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Cover photo: Lesser Sand-Plover, Long Lake, West Beach Unit of Indiana Dunes National Lakeshore, *Porter Co.*, 21 October 2013. Photo by John Kendall

Back cover photo: A Neotropic Cormorant gracing Goose Pond, *Greene Co.*, 11 August 2013, and American Avocets, 23 October 2013. Photos by Michael Brown

**CLASSES OF MEMBERSHIP IN THE INDIANA AUDUBON SOCIETY**

Life Membership	\$675.00	Individual	\$30.00
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## **From the President's Desk**

I want to personally thank you for choosing to be a member of Indiana Audubon Society. We're one of the oldest Audubon societies in the country and we're not a society without our members. In today's economic climate, we can't offer donations to all the worthy non-profits and organizations. Choosing Indiana Audubon means a great deal to myself and the board of directors. We hope you enjoy the unique benefits from the Society, such as the great field trips, festivals, grants and scholarship opportunities, and so much more. The greatest benefit of being a member is the strength that comes from standing in solidarity with our birding colleagues across the different communities in Indiana. Happy 2014!

Help IAS welcome our new Field Trip Chair. Ryan Slack is a graduate of Purdue University. Ryan is a professional biologist and has been studying endangered bats and birds for nearly two decades. Ryan has helped schedule a nice selection of field trips this upcoming year. Join IAS for a trip or two this year. For more info, check the [IAS Event Calendar!](#) Our first trip, the annual winter eagle trip in east-central Indiana happens this weekend!

What do Geneva, Chesterton, Rome City, and Nashville all have in common!? They're all celebrating bird conservation, demonstrating a commitment to protect bird habitat and are Indiana's first [Bird Town Indiana](#) communities. We're so excited about this early success that community applications fee are being waived again for 2014! It's a win-win situation and also helps towns in applying for conservation grants. Email the Conservation Chair, [Jeff Canada](#), for more information on getting your town recognized!

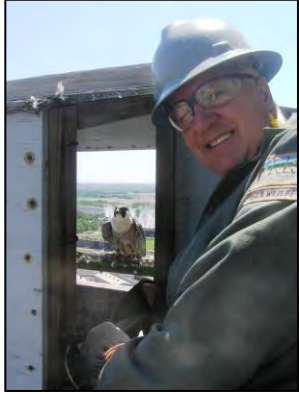


Finally, the IAS board of directors voted unanimously to oppose the proposed reservoir in Anderson. Due to negative impacts upon Indiana's native bird habitat, native flora, and fauna, the Indiana Audubon Society endorses the Heart of the River's opposition to the proposed installation of the Mounds Reservoir. To read more about the reservoir and some more info on why IAS is opposing the proposal, please see the [Heart of the River's website](#).

Thanks again for being a member in 2014!

Brad Bumgardner  
IAS President





## TWENTY-FIVE YEARS OF PEREGRINE FALCON NESTING IN INDIANA

**John S. Castrale, Indiana Division of Fish and Wildlife, 562 DNR Road, Mitchell, IN 47446; jcastrale@dnr.IN.gov**

**Abstract:** Restoration efforts for peregrine falcons (*Falco peregrinus*) in Indiana and the Midwest have resulted in a current Hoosier breeding population of 24 territories in 2013. Beginning in 1989, 27 nesting sites were documented in 13 Indiana counties with most (59%) located in the three counties bordering Lake Michigan. Nests have been found in industrial (78% of sites) and urban (21%) areas, with steel mills, power plants, office buildings, and bridges being most frequently used by falcons. Eighty-eight percent of nesting attempts have been successful, with a mean of 2.46 young/nesting attempt produced to flight stage. Eighty-seven percent of nestlings were banded prior to fledging. Productivity among individual breeders varied dramatically with five males and four females each producing over 30 chicks. The 63 nesting adults that were identified by their leg bands originated from 11 states, most frequently from Indiana, Wisconsin, and Illinois. Breeding adults settled an average of 135 miles (range 0-530 miles) from their original nest or release site to their eventual nest location. Current numbers of breeding peregrine falcons in Indiana and the Midwest are well above what they were historically.

### INTRODUCTION

The peregrine falcon, once extirpated from Indiana and the eastern United States, has been nesting in Indiana for 25 consecutive years beginning in 1989. Releases of captive-bred peregrines for population restoration began in the eastern United States in 1974 (Cade 2003). In the Midwest, experimental releases occurred in 1976 and 1977 and in earnest beginning in 1982 (Redig and Tordoff 1988, Tordoff and Redig 2003). Over 1,250 captive-bred falcons were released (=hacked) in the Midwest until 2007 (Redig, et. al. 2012) including 60 in Indiana from 1991-1994 (Castrale and Parker 1999). Numbers of peregrines are now several times greater than what was thought to be present historically. The population in the upper Great Lakes states was estimated to consist of about 50 pairs (Redig and Tordoff 1988) with the current population exceeding 300 pairs (Redig et al. 2012). Historical nesting sites in the Midwest were ledges on cliffs and river bluffs, rock quarries, and even a tree-nesting population from the lower Wabash River basin in Indiana and Illinois south to Tennessee (Bohlen 1989, Spofford 1942). The first successful nest in the Midwest in recent times was in 1987 (Tordoff and Redig 2003).

Historical records of peregrine falcons nesting in Indiana are sparse and include observations by Robert Ridgway in 1878 near Mount Carmel, Illinois, which may or may not have been in Indiana (Mumford and Keller 1984). The only conclusive historical record of nesting consisted of eggs collected in 1906 at a rock quarry near Laurel in Franklin County (Whitaker et al. 1988).

This article chronicles the increase in nesting by peregrine falcons in Indiana, describes breeding sites, and discusses nest success, productivity, dispersal, and the origin of breeding adults. An earlier article (Castrale and Parker 1999) addressed restoration efforts and nesting in Indiana through 1998.

## **METHODS**

Nest sites were sometimes reported by bird watchers, but most were discovered by building or plant workers who observed falcons, often after aggressive encounters with adults defending nest sites. After a nest was discovered, the site was evaluated and most times a nesting box or tray was provided during or after the breeding season to improve the chance for successful nesting or to influence nest site selection for management purposes. Nest boxes were covered wooden structures with dimensions of approximately 3' wide, 2' deep, and 2' tall with open fronts and filled with a 3-4" layer of pea gravel. Nest platforms were placed in recesses where overhead protection was already present. In about ten cases, nest boxes were in place at sites prior to any nesting attempts. Other nest boxes erected in Indiana during the years remain vacant.

Peregrine falcon nests have been monitored annually in a variety of ways depending on the ability to access the nest site. Most sites were visited at least 3-4 times during the year to determine the presence and identity of a pair, the timing and number of eggs laid, the timing and number of chicks hatched, and to band the young at 3-4 weeks of age. Some sites had a video camera that allowed 24-hour monitoring, while most were visited periodically by biologists, volunteers, or property staff. Each year an attempt was made to band all chicks produced and to collect unhatched eggs. Blood samples were usually taken and nest boxes were generally cleaned of feathers and prey remains. Attempts were made to identify territorial adults by viewing colored leg bands. Federal bands used in the Midwest were either silver, purple (indicating a wild-produced bird), or gold (hatched in captivity). The other leg, usually the left, contained a colored band with silver numbers and/or letters that could often be read from a distance. In the Midwest, these were initially black bands, but bicolor (black over red or black over green) bands were later used. In some years, the bands of nesting adults could not be definitively read, so the identity of some birds was assumed based on colors of bands, partial band characters read, behavior, plumage characteristics, and the presence of identified birds in the year before or after the breeding season. In a few cases, replacement of adults during the early part of the breeding season added a degree of uncertainty in determining parentage of chicks.

Annual nesting reports and banding information for Midwestern peregrines are maintained on a web site (<http://midwestperegrine.org/>) hosted by the Midwestern Peregrine Society. In order to calculate dispersal distances, the latitude and longitude of each site was obtained using Google Maps. Distances in statute miles were determined using an on-line calculator provided by the National Weather Service (<http://www.nhc.noaa.gov/gccalc.shtml>).

## **RESULTS AND DISCUSSION**

In 1989, John Kendall detected a pair of peregrine falcons under the Cline Avenue (SR 912) bridge in East Chicago, Lake County, with three fledged young observed and photographed (Kendall 1989). The following year, a pair and at least one young falcon were reported at the US Steel plant in Gary. Until 1995, those were the only nest sites known in Indiana (Table 1). That year a pair nested successfully in Indianapolis and pairs were reported from Fort Wayne and another steel mill in Lake County. In 1996, numbers jumped to seven nesting pairs, with five along Lake Michigan and two inland sites. Since that time, numbers of pairs gradually increased by one or two pairs most years with the largest jump occurring in 2012. In 2013, 17 pairs were

known to have laid eggs with single birds or pairs noted at seven additional sites. In total, at least 27 unique nesting territories have been identified in 13 Indiana counties (Table 1, Fig. 1).

### **Nesting and Productivity**

Peregrine falcons generally lay from 3-5 eggs with four eggs being most common. Of 165 nests where I was reasonably confident that the clutch was complete, 67% contained four eggs, 19% had three eggs, and 15% had five eggs. Based on this sample, the mean clutch size was 3.96 eggs. In the few instances where 1-2 eggs were encountered, loss of eggs or an incomplete clutch was suspected. Peregrines produce one clutch of eggs per year, although renesting will sometimes occur if a nest fails during incubation or in the early nestling stage. This occurred six times (2.8% of 215 nest site observations) in Indiana during the 25 years of observation. Hatchability, the percentage of eggs laid that hatch, was 76% for 161 nesting attempts where there was a high degree of confidence in both the number of eggs laid and young hatched. Only 39% of these nesting attempts had all eggs hatch, while in 61% of cases at least one egg did not hatch.

The initial brood size of 168 nests in which at least one chick hatched averaged 3.12 chicks/nest with most (38%) having four chicks, 33% with three chicks, 22% with two chicks, 5% with a single chick, and 3% with five chicks. Of the 164 nesting attempts where at least one egg hatched, nestling survival was 92% and >98% of these nests produced at least one young to near fledging age.

Nest success (percent of nest attempts that produced at least one chick to fledging age) averaged 88% and ranged from 77-100% annually (Table 1). Breeding attempts in nest boxes or platforms were more successful (91%) than when nest boxes were not used (73%). The number of chicks produced annually averaged 2.46/nesting attempt and ranged from 0.00 (single attempts at three sites) to 3.56 chicks/attempt for the 27 nesting territories. Pairs using nest boxes or trays produced more young on average (2.70 chicks/attempt) than in situations where nest boxes were not used (1.54 chicks/attempt).

Success (88%) and productivity (2.46 chicks/attempt) of Indiana nests were slightly above the overall values (84% success, 2.33 chicks/attempt) reported for all Midwestern nests (Redig et al. 2012). For banded individuals that nested at least five times (n=25), four females and five males averaged  $\geq 3.00$  chicks/nesting attempt.

Lifetime productivity of 66 banded individuals ranged from 0-61 chicks produced (Table 2). These values are underestimates since some of these birds are still alive and will likely breed in subsequent years. In other cases, breeding by an individual may have been overlooked during some years. Females produced an average of 12.3 (n=36) chicks each over their lifespan, with a median of 7.5 chicks. Males had similar values with a mean of 12.7 (n=30) chicks and a median of 8.5. Fifty-six percent of banded breeders produced <10 chicks each over their lifetime, while 15% of identified breeders produced over >30 chicks each.

### **Dispersal and Origins of Breeders**

In Indiana, 457 of the 528 peregrine falcon chicks (87%) fledged have been banded at their nest sites. In addition, three unmarked breeding falcons were captured by hand and given leg bands.

Over the years, the origins of 63 different banded adults breeding at nest sites in Indiana were determined (Table 2). These birds originated from 11 different states, with 97% from Midwestern states (Table 3). Most birds were from Indiana (22%) and Wisconsin (22%) and 40% were from states that border Indiana. Males originating in Indiana were much more likely to nest in Indiana than females.

