlantic peregrines, and found that New Jersey coastal peregrines had some of the heaviest loads of DDE and mercury. Population management focuses on monitoring nests, banding young, and improving conditions at nest sites in order to enhance productivity.

Highlights:

The highlight of 2005 was the same as the previous two years: successful nesting in natural cliff habitat formerly devoid of peregrines since about 1950. The successful fledging of a young at the cliffs in 2003 was a huge milestone, and an amazing sight for peregrine fans. In 2005, we were further inspired by tracking three nesting pairs, all of which successfully raised young. This is a new milestone that makes full recovery in historic habitats credible and achievable. More dramatic events unfolded on the webcam at the nest atop 101 Hudson Street in Jersey City. This nest lost the tiercel to an accident, but weathered that loss and other problems to successfully fledge two young. The events were interpreted by Linn Pierson and followed by peregrine fans in the website's Nestbox News.

Productivity was well above average at tower and building nest sites: for the first time ever, five nests successfully fledged four young each. Congratulations to Egg Island, Swan Bay, Tuckahoe, Ocean Gate nests, and "C-3," one of the cliff sites! Sedge Island and "C-1" each fledged three young; Brigantine, Marmora, Stone Harbor and Jersey City each fledged two young; the Hilton Casino and "C-4" each fledged one young. The only failures were at Barnegat, Heislerville, and the new nest on a ledge in Newark.

On the Delaware River bridges, three of four hatched young fledged successfully at the Betsy Ross and Walt Whitman nest boxes. A pair nested unsuccessfully at the Commodore Barry Bridge, but two young fledged from the NJ-PA Turnpike Bridge on the Pennsylvania side. This was the second year a pair nested at the Tacony-Palmyra Bridge; we are hoping they work things out next year. At northern New Jersey bridges, construction engulfed the George Washington Bridge site, which may have forced those birds toward the Palisades cliffs. As far as we know, no young fledged from either the NJ Turnpike-Vince Lombardi site or the Newark Bay Bridge, discovered last year.

- The statewide population grew by three pairs, to 20 nesting pairs (Figure 1, Table 1). Productivity was above average at 2.10 young per active nest for 20 known-outcome nests.
- Productivity was very good at 13 tower and building (non-bridge sites), averaging 2.23 young per active nest; ten nests were successful in producing 29 young. Productivity at four bridge nests was above average at 1.50 young per nest; two bridges produced four young each, and two bridges failed to produce. The 1.50 rate does not include the loss of two young when they fledged from two bridges.
- In 2005 the natural cliff habitat in northern NJ hosted three nesting pairs that fledged four, three and (at least) one young, respectively. Of the pairs that occupied those cliffs in previous years, only one remained in the same location, which suggests that pairs have not developed a strong affinity to particular eyries, or that there are multiple suitable nest sites available. A third eyrie active in 2005 may have been a pair that relocated from a nearby bridge.
- Biologists banded a total of 37 nestlings at 12 nest sites. We plan to begin banding at cliff sites in 2006.
- Two new urban pairs were discovered in 2005: A new pair nested on a window ledge of a Newark building undergoing demolition; the nest was protected from disturbance until after the pair abandoned apparently infertile eggs. A territorial pair occupied a building in Elizabeth; the adults were identified by their color bands, and the female, at two years of age, is expected to attempt to nest next year. Biologists will provide nest structures at both these locations.
- Biologists built a new, smaller nest tower to replace the tower on Egg Island WMA. The new tower was sited about 5 miles to the east, to remove the peregrine nest from an important shorebird roost site and thereby reduce the management conflicts between species of concern.
- Biologists replaced the nest box at two tower sites with a plastic dog "igloo," making a total of six such structures currently in use in NJ. The igloo structures require virtually no maintenance, are accepted by peregrines, and may facilitate peregrines' defense of their nests and chicks.
- New nest structures were placed on building roofs in Newark and Secaucus, but were not occupied in 2005.

- For the fifth year, a camera watched the nest on a Jersey City rooftop, and the image was available for viewing on the Division of Fish and Wildlife's website (www.njfishandwildlife.com/peregrinecam). The camera and website were maintained by private funding through the Conserve Wildlife Foundation of New Jersey.

Recoveries: One of the first recoveries of the season was determined to be the adult male from the Jersey City pair, recovered alive on April 30 after losing a wing in a wire collision near the Jersey City train station. This bird was banded (X/5), and had originated in 1998 from the Outerbridge Crossing between NJ and NY. His loss from the nest site occurred during the last week of incubation, but the remaining falcon successfully raised three young to fledging, in a drama we won't soon forget. Naturalist Linn Pierson chronicled the details of the Jersey City nesting season as she visited the nest site, watched the webcam, and translated the falcon behaviors into a fascinating story. The tiercel remains at the Raptor Trust, destined to help in wildlife education efforts there.

