

## From Death's Door to Life in the City

### The Urban Peregrine Falcon

by Lucy M. Rowland

The use of *dichlorodiphenyltrichloro ethane*, or DDT, ended in the United States in 1972. A widely used, persistent pesticide that worked its way up the food chain, DDT and its metabolic end product *dichlorobis (dichlorophenyl) ethylene*, or DDE, pushed populations of birds of prey in North America to the brink of extinction by the mid-century mark. As the birds accumulated the toxins in their fat reserves, the shells in their clutches thinned and broke easily, or never hatched. Adult birds and weakened chicks died. By the time Rachel Carson published her oft-reprinted book *Silent Spring* in 1962, it was almost too late for the Peregrine falcon. By 1960, the population was nearly wiped out on the East Coast of the United States and in decline elsewhere in its range. In 1964, virtually all Peregrines in the upper midwestern U.S. were gone. The future of this elegant and feisty bird seemed grim.

But this is not a story about the extinction of a species. In fact, with some fanfare, Secretary of the Interior Bruce Babbitt removed the Peregrine falcon from the Endangered Species List on August 20, 1999, at a ceremony at a raptor research facility in Boise, Idaho. The remarkable tale of the regeneration of the Peregrine falcon in the United States is one of human persistence and species adaptability to a new environment, 50 stories up.



**Falco peregrinus, the Peregrine falcon.**  
Photo courtesy of Defenders of Wildlife.

Peregrine falcons are heavy, compact birds with the female being significantly larger than the male. Females weigh about 2 pounds with a wingspread of 40 to 46 inches, while a male will weigh in at about 1 1/2 pounds and span just 37 to 39 inches, roughly the size of a crow. They are powerful raptors in flight, achieving speeds of 175 to 200 miles per hour in astonishing vertical dives known as "stoops," with wings glued to the body, optimizing the bird's aerodynamics. Their plumage is distinctive, with a dark hood and white cheek patches on the head, bluish, slate gray back, and light underbelly with horizontal dark bars, sometimes with a faint peach coloration over the breast—a beautifully packaged avian with a hostile, imperious stare and inch-long talons at the ready.

Peregrine falcons are found on every continent in the world except Antarctica, primarily from temperate zones to the tundra or arctic regions. *Falco peregrinus* is far ranging, and in fact, the species name is derived from the Latin for "wandering." They are keen hunters with acute vision and feed primarily on small birds and mammals, waterfowl, and

reportedly, even bats. Clearly they seem to prefer the challenge of a moving target. A falcon will locate prey visually from high altitude and go into a stoop, knocking the bird out while catching it in air, or grasping it with its talons from below as it levels off from the steep dive like a fighter jet.

Peregrines rarely breed before they are two years old. A clutch is three to six eggs, and nest building is not a major domestic activity—instead the female lays the eggs on a cliff ledge or some similar spot. Incubation is 33 days and the fledglings can fly by the time they are about six weeks old.

Prior to the sharp decline of Peregrines from the raptor's indigenous habitat, the birds nested mainly on steep cliffs, which seems like a very wild bird-like thing to do. There were about 2,000 pairs at the turn of the century in the U.S. But by 1964 there were no active nesting pairs of Peregrines in the eastern United States at all. In 1970, there were only 39 known pairs in the lower 48, a reduction of 100 percent east of the Mississippi and about 90 percent in the west. Including Canada and Alaska, there were fewer than 325 pairs in all of North America by 1974. At that desperate time for the species, Dr. Tom Cade of Cornell University initiated The Peregrine Fund and persuaded hobby falconers to send their remaining captive birds to him to attempt breedings, at best a risky project with doubtful likelihood of success. Against the odds, twenty hatchlings survived in 1973 and the first releases into the wild took place the next year.

