

**PENNSYLVANIA GAME COMMISSION
BUREAU OF WILDLIFE MANAGEMENT
PROJECT ANNUAL JOB REPORT**

PROJECT CODE NO.: 06715

TITLE: Peregrine Falcon Research/Management

JOB CODE NO.: 71501

TITLE: Peregrine Falcon Investigations

PERIOD COVERED: 1 January 2013 to 31 December 2013

COOPERATING AGENCIES: The Aark Wildlife Rehabilitation and Education Center, Chalfont; Academy of Natural Sciences of Philadelphia; Pennsylvania American Water Company, Hershey; Carbon County Environmental Education Center, Summit Hill; Comcast Center, Philadelphia; Delaware River Joint Toll Bridge Commission, Phillipsburg, New Jersey; Delaware River Port Authority; Delaware Valley Raptor Center, Milford; Delaware Water Gap National Recreation Area; Gulf Tower, Pittsburgh; Make a Wish Foundation, Pittsburgh; The National Aviary, Pittsburgh; New Jersey Division of Fish, Game, and Wildlife; Packer Ave. Marine Terminal, Philadelphia; Pennsylvania Department of Conservation and Natural Resources; Pennsylvania Department of Environmental Protection; Pennsylvania Department of Transportation; Pennsylvania Fish and Boat Commission; Pennsylvania Turnpike Commission; Philadelphia City Hall; Philadelphia Zoo; Pocono Wildlife Rehabilitation and Education Center, Stroudsburg; PPL Corporation; Red Creek Wildlife Center, Schuylkill Haven; Ritz-Carlton Hotel, Philadelphia; Schuylkill Center for Environmental Education - Wildlife Division, Philadelphia; Southern Illinois University, Carbondale, IL; Tri-State Bird Rescue and Research, Newark, Delaware; University of Pittsburgh; U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; Western Pennsylvania Conservancy, Pittsburgh.

WORK LOCATIONS: Statewide

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ABSTRACT The long-term management goal of this project is to re-establish a self-sustaining peregrine falcon (*Falco peregrinus*) population in Pennsylvania (Brauning and Hassinger 2001; Brauning et al. 2013). Monitoring of peregrine falcon nesting activity was coordinated by Dr. Art McMorris, using agency personnel and over 200 volunteers. Over 60 sites and additional locations across the state were searched for falcon activity. We coordinated with managers at over 20 bridge and building sites undergoing construction and maintenance projects to ensure protections for nesting falcons at those sites. Forty sites were occupied by territorial pairs in 2013, the highest number since the beginning of the peregrine falcon recovery program. Nesting

success increased slightly to 70% with 28 successful nests and 73 young fledged, and productivity remained high, 1.83 fledglings per territorial pair. Fifty-six nestlings were banded. Site managers (e.g. building and bridge personnel) and volunteer nest monitors were invited to attend peregrine falcon banding events at all sites; and the public was invited to attend whenever feasible, notably at the Rachel Carson State Office Building in Harrisburg, the University of Pittsburgh's Cathedral of Learning in Pittsburgh, and Philadelphia City Hall. Activities of Pennsylvania's peregrine falcons attracted much favorable attention from the public and were well covered in the online, print and broadcast media. There were 21 band encounters of birds banded in Pennsylvania, or banded elsewhere and encountered in Pennsylvania, in 2013.

OBJECTIVES

1. The long-term management goal is to re-establish a self-sustaining peregrine falcon population in Pennsylvania.

2. The peregrine falcon is currently listed as endangered in Pennsylvania. Recovery actions should follow levels proposed for changes in state legal status as outlined in the Pennsylvania recovery and management plan for the peregrine falcon (Brauning et. al., 2013).

METHODS

Peregrine falcon coordinator Dr. Art McMorris monitored peregrine falcon nesting activity in eastern Pennsylvania during the 2013 nesting season and coordinated personnel from the Pennsylvania Game Commission (PGC), cooperating agencies, and over 200 volunteers in monitoring over 60 actual and potential nest sites across the state (Fig. 1). Video cameras, linked to live Internet connections, again monitored the nest site at the Rachel Carson State Office Building (RCSOB) in Harrisburg (Pennsylvania Department of Environmental Protection [DEP] 2013), and the Gulf Tower and the University of Pittsburgh's Cathedral of Learning in Pittsburgh (National Aviary 2013). Banding of peregrine falcon nestlings was overseen by Peregrine Falcon Coordinator Art McMorris.

RESULTS

Peregrine falcons occupied 40 nest sites in Pennsylvania during 2013 (Tables 1 and 2, Figs. 1 and 2). Young fledged at 28 nests, for a success rate of 70% (Tables 1 and 2). Six new nests were established in 2013, and 2 of them were successful. Additionally, a nest site was finally found in 1 location (Erie) where peregrines had been seen for 2 years previously, and success was documented for the first time in 2013. A previously-active nest in Eddystone was successful for the first time in 2013. A pair in Monaca relocated their nest from 1 bridge to another, but success was not documented at the new site. An established nesting pair that frequently moves back and forth between Pennsylvania and New Jersey (the Walt Whitman Bridge on the Delaware River) returned to Pennsylvania in 2013, while another nest on a Delaware River bridge (Scudder Falls) relocated from Pennsylvania to the New Jersey side (Tables 1 and 2). Two previously-active nest sites that were unoccupied in 2012 were re-occupied in 2013. Conversely, except for relocations, no sites that were active in 2012 were inactive in 2013. With all of these changes, there was a net increase of 8 occupied nests in 2013

(Tables 1 and 2). Seventy-three young fledged from 28 successful nests, and 56 of them were banded before fledging (Tables 1 and 2). The 40 nest sites occupied by pairs throughout the nesting season in 2013 was the highest number since the beginning of the peregrine falcon recovery program (Table 1, Fig. 2).

Of the 40 occupied nests, the great majority were on man-made structures: 18 were on bridges, 15 on buildings, 2 on smokestacks and 1, a new nest, was on a water tower. Only 4 nests were on cliffs (Table 3, Fig. 1).

Nests in Philadelphia Area, Southeast Region

Six Delaware River bridges, 4 Schuylkill River bridges and several tall buildings in the greater Philadelphia area were monitored for peregrine falcon activity. Territorial pairs occupied 10 sites and success was confirmed at 9, which fledged total of 22 young. Two of the 10 occupied nests were new in 2013. Philadelphia-area nests comprised 25% of the total nests in the Commonwealth and produced 30% of the fledged young (Tables 1, 2 and 4.)

Benjamin Franklin Bridge, Philadelphia County.--The Ben Franklin Bridge spans the Delaware River between Philadelphia, Pennsylvania (PA) and Camden, New Jersey (NJ). The falcons nest in a nest box placed near the top of the Pennsylvania Tower by local Delaware River Port Authority (DRPA) maintenance staff. The nest was again monitored by volunteers Georgia and Barrie Ashby and several others. Two young were produced in this nest and were banded by PGC personnel on 22 May. Both fledged and were observed throughout the summer.

Commodore Barry Bridge, Delaware County.--This nest was successful in 2013, after failures in the 2 previous years. Three nestlings were found and banded by PGC personnel on 28 May. During the winter of 2012-2013, DRPA personnel had installed a new peregrine falcon nest box on the catwalk in the bay between floor beams (FB) 26 and 27, near the site where peregrines had nested in recent years. However, the falcons did not use the nest box; instead, they nested on a gusset plate near the catwalk under FB27.

During the nest visits in March and May, a new adult female was identified: she had fledged from a NJ nest in 2010 (Tables 5-6). The previous nesting female, from Virginia, was last positively identified in 2010.

Exelon Eddystone Generating Station, Delaware County.--Peregrine falcons have been observed at this location and at the adjacent Boeing Aircraft factory since 2009, and a nest was found in 2011 inside an air duct on the exterior wall of a tall building. Success was confirmed for the first time at this nest in 2013 when a pre-fledged nestling was found on the ground under the nest on 6 June. The nestling was taken to Tri-State Bird Rescue where it was examined and determined to be uninjured. The nestling was returned to the nest site, banded, and released on a rooftop near the nest where it was observed being attended by its parents, and from which it is believed to have fledged successfully.

The power plant, a coal-fired electrical generating station on the Delaware River, was recently shut down, and part of the land has been leased to another company for conversion to an

oil terminal. Construction has been underway at ground level since late 2013, but the adult falcons have continued to be seen at the site regularly.

Girard Point Bridge, Philadelphia County.--This bridge carries Route I-95 across the Schuylkill River near the Philadelphia Navy Yard and Philadelphia International Airport. A major bridge maintenance project was begun in late 2009 and continued into mid-2013 when it was finally completed. In 2013, the falcons nested in the south nest box (referring to the southbound direction; actually the west end of the bridge) and raised 3 young, which were banded by PGC personnel on 7 May, and fledged in late May.

Hospital of the University of Pennsylvania, Philadelphia County, NEW 2013.—On 8 May, peregrine falcon volunteers Amy Carpenter and Ed Mutzer found a nesting pair of peregrines on a seventh floor ledge at the Hospital of the University of Pennsylvania (HUP) in Philadelphia. University personnel subsequently related that a pair of red-tailed hawks had nested the previous 2 years in a stick nest on the ledge, but early in 2013 the falcons had challenged the hawks and won possession of the stick nest and the territory. Because the ledge slopes out, it would not have been possible for the falcons to nest on the ledge without the stick nest to hold the eggs in place. When the nest was found, 1 chick and 1 unhatched egg could be seen in the nest. University personnel hastily made arrangements with L.F. Driscoll Company to provide a crane to reach the nest, and PGC personnel banded the nestling on 18 May. The nestling fledged on 15 June, and was observed in the area for approximately 30 days after fledging. Fittingly, Amy Carpenter witnessed the fledgling's first flight.

Manayunk, St. John's Church, Philadelphia County.—The pair of peregrine falcons that was found nesting in the steeple of the Church of St. John the Baptist in the Manayunk section of Philadelphia nested there again in 2013, and was successful again. Four nestlings were found in the steeple on 14 May and were banded by PGC personnel. They fledged on 8-11 June and continued to be seen by local volunteers for the next 4 weeks.

Pennsylvania-New Jersey Turnpike Delaware River Bridge, Bucks County.--This nest was again monitored by several dedicated volunteers led by Linda Rowan and Howard Eskin. The falcons nested in the box beam that they have used continuously since 2001. Three nestlings were banded on 14 May, and all 3 fledged successfully 3 weeks later. The fledglings continued to be seen near the nest for at least 6 weeks after fledging.

Young are typically observed at this nest for a longer time after fledging than at most other Pennsylvania nests. At least in part, this may be the result of extensive observing by the local volunteers: the fledglings may not stay longer, but may simply continue to be seen even as they spend less and less time in the vicinity of the nest.

