

February 4, 1992

## **MIDWEST PEREGRINE FALCON RESTORATION, 1991 REPORT**

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### **INTRODUCTION**

The tenth year of restoration of Peregrine Falcons (*Falco peregrinus*) in the Upper Midwest was completed in 1991 with the release by hacking of 98 young falcons. An additional 12 were released at Nipigon, Ontario. Pairs were on territories at at least 30 places by the end of the season. Twenty-two pairs of wild falcons laid eggs and at least 36 young fledged successfully.

The weather in April through June 1991 was cold and rainy in most of the Midwest, and peregrine production of young was lower than in 1990 (1.6 young per nesting pair, 1991, versus 2.1 in 1990). From 1990 to 1991, the total number of pairs increased from 23 to 30, the number of wild young fledged from 33 to 36.

Since 1982, 563 falcons produced in captivity have been released in the Midwest. An additional 105 or more young falcons have been fledged by peregrines now breeding on their own in the wild. Although Minnesota and Chicago releases have been concluded, releases will continue in other Midwest states for a few more years to reach the regional goal of 40 territorial pairs.

### **1991 POPULATION STATUS**

#### **SUCCESSFUL BREEDING PAIRS**

1. Multifoods Tower, Minneapolis, Minnesota. On January 26, two adult peregrines were in the MFT box when the gravel was changed; neither was MF1 (Muffin) or Will (different bands and plumage details), the 1990 residents here, but the newcomers were not further identified. By February 4, Will was present and on March 13, MF1 was positively identified. Clearly, the presence of falcons in midwinter on a territory is not necessarily proof that the breeders over-wintered. 1991 was MF1's fifth nesting season, Will's third. They had five eggs by April 16, hatched four by May 19. One died young; the other three, two females and one male, were moved to the roof on June 11 where they fledged in late June.

2. North Central Life Tower, St. Paul, Minnesota. Meg, the female who nested here in 1988, 1989, and 1990 apparently spent the winter here. An adult falcon was seen repeatedly in February. On March 14, an adult male, apparently Beaner (gold band on right leg, left bare, and agreeing in plumage details), the 1990 resident here, was in the box. (The parents of the 1990 young were Meg and Maverick, as determined by Sharon Moen by DNA fingerprinting, even though Beaner raised them after ousting Maverick: for the lurid details see the 1990 report.) This year Beaner presumably fertilized Meg's eggs, finally getting to raise his own young for the first time at age five. Her clutch of four was complete on April 22; three young hatched by May 28. The young, all males, were moved to the roof box on June 18 and fledged in early July.

On May 2, we trapped Meg to check her identity and to take a blood sample; we put black band 12R on her left leg to make it easier to identify her in the future.

Nancy Triplett reported a dramatic aerial battle seen by a co-worker on April 1. Two falcons grappled, screamed, and gyrated to Minnesota Street below

the nest box. A third, larger falcon followed them to the ground, where all three were grazed by a passing car as they flew up.

3. Control Data Corporation Headquarters, Bloomington, Hennepin County, Minnesota. Both adult peregrines, female 08V and male 04T, returned for the third year by March 8, 1991. The female refused to lay in the box installed on the north wing, although a scrape was made in it by one of the birds. As in 1990, we gave them a gravel tray on a favorite ledge on April 8, by which date the female had almost certainly dropped her first clutch. Three eggs were laid by April 18, but none hatched. We put two young (from Bob Anderson), five and six days old, in the tray on May 26. On June 1 we moved the chicks to the roof box. On June 11, we banded them, both males, and they fledged in late June. One was killed in building collision nearby on June 26.

A female, Minnsoar 75V, from the 1990 CDC brood, joined Chase 06T in Rochester in late April or early May (see pair 23 below).

4. NSP King Power Plant, Bayport, Minnesota. An adult peregrine, thought to be a male, was seen on January 8 by Paul Simonet. The 1990 NSP female, Mae 31V, was identified in February by Bob Anderson and Simonet when they changed gravel in the nest box. Identity of the 1991 male was not positively established, although he closely resembled the 1990 male, 13T, a half sibling of Mae. Courtship was seen on March 13, copulation on March 19. Four eggs were laid by April 4; three hatched by May 9. All three were males, fledging on June 16. One, 49X, was killed by an airplane propeller on the St. Paul airport on September 4.