Beginning a breeding and captive release program for Peregrine falcons was not likely to be a panacea and in no way guaranteed that the population could be reestablished in the wild. Even as large numbers were reintroduced to former habitats, it was not easy to prove that they were surviving and reproducing, the true measure of the project's success. However, in the early 1970s, two events occurred that almost certainly tipped the balance in favor of the Peregrines. First, the U.S. and Canada finally banned the use of DDT. Second, Congress passed the Endangered Species Act in 1973, placing the species under vast federal protection. Together these measures provided protections that the Peregrine falcon's wild brothers and sisters had not enjoyed during their decades of steep decline.



**A fledgling Peregrine falcon with new flight feathers and nesting box on a building ledge in downtown Montreal.**  
Photo courtesy of Peregrine Falcon Information Centre.

The fledgling captive breeding program was only partially a practical attempt to stabilize and reestablish one declining species. It also served as a research vessel to gain information and establish techniques that could be used with other endangered species, primarily eagles and other raptors. The population could be increased through augmentation, fostering chicks, or a method known as hacking where young birds are released after being acclimatized. A hack box is rather like an enclosed nest that provides young falcons (eyasses) with perches, food and water, and a view of their new habitat before venturing their first flight. While the birds are released at around 45 days of age, weather conditions are also considered to optimize success.

Choosing the location for the release provided an intriguing result that no one quite anticipated. Because immature falcons are susceptible to predation by large owls, raccoons, and foxes, researchers began hacking and releasing birds in urban areas where they hoped their chances of survival would be better. This idea originated from the knowledge that Peregrine falcons traditionally nest on cathedrals and other large buildings with ledges in Europe. In fact, a wild falcon dubbed Scarlett nested on a Baltimore building for several years beginning in 1978. Captive-bred Peregrine falcons later were released in more than a dozen U.S. cities in the east, midwest, and west. By 1993, nearly three quarters of the 43 nesting pairs in the midwest were located in urban environments.

By the mid-1980s, the Peregrine falcon began showing small successes in its gradual comeback. And, not coincidentally, the seemingly strange phenomenon of urbanization continued. Banded Peregrine falcons settled into cities with ever more frequency, sometimes bringing with them a non-captive bred mate. In 1988, Red-Red, a two-year-old captive-bred female, and her wild mate nested on a ledge of the New York Hospital-Cornell Medical Center, 25 stories above the street in Queens, and successfully raised two chicks. That same year, more than 30 breeding pairs were reported in U.S. cities, and 74 percent of them reared fledglings. Researchers began to track the city dwellers, and by 1988 breeding pairs were found nesting in such places as the Custom House in Boston, Throg's Neck Bridge, Verrazano Narrows Bridge, Tappan Zee Bridge, Riverside Church, and near the World Trade Center in New York, Wisconsin State Bank Building in Milwaukee, the Golden Nugget Casino penthouse in Atlantic City, the U.S.F.&G. in Baltimore (home of the very popular Scarlett from 1977-84), and the Oakland Bay Bridge in San Francisco. By 1989, after the release of nearly 3,000 captive-bred Peregrines, researchers estimated about 1,200 pairs living in the wild. As of 1997, twelve breeding pairs resided in New York City alone. Other U.S. cities where Peregrine falcons have taken up housekeeping include Chicago, Atlanta, Minneapolis/St. Paul, Springfield, Mass., Philadelphia, Norfolk, Toledo, Detroit, Salt Lake City, and Long Beach, Calif.

One reason that Peregrine falcon aficionados believe the birds thrive in large cities is the abundance of prey in the form of typical small urban wildlife. Pigeons, starlings, and blue jays make for easy targets and there is not much competition from other predators. Peregrines have been known to prey on rats and ground squirrels for gustatory variety. Also, skyscrapers in the cities that have attracted the falcons have ledges that approximate the cliffs the species uses in wilder settings. However, Peregrines shun building nests, often requiring some sort of box or other modification to prevent the eggs from simply rolling over the edge and the fledglings from falling to the ground.



**The not-so-urban Peregrine falcon: biologists prepare to release a Peregrine in the remote mountains of Montana.**  
Photo courtesy of Wyoming Department of Game and Fish.

