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## MIDWEST PEREGRINE FALCON RESTORATION, 1996 REPORT

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**NOTICE:** All peregrines banded in the U.S. Midwest in 1996 got a bicolored band, black over red, on the left leg. Wild-produced birds got a purple anodized USFWS band on the right leg; hatched birds have a gold anodized USFWS band on the right leg.

Many of the black/red bands have either the upper (black) or lower (red) character on its side; these we show by using a star (\*) to indicate the tipped-over letter or number, for example, \*2/E or H/\*4. It is essential to include the star because both combinations are in use (H/4 and H/\*4, for example). It is also important to put bands on right side up, to make it easier to read them in the field (even the USFWS bands are read in the field on occasion).

### INTRODUCTION

From our perspective in Minnesota, production of young in 1996 by wild Peregrine Falcons (*Falco peregrinus*) was poor; we tried to blame it on the record-setting cold winter and miserably cold April. However, Wisconsin, Indiana, and Ohio shared our cold weather but not our poor peregrine nesting season.

Peregrine production in Minnesota a year ago was 41 young from 17 pairs, 2.4 young per pair. By contrast, in 1996, 20 Minnesota pairs fledged only 27 young, down 34 percent, 1.4 young per pair. But in Wisconsin, five nesting pairs laid 19 eggs and fledged a remarkable 19 young, despite weather in April that was cold, wet, and generally miserable. Indiana had four new nest sites and the seven Hoosier nesting pairs fledged 16 young, double the 1995 crop. Ohio's production of 16 young last year was impressive enough, but this year 18 young were fledged by their seven nesting pairs.

Peregrines continue their encirclement of Lake Michigan with four new lakeside territories. As Greg Septon predicted, before many years pass there will be a pair of peregrines every few miles along the lakeshore wherever suitable nest sites can be found. Production of peregrine young from lakeside eyries on man-made structures in Wisconsin, Illinois, and Indiana was greater this year than from all sites in Minnesota. The same attraction to big lakes is evident in Ohio, where four of the seven pairs in the state are within shouting distance of Lake Erie, and in Ontario, Michigan, and Minnesota, where about 15 pairs now nest along the shores of Lake Superior.

At least 127 young were fledged this year in the wild 119 were banded and eight were not because of undiscovered nests, remote locations, late discovery of nests, or other logistical problems. An additional 33 captive-produced peregrines were hatched in our area, eight in Iowa, 13 in Kentucky, and 12 in Ontario.

For the Midwest region, brood size at fledging was 2.6 young per successful pair, 1.6 young per territorial pair, about the same as for the past three years, in spite of poor reproduction in 1996 in Minnesota and Illinois.

The number of young fledged is important as a measure of evolutionary fitness. A better measure of an individual's fitness would be the number of its young surviving to become breeders themselves. Ordinarily, this is difficult to determine, but long-term studies of individually marked populations are promising. We are approaching the point with the Midwest peregrine population where individual peregrine contributions to future generations can be measured directly. Until this is done, however, it is important to understand that numbers of young fledged do not necessarily tell the whole story -- quality of young is also very important. This point was well made recently at Palisade Head, a cliff on Lake Superior in Minnesota. In 1994, Fridge 43R and her mate raised four young to banding age, but one was picked so bloody by its nest mates that it died before we could get it to TRC -- the only proved case of siblicide in peregrines that we know about. Siblicide is, of course, frequent with some other hawks and eagles. The other three 1994 Palisade young seemed scrawny although vigorous. In 1996, Fridge's brood at banding was a single female; this chick was fat and thriving (the young were not weighed, so this is mere speculation). Since survival to breeding age in many other species of birds has been shown to be positively related to weight at fledging, it is possible that small peregrine broods may sometimes result in more young surviving to reproduce than large broods, particularly in years or localities that are lean in prey.

Returning to the possibility of siblicide -- since peregrines eat birds, a dead peregrine chick is merely more food. Proof of siblicide requires seeing chicks actually attacking one another, or, as above, visible damage to a chick not readily explainable otherwise. When chicks are killed by flooding, rarely are they left uneaten long enough to be seen by humans. Instances of unexplained brood reduction could be the result of siblicide; perhaps it is more frequent in peregrines than the literature suggests. Tom Cade tells us of instances where adult peregrines have been seen feeding dead chicks, possible victims of siblicide, to the rest of the brood.

A handful of female peregrines in the Midwest have accounted for a large share of the production of young. The top 17 performers (12 or more young fledged, augmented young excluded) have fledged 279 young, 45% of the 616 fledged in the wild through 1996.

--*Sibella* (Firststar, Milwaukee) 24 young, 8 seasons  
--*Meg* (North Central Life, St. Paul), 24 young, 9 seasons  
--*Fridge* (Palisade Head), 21 young, 9 seasons  
--*Comet* (Montgomery Ward and Ford Bridge, Minneapolis), 20 young, 7 seasons  
--*\*MF-1* (Multifoods Tower, Minneapolis), 18 young, 8 seasons  
--*Egore* (Cline Avenue, East Chicago), 18 young, 5 seasons  
--*Marla* (Colonnade and Multifoods), 18 young, 5 seasons  
--*Mae* (NSP King, Bayport), 16 young, 7 seasons  
--*\*Nellie McClung* (Commodore Perry, Toledo), 16 young, 8 seasons  
--*Harriet* (125 S. Wacker, Chicago), 15 young, 8 seasons  
--*Suzy Q* (U.S. Steel, Gary), 14 young, 7 seasons

--*Minnsoar/Ariel* (Mayo Clinic, Rochester), 13 young, 5 seasons  
 --*Aurora* (Rhodes Tower, Columbus), 12 young, 4 seasons  
 --*Zenith* (Terminal Tower, Cleveland), 12 young 4 seasons  
 --*Silverstreak* (WPL Edgewater, Sheboygan), 12 young, 5 seasons  
 --*36R* (NSP Sherco, Becker), 12 young 5 seasons  
 --*52V* (Winnipeg), 12 young, 6 seasons  
 \* = known or presumed dead

Male peregrines in the Midwest have not done quite as well, individually. The top nine males (12 or more young fledged, augmented young excluded) have fledged 148 young, 24% of the total of 616.