Distances were calculated between the original site where an individual was hatched or released as a juvenile and the eventual nest site. In one case, a female nested at two different spots >30 miles apart and both of these instances were counted. Other cases where a bird shifted nest sites <3 miles apart were only counted once in the analysis. For 64 cases, distances between the original natal site and the selected nest site ranged from 0-530 miles with a mean of 135 miles and a median of 112 miles. In only one case did a bird, a male, nest at the site where it was raised. Males (n=29) on average dispersed shorter distances with a mean of 109 miles, a median of 66 miles, and a range from 0-530 miles (Fig. 2). Females (n=35) ranged from 12-407 miles with a mean of 156 miles and a median of 145 miles. Hatched or released falcons had a greater dispersal distance than wild-produced birds (mean: 186 vs. 113 miles; median: 147 vs. 83 miles). Tordoff and Redig (1997) also found that Midwestern females dispersed much greater distances than males (212 vs. 104 miles), although no statistical differences were noted in hatched vs. wild birds.

Although more than one nest location within a territory is sometimes selected, in only one case did an individual move to another territory. A female that nested on a smokestack nest box at the Wheatfield power plant in 1998 and 1999 moved 38 miles to the East Chicago Cline Avenue bridge site in 2000 and nested there until 2008. It is likely that that this bird was forced to move as a result of a territorial challenge by another female.

### **Nest Sites**

Of the 27 nesting sites encountered over the years, most (16; 59%) were in the three counties (Lake, Porter, LaPorte) bordering Lake Michigan (Table 1, Fig. 1). Of the 215 nesting attempts recorded during the 1989-2013 period, 62% occurred in this region as well as 55% of all chicks produced to fledging age.

Once established, nest site use by peregrine falcons can persist for many years. In the 27 locations examined, sites had nesting pairs for 1-22 years (Table 1). Five sites had a history of peregrine use exceeding 15 years. Another five sites had only 1-2 nesting attempts, with pairs seen in subsequent years in two cases that still may become established. In six cases, territories no longer exist. Of the sites listed in Table 1, three were razed and no longer exist. In two (the Cline Ave. bridge sites) of these cases, the pairs disappeared prior to the bridge removal. The fate of the pair at the Kokomo Gas Tower is unknown after it was razed. In two other instances (US Steel coke plant, IPL Harding Street Plant) where a building was destroyed, pairs retained their territory and nested on nearby buildings.

Locations where nests were located can be classified as either industrial (78%) or urban (21%). Sites can be more specifically categorized (Table 4) as steel mills, power plants, office buildings, and bridges hosting most peregrines. Of these four categories, peregrines seemed to show a greater affinity to tall buildings and exhibited higher fledgling rates on urban buildings. However, urban sites likely have higher rates of mortality and injuries due to collisions with



structures (windows, posts, wires, antennas) and vehicles shortly after birds take flight. In industrial sites, mortalities and injuries have been noted from birds being hit by vehicles, being trapped in buildings, becoming oiled, or having singed feathers.

Eggs were laid in nest boxes (74%) on sides and roofs of buildings, smoke stacks, bridges, and a propane gas tower, as well as unmodified recesses or ledges (26%) under conveyors or bridges, on I-beams, atop silos, in gutters or large pipes, and on metal floors, stairwells, and industrial equipment. In nest boxes, nesting substrate consisted of pea gravel and, in other locations, it varied from virtually nothing to a heavy accumulation of soot, lime dust, soil, gravel, feathers, or other debris.

Besides the presence of tall buildings, smokestacks or other tall structures, most peregrine falcon territories in Indiana are associated with a large body of water. Besides Lake Michigan where 16 nesting territories were located, all other breeding sites were situated near rivers. These included the White River (3 sites), Ohio River (3), Wabash River (1), St. Joseph River (1), Kankakee River (1), Wildcat Creek (1), and the three rivers (St. Mary's, St. Joseph, and Maumee) in Fort Wayne (1). Although upland birds predominate in the diet of Indiana peregrines, waterbirds, shorebirds, and birds associated with riparian areas are frequently preyed upon (Kearns 2012).

### **Site Descriptions and History**

More than half of the peregrine falcon nesting sites were along the approximately 40 miles of Lake Michigan shoreline in Indiana (Fig. 1) with industrial sites including steel mills, power plants, and a bridge providing an abundance of nest sites. Spacing of Lake Michigan nest sites (n=14) averaged 2.6 miles to the next nearest active nest site and ranged from 360' to 12.2 miles. Seven nest sites were <1 mile apart. The distances from nest sites to the Lake Michigan shoreline averaged 2640' and ranged from 300-8700'. All but one nest were within one mile of Lake Michigan.

***1-2. Cline Avenue, East Chicago, Lake County*** – This was the first modern peregrine nesting site discovered in Indiana during 1989 (Kendall 1989). The original nest site was a cave-like recess with crumbled rock and other debris serving as the nest substrate with recesses in three expansion joints used as nest sites in other years. All were located under an elevated expressway (SR 912) about 85 feet high in an industrial area. The bridge spanned the Indiana Canal, but the nest site was over land and not water, so drowning was not a potential problem and there was no vehicular traffic hazard below. Young from this site have been killed by vehicles on the roadway above the nest, but this was a rare occurrence. Nesting occurred at this site from 1989-2009, and the bridge was removed in 2012 due to safety concerns as a result of faulty construction. The original nest site was enhanced with a nest tray in July 1990 with access provided by a bridge inspection truck operated by the Indiana Department of Transportation. In 1993, a camera was placed near the recess to allow monitoring of the nest contents and was functional through 2002. In 2004, it was determined that two nests were present, the second about 360 feet distant in an expansion joint. Two different females were identified, but only one male was present, representing a case of bigamy for this normally monogamous species. This trio persisted from 2004-2006 and two other expansion joints adjacent to the recess were used in later years. Three young were produced the first year and an initial nesting attempt during 1990 in an expansion joint failed but the pair re-nested in the original ledge and produced two chicks.

In 1994, five chicks were raised, the first time a Midwestern pair fledged over four young. During early February 1997, the breeding female was found injured, rehabilitated for 3.5 weeks and returned to the site where she nested after reclaiming her territory from another female who was already present. Forty-eight young were raised at the original nest site with successful nests each year for 17 years (2.82 young/nest attempt). Expansion joints were used for six years, with nesting determined for five of those years and four nest attempts were successful with at least eight young fledged. Because the expansion joints could not be accessed, young could not be banded and the number of young produced was likely underestimated. Five females have nested at the Cline Avenue site, while at least three males have been resident through the years.

**3. Sinter Plant, US Steel, Gary, Lake County** – A contractor at the US Steel plant who was also a birder notified me in late 1990 that a pair of peregrines nested at this location earlier that year and raised at least one chick. In 1991, I visited the nest site which was on the top of a large storage bin about 35' above the ground and could only be reached with a man-lift from below. The nest substrate was an accumulation of black coal dust. The young were banded that year using the man-lift, but in subsequent years, access was obtained by removing a steel panel from a stairwell adjacent to the nest location. In 1993, the pair switched from the original location on the bin on the north side of the building to an identical location on the south side. In November 1991, due to a concern about planned construction near the nest site, three large nest boxes were built by US Steel and erected in the area. The birds started using the nest boxes in 1995 and all three have been used at one time or another in subsequent years. In 2002 single eggs were laid in two of the boxes before the female completed a clutch of four eggs in the third box. Nesting has taken place in 22 of 24 years from 1990-2013 and production has averaged 2.45 young/nest attempt. In 2008 and 2011, nesting was not detected; either the birds did not nest, their nest was in an undiscovered location, or nesting began after nest box checks were completed. Of the 22 known attempts, nesting failed in only one year. In 1993, a captive-bred falcon was placed in the nest to be fostered by the existing pair. This bird (*Bailly*, 4/9) survived and nested for 15 years at the Bailly Power Plant in Burns Harbor. Hazards at this site are low, although young on the ground have been killed by vehicles and cases of trichomoniasis or frounce have been noted. Only two females have nested at this site during its existence, while their mates have consisted of at least five males. During one year, the female was paired with her grandson. The original pair consisted of a brother and sister that had been hacked together in Grand Rapids, MI.

**4. Pre-carb/old coke plant, US Steel, Gary, Lake County** – A second falcon nest site was discovered at the US Steel plant in Gary in 2006, approximately 0.6 miles east of the sinter plant site. Three eggs were noted in a soot-filled gutter at the pre-carb plant and the exposed site was soon abandoned. A nest box was provided later that year but was not used in 2007. Instead a pair was found nesting about 570' to the east in a recess under the stairway of the abandoned coke plant building. The nest substrate was an accumulation of coal dust and other debris. Nesting was successful, but the building was demolished later that fall. In 2008, the pair moved back to the pre-



carb plant and raised one chick in the nest box. Due to frequent human activity and concerns about the safety of workers from this aggressive pair, the nest box has been relocated twice on this building. In 2011, the female was likely disturbed at the nest box and three eggs were subsequently laid on the bare metal floor and were abandoned. She later renested in the nest box and raised 1 chick. In 2012, the pair nested on the top of some machinery and plant personnel delayed using the equipment until after the birds raised two young. The pair returned to using the nest box in 2013. On several occasions, the adults have been captured by hand at banding time and the unbanded male was subsequently banded. At least two different males but only one female have been present during the eight years this site has been active. Productivity (1.7 young/year) at this location is below average.

**5. #1 BOP Plant, US Steel, Gary, Lake County** – A third nest site at the US Steel plant in Gary was discovered in 2010. This location was about 0.7 miles west of the sinter plant. The pair nested in debris on an I-beam of the top floor of this 90' building and raised three young, but they were inaccessible for banding. The adults had leg bands, but complete numbers could not be obtained. A nest box was provided at the end of the season, and a scrape was present in the box in April 2011, but there was no other evidence of nesting found. A male found dead later that fall had band numbers similar to the partial numbers from the 2010 male. Falcons were not reported at this site in subsequent years.

**6. Steel-producing building, US Steel, Gary, Lake County** – A fourth site at this steel mill was reported in 2012 and is located 0.8 miles west of the sinter plant and 0.5 miles north of the BOP plant site. A pair appeared to be nesting on a small ledge about 35' off the ground at the corner of a steel-sided building. A man-lift was used to access the site on 22 May and a single egg was observed on this ledge with little substrate present. The egg did not hatch and a nest box was erected later in the fall. The pair used the nest box in 2013 and raised two young falcons. The banded adults were identified in 2012 and it appears the same birds were present in 2013 when the chicks were banded.

**7. Indiana Harbor East, ArcelorMittal Steel, East Chicago, Lake County** - When this nest was first reported in 1996, this plant was referred to as Inland Steel and is located on the southeastern side of the Indiana Canal. Although falcons may have been present here since 1994, confirmation was not obtained until 1996 when a nest was located on a narrow I-beam 90' above the ground on an abandoned building, the No. 11 Coke Battery Preheater Tower. A nest box was subsequently erected prior to the 1997 breeding season about 20' above the I-beam. The I-beam was used again in 1997 and 1998, and once the chicks hatched, they were retrieved by rappelling from above and placed in the nest box. The pair nested successfully on I-beams at three separate locations on the west and east sides of this building through 2001 and failed in 2002. Beginning in 2001, the building was deemed unsafe so the nest box could not be accessed. From 2003-2007, the nest box was used for nesting, although it was difficult to determine how many young were produced each year. Pairs or single birds were seen in the area from 2008-2012, but nesting could not be confirmed. At least three females and three males have nested at this site during the years.

**8. Lime Plant, Indiana Harbor East, ArcelorMittal Steel, East Chicago, Lake County** – A second site at this steel mill was reported in 2006 and confirmed in 2007 with the adults

identified. Falcons nested in a large pile of fine lime dust atop a large storage bin. The nest could be viewed through a peephole from the inside the building. In late April 2010, the panel was modified so that the ledge could be accessed and a nest box was placed at this location. Nesting did not take place in 2010, likely due to disturbance and the removal of the lime dust the previous winter. The nest box was used from 2011-2013 with increased productivity and all chicks banded. From 2006-2013, 16 young were raised during seven years, with an average of 2.29 chicks/attempt. At least four females and two males have nested at this site.