In winter and early spring, pigeon breeders across the St. Croix River in Wisconsin reported losing several dozens of their roller pigeons to peregrines.

Male 84T, fledged at NSP in 1990, was a frequent visitor to the Northwestern Financial Center at Xerxes and I494, Bloomington, from June 24 to August 14, according to Kathy Dean, who works in the building (see no. 31).

5. Montgomery Ward, St. Paul, Ramsey County, Minnesota. A peregrine roosted frequently through the winter on an apartment building about a half mile north of the Ward tower. The 1990 female, Comet 11V, was at the nest box on the tower on March 9; the second 1990 adult, Maverick 05T, was first seen on March 22. Four eggs were laid, hatching by May 24. The young, three males and one female, fledged around July 1.

6. Palisade Head, Lake County, Minnesota North Shore. In the first week of April, two adult peregrines were seen visiting the nest ledge used in 1988 and 1989. On April 30, Dave Evans saw a food transfer by a pair at the north ledge used in 1990. Here they nested, producing four eggs which all hatched around June 6 to 8. Three young, two females and one male, fledged around July 15. Two young were still present in early August, but the third may have disappeared. The killing of several dozen Ring-billed Gulls in 1990 was not repeated in 1991, when only a few gull kills were found. A male Wood Duck found in the nest on June 25 had been banded as a chick in Illinois in 1988.

The adult female, Fridge, was netted on June 25 and again on July 25. We added a black band (43R) to her left leg and took a blood sample. She has nested here now for four years, the first three with Larry and with a new, unidentified male (silver band on right leg) in 1991. The new male, in contrast to Larry, is not aggressive towards humans near the nest and refused to attack our plastic owl, defeating our efforts to capture him for identification and blood sampling. Dave Evans said, "I guess Great Horned Owls are just not in his job description."

7. Environmental Learning Center, Finland/Lake Superior cliff north of Kennedy Creek, Lake County, Minnesota. According to Peter Harris, the 1990 ELC pair was back at their 1990 site on April 1, visiting the new nest box. An aggressive nearby pair of ravens with young still in the nest apparently discouraged the falcons and they disappeared after a week or two. On June 24, Harris reported that some neighbors living near a cliff north of Kennedy Creek had been seeing a pair of peregrines all spring and now heard calling from chicks. On June 25, we found the nest ledge, identified the female (20P) and the male (green band on left leg) as the 1990 ELC pair, but were unable to see the chicks which were in a raven nest under an overhang. In 1989, this cliff had been used for a few days by a pair of peregrines who later moved to ELC, two miles away. On June 30, Harris saw three young on the ledge. On July 9, we saw two flying young, male and female, and possibly a third. We were unable to catch any young or either adult.

8. Rouchleau Mine, Virginia, St. Louis County, Minnesota. On April 12, Jeff Lightfoot, MN DNR, found a pair of adult falcons using the hack box in the mine pit from which falcons had been released in 1987, 88, and 89. On April 30, Pat Redig caught the female (25V) by hand in the hack box. She was incubating three eggs. She had been released in 1989 at the Wolf Ridge Environmental Learning Center, then trapped along with seven other youngsters and moved to the Rouchleau Pit to avoid attacks from a pair of adult falcons. On June 15, we banded her two young, male and female, which subsequently fledged. The adult male was very shy, never approaching even close enough to see if he was banded.

Female 25V struck an obstacle in Virginia on July 24, bruising her wing. She recovered at The Raptor Center and was released at Virginia on August 8.

9. Bong Bridge, Duluth, St. Louis County, Minnesota. A pair of adult peregrines was present here in 1990, with no proof of nesting. On April 30, 1991, Dave Evans reported a pair again at the bridge. On May 29, Rick Peifer and Tordoff met Steve Cavanaugh and John Bray, MN Department of Transportation, at the bridge. Cavanaugh found the female sitting tight amidst fragments of hatching eggs on a ledge about 10 feet below the road bed. On June 19, Redig caught the female by hand as she defended her chicks, Peifer read the male's band, and we banded their two young, male and female, with the help of MN DOT and MN State Patrol people. The adult female (15V) was fostered in 1988 to MF1 and her mate, Alfie, on the Multifoods Tower in Minneapolis. Her original black band 15V was badly worn so we replaced it with black band 34R. The adult male (red Canadian band 6P3) was released in Quebec City, Quebec, in 1986, according to Phil Trefrey, Canadian Wildlife Service, Wainright, Alberta.