--*Will* (Multifoods Tower, Minneapolis), 23 young, 8 seasons  
 --*Kato* (Colonnade, Minneapolis), 19 young, 5 seasons  
 --*Bill* (Firststar, Milwaukee), 19 young, 6 seasons  
 --\**Maverick* (NCL and Montgomery Ward, St. Paul), 16 young, 7 seasons  
 --*Spanky* (Control Data and NCL, St. Paul), 16 young, 7 seasons  
 --\**red5P9* (Delta Winnipeg, Winnipeg), 15 young, 6 seasons  
 --*Jingles* (125 S. Wacker, Chicago), 15 young, 7 seasons  
 --*Chase* (Mayo Clinic, Rochester), 13 young, 5 seasons  
 --*Szell* (Terminal Tower, Cleveland), 12 young, 4 seasons.  
 \* = known or presumed dead

Production of wild-produced young the past two years by state or province was (sequence here and in the main list below is north tier of states first, west to east; second tier, etc., then Canadian provinces):

|                  | 1995      | 1996      |
|------------------|-----------|-----------|
| --Minnesota..... | 41        | 27        |
| --Wisconsin      | 14        | 19        |
| --Michigan       | 4         | 6         |
| --Nebraska       | 0         | 2         |
| --Iowa           | 6         | 5         |
| --Illinois       | 8         | 4         |
| --Indiana        | 8         | 16        |
| --Ohio           | 16        | 18        |
| --Kansas         | 3         | 2         |
| --Missouri       | 3         | 3         |
| --Kentucky       | 1         | 0         |
| --Manitoba       | 6         | 9         |
| --Ontario        | 8         | 16        |
| Totals           | 118 young | 127 young |

For territorial Midwest peregrines today, is it better to migrate or to overwinter on territory? Some evidence suggests that or city birds it is better to stay put rather than risk returning to find a new bird in residence. Recall the battle between Beaner and Maverick for the North Central Life territory in St. Paul; Beaner, the incumbent in 1990- returned in April 1991 to find Maverick in residence. Beaner evicted Maverick after a day-long battle but then spent the summer raising young sired by Maverick (who had moved to an adjacent territory where he nested for four years). In Madison, Calvin's famous mid- to late-April arrivals, after neighboring pairs were well along in nesting, seem to have cost him ready access to unmated females. Calvin 48T was trapped and released on Padre Island, Texas, on April 14, 1990. Now, John Dinan speculates convincingly that a comparable scenario has been played out over the past several years in Nebraska. The principal player is male 54T, produced by Bob

Anderson and hacked in Omaha in 1989. An unpaired male peregrine, black band on the left leg, silver right but not otherwise identified, was on territory at the state capitol in Lincoln generally from April to early October in 1991, 92, and 93. The two years that male 54T was known to be in Omaha 58 miles away, 1994 and 95, there was no male on territory at the capitol in Lincoln. In early February 1995, 54T was trapped and released 200 kilometers south of Lima, Peru, according to Tom Maechtle, The Peregrine Fund. On April 24, 1995, 54T arrived in Omaha after six infertile eggs had already been laid by his mate that year, female 84R. In 1996, male Zeus X/R, produced by Anderson and hacked in Rochester, New York, in 1994, arrived in Omaha on March 18 and paired with a new female, black T/6, (fledged wild in 1994 in Winnipeg). In the morning of April 15, a male with a black band but not otherwise identified, engaged X/R in a knock-down, drag-out battle (John's words). Zeus X/R prevailed and held the territory for the season. After the battle, a male, black band left, silver right, was back on territory at the capitol in Lincoln. Is he 54T? John doesn't know, but it seems likely.

The original midwestern cliff -nesting *anatum* peregrines probably all migrated to some extent. Southern Canadian birds seem to have mostly gone south of the United States. Birds nesting around Lake Superior must have moved south to find sufficient prey. Peregrines nesting on the Mississippi cliffs probably migrated, but some were back on territory by late February, unlike the April returns of Calvin 48T, Beaner, and 54T. Prey availability does not seem to be a problem for city peregrines, even as far north as Winnipeg where female 52V regularly overwinters.

*Some not-so-good news:*

In Minnesota we failed again to locate any breeding pairs on the Iron Range or Mississippi River cliffs.

There was apparently no successful peregrine nesting in the Upper Peninsula of Michigan this year, where four sites have produced young in recent years. Joe Rogers reports snow and ice persisting on north-facing slopes and cliffs as late as June 17. On Grand Island, he found the last of the winter's ice on July 9! His counts this year of potential peregrine prey were the lowest in his experience until well into summer. He writes, "A one hour cliff point count other years was often 30 to 50 birds, this year at the Porkies [it] was 5 to 15 birds." Rogers is convinced that the cold, late spring and poor prey populations delayed U.P. peregrine nesting until it was too late. The pair at Porcupine Mountains Wilderness State Park (pair 65) may be typical: two adults, probably both here in earlier years, were present in May, copulated, spent hours at the potential nest ledge, but seemed less intense than in other years and finally stopped regular visits to the ledge in late June, when prey species were still scarce.

At the State Capitol in Madison, Calvin 48T ("pair" 78) coming off a productive 1995 season, fell back into his old ways, returning late and failing to attract a female who would stay. His desiccated carcass was found on the University of Wisconsin-Madison campus in October. He apparently died in late summer. Although he sired only three young over his lifetime, he contributed hugely to public appreciation of peregrines. Thousands of people watched him at the state capitol and were thrilled by his beauty and flying skills.

Peregrines in Chicago did poorly in 1996. The six known pairs fledged only two young. A brood of three disappeared at one site, which is exposed overhead to the weather. At another site one chick of a brood of two on a

narrow window ledge fell to its death at banding. The one pair using a next box in 1995 had their box removed and did not nest in 1996. Two pairs laid eggs but lost them to flooding by heavy rains; one of these renested and fledged one young. A sixth pair's nest, if it existed, eluded discovery. Clearly city pairs need the help of secure nest boxes. With such boxes, eggs and chicks seem almost invulnerable until fledging. Without boxes, failure, usually from heavy rains, is so frequent that one wonders if unassisted city peregrines could produce enough young to replace themselves.

*Some very good news:*

--The success of Gail Jackson's climbing team in banding 16 young at five cliffs in Ontario (pairs 44-48).

--Wisconsin's perfect record of 19 chicks fledged from 19 eggs laid by five pairs (pairs 14-18).

--Ohio's 18 young fledged by six pairs (pairs 33-38).

--Four new sites in Indiana ( pairs 27, 29, 31, and 56), production of young doubled over last year, from eight to 16.

--Two new bridge sites in the Twin Cities, Minnesota (pairs 5, formerly at Montgomery Ward, St. Paul, and pair 6), fledging unbanded young because of our failure to find the nests early enough.

--Two new sites on the North Shore of Lake Superior in Minnesota (pairs 12 and 60), discovered too late to determine their productivity.

--Continued establishment of new territories along the shores of Lake Michigan and Lake Erie (pairs 18, 27, 29, 56, 57, 62).

## **1996 Population Status**

### **SUCCESSFUL BREEDING PAIRS (Pairs fledging young)**

1. Mayo Clinic, Rochester, Olmsted County, Minnesota. Ted Bartel, Mayo staff, reports that eight-year-old male Chase 06T and six-year-old female Minnsoar (Aeriel) 75V nested for the fifth year. Four eggs were laid by about April 4, three young hatched by May 5, one egg did not hatch. All three young fledged in mid-June, a male and two females. One was injured shortly after fledging and is being rehabilitated at The Raptor Center (TRC). Again, the closed circuit TV nest coverage shown in the main Mayo concourse was outstanding.

2. Multifoods Tower, Minneapolis, Hennepin County, Minnesota. Six-year-old female Marla 81V, nesting for the fifth time, second year at this site, and nine-year-old Will 04Y, nesting here for his eighth year, produced four eggs, hatched three, and fledged two males and a female.