There are some serious disadvantages, however, to the Peregrine's urban-dwelling ways. Some cities' proclivity for creating skylines of large structures with plate glass provides a serious hazard to the birds, especially young, inexperienced ones that fly into them. Fledglings that fall off ledges can be injured, killed, or lost by their parents which are unable to hear them in the din of the city. Even if they make it to the ground without injury, baby falcons are vulnerable to predators such as dogs, people, and automobiles, as well as starvation and dehydration. Adult birds are susceptible to lead poisoning when their food source is contaminated.

Direct human intervention is another risk, as in the case of Los Angeles in the late 1980s, where several Peregrine falcons were shot, probably by "tumbler" pigeon enthusiasts. To the Peregrine falcon, even fancy pigeons are fair game.

Because of their proximity to man in the urban environment, sooner or later the falcons have stand-offs. In 1997, when Manhattan's Pan Am Building sign came down, the workers had to deal with a pair of nesting Peregrines, 81 stories in the air.

"Every day the men would come to work and on our scaffolds would find pigeon heads," said Sol Sachs, a sign manufacturer. We did them no harm and they did us no harm." Peregrines can be aggressive toward humans during breeding and hatching, while others are relatively tame. More than one instance of attacks on humans, or on office windows where workers could be seen by the birds has been recorded. Some of the encounters have been severe enough to draw blood.

Following the successes of other cities in releasing and attracting Peregrines, the Georgia Department of Natural Resources released two pairs in downtown Atlanta in 1990. The first attempt, unfortunately, was short-lived. One of the birds flew into a skyscraper's mirrored windows and was killed instantly. But only two years later, a female nested on the 48<sup>th</sup> floor of the Marriott Marquis Hotel, the first documented nest in the state since the 1940s. This time, however, a lone Peregrine repeatedly attacked the nesting pair. The nest box with the three hatchlings was eventually abandoned. By 1995, there were no known nesting pairs in the state.

In April 1996, after the state decided to abandon efforts to establish breeding pairs of Peregrine falcons in Atlanta, biologists confirmed that a banded female was once again nesting on the 48<sup>th</sup> floor ledge of the Marriott Marquis. Researchers speculated that it was probably the same pair that attempted to nest in a planter on the 52<sup>nd</sup> floor of the nearby Peachtree Center building. The Peachtree Center pair was disturbed by building maintenance workers and abandoned the first site after a few days of enduring human activity.



**After catching its prey, the Peregrine falcon shields its catch from potentially thieving raptors.**  
Photo courtesy of Defenders of Wildlife.

By late May, the falcons were well-documented inhabitants and three healthy offspring, hatched around April 20, made their maiden flights. One of the fledglings was even found walking unharmed on the patio of a restaurant on Baker Street, the result of a flight gone awry where she was unable to remain aloft long enough to return to the aerie. Young Peregrine falcons can "helicopter" down under such circumstances, but do not have the power to gain enough lift to become airborne again. The bird was returned to its nest box on the hotel ledge. The other two were more successful on their first try, and within weeks had abandoned Atlanta for other territories.

The Peregrine falcon again made news in Georgia only a month after the third successful nesting of the Marriott Marquis pair. Secretary of the Interior Bruce Babbitt was on hand at Stone Mountain, just east of downtown Atlanta, to witness the release of a rehabilitated bird found injured in Roswell, Georgia, and to announce the intent to remove the Peregrine falcon from the endangered species list. The announcement appeared in the August 26, 1998, issue of the *Federal Register* and signaled the success of the Endangered Species Act in re-establishing the population through restoration and protection. Secretary Babbitt chose Georgia to make the announcement in recognition of the state's strong commitment to wildlife conservation.

The notorious Atlanta pair has attacked workers at the Marriott on a few occasions, most recently during the summer of 1999 when a major exterior renovation began. The birds generally did not score actual hits, content merely to dive bomb the human intruders, even during the nesting season from March through May. But in one Peregrine-to-person encounter the preceding spring, an engineer was bludgeoned on the head by a belligerent bird that she identified as one of the hotel's two protected guests. The engineer quickly learned that, as a predator, the Peregrine falcon is fearless and tenacious.

