

Overwintering by Urban-nesting Peregrine Falcons *Falco peregrinus* in Midwestern North America

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ABSTRACT

In January of 1997 a survey was conducted to determine the degree of overwintering by urban-nesting Peregrine Falcons in Midwestern North America. A survey was sent to 58 Peregrine observers and managers in 10 Midwestern states and the province of Ontario, Canada. Twenty-one observers (36%) responded representing all 10 states surveyed. No responses were received from Canada. The responses covered overwintering activity at 58 known urban Peregrine nest sites/territories. This paper will report on the results of the survey and describe the different types of man-made structures where Peregrines overwintered. Also discussed will be the attractiveness of cities versus near-urban sites. The results of this survey may provide useful management insights pertaining to the overwintering requirements and preferences of urban-nesting Peregrines in Midwestern North America and elsewhere.

INTRODUCTION

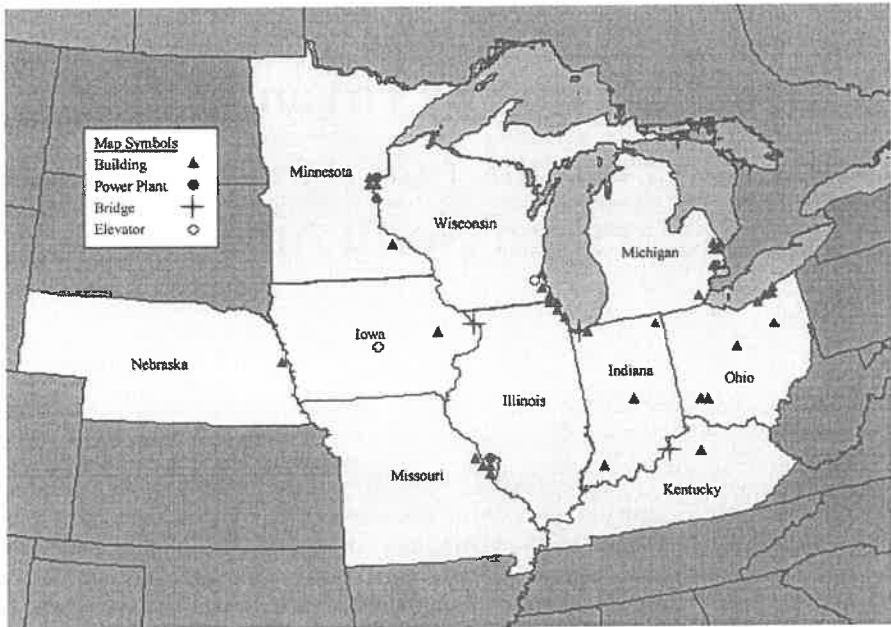
In an effort to restore the extirpated population of Peregrine Falcons *Falco peregrinus* in midwestern North America, a reintroduction programme was initiated in 1982. Since that time Peregrines have been making a comeback and the reintroduced population has continued to increase. In 1996 there was a total of 48 known successful nests (eggs and or young produced) within the region. Of these, 41 pairs (85%) nested in urban areas on human-built structures. Although the population of urban-nesting Peregrines in the midwest has been closely observed and documented during the nesting season, little has been collectively known about the degree to which this population overwinters in the region.

METHODS

In an attempt to determine the degree of overwintering by urban-nesting Peregrines in midwestern North America, a survey was conducted in mid-winter (January) of 1997. The survey aimed to answer related overwintering questions including site preferences, sex ratios, numbers of adults versus immatures and which urban areas had the highest numbers of overwintering falcons. The

survey was sent to 58 prospective Peregrine managers and observers in 10 midwestern states and the province of Ontario, Canada. There were no survey responses from Canada, hence the resulting midwestern survey region can be defined as the ten state area map in Figure 1.

Figure 1. Midwestern overwintering survey area.