Philadelphia, Downtown (City Hall), Philadelphia County.--Downtown Philadelphia and vicinity were monitored with the assistance of long-term volunteer Ed Mutzer. The downtown Philadelphia pair of peregrine falcons nested in the nest box on City Hall Tower for the third year in a row and produced 5 nestlings. When the nest was visited for banding on 20 May, 4 young about 30 days old were found in the nest box, and a dead 25-day-old nestling was found nearby. The dead nestling may have died of hypothermia during a violent rainstorm that had

occurred about 5 days previously. The four surviving nestlings were banded, and fledged on 1 and 2 June. Three of the fledglings were seen flying well with their parents for the next 3-4 weeks, but the fourth was never observed after fledging, and is presumed to have perished.

Temple University Medical School, Philadelphia County, NEW 2013.—On 21 April, volunteer Dr. Barrie Ashby found a pair of peregrine falcons nesting on a sixth floor window ledge of a Temple University Medical School building at Broad and Ontario Streets in Philadelphia. Peregrines had been reported at various locations in the same general area on numerous occasions for 5 years, but this was the first confirmation of nesting. The first report, in January 2008, was at that same building, but there were no further reports of peregrines in the area for almost 2 years. A peregrine was then seen in March 2010, and a pair put in a brief appearance in late summer. Again in 2011, single peregrines were seen in February, and not again until December; and in 2012, a single peregrine was seen at various locations from January through August, and not again until a pair was observed in October and November. None were seen during the nesting season until the 2012 records, and no nest site could be found.

In 2013, sightings were more regular, and the nest was found on 21 April. On 30 April, 2 eggs could be seen in the nest. The ledge was shaped like a trough, and served as a rain gutter as well as an architectural element. On 14 May, after several heavy rain storms which potentially flooded the nest, the nest was abandoned. Single adult peregrines were seen in the area during the ensuing months, but no re-nesting attempt was observed.

The building with the nest is scheduled for demolition during the winter of 2013-2014, before the 2014 nesting season. It is hoped that the falcons find a more suitable nest site.

Walt Whitman Bridge, Philadelphia County.--There are 2 nest boxes on this large suspension bridge, which spans the Delaware River between Pennsylvania and New Jersey: 1 is on top of the PA tower at the west end of the bridge, and the other is at the east end in NJ. In 2013 the falcons returned to the PA side from NJ, and nested successfully (Table 1). One nestling was found and banded at the nest on 29 May. There were no unhatched eggs in the nest box. Photographs indicated that the adult male was banded (Table 5), but the band could not be read. This would be a new male; the male that nested in 2011 (the last time band information could be determined) was not banded. The identity of the female is unknown (Table 5), but the fact that only 1 chick was produced, and no unhatched eggs were present, may indicate that she is aging and her fertility is declining.

Other nests in the Southeast Region

In addition to the 10 Philadelphia area nests described above, there were 12 more in the SE Region in 2013. The 22 nests in the SE Region accounted for 55% of the occupied nests and 67% of the fledged young in Pennsylvania in 2013. The concentration of peregrines in the SE Region is probably due to the concentration of tall bridges and of cities with tall buildings in that region.

Allentown, Lehigh County.--The Allentown pair nested at the 8th Street Bridge for the fifth year in a row, after having nested previously at the PPL GO Building a short distance away.

Four nestlings were banded on 23 May with the aid of a crane generously provided by PPL Corporation. All 4 fledged and continued to be seen by local observers through the summer.

Bethlehem, Northampton County.--Peregrine falcons nested again in Bethlehem at the nest which was found in July 2012 at the "High House," a disused building from the old Bethlehem Steel mill which is now owned by the Sands Casino. Three nestlings could be seen in the nest, which is on a horizontal steel beam high on the face of the building. Because of the height of the nest and the configuration of the building and nearby streets, railroad tracks and bridge, it was not feasible to reach the nest for banding. Local volunteers observed the nest regularly, and confirmed that all 3 nestlings fledged on 27 June. One was found on the railroad tracks below the nest 2 days later with a fractured radius and ulna. It was taken to a veterinary hospital and then to a wildlife rehabilitator for treatment, but it failed to recover from its injuries, and was euthanized. A second fledgling was found dead on a nearby roadway, and the third was never seen after fledging.

Clark's Ferry Bridge, Dauphin County.--Peregrine falcons nested for the fourth year in a row on a bridge pier under the deck of this bridge, which carries US Routes 22/322 across the Susquehanna River near Duncannon. In 2012 the falcons moved their nest from a pier near the west end of the bridge to one closer to the east end, and they used the same nest site again in 2013. On 13 May PGC personnel accessed the nest via a snooper crane very generously provided by the Pennsylvania Department of Transportation (PennDOT) District 8, and banded 3 nestlings. All 3 fledged 1 week later, and continued to be seen by local volunteers in the ensuing weeks. The adult female was identified from her bands which could be read in a photograph taken by a local volunteer: she had fledged from the PA/NJ Turnpike Delaware River Bridge in Bristol, PA, in 2008 (Tables 5 and 6).

The falcons were undeterred from nesting in the same location as the previous year despite the presence of a walkway for Appalachian Trail hikers and other pedestrians that passes fairly close to the nest on the pier top (which, however, cannot be seen from the walkway). The adult falcons, especially the male, would challenge and harass pedestrians as they neared the nest. A local Appalachian Trail volunteer posted signs on the walkway to inform pedestrians about the falcons. These were very educational to the public, but of course did nothing to reduce aggressiveness on the falcons' part.

Columbia, Lancaster County.--This pair was monitored by a group of local volunteers led by Meredith Lombard and the late Charley Albin. The falcons nested on the Pennsylvania Route 462 Bridge over the Susquehanna River since 2009; previous to that, they had used the US Route 30 Bridge 1.5 km upriver. On the Route 462 Bridge, the falcons nested on several different concrete arches under the bridge deck, moving their nest location each year. The nest was visited by PGC personnel on 30 May, and 2 nestlings and 3 unhatched eggs were found. The 2 nestlings were banded. Local volunteers organized a "fledge watch," and observed both nestlings to fledge on the morning of 18 June. Unfortunately, a violent rain and wind storm moved through the area later that day. The fledge watch volunteers spent the entire next day searching the area, including the shore and islands for approximately a mile downstream, and could not locate the fledglings. The adult falcons were observed searching the islands and calling. It is concluded that the fledglings perished in the storm, probably by drowning (Table 2).

In May 2012, during the nesting season, it appeared that a new adult female with different plumage markings had replaced the previous female, which was last seen in April. However, that could not be confirmed by a band reading. During the 30 May 2013 nest visit, photographs of the female with readable bands were obtained, allowing confirmation that she was indeed a new female: she was from a nest on the James River Bridge in Virginia in 2010 (Table 5). The male was confirmed from photographs to be the same male that has nested at this site since at least 2009 (Table 5; McMorris and Brauning 2009).

Delaware Water Gap, Northampton County.--Peregrine falcons have been observed at the Mount Minsi Cliff, a historic nest site, since at least 2003, and have nested on multiple occasions (Table 1), but not successfully in the post-DDT era (Tables 1 and 2). Monitoring by local observers Brian Hardiman, Rick Wiltraut, Jim Thomson, Allan Ambler and Tim Kita documented that peregrine falcons were present at the site throughout the calendar year. The cliff was closed to rock climbing in February to protect the birds from disturbance. Behavior strongly suggested that incubation began in early April and continued until early May on a high cliff ledge. However, nesting behavior ended abruptly on 3 May, and no further evidence of nesting was observed for the rest of the season. The reason for the continued failure of nesting at this site is unknown.

French Creek State Park, Berks County.--This nest was discovered on a cliff ledge in an abandoned quarry in French Creek State Park in early 2011, by the Pennsylvania Department of Conservation and Natural Resources' (DCNR's) Eric Brown and Rob Neitz. It is monitored by them and local enthusiasts Jim and Deb Doaty and Rich Bonnett. The nest was successful in 2011, but failed in 2012, possibly due to predation by Great Horned Owls. In 2013, incubation appeared to commence in April on the same nest ledge that was used the previous year, but this was followed by apparent nest failure and a re-nesting attempt which also failed. Both adults continued at the site through the late summer, but no nesting activity was observed after mid-May. Unlike 2012, when 3 nestlings were observed and then suddenly disappeared, no nestlings were ever observed in 2013.

Harrisburg, Rachel Carson State Office Building, Dauphin County.--The Harrisburg nest has continued to be productive every year since its first success in 2000. PGC and DEP partner to manage this site. This year 4 eggs were laid and all 4 hatched, and the nestlings were banded on 21 May at an event attended by an overflow audience of 161 students and teachers from area schools and broadcast on local TV and live webcast. The nestlings fledged on 31 May and 1 June and were seen flying well for at least 4 weeks before dispersing: 2 dispersed in early July, the third remained at the site until 20 July, and the fourth did not disperse until 4 September, 3 months after fledging.

DEP and local volunteers have an organized "fledge watch" each year when the young falcons are expected to fledge. Volunteers watch the nest from dawn to dusk each day and are poised to rescue the young falcons from the many hazards that are present at this and other urban sites (e.g. being grounded on the street, trapped in locations from which they cannot fly, etc.) The fledge watch was active again in 2013, and as commonly happens, all of the fledglings were rescued at least once each from life-threatening situations. If it were not for the efforts of these

dedicated volunteers, the contribution of this nest to the recovering peregrine falcon population would be very much reduced.

On 12 November, 1 of the fledglings was found dead in Virginia after being hit by an airplane (Table 6).

There was turnover of the nesting female prior to the 2013 nesting season: in 2012, when the nestlings were approaching the age of fledging, the adult female appeared to be injured, and was last seen a few days later. The male took over full parental duties and began advertising for a new mate. A new adult female appeared on the nest ledge in late May, and in early June she was identified as a bird that had fledged from the PA/NJ Turnpike Delaware River Bridge in Bristol, PA, in 2009 (Table 5). Local observers reported that the new female “did not welcome” the fledglings, and they dispersed soon thereafter. The new female remained at the site, and was the nesting female in 2013 (Table 5). The nesting male in 2013 was confirmed to be the same male that had nested at this site since 2005 (Table 5).

Lancaster, downtown, Lancaster County, NEW 2013.--Peregrine Falcons have been observed in downtown Lancaster since at least 2006, originally at the Griest building and then at the recently-constructed Marriott Hotel on South Queen Street, but no nesting activity was documented prior to 2013. A pair that was present at the Marriott Hotel in 2012 remained through the winter and the 2013 nesting season, where they were observed copulating. However, no evidence of eggs or young was observed.

Martin's Creek PPL Power Plant, Martin's Creek, Northampton County.--Peregrine falcons again bred successfully at this nest for the ninth year in a row. The nest box, mounted 110 m above the ground on a 180 m smokestack at the Martin's Creek PPL Power Plant, is monitored by PPL employees John Depalma and Jack Hahn. Five eggs were laid and 4 hatched. The young were banded on 10 June, and all 4 fledged in early July. Soon after fledging, 1 fledgling was found grounded near the nest, and was taken to a wildlife rehabilitator for evaluation. The fledgling was found to be healthy and uninjured, and was returned to the nest site and released by PGC personnel. One week later, a different fledgling was found dead on the ground near the nest (Table 4). Its condition suggested that it had been dead for several days.

