New York City

Peregrine Falcons

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Robert DeCandido, PhD and Deborah Allen with photos by the authors

People from all over the world are fascinated by Peregrine Falcons. In flight, these mid-sized predators are simply perfect. The combination of speed, acceleration, and maneuverability on powerful wings is the essence of birdness. Their presence in New York City also represents one of the great successes in Conservation Biology. Here in the eastern United States, they have literally returned from the brink of extinction. In Manhattan on a single day, it is possible to visit at least three nest sites in late May. In early October on northwest winds, Peregrine Falcons migrate through our area in good numbers.

…Dedicated to Saul Frank and Laurence Poh…

In 1983, Peregrine Falcons nests were discovered in New York City at two bridges: the Throgs Neck and Verrazano-Narrows. There had been no nests recorded in our area for more than a quarter of a century. Our city now has a greater number of active Peregrine nests than any other urban environment in the world. The Peregrine has even been declared the official bird of New York City. How is it possible that this species could have recovered so well, right in the heart of one of the largest cities in the world?

Historically, Peregrine Falcons (*Falco peregrinus*) once nested along the Palisades cliffs on the New Jersey side of the Hudson River. In Manhattan up until the 1950s, they rarely nested on tall buildings. In recent times, they have adapted to bridges and tall buildings in the metropolitan area that rise sharply above the surrounding landscape. Here they can raise their families, hunting for pigeons and smaller birds that abound in New York City.

Peregrine nests are often located near water on bridges, buildings or cliffs, because these falcons prefer to hunt over open terrain. Open areas, such as the canyons between skyscrapers, and along river courses, are usually windy or breezy. This benefits the falcons greatly as they pursue flying prey with intense speed and determination. With extremely sharp vision, the Peregrine "locks on" to a potential meal. Then, the chase begins, winding and unwinding until the falcon zooms up from behind, flips over and seizes the bird in its talons. Alternately, a Peregrine will

You Can Help…

Reports on Peregrine sightings (especially from February to July) are strongly encouraged and greatly appreciated. Contact: the NYC Peregrine Project Manager, Chris Nadareski cnadareski@dep.nyc.gov or New York State Peregrine Project Coordinator, Barbara Loucks baloucks@gw.dec.state.ny.us . They are always interested in hearing about possible new Peregrine nest sites in New York. Thanks!

swoop down from above, seize a flying bird, and carry it to a perch, where it will consume the prey. In the New York City area, male Peregrines (called "tiercels" by falconers) primarily capture small birds such as Mourning Doves, Starlings, Robins, Blue Jays and House Finches. Female Peregrines ("falcons"), being somewhat larger, prey mostly on pigeons.

Prey are often caught attempting to cross open areas such as from one patch of greenery to a distant one. For example, at the Riverside Church nest site (120th Street and Riverside Drive in Manhattan), the tiercel perches nearly 250 feet up among the gargoyles overlooking Riverside Drive. From this vantage point he can clearly see Mourning Doves attempting to cross from one side of the Hudson River to the other. He then swoops down, closing the distance between himself and the prey in seconds. Isolated over the water, the prey has no choice but to try and out-fly the tiercel. If the male misses the bird on its first pass, a series of repeated dives (in "loop-the-loop" fashion) may be executed. To avoid being caught, a Mourning Dove may simply plop down into the Hudson River. Other species such as Blue Jays will try to gain altitude and remain above the Peregrine in pursuit. Avoidance tactics are generally futile, and once a Peregrine locks onto prey, the operative word becomes, "victim." Peregrines can out-fly any other bird on the wing in North America. Peregrines seem to prefer to attack species with conspicuous "flash" patterns in flight (such as Blue Jays and Northern Flickers) or those with special courtship or flight displays (American Woodcocks). Agile prey species such as swifts, swallows and even shorebirds, are attacked in a different way. The tiercel and falcon may work as a team to isolate and capture one of these birds after a sustained chase over open terrain.

Female Peregrines, being about a third larger than males, are better suited to capturing larger prey items such as city pigeons. Typically, a female peregrine will see a flock of these birds circling above city roof-tops. Leaving her hunting perch she might fly up to a mile to dive into the flock. If she can, she will seize one of the pigeons after a dive from above, and take it to a nearby roof-top to eat. At the 55 Water Street nest site (see: www.falcons.55water.com), Peregrines have been seen executing dives of several hundred feet, perhaps attaining speeds greater than 100mph, in pursuit of pigeons. For this reason, pigeon keepers in all five boroughs dread the appearance of the Peregrine, since this predator can cause their circling birds to scatter widely. On the other hand, during the nesting season, female Peregrines may capture pigeons much more simply. At the Throgs Neck Bridge nest site, female Peregrines have been seen flying into the alcove where pigeons roost. In this enclosed space, a pigeon is easily captured, and the female Peregrine can quickly return with it to her nest to feed her young birds.
In 2004, it was first discovered right here in NYC that Peregrine Falcons frequently hunt night migrating birds, using the top of the Empire State Building as a perch from which to launch their attacks. At certain times of the year (August through mid-October), Peregrines may be capturing more prey at night than during the day. The peak season for night hunting by Peregrines at the Empire State Building occurs from late September through mid-October, which also corresponds to the peak migration time of birds in our area.