HISTORY OF OVERWINTERING IN NORTH AMERICA

Because overwintering accounts on the historic cliff-nesting population of Peregrines in the midwest are scarce, it is not known whether these Peregrines overwintered locally. It is generally believed however that the pre-DDT population from this region normally migrated and wintered in more southerly latitudes. One report from Berger and Mueller (1969) which indicates Peregrines may have at least spent some winters in the region includes a quote by W.E. Green who saw two Peregrines on 2 December 1949 on the Upper Mississippi River National Wildlife Refuge. This observation in Green's opinion indicated that some midwestern (nesting) birds might be year-round residents. However, the report was inconclusive as to whether these falcons actually overwintered on the refuge, wintered in a nearby city, or were merely passing through from somewhere further north.

More detailed overwintering records do exist for Peregrines in cities in eastern North America. Some of the more extensive observations from this region were documented by Herbert and Herbert (1965). Their detailed observations of Peregrines in the New York City region which ended in 1961 covered a span of 30 years. Herbert and Herbert (1965) reported that as many as 16 Peregrines regularly overwintered on some 20 different New York skyscrapers in mid-town and downtown Manhattan and on three bridges, a gas tank and a high school in the Bronx. They also indicate that females dominated the New York skyscrapers and seemed to have territorial attachments for certain buildings. In addition to unattached wintering females, a pair would occasionally overwinter and

one year-round resident pair overwintered from 1943 - 1953. In reference to the Peregrines that nested at the Sun Life building in Montreal from 1936 - 1952 Hall (1955), stated that "after rearing young, they (the adults) did not migrate from the city, and during winter were seen from time to time in the vicinity; frequently towards evening they came in to roost on the building."

In the first 75 years of this century, city nesting Peregrines were a rare occurrence and an exception to the rule in North America. Consequently, aside from early accounts of nesting pairs in Hartford, Connecticut, New York City and Montreal, Canada, documented historical records of Peregrines nesting in cities in North America are few. Even though the vast majority of overwintering Peregrines referred to in the New York City region were not urban-nesters, their attraction to large cities as overwintering sites was well documented.

Since efforts to restore Peregrine populations in North America began in the 1970's, a steadily increasing number have nested in cities. In 1993, Cade *et al.* (1996) were able to document 88 pairs of Peregrines located in 61 urban areas in the US. Many of these falcons have been found to overwinter at these sites as well. According to D. Bird (pers. comm.) Peregrines that breed in Montreal, Canada overwinter there too. Frank (1994) noted that New York City Peregrines had shown a distinct predilection for remaining on their territorial grounds all year round. In contrast to where Herbert and Herbert (1965) observed mostly unattached, non-urban-nesting females overwintering in the New York City region, Frank's findings indicate that both males as well as females in the reintroduced population (often territorial pairs) overwintered in the region. Where the Peregrines in the New York City region before reintroduction were mainly non-resident winter visitors, the overwintering falcons noted by Frank were often resident urban-nesting pairs.

RESULTS AND DISCUSSION

Overwintering survey responses were received from 21 observers (Appendix I) who reported on a total of 58 urban Peregrine sites (i.e., known nest sites or territories) in ten midwestern states. Of the 58 sites surveyed, 43 (74%) had overwintering Peregrines ($n = 77$). Table 1 lists these sites by state, city and site name. The map in Figure 1 shows the midwestern survey area, overwintering sites ($n = 43$) and site types. An overview of the demographics of the overwintering population is provided in Table 2. Of special note is the fact that the majority of overwintering Peregrines (83%) were associated with buildings within cities and that most (88%) of these were identified as adults. Conversely, it is also important to note that only 3% of overwintering falcons at all site types combined were identified as immatures. Maturity of nine (12%) of the falcons observed in the survey was questionable and undetermined.