Norman Wood Bridge, Lancaster County.--The Norman Wood Bridge (Pennsylvania Route 372 and the Susquehanna River, Lancaster County) was occupied by territorial pairs in 2009, 2010 and 2011, and by a single falcon in 2012, but successful nesting has not been documented. An adult pair was present throughout the 2013 nesting season, and were observed copulating and aggressively defending their territory. However, behavior suggestive of incubation or brooding was not observed. The bridge was searched by PGC personnel on 16 July, and a single abandoned unhatched egg was found. No evidence of young could be found.

Reading, Downtown, Berks County.--This pair nested on a balcony of a building in downtown Reading for the sixth year in a row, after nesting once (2007) on a different building just 200 m away. Volunteer Shawn Walb monitored the nest and provided progress updates. Four eggs were laid during the first week of April, and all hatched. The nestlings were banded on 31 May.

Upon examination during the banding visit, 1 nestling was found to have faint lesions in the throat suggestive of early-stage trichomoniasis. The fledgling was taken to Red Creek Wildlife Center where the diagnosis was confirmed, and the bird was treated and returned to the nest 3 days later. During that visit, the other 3 fledglings were examined again, and found to have similar symptoms of early-stage trichomoniasis. They too were taken to Red Creek, treated, and returned to the nest the next day.

All four nestlings progressed well and fledged at the end of June. On 1 August, 1 of the fledglings was found injured in Eastham Massachusetts (Cape Cod), 525 km to the east-northeast; and on 9 August, another fledgling was sighted alive and well in Lyndhurst, NJ, 160 km to the northeast (Table 6). These re-sightings verify that the treatment for trichomoniasis 2 months earlier was successful.

Safe Harbor, Lancaster County.--A single peregrine falcon was observed at Safe Harbor in February, and a pair was observed briefly in mid-May, but there was no other evidence of occupancy by peregrines in 2013.

Scudder Falls Bridge, Yardley, Bucks County.--This nest is on the catwalk of the bridge that carries I-95 over the Delaware River from Lower Makefield, Bucks County, PA to Ewing Township, NJ. The bridge was searched by PGC personnel on 15 May with the aid of a snooper crane generously provided by the Delaware River Joint Toll Bridge Commission (DRJTBC). It was found that the falcons had moved their nest to the eastern end of the bridge near the shoreline, in NJ. Two chicks, approximately 8-10 days old, could be seen in the nest, which was in a location that could not be reached physically. NJ Department of Environmental Protection personnel were notified of the relocated nest.

Three Mile Island, Middletown, Dauphin County.--Nesting activity at the Three Mile Island (TMI) nuclear power station continued in 2013. Three young were produced at an inaccessible location near the top of the #1 reactor containment building and fledged on 7 June.

Wade Bridge, I-81 and the Susquehanna River, Dauphin County.--No peregrine falcons were observed at the bridge in 2013. Extensive repair work was still in progress through the nesting season.

Northeast Region Nests

There were 5 peregrine falcon nests in the Northeast (NE) Region in 2013: two on cliffs, and one each on a bridge, smokestack and building, the latter being a new nest. Two of the 5 were successful.

Luzerne County Cliff, Luzerne County.--This nest is on a cliff in Luzerne County at a location which is undisclosed at the landowner's request. This and the other 3 Luzerne County nests were monitored by skilled volunteers led by Bob Wasilewski. The falcons used the same nesting ledge in 2013 as in the previous 2 years, and raised 3 young which were banded on 20 May by PGC personnel. On 8 October, PGC placed a trail cam on the nest ledge in hopes of capturing the band combinations of the nesting adults.

Montour PPL Power Plant, Montour County.--The falcons nest in a nest box mounted on the decommissioned #2 stack at the Montour PPL Power Plant near Washingtonville. Although the height of the nest makes viewing difficult, and access for banding impossible, PPL employee Jon Beam was able to observe 1 nestling which fledged successfully and continued at the site, flying well, for several weeks after fledging.

Pittston/Duryea, Luzerne County.--A pair has nested in this location since 2002, but the nest site has shifted back and forth between a bridge in Pittston and the Campbell's Ledge Cliff in Duryea, 3.5 km to the north. The pair nested at the Campbell's Ledge Cliff in 2013 for the fifth year in a row. Since returning to Campbell's Ledge from the bridge in 2009, the falcons have moved to a different ledge each year. In 2013 the falcons nested on the ledge last used in 2009, but that nesting attempt failed. They then re-nested on the ledge last used in 2011, but that attempt also failed, apparently due to predation. A broken egg was found on the ledge when the site was visited by PGC personnel on 19 June, but no young were found and the adults' behavior did not suggest that they were defending young or an active nest.

Scranton, downtown, Lackawanna County, NEW 2013.--Peregrine falcons have been observed sporadically in downtown Scranton since at least the spring of 2010, but no evidence of nesting could be found, despite careful searching. On 7 April 2013, local volunteer Bob Wasilewski searched the area yet again, and found a pair of peregrines nesting in a rain gutter atop a church steeple. The nesting male was the same individual that had previously been observed in downtown Scranton on 8 December 2011; it had fledged in 2008 from a nest on a bridge in Pittston, PA, 14 km to the southwest. The female was unbanded. The pair appeared to be incubating, but then abandoned the nest in late May after several heavy rainstorms. Wildlife diversity biologist Rich Fritsky visited the nest on 22 May and found 1 abandoned unhatched egg balanced precariously on the lip of the downspout. It seemed possible that additional eggs had disappeared down the downspout. The adults remained at the site for the rest of the season but gave no indication of re-nesting.

Wilkes-Barre, Luzerne County.--A pair of peregrines nested under the deck of the Market Street Bridge at the same inaccessible location they have used since 2003. The same adults that had nested in previous years were identified at the site early in the season, but on 30 March, the female, which was banded, was replaced by a new unbanded adult female. The previous female was 16 years old, so her replacement had been expected for some time. However, despite the replacement of the female with a younger 1, the nest failed for the fourth year in a row. There appeared to be 2 nesting attempts, commencing in early April and then in late May, both ending in failure. Young were never observed.

Southcentral Region Nests

There was one nest in the Southcentral (SC) Region in 2013, at PPL's Brunner Island Steam Electric Station in York Haven. The nest was successful.

Brunner Island PPL Plant, York County.--Peregrine falcons nested successfully for the fourth consecutive year atop a coal silo at this coal-fired power plant. Four eggs were laid and 3

hatched, and all 3 fledged. The nest is inaccessible, but plant workers were able to view and photograph the nest from a small hole in a steel fascia wall.

Northcentral (NC) Region Nests

There were 3 active nest sites in the Northcentral (NC) Region, all of them on bridges. Two previously-active cliff nest sites were abandoned.

McElhattan Bridge, McElhattan, Clinton County.--This nest has been successful every year since 2008 when the nest was discovered. The nest is on a concrete pier under the deck of the bridge that carries State Route (SR) 1005 (McElhattan Drive) across the Susquehanna River West Branch between Woolrich and McElhattan in Clinton County, and is monitored by a group of local volunteers led by Wayne Laubscher. PennDOT District 2 again provided the use of a snooper crane to access the nest, and 4 young were banded on 24 May, and fledged in early June. At least 2 were observed flying well in mid-June.

Montgomery Cliff, Lycoming County.--This site was unoccupied in 2013 for the second year in a row. It was the first successful cliff nest in Pennsylvania in 45 years when 1 falcon fledged in 2003, and falcons nested at the cliff every year from 2003 to 2011, although not always successfully.

Muncy, Lycoming County.--This nest was found in June 2012 when a PA Fish and Boat Commission staff member found a recently-fledged peregrine falcon on the PA Route 405 Bridge over the Susquehanna River West Branch. The nest site was found in 2013 by local volunteers who monitored nesting activity. The birds' behavior indicated that their first nesting attempt failed, and they subsequently re-nested. The nest was visited on 17 June by PGC personnel with the assistance of a crane generously provided by PennDOT District 3, and a single nestling, approximately 10 days old, was found. The nestling was too young to band, and no crane was available when the nestling reached the appropriate age for banding, so it remained unbanded. The nestling fledged on 20 July, and continued to be seen at the site, flying well, until 28 September.

Shikellamy Cliff, Union County.--Allen Schweinsberg and Cathy Haffner monitored this site but were unable to find any evidence of occupancy. The site was last occupied in 2009.

Williamsport, Market St Bridge, Lycoming County, NEW 2013.--Peregrine falcons were found in downtown Williamsport by Mike Kuriga in March 2013, first at the Maynard St. Bridge and subsequently at the Market St. Bridge. Local volunteers monitored the site regularly and found the nest site on a pier under the bridge deck. PGC personnel visited the nest on 17 June with the assistance of a crane generously provided by PennDOT District 3, and banded 2 nestlings. The nestlings fledged on 8 and 10 July. The female fledgling flew into a power line and was electrocuted 8 days after fledging. The other fledgling, a male, continued to be seen near the nest until 8 September, 2 months after fledging.

Anecdotal reports subsequently surfaced of peregrines being observed in the Williamsport area for at least 2 years previously, but there were no reports of young falcons being seen. The female's hatch date of 2010 sets an early limit for possible residence and

nesting, at least by this female. Coincidentally, The Genetti Hotel in Williamsport was one of the four sites in PA where young peregrines were released during the 1990's, but there were no records of nesting until 2013.

Southwest Region Nests

Eight nest sites were occupied by peregrine falcons in the Southwest Region in 2013. Two were on buildings in Pittsburgh, 5 were on nearby bridges, and one nest, new for 2013, was on a water tower. Four of the 8 nests were successful, fledging a total of 9 young; two others had eggs but no young.

Glenfield, I-79 Ohio River Bridge, Allegheny County.--Peregrine falcons nested for the second year on the bridge that carries Interstate 79 across the Ohio River from Neville Island to Glenfield. This nest site was discovered in 2012 when one fledgling was rescued from the river and a second was found on the riverbank, but the location of the nest was not known. In 2013, a group of dedicated local volunteers located the nest site in the steelwork under the catwalk. The nest was visited by PGC personnel on 21 May. Three nestlings were found and banded, and the adult female was identified from her leg bands; she had fledged from Canton, Ohio in 2010. The nestlings fledged on 7-10 June and continued to be seen near the nest for several weeks. On 7 August, 1 of the fledglings was found dead in Monongahela, PA, 40 km from the nest (Table 6).

Greentree Water Tower, Allegheny County, NEW 2013.--In mid-April 2013, local observers Vicki Dinsmore, Mary Jo Peden and Shannon Thompson found a pair of peregrine falcons frequenting the Greentree Water Tower in suburban Pittsburgh. The male was in juvenile plumage (1 year post-hatch), and the female, an adult, was later identified by her leg bands as being from the 2011 nest at the University of Pittsburgh nest (Table 5). The pair nested on an inaccessible shelf just below the bulb. The first nesting attempt failed, and the pair re-nested and failed again. No young were ever observed despite careful monitoring.