3. Colonnade Building, Hwy. 100 and I-394, Minneapolis, Hennepin County, Minnesota. Rusty, the distinctively red unbanded female who nested here in 1995, failed to return. She was replaced by female Elma (also fairly reddish; perhaps from the same undiscovered nest somewhere in the metro area?), who first

came to our attention on 30 September 1995 when she hit a window in Minneapolis. She was then unbanded and in adult plumage. After a brief stay at TRC, she was released October 5 at Fort Snelling, south of Minneapolis, wearing only a silver FWS band on the mistaken assumption that she was a migrant enroute south and would not be seen here again. Rich Kaiser, who works in the Colonnade near the nest site, read the crucial last numbers on Elma's FWS band (1807-29497) through his office window and kept careful daily track of her nesting..

Although Marla 81V was seen at the Colonnade in February, by March 1 she had returned to the Multifoods Tower and at the Colonnade Elma was paired with seven-year-old Kato 31T, his fifth year here. They produced four eggs and fledged four young, three males and a female. As far as we know, this is the only four-chick brood fledged in Minnesota in 1996. One male youngster was found dead on the roof of the Colonnade shortly after fledging.

4. North Central Life Tower, St. Paul, Ramsey County, Minnesota. Ten-year-old Meg 12R again overwintered here and nested for the ninth year; her mate was eight-year-old Spanky 04T for the fifth year. Four eggs were laid, three hatched by May 14, and two males and a female fledged around June 24. The female fractured her sternum, recovered at TRC, and was released at the nest site on July 30, and was found dead about 100 miles south of Chicago, Illinois, on August 15, 1996.

5. [Montgomery Ward] Ford Parkway Bridge, Minneapolis, Hennepin County, Minnesota. Eight -year-old female Comet 11V returned for the seventh year, paired for the third year with three-year-old Lindee 1/\*A. Their old nest site on the Montgomery Ward tower was demolished in accordance with long-standing plans in January 1996. Comet and Lindee spent March and April visiting various buildings near the old nest site in the Midway district, two of which had nest boxes in place. Apparently not satisfied, they disappeared from the area late in April. On June 24, Dave Zumeta, MN DNR Forestry, reported a peregrine on the west arch of the Ford Bridge over the Mississippi, about three miles southwest of the Montgomery Ward tower. Bruce Fall saw two adults there on June 25, and by June 30 Tordoff had identified both by their bands, Lindee 1/\*A and Comet 11V. On July 4, Tordoff saw one chick, about 32 days old, on the north side of the top of the westernmost over-water arch. Back-dating, eggs must have been laid the last week of April.

There is a lesson here: two peregrines known to be displaced and searching for a new nest site evaded discovery until their chick was too old to be captured for banding. And when they were found by Dave Zumeta, he was doing a general riverside bird survey, not searching for falcons. Little wonder that more unbanded peregrines are appearing in our midst each year!

6. Mendota Bridge, Fort Snelling State Park, Dakota County, Minnesota. New site. On July 14, Chad Jones reported peregrines at this long, high bridge over the Minnesota River near its confluence with the Mississippi. On July 16, John Kellner and Tordoff identified the female, E/C, fledged wild in 1994 at Cedar Rapids, Iowa. As a one-year-old in 1995, she was paired with Malin 0/\*7 but did not lay at the NSP Prairie Island Plant, 32 miles southeast of the Mendota Bridge. The 1996 Mendota male is not Malin 0/\*7; Jim Bertrand, Raptor Resource Project intern, read his b/r band as 1/? on July 18. Peregrines were first noted here on April 8 by Mark Cleveland, MN DNR Parks, and two other park employees had been watching the birds for several weeks but had not spread the news; they saw two young in the nest on the top of a high concrete arch. On July 17, Jan Jancourt and Tordoff saw two unbanded young, a male and a female, several days out of the nest and flying strongly.

Although the record of bridge-nesting peregrines elsewhere is poor, this site is excellent. The nest was about 150 feet above the east bank of the 100-

yard wide river and there are no bridge piers rising sheer from the water, making fledging without drowning easy. Also, the bridge under-structure provides a maze of broad concrete perches as well as security from would-be graffiti artists, a problem at the Ford Parkway Bridge (pair 5). The bridge is only a year old and still clean; one wonders what was available for a scrape, but the two young are proof that the adults were able to incubate successfully.

Two unidentified peregrines were seen at NSP Prairie Island in late May (pair 59), after the Mendota Bridge birds were already nesting.

7. NSP King Power Plant, Bayport, Washington County, Minnesota. Bob Anderson, Raptor Resource Project (RRP), reports that female Mae 31V, seven years old and nesting for the seventh time, again spent the winter here. She paired with four-year-old Caesar 49Z, her full brother from the Multifoods Tower. They produced four eggs, only one hatched, and a female chick fledged in late June. In 1994 and 1995, Mae's mate had a black band on the right leg; possibly Caesar 49Z. This site has had a history of close inbreeding. Mae's first mate for three years was her half-sibling, 13T; next she paired with her own son, Jim 51Z, for at least one year, then with her brother Caesar 49Z. All chicks produced have appeared normal and healthy. At least two have survived to become breeders elsewhere. University of Minnesota geneticist James Curtsinger suggests that there may be little or no inbreeding depression because the population went through a bottleneck, which temporarily reduces or eliminates deleterious recessive alleles.

8. NSP Black Dog Plant, Eagan, Dakota County, Minnesota. Bob Anderson reports that a new female, two-year-old Skywalker U/R paired with her five-year-old half-brother 55X, nesting here for the fourth year. Both fledged wild from the Montgomery Ward site in St. Paul, same mother, different fathers. They fledged two female young in late June; one was briefly grounded and returned to the nest site on July 4 by Anderson.

9. NSP Sherco Plant, Becker, Sherburne County, Minnesota. Dan Orr, NSP biologist, reports that five-year-old female 36R, back for the fifth year, paired with a male fledged in 1992 at the NSP King Plant, Bayport (either 51Z or 52Z, based on Dan's partial reading of the FWS band, 2206-13777 or 78). They produced four eggs and fledged two female young in early July.

10. NSP Monticello Plant, Monticello, Wright County, Minnesota. A new female, two-year-old Camilla E/B from the Colonnade, Minneapolis, replaced female 31R, who was killed here in a collision with the stack in July 1995. Camilla's mate was 1/\*?, the same male present here in 1995, judging by plumage and partial reading of his band. (The red part of the b/r bands fades badly in a couple of years to a pale pinkish-orange, making it difficult and sometimes impossible to read under field conditions.) They produced four eggs and fledged three young, a male and two females, in early July, according to Dan Orr and Bob Anderson. Dave Wisted, NSP, Orr, and Anderson saw three adults here late in incubation and shortly after hatching. The extra bird was an adult female. Relations among the three appeared amicable; all three visited the nest box. The extra female was gone before the chicks were banded at about four weeks of age.

Two of the young were found dead near the nest site a few weeks after fledging. Neither showed signs of trauma and both tested negative for organophosphate poisoning. After complete testing at the USFWS lab at Madison, Wisconsin, no cause of death could be determined.