Malaysian Peregrine Falcons Adult © 2001 Laurence Poh Juveniles © 2006 Ooi Beng Yean

The best time to see Peregrines hunting near their nest is in late spring when their young are about to fledge. Mornings and late afternoons on days with a moderate wind are the best times to visit. From about 10 May through 15 June each year, both adults are actively chasing birds to feed their hungry and vocal offspring. To defend the nest during this time, they attack any large bird that crosses their territory. Cormorants, crows, gulls, Red-tailed Hawks, Ospreys, and even Great Blue Herons are dived-bombed by anxious parents if these birds fly too close to a Peregrine nest. Since about 1990 in Manhattan, the Peregrines at the nest sites at the Brooklyn Bridge and at New York Hospital (both sites are on the East River) have tended to fledge young the earliest, usually by 15 May. By comparison, the Throgs Neck Bridge, Riverside Church and 55 Water Street Peregrines tend to fledge the latest (early to mid-June). Research by Chris Nadareski of New York City's Department of Environmental Protection (NYC-DEP) indicates that Peregrine Nests on buildings produce more fledged young than nest sites at bridges.

In our area, once the young are flying, there can be many Peregrines in the air simultaneously near the nest. This is the most fun time of the year to falcon watch, since young Peregrines will readily chase anything that flies past them, from dragonflies to each other. By mid-July the young Peregrines are beginning to range further, and may be difficult to locate in the area of the nest site except early in the morning. By late August, these juvenile Peregrines are dispersed throughout our area and beyond. If you cannot visit a nest site in the spring, the fall is also an excellent season to look for Peregrines. In early October, the first cold front that passes through our area will bring a wave of migrating Peregrines. As the winds shift to the northwest, these falcons migrate south in greatest number along coastal areas. On these days a lucky observer at a hawk watch at Fire Island or one of the ocean beaches, especially along the Rockaways or Riis Park in Queens, might see up to 50 Peregrines flying south fairly low over the sand. Many of these are the "*tundrius*" subspecies, coming south from Greenland and even the Arctic to winter primarily in Central and South America.

5 Week Old Peregrines - Marine Parkway Bridge
Brooklyn 2002

Recently Fledged Peregrine at the Brooklyn Bridge
15 May 2002

As one moves west farther inland and away from the ocean beaches, the numbers of migrant Peregrines that can be seen on a good day decreases. For example, at Pelham Bay Park in the Bronx on the western edge of the Long Island Sound, a good day in early October with northwest winds will produce 10-20 peregrines in migration. On the same day in Central Park, up to 5 may be expected. Some of the migrants will remain in the area and can easily be seen if you know where to look. For example, a pair of Peregrines spent the winters of 1995-96 on the east face of the San Remo building at 74th street and Central Park West. Another pair has over-wintered in 1997-2005 in the area of 5th Avenue and Central Park South. These two adults are often perched atop 9 West 57th Street and the nearby Sherry-Netherland Hotel. They can often be seen from Central Park, since they like to perch on buildings that overlook it.

In late summer and fall, along with migrating Peregrines comes a wave of other falcons such as Kestrels and Merlins. This season from mid-August through late November is the time of the migration of raptors, the greatest movement of land-based predators on earth. In Manhattan, the best place to observe birds of prey in migration is from the Observation Deck of Belvedere Castle in Central Park (mid-park at 79th street). Days when winds are from the northwest are best, though it is usually possible to see a few soaring hawks on any given morning. In the Bronx, the parking lot at Orchard Beach (along the sculling lagoon), is the best place in New York City to observe diurnal raptor migration. Over 20,000 raptors of 15 species were seen in this urban park during one fall season, including more than 15,000 Broad-winged Hawks on 18 September 1990. In New York City, the most commonly seen migrants besides Broad-wings are Sharp-shinned Hawks and Ospreys, and the rarest is the Golden Eagle.