The Greentree water tower had been scheduled for maintenance and re-painting during the spring of 2013, but PGC arranged with the owners, the Pennsylvania American Water Company, to suspend work until after the nesting season. Work was resumed in the fall and completed during the winter, before the start of the 2014 nesting season.

McKees Rocks Bridge, Allegheny County.--The McKees Rocks bridge crosses the Ohio River near the borough of McKees Rocks in Allegheny County, about 6 km northwest of Pittsburgh. The bridge was inspected by PGC personnel on 17 May with the aid of a snooper crane provided by PennDOT District 11, and 1 abandoned unhatched egg was found. The resident adult male was observed and identified; he was 14 years old, and so turnover at this site may occur soon.

Monaca, Beaver County.--Peregrines have been documented nesting under the deck of the Monaca-East Rochester Bridge (PA-51 and Ohio River) every year since 2007, when the nest was found by local volunteer Scott Gregg. During those years, the falcons were also occasionally seen and identified at the Pennsylvania and Lake Erie Railroad Bridge over the Ohio River 2 km to the west, especially during the pre-laying period when the falcons were re-establishing dominance over their territory. The falcons did not frequent the Route 51 Bridge during the

spring of 2013, and on 13 May, Wildlife Conservation Officer Matt Kramer found them at an apparent nest in an inaccessible location at the top of the railroad bridge. The falcons continued at this location through at least the following month, but young falcons were never documented.

Pittsburgh, downtown, Allegheny County.--Peregrines nested successfully at the Gulf Tower in downtown Pittsburgh for 21 straight years from 1991 to 2011, fledging 73 young falcons, making it the longest continuously-successful nest in Pennsylvania. In 2012, the falcons relocated to a ledge on a building at 322 Fourth Ave., about 0.6 km. from the Gulf Tower. The location of the ledge made observation difficult, and prevented access for banding. Although the adults were not identified by their leg bands, they were believed to be the Gulf Tower pair, based on plumage and behavioral characteristics. The falcons nested at 322 Fourth Ave. again in 2013, and were well monitored by a small army of local volunteers led by Kate St. John. Four nestlings were raised; 3 fledged on 30 May and the fourth on 1 June. Volunteers organized a "fledge watch" to rescue fledglings from dangerous situations if that should be required, and it was. Two of the birds that fledged on 30 May were rescued from dangerous situations that same day. Another fledgling was not so fortunate: it was hit by a car and killed on 7 June (see Table 2).

Pittsburgh, University of Pittsburgh's Cathedral of Learning, Allegheny County.--The pair at the University of Pittsburgh's Cathedral of Learning in the Oakland section of Pittsburgh nested again in the nest tray on the fortieth floor. This pair was monitored by a crew of local enthusiasts led by Kate St. John. Five eggs were laid but only 2 hatched. One of the nestlings appeared to be abnormal and died 2 days after hatching, and was removed from the nest by the adult male the following day. The surviving nestling, a male, developed well and was banded by PGC personnel on 17 May. The nestling fledged on 3 June and was observed flying well for 11 days until it was hit by a car and killed on 14 June (Tables 2 and 4).

The adult female was 14 years old and may be reaching the end of her reproductive life, as evidenced by the 3 unhatched eggs and the nestling that apparently developed abnormally. Replacement by a younger female in the near future would not be unexpected.

Tarentum Bridge, Allegheny and Westmoreland Counties.--The Tarentum Bridge carries Pennsylvania Route 366 across the Allegheny River between Tarentum, Allegheny County and New Kensington, Westmoreland County. This site was a new, but unsuccessful, nest site in 2010, and was successful for the first time in 2012 (Table 1), fledging 2 young from an unidentified location on the bridge. The falcons nested again in 2013, and were monitored by a large group of local enthusiasts. Local observers found the location of the nest: it was in a difficult to reach location, in a hole in the lower chord box beam near the mid-river pier. The nest was visited by PGC personnel on 16 May with the use of a snooper crane provided by PennDOT District 11. One abandoned unhatched egg was found, but no young were observed, either then or during the remainder of the season (Tables 1 and 2).

Westinghouse Bridge, Allegheny County.--The George Westinghouse Memorial Bridge carries US Route 30 across Turtle Creek from East Pittsburgh to North Versailles in Allegheny County. Nesting was first documented in 2010, when 3 young were found and banded (Table 1), but nesting is suspected to have taken place at least 3 years previously. Volunteers John English and Tim Johnson monitored the falcons' activities. A single nestling that was too young to band

was found when the nest was inspected from the catwalk by PGC personnel on 16 May, and on a return visit at the next available opportunity, 10 June, it was too old to approach without risking pre-fledging. PennDOT District 11 provided a snooper crane on both dates to reach the nest, which could not be reached from the catwalk, but PGC made the decision both times not to approach the nest.

Evidence suggested that the nestling fledged on 11 June, but it was not observed subsequently, despite much searching. It is concluded that it perished soon after fledging, and is listed as such in Table 2.

Northwest Region Nests

Erie, Donjon Shipbuilding, Erie County.--A pair of peregrine falcons was found in the Bayshore area of Erie in 2011 and exhibited nesting activity, but no nest and no evidence of young could be found. The falcons were most prominently observed at the Penelec stack, a tall smokestack remaining from the former Penelec power plant. In 2013, the nest site was found when a pre-fledged peregrine falcon was found on the ground near the nest on 24 June. The nest proved to be 350 m from the Penelec stack, inside the Donjon Shipbuilding Building, a huge building where ships are built, with industrial-size doors that are always left open. Plant personnel reported anecdotally that the falcons had nested there previously. The nestling was taken to a local wildlife rehabilitator, found to be uninjured, and returned to the nest by PGC personnel. The nestling fledged successfully and was seen subsequently by local observers. Plant personnel and local observers reported that there had been a second nestling in the nest, but it fell from the nest and died before fledging (Table 2).

Other sites

Peregrine falcons were observed with some regularity at a number of additional sites, but without confirmed evidence of nesting. In some cases the site is most likely used only for wintering or foraging; in other cases, the regularity or timing of the falcons' presence suggests nesting may occur, either in the future or undetected at the present. All areas are being monitored by local volunteers and PGC personnel, and most have been thoroughly searched on one or more occasions. The following is a list of such sites:

Bath, Keystone Cement Quarry, Northampton County, SE Region.

Delaware River Route 202 Bridge, north of New Hope, Bucks County, SE Region.

East Coventry Township, Chester County, SE Region.

Easton, Northampton County, SE Region. Downtown and riverfront.

Etna, 62nd Street Bridge, Allegheny County, SW Region. Nesting was confirmed at this location once in the past: eggs were laid in 2007 but were washed out in a storm. A nest box has subsequently been installed.

Norristown, Montgomery County, SE Region. Vicinity of Montgomery County Court House and nearby Schuylkill River.

Peach Bottom, Lancaster and York counties, SE Region. Vicinity of the Peach Bottom Atomic Power Station on the Susquehanna River in Peach Bottom Township, York County.

Philadelphia, 2400 Chestnut Street, Philadelphia County, SE Region. Tall building overlooking the Schuylkill River, with nest box installed on the roof.

Plainfield Township, Northampton County, SE Region.

Rankin Bridge (George Rankin Jr. Memorial Bridge), Allegheny County, SW Region. Steel bridge crossing the Monongahela River from Braddock Ave. in Rankin to Kennywood Blvd. on the opposite bank.

Raymondskill Cliff, Pike County, NE Region. Cliff overlooking the Delaware River, 2-3 km south of Milford.

Sewickley Bridge, Allegheny County, SW Region. Steel truss bridge carrying River Street (SR4025) across the Ohio River at Sewickley.

Shippingport, Beaver County, SW Region. Three nearby sites: Bruce Mansfield coal-fired electric generating station, Shippingport Atomic Power Plant, and Montgomery Dam.

Productivity

A total of 40 sites were occupied by peregrine falcons during the 2013 nesting season. Thirty-seven of those pairs (93% of total) laid eggs; and 28 pairs (70%) were successful, producing fledglings (Tables 1 and 2). Six nests were new in 2013, and 2 of them were successful; and success was documented for the first time at 2 previously-occupied sites.

A total of 73 young fledged for 1.83 fledglings per territorial pair (Tables 1 and 2). The distribution of nests and young produced by nest type (bridge, building, smokestack, water tower and cliff; Table 3) is too small to allow statistical comparison of productivity by nest type.

Young were lost as nestlings (3), as pre-dispersal fledglings (11) and as post-dispersal fledglings (2) as discussed above. Many more losses undoubtedly occurred at all stages without being detected, especially post-dispersal, so the figures given here should be taken as minimums.

Seventeen unhatched eggs were found at 12 nests in 2013 (Table 2), and were collected for contaminant analysis. Eggs suspected to be from previous seasons are not included in these totals. As with undetected losses of nestlings, it is most likely that there were additional unhatched eggs that went undetected because they were lost before the nest was visited for banding, or were never observed at failed nests that were not visited for banding.

Banding

Fifty-six nestlings were banded at 20 of the 28 productive nests (Table 4). When nestlings were not banded, it was because the nest was inaccessible (5 nests), equipment required to reach the nest was not available at the appropriate age for banding (2 nests), or the nest location was not discovered in time (1 nest), as described above.

Egg Contaminant Analysis

Whenever possible, unhatched eggs found during banding visits (i.e. 20-30 days after expected hatch) were collected, stored at -20°C, and shipped to a collaborating laboratory for contaminant analysis. The analyses have not been completed.

Parental Birds

Nesting adult peregrine falcons were identified wherever possible. Table 5 lists the data for the falcons at the 40 Pennsylvania nests and the 1 nest that was relocated to New Jersey (Scudder Falls). Of the 80 adults nesting in PA, almost half 38, were identified by their bands. Thirty-seven of the 38 had been banded as nestlings, and therefore their origin was known (Table

5). One arrived in PA as an unbanded adult and was banded in its nesting territory (Table 5).

Partial band information was obtained for 12 nesting adults (15% of the total), and 17 adults (21%) were not banded. No information could be obtained for the remaining 13 birds (16% of the total).

Very little turnover of nesting adults was observed in 2013. The female at the Commodore Barry Bridge was replaced by a female from the 2010 nest at the Walt Whitman Bridge in NJ. However, the previous female's identity was last confirmed in 2010, so the new female could have arrived as early as 2011. The female at the Wilkes-Barre nest was replaced by a new, unbanded adult during the nesting season, on 30 March. The previous female, from a nest on the Fairlee Palisades cliff in Vermont, had been positively identified at the Wilkes-Barre nest as recently as 3 March. At this point she was 16 years old, and so her replacement by a younger bird had been expected for some time. The female at the Rachel Carson building in Harrisburg arrived on 7 June 2012, shortly before that year's nestlings fledged, and bred for the first time in 2013. Also, the female at the Scudder Falls Bridge nest was lost to predation in 2012, so the female that nested on the bridge in 2013 (and moved from the PA to the NJ side of the river) was a new female, even though she was not identified. Additional turnover may have occurred among birds whose band information was unknown or who were unbanded.