11. Palisade Head, Lake County, Minnesota North Shore.

Dudley Edmondson identified ten-year-old female Fridge 43R, ninth year here, and an unbanded male, as in 1995. The nest, found by Dudley and Jerry Hoeft, MN DNR Parks, was just northeast of the parking lot on a ledge used in 1992. In her nine years, Fridge has moved to a new ledge after two years, two years, one, one, one, and one. This year an old nest ledge was reused for the first time. One female young was fledged in mid-July. The climb was made by Peter Smerud and Peter Harris, Wolf Ridge Environmental Learning Center, Finland, Minnesota. Gail Jackson, Parks Canada, and her team of climbers from Thunder Bay, Ontario, helped with the banding.

12. Wausaugoning Bay, northeast of Grand Portage, Cook County, Minnesota. Dave Duncan, U.S. Fish and Wildlife agent, reported to Dave Evans that on August 7, he (Duncan) saw an adult peregrine being chased by a juvenile screaming for food. Duncan thought the young bird was recently fledged, judging by its flying proficiency, and therefore fledged locally. He also saw a white-washed ledge on a cliff in this bay in 1995, but did not notice it this year.

13. Minnesota Power and Light Boswell Energy Center, Cohasset, Itasca County, Minnesota. Daryl Councilman, MPL, reports that the same pair, five-year-old female red X/H, hacked at Nipigon, Ontario, and five-year-old male 74X, fledged wild at the Rouchleau Pit, Virginia, Minnesota, nested for the fourth year. A new female was present in April, but was driven out by red X/H when she returned from wherever she wintered. This is the second time that red X/H had to reclaim her territory from another female after returning in spring. Three eggs were laid, one hatched. The young female was banded by Councilman and Bob Anderson (RRP) on June 28 and fledged in mid-July.

14. Firststar Center, Milwaukee, Milwaukee County, Wisconsin. Greg Septon reports that eight-year-old female Sibella 20V, eighth year at this site, and six-year-old male Bill 74T, sixth year, produced three eggs in late March, hatched three in early May, and fledged two males and a female in mid-June; these bring Sibella's reproductive output to an even two dozen young, not counting two augmented. Bill's total is now 19.

15. Landmark on the Lake, Milwaukee, Milwaukee County, Wisconsin. The female here, Alice U/K, was unbanded in 1994; Greg Septon caught her in the nest box in 1995 and banded her. Her mate this year was again six-year-old Omni 76T, in his third year at this site. Four eggs were laid and all four hatched around May 20. Two males and two females fledged June 30 and July 1.

16. Froedtert Malt, Milwaukee, Milwaukee County, Wisconsin. Jim Marks and Greg Septon report that female Vera nested here for the second year. She is probably now three years old, having been present as an unbanded juvenile but not nesting in 1994; this year, Septon caught her at the nest and banded her, U/X, along with her chicks. Her mate again was four-year-old Leopold C/D. They produced four eggs, hatched and fledged four young, two each sex, in early July.

17. Edgewater Generating Station, Sheboygan, Sheboygan County, Wisconsin. Seven-year-old Silverstreak 42V, in her fifth year at this site, paired again with three-year-old Grant B/N, from New York City, nesting here for the second year. They produced four eggs, hatched all four and fledged four females, according to Septon and Marks.

18. WPS Pulliam Power Plant, Green Bay, Brown County, Wisconsin. New site. In 1995, an unbanded juvenile female and an adult male wearing two bands were present on the nearby Tower Bridge but did not nest. This year, they were lured to a nest box on the power plant smokestack, where they produced four eggs

by April 28, hatched all four by May 30, and fledged four female young by July 10, according to Greg Septon. The 1996 female is unbanded and the male has a b/r band on his left leg; in all probability these are the same birds as in 1995. If so, this is excellent production by a pair nesting for the first time. One of the young was killed near the nest site when caught in some wiring about three weeks after fledging.

19. Book Building, Detroit, Wayne County, Michigan. Judith Yerkey, Detroit Peregrine Coordinator, and Tim Payne, MI DNR, report that six-year-old female Judy red AD paired again with five-year-old male Pop, her sixth year in Detroit, his fifth. Again, both adults over-wintered in Detroit. Eggs were laid in mid-April; three hatched and two males and a female fledged June 28.

20. New Center, Detroit, Wayne County, Michigan. Judy Yerkey reports that three-year-old female H 6/H, from Pittsburgh, Pennsylvania, third year at this site, paired with a new male, two-year-old Speedster A/\*6, wild-produced at the Book Building, Detroit, in 1994, who replaced male C.J. 27N, killed in September 1995. Speedster A/\*6 had been at the Whittier Apartments, Detroit, in September 1995. Speedster and H nested in the "west dome," site of the second nesting attempt in 1995. The chicks were moved about eight feet to a nest box at banding. Clutch size was not determined but three eggs hatched and two females and a male fledged.

21. Woodman Tower, Omaha, Douglas County, Nebraska. John Dinan and Jeanine Lackey, Nebraska Game and Parks Commission, report that a new pair nested here in 1996. The female is Winnie, black band \*T/6, fledged wild at the University of Manitoba, Winnipeg, Manitoba, in 1994. The male is Zeus X/R, hatched in Rochester, New York, in 1994. They produced four eggs, hatched four, and fledged two young, one of each sex.

Female \*T/6 is a great-granddaughter of MF-1, first successful peregrine nester in the post-DDT Midwest (1987, Multifoods Tower, Minneapolis).

22. American Republic, Des Moines, Polk County, Iowa. Pat Schlarbaum and Bruce Ehresman, Iowa DNR, report that five-year-old female 13R, nesting here for the fourth year, and male 93\_, third year at this site, produced three eggs, hatched three, and fledged two male young in late June.

23. Firststar Bank, Cedar Rapids, Linn County, Iowa. Five-year-old female 49R nested here for the fourth year, paired again with male 64\_, the same male as in 1993, 1994, and 1995. They produced four eggs, three hatched, and two males and a female fledged in late-June, according to Pat Schlarbaum and Bruce Ehresman.

24. 5821 Broadway, Irving Park, Chicago, Cook County, Illinois. Mary Hennen reports that female Eleanor 2/8, now three years old, paired for the third year with six-year-old male Franklin 95T. They produced four eggs and hatched four young by May 4; two were alive at banding, but one fell from the narrow window ledge and was killed. The remaining female fledged.

25. Wacker and Michigan, Chicago, Cook County, Illinois. Mary Hennen reports that this "river pair" produced a clutch in the same place where previous clutches had been flooded; the eggs were moved to a safer spot but the adults refused to incubate there. They then renested one-half block away and fledged one young that was not banded.

26. McKinley Bridge, East St. Louis, St. Clair County, Illinois. New site. Two adult peregrines, both wearing silver bands, produced two chicks, which were banded when two weeks old.

27. Cline Avenue at Lake Michigan, East Chicago, Lake County, Indiana. John Castrale, Indiana DNR, reports that six-year-old female Egore 57V and four-year-old male Marty 53Z were back, the fifth year at this site for Egore, the third for Marty. The site has been occupied for eight years. Three eggs were laid, incubation started around March 23; three hatched by April 27; three male young fledged June 8.