Also qualifying as recoveries are the peregrines re-sighted using both optics and the remote camera. We identified 22 breeding adults at 13 nest sites. There appeared to be greater turnover among females (4 of 8 known in 2004 were replaced in 2005) compared to males (1 of 7 known in 2004 was new in 2005). Repeating a trend observed in 2004, most adults identified originated in New Jersey: 8 of 13 females and 10 of 12 males. Five adults could not be identified because they lacked federal and/or color bands.

Conclusions: Peregrines had excellent nest success in 2005, their 26^{h} year of nesting in New Jersey. Nest success was good at 75%, and 20 active pairs fledged 42 young. We need to continue the investigation of contaminants in unhatched, salvaged eggs, as well as the close monitoring of nesting pairs to detect problems. 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 management and the cooperation of bridge and building personnel, these sites can contribute to population viability. The success of peregrines nesting in historic, natural habitat made 2005 a new landmark year for the peregrine's recovery in New Jersey.

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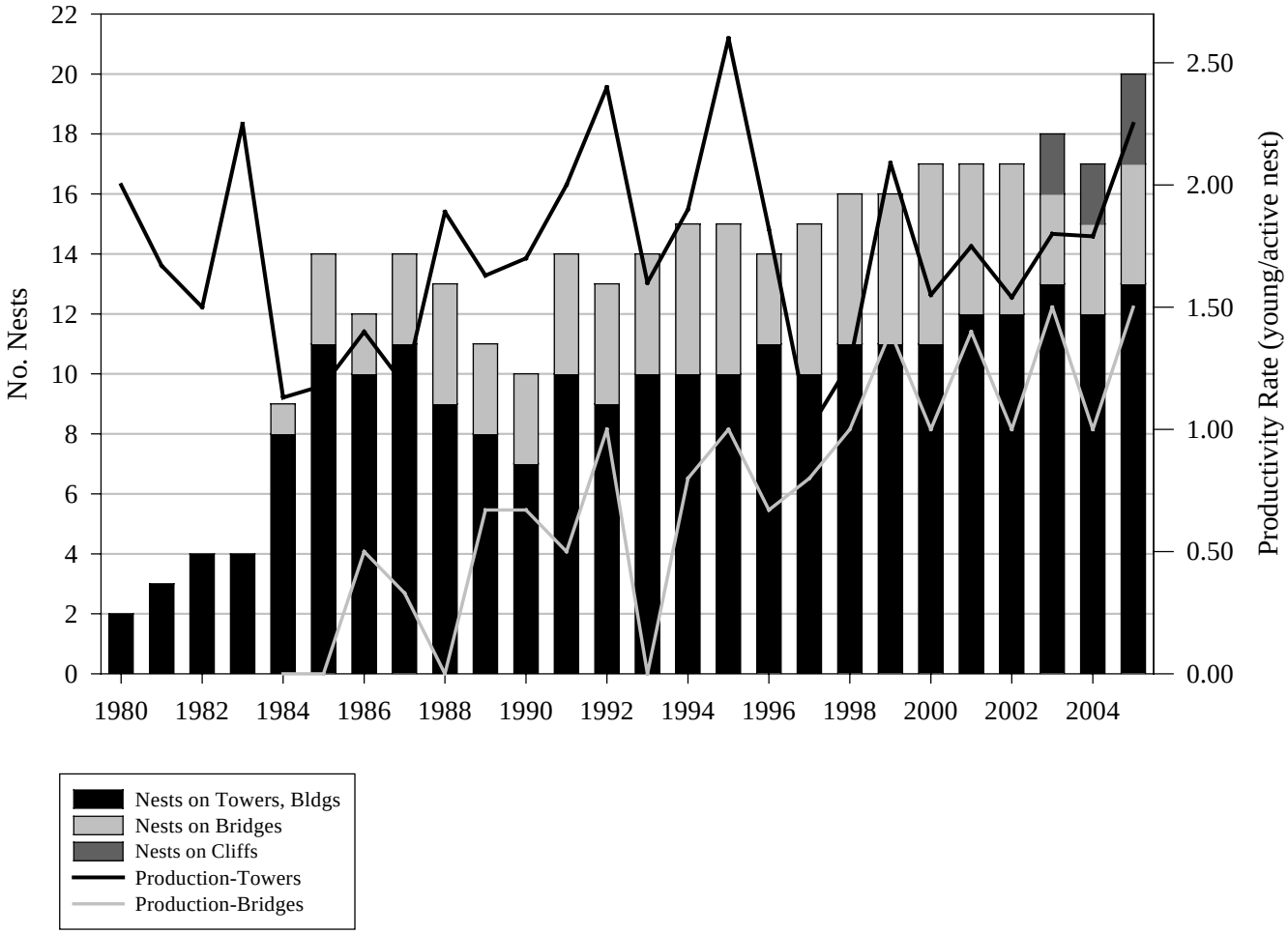

Figure 1. Nesting and productivity of peregrine falcons in New Jersey, with comparisons between towers/buildings, cliffs, and bridges.