Adult Peregrine, Riverside Church 2004: *Note the long, pointed wings without any pronounced "fingers." Male wingspans average 39 inches, and female wingspans can be up to one-third larger. Active (flapping) flight is with shallow but stiff wing beats, similar to those of cormorants. From below, adults show black horizontal streaks against a whitish body. From above, adults have a black helmet and sideburns, with slate grey back. There are two subspecies in our area: the resident* anatum *subspecies, shown here; also a migrant* tundrius *subspecies that has a forehead that appears light grey or "blonde."*

Peregrine Falcons have a long history with man, and like humans, these raptors are found on every continent except Antarctica. As early as 2400 B.C., the Peregrine had made its appearance in art: Horus, the Egyptian god of the sun, and symbol of sun and sky, was probably derived from the Peregrine. (Both large and small falcons cast in this image are on display in the Egyptian wing of the Metropolitan Museum of Art.) By about 860 A.D., the sport of falconry had become popular with the nobility in Europe. Peregrines were a preferred species to hunt with because of the fabulous stoops (dives) at flying prey that this species can make from great heights. In the United States, the Peregrine once hunted the extinct Passenger Pigeon and almost shared a similar fate.

Beginning in the late 1940s, Peregrine Falcons underwent a dramatic decline. The reason became clear during the late 1950s: pesticides such as DDT, applied to crops to control insects, were finding their way up the food chain, and accumulating in the bodies of Peregrines and other raptors. The pesticides caused females to lay eggs with thin shells, which would crack when the female sat on them. Due in large measure to the work of Rachel Carson (*Silent Spring*) and other scientists, DDT was banned in this country in 1965. At the University of Wisconsin at Madison, Professor Joseph J. Hickey (who grew up in the Bronx, and was a member of the Bronx County Bird Club) did much research about the ecology, and decline, of the Peregrine in the United States. However, despite these efforts to identify the problem that led to the decline of this falcon, it was already too late for the Peregrines of our area. By 1964, the Peregrine was extinct in the eastern United States, a region that had previously supported about 200 pairs.

In the mid 1970s, a captive breeding project was begun in order to bring back the birds. This pioneering project in conservation biology was developed and administered by Professor Tom Cade, founder of the Peregrine Fund. Birds released through this program eventually made their way to New York City. To facilitate their breeding, federal and local wildlife agencies placed

nest boxes on certain bridges and skyscrapers. As a result, there are now more Peregrine nests than ever in our city. From 1995- 2005, there were about 12 known nest sites in New York City, with at least 5 different locations in Manhattan. The nests are monitored and protected by the New York City Department of Environmental Protection, and a cadre of volunteers. Because of the work of Professor Cade and others, the Peregrine Falcon was removed from the list of North American endangered species in 2004. For more information about the history of this project, see the web site of the Peregrine Fund: www.PeregrineFund.org

Peregrine Falcons are a great success story. Their reintroduction shows that people can intercede and make positive changes in the world. However, what will be the fate of lesser known species? Most of the approximately 10 million species on earth are small or nondescript, but can play big roles in the biosphere. Some pollinate plants, making fruits and vegetables available to us. Other tiny species simply make most of the oxygen we breathe. What would happen if these became extinct? The Peregrine Falcon is one species that is still with us. Who cares about the 9,999,999 others?

This flyer is dedicated to two people with whom we were fortunate enough to watch Peregrine Falcons with through the years. From 1985 through 1996, many happy hours were spent with Mr. Saul Frank (1935-1996) at the nest site on the Queens side of the Throgs Neck Bridge. Some of the information contained in this flyer was seen in his company, or derived from his book, **City Peregrines**. *The authors also wish to acknowledge the friendship and knowledge that Saul, his wife Dolores, and Mr. Ted LeViness shared with them. Farther afield as part of our raptor migration research in Southeast Asia, we were fortunate to meet Mr. Laurence Poh (1952-2004) of Malaysia, and many of the digiscopers and birders of the Malaysian Nature Society such as Ooi Beng Yean, Chiu Sein Chiong and Dr. Cheang Kum Seng. The photographs on the "Laurence of Malaysia" web site are a testament to how much we have learned about all birds in just the last decade. See www.LaurencePoh.com for magnificent photographs of tropical Asian Peregrines and other birds of that part of the world.*

Closer to home here in NYC, Carl Howard provided information about the Brooklyn Bridge Peregrines. Barbara Saunders kept us posted about happenings at the 55 Water Street nest site, that is so well looked after by Frank Magnani and his colleagues in the Security Department. Our thanks is also extended to Rita and Barry Freed, Ph.D., the latter of Cornell University's New York Hospital, where we watched Red-Red and other nesting Peregrines above the East River in the middle 1990s. At Riverside Church, we have been hosted on several occasions by Jeff Nulle and Laura Jacobs. At night at the Empire State Building, we watched Peregrines with Sandra Critelli, Mark Kolakowski, Alan Rosenberg, Ellen Shapiro, Mary Traynor, S.J. Wiley, Carol Wood and many of our friends from our bird walks in Central Park. Finally, we thank Merrill Higgins for his efforts on behalf of the public on the bus trips we led around New York City to observe nesting Peregrines from 1995-2000. We wish to acknowledge information provided to us by Bill Clark about Peregrine Falcons in North America.

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