28. Inland Steel, East Chicago, Lake County, Indiana. New site. This site is about three miles east of the Cline Avenue nest. John Castrale reports that on April 19, four-year-old male C/M, hatched in Muscatine, Iowa, was found dead here, but nesting was not suspected at that time. On June 10, a fledgling male peregrine was found injured on the ground; this youngster later died but a sibling female fledged June 13, unbanded because undiscovered until almost ready to fly. The female parent was Courtney 25W, hatched in Racine, Wisconsin, in 1992; the male, an adult, is banded 2/? on the left leg, silver right. Back-dating from date of fledging, the eggs must have been laid the last week of March; either C/M or 2/? might have been the male parent. DNA analysis of blood or tissue of the dead fledgling and the two males could answer that question. Perhaps C/M was killed in a territorial dispute.

29. U.S. Steel, Gary, Lake County, Indiana. Nesting in a new box, the fourth spot used at this site, the same pair, eight-year-old female Suzy Q 52P and six-year-old male Vulcan 79T, nested again, the seventh year for the locality and for Suzy Q, the fourth for Vulcan. They produced three eggs at the end of March and in early April, hatched three by May 11, and fledged three males June 19-20, according to John Castrale.

30. Bailly Power Plant, Porter, Lake County, Indiana. New site. A pair of two-year-olds, female Isabella 2/7, wild from Sheboygan, Wisconsin, and male Bailly 4/9, fostered with Suzy Q 52P at Gary, Indiana, nesting in a box on a smokestack produced three eggs in late March, hatched two, and fledged two females June 15.

31. Market Tower, Indianapolis, Marion County, Indiana. John Castrale reports that three-year-old male Kinney 7/\*3 paired for the second year here with four-year-old female Scout 28W. Again the earliest nesting pair in our area, they produced four eggs by March 12, hatched all four by April 16, and fledged two males and two female May 24-28. One young female was found with an ulnar fracture on July 8. After rehabilitation at TRC, she was released in Indianapolis on August 21, was aggressively pursued by Kinney, and was not seen again. One young male was found with a fractured carpometacarpus in Racine, Wisconsin, on August 6; he is being treated at TRC and will likely recover and be released..

32. One Summit Square, Fort Wayne, Allen County, Indiana. New site. Two-year-old female Freedom U/\*8, hatched in Evansville, Indiana, paired with three-year-old male Bandit 1/\*1, hatched in Birmingham, Alabama. They produced four eggs, two hatched May 14, and a male and a female fledged June 18, according to John Castrale. This pair was also here in 1995, but did not nest.

33. Commodore Perry Motor Inn, Toledo, Lucas County, Ohio. Peregrines have nested on this vacant building for nine years; female red 3C7 for the first eight years, but a new female this year, two-year-old Carmen D/N. Carmen was

paired with her full brother, three-year-old male C/U, second year here, both wild from the Firststar Center, Milwaukee, according to David Scott, Ohio Division of Wildlife. At least two young were fledged, unbanded because access to the building is prohibited. One young was injured after fledging and was sent to TRC for rehabilitation. It was banded and released in Toledo on July 29, 1996.

34. Terminal Tower, Cleveland, Cuyahoga County, Ohio. Sara Jean Peters and David Scott, Ohio Division of Wildlife, report that eight-year-old male Szell paired for the fourth time with four-year-old female Zenith 23W. Four eggs were laid by April 11, all four hatched May 17, and three young fledged, two females and a male, in late June. One young was knocked from the ledge near the nest tray by the adults during defense of the site at banding; it was killed in the fall. An early egg was laid here and never incubated; Scott suspects it was laid by a different female.

35. Lakewood, Cleveland, Cuyahoga County, Ohio. Dave Scott reports that two-year-old female Athena 5/V paired for the second year at this site with three-year-old male Buckeye 3/1. Three eggs were laid by April 2, two hatched by May 12, and two young, one each sex, fledged in mid-June.

36. Rhodes State Office Tower, Columbus, Franklin County, Ohio. David Scott reports that five-year-old female Aurora red 4R0 returned for the fourth year, paired for the third year with an unbanded male, Bandit. They had four eggs by April 15, hatched them by May 17, and fledged four young, all males, in late June. Two received minor injuries shortly after fledging, but were soon released at the nest site.

37. Lazarus Building, Dayton, Montgomery County, Ohio. According to David Scott, three-year-old female Baltimore 7/D paired again with six-year-old male Mercury 21X. They produced four eggs in late March and early April, hatched all four on May 1, and fledged three males and a female around June 17.

38. PNC Building (renamed, formerly Central Trust Tower), Cincinnati, Hamilton County, Ohio. Five-year-old female Falcar 57R and six-year-old male Falcor 29X finally had a productive season. (Falcar was hacked and named in Cincinnati; Falcor was hacked and named in Indianapolis. No collusion!) Paired here in 1993, they fledged one young; in 1994, none; in 1995, unidentified adult peregrines were present but did not nest. This year, five eggs were laid the last week in April, hatching began on June 3, and three young, two males and a female, fledged in mid-July.

38. Kansas Power and Light, Topeka, Shawnee County, Kansas. Jerry Horak, Kansas Department of Wildlife and Parks, and Joanne Brier report that this pair nested for the fourth year in Topeka, second year on this building. Five-year-old female 28R paired again with four-year-old male 56Z (although his band was not read this year), producing four eggs by April 2; two hatched May; two chicks, a male and a female, fledged in mid-June. The young female broke her wing on June 16 and is in the care of a local rehabilitator; the break is close to a joint and will probably preclude release to the wild..

40. Park Plaza, St. Louis, St. Louis County, Missouri. Four-year-old female 2/3, nesting here for the fourth year, paired with an unidentified male, producing four eggs, three hatched, three female young fledged, according to Mike Cooke.

*Robert Nero and Robert Jones, Manitoba Wildlife Branch, supplied the following information on Manitoba falcons with a U.S. connection.*

41. Delta Winnipeg Hotel, Winnipeg, Manitoba. Seven-year-old female 52V paired again with male black 1/X, her fifth season here, his second at this site. They used a new ledge on the building this year. They hatched three young and fledged all three, two females and a male, in early August.

42. Manitoba Legislative Building, Winnipeg, Manitoba. New site. Female red A/4 and an unbanded male nested just below the dome of this building. They produced three eggs, hatched all three, and fledged three young, two females and a male, in the last half of August.

43. McKenzie Seeds Building, Brandon, Manitoba. The same pair of five-year-olds nesting here for the third year, female black 0/B and male red 7/\*3, produced four eggs, hatched three, and fledged three young, two females and a male, in late July. Female black 0/B is the daughter of Maud and granddaughter of MF-1.

*Ted Armstrong, Ontario Ministry of Natural Resources, and Gail Jackson, Parks Canada, sent the following summary of peregrine nesting along the Ontario North Shore of Lake Superior. Gail Jackson organized a team of climbers this year. They banded 16 young falcons at five cliff nests, a great achievement. Many of the Ontario sites are much more difficult to reach than most sites in midwestern U.S. We congratulate and thank lead climbers Robert Dye, Andi Dye, and Rodney Swatton from Lakehead University, School of Outdoor Recreation, Parks, and Tourism, and Frank Pianka with the Alpine Club of Canada.*

44. Mt. McRae, about three km from Mt. McKay, near Thunder Bay, Ontario. New site. Two unidentified adults at this cliff fledged three young; all were banded.