Both young apparently left the nest ledge successfully, but their further fate is not known because of the lack of observation sites nearby. Bridge-nesting pairs in other areas often suffer high chick mortality to cars and to drowning on initial flights.

10. First Wisconsin Center, Milwaukee, Wisconsin. McArthur, 03Y, was found dead of tuberculosis in Milwaukee on March 12, after three nesting seasons here. His 1989-90 mate, Sibella, 20V, attracted a new mate, Bill 74T, released in Madison, WI, in May 1990. They produced four eggs by April 25, but hatched only one. A second chick from Bob Anderson was added and both fledged in early July. The fostered chick, male 76X, was trapped and released at Cedar Grove, Wisconsin on August 16. At least two and perhaps as many as four males were present in Milwaukee in April; here is an instance where blood samples will be important to determine paternity of the young. This is the second instance in Milwaukee of the rare nesting of a one-year-old male; in the first, both breeders were one year old, a first for the species.

11. Cline Avenue at Lake Michigan, East Chicago, Indiana. The same pair of peregrines from 1989 and 1990 nested here again in 1991, in the same cave-like opening under the highway overpass that they had used earlier, and fledged one young female in mid June. The adult male, Floyd 34Y, was found dead of unknown cause below the nest on May 14. The female, Phoenix 08P, reared the single youngster alone. In late June, she attracted a new adult male, not yet identified but with a black band on the left leg, silver right. Copulations were seen despite the lateness of the date.

12. U.S. Steel, Gary, Indiana. Little more than a rumor at the time of our 1990 report, a pair of peregrines nested and produced one young in 1990 on the same building used in 1991. The nest site is about 35 feet above the ground on a ledge in the heart of a huge steel mill. Isolated from outside viewers, the birds have been adopted by the steel workers who see them daily. In 1990, two adults and a single juvenile were seen until late summer. From August to November, only one adult (the female, according to USS employee Gene Coleman) was present. In January 1991, two adults were back, producing four or five eggs (difference of opinion between USS employees), at least three of which hatched by May 1. By May 22, when we banded them and captured their parents, three female chicks survived. Two fledged, but one was found dead just prior to fledging. The adults are siblings, female Susy Q 52P and male Doc 55Y, released in Grand Rapids, Michigan, July 25, 1988.

This site could not be more industrialized. When trying to imagine what attracted the peregrines to a metal ledge on bins and conveyors only 35 feet above ground, in the midst of a noisy, heavily populated, bustling mill, only two factors seem important: an abundance of pigeons and Lake Michigan only a few rods away. One chick had a small frounce lesion in the back of her mouth, a treatable, pigeon-borne infection that is often fatal to young peregrines before their immune systems are fully functional. All three nestlings were treated for frounce.

13. Commodore Perry Motor Inn, Toledo, Ohio. At this abandoned hotel site two young were fledged in 1988, none in 1989, one in 1990, and one in 1991. The adult female, Canadian red band 3C7, released in St. Catherine, Ontario in 1987, was in her fourth nesting here; her mate in 1991 was Solo 20Y, famous for his three years of residence in Detroit, Michigan, where he had three mates, only one of which produced eggs; these failed to hatch. In Toledo this year, the pair produced four eggs, one male hatched near May 1 and fledged in late June. This young male may have been in Detroit in September and October (see #29, below).

Solo's 70 mile move to Toledo is the first major move in the new Midwestern population of a previous breeder to a new territory; it was probably encouraged by his unsuccessful nesting history in Detroit.

14. Trap Hills, Bergland, Ontonagon County, Michigan. Eighteen peregrines were released here in 1988 and 1989. A pair of adults were here in 1989, 1990, and again in 1991, but no individuals were identified in 1990 or 1991. Nesting took place in 1990, but failed. In 1991, the small, exposed nest ledge was empty but showed signs of use when Redig climbed to it on July 8, although adults had been seen carrying food on July 5. On July 9, Joe Rogers, MI DNR, found at least one fledged youngster being attended by adults in trees below the cliff. This is the first successful peregrine nesting in Michigan since 1957.