**9. BOF plant, Indiana Harbor West, ArcelorMittal Steel, East Chicago, Lake County** – This steel plant was once operated by LTV Steel and HG Steel before being acquired by ArcelorMittal Steel and is located northwest of the Indiana Canal. Workers reported successful nesting from 2004-2006, but this site was not brought to my attention until after the 2006 breeding season. Nesting occurred on a steel I-beam under a stairwell on this tall building. This exposed area was dangerous to workers so in 2009 the I-beam was made unusable and two nest boxes were provided. In 2012, the eastern nest box was used, but in other years a nest was not found while in recent years single eggs were located in a recess adjacent to a smoke stack where temperatures can be very high. In seven years where nesting attempts were thought to have occurred, breeding was successful in five years with an average of 1.57 chicks/nest attempt. Adults at this site have been difficult to identify, but at least three females and three males have been present beginning in 2008.

**10. BP Amoco, Whiting, Lake County** – At the end of March 2004, a worker at this oil refinery reported a peregrine falcon egg on the catwalk of a smokestack. Two days later, another egg was found on the metal stairwell of an adjacent building. At that time, a nest tray was placed at the smokestack site and the two eggs placed within it. The eggs were eventually predated, possibly by a crow, but the pair renested around 1 May laying four eggs and raising two chicks. At the end of the season, the nest tray was converted to a nest box and was used successfully in 2005 and 2006. Due to planned construction, a new nest box was built nearby prior to the 2007 season and the old box closed. The new box was used in 2007 and 2008, but no nests were found in 2009 and 2010, although adults were observed on occasion. In 2011, the pair raised one chick in the smokestack box after the board excluding them failed. At the end of the season, this box was closed again and the falcons moved to the newer box and nested successfully in 2012 and 2013. One female from Waukegan, IL, had been present from 2004-2012 and was replaced by another bird after she was found injured December 2012 and was unreleaseable. At least two females and two males have been present at this site and during one year the pair consisted of siblings.

**11. Carmeuse Lime Plant, Gary, Lake County** – In 2009, a NIPSCO employee noted a falcon at the abandoned Dean Mitchell power plant along Lake Michigan. Later that year, a nest box was erected on the roof of the building near the smokestack. Falcons were seen at this site in 2010 and 2011, but there was no evidence of nesting. In 2012, a wildlife nuisance operator was called to the adjacent Carmeuse Lime Plant in mid-May to remove a hawk that was harassing workers at the chemical plant. Instead, he discovered a peregrine with chicks nesting in a small recess under a metal landing on the side of a building. The banded female was nesting in chunks of hardened lime and a layer of lime dust. Three chicks were banded that year. A nest box was provided at the end of the season adjacent to the nest site. The same female again used the



previous nest site in 2013, but the three chicks were placed in the nest box following banding. The male was not observed in 2012, but was unbanded in 2013.

**12. NIPSCO Bailly Power Plant, Burns Harbor, Porter County** – A nest box was placed at an elevation of 250' on the catwalk of the older and smaller of two smokestacks at this NIPSCO power plant in 1992. Falcons were reported here in 1995, and nesting first occurred in 1996 when two chicks were raised. The following year the pair apparently moved to Bethlehem Steel, approximately 1.1 miles to the west, before returning to nest at Bailly in 1998 and 1999. A pair nested again on the stack in 2004 and 2006, and annually beginning in 2010. Until 2007, it appeared that a single pair would rotate among the three sites: Bailly, Bethlehem Steel, or Cargill. From 2007, at least 2-3 pairs have been present at these sites. One female and two different males have nested at each of the three sites in different years. At least two other females and two additional males have nested at the Bailly plant.

**13-14. Bethlehem Steel, Burns Harbor, Porter County** – During 1997, the report of a pair of falcon led to the discovery of some eggshell fragments and a recently dead peregrine chick in an area that covered a conveyor belt that led to a blast furnace. A nest box was erected on the roof of the nearby coke building in February of 1998. In 2000, nesting was successful at the conveyor site and the nest box was used the following year, producing three chicks. A third site, this one on top of the blast furnace, was used in 2004. During 2005, an egg was laid in the nest box but the clutch was completed at a second spot near the conveyor. At least two chicks hatched but later disappeared. The pair renested, however, this time on the blast furnace and raised two chicks into August. A nest attempt in 2007 on the blast furnace failed. Subsequent nestings occurred in 2008, 2010, 2012, and 2013, all in the nest box. Eggs did not hatch in 2012 and 2013. In 2008 and 2009, unbanded, recently fledged young were retrieved on the ground by workers at the nearby Stackhouse #2 building. These were apparently from another pair, although a nest site was never located and evidence of nesting has not been reported since. At least three females and two males have nested at Bethlehem Steel.

**15. Cargill, Portage, Porter County** – A nest box was installed in January of 1994 at the highest point of this grain storage and shipping facility at the Port of Indiana along Lake Michigan. It is 0.7 miles west of the nest site at Bethlehem Steel and 1.7 miles west of the Bailly nest box. In 1995, an adult was flushed from the empty nest box and another adult female was perched at the nest box in 1998. Nesting attempts in 2003 and 2009 were unsuccessful, but one in 2007 produced four chicks. One later died from trichomoniasis. Although peregrines are generally reported each year, it is difficult to determine if these are birds from nearby nest sites. At least three females and two males have nested at Bethlehem Steel.

**16. NIPSCO Power Plant, Michigan City, Laporte County** – A nest box was originally placed on a catwalk at the top of this large smokestack in 1992. Because of accessibility issues, the box was relocated inside the stack approximately two-thirds up the stack prior to the 1994 breeding season. Nesting has occurred annually from 1996-2013 with unsuccessful nesting attempts during four years. Five chicks were raised during 2003. Trichomoniasis has been detected in chicks at this site. Three different females have nested at this site along with two different males.



**17. City-County Building/Tower Building, South Bend, St. Joseph County** – Following releases of young peregrines in 1993, a nest box was placed on the southeast side of the Tower Building (formerly called the Standard Federal Building), just below the roof where the releases took place. Falcons were reported in most years after the releases. A pair first nested in 2003 and has been successful each year through 2013. In late 2007, the nest box was moved south to the roof of the adjacent City-

County building, due to the desire of the building manager. The pair quickly adopted this box. A camera was placed in this box prior to the 2010 nesting season. The same pair has nested each year at this site, except for 2013 when an unbanded male replaced *Zephyr* who suffered a fatal collision with a light pole the third week of June 2012. In 2011, it was noted that *Zephyr* was missing his right foot, but he was able to survive over a year with this handicap. The female was captured and banded during the first year she nested.

**18. NIPSCO Schahfer Power Plant, Wheatfield, Pulaski County** – This NIPSCO power plant near the Kankakee River has four prominent smokestacks. Following reports of a peregrine falcon in 1993, a nest box was erected at an elevation of about 350' on a catwalk of one of them in January 1994. An immature female from Columbus, OH, was identified at the plant in 1996 and remained for over a year. A different female was discovered incubating eggs in the nest box in 1998 and a nesting pair has been present each subsequent year with only one nesting attempt having failed. The nest box was used from 1999-2006 and again in 2011-2012. In 2007, the pair was found using an inaccessible recessed area near the roof of the main building. Nesting has been successful at this location which was used again in 2008-2009 and again in 2013. In 2010, a single egg was found in the nest box and later abandoned. The pair either renested in the inaccessible building location or completed the clutch there, but the attempt apparently failed that year. Trichomoniasis has been observed in chicks at this site, not surprising given the large numbers of rock pigeons present. A nest box camera was installed in 2006. At least two females and two males have nested at this site. The original female, *Laurie*, nested only one year before relocating to the Cline Avenue site in East Chicago.

**19. One Summit Center, Fort Wayne, Allen County** – Following the release of peregrine falcon chicks during 1992 in Fort Wayne, a nest box was placed on the roof of this city's largest building. A pair first nested in 1996 and successfully raised young each year from 1996-2007. From 2008-2011, the same pair returned, but no eggs were ever laid, possibly due to the advanced age of the female. In 2012, a juvenile female displaced the resident female early in the breeding season and a new male was also present. Nesting did not occur that year, but the same pair nested successfully in 2013. The previous female, *Freedom*, was found dead in mid-May 2013 not far from the nest site. A camera has been in place at this nest site since 1999. Two different females and three males have nested here.

**20. Kokomo Gas Tower, Kokomo, Howard County** – A banded adult male and two immature females were reported in this moderate-sized city in 1998 with the birds obviously attracted to a large propane storage tank that resembled a water tank. Except for a couple of smaller water tanks, this was the only tall structure in town. A nest box was erected in 1999 and a pair was

seen frequenting it in 2000, although nesting did not take place. Nesting did occur successfully in 2001 and continued until 2003. The tower was removed later in 2003 and even though a nest box was placed on a roof of a much lower building nearby, peregrines have not been seen since. Only one male and female had been identified at this site.

**21. Market Tower, Indianapolis, Marion County** –

Sightings of peregrine falcons in downtown Indianapolis date back to 1986 and four nest boxes were erected soon thereafter and have since been removed. The original release of peregrines in Indiana occurred in Indianapolis in 1991. Following the release, a nest box was erected on the ledge of the 31<sup>st</sup> floor of the Market Tower facing east towards Monument Circle, a half block to the east. A juvenile male was first sighted in 1994 and nesting occurred the following year.



This site has successfully produced young each year through 2013 and leads the state in number of young produced (65) and mean number of young fledged annually (3.4/nest attempt). Nesting has taken place in the nest box each year except for two. In 1997, the pair moved to a gutter on the south side of the War Memorial and in 2003 the pair relocated to a gravel alcove on a building at 30 South Meridian Street. These locations are 1750' northeast and 725' southeast of the Market Tower and at a much lower elevation. Two different females and two males have nested in downtown Indianapolis. The original male, *Kinney*, holds the distinction of living longer (19 years, 2 months) than any other male in the Midwest and raising more chicks (61) than any other Midwestern peregrine. Female *KathyQ* has also produced more chicks than any other female in Indiana. A camera at this site since 2001 has allowed thousands of people to follow these birds.

**22. IPL Harding Street Power Plant, Indianapolis, Marion County** – This site is 4.5 miles south of the center of Indianapolis and the Market Tower territory. A nest box was installed on the roof of the tallest building at this power plant along the White River in 1999. An unbanded, immature female and a banded male were first noted around the nest box in 2001, but nesting did not occur. Four young were raised the next two years and the adult female was captured and banded in 2002. Roof work after the 2003 nesting season forced us to relocate the nest box. Although a pair was seen in early 2004, nesting did not occur in the new nest box but may have taken place elsewhere. In 2005, the same pair was located 1.3 miles north at the Southside Landfill. The nest site was a large horizontal pipe near the top of an abandoned grain mill. Although chicks were present, the attempt later failed. The nest box was relocated to its original location at the Harding Street plant prior to the 2006 breeding season. That year birds were originally observed at the Southside Plant, but it could not be determined if a nesting attempt occurred there prior to the building being demolished. However, a late nesting or renesting attempt took place at the power plant box with two chicks fledging in early July. A pair was present in 2007 but a nest was not found. From 2008-2013, nesting was successful each year at the Harding Street nest box with five chicks raised in 2008. An internet camera was installed in 2011. At least two females and three males have nested at this site. During one year, the pair likely consisted of a mother and her son.

**23. ISU Business Building, Terre Haute, Vigo County** – Reports of peregrines on the Indiana State University campus date back to at least 1999 with mostly one or two birds noted during the winter months. In 2001, a pair was present consisting of an adult and immature bird and was frequenting the Business Building. In early March of that year, a nest tray was placed on the roof of the building and was replaced by a nest box a week later. No nesting occurred, however. A few reports were received in 2002, but in the years after that, peregrines were rarely reported until the fall of 2009. At that time, at least three different falcons were noted. In April 2010, a juvenile female from St. Louis, MO, paired with an unidentified male and two eggs were found on a ledge of the Business Building. With no substrate present, the eggs did not hatch and eventually rolled off the ledge. The same female remained through 2013, but nesting went undetected in 2011 and 2013. In 2012, the nest box was used and three chicks were banded and fledged. That year the male was finally identified and had been produced at the Harding Street Plant in Indianapolis during 2008.

**24. IPL Power Plant, Petersburg, Pike County** – A nest box was installed on the roof of this power plant along the West Fork of the White River in the fall of 2004. No activity was reported until 2012 when a worker flushed an adult incubating three eggs in late March, but the nest was later abandoned. After the breeding season, the box was relocated due to roof work, but no evidence of nesting was found in 2013, even though adults were occasionally observed. A camera installed in the new box did not show any visitation by peregrines. The adults appeared to be banded but bands could not be read.