August 20, 1999, became another landmark date in the history of the wandering Peregrine falcon. Secretary Babbitt removed the species from the list of endangered species, almost a year to the day after he announced his intent to do so in Stone Mountain. Babbitt cited the Endangered Species Act as a major reason that the Peregrine population had recovered, although others agree that the ban on DDT in the early 1970s was at least as important. The decades of tireless effort in breeding and releasing birds, and monitoring the progress and status of the species—particularly through the good work of organizations such as The Peregrine Fund—should not be minimized.

While it has lost some federal protection in its removal from the list, the Peregrine falcon still is protected under the Migratory Bird Conservation Act, carrying severe penalties for offenders. The Atlanta pair, as with other city-dwelling Peregrine falcons, has achieved celebrity status, finding real local affection just as it has found a home on the 48<sup>th</sup> floor of the Marriott Marquis.

The world's fastest bird has come back from the brink and is living well in a downtown near you.



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## Resources

- The Peregrine Fund
- Peregrine Falcon Information Centre, Avian Science and Conservation Centre of McGill University
- The Canadian Peregrine Foundation
- Peregrine Falcon Birdcam by Kodak, Rochester, New York
- Chicago Peregrine Release and Restoration Project, Chicago Academy of Sciences
- The National Birds of Prey Centre, United Kingdom

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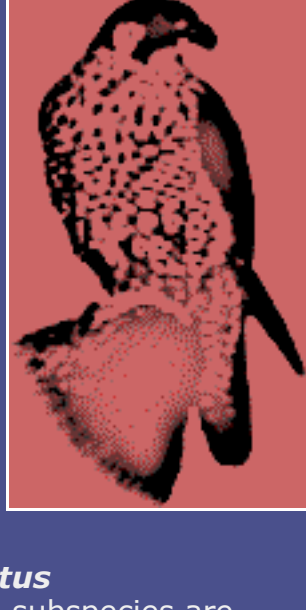
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## Peregrine Falcon *Falco peregrinus*



**Status**  
Two subspecies are endangered: American (*F. peregrinus anatum*) and Eurasian (*F. peregrinus peregrinus*). Arctic subspecies (*F. peregrinus tundrius*) is threatened. However, many populations have made a dramatic comeback.

**Description**  
Medium-sized bird of prey with long, pointed wings and a long tail. Adults have blue-gray backs and white faces usually with a black stripe on each side, and large, dark eyes.

**Size**  
Length: 15-20 inches from head to tail. Wingspan: 3 feet. Females larger than males.

**Habitat**  
Mountain ranges, river valleys, coastal areas. Sometimes build aerias (nests) on tall buildings in cities.

**Range**  
*F. peregrinus*: worldwide, except Antarctica and Pacific Islands.  
*F. peregrinus anatum*: nests from central Alaska across northcentral Canada to central Mexico; winters south to South America.  
*F. peregrinus tundrius*: nests from northern Alaska to Greenland; winters south to Central and South America.  
*F. peregrinus peregrinus*: Europe, Eurasia south to Africa and Mideast.

**Food Source**  
Primarily starlings, jays, pigeons, shorebirds, ducks, and small mammals.

**Behavior**  
Male performs aerial acrobatics to attract mate. Female lays several eggs in late spring which hatch one month later. Young mature at two years.

**Survival Threats**  
Habitat loss; continued use of DDT in many Latin American countries where the falcon winters. DDE, a by-product of DDT, weakens eggshells, causing them to break during brooding.

**Legal Protection**  
CITES Appendix I; Migratory Bird Conservation Act; Endangered Species Act (though Peregrine falcon was de-listed in August 1999).

**Conservation**  
Banding and DDT; captive breeding and (raptor education); public education; field research. Over 3,000 Peregrines have been released in 28 states since mid-1970s.

Courtesy of Defenders of Wildlife, 1999.