15. Delta Winnipeg Hotel, Winnipeg, Manitoba. Robert Nero reports that the same adults as in 1989 and 1990 (Maud, 27P, and male 5P9 released in Winnipeg in 1986) produced four eggs and hatched and fledged two young. On

September 9, Maud 27P was found with a severe back injury near a powerline in Winnipeg. She died three days later. She laid 12 eggs and fledged 8 young in her three nesting seasons. Maud, produced by MF 1 and Billy Ray in Minneapolis in 1987, was the first young fledged in the wild by the new midwestern population of peregrines. One of her offspring is the male 1X at the University of Manitoba campus in Winnipeg.

16. Nipigon, Ontario. Ontario MNR conservation officer R. Rustenburg reports a red-banded adult male paired with a first-year female nesting on a cliff. Young were heard begging as female approached nest on July 4.

17. Southwestern Bell Building, St. Louis, Missouri. Walter Crawford has been releasing peregrines in St. Louis for several years. This year a one-year-old female and a two-year-old male, both locally released, produced two eggs and hatched one young which fledged along with a second fostered young from Bob Anderson. Crawford says that this is the first known peregrine chick hatched in the wild in Missouri in over 100 years.

### **UNSUCCESSFUL BREEDING PAIRS**

18. Mt. Leveaux, Lake County, Minnesota. Jim Carlson found a pair of adult peregrines incubating eggs in a cliff nest built and used by Common Ravens in 1989 and 1990. On June 22, Tordoff saw the female (black band on left leg) feeding at least two young. The adult male is unbanded, according to Peter Harris, Carlson, and Tordoff. On July 9, the nest was empty and no adults were seen, although one adult was seen at the cliff a week later.

19. State Capitol Building, Madison, Wisconsin. A new pair, adult male and one-year-old female both with black and silver bands, according to Stanley Temple, attempted to nest but laid eggs on a narrow ledge from which they fell and broke.

20. 125 South Wacker Building, Chicago, Illinois. For the fourth year, a pair nested at this site. The female is Harriet, who nested here in 1988, 1989, and 1990; the male has a black band on his left leg, silver right but is not further identified. The pair produced four eggs; at least two young hatched in early May, but the chicks disappeared when about a week old, cause unknown. The adults did not reneest.

21. Porcupine Mountains Wilderness State Park, about 5 miles west of Silver City, Ontonagon County, Michigan. Joe Rogers, MI DNR, reports that for the second year a pair nested on a cliff in the park. Three eggs were laid and three young hatched on June 12. As in 1990, the nesting failed after severe rain and hail storms on June 24 and 25; the adult female (red Canadian band CN) was found dead below the nest, probably killed by the storm although she had been dismembered by something. She had been released in July 1989 at the Bay of Fundy, New Brunswick, according to Phil Trefrey, Canadian Wildlife Service. The male, with black and silver bands, has not been seen since the storm.

22. Cliff near Calumet, Keweenaw County, Michigan. Found by local birders in mid-April, this new pair nested on a big south-facing cliff about 3 miles inland from Lake Superior. The male is an adult with a black band left, silver right; the female, similarly banded, appeared to be a one-year-old. The nesting failed during incubation; parts of the female, not including any bands, were found beneath a power line.

## NONBREEDING TERRITORIAL PAIRS

23. Mayo Clinic, Rochester, Minnesota. The adult male, Chase, 06T, whose misadventures were described in the 1990 report, recovered at The Raptor Center and was released again at the Mayo Clinic on April 3. He was soon joined by a one-year-old female, Minnsoar 75V, produced by the Control Data pair in Bloomington MN in 1990. They remained together through the season but did not attempt to nest.

24. Colonnade building, Hwy. 100 and I394, Minneapolis, Minnesota. In May, a one-year-old female 81V, released in June 1990 in Cedar Rapids, Iowa, and a two-year-old adult wild-produced male 31T, from the North Central Life tower in St. Paul, were found using this building. They are still resident in October as this is written. The Colonnade is four miles west of the Multifoods Tower, home of the nearest pair of peregrines. Male 31T, son of Meg and Radar, is the first young from the NCL eyrie to be found on territory as an adult. A nest box was installed on August 29 and within a week both peregrines were visiting it and making scrapes.

25. Duluth Hotel, Duluth, Minnesota. On July 15, Don Goodermote, MN DNR, found a pair of peregrines on the Duluth Hotel in downtown Duluth, about five miles from the Bong Bridge pair. Dave Evans and Dudley Edmondson report that both birds are in adult plumage, each with a black band on the left leg, silver right. Both birds were still present in early September.