Curiously, all 3 new adults identified this year at previously-occupied PA nest sites, plus the one that moved from PA to NJ, and all 4 in 2012, were female. Females are somewhat more likely than males to be identified positively because they spend more time in the nest and are more likely to remain near their young when the nest is visited for banding, but the apparent turnover of only females nevertheless seems curious.

At the 6 nests that were newly established in 2013, 3 of the adults were positively identified by their leg bands, and 6 were found to be unbanded. Partial or no band information was obtained on the remaining 3 (Table 5). Four adults were identified for the first time at previously-established nests: the females at Clark's Ferry, Columbia and Glenfield, and the male at Manayunk. The Columbia female is known to have arrived in 2012 and replaced the previous female, but her bands could not be read until 2013.

The 22 adult females breeding in Pennsylvania with known origins fledged from nests in 8 U.S. states: 6 from Pennsylvania, 4 each from Ohio and New Jersey, 3 from Virginia, 2 from New York, and 1 each from Connecticut, Massachusetts, and Wisconsin. In contrast, the 17 breeding males with known origins came from fewer and closer locations: 14 from Pennsylvania, 2 from Ohio and 1 from Maryland. (Table 5). These findings are consistent with the pattern, observed in many avian species, that females disperse greater distances than males.

Band Encounters

There were 21 encounters of birds banded in Pennsylvania, or banded elsewhere and identified in Pennsylvania, in 2013, including 4 delayed reports of encounters from previous years. Band encounter data are listed in Table 6. Four of the band encounters were of males and 17 were of females. This unusual sex ratio was atypical; it was not observed in previous years (McMorris and Brauning 2008).

Sixteen of the encountered birds had been banded in PA, and 5 had been banded elsewhere. Of the 16 birds banded in PA, 6 were encountered in PA, 3 in Maryland, and 1 each in Ohio, New York, New Jersey, Virginia, Massachusetts, Indiana and Florida. The 5 birds banded elsewhere and encountered in PA originated in New Jersey (2 birds), New York, Ohio and Virginia (1 each) (Table 6). In addition, 6 birds banded in PA were found dead before dispersing from the nest site within a few weeks of fledging; these are indicated in Table 4 but not included in the band encounters shown in Table 6.

Four of the encountered birds had previously been encountered at different locations (Table 6). A bird found nesting at the Glenfield I-79 Bridge in May had previously been observed near the Pittsburgh International Airport in January. A bird that fledged from the 2009 RCSOB nest in Harrisburg was found nesting unsuccessfully in Brookpark, OH in 2011, and then was found fighting with another female for possession of a nest in Cleveland, OH in 2013. Interestingly, the 2 fighting females were both from a PA nests; the other 1 had fledged from the McKees Rocks PA nest in 2009 and was found nesting in Cleveland in 2011 (McMorris and Brauning 2011). A bird from the 2012 Reading PA nest was found in September 2012 at Hawk Cliff on the north shore of Lake Erie in Ontario, and then was found dead in Indiana in January 2013. Another bird was recovered a third (and final) time: It had fledged from the PA/NJ Turnpike Bridge nest in PA in 2004 and then was encountered subsequently as a passage bird on Assateague Island, Virginia in September 2004; as a successfully nesting bird on a bridge in Cabin John, Virginia in 2008; and finally was found injured, and died, in Bethesda, Maryland in September 2013 (Table 6).

Nine of the encountered birds were found nesting. Seven of them were encountered as newly-identified nesting adults at Pennsylvania nests, and 6 of those 7 nested successfully (Tables 5 and 6). Ten birds were encountered injured or dead, and 2 were sight records of birds that were alive and free (Table 6). The time interval between banding and re-sighting ranged from 2 months to 9 years.

Distances from natal site to recovery site varied from short to substantial. Four birds were found nesting in PA a short distance from their natal site: a bird from the Girard Point Bridge in Philadelphia was found nesting 15 km away in the Manayunk section of Philadelphia; a bird from the NJ side of the Walt Whitman Bridge was found nesting 23 km away at the Commodore Barry Bridge in Chester; a bird from the Montour power plant was found nesting 34 km away in Williamsport; and a bird from the University of Pittsburgh Cathedral of Learning nest was found nesting 8 km away at the Greentree Water Tower (Table 6). At the opposite end of the spectrum, 3 PA birds traveled long distances in a short time. A bird that fledged from the Reading nest was found 50 days later in Lyndhurst, NJ, 160 km away; another bird that fledged from the Reading nest was found 42 days later on Cape Cod, Massachusetts, 525 km away; and a bird that fledged from the Martin's Creek nest was found 119 days later in Fort Myers, Florida, 1700 km from its natal site.

Construction and Maintenance Activities at Nest Sites

Since 36 of the 40 nests are on man-made structures, human activities are the most likely source of disturbance. Some human activity is routinely present and unavoidable (e.g. vibration

and traffic noise on bridges); falcons have shown their acceptance of those activities by nesting at those sites. In other cases, specific projects or activities such as construction or maintenance present the possibility of unacceptable disturbance. Such activities may harm both falcons and people. Harm to the falcons may include injury, nest failure or abandonment. Harm to people may include harassment or injury of workmen by aggressive falcons. PGC maintains a dialog with personnel at all sites used by falcons so that activities can be designed or scheduled to minimize human-avian conflicts.

Projects and activities posing the potential for conflicts, and actions being taken by PGC, include the following:

Allentown, 8th Street Bridge rehabilitation.--This aging concrete bridge is scheduled for major rehabilitation work. PGC is in contact with PennDOT District 5 to coordinate the work to minimize disturbance of falcons and inconvenience to the project work. Preliminary assessments were completed. Rehabilitation work is scheduled to begin in 2014 at the earliest. In a cooperative effort between PGC, PennDOT, PPL Corporation and Michael Baker Corporation, a nest box was installed near the bridge on the PPL building, where the falcons have nested previously, to provide an alternative nest site.

Commodore Barry Bridge.--A major repair/retrofitting project was completed on the bridge prior to the 2013 peregrine falcon nesting season. In anticipation of a bridge repainting project in the near future, and in coordination with PGC, DRPA installed a nest box during the winter of 2012-2013 near the site the falcons have nested in recent years. However, the falcons did not use the nest box in 2013; instead they nested in their traditional place, on a bridge member near the catwalk.

Girard Point Bridge repainting and maintenance.--A major repainting and maintenance project began in the fall of 2009 and was finally completed on 20 June 2013. The PGC had negotiated with PennDOT to include protections for the falcons in the contract. The nest was successful in 2013.

Greentree Water Tower.--The water tower was scheduled for maintenance and repainting in 2013. When peregrine falcons were discovered nesting on the water tower, PGC coordinated with the Pennsylvania American Water Company to delay the work until after the nesting season. Work was completed during the fall and winter of 2013-2014.

Pennsylvania-New Jersey Turnpike Delaware River Bridge.--Another work project on this bridge, the fourth in the last 5 years, was started in 2013, and yet another, a multi-year repainting project, will begin in 2014. PGC consulted extensively with bridge authorities and engineers to schedule the projects and provide safeguards to minimize disturbance to the falcons. These provisions were written into the contracts. A dedicated peregrine falcon monitor will monitor the falcons and the work activity during both projects.

Tarentum Bridge.--Re-paving of the bridge in 2013 was re-scheduled to avoid disturbance during the peregrine falcon nesting season.

Wade Bridge, I-81, Harrisburg.--A multi-year maintenance project was completed in 2013. When the falcons were first discovered nesting at the bridge in 2010, PennDOT District 8 coordinated with PGC to reduce disturbance during the project and placed a nest box for the falcons' future use. However, falcons have not been observed at the bridge since 2010.

Other locations.--The PGC provided coordination with various agencies regarding numerous other projects in 2013, including:

Clark's Ferry Bridge.--various maintenance activities.

Exelon Eddystone Power Plant.--decommissioning of coal-fired electrical generating station and reconfiguration as an oil terminal.

Manayunk, Church of St. John the Baptist.--masonry repairs.

Scudder Falls Bridge.--long-range planning for bridge replacement.

Walt Whitman Bridge.--redecking.

Peregrine Falcon 10-Year Management Plan

We completed the preparation, review, and adoption of a 10-year management plan for the peregrine falcon in Pennsylvania. The draft plan for 2013-2022 was reviewed internally within PGC, revised in accordance with comments and recommendations, and presented to the PGC Board of Commissioners for consideration at its 14-15 April meeting. With the Commissioners' approval, it was then distributed to cooperating agencies (e.g. PennDOT) for discussion and comment, and released for public comment. The draft plan received over 1,500 document views on the PGC website. The plan was revised again in response to those comments, and presented to the PGC Board of Commissioners at its 24-25 June meeting. The finalized plan was adopted by the Board of Commissioners on 25 June 2013 (Brauning et al. 2013).

Outreach

Web casts.--Video coverage of nesting activities continued at RCSOB and the University of Pittsburgh Cathedral of Learning in Pittsburgh.

Rachel Carson State Office Building.--The peregrine falcon nest site was monitored with live video Web streaming at the RCSOB in Harrisburg (DEP 2013). The Web site, with its Web cam, supporting information, email account, falcon story submission and related links, continues to be one of the most popular wildlife watching websites in the world.

Pittsburgh Nest Sites.--A Web camera at the nest site at the University of Pittsburgh Cathedral of Learning was again provided by the National Aviary (National Aviary 2013). The relocation of the Gulf Tower pair resulted in loss of live web coverage of this nest; the Gulf Tower website showed snapshots from previous years. The Cathedral nest allows the public to watch live video Web streaming of nesting activity.

Banding Events.--Groups were invited to attend banding events where logistically possible, most notably at Philadelphia City Hall, the RCSOB (see below) and the University of Pittsburgh Cathedral of Learning. These are popular events, drawing capacity crowds.

In 2013, 161 students and educators from area schools attended the banding of the nestlings at the RCSOB. The event was also broadcast live locally on TV and world-wide by Webcast.

The National Aviary partnered with the PGC to invite members of the public and the local media to attend the banding at the University of Pittsburgh Cathedral of Learning.

Philadelphia city officials and members of the public attended the banding event at Philadelphia City Hall. The event was covered by local newspapers and featured on the TV evening news.

Teacher In-Service Workshop.--The DEP and the PGC again partnered to facilitate a spring endangered species education teacher in-service workshop at the RCSOB. On 2 April, 31 Pennsylvania teachers and environmental educators were instructed on peregrine falcon reintroduction efforts, endangered species curriculum activities, and teaching techniques to address urban habitat.

Public Presentations.--Dan Brauning and Art McMorris presented talks on peregrine falcon biology and population dynamics and the Pennsylvania Peregrine Falcon Recovery and Management program to numerous public groups during the year.