**25. Belterra Casino, Florence, Switzerland County** – In early April of 2009, a visitor occupying a room on the 12<sup>th</sup> floor of this hotel and casino along the Ohio River reported a pair of falcons with two eggs on the ledge outside the room. Without a suitable nest substrate, the eggs were difficult to keep in place and a nest tray could not be provided because of lack of accessibility. After the eggs disappeared, a nest box was erected on the roof of the building one floor directly above the nest site. Adult falcons were reported in the spring of 2011 and 2013, but nesting apparently did not take place. No falcons were observed in 2011 and 2012. The female in 2009 was unbanded and the male had a black/green color band. Several pairs nest nearby at power plants on the Kentucky side of the Ohio River.

**26. Duke Gallagher Power Plant, New Albany, Floyd County** - A nest box was erected on a mid-level catwalk of a smokestack at this Duke Energy power plant along the Ohio River in 1994. Although a few reports of falcons were received from this location dating back to 1999, nest box use by a pair was first reported in 2010. Nesting did not occur that year, however, but three chicks were produced in 2011. A breeding attempt failed in 2012, but the pair was successful in 2013. The female has been identified as Isis, from nearby Louisville, KY, while the male in 2011 and 2012 had a black/green color band. In 2013, the male appeared to be unbanded.

**27. US 421 Bridge, Madison, Jefferson County** - A pair has been nesting under this bridge over the Ohio River connecting Madison to Milton, KY, since 2002. The nest site was officially in Kentucky until 2011, when the nest box was moved due to planned bridge replacement activities over the next three years. With the cooperation of the construction companies and each state's transportation departments, the pair nested successfully during the three years of construction.



Kentucky biologists monitor this site, although I assisted in banding the chicks from 2011-2013. Nesting did not occur in 2010 but has been successful in all other years. Trichomoniasis was regularly detected and treated in chicks at this site and several birds have been rescued from the river and adjacent shoreline. At least two females and two males have nested at this site.

Other locations in Indiana have had lingering falcons from time to time, but nests were never discovered. Following a peregrine release in Evansville in 1994, falcons were reported most years through 1999. A pair appeared to have wintered into the late winter of 2010. At the US Steel Tin Plant in East Chicago, falcons have been reported sporadically beginning in November 2011. Even though birds have been noted at a nest box there, nesting has not occurred. Nest boxes were also present at Duke Energy power plants along the Wabash River with reports of peregrines in 2000 at the Wabash Valley plant in Vigo County, and an adult peregrine photographed at the Cayuga plant in Vermillion County in 2012. At Duke's Gibson Station power plant in Gibson County, reports were received in 1999, 2000, 2004, and 2013. A nest box is not available due to the presence of nesting least terns nearby. A nest box at the AES Tanners Creek Power Plant near Lawrenceburg has been in place for many years, and a pair was present during 2012 and 2013. The AEP Rockport Plant in Spencer County, had a pair present during the breeding season in 2004 and 2010. During 2007, a pair of falcons was present under the highway bridge over the Ohio River connecting Mauckport, IN, to Brandenburg, KY. Following reports of a pair at St. John's Church in Whiting (Lake County) beginning in late summer of 2003, a nest box was placed in the belfry. The pair remained into April 2004 and copulation was noted but no nest was found. A pair was present in November 2012 but the nest box had been removed.

Additional peregrine falcon nests are near the Indiana border in adjacent states. The metropolitan area of Chicago supports >15 pairs. A power plant near Cleves, OH, hosts a pair of falcons and the smokestack can be seen in the distance from Lawrenceburg, IN. Seven Kentucky nests along the Ohio River include a bridge-nesting pair in Louisville and falcon pairs at power plants bordering the Indiana counties of Switzerland, Clark, Floyd, and Harrison.

With an abundance of nesting peregrine falcons well dispersed and reproducing above replacement levels in the Midwest, new nesting sites are expected in Indiana in the coming years. Although a state breeding population of about two dozen pairs seems small relative to other bird species, peregrines have the amazing ability to find each other and maintain a secure population that is widely distributed and at low densities over large areas. Although the current population in the lower Midwest is closely tied to human structures and the tolerance of building managers, the adaptability of this species and the many people who are passionate about this bird should ensure a bright future. Peregrine falcons were removed from the federal endangered species list in 1999 and the Indiana state list in 2013.

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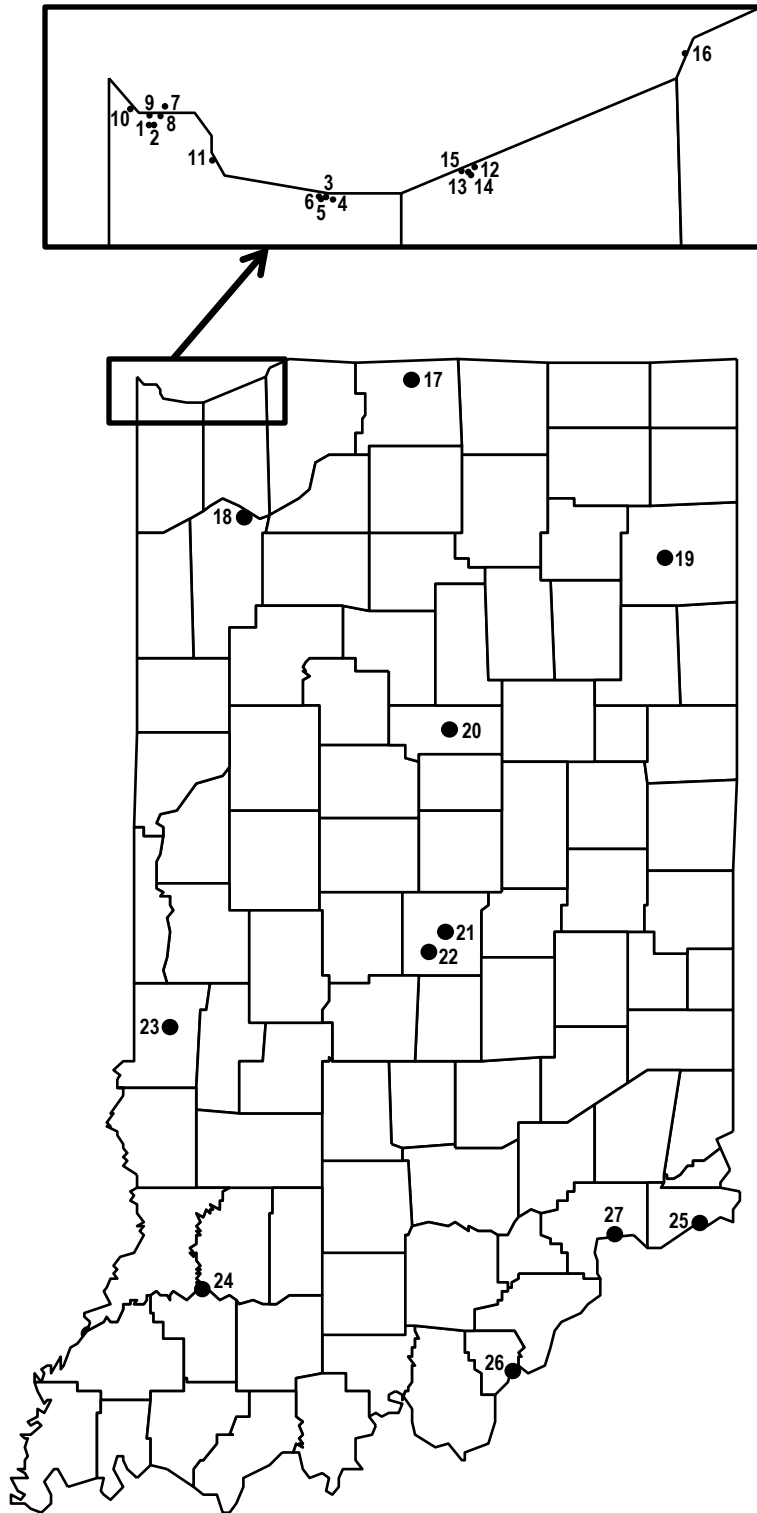
**Table 1.** Annual number of chicks fledged at Indiana peregrine falcon nesting sites.

Nesting site	Year													Sum	Years nested	Chicks/year												
	89	90	91	92	93	94	95	96	97	98	99	00	01				02	03	04	05	06	07	08	09	10	11	12	13
Whiting, BP Amoco															2	3	2	3	2	? <sup>a</sup>	pr	1	2	4	19	8	2.38	
E. Chicago, Cline Ave, ledge	3	2	1	4	4	5	2	3	2	1	4	2	2	3	2	4	4								48	17	2.82	
E. Chicago, Cline Ave, exp. joint															3	0	2	pr	2	1					8	5	1.60	
E. Chicago, Mittal Steel West, BOF															2	2	3		1	pr		0	3	0	11	7	1.57	
E. Chicago, Mittal Steel East							?	2	2	1	3	2	1	0	2	0	0	3	3	pr	?	pr	pr	s	19	12	1.58	
E. Chicago, Mittal Steel East, lime																	1	2	1	1	pr	3	4	4	16	7	2.29	
Gary, Carmeuse Lime																							3	3	6	2	3.00	
Gary, US Steel, sinter plant		1	2	2	2	3	2	3	2	3	4	2	2	2	0	3	3	3	4		4	3		1	3	54	22	2.45
Gary, US Steel, pre-carb/coke																	0	2	1	3	3	1	2	2	14	8	1.75	
Gary, US Steel, #1 BOP																						3	pr		3	1	3.00	
Gary, US Steel, steel producing																							0	2	2	2	1.00	
Portage, Cargill														0					4	pr	0	?		pr?	4	3	1.33	
Burns Harbor, NIPSCO Bailly Plant							pr	2		2	4			4				1				4	2	5	3	27	9	3.00
Burns Harbor, Bethlehem Steel										0			3	3		2	2		0	4	pr	2		0	0	16	10	1.60
Burns Harbor, Bethlehem #2																				2	2				4	2	2.00	
Michigan City, NIPSCO Plant								0	2	0	0	3	1	3	5	2	3	2	0	3	2	2	4	3	4	39	18	2.17
South Bend, City-County/Tower					pr									pr	4	3	3	3	4	2	3	2	2	1	1	28	11	2.55
Fort Wayne, One Summit Center							pr	2	4	3	4	4	4	2	4	3	4	2	2	pr	pr	pr	pr	pr	4	42	13	3.23
Wheatfield, NIPSCO Schahfer Plant										1	2	4	3	1	4	4	4	4	2	2	3	0	3	3	2	42	16	2.63
Kokomo, Kokomo Gas Tower											pr	pr	1	4	4										9	3	3.00	
Indianapolis, Market Tower							4	4	3	4	3	3	3	4	4	4	3	3	4	4	4	4	1	2	4	65	19	3.42
Indianapolis, IPL Harding Street													pr	4	4	pr	0	2	pr	5	3	4	4	3	3	32	10	3.20
Terre Haute, ISU Business building													pr									0	pr	3	pr	3	2	1.50
Petersburg, IPL Plant																							0	s		0	1	0.00
Florence, Belterra Casino																					0	pr		pr?	0	1	0.00	
New Albany, Duke Gallagher																					pr	3	0	3	6	3	2.00	
Madison/Milton US 421 bridge <sup>b</sup>														2	1	2	3	2	4	4	4	pr	4	3	4	33	11	3.00
Territories <sup>c</sup>	1	2	2	2	2	3	5	7	8	9	9	9	11	11	11	13	13	14	14	15	16	17	17	20	24	255		
Nest attempts	1	2	2	2	2	2	3	7	7	8	8	8	9	10	11	12	13	14	12	12	12	11	12	18	17	215		
Successful nests	1	2	2	2	2	2	3	6	6	7	7	8	9	9	9	11	10	13	10	12	10	9	11	14	15	190		
Chicks produced	3	3	3	6	6	8	8	16	15	15	24	23	20	27	33	32	31	31	30	29	26	27	28	38	46	528		
Banded	0	2	3	6	6	8	6	14	15	14	21	21	17	24	29	28	25	23	23	23	19	22	28	36	44	457		
Nest success, %	100	100	100	100	100	100	100	86	86	88	88	100	100	90	82	92	77	93	83	100	83	82	92	78	88			88
Chicks/territory	3.0	1.5	1.5	3.0	3.0	2.7	1.6	2.3	1.9	1.7	2.7	2.6	1.8	2.5	3.0	2.5	2.4	2.2	2.1	1.9	1.6	1.6	1.6	1.9	1.9			2.07
Chicks/nest attempt	3.0	1.5	1.5	3.0	3.0	4.0	2.7	2.3	2.1	1.9	3.0	2.9	2.2	2.7	3.0	2.7	2.4	2.2	2.5	2.4	2.2	2.5	2.3	2.1	2.7			2.46
Chicks/successful nest	3.0	1.5	1.5	3.0	3.0	4.0	2.7	2.7	2.5	2.1	3.4	2.9	2.2	3.0	3.7	2.9	3.1	2.4	3.0	2.4	2.6	3.0	2.5	2.7	3.1			2.78

<sup>a</sup>Pair (pr), single bird (s), uncertain (?).