26. Irving Park, Chicago, Illinois. In midsummer 1990 a new pair, male Pegasus 14Y and female Silverstreak 42V?, replaced the old occupants here. They did not nest in 1991 but are still present. Their territory, occupied year around, centers on the Fisher Building, near Irving Park and Lakeshore Drive, where two nest boxes are available.

27. Hyde Park, Chicago, Illinois. A pair of peregrines was present in 1990 and 1991 but did not nest. Both adults are banded.

28. Lansing, Michigan. An unidentified pair was present and copulating in early spring.

29. Detroit, Michigan. Judith Yerkey, Detroit Peregrine Coordinator, reports that two adult falcons were present in early spring; both birds were unbanded but the female was identified by plumage characters as Bluebell, present in Detroit in 1990. She left the area on July 9, 1991 and returned in mid-November, remaining alone in downtown Detroit through December. The second spring bird was a male, who left in early May without courting Bluebell. The male, Solo (20Y), who was here from 1988 through 1990 mated unsuccessfully with two females, moved to Toledo in 1991 and reared one chick with his new mate (see pair 13). Two peregrines with Canadian bands were seen intermittently through the summer. One, a female with red band AD was released in Sudbury, Ontario in July 1990, according to Phil Trefrey, Canadian Wildlife Service. In September and October, a different red-banded female (probably Canadian) and a juvenile male with a black band on right leg (indicating wild origin) were seen regularly. Possibly this young male is Solo's 1991 offspring from Toledo. His aluminum band was glimpsed briefly through an office window; the last two digits were read as "36". The Toledo nestling's band ended in "56"; the only other wild male youngster fledged in the Midwest in 1991 whose band number ended in "6" was in St. Paul, Minnesota.

30. University of Manitoba, Winnipeg, Manitoba. A two-year-old male 1X produced by Maud 27P and her mate 5P9 in downtown Winnipeg was here for the second season, paired in 1991 with two-year-old female 52V, released in Cedar Rapids, Iowa, in 1989. 52V moved into downtown Winnipeg in early fall 1990 and overwintered but was ousted by Maud when she returned in March 1991. This pair copulated but produced no eggs. The male 1X then successfully fostered two captive-produced peregrine chicks.

#### **SINGLE AFTER-HATCHING-YEAR FALCONS IDENTIFIED**

31. Northwestern Financial Center, Xerxes and I494, Bloomington, Minnesota. Kathy Dean reported that female 72V, wild young from the Multifoods Tower, Minneapolis in 1990, was seen here several days in early April. She was picked up in St. Cloud, Minnesota, on April 18 with an irreparably injured wing (possibly a falcon strike). Male 84T, wild young from the NSP plant in Bayport, Minnesota, in 1990, came to the building in early summer. On August 14, he too was found injured (again, a possible falcon strike; injuries from peregrine strikes are suspected when a blow appears to have been delivered from above and behind) on University Avenue near the Minneapolis campus; he recovered at The Raptor Center and was released at NFC on September 18. A juvenile female 22R, released at La Crosse WI in early June joined 84T. The two did a lot of chasing. Male 84T has not been seen there since about September 20; the female, who was also seen in Rochester MN in late July, was still in residence in October.

32. Male 50X, released in La Crosse, WI, on June 11, 1991, was found in a fire training basin at the NSP Sherco Plant, MN, on October 30, 1991. The bird had apparently attempted to bathe in waste diesel fuel. The bird was brought to The Raptor Center where it died later that same day.

33. Female 93V, released in Cedar Rapids, Iowa, in 1990, was seen being attacked by peregrines in St. Paul on July 20. She was driven to the ground, then hit by a car. She died at The Raptor Center. Chase 06T (pair 23) was downed by this same St. Paul pair in 1990.

34. Male 86Y, wild young from Chicago 1989, was found injured and released in Louisiana, then again found injured and sent to The Raptor Center. He is not releasable.

35. Male 93T, released in Cedar Rapids, Iowa, in 1990 was present but not seriously aggressive at the hack site in Des Moines, Iowa, in 1991.