45. Pie Island #3, Ontario. An adult female with a FWS silver band and an unidentified adult male fledged four young from a new cliff site. Gail Jackson thinks it probable that the pair moved from Pie Island #1 cliff, which was vacant this year. All young were banded.

46. Sibley Peninsula, Ontario. The same male as in 1995 and an adult female, silver band right leg, black band left leg, (probably released at Isle Royale), fledged four young, all banded, at a nest over 200 feet down from the cliff top. The ledge used was different from the 1995 nest.

47. Nipigon Bay, mouth of Nipigon River, Ontario. This territory has been occupied for six years. This year, the nest was found for the first time. The adult female has a red band. The male is also an adult. Two young were fledged; both were banded.

48. Lake Superior Park, east end of Lake Superior, Ontario. Two adults, the female with a silver band on the left leg and a male released in 1990 at Five Islands, Nova Scotia, three young banded, two of which fledged.

**UNSUCCESSFUL BREEDING PAIRS**  
(Eggs laid, no young fledged)

49. University Bridge, St. Cloud, Stearns County, Minnesota. Al Grewe, St. Cloud State University, reports that a single peregrine was seen here on March 4 and a pair on March 16. They probably nested and failed on the bridge; around May 15 they appeared at a nest box on the granite water tower at nearby St. Cloud State Correctional Facility. Tordoff read their bands there on May

17, confirming that they were the same pair as in the past two years. The female is five-year-old Olivia 26R from the Multifoods Tower, Minneapolis; the male is four-year-old St. Pauli Boy 76Z from North Central Life, St. Paul. According to Ben Baloun, SCSCF, after several days at the water tower, the birds departed again. They were seen for the rest of the season by Grewe and his students along the river near the bridge. In their three seasons at the bridge, this pair has fledged two young, only one of which survived its first flight. Their breeding success would surely improve if they would use the nest box on the water tower.

50. Bong Bridge, Duluth, St. Louis County, Minnesota. Dave Evans reports that eight-year-old Bong female 34R was present by March 17, for her sixth nesting attempt. Two birds were seen by the railroad bridge operator on May 6, but Evans never saw two adults subsequently. He found one egg in the scrape used in 1995 on May 17; the egg was broken by May 22. From the six nests, Bong female 34R has fledged at most only three young; none of these have been seen post-fledging.

51. Blatnik Bridge, Duluth, St. Louis County, Minnesota. Dave Evans reports that an unbanded female was present by March 14; her behavior was like that of the juvenile female here in 1995. An unbanded male was here by March 19. Incubation started April 21 or 22 on a bridge beam on the Wisconsin side of the state line, but the nest had failed by April 27. Renesting was on the Minnesota side, with incubation by May 13 through at least May 25. When Evans returned from eagle work on June 26, he saw no sign of young during five hours of observation over several days. Both adults were still at the bridge on August 28.

52. Finn Church cliff, two miles northeast of Tofte, Cook County, Minnesota. On May 27, Jim Carlson saw three eggs in the same scrape used since 1993. He is fairly certain the female was Algoma 77V, on the basis of her black band and plumage details. The male was unbanded, as in past years. On a later visit by Carlson in June, the scrape was empty and only the male was seen. Carlson suspects the nest failed because female was killed.

53. Whittier Apartments, Detroit, Wayne County, Michigan. Five-year-old Sunrise 55R, nested at this site for the second year, paired with an unbanded juvenile male (called Seven, Sunrise's seventh mate, by Judy Yerkey). Four eggs were laid in mid-May, one was eaten soon after laying; the clutch was incubated only by Sunrise until the 32nd day, when only one egg was left; it was removed by Tim Payne, MI DNR. In her colorful career to date with her seven mates, Sunrise, hatched in Cincinnati in 1991, has nested at three sites in Detroit and made an unsuccessful exploratory trip to Cleveland; the net result is one young fledged, testimony to the importance of finding a single viable nesting site and holding on to it.

54. 125 S. Wacker, Chicago, Cook County, Illinois. Eleven-year-old Harriet, the oldest Midwest peregrine, and her mate, ten-year-old Jingles, produced four eggs, three hatched, but the young disappeared while still small, circumstances not known.

This is Harriet's ninth year nesting at this site and the eighth for Jingles, according to Mary Hennen.

55. 3180 Lakeshore Drive, Chicago, Cook County, Illinois. New site, near the former Park Place territory held in 1995 by a single unidentified peregrine, according to Mary Hennen. This year, an unidentified pair produced a single egg which was flooded out. No renesting was reported.

56. NIPSCO Power Plant, Michigan City, La Porte County, Indiana. New site. John Castrale reports that this pair nested in a box on a smokestack. The female was two-year-old Diana D/U, hatched at Festus, Missouri, in 1994; the male was juvenile Uncle Billy 3/\*B, fledged wild at Landmark on the Lake, Milwaukee, Wisconsin, in 1995. Three eggs were laid May 5 to 10, but failed to hatch despite incubation continuing past June 12. Inexperience of the male possibly explains failure of the eggs to hatch.

57. USS/Kobe Steel Plant, Lorain, Lorain County, Ohio. New site. About 20 miles west of Lakewood, Lorain is on the shore of Lake Erie. Dave Scott reports that female Star 5/X, hatched at Rochester, New York, in 1994, paired with an unidentified adult male. The nest was located on an "island" of silt and other debris at the end of a rain gutter on a large metal building, in active use. Access to the nest site was through a "barrel" ladder on the side of the building. Heavy, frequent rainstorms washed three eggs down the downspout before a box could be built. The fourth egg was abandoned.

58. Clayton, St. Louis County, Missouri. New site. This site is on the west side of metropolitan St. Louis. Mike Cooke reports that the nest was on a bare ledge of a building. Two adults, unidentified, nested and lost their first clutch. They were still in the area in late August.

#### **TERRITORIAL PAIRS, NON-BREEDING OR STATUS UNKNOWN**

59. NSP Prairie Island, Goodhue County, Minnesota. Two peregrines were seen here in late May, but there was no evidence of nesting. One and sometimes two peregrines appeared intermittently through the summer, often visiting the nest box.

60. Beaver Bay, Lake County, Minnesota. New site. Dana Kollar, operator of Lake Superior boat tours, reports that a pair of peregrines spent the summer at Pink Cove, Beaver Bay Club, about eight miles southwest of Palisade Head. He writes: "We noticed it too late to actually see any chicks on the nest. Throughout the rest of the summer, however, we would see one or two falcons at that location. At least one of them was obviously adolescent."

61. Kennedy Creek, Lake County, Minnesota. Old female with new male at new site? Peter Harris reports that two adult peregrines were at a cliff at the Wolf Ridge Environmental Learning Center in early April, but left after a few days. Assuming the female was nine-year-old Blueberry 20P with a new mate (her mate for the preceding six seasons, Oly, was killed by a car in July 1995), she did not use her old cliff on the Lake Superior shore, which is now directly under some houses built in the last couple of years. On July 14, Harris reported that a pair of peregrines were found a mile southwest of the 1995 nest. They were aggressively defending a cliff. Later in July, Harris spent two hours at the site but did not see any falcons. Behavior described by local residents suggests that the pair nested, but the outcome is unknown.]