Media Coverage.--Peregrine falcons continue to capture the public's interest and are frequently featured in many media outlets throughout the year. The PGC's work with peregrine falcons is publicized on the Web via live webcasts, on the websites of numerous cooperating agencies (e.g. Aark Wildlife Rehabilitation and Education Center, DRJTBC, The National Aviary, DEP, PPL Corporation, Red Creek Wildlife Center), and in blogs and online discussion groups that are too numerous to keep track of.

Peregrine falcon Web pages on the PGC website (PGC 2013), exclusive of the draft 10-year management plan, received over 8400 unique views during 2013. The target audience is educators, school children and adults interested in wildlife and conservation. Including views of the draft management plan, the total number of unique hits was over 10,000.

The PGC's work with peregrine falcons also receives much attention in the print and broadcast media. A partial list of appearances during the 2013 calendar year follows:

Newspapers and Magazines:

Allentown Morning Call
Daily Record (NJ)
Lehigh Valley Express-Times (Easton; 3 stories)
New York Post
Philadelphia Inquirer (2 stories)

Pocono Record
Post-Gazette (Pittsburgh)(3 stories)
Press-Enterprise (Bloomsburg)
Reading Eagle (2 stories)
Record Express (Lititz)
Times Leader (Wilkes-Barre)(3 stories)
Tribune-Review (Greensburg)(6 stories)
Valley News Dispatch (Tarentum)(3 stories)

TV Stations:

Fox 43 (Harrisburg)
KDKA (CBS Channel 2, Pittsburgh)
WFMZ (Allentown)
WICU (Erie)
WPVI (ABC Channel 6, Philadelphia)

Radio Stations:

KDKA (Pittsburgh)
KQV (Pittsburgh)
NPR (network)
WESA FM (Pittsburgh)
WITF (Harrisburg)
WQED (Pittsburgh)

Miscellaneous news outlets:

“Outside My Window” nature blog (Pittsburgh)
HUPdates (Philadelphia)
Meadowlands Nature Blog (NJ)
PennDOT District Highlights
Pennsylvania Game News (2 articles)
Pitt University Times
PPL Corporate News
University of Pittsburgh News

RECOMMENDATIONS

1. Nest boxes or trays should be placed on any building or bridge where peregrine falcons are nesting and the nest site is judged to be insecure for nesting birds. Nestlings in bridge girders should be transferred to a suitable nest box or tray to increase prospects of fledging. Placing of nest boxes on man-made structures where falcons are not already nesting, in an attempt to attract birds there, is not recommended; it is preferable to let the birds seek out natural sites.

2. Maintenance and construction on bridges, buildings and other manmade structures supporting nesting peregrines must be coordinated with the PGC to assure minimized disturbance of nesting birds.

3. Nestlings should be banded when feasible.

4. Inspections of historic cliff and potential urban nest sites should be completed at regular intervals, in accordance with federal monitoring protocols.

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Table 1. Number of young peregrine falcons produced in Pennsylvania by nest site, 2003-2013^a.

Locations	Number of young produced per year ^b										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Allentown					TP	4	4	3	4	3	4
Ben Franklin Bridge	S	S	?	4	1	3	3	2	4	4	2
Bethlehem										4	3
Brunner Island PPL plant								2	2	3	3
Clark's Ferry Bridge								3	4	AP	3
Columbia Bridge					AP	AP	AP	2	2	AP	2
Commodore Barry Bridge	?	?	[AP] ^c	TP	TP	2	1	3	AP	AP	3
Delaware Water Gap	TP	AP					AP	AP	AP	AP	AP
Erie, Donjon Shipbuilding <i>1st success 2013</i>									TP		1
Etna, 62nd St. Bridge					AP						
Exelon Eddystone <i>First success 2013</i>									AP	TP	1
French Creek State Park									3	AP	AP
Girard Point Bridge	3	3	1	4	3	2	4	2	AP	2	3
Glenfield I-79 Bridge										2	3
Greentree Water Tower <i>New 2013</i>											TP
Harrisburg, Rachel Carson	4	3	3	5	4	4	5	2	1	2	4
Hospital of U. of PA (HUP) <i>New 2013</i>											1
Lancaster, Downtown <i>New 2013</i>											TP
Luzerne County cliff					AP	2	3	2	3	3	3
Manayunk, St. John Church									2	2	4
Martin's Creek PPL plant			2	3	3	4	3	2	4	4	4
McElhattan Bridge						2	4	4	4	3	4
McKees Rocks Bridge						AP	3	2	AP	AP	AP
Monaca Bridge <i>Relocated to RR bridge 2013</i>					2	4	3	AP	4	4	TP
Montgomery Cliff	1	AP	1	1	AP	2	4	1	AP		
Montour PPL plant					1	4	3	2	1	3	1
Muncy										1	1
Norman Wood Bridge							TP	TP	AP	S	AP
PA/NJ Turnpike Bridge	3	4	2	3	3	4	4	3	3	3	3
Philadelphia: City Hall	S	S					4		4	4	4
Wachovia Bldg.								2			
Schuylkill Exp.			3	AP	TP						
Pittsburgh, Gulf Tower	4	4	3	5	4	2	2	5	5		
Downtown										1	4
Pittsburgh, U. Pitt. Cathedral	4	4	3	3	4	3	4	5	4	3	1

Table 1. cont.

Locations	Number of young produced per year ^b										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pittston/Duryea: Bridge	3	3			4	3					
Campbell's Ledge			2	3			2	3	1	3	AP
Reading, downtown					1	3	4	3	2	3	4
Safe Harbor RR Bridge								AP		S	
Scranton											AP
<i>New 2013</i>											
Scudder Falls Bridge						1	3	3	2	AP	[2] ^c
Shikellamy cliff					AP	1	AP				
Tarentum Bridge								TP	S	2	AP
Temple Univ. Medical School											AP
<i>New 2013</i>											
TMI, Middletown	3	2	3	3	2	2	1	2	3	3	3
Wade Bridge, I-81 Harrisburg								AP			
Walt Whitman Bridge	4	3	[4] ^c	[1] ^c	[4] ^c	4 ^d	[2] ^c	[3] ^c	3	[1] ^c	1
Westinghouse Bridge					S			3	3	AP	1
Wilkes-Barre	2	2	3	2	3	4	4	AP	AP	TP	AP
Williamsport, Market St. Br.											2
<i>New 2013</i>											
Summaries ^e											
Hacking summary						-3					
Number of Territorial Pairs ^f	11	11	11	13	21	23	25	30	32	32	40
Number of Active Pairs ^f	10	11	11	12	18	23	24	28	31	30	37
Percent of pairs active ^f	91	100	100	92	86	100	96	93	97	94	93
Number of Successful Pairs ^f	10	9	11	11	13	21	21	23	23	22	28
Percent of pairs successful ^f	91	82	100	85	62	91	84	79	72	69	70
Young produced ^b	31	29	26	36	35	60	68	61	68	62	73
Productivity: Young/Territorial Pair ^g	2.82	2.64	2.36	2.77	1.67	2.61	2.72	2.10	2.13	1.94	1.83
Productivity: Young/Active Pair ^g	3.10	2.64	2.36	3.00	1.94	2.61	2.83	2.18	2.19	2.07	2.03
Nestlings known lost ^h		2	0	1	5	1	2	3	2	5	3
Known fledgling mortality, pre-dispersal	1	2	4	1	3	5	6	7	5	4	11
Known fledgling mortality, post-dispersal	3	1	0	2	3	0	3	0	0	0	2

^a Includes nesting pairs on Delaware River bridges that occasionally move nest site to the New Jersey side. When nesting occurs on the NJ side of the state line, data are placed in square brackets and noted with footnote "c". NJ data are not included in the summaries at the bottom of the table.

^b "Young produced" is defined as the number of young that fledged or reached fledging age. Where no young were produced, AP = Active Pair (pair produced nestlings or eggs, or showed evidence of incubating); TP = Territorial Pair (pair present defending territory during nesting season, but no evidence of eggs or young). All Active Pairs were also Territorial. "S"

represents a single adult bird observed through the breeding season, and a “?” reflects uncertainty of activity.

^c Nest was on the New Jersey side of the bridge. Results are not included in the Pennsylvania totals.

^d Three of the 4 young were transferred to West Virginia cliff hacking site by PGC.

^e Summaries exclude data from nests on the NJ side of the state line.

^f Successful pairs are defined as those that fledged young or raised young to fledging age. See footnote b for definitions of Active Pairs and Territorial Pairs. All Successful Pairs were also active, and all Active Pairs were also territorial.

^g Productivity is defined as the mean number of young produced per Territorial or Active Pair, as indicated.

^h Data for nestlings known lost begin in 2007.

Table 2. Nesting results at occupied nests in Pennsylvania, 2013^a.

Nest site	Nest Type ^b	Status ^c	Unhatched Eggs ^d	Nestlings	Banded	Fledged ^e	lost ^d		
							Known Nestlings	Fledged	Dispersed
Allentown, 8 th St. Bridge	Br -	SP	0	4	4	4			
Ben Franklin Bridge	Br +	SP	1	2	2	2			
Bethlehem	Bl -	SP		3	0	3		3	
Brunner Island PPL plant, York Co.	Bl -	SP		3	0	3			
Clark's Ferry Bridge	Br -	SP	0	3	3	3			
Columbia, Rte. 462 Bridge	Br -	SP	3	2	2	2		2	
Commodore Barry Bridge	Br -	SP	0	3	3	3			
Delaware Water Gap	Cl -	AP		?	0	0			
Erie, Donjon Shipbuilding	Bl -	SP		2	0	1	1		
Exelon Eddystone Power Station	Bl -	SP		≥1	1	1			
French Creek State Park	Cl -	AP		?	0	0			
Girard Point Bridge	Br + ^g	SP	0	3	3	3			
Glenfield, I-79 Bridge	Br -	SP	0	3	3	3			1
Greentree Water Tower	<i>New</i> WT -	TP		?	0	0			
Harrisburg, RCSOB	Bl +	SP	0	4	4	4			1
Hospital of U. of PA (HUP)	<i>New</i> Bl -	SP	1	1	1	1			
Lancaster, downtown	<i>New</i> Bl -	TP		?	0	0			
Luzerne County cliff	Cl -	SP	1	3	3	3			
Manayunk, St. John Church	Bl -	SP	0	4	4	4			
Martin's Creek PPL plant	Sm +	SP	1	4	4	4		1	
McElhattan Bridge	Br -	SP	0	4	4	4			
McKees Rocks Bridge	Br -	AP	1	0	0	0			
Monaca RR Bridge	<i>Relocation</i> Br -	TP		?	0	0			
Montour PPL Power Plant	Sm +	SP		≥1	0	1			
Muncy Rt. 405 Bridge	Br -	SP	0	1	0	1			
Norman Wood Bridge	Br -	AP	1	0	0	0			
PA/NJ Turnpike Bridge	Br #	SP	0	3	3	3			
Philadelphia City Hall	Bl +	SP	0	5	4	4	1	1	
Pittsburgh, downtown	Bl -	SP		4	0	4			1
Pittsburgh, Pitt Cathedral	Bl +	SP	3	2	1	1	1	1	
Pittson/Duryea: Campbell's Ledge	Cl -	AP	1	0	0	0			
Reading, downtown	Bl -	SP	0	4	4	4			
Scranton, downtown	<i>New</i> Bl -	AP	1	0	0	0			
Tarentum Bridge	Br -	AP	1	0	0	0			
Temple Univ. Med. School	<i>New</i> Bl -	AP	2	0	0	0			

Table 2. cont.