36. A male peregrine tentatively identified as Savage 15X, released on Isle Royale, Michigan, in 1990, was seen in May and June 1991 on Isle Royale. On August 4, Marcus Koenen read "83" on the black band of a male-sized falcon on Feldtmann Ridge; this was probably Dagmar 83T, released in 1990 at Blake Point, Isle Royale. He was present at Feldtmann Ridge from July 11 to August 11, 1991.

37. Hill Annex Mine State Park, Calumet, Itasca County, Minnesota. Used as a hack site in 1989. Adult falcons were seen here intermittently in 1989, 1990, and in early season 1991, but with no evidence of pairing.

38. Cedar Rapids Iowa. Releases were made here in 1989 and 1990. Laura Jackson, IA DNR, reports sporadic falcon sightings in winter and spring, with an adult female seen as late as June 9.

39. Chicago, Illinois. Mary Hennen reports two unidentified single peregrines, one in the Glen Ellyn/Lisle area all summer, the second with the downtown pair and then the Irving Park pair through July.

40. Omaha, Nebraska. John Dinan, Nebraska Game and Parks, reports an adult male with a black band on left leg present all summer. On September 25, a juvenile female 33R, released in Des Moines on July 6, 1991, arrived in Omaha and was still there in early October.

41. Lincoln, Nebraska. Dinan also reports an adult peregrine in Lincoln at the state capitol building in September and October 1990. In spring 1991, a pair of adults were present; the female disappeared after a few weeks but the male remained all summer.

42. Fargo, North Dakota. Wick Corwin reports an adult peregrine seen in Fargo from May 3 to about May 9. Most likely this was a migrant going north. Fresh prey remains indicating occupancy for several days were found on the First Interstate building, where two peregrines had been present a year earlier.

### **SUMMARY OF PEREGRINE NESTING IN 1991**

Summing up the natural breeding in 1990, 30 pairs were on territories, 22 pairs (73%) nested, 17 (77%) of which were successful. Thirty-six young were fledged (counting four fostered young), 2.1 young per successful pair, 1.6 per nesting pair, 1.2 per territorial pair. Five territorial adults are known to have died in 1991, two in powerline collisions, one by disease, one in a storm, and one cause unknown.

Of the 22 nesting pairs, eight were on cliffs, 12 were on buildings, one on a bridge, and one under a highway overpass. Ten of the 12 building pairs succeeded, as did five of the eight cliff pairs, the bridge pair, and the highway pair. Of the 36 young fledged in the wild, all were banded except three young at Kennedy Creek, one at Trap Hills, and an unknown number at Nipigon.

### **PEREGRINE RELEASES IN 1991**

Fostered young. Four young from Bob Anderson were added to wild broods: two at Control Data, Bloomington, Minnesota; one at First Wisconsin Center, Milwaukee, Wisconsin; and one at Southwestern Bell Building, St. Louis, Missouri. All fledged successfully, but one was later lost at Control Data in a building collision. Young added to wild broods are counted in our totals as "wild-produced" rather than hacked to emphasize their rearing by wild falcons rather than their captive origin.

Wisconsin, La Crosse, City Hall. Fifteen peregrines were released from one hack box, in groups of six, six, and three. Four birds died, one from bacterial infection, two in building collisions, and one from a severe bill injury. A fifth falcon injured its right wrist and was re-released after treatment at The Raptor Center. The remaining 10 fledged and dispersed successfully. Female 22R, released in early June in La Crosse was seen in Rochester, MN in late July and settled down at the Northwestern Financial Center in Bloomington, MN in September.

Michigan, Isle Royale National Park. Twelve peregrines were released in sequential groups of six at Feldtmann Ridge. All fledged successfully, two somewhat earlier than usual possibly because of harassment by a one year old

male, probably Dagmar 83T (see no. 35 above) released at Blake Point, Isle Royale, in 1990. One 1991 male, Whalen 13Z, was trapped and released by Ken Holkestad on September 6 at Moose Mountain, near Duluth, MN, where he caught another hacked peregrine in 1990.

Michigan, Pictured Rocks National Lakeshore, 10 miles NE of Munising. Twelve peregrines were released in three sequential groups of five, five, and two. One young falcon disappeared the day after fledging and is presumed dead; another disappeared after 14 days of normal flight and may simply have dispersed early; the remaining 10 fledged and dispersed normally at ages ranging from 84 to 105 days.