<sup>b</sup>Nesting attempts prior to 2010, when nest located in Kentucky, were not included in annual totals.

<sup>c</sup>Sites where nesting has never taken place are not listed.



**Figure 1.** Locations of peregrine falcon nests in Indiana, 1989-2013. Numbers link to site descriptions in the text.



**Table 2.** Identified peregrine falcons nesting at Indiana sites.

City / Site name		Chicks			
<i>Name, color band no.</i>	Sex	Origin <sup>a</sup>	Years	raised	Original nest or release site
<b>East Chicago</b>					
Cline Ave					
<i>Phoenix, 089</i>	F	H	1989-1991	6	Fort Sheridan, IL
<i>Floydy, 34Y</i>	M	H	1989-1991	6	Milwaukee, WI
<i>Kennicott, 88T</i>	M	H	1990	4	Chicago, IL
<i>Egore, 57V</i>	F	H	1992-1997	20	Madison, WI
<i>Marty, 53Z</i>	M	W	1994-2004	33	Bayport, MN
<i>Ozzie, V/D</i>	F	W	1998-1999	5	Irving Park, Chicago, IL
<i>Laurie, E/*H</i>	F	W	2000-2008	14	Hyde Park, Chicago, IL
<i>*U/3</i>	F	W	2002, 2004-2005	11	Interco Building, Clayton, MO
Mittal East					
<i>Courtney, 25W</i>	F	H	1996-2003	13	Racine, WI
<i>Glory, 2/*2</i>	M	H	1996-2000	8	Tower Bank, South Bend, IN
Mittal East lime plant					
<i>Sloopy, 06/E</i>	F	W	2011-2012	7	Irving Park, Chicago, IL
<i>40/P</i>	M	W	2007	3	NIPSCO Plant, Michigan City, IN
<i>58/N</i>	M	W	2007-2009	4	BP Amoco, Whiting, IN
<i>Shirley, N/36</i>	F	W	2009	1	Oak Creek Plant, WI
<i>Muriel, 13/V</i>	F	W	2013	4	U. Wisconsin, Milwaukee, WI
Mittal West					
<i>Marie, 04/A</i>	F	W	2008	1	Port Washington, WI
<i>53/A</i>	M	W	2008	1	NIPSCO Bailly Plant, Burns Harbor, IN
<i>Freedom, 44/E</i>	F	W	2012	3	Pulliam Power Plant, Green Bay, WI
<b>Fort Wayne</b>					
One Summit Center					
<i>Bandit, 1/*1</i>	M	H	1996	2	Birmingham, AL
<i>Freedom, U/*8</i>	F	H	1996-2007	38	Evansville, IN
<i>Roosevelt, R/*4</i>	M	W	1997-2007	36	Rhodes Office Building, Columbus, OH
<i>Jamie, 92/D</i>	M	W	2013	4	Port Sheldon, MI
<i>Moxie, 99/E</i>	F	W	2013	4	Canton, OH
<b>Gary</b>					
Carmeuse Lime Plant					
<i>Aurora, 95/E</i>	F	W	2012-2013	6	Dow Chemical Plant, Jefferson Co., KY
USS #1 BOP					
<i>Robinson, E/33</i>	M	W	2010	3	Evanston, IL
USS coke/precarb					
<i>65/A</i>	F	W	2007-2013	14	Interco Building, Clayton, MO
<i>07/N</i>	M	W	2007-2013	14	unknown
USS sinter plant					
<i>Doc, 55/Y</i>	M	H	1990-1992	5	Grand Rapids, MI
<i>SuzyQ, 52P</i>	F	H	1990-2000	26	Grand Rapids, MI
<i>Vulcan, 79T</i>	M	H	1993-2005	31	Madison, WI
<i>Brook, 47/H</i>	M	W	2006	3	Detroit Edison, Monroe, MI
<i>Crystal, X/*K</i>	F	H	2001-2013	31	Labadie, MO
USS steel producing					
<i>Erica, *U/*C</i>	F	W	2012	0	IPL Plant, Indianapolis, IN
<i>Cara, 00/E</i>	M	W	2012-2013	2	Midwest Generating, Waukegan, IL
<b>Indianapolis</b>					
Market Tower					
<i>Scout, 28W</i>	F	H	1995-2001	24	Kenosha, WI
<i>Kinney, 7/*3</i>	M	H	1995-2012	61	Lexington, KY
<i>KathyQ, *B/*C</i>	F	W	2002-2013	41	Froedtert Malt, Milwaukee, WI
<i>Will, 02/P</i>	M	W	2013	4	Grand Rapids, MI
IPL Harding St. Plant					
<i>Star, 3/*S</i>	F	W	2002-2004	8	unknown
<i>Orion, L/*8</i>	M	W	2002-2009	18	One Summit Center, Fort Wayne, IN
<i>67/B</i>	M	W	2010-2013	14	IPL Plant, Indianapolis, IN
<b>Kokomo</b>					
Kokomo Gas					

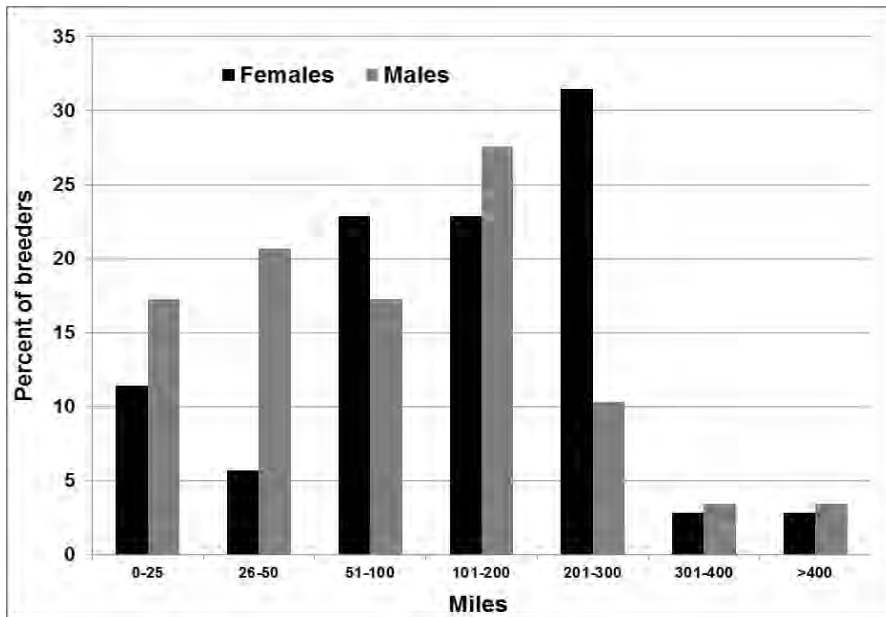
City / Site name		Chicks				
<i>Name, color band no.</i>	Sex	Origin <sup>a</sup>	Years	raised	Original nest or release site	
<i>Athena, W/T</i>	F	W	2001-2003	9	One Summit Center, Fort Wayne, IN	
<i>Thane, *T/U</i>	M	W	2001-2003	9	Lazarus Building, Dayton, OH	
<b>Madison</b>						
US 421 Bridge						
<i>Kessel, *R/*A</i>	F	W	2011-2013	11	LG&E, Bedford, KY	
<i>Asa Crane, *D/D</i>	M	H	2005-2013	28	Ghent, KY	
<b>Michigan City</b>						
NIPSCO Plant						
<i>Diana, D/U</i>	F	H	1996-1999	2	Festus, MO	
<i>Uncle Billy, 3/*B</i>	M	W	1996-2008	24	Landmark Building, Milwaukee, WI	
<i>Cloud Dancer, *B/*G</i>	F	W	2000-2009	24	Pulliam Power Plant, Green Bay, WI	
<i>W/55</i>	M	W	2009-2013	15	South Bend, IN	
<b>New Albany</b>						
Duke Gallagher Plant						
<i>Isis, 21/H</i>	F	W	2011-2013	6	LG&E, Bedford, KY	
<b>Burns Harbor</b>						
NIPSCO Bailly Plant						
<i>Isabella, 2/7</i>	F	W	1996	2	Edgewater Plant, Sheboygan, WI	
<i>Bailly, 4/9</i>	M	A	'96, '98-99, '02, '06, '10	17	US Steel, Gary, IN	
<i>Barb, E/*L</i>	F	H	1998-99, 2002, 2006	11	Labadie, MO	
<i>Ludwicki, C/02</i>	M	W	2013	3	Wheatfield, IN	
Bethlehem Steel						
<i>Bailly, 4/9</i>	M	W	'97, '00-01, '04-05, '07-08	14	US Steel, Gary, IN	
<i>Barb, E/*L</i>	F	H	2000-01, '04-05, '07-08	14	Labadie, MO	
<i>Ludwicki, C/02</i>	M	W	2010	2	Wheatfield, IN	
<i>Jo-an, 00/X</i>	F	W	2012-2013	0	Midwest Generating, Waukegan, IL	
<i>Eagla, 02/E</i>	F	W	2010	2	Midwest Generating, Waukegan, IL	
<b>Portage</b>						
Cargill						
<i>Bailly, 4/9</i>	M	W	2003	0	US Steel, Gary, IN	
<i>Barb, E/*L</i>	F	H	2003	0	Labadie, MO	
<i>34/V</i>	F	H <sup>b</sup>	2009	0	New River Gorge, WV	
<i>Ludwicki, C/02</i>	M	W	2007	4	Wheatfield, IN	
<b>South Bend</b>						
City-County/Tower Building						
<i>Guinevere, 79/E</i>	F	W	2003-2013	28	unknown	
<i>Zephyr, *9/*A</i>	M	H	2003-2012	27	Louisa Plant, Muscatine, IA	
<b>Terre Haute</b>						
ISU Business Building						
<i>S/34</i>	F	W	2010-2012	3	Washington Univ., St. Louis, MO	
<i>N/83</i>	M	W	2012	3	IPL Plant, Indianapolis, IN	
<b>Wheatfield</b>						
NIPSCO Schahfer Plant						
<i>Laurie, E/*H</i>	F	W	1998-1999	3	Hyde Park, Chicago, IL	
<i>Rollin, K/*8</i>	M	W	1998-2009	34	US Steel, Gary, IN	
<i>Latesha, Z/K</i>	F	W	2001-2012	33	Dairyland Coop., Genoa, WI	
<b>Whiting</b>						
BP Amoco						
<i>Nancy, 5/*4</i>	F	W	2004-2012	15	Midwest Generating, Waukegan, IL	
<i>Hughes, E/09</i>	M	W	2012-2013	6	Midwest Generating, Waukegan, IL	
<i>Joules, 50/Y</i>	F	W	2013	4	Mill Creek, Jefferson Co., KY	

<sup>a</sup>Wild-produced (W), captive bred (H), or augmented (captive-bred but placed in wild nest).

<sup>b</sup>Taken from wild nest in Virginia and hacked.