62. WEPCO Power Plant, Oak Creek, Milwaukee County, Wisconsin. New site. A juvenile female Raynie A/\*H, fledged wild from 5821 Broadway, Chicago, in 1995, paired with male Griffin 5/\*D, wild-produced at Landmark on the Lake, Milwaukee, in 1994. They used the nest box on a smokestack, made a scrape, but did not nest.

63. Monroe Edison Power Plant, Raisin River, Monroe, Monroe County, Michigan. Judy Yerkey reports that a juvenile female and an adult male were seen here, but did not nest.

64. Trap Hills, Ontonagon County, Michigan. Joe Rogers visited this site several times and saw two peregrines at least twice, but no evidence of nesting. David Csepp, U.S. Forest Service Contract Observer, checked the site almost daily from May 28 through the summer; he reports seeing only an unpaired adult male, occasionally early but regularly after mid-June. The male was still present in mid-August.

65. Porcupine Mountains Wilderness State Park, five miles west of Silver City, Ontonagon County, Michigan. Peregrines were here for the seventh year. Joe Rogers reports that copulation was seen on May 25. The female was banded, but no colors or numbers were noted. The male showed the same coloring and pattern as the male here for the past four years. Snow persisted into mid-June and prey species arrived late and apparently in small numbers. Activity at the cliff centered around the ledge used in 1994 and 1995, but was less intense than usual. No eggs were laid and the peregrines quit daily use of the cliff by June 20.

66. Grand Island, north of Munising, Alger County, Michigan. Joe and Barb Rogers made a kayak trip around the south and east sides of the island, seeing no falcons. The suspected nest ledge of 1995 was gone in a rock fall. Bad weather prevented covering the north and west sides of the island until late June and early July. A peregrine was seen, but with no evidence of nesting. The last of the winter's ice was seen on July 9!

67. Pictured Rocks National Lakeshore, near Munising, Alger County, Michigan. A pair nested here in 1994, but not in 1995 or, apparently, 1996, according to Joe Rogers and Brian Kenner, National Park Service Biologist. Again, snow and ice persisted into mid-June on these north-facing cliffs.

68. Hyde Park, Chicago, Cook County, Illinois. Mary Hennen reports that the nest box was removed after two years of nesting at this site because aggressiveness by the peregrines restricted use of building balconies by tenants. There was no peregrine activity at the building this year and the whereabouts of the 1995 pair, five-year-old female 22R and six-year-old male Orion 77T, are unknown. This is the first case in the Midwest where unacceptable peregrine aggressiveness has resulted in loss of a nest site. It probably will not be the last.

69. Lakeview, Chicago, Cook County, Illinois. Two adults, each with a purple band and a b/r band (= wild-produced), were present. No nest was found. Male K/\*6, wild-produced in Cedar Rapids, Iowa, in 1994, was found dead from a window collision at a nearby building in the summer.

70. Evansville, Vanderburgh County, Indiana. A pair of peregrines was observed courting in February. On March 27 they were still present, but were not seen on March 29 or later. John Castrale suspects they were two-year-old female Phoenix U/Y and three-year-old male Screech 2/\*L, who spent the 1995 season in Evansville, but their identity was not confirmed.

71. City Hall, Kansas City, Jackson County, Missouri. John Meyer reports that two unidentified adult peregrines were present, but did not nest. Two other peregrines were seen in downtown Kansas City.

72. Southwestern Bell, St. Louis, St. Louis County, Missouri. Mike Cooke reports that a pair was present downtown, but the Southwestern Bell site was not used and no new site was found.

73. Interstate Highway 270 Bridge, St. Louis, St. Louis County, Missouri. Mike Cooke reports that an unidentified pair was present. No information about nesting attempt or outcome.

74. Ohio River Bridge, Jeffersonville, Indiana/Louisville, Kentucky. Laura Burford reports that two unidentified adult peregrines were present here through the nesting season, but with no evidence of nesting this year. In 1995, at least one young was fledged at this bridge. These birds seem to be year around residents.

75. Mary Speechly Hall, University of Manitoba, Winnipeg, Manitoba. Peregrines were seen in this vicinity but there was no evidence of nesting.

76. Mt. McKay, near Thunder Bay, Ontario. The same pair as last year, male red O/K, released at nearby Sturgeon Bay in 1989, and female red G/R, released in 1990 on the Sibley Peninsula, about 30 km east of Thunder Bay. The birds were present all summer and closely watched; there was no evidence of nesting.

77. Pie Island #2, Ontario. One adult peregrine was seen, but no nest was located.

#### **SINGLE TERRITORIAL FALCONS**

78. State Capitol Building, Madison, Dane County, Wisconsin. Tim Ellestad reports that a male, presumed to be Calvin 48T, returned in mid-April. He was joined briefly by two females, in sequence, but they both then disappeared. In late October, his remains were found on the University of Wisconsin campus. He apparently died in late summer. It is particularly disappointing to have this site inactive since it attracts huge public attention. Calvin held this territory since he replaced defunct Jade in June 1992.]

79. Racine County Courthouse, Racine, Racine County, Wisconsin. Greg Septon reports that male Joshua O/\*A, augmented in 1993 at Sheboygan, Wisconsin, was intermittently on territory here in 1995 and again through the 1996 season, but attracted no females.

80. State Capitol, Lincoln, Lancaster County, Nebraska. John Dinan reports that an unidentified pair of adult peregrines visited a nest box here from April 21 to May 17, when the female disappeared. The male was still present in late June. From 1990-1993, male falcons have been present at the Capitol and periodically attracted female peregrines, although this year's episode is the closest approach to nesting so far.

81. Akron, Summit County, Ohio. A single unbanded bird was seen during spring in the downtown area several times. Also, Tom Henry reports that male Bandit 3/\*P, fledged wild in Detroit in 1995, was seen here in July; he visited a nest box. In late summer, two birds, both reported to be in adult plumage, were seen here.

82. Portage La Prairie, Manitoba. At least one bird present here, seen killing pigeons; no further info.

## **SUMMARY OF PEREGRINE NESTING IN 1996**

Summing up the natural breeding in 1996, 77 pairs were known to be on territories, 58 pairs (75%) laid eggs, 48 pairs (83% of the nesting pairs) were successful in fledging 127 young, 2.6 young per successful pair, 2.2 per nesting pair, 1.6 per territorial pair.

Of the 77 territorial pairs, 16 (21%) were on cliffs, 44 (57%) were on buildings, eight (10%) on smokestacks, eight (10%) on bridges, and one under a highway overpass. Thirty-one of the 44 building pairs succeeded, as did the highway pair. Four bridge pairs fledged young and four did not. Six of the eight smokestack pairs fledged young. Of the 16 cliff pairs seven failed or did not nest, seven are known to have succeeded, and the outcome is unknown for the other two.

Of the 127 young known fledged in the wild, all were banded except one in Chicago, Illinois, two at Toledo, Ohio, one or more at the I-270 Bridge, St. Louis, Missouri, one or more at Wausaugoning Bay, Grand Portage, Minnesota, and three at the two bridges in the Twin Cities, Minnesota. Additional unbanded young were fledged, of course, at unlocated nests.