Nest site	Nest Type ^b	Status ^c	Unhatched Eggs ^d	Nestlings	Banded	Fledged ^e	Known		
							Nestlings	Fledged	Dispersed
Three Mile Island, Middletown	Bl -	SP		3	0	3			
Walt Whitman Bridge	Br + ^g	SP	0	1	1	1			
Westinghouse Bridge	Br -	SP	0	1	0	1		1	
Wilkes-Barre, Market St. Bridge	Br -	AP		?	0	0			
Williamsport, Market St. Br. <i>New</i>	Br -	SP	0	2	2	2		1	
Totals			17	≥76	56	73	3	11	2

40 occupied nests (Territorial Pairs); 37 Active; 28 Successful

^a Occupied Nests are nests that are occupied during the nesting season by pairs that are designated as Territorial, Active or Successful. See footnote c for definitions.

^b Bl = building, Br = bridge, Cl = cliff, Sm = smokestack, WT = water tower. + = nest box or tray, # = other enhancement (e.g., gravel), - = no nest site enhancement.

^c Status shown is highest breeding evidence documented. SP = Successful Pair (produced fledged young or young of fledging age); AP = Active Pair (produced nestlings or eggs, or showed evidence of incubating); TP = Territorial Pair (pair defended territory during nesting season). All Successful Pairs were also Active, and all Active Pairs were also Territorial.

^d Observed numbers of unhatched eggs or of lost young; actual numbers may be higher. Where no number is shown, eggs or young may have been lost without being detected. Young known to be lost are further categorized as Nestlings (prior to fledging), Fledged (post-fledging but prior to dispersal from nest site) or Dispersed (young of the year after dispersal from nest site).

^e Number fledged or raised to fledging age.

^f Observed number of nestlings or fledglings. Actual number may be higher, but insufficient data was obtained.

^g Two nest boxes are present.

Table 3. Number of young peregrine falcons produced in Pennsylvania by nest type, 2013.

Nest type	Number of occupied nests	Number of successful nests	Number of young fledged
Man-made structures:			
Bridge	18	13	32
Building	15	12	33
Smokestack	2	2	5
Water Tower	1	0	0
(Total man-made)	(36)	(27)	(70)
Natural sites:			
Cliff	4	1	3
Totals	40	28	73

Table 4. Listing of peregrine falcon band numbers used in Pennsylvania, 2013: Nestlings banded at nest.

County	Location	Banding Date	Sex	USFWS Band	Color Band ^a	Weight g.	Tape ^b
Allegheny	Glenfield, I-79 Bridge	21 May	M	2206-79780	02/AP	555	-
			M	2206-79781	03/AP	515	-
			F ^c	1687-00544	27/AR	725	-
Allegheny	U. Pitt. Cathedral	17 May	M ^d	2206-80644	32/X	605	-
Berks	Reading, downtown	31 May	M	1156-12514	66/AP	520	red
			F ^e	1947-07028	70/AR	860	white
			F ^f	1947-07029	71/AR	870	blue
			F	1947-07030	72/AR	820	yellow
Bucks	PA/NJ Turnpike Brdg.	14 May	M	2206-80643	31/X	625	blue
			F	1687-00530	07/AR	930	red
			F	2687-00531	08/AR	900	white
Clinton	McElhattan Bridge	24 May	M	2206-79745	26/AP	700	yellow
			F	1947-07020	85/AR	975	red
			F	1947-07021	86/AR	865	white
			F	1947-07022	87/AR	980	blue
Dauphin	Clark's Ferry Bridge	13 May	M	2206-80642	30/X	715	red
			F	1687-00528	05/AR	975	white
			F	1687-00529	06/AR	>1000	blue
Dauphin	Harrisburg, RCSOB	21 May	M	2206-79742	23/AP	690	yellow
			F ^g	1687-00548	31/AR	990	red
			F	1687-00549	32/AR	960	white
			F	1947-07015	80/AR	940	blue
Delaware	Commodore Barry Br.	28 May	M	2206-79746	27/AP	525	red
			F	1947-07023	88/AR	755	white
			F	1947-07024	89/AR	725	blue
Delaware	Exelon Eddystone	18 June	F	1947-01306	74/AR	710	-
Lancaster	Columbia, Rte. 462 Br.	30 May	F ^h	1947-07026	91/AR	625	red
			F ^h	1947-07027	92/AR	620	blue
Lehigh	Allentown, 8 th St. br.	23 May	M	2206-79744	25/AP	670	red
			F	1947-07017	82/AR	990	white
			F	1947-07018	83/AR	960	blue
			F	1947-07019	84/AR	920	yellow
Luzerne	Luzerne County Cliff	20 May	F	1947-04791	67/AR	900	-
			F	1947-04792	68/AR	920	-
			Unc	1947-04793	69/AR	635	-

Table 4. cont.

County	Location	Banding Date	Sex	USFWS Band	Color Band ^a	Weight g.	Tape ^b
Lycoming	Williamsport, Market St	17 June	M	2206-79782	04/AP	630	-
			F ⁱ	1687-00545	28/AR	710	-
Northampton	Martin's Creek PPL	10 June	M	1156-12515	67/AP	590	white
			M	1156-12516	68/AP	535	blue
			M	1156-12517	69/AP	575	yellow
			F ^j	1947-07031	73/AR	790	red
Philadelphia	Ben Franklin Bridge	22 May	M	2206-79743	24/AP	440	yellow
			F	1947-07016	81/AR	720	red
Philadelphia	Girard Point Bridge	7 May	F	1687-00572	51/AR	735	red
			F	1687-00573	52/AR	750	white
			F	1687-00574	53/AR	750	blue
Philadelphia	Hospital of Univ.of PA	18 May	F	1687-00546	29/AR	530	-
Philadelphia	Manayunk, St. John Ch	14 May	Unc	1687-00542	25/AR	510	blue
			Unc	1687-00543	26/AR	480	yellow
			F	1687-00532	09/AR	700	red
			F	1687-00533	10/AR	515	white
Philadelphia	Philadelphia City Hall	20 May	F ^k	1687-00547	30/AR	900	red
			M	2206-79739	20/AP	750	white
			M	2206-79740	21/AP	665	blue
			M	2206-79741	22/AP	675	yellow
Philadelphia	Walt Whitman Bridge	29 May	F	1947-07025	90/AR	850	-

^a All color bands are Black/Green.

^b Color of marker tape placed on USFWS band. "--" indicates no tape was used.

^c Found dead in Monongahela, PA, 40 km from nest, 7 August. See Table 6.

^d Hit by a car and killed near nest 14 June.

^e Encountered alive and free (sight record) in Lyndhurst, NJ, 160 km from nest, 9 August. See Table 6.

^f Encountered injured in Eastham, MA, 525 km from nest, 1 August. See Table 6.

^g Found dead (hit by airplane) in Virginia, 12 November. See Table 6.

^h Disappeared during violent storm on day of fledging 18 June; presumed dead.

ⁱ Electrocuted on power line near nest 18 July.

^j found dead near nest 18 July; cause of death unknown.

^k Not seen after fledging; presumed dead.

Table 5. Identities of nesting peregrine falcons at occupied nests, 2013.

Nest Site	Parent	USFWS Band ^a	Aux. Band ^{a,b}		Banding (hatch) date ^c	Age at Banding	Banding Site
			Number	Color			
Allentown, 8 th St. Bridge	M	none	none		≤ 2005		
	F	present	?	Bl/Gr	≤ 2010		
Ben Franklin Bridge	M ^d	none	none		≤ 2004		
	F ^d	1807-62116	25/E	Bl/Gr	6/26/2003 ^e	Nestling	LTV Steel Bldg, Cleveland, OH
Bethlehem	M ^d	2206-80689	28/S	Bl/Gr	5/7/2010	Nestling	PA-NJ Turnpike Bridge, Bristol, PA
	F	1687-10883	51/AE	Bl/Gr	5/27/2009	Nestling	RCSOB, Harrisburg, PA
Brunner Island PPL Plant	M	present	present	Bl/Gr	≤ 2009		
	F	1687-00509	84/Y	Bl/Gr	5/28/2008	Nestling	US11 Bridge, Pittston, PA
Clark's Ferry Bridge	M	present	present	Bl/Gr	≤ 2008		
	F ^d	1687-10854	A/50	Bl/Gr	5/21/2008	Nestling	PA-NJ Turnpike Bridge, Bristol, PA
Columbia, Rte. 462 Bridge	M ^d	816-69321	*1/*3	Bl/Gr	5/27/2004	Nestling	Southmarsh I. WMA, MD; hacked at Harper's Ferry, MD
	F ^d	1807-65014	09/AD	Bl/Gr	5/14/2010	Nestling	James River Bridge, VA; hacked at Shenandoah National Park, VA
Commodore Barry Bridge	M	?	?				
	F ^{d,f}	1687-02845	08/AE	Bl/Gr	May 2010	Nestling	Walt Whitman Br, Gloucester City, NJ
Delaware Water Gap	M	?	?				
	F	?	?				
Erie, Donjon Shipbuilding	M	1126-06438	B/79	Bl/Gr	5/28/2008	Nestling	I-90 Br., Cuyahoga R., Cleveland OH
	F	1687-01203	72/U	Bl/Gr	5/29/2007	Nestling	Statler Towers Bldg., Buffalo NY
Exelon Eddystone Power Sta.	M	present?	present?		≤ 2009		
	F	?	?		≤ 2009		
French Creek State Park	M	present	present	Bl/Gr	≤ 2009		
	F	none	none		≤ 2009		
Girard Point Bridge	M	present	none		2004		Philadelphia or Bristol PA? ^g
	F ^d	1807-37492	*K/*V	Bl/Rd	5/22/2003	Nestling	Ocean Gate, NJ
Glenfield, I-79 Bridge	M ^d	?	?		≤ 2010		
	F ^d	1687-30441	62/H	Bl/Rd	5/20/2010	Nestling	Bank One, Canton, OH
Greentree Water Tower	M ^{d,f}	none	none		2012		
	F ^{d,f}	1687-00522	74/AE	Bl/Gr	5/19/2011	Nestling	U. Pitt. Cathedral, Pittsburgh, PA

Table 5. cont.