**Table 3.** States of origin of peregrine falcons identified nesting in Indiana.

		State											Total
		IN	WI	IL	KY	MO	MI	OH	IA	MN	AL	WV	
Males	Hacked	1	2	1	2	0	1	0	1	0	1	0	9
	Wild	10	1	3	0	0	3	2	0	1	0	0	20
	Both	11	3	4	2	0	4	2	1	1	1	0	29
Females	Hacked	1	3	1	0	3	1	0	0	0	0	1	10
	Wild	2	8	6	4	3	0	1	0	0	0	0	24
	Both	3	11	7	4	6	1	1	0	0	0	1	34
All	Hacked	2	5	2	2	3	2	0	1	0	1	1	19
	Wild	12	9	9	4	3	3	3	0	1	0	0	44
	Both	14	14	11	6	6	5	3	1	1	1	1	63



**Figure 2.** Distances between origin and subsequent breeding location of peregrine falcons nesting in Indiana.

**Table 4.** Productivity and site categories used by nesting peregrine falcons in Indiana.

	Sites (%) (n=28)	Nest attempts (%) (n=215)	Chicks raised (%) (n=528)	Chicks/attempt
Steel mill	32	33	26	1.96
Power plant	21	26	28	2.61
Office building	14	21	26	3.07
Bridge	11	12	13	2.68
Grain storage	7	2	1	1.00
Oil refinery	4	4	4	2.38
Gas storage	4	1	2	3.00
Lime factory	4	<1	1	3.00
Casino	4	<1	0	0.00

**THE LESSER SAND PLOVER**  
**Indiana's Second Dream Bird for 2013**

Kenneth J. Brock  
Chesterton, IN

**ABSTRACT:** Indiana's first Lesser Sand Plover (*Charadrius mongolus*) appeared on the Indiana lakefront in October 2013. It was seen only on two nonconsecutive days: 15 October at Michigan City Harbor and 21 October at Long Lake. Presumably, the bird departed Michigan City Harbor on the evening of 15 October and spent the next six days at Long Lake. However, Long Lake was birded multiple times during this period and the plover was not seen.

**INTRODUCTION**

For decades two shorebirds have topped my list of birds that *I really wanted to see in Indiana*: the Spotted Redshank and the Mongolian Plover (now known as Lesser Sand Plover). Miraculously, both appeared in the state in 2013 and I was fortunate to see both. Roth and Sterrenburg (2013) eloquently describe the Redshank occurrence; this article provides details of the Plover's visit. The Lesser Sand Plover is an Asian species that occasionally occurs in Alaska and rarely along the coasts. Domagalski (2003) lists only one inland record: 4 May 1984 in Northumberland, Ontario.

**MICHIGAN CITY HARBOR**

Late on the morning of 15 October 2013 Brendan J. Grube visited Michigan City Harbor in search of a



Fig. I Juvenile Lesser Sand Plover on the Beach at Michigan City Harbor 15 October 2013. This shot shows the pale-fringed wing covert feathers (indicating juvenile plumage) and the apricot wash on the upper breast. Photo by Peter B. Grube.

Franklin's Gull that had been reported earlier. The gull was nowhere to be seen, but an odd plover was standing on the beach. Brendan quickly recognized that this was a bird that he had never seen. The plover then took wing and flew to the outer breakwall.

Brendan hiked out to the lighthouse and found the bird perched atop the breakwall 300 yards away. The exciting thought that this might be a sand plover crossed his mind. Having forgotten his cell phone, Brendan asked to use the phone of nice lady who had hiked out to the lighthouse. He called his folks and my house. Pete, Nila, and Josh Grube immediately put lunch on hold, tossed binoculars, scopes, and cameras into the Honda and headed for the Harbor.

As I was out birding, my wife took Brendan's call and attempted to reach me on the cell phone. Unfortunately, the ring-tone on my cell had been accidentally turned off so I learned of Brendan's

discovery only upon arriving at home. I immediately headed for the harbor and arrived at the lighthouse about 1:00pm CDT. The bird was perched accommodatingly on top of the breakwall, where it remained for the next two hours.

Before I arrived the bird had made a short flight past the lighthouse. As it passed by Nila and Josh heard it call, which they described as trill-like and subsequently confirmed that it matched the Lesser Sand Plover call played on Pete's iPhone's Sibley application. In addition, a video taken later in the day by Caleb Putnam captures the trill and a single call note at the 1:12 mark.

For the next two hours we studied the bird, which occasionally disappeared onto the backside of the breakwall, and compared field marks with those of the Lesser Sand Plover in the *Collins Bird Guide*. The bird was about the size of a Semipalmated Plover (based on a Pete Grube digiscope photo of the plover standing next to a Sanderling), but displayed much longer legs. It was gray-brown above, had long blackish legs and did not have a white collar. The bill was intermediate in size between the Semipalmated and Wilson's Plover. The upper breast showed a faint apricot wash, which was most intense on the sides (see Fig. I and Fig. II).



Fig. II Juvenile Lesser Sand Plover showing the bird's long legs, bill size, and face pattern. Josh Grube took this photo 15 October 2013 at Michigan City Harbor.

After we confirmed the absence of a white collar, as the bird stretched its head upward, Pete posted it on Facebook's Birding Indiana Group as "a probable Lesser Sand Plover," and several other birders were called. Within a half-hour birders began to arrive and observe this Asian rarity. The list included Brad Bumgardner, John Cassady, Kim Ehn, Brendan, Josh, Nila, & Pete Grube, Lynea Hinchman, Ed Hopkins, Randy Pals, Steve & Sarah Sass, and Michael & Patty Topp. Others came after I departed.

Light rain began to fall about 2:30. At 2:50 the plover flew eastward and landed on the beach, where it could be viewed at much closer range. Unfortunately, during this "bird on the beach period" the rain began in earnest, rendering photography considerably more difficult. Despite the precipitation several excellent photos were obtained. Pete Grube's fine shot (Fig. I) reveals pale-fringed upper-part feathers indicating that this bird was a juvenile (this mark was not visible at 300 yards). Figures III and IV show flight shots that reveal the Sand Plover's upper and under parts.





Fig. III Josh Grube took this photo as the bird flew past the lighthouse. It illustrates the weak wingstripe and near absence of white in the tail.



Fig. IV Flight shot revealing the underwing pattern and wing shape. This shot was taken by Lynea S. Hinchman at Michigan City Harbor on 15 October 2013.

A later IN-BIRD post by Michael Retter described the plover’s departure, “The bird took off and flew to the west across the water about 17:55 (5:55pm) CDT. We lost it over the water and were unable to relocate it on the power plant beach. We didn’t scan the far breakwater.” The following day many hopeful observers conducted an exhaustive search, including sites farther west along the lakefront, but the plover was never found.

#### LONG LAKE

One site that the 16 October Sand Plover seekers could not check was Long Lake, a portion of the West Beach unit of the Indiana Dunes National Lakeshore located 18 miles west of Michigan City Harbor. This location, along with U.S. property across the country, was closed due to the federal government shutdown. The park reopened on the 17<sup>th</sup>; John Kendall birded Long Lake that day and discovered three adult White-faced Ibis. A number of people visited the lake later in the day and on subsequent days searching for the ibis. Although a number of shorebirds were noted, the Sand Plover was not among them.



Fig. V This photo was taken on the floor of Long Lake 21 October 2013. It provides a good size comparison with the adjacent Killdeer. Note the the apricot breast wash appears brownish in this light. Photo by Peter B. Grube.



In recent years the water level at Long Lake has lowered significantly. Indeed, throughout the autumn of 2013 the lake floor consisted of exposed mudflats, a few low islands, and several large puddles. The lakebed is also quite irregular with many portions covered in low vegetation rendering it rather difficult to bird, as plants and low hummocks obscure the birds.

During the morning of 21 October Jeffrey J. McCoy conducted a lakewatch at the Miller Beach concession stand. Other than a few ducks, there was little movement on Lake Michigan so Jeff terminated the watch by noon. With nothing better



Fig. VI Lesser Sand Plover in the habitat of choice at Long Lake on 21 October 2013. It was observed casually feeding and seemed quite comfortable at this location. Photo by KJB.



Fig. VII Long Lake birders enjoying the Sand Plover at close range. From the left Michael Topp, the author, and Jeffrey J. McCoy. Photo by John C. Kendall.

find was a winter-plumed Semipalmated Plover. Fortunately, just before Jeffrey uttered a world-class expletive, John Kendall arrived at the viewing platform just in time to see the bird fly in and land in front of him. Finally, after Pete Grube and Michael Topp confirmed that this was indeed the same bird they saw at Michigan City Harbor, Jeff exchanged high-fives with all.

to do in the afternoon he elected to take a look at Long Lake. At 1:00pm CDT Jeff spotted the Sand Plover about 400 yards east of the viewing platform and immediately called a number of birders, including Pete Grube, who was already at West Beach.

As this discovery was the birding equivalent of the famous Franco Harris “immaculate reception” in the 1972 professional football divisional playoff game (often cited as the NFL’s greatest play of all time), Jeff opted to confirm the bird with a closer look.

However, following a hike along Long Lake’s north shore the only bird Jeff could

The plover loosely associated with a group of Killdeer and was observed feeding and resting on dryer portions of the lakebed. More than a dozen birders, including several from Chicago, arrived in time to view the bird. Photographers were able to approach within 80 feet without disturbing the Sand Plover (or the Killdeer). The sky was broken providing occasional periods of direct sunlight, which greatly benefitted photography. Interestingly, the upper breast's subtle apricot wash seemed to depend on the lighting, as it appears brownish in many photos. The plover then remained just south of the viewing platform, where it was easily observed, until at least sundown.

Two-dozen hopeful birders were present on the morning of 22 October, but once again the bird disappeared. Indeed, it was never again seen.

It is tempting to assume that the Sand Plover flew from Michigan City Harbor to Long Lake and remained there undetected for six days. However, John Kendall's 17 October discovery of White-faced Ibis at Long Lake stimulated many birders to visit the lake and the Sand Plover was not detected. It is, therefore, quite possible that the bird spent part of these six days at some other unknown location.

#### AN ASIDE: THE SUBSPECIES

Following the Michigan City Harbor sighting, Randall J. Pals discussed the Sand Plover with a number on online birders. One man in Malaysia, who was quite familiar with the Lesser Sand Plover, pointed out that there are two subspecies of Lesser Sand-Plover, *atrifrons* and *mongolus*. The gentleman noted that both forms are "highly distinctive and identifiable in all plumages," suggesting that they may ultimately be split. Indeed, during the online discussion Randy noted that, "some participants refer to the *atrifrons* subspecies as 'Lesser Sand-Plover' and the *mongolus* subspecies as 'Mongolian Plover'."

The Malaysian man stated that, "This (the Indiana bird) looks to me like *mongolus* rather than *atrifrons*. The bill is thick and short, there are conspicuous dusky feathers well down the flanks. The upperpart feathers are grey-brown and the edges to the upperpart feathers lack strong buff/peach tones - all characters I associate with *mongolus* and not *atrifrons*." He also included the photo of a juvenile *atrifrons*. Randy forwarded all of this valuable information to the Indiana Bird Records Committee.

#### ACKNOWLEDGEMENTS

Enthusiastic thanks go to Brendan J. Grube and Jeffrey J. McCoy for discovering and sharing this incredible bird. I am indebted to Peter B. Grube, Josh Grube, Lynea S. Hinchman, and John C. Kendall for sharing their exceptional photographs. Thanks also to Randall J. Pals for providing information about Lesser Sand Plover subspecies. My wife Victoria critically read an early draft and made many helpful suggestions.

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# Field Notes Fall 2013

Brad Bumgardner- [bbumgardner@dnr.in.gov](mailto:bbumgardner@dnr.in.gov)

Every fall can be remembered for its own unique combination of rare birds or different invasions from the north. No two fall seasons are ever the same. After last year's fine winter finch flight, winter finches were notably absent this fall. The fall season came after a more mild summer. Early fall weather was mild with weak fronts, often producing little of note, particularly on lakefront watches. Mid-fall weather was average, and then turned colder by late November. No remnant hurricanes or other major weather systems affected the state during the fall of 2013.

Highlights included Harlequin Duck, Neotropic Cormorant, Swallow-tailed Kite, Yellow Rail, Lesser Sand-plover, Hudsonian Godwit, Long-tailed Jaeger, Little Gull, Fork-tailed Flycatcher,

The editor is indebted to Ken Brock for his statewide fall report, which is heavily referenced in this year's Fall Field Notes.

Reports were submitted by: Jim Haw and Ken Brock.

## **Abbreviations:**

FWA = Fish & Wildlife Area

NWR = National Wildlife Refuge

SP = State Park

SRA = State Recreation Area

GHA = Game Bird Habitat Area

TNC = The Nature Conservancy

## **SPECIES ACCOUNTS**

**Greater White-fronted Goose-** Reports were again few this fall with the season's high being (120) seen at Goose Pond FWA, Greene Co. (Lee Sterrenburg et al.) on 20 November. Interestingly, last year's season high occurred on the same exact date.