## **PEREGRINE RELEASES IN 1996**

### *Iowa*

Mason City, Cerro Gordo County. Seven peregrines from the Raptor Resource Foundation were hacked here, four from an initial release plus three moved from a hack site in Iowa City to save them from attacks by an adult female, who appeared shortly after the release and killed one of the four young. One of the original group of hacked birds at Mason City flew through an open window into the cab of a truck at Taylorville, Illinois, 325 miles from the hack site. Unfortunately, the truck window was then closed to keep the peregrine from escaping, the day was hot, the bird died. Six young dispersed normally. Five were still in Mason City on September 1.

### *Kentucky*

E.W. Brown Generating Plant, Burgin, Dix River Gorge/Herrington Lake, Mercer County. Ten young peregrines from the South Dakota Raptor Trust and three from the Raptor Resource Project were released here by the Kentucky Department of Fish and Wildlife, in the fourth year of a five-year program, according to Laura Burford. Two were lost when trapped in building, one was treated at TRC for a slight injury and coccidiosis and successfully released again at the hack site; in total, ten dispersed normally.

### *Ontario*

Sibley Peninsula. Twelve young peregrines were hacked here, probably the last to be hacked in Ontario. The Canadian Wildlife Service peregrine breeding facility at Wainwright, Alberta, is closing this year.

In sum for 1996, 127 young were fledged by wild pairs and 33 young were released from captive pairs, for a total of 160. Of the 33 hacked young, 28 lived to independence.

## **GENETIC ANALYSIS**

We continued collecting blood in 1996 from all released young and from all wild young banded, and from whatever wild breeders were handled. 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.

Dr. Robert Zink and University of Minnesota student Kate Kaluzinsky continued their study of changes in mitochondrial DNA with aging of individual peregrines. They are analyzing blood samples from birds of known age and, especially, multiple samples from single individuals captured more than once. It is important for this study to take a blood sample each time an adult peregrine is handled.

The peregrine blood samples collected over the years uniquely represent the history of the population. Only a handful of study skins and skeletons, acquired randomly, have been preserved, in contrast to the nearly full coverage of blood samples available. The blood specimens are in the permanent tissue collections at the Bell Museum of Natural History, University of Minnesota, where they are available for genetic and other analyses in the future.

#### **Plans for 1997 and Beyond**

Annual increases in territorial pairs from 1987 through 1995 show rapid growth earlier and the first signs recently of the inevitable leveling off.

| Year | Pairs | Increase | % increase |
|------|-------|----------|------------|
| 1987 | 6     |          |            |
| 1988 | 13    | 7        | 54%        |
| 1989 | 16    | 3        | 19%        |
| 1990 | 23    | 7        | 30%        |
| 1991 | 30    | 7        | 13%        |
| 1992 | 37    | 7        | 19%        |
| 1993 | 53    | 16       | 30%        |
| 1994 | 62    | 9        | 15%        |
| 1995 | 67    | 5        | 8%         |
| 1996 | 77    | 10       | 15%        |

Releases of captive-produced peregrines from 1989-1992 averaged 104 per year, accounting for the big jump in territorial pairs in 1993. In the past two years, most new territorial birds have been wild-produced. Numbers of wild-produced young from 1994-1996 have averaged 120 per year; the wild peregrines are now producing as many young each year on their own as we did in the peak years of releases. As the new population reaches current carrying capacity, some inevitable combination of increased mortality and/or decreased productivity will cause the population to level off.

Our major immediate tasks remain the same:

- Identify all breeders.
- Band all wild young produced.
- Collect and analyze blood from all young produced.
- Manage city pairs so that production of young, enthusiastic cooperation of building managers, and public appreciation of the falcons are all fully enhanced.
- Try to find effective ways to help peregrines re-establish themselves on the river cliffs and on suitable cliffs elsewhere in the region.
- Collect, coordinate, and circulate information among the Midwest peregrine workers through reports, meetings, and regular informal contacts.

## **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 and Mark Martell of the Raptor Center and Dr. Bud Tordoff of the Bell Museum.

Support for the Minnesota part of the effort is provided by:

- BCED Minnesota
- Big Game Club Special Projects Foundation
- Farm Credit Leasing
- Iron Range Resources and Rehabilitation Board
- Koll Management
- Mayo Clinic
- Minnesota DNR Nongame Wildlife Program
- Minnesota DNR Parks and Recreation
- Minnesota Department of Transportation
- Minnesota Falconers Association
- Minnesota Power and Light Company
- Northern States Power Company
- Northwest Airlines
- Raptor Resource Project
- U. S. Fish and Wildlife Service
- U. S. Forest Service
- Wolf Ridge Environmental Learning Center

Each cooperating state or province has, in addition, its own list of cooperators. Falcons for release were obtained from the falcon breeders listed below.

### **BREEDERS SUPPLYING PEREGRINES FOR 1996 RELEASES**

- Robert Anderson, Raptor Resource Project, Hugo, Minnesota (Iowa and Kentucky releases)
- Victor Hardaswick and Don Hunter, South Dakota Raptor Trust, Centerville, South Dakota (Kentucky releases)
- Canadian Wildlife Service (Ontario releases)

**PEREGRINE POPULATION GROWTH AND PRODUCTIVITY  
IN THE MIDWEST, 1981-1996**

| Year  | Hacked<br>yg. | Terr.<br>pairs | Nest.<br>pairs | Succ.<br>pairs | Young<br>fldgd | Yg/t<br>pair | Yg/n<br>pair | Yg/s<br>pair |
|-------|---------------|----------------|----------------|----------------|----------------|--------------|--------------|--------------|
| 81-86 | 102           | 4              | 1              | 0              | 0              | 0            | 0            | 0            |
| 87    | 68            | 6              | 3              | 1              | 1              | .17          | .33          | 1.0          |
| 88    | 84            | 13             | 8              | 6              | 12             | 1.1          | 1.5          | 2.0          |
| 89    | 116           | 16             | 12             | 9              | 22             | 1.4          | 1.8          | 2.4          |
| 90    | 83            | 23             | 16             | 13             | 33             | 1.4          | 2.1          | 2.5          |
| 91    | 110           | 30             | 22             | 17             | 36             | 1.2          | 1.6          | 2.1          |
| 92    | 104           | 37             | 32             | 23             | 68             | 1.8          | 2.1          | 3.0          |
| 93    | 20*           | 53             | 43             | 33             | 87             | 1.6          | 2.0          | 2.6          |
| 94    | 42*           | 62             | 51             | 41             | 116            | 1.9          | 2.3          | 2.8          |
| 95    | 18*           | 67             | 53             | 43             | 118            | 1.8          | 2.2          | 2.7          |
| 96    | 29*           | 77             | 58             | 48             | 127            | 1.6          | 2.2          | 2.6          |
| Total | 767           | 388            | 299            | 234            | 620            | 1.6          | 2.1          | 2.6          |

Note: "Young fledged" includes all young surviving to first flight from nest.

\* Does not include peregrines released in Kentucky, Tennessee, Alabama, and Arkansas, in order to make comparisons with earlier years meaningful.