Ohio, Columbus. Five female and two male peregrines were released from the Rhodes State Office Tower on July 31. Two females died after vehicle collisions on September 1; the other five birds dispersed successfully. An additional wild juvenile female from an unknown nest, captured at an age of about 50 days in Toledo, was released in Columbus in mid-September; she remained in the area until at least November 18.

Ohio, Cincinnati. Seven peregrines were released on July 21. One male disappeared on the 4th day after release; another injured a wing in an apparent building collision, was rescued, treated for 20 days, and released again. All six survivors fledged and dispersed normally.

Indiana, Indianapolis. Fifteen falcons, eight females and seven males, were released in four groups in July and August. Twelve fledged and dispersed successfully. Two died in building collisions and one from bacterial infection. Thirty incidents of prey capture were recorded, involving nine species of birds and two bats. One particularly enterprising male falcon, Amos, was seen on August 4 clutching a chimney swift in one foot and a bat in the other!

Iowa, Des Moines. Nineteen peregrines, eight females and 11 males, were released in three groups. Three were killed, one in a vehicle collision, one in a building collision, and a third cause unknown but possibly also a building strike. Sixteen dispersed successfully, with four females appearing later long enough to have their bands read by sharp-eyed observers: Omaha, Nebraska in September (33R), near Lawrence, Kansas in October (47R), near Iowa City (40R), and in Cedar Rapids, Iowa in late October (28R).

Missouri, Kansas City. Eleven young falcons were released in groups of five and six. All fledged successfully, including one male which had a broken leg, requiring an extra month at The Raptor Center for recuperation before release. Later in the summer, one male and one female were killed in probable collisions with power lines about 20 miles from the release site, one female died in a probable collision with a small plane on the downtown Kansas City airport, and one male was found dead on a parking lot, cause unknown. An adult peregrine appeared at the site two days after the second release but was not aggressive to the young birds.

Ontario. Nipigon. The Ontario Ministry of Natural Resources (Thunder Bay District), Canadian Wildlife Service, and the Thunder Bay Field Naturalists, led by Harold Kish, cooperated in a release of 10 peregrines.

To sum up production for 1991 in the Midwest, 36 young were fledged by wild pairs and 108 young (including the 10 at Nipigon, Ontario, part of the Midwestern population although not released under our auspices) were released

from captive pairs, for a total of 144. Of these, 125, 87%, lived to independence (90 hacked, 83%; 35 wild, 97%). Causes of deaths before independence were: collision with buildings (7), collision with vehicle (4), collision with powerline (2), starvation because of failure to return to hack box (2), disease (2), unknown (2).

### **GENETIC ANALYSIS**

We continued collecting blood in 1991 from all released young, from all wild young banded, and from wild adult breeders not previously sampled. The goal is to measure inbreeding, outbreeding, genetic variation, changes in occupancy of territories, dispersal of adults and young, success of the different genetic stocks introduced, and long-term development of genetic structure in the new midwestern population. Sharon Moen has gathered pedigree data and done the laboratory work and genetic analysis. A major goal now is to find out how much of the genetic information present in the captive breeders is represented in the wild birds. Preliminary information suggests only an 11% loss from captivity to the wild so far, but much depends on the relative reproductive success of the different wild individuals in these early years of the peregrine's recovery. The pedigree results depend on accurate field identification of the falcons. We need help in locating and identifying wild falcons.

### **PLANS FOR 1992 AND BEYOND**

In 1988, we suggested a new goal for the Midwestern restoration effort of 40 territorial pairs of peregrines for the nine state area (Minnesota, Wisconsin, Michigan, Nebraska, Iowa, Illinois, Indiana, Ohio, and Missouri) and western Ontario. The 30 pairs on territories in 1991 agree with our 1989 prediction of 26-30. For the years ahead, we repeat our prediction made in 1989, namely, 32 to 36 in 1992, with the goal of 40 pairs reached in 1993 or 1994.