**Ross's Goose-** A couple good reports were noted this fall. The first was a singleton noted at a Benton Co. pond (Ed Hopkins) on 5 November. A noteworthy flock of (30) were counted by Brendan Grube during a Dunes State Park pavilion lakewatch on 6 November. A third report of a single bird came from Muscatatuck NWR on 16 November (Tommy Becker).

**Cackling Goose-** 10 reports came in throughout the state. This species posted a good fall in the NE part of the state. (11) total birds were seen from different locations from 17 October through 16 November (Jim Haw).

**Mute Swan-** Numbers continue to climb, especially in northern Indiana. An incredible (70) were logged by John and Elaine Harley at the Elkhart River in Goshen, Elkhart Co. (30 October).

**Trumpeter Swan-** A sign of a growing winter population. Universal Mine, Vigo Co. hosted a fall record (127) of these large swans on Thanksgiving Day, 28 November (Steve Lima).

**Tundra Swan-** (23) seen over the lake at Marquette Park, Lake Co., 12 November was the season's high count (John Kendall).

**Wood Duck** – (713) during weekly waterfowl counts at Goose Pond FWA, Greene Co., was significant on 19 September (Lee Sterrenburg et al.).

**Gadwall** – Goose Pond FWA, Greene Co., accounted for the high count this season with (1,277) birds being counted on 20 November (Lee Sterrenburg et al.). On 8 August Dennis Workman observed a female and (4) young that were, “probably big enough to fly but didn't” at Goose Pond FWA.

**American Wigeon-** The lakefront took the high count this year from Goose Pond. (173) at Marquette Park, Lake Co. on 26 October surpassed any other state counts during the period as well as the third highest ever lakefront count (Ken Brock et al.).

**Blue-winged Teal-** Goose Pond FWA led the pack with an exact high count of (1,315) on 9 October (Lee Sterrenburg et al.). Dennis Workman estimated that (2,000) birds were seen on 21 September. The same waterfowl counts recorded a tardy female at Goose Pond on 28 November. The bird appeared to have a wing injury.

**Canvasback-** Hidden within a giant Redhead flight in the dunes, (42) Canvasbacks was a good fall count on 24 November from the Dunes State Park Pavilion, Porter Co. (Jeff McCoy and Brendan Grube).

**Redhead-** A massive flight occurred over two days on Lake Michigan. (1,615) birds were recorded from Marquette Park, Lake Co. on 23 November (Brock et al.). This total was then paired with (585) witnessed the next day at Dunes State Park, Porter Co. (Jeff McCoy and Brendan Grube).

**Greater Scaup-** (243) were logged on 26 October by many lakefront birders at Marquette Park, Lake Co. (Ken Brock et al.).

**Lesser Scaup-** (800) were witnessed by Ed Hopkins during a flight at Marquette Park, Lake Co. on 11 November.



**Harlequin Duck-** After none were seen last fall, it was a good season for the sea mouse. (2) birds were found at Michigan City Harbor, LaPorte Co., by Jeff McCoy on 3 November. On 7 November, this count increased to (3) birds (Brendan Grube). On 12 November Brendan Grube and Brad Bumgardner witnessed a flyby bird heading west past the Dunes State Park Pavilion, Porter Co.

**Surf Scoter-** Many reports filtered in during the fall season, including many inland locations. (20) birds would be the high count at Michigan City Harbor, LaPorte Co., on 03 November (Jeff McCoy). A combined (5) were counted on Lake James and Clear Lake, Steuben Co. on 21 November (Jim Haw).



Figure 1. Surf Scoters at Miller Beach, Lake Co., during the epic 26 October 2013 seabird flight. Photo by Marty Jones

**White-winged Scoter-** Brendan J. Grube logged (115) in a flight off Dunes State Park, Porter Co., on 23 October. This is Indiana's second largest daily count.

**Black Scoter-** (115) birds seen by Brendan Grube at Dunes State Park, Porter Co., on 23 October were exceptional and represents the second highest state count.

**Long-tailed Duck-** Like the Harlequin Duck, reports trickled in through the late season. Tom Becker reported the season's first bird down at Deam Lake SRA, Clark Co. on 11 November. Seven other reports would come in.

**Red-breasted Merganser-** An excellent fall count of (995) birds were logged at Marquette Park, Lake Co. on 23 November by Ken Brock et al.

**Ruffed Grouse-** A single bird was flushed from rural Lawrence Co. on 9 November (Noah Kearns).

**Red-throated Loon-** Despite their growing abundance, all the season's reports consisted of lakefront birds this time around. The high count snuck in just before the fall ended on 30 November when (68) were totaled throughout the lakefront at multiple sites (Ken Brock et al.)

**Pacific Loon-** A single bird was discovered near shore at Dunes State Park by Brendan Grube on 21 November.

**Common Loon** – A flyover bird was observed at Big Chapman Lake, Kosciusko Co., on 27 August (John Kendall). (252) were observed during a Miller Beach, Lake Co., lakewatch on 2 November (Ken Brock et al.). Numbers of this normally common species were low across Indiana. For the season only 1021 were reported, which is the lowest fall total since 1997.

**Red-necked Grebe-** Seven records were reported this fall. All but one was on the lakefront, and all but one was in November.

**Eared Grebe** – Four reports came in this fall. The most notable was a Michigan City Harbor bird that was seen for many days after its initial sighting on 1 November (Jeff McCoy).

**Western Grebe** – Multiple reports came in during the fall season. All but one was on the lakefront. Possibly a single bird was seen repeatedly from 19 August through 30

November between Miller Beach, Lake Co. and Beverly Shores, Porter Co. Bob Decker reported a single bird at Mounds SRA, Franklin Co. on 7 October.

**American White Pelican-** Fall sightings continue to grow. Eagle Creek Park, Marion Co., Willow Slough FWA, Newton Co., Cane Ridge WMA, Gibson Co., and Goose Pond FWA, Greene Co. hosted this fall's birds. The latter site had an amazing high count of (400) by Jerry Downs on 14 October.

**NEOTROPIC CORMORANT-** A single bird was present through 29 August at Goose Pond FWA, Greene Co. (multiple observers).

**American Bittern-** Only six sightings came in this fall. Three of these were from Goose Pond FWA, Greene Co. The latest was on 23 November (Jeremy Ross).

**Least Bittern-** Nine records were logged this fall. All but two were from Goose Pond FWA, Greene Co.

**Yellow-crowned Night-heron-** All fall reports came from Goose Pond FWA, Greene Co.



Figure 2. White-faced Ibis West Beach, Porter Co., 18 October 2013. Photo by Pete Grube

**White-faced Ibis-** Three locations hosted White-faced Ibis' this fall. The first was a bird seen at Muscatatuck NWR on 8 September (Gary Norris). Three birds

showed up on 17 October at West Beach, Porter Co. (John Kendall). Finally, (6), and (7) birds were found at Goose Pond FWA, Greene Co., from 22 October (Amy Kearns, Kirk Roth).

**SWALLOW-TAILED KITE-** After previous sightings of this species in Indiana in 2013, a third bird for the year was reported to Indiana Audubon Society on 14 August. The bird was confirmed in Aurora, Dearborn Co. on 15 August by Kathi Hutton and seen by many birders through 25 August.



Figure 3. Swallow-tailed Kite, Dearborn Co., 20 August 2013. Photo by Leslie Houser

**Mississippi Kite-** Away from their usual breeding areas, a single bird confirmed and photographed at Muscatatuck NWR, on 2 August was significant (Dan Kaiser).

**Broad-winged Hawk-** The season's only significant sighting was (29) at Eagle Slough, Vanderburgh Co. by Dan Collins on 17 September.



**Golden Eagle-** Six locations hosted fall Golden Eagles this season. Half occurred in north-east Indiana.

**Merlin-** A most significant finding occurred at Pokagon State Park, Steuben Co., starting on 12 August. Fred Zilch photographed a pair of Merlin in the park's south beach parking lot. This sighting led to the realization that breeding very likely had occurred and at least one of three seen was a juvenile bird. The birds were seen through at least 28 September and represents Indiana's first nesting pair.

**Peregrine Falcon-** During a big sit at Dunes State Park, Porter Co. on 21 September (13) birds were observed flying over, going east to west (Brendan Grube, Brad Bumgardner, et al).

**YELLOW RAIL-** Three secretive rails were reported this season. The first was a surprise sighting in a remediation wetland in Lafayette, Tippecanoe Co. on 13 October (Ed Hopkins). Two later reports came from staff at Goose Pond FWA, Greene Co. on 15 October and 16 October.

**King Rail-** The season's only report came from TNC Kankakee Sands, Newton, Co., on 15 August. An incredible (5) birds were observed (Jed Hertz).

**Sandhill Crane-** The official DNR count from Jasper-Pulaski FWA, Jasper Co., came on 26 November with (21,074) birds.

**Whooping Crane-** At least six locations hosted Whooping Cranes from the Wisconsin population during the month of November. All sightings were from the western half of the state.

**American Golden-Plover-** The Lebanon Sod Farm hosted many fall plovers. The

high count came from Don Gorney on 2 September when (104) birds were counted.

**LESSER SAND-PLOVER-** Arguably the rarest bird of the season was found on the beach at Michigan City's Washington Park, LaPorte Co., on 15 October by Brendan Grube. The bird was well documented with both photos and video. The bird did not reappear the next day but was then relocated by Jeff McCoy on 21 October at Long Lake (West Beach), Porter Co. The bird was not seen after the 21 October sighting. The record is pending IBRC acceptance as the first state record.



Figure 4. Lesser Sand-plover, West Beach, Porter Co., 21 October 2013. Photo by Pete Grube

**Piping Plover-** After many notable spring and summer records, it was noteworthy that no Piping Plovers were seen in Indiana during the fall period.

**Black-necked Stilt-** Six reports trickled in during the month of August. All but one report came from Goose Pond FWA, Greene Co. The remaining included (5) birds at Gibson Lake (Amy Kearns) on 6 August.

**American Avocet** – It was a good fall for avocet sightings. Seven sites reported birds. The most spectacular was a count of (19) birds reported flying by at Kemil Beach, Porter Co. by Casey Zillman on 30 August.

**Upland Sandpiper-** This season had (4) birds reported statewide. Areas near Kankakee Sands, Newton Co. and Cane Ridge WMA, Gibson Co. accounted for the fall records.

**Whimbrel-** After a few good summer sightings, fall sightings were few and on polar ends of the state. Miller Beach, Lake Co. hosted a single bird on 2 September and 7 September (multiple observers). Cane Ridge WMA, Gibson Co. hosted a bird seen by many from 21 August through 29 August.

**Hudsonian Godwit-** The only report of the season was a very tardy individual at Long Lake, Porter Co. on 29 October. The bird appeared to have a leg injury.

**Marbled Godwit-** It was a down year for godwits overall. Like Hudsonian, only a single Marbled Godwit was seen all season. A bird at Eagle Creek Park, Marion Co. on 12 August was seen by many after being initially found by Wendy Kindig.

**Ruddy Turnstone-** Only two records were seen away from the big lakefront. A Wakarusa Treatment Plant, Elkhart Co., bird was noted by Leland Shaum et al on 4 September. A Cane Ridge WMA, Gibson Co., bird was seen on 2 October by Vern Wilkins.

**Red Knot-** (3) birds were logged this fall, all occurring at Miller Beach, Lake Co. These were logged on 24 August, 3 September, and 7 September (multiple observers). This fall season nearly perfectly mimics last fall's report.

**Western Sandpiper-** A basic plumaged adult was reported by Kirk Roth on 21 August at Cane Ridge WMA, Gibson Co.

**White-rumped Sandpiper-** (5) birds were reported throughout the state in various places.

**Purple Sandpiper-** Only one bird was seen on 24 November at the Port of Indiana, Porter Co. (John Kendall).

**Stilt Sandpiper-** A peak count of (36) birds occurred at Goose Pond FWA, Greene Co. on 25 September (Lee Sterrenburg).