An interesting point regarding site preference is that 13 of the 15 sites (87%) covered in the survey where Peregrines were not found overwintering were "near-urban" sites. Near-urban sites can be described as those solitary yet prominent human-built structures such as power plants and grain elevators which are located away from large cities. These sites are generally visible from great distances and are quite attractive to Peregrines. Interestingly, the two remaining surveyed sites where Peregrines were not found overwintering were prominent state capitol buildings (Madison, Wisconsin and Lincoln, Nebraska) located in cities without numerous tall buildings. These state capitol sites, much like near-urban sites, are also prominent landmarks that attract Peregrines during the nesting season. However, they seemingly may not provide adequate prey nor the shelter provided by surrounding tall buildings in cities during the winter months. It appears then that cities, especially larger cities with numerous tall buildings and the associated prey available during the winter, i.e., Rock Doves (*Columba livia*) Mourning Doves (*Zenaida macroura*) and Starlings (*Sturnus vulgaris*), probably provide a fairly comfortable and secure existence for overwintering Peregrines. Even though some adult Peregrines from within this urban-nesting population have been known to migrate (as noted by band recoveries), it would still appear that most adult midwestern Peregrines stay fairly close to home throughout the year.

Table 1. Overwintering sites (n = 43) of peregrine falcons in Midwestern North America, 1996-97.

<i>State</i>	<i>City</i>	<i>Site</i>
Minnesota	Rochester	Mayo Clinic
	Bayport	NSP King Plant
	Minneapolis	Multifoods Tower
	Minneapolis	Colonnade Building
	Minneapolis	Riverside Plaza
	Saint Paul	North Central Life Tower
Ohio	Columbus	Rhodes State Office Tower
	Toledo	Commodore Perry Motor Inn
	Dayton	Lazarus Building
	Akron	Key Bank
	Cleveland	Terminal Tower
	Cleveland	Metro Health Hospital
	Lakewood	Gold Coast
	Cincinnati	PNC Building
Indiana	East Chicago	Cline Avenue
	Gary	U.S. Steel
	Burns Harbor	Bailly Power Plant
	Fort Wayne	One Summit Square
	Indianapolis	Market Tower
	Evansville	Downtown area
Wisconsin	Milwaukee	Firststar Center
	Milwaukee	Landmark on the Lake
	Milwaukee	Froedtert Malt Complex
Missouri	St. Louis	Chase Park Plaza
	St. Louis	Downtown area
	South St. Louis	J.B. Bridge
	Clayton	Interco Building
	Portage De Sioux	Ameren UE Power Plant
Illinois	Chicago	125 S. Wacker
	Chicago	5821 Broadway
	Chicago	Lakeview
	Chicago	Wacker & Michigan
	Chicago	Unitarian Church
Michigan	Detroit	Whittier Apartments
	Detroit	New Center/Fisher Building
	Detroit	Ameritech/Book Building
	Detroit	Monroe Edison Power Plant
Iowa	Des Moines	American Republic Insurance
	Davenport	Centennial Bridge
	Cedar Rapids	Firststar Bank
Kentucky	Louisville	Big Four Bridge
	Lexington	KY Central
Nebraska	Omaha	Woodman Tower

Table 2. Demographics of overwintering peregrines in midwestern North America. Numbers represent total survey counts by site type and include available sex and age data.

<i>State</i>	<i>Buildings</i>	<i>Power plants</i>	<i>Elevators</i>	<i>Bridges</i>	<i>Total</i>
Minnesota	3 ad. males 1 ad. female	1 ad. male 3 ad. females			4 ad. males 4 ad. females
Ohio	8 ad. males 7 ad. females 1 ad. ? 2 imm. ?				8 ad. males 7 ad. females 1 ad. ? 2 imm. ?
Indiana	4 ad. males 4 ad. females			1 ad. male 1 ad. female	5 ad. males 5 ad. females
Wisconsin	2 ad. males 2 ad. females		1 ad. male 1 ad. female		3 ad. males 3 ad. females
Missouri	2 ad. males 2 ad. females 2 ad. ? 2 unknown	1 ad. male			3 ad. males 2 ad. females 2 ad. ? 2 unknown
Illinois	5 ad. males 5 ad. females				5 ad. males 5 ad. females
Michigan	4 ad. males 4 ad. females				4 ad. males 4 ad. females
Iowa	1 ad. male		1 unknown	1 ad. male	2 ad. males 1 unknown
Kentucky				1 ad. male 1 ad. female	1 ad. male 1 ad. female
	1 unknown				1 unknown
Nebraska	1 ad. male 1 ad. female				1 ad. male 1 ad. female
Sex and age breakdown by site type	30 ad. males 26 ad. females 3 ad. ? 2 imm. ? 3 unknown	2 ad. males 3 ad. females	1 ad. male 1 ad. female 1 unknown	3 ad. males 2 ad. females	36 ad. males 32 ad. females 3 ad. ? 2 imm. ? 4 unknown
Totals	64	5	3	5	77