### **ACKNOWLEDGEMENTS**

The Midwest Peregrine Project is a cooperative effort involving many people and organizations. The University of Minnesota provides the overall coordination and administration of the project through Dr. Pat Redig of the Raptor Center and Dr. Bud Tordoff of the Bell Museum. The Minnesota Chapter of The Nature Conservancy provided administrative support services. Other financial and logistical support for the Minnesota part of the effort is provided by Minnesota DNR Nongame Wildlife Program, Minnesota DNR Parks and Recreation, Endangered Species Office and Minnesota Cooperative Fish and Wildlife Research Unit of the U. S. Fish and Wildlife Service, U.S Forest Service, Minnesota Falconers Association, Iron Range Resources and Rehabilitation Board, Wolf Ridge Environmental Learning Center, Mayo Clinic, Northwest Airlines, BCED Minnesota in Minneapolis and St. Paul, and The Shelard Group. Each cooperating state and agency has, in addition, its own list of cooperators, for which see the individual hack site reports. Falcons are obtained from private falconer/breeders, listed in the appendix, throughout North America. Falcons were supplied through us to the Wisconsin, Michigan, Ohio, Indiana, Iowa, and Missouri releases on a contract basis. The day to day devoted care that makes hacking falcons successful was provided by the hack site attendants listed in the appendix.

## **APPENDIX**

### **BREEDERS SUPPLYING PEREGRINES FOR 1991 RELEASES**

Robert Anderson, Hugo, Minnesota  
Dave Baker, Norman Oklahoma  
Gerald Geiger, Havre, Montana  
Bruce Haak and Jack Oar, Eagle, Idaho  
Don Hunter and Victor Hardaswick, Centerville, South Dakota  
Bob Hollister, Berthoud, Colorado  
Peter Jenny, Sheridan, Wyoming  
Brad Mitchell, Watertown, South Dakota  
Lynn Olyphant and Paddy Thompson, Saskatoon, Saskatchewan  
Ed Pitcher, Blackfoot, Idaho  
Dewey Sevell, Oakley, California  
Steve Sherrod, Bartlesville, Oklahoma  
Daniel Thee, North Powder, Oregon  
Skipp Tubbs, Bozeman, Montana  
Pete Widener, Sheridan, Wyoming

### **1991 CONTRIBUTORS TO PEREGRINE RESTORATION IN MINNESOTA**

#### ***Individuals***

Anne Marie Plunkett

#### ***Organizations***

American Museum of Natural History  
BCED Minnesota  
Big Game Club Special Projects Foundation  
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Minnesota DNR Nongame Wildlife  
Minnesota Falconers Association  
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University of Minnesota Graduate School Faculty Grant-in-Aid  
U. S. Fish and Wildlife Service

### **1991 HACK SITE ATTENDANTS**

#### **Michigan**

Isle Royale National Park, Feldtmann Ridge: Gary Kress, Marcus Koenen.  
Coordinator, Stephen Fettig.  
Pictured Rocks National Lakeshore: Jim Bean, Craig Limpach. Coordinator,  
Brian Kenner.  
Phoenix Cliffs, Jamie Burton

#### **Wisconsin**

LaCrosse: Patricia Skewes, Pandora Hutchinson, plus 47 volunteers!  
Coordinator, Charlene Gieck.  
Milwaukee, First Wisconsin Center: Greg Septon and Annie Wendt.

Indiana

Indianapolis: Allen Parker, Kim Tracy, Jeff Ehman, Amy Krauss, Bety McGregor. Coordinator, John Castrale.

Iowa

Des Moines: Jason Humble, Alice Wagner, Susan White, Bruce Ehresman, Laura Jackson, Pat Schlarbaum.

Ohio

Columbus, Rhodes State Office Tower: Jeanette Bettinger, Pamela Claar, Martha Konidaris.

Cincinnati, Commerce Center: Margaret Kelly, David Brinkman, Ginny Herbst, Jack Holt.

Missouri

Kansas City: Mike Lampe, Alie Scholes, Paige Frederick. Coordinators, DeeCee Darrow, John Meyer, Jim Wilson.

Detroit Peregrine Coordinator, Judith M. Yerkey

**Table 6. PEREGRINE POPULATION GROWTH IN THE MIDWEST**

Year	Total rel.	Terr. pairs	Nest. pairs	Succ. pairs	Young fldgd	Yg/n. pair	Yg/s. pair
1986	102	4	1	0	0	0	0
1987	170	6	3	1	1	.33	1.0
1988	254	13	8	6	12	1.5	2.0
1989	370	16	12	9	22	1.8	2.4
1990	453	23	16	13	33	2.1	2.5
1991	563	30	22	17	36	1.6	2.1

Note: Starting in 1989, "young fledged" includes all young surviving to first flight from the nest.