**American Woodcock-** A tardy individual was logged on 24 November by Tim Griffith in Warrick Co.



**Figure 5. Red-necked Phalarope, McCool Basin, Porter, 7 August 2013. Photo by John Cassady**

**Red-necked Phalarope-** It was a great fall for this interesting shorebird in Indiana and neighboring Lake Michigan states. An unprecedented twenty-one were counted on the lakefront this fall. E-Bird shows inland singletons 11 August (Elaine Harley) and *Kosciusko* 27 August (John Kendall). Single juveniles were seen at McCool Basin (KJB, John K. Cassady, et al.) 7 August and at Miller Beach on 10 August (John K. Cassady & KJB) and 23 August (Michael Topp). However, by far the most spectacular report occurred off Marquette Park concession stand 2 Sep when John K.

Cassady, Brendan J. Grube, Peter B. Grube, John C. Kendall, & Jeffrey J. McCoy counted a state record (15) birds. Indiana's previous maximum count was six birds at Goose Pond FWA in September 2011.

**Red Phalarope-** Two reports logged Red Phalarope this fall. The first report consisted of (2) birds during a 26 October lakewatch at Miller Beach, Lake Co. (Ken Brock et al.). The second was a single bird during a similar lakewatch on 23 November.

**Parasitic Jaeger-** For the season, 26 Parasitic Jaegers were reported on the lakefront.

**LONG-TAILED JAEGER-** For the second consecutive August Michael Topp logged a Long-tailed trifacta at Miller Beach, Lake Co. This year's trio (two adults, tail streamers intact, and one gray juvenile) was seen on the afternoon of the 29th. This sighting extends the string of consecutive annual sightings of this jaeger on the Indiana lakefront to 15 years.

**Laughing Gull-** On 20 October Evan Speck photographed a first-cycle bird at Cane Ridge WMA, Gibson Co., for the season's only report.

**Franklin's Gull-** On 26 October Amar Ayyash counted (41) in Indiana waters off Calumet Park, IL. This was the season's largest count.

**LITTLE GULL-** In recent years this tiny gull has become almost impossible to find; consequently, the first-cycle bird, seen flying with a flock of Common Terns at Miller Beach, Lake Co. on 12 September (Brendan J. Grube, John C. Kendall, Peter B. Grube, & KJB), was a welcomed addition to the fall bird list. However, this youngster proved to be the vanguard of the best flight



in seven years. Adult birds were seen on 2 Nov (Amar Ayyash) and 12 Nov (Brendan Grube et al.).

**Bonaparte's Gull-** John Kendall logged the season's high count of (291) birds on 12 November at Miller Beach, Lake Co.

**Iceland Gull-** Indiana's first October record was established when a first-cycle bird was photographed at Michigan City Harbor (John K. Cassady et al.).



**Figure 6. Record-early 1st-cycle Kumlien's Gull, Michigan City, LaPorte Co, 28 October 2013. Photo by Pete Grube**

**Lesser Black-backed Gull-** The following reports occurred away from Lake Michigan. Brian Haskett found an adult at Eagle Creek Park, Marion Co. on 24 September. Don

Gorney and Aidan Rominger also saw the bird. On 5 October William H. Buskirk saw (2) adults on Brookville Res., Franklin Co. Roger P. Rang found an immature at Eagle Marsh, Allen Co. on 11 November and Jim Haw observed an Adult at Salamonie Reservoir, Wabash Co. two days later.

**Sabine's Gull-** Eleven birds were logged during the fall season on the lakefront. The two birds seen on 22 November at the Port of Indiana, Porter Co., (John Kendall) tie Indiana's third latest record.

**Black-legged Kittiwake-** Lakefront birders enjoyed the best flight in three years. For the season some 26 Kittiwakes were reported. The peak daily count occurred during the big 23 November longshore flight when seven juveniles and one second-cycle bird were counted at Miller Beach, Lake Co. (John K. Cassady, Jeffrey J. McCoy, Amar Ayyash and many others).

**Least Tern-** A distinct highlight for the fall season was the observation, at Goose Pond FWA, Greene Co., of a chick on 19 August and a fledgling on 24 August (Amy Kearns).

**Black Tern-** A nice movement of (202) Black Terns, observed migrating past Dunes State Park on 19 August (Brad Bumgardner & Bobbie Asher), proved to be the vanguard of an unusually fine fall flight. The peak daily count consisted of (1,068) that Brendan Grube observed migrating past Dunes State Park on 22 August. The latter is Indiana's second largest daily count.

**Barn Owl-** Outside of known breeding sites, a hunting bird was seen on 18 September by Steve Gifford at Bluegrass FWA, Warrick Co.

**Snowy Owl-** According to Jeremy Ross the photograph of a Snowy was taken 26

November at a coalmine on the Pike/Warrick Co border. (3) were reported on the lakefront in the last week of the fall season. These early birds were vanguards to the best winter season ever for Snowy Owls in Indiana.

**Short-eared Owl-** In terms of numbers seen, 2013 was the best year since 2008, with 117 reported. No single site, however, reported more than (15) birds at any one time.

**Northern Saw-whet Owl-** Compared to last fall, "swet" reports were few and far between. The Arvin stand in Lafayette, Tippecanoe Co., logged only two sightings through the fall. Saw-whet Owl banding netted throughout the state banded birds: Manchester, Wabash Co. (5), Mary Gray Sanctuary, Fayette Co. (6), Dunes SP, Porter Co. (16), Yellowwood SF, Brown Co. (21), and Newark, Monroe Co. (23).

**Common Nighthawk-** Indiana's largest daily count since 2007 was logged on the evening of 29 August when Joni James estimated (500+) over Martinsville, Morgan Co. Others (including Dan Collins, Julia Ferguson, and Tim Street) who happened to be traveling through Martinsville on Highway 37 also noted these migrants.

**Chimney Swift-** (175) were noted at Celery Bog by John Skene on 11 September.

**Ruby-throated Hummingbird-** a single, lingering female bird was seen as late as 4 November at office feeders in Bloomington, Monroe Co. (Gary Langell).

**Rufous Hummingbird-** Of (7) *Selasphorus* types seen this fall, all but one have been positively identified to Rufous Hummingbird species.





**Figure 7. Male Rufous Hummingbird, Vigo Co., 26 September 2013. Photo by Marty Jones**

**Alder Flycatcher-** A calling bird was seen and heard at the Hammond Sanctuary, Lake Co., on 13 September (John K. Cassady, Matt Kalwasinski, & Randy J. Pals). This is the state's second latest fall record.

**FORK-TAILED FLYCATCHER-** Indiana's second record of this tropical species was reported at the Universal Mine, Vermilion Co., by Illinois birders Marilyn Campbell and Mary Jane Easterday on 30 October. The sighting is pending IBRC acceptance.

**Loggerhead Shrike-** Amy Kearns found (1) hunting along a fencerow in Orange Co on 13 November. The season's (8) reports beats last fall's zero sightings.

**Northern Shrike-** Once again, the lakefront provided plenty of Northern Shrike viewing opportunities. Goose Pond FWA, Greene Co., and Universal Mine, Vigo Co., also hosted birds this fall.

**White-eyed Vireo-** On 12 November Steve Doud and Alex Forsythe observed (1) in

Kosciusko Co, which provided Indiana's sixth latest record.

**Bell's Vireo-** The season's peak count consisted of (16) that James H. Campbell found in Warrick Co on 19 August. An eastern straggler was found by Don Gorney on 3 August at Big Oaks NWR, Jennings Co.

**Philadelphia Vireo-** One at the Hammond Sanctuary, Lake Co., on 13 October (John K. Kendall) tied the lakefront's latest record.

**Northern Rough-winged Swallow-** John and Elaine Harley logged a number of fine counts in the Goshen area; their peak count was (726) on 18 September.

**Golden-crowned Kinglet-** Randy Pals and John K. Cassady saw and heard (1) at Whiting Park, Lake Co., on 13 September. This record provided Indiana's sixth earliest fall arrival date.

**Yellow Warbler-** On 13 October Neal Miller observed an adult male on his Marshall Co farm. This is the state's 8th latest record.

**Palm Warbler-** During the 2 October fall-out at Michigan City Harbor, LaPorte Co., Brendan J. Grube estimated the combined total of Yellow-rumped and Palm Warblers, "was roughly 400 birds (equal numbers)." The (200) Palms in this tally constitutes a record fall count for Indiana.

**Worm-eating Warbler –** (3) sightings, consisting of single birds took place in August and September. Eagle Creek, Marion Co., hosted one bird on 9 September. The other two sightings (18 August and 18 September) occurred in Brown County.

**Connecticut Warbler-** Most unusual was an immature male in Logansport, Cass Co., 23 September (Landon Newman & Bud Dodrill). The bird's gender was determined by the fact that it sang.

**Yellow-breasted Chat-** One reported in Warrick Co on 1 October (James H. Campbell) was Indiana's fifth latest record.

**Wilson's Warbler-** Vern W. Wilkins photographed (1) at Tern Bar Slough on 5 November, which constitutes Indiana's fifth latest record.

**American Tree Sparrow-** During a 19 November banding operation at Koinonia, Kosciusko Co., a bird banded at that site on 18 November 2008 was recaptured.

**Vesper Sparrow-** Few were seen. The season totals were Indiana's lowest autumn total in 20 years.

**Lark Sparrow-** Based partly on an unprecedented two birds seen on the lakefront, the state's fall total was well above normal.

**Nelson's Sparrow-** It was a good fall for Nelson's, especially on the lakefront where (3) birds were tallied on three different occasions and Nelson's were reported from McCool Basin, Porter Co., Hammond Sanctuary, Lake Co., George Lake, Lake Co., and Michigan City Harbor, LaPorte Co.

**Harris's Sparrow-** An immature was found at the west end of the Hammond Sanctuary on 29 Sep (Jeffrey J. McCoy & Michael Topp). Another bird was found at the Portage Lakefront Park, Porter Co., by Brendan Grube (24 October).

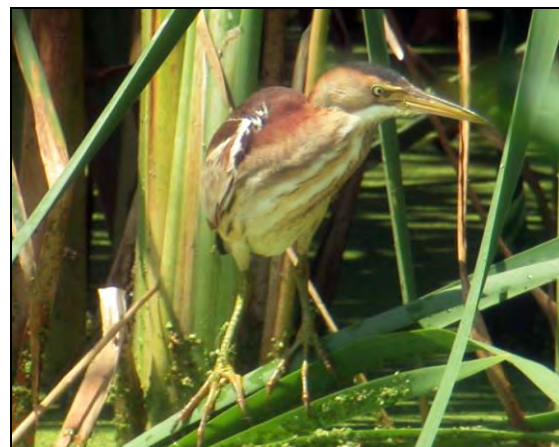
**Lapland Longspur-** The season's largest count (1000) was made 26 November along U.S. 41 in s. Lake Co (Michael R. Topp). This tally ties the state's fall highest count.

**Snow Bunting-** It was a good season for this species with 2668 reported and the peak report was (630) at two lakefront sites on 24 November (John C. Kendall). The latter record included a single flock of (350) at Michigan City Harbor, LaPorte Co.

**Blue Grosbeak-** A first-cycle male was found on the Kattelman/Seal property, Monroe Co., on 10 October (David Rupp). This report provides Indiana's third latest record; the latest was 12 October 2011 at Kankakee Sands.

**Purple Finch-** The 38 birds reported this fall constitutes Indiana's lowest autumn total since 2006.

**Pine Siskin-** Virtually absent from the state. The five reported represents the lowest fall total since Indiana birders were skunked in 1996.



**Figure 8. Least Bittern, Highland, Lake Co., 2 August 2013. Photo by Michael Topp**



The Indiana Audubon Quarterly is the official publication of the society. A limited, printed version and a web copy (<http://www.indianaaudubon.org/>) of the Quarterly are available to members. The web version contains more in-depth information, and articles that are greater than 10 pages in length as a general rule. You are invited to publish your field notes and articles concerning wildlife or conservation. Material for publication should be sent to the Editor at: [jeffro595@yahoo.com](mailto:jeffro595@yahoo.com). **Articles and papers should be computer generated, preferably using Microsoft Word.** All dates should conform to scientific journal date format – date, month, year (e.g. 22 July 2010 not July 22, 2010). In matters of bird nomenclature, please conform to the 7<sup>th</sup> edition of the American Ornithologist’s Checklist and its supplements. Art work and photographs are encouraged but must be of sufficient quality suitable for publication, typically >300 dpi.

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