In attempting to determine the makeup of the overwintering urban population in the midwest, one might also ask whether any of the overwintering falcons could be visitors from the north or from outside the region? This is certainly a possibility as some unbanded overwintering falcons have been observed and their origins are unknown.

However, these could also be urban-nesters from within the region as several urban-nesting midwestern Peregrines are unbanded. So although there may be some winter visitors in the region, the fact that several Peregrine observers participating in this survey identified known urban-nesting falcons from band numbers at their respective nest sites/territories, it is probably safe to say that the majority of overwintering Peregrines in the midwest are urban-nesters and comprise a non-migratory resident population.

From the findings of this survey, it appears that urban-nesting Peregrines are now regularly overwintering in cities across the midwest much like the New York City falcons described by Frank (1994). As cities have continued to grow in size across North America and the number of tall buildings has likewise increased within these cities, the urban-nesting component of the Peregrine population has increased as well. With urban nest sites/territories in the midwest occupied mainly by resident adult pairs during the winter, the question arises, where do the immatures produced at these sites spend their winters? And, if these immatures migrate, do they only migrate for their first winter or until such time they are able to establish nesting territories? Finally, do Peregrines from more northern cities overwinter in warmer cities to the south and do nesting Peregrines from near-urban sites move into nearby cities during the winter to take advantage of the more available prey and shelter? It is hoped that these questions and more will be answered in the coming years as satellite telemetry techniques are applied to urban-nesting falcons.

ACKNOWLEDGEMENTS

I would like to sincerely thank all of the survey respondents for identifying overwintering sites and for providing detailed information on the demographics of the overwintering Peregrine population. I would also like to recognize Clayton White who first coined the term "near-urban" to define prominent human-built structures located away from cities.

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APPENDIX I

<i>Survey Respondents</i>	<i>State</i>	<i>Affiliation</i>
Bob Anderson	Minnesota	Raptor Resource Project
Harrison Tordoff	Minnesota	Bell Museum of Natural History
Tom Hennessey	Minnesota	Mayo Clinic
Ted Bartel	Minnesota	Mayo Clinic
Sara Jean Peters	Ohio	Ohio Division of Wildlife
David P. Scott	Ohio	Ohio Division of Wildlife
John Castrale	Indiana	Indiana Division of Fish & Wildlife
Greg Septon	Wisconsin	Milwaukee Public Museum
Jim Marks	Wisconsin	Wisconsin Peregrine Society
Tim & Mary Ellestad	Wisconsin	Wisconsin Peregrine Society
Bill Holton	Wisconsin	Wisconsin Electric Power Company
Bob Miedl	Wisconsin	Wisconsin Electric Power Company
JoAnn Thiel	Wisconsin	Wisconsin Power & Light
Alan Trick	Wisconsin	Wisconsin Public Service
Mike Cook	Missouri	World Bird Sanctuary
Mary Hennen	Illinois	Chicago Academy of Sciences
Vernon Kleen	Illinois	Illinois Department of Conservation
Judith Yerkey	Michigan	Michigan Department of Natural Resources
Jaime Edwards	Iowa	Iowa Department of Natural Resources
Laura Burford	Kentucky	Kentucky Department of Fish & Wildlife
John Dinan	Nebraska	Nebraska Game & Fish Department