Nest Site	Parent	USFWS Band ^a	Aux. Band ^{a,b}		Banding (hatch) date ^c	Age at Banding	Banding Site
			Number	Color			
Harrisburg, RCSOB	M ^d	2206-24690	*W/*V	Bl/Rd	5/19/2003	Nestling	Walt Whitman Bridge, Phila., PA
	F ^{d,f}	1687-10880	48/AE	Bl/Gr	5/21/2009	Nestling	PA-NJ Turnpike Bridge, Bristol, PA
Hospital of U. of PA (HUP)	M ^{d,f}	present	present	Bl/Gr	≤ 2011		
	F ^{d,f}	none	none		≤ 2011		
Lancaster, Downtown	M ^{d,f}	none	none		≤ 2011		
	F ^{d,f}	none	none		≤ 2011		
Luzerne County cliff	M	2206-80632	3/Z	Bl/Gr	6/15/2006	Nestling	Martin's Creek PPL plant, PA
	F ^d	?	present	Bl/Gr			
Manayunk, St. John Church	M ^d	2206-80670	45/AC	Bl/Gr	5/14/2009	Nestling	Girard Point Bridge, Philadelphia, PA
	F ^d	1687-02809	Y/44	Bl/Gr	5/30/2008	Nestling	Union Co. Courthouse, Elizabeth, NJ
Martin's Creek PPL plant	M ^d	none	none		≤ 2003		
	F ^d	1807-76470	23/Z	Bl/Gr	5/27/2009	Nestling	DuBois Lib., U. Mass., Amherst, MA
McElhattan Bridge	M	?	?		≤ 2006		
	F	0987-51296	8/W	Bl/Gr	5/19/2005	Nestling	BB&T Building, Richmond, VA; hacked 6/3 at Hawksbill Mt., Shenandoah NP, VA
McKees Rocks Bridge	M ^d	2206-35777	V/H	Bl/Gr	6/28/1999	Nestling	Terminal Tower, Cleveland, OH
	F	none	none		≤ 2006		
Monaca RR Bridge	M	none	none		≤ 2005		
	F	1687-10824	75/Y	Bl/Gr	5/24/2006	Nestling	RCSOB, Harrisburg, PA
Montour PPL plant	M	2206-80627	64/X	Bl/Gr	5/25/2006	Nestling	Campbell's Ledge, PA
	F	none	none		≤ 2005		
Muncy	M ^d	none	none		≤ 2011		
	F ^d	none	none		≤ 2011		
Norman Wood Bridge	M ^d	present	present	Bl/Gr	≤ 2011		
	F ^d	present	present	Bl/Gr	≤ 2011		
PA/NJ Turnpike Bridge	M ^d	2206-24692	*4/*R	Bl/Gr	5/19/2003	Nestling	Girard Point bridge, Philadelphia, PA
	F ^d	1807-63442	*S/2	Bl/Rd	5/30/2002	Nestling	Castleton-on-Hudson, NY
Philadelphia, City Hall	M ^d	2206-80665	40/AC	Bl/Gr	4/17/2009	Adult	Comcast Center, Philadelphia, PA
	F ^d	987-95673	60/Y	Bl/Gr	6/13/2006	Nestling	Tuckahoe River tower, NJ
Pittsburgh, downtown	M	2206-24689	*4/*E	Bl/Gr	6/11/2002	Nestling	Pitt. Cathedral, Pittsburgh, PA
	F	1687-01853	M/93	Bl/Gr	5/24/07	Nestling	Landmark Building, Akron, OH

Table 5. cont.

Nest Site	Parent	USFWS Band ^a	Aux. Band ^{a,b}		Banding (hatch) date ^c	Age at Banding	Banding Site
			Number	Color			
Pittsburgh, U. Pbg. Cathedral	M ^d	2206-80608	*5/*4	Bl/Gr	5/17/2005	Nestling	Gulf Tower, Pittsburgh, PA
	F ^d	1807-77607	5/*A	Bl/Gr	6/15/1999 ^e	Nestling	Firstar Bldg., Milwaukee, WI
Pittston: Campbell's Ledge	M ^d	2206-24673	*X/L	Bl/Rd	6/02/2000	Nestling	Wilkes-Barre, PA
	F ^d	1687-17684	V/21	Bl/Gr	6/7/2007	Nestling	West Rock cliff, Hamden, CT
Reading, downtown	M	2206-80617	3/T	Bl/Gr	5/26/2005	Nestling	RCSOB, Harrisburg, PA
	F	none	none		≤ 2005		
Scranton, downtown	M ^{d,f}	2206-79715	77/X	Bl/Gr	5/28/2008	Nestling	Pittston Bridge, Pittston, PA
	F ^{d,f}	none	none		≤ 2011		
Scudder Falls Bridge [NJ 2013] ^h	M ^d	2206-80618	3/U	Bl/Gr	5/31/2005	Nestling	Schuylkill Expy. br., Philadelphia, PA
	F	?	?				
Tarentum Bridge	M	?	?		≤ 2010		
	F ^d	1807-02774	69/Z	Bl/Gr	5/22/08	Nestling	Benjamin Harrison Bridge, Hopewell, VA; hacked in Shenandoah NP, VA
Temple Univ. Medical School	M ^{d,f}	?	?		≤ 2011		
	F ^{d,f}	?	?		≤ 2011		
Three Mile Island, Middletown	M	?	?				
	F	?	?				
Walt Whitman Bridge	M ^d	present			≤ 2011		
	F	?	?		≤ 2011		
Westinghouse Bridge	M ^d	present	present	Bl/Gr	≤ 2010		
	F ^d	1687-30246	68/H	Bl/Rd	5/22/2009	Nestling	Ironton-Russel Bridge, Ironton, OH
Wilkes-Barre, Market St. Br.	M ^d	none	none		2008		
	F ^{d,f}	none	none		≤ 2011		
Williamsport, Market St. Br.	M ^{d,f}	2206-79763	37/S	Bl/Gr	5/10/2010	Nestling	Montour PPL Plant, Montour Co., PA
	F ^{d,f}	none	none		≤ 2011		

^a Present = band present but band number unknown; none = no band present; ? = not known whether a band is present.

^b Characters marked with an "*" are in a horizontal position, top to left.

^c Full date indicates banding date. When only the year is shown and no band numbers are known, it is the hatch year, based on plumage when first observed. ≤ : on or before the year indicated.

^d Band information reconfirmed 2013.

^e Fledge date.

^f New nesting adult 2013.

^g Possibly from Walt Whitman bridge (Philadelphia, PA), Girard Point bridge (Philadelphia, PA) or PA/NJ Turnpike connector bridge (Bristol, PA).

Birds banded at those nests in 2004 (this bird's hatch year) received USFWS band but no auxiliary band.

^h The falcons moved their nest from the PA to the NJ side of the bridge in 2013. Data are not included in the PA totals.

Table 6. Peregrine falcon band encounters, 2013 (including delayed reports).

Banding Site	Banding Date	USFWS Band	Aux. Band		Sex	Encounter Date	Encounter Site	Status
			Number	Color				
PA/NJ Turnpike Bridge, Bristol, PA	5/12/2004	2206-80603	none	none	M	9/1/2013 ^a	Bethesda, MD	Injured, dead
PA/NJ Turnpike bridge, Bristol, PA	5/21/2008	1687-10854	A/50	Bl/Gr	F	6/13/2013	Clark's Ferry Bridge, PA	Nesting successfully
Girard Point Bridge, Philadelphia PA	5/14/2009	2206-80670	45/AC	Bl/Gr	M	4/9/2013	Manayunk, Philadelphia, PA	Nesting successfully
Bldg. nest, Syracuse NY	5/26/2009	1687-01348	83/Z	Bl/Gr	F	3/15/2013	Dickson City, PA	Injured, euthanized
RCSOB, Harrisburg PA	5/27/2009	1687-10881	49/AE	Bl/Gr	F	4/30/2013 ^b	Hilliard Road Bridge, Cleveland, OH	Alive, free (sight record)
Walt Whitman Bridge, NJ	May 2010	1687-02845	08/AE	Bl/Gr	F	5/20/2013	Commodore Barry Bridge, Chester, PA	Nesting successfully
Montour PPL plant, Montour County, PA	5/10/2010	2206-79763	37/S	Bl/Gr	M	4/28/2013	Market St. Bridge, Williamsport, PA	Nesting successfully
James River Bridge, VA; Hacked in Shenandoah NP, VA	5/14/2010	1807-65014	09/AD	Bl/Gr	F	5/30/2013	Rte. 462 bridge, Columbia, PA	Nesting successfully
Bank One, Canton, OH	5/20/2010	1687-30441	62/H	Bl/Rd	F	(1)1/1/2013 (2)5/21/2013	(1) Pittsburgh Int'l Airport, Pgh., PA (2) Glenfield I-79 Bridge, PA	(1) Alive, free (sight record) (2) Nesting successfully
RCSOB, Harrisburg, PA	5/17/2011	2206-79747	28/AP	Bl/Gr	M	6/19/2013	Conowingo Dam, Conowingo, MD Philadelphia	Nesting successfully
Tacony-Palmyra Bridge, Palmyra, NJ	5/19/2011	1687-02858	00/AN	Bl/Gr	F	7/15/2011	International Airport, PA	Injured, in captivity
U. Pitt. Cathedral, Pittsburgh, PA	5/19/2011	1687-00522	74/AE	Bl/Gr	F	8/6/2013	Greentree Water Tower, Greentree, PA	Nesting unsuccessfully
McElhattan Bridge, McElhattan PA; fostered into nest in Reading, PA	5/25/2011	1687-00589	14/AR	Bl/Gr	F	6/29/2011	Reading, PA vicinity	Found dead on highway
8 th St. Bridge, Allentown, PA	5/26/2011	1687-00564	41/AR	Bl/Gr	F	8/30/2011	JFK Airport, Queens, NY	Found dead: struck by airplane

Table 6. cont.

Banding Site	Banding Date	USFWS Band	Aux. Band		Sex	Encounter Date	Encounter Site	Status
			Number	Color				
Walt Whitman Bridge, PA	5/31/2011	1687-00563	43/AR	Bl/Gr	F	6/19/2013	Conowingo Dam, Conowingo, MD	Nesting successfully
Reading PA, downtown	5/25/2012	1687-00587	66/AR	Bl/Gr	F	1/18/2013 ^c	Stinesville, IN	Found dead
Martin's Creek PPL Plant, Martin's Creek PA	6/14/2012	1947-07014	79/AR	Bl/Gr	F	11/5/2012	Fort Myers, FL	Injured (struck structure); alive
RCSOB, Harrisburg, PA	5/21/2013	1687-00548	31/AR	Bl/Gr	F	11/12/2013	Virginia	Dead: hit by airplane
Glenfield I-79 Bridge, PA	5/21/2013	1687-00544	27/AR	Bl/Gr	F	8/7/2013	Monongahela, PA	Found dead
Reading PA, downtown	5/31/2013	1947-07028	70/AR	Bl/Gr	F	8/9/2013	Lyndhurst, NJ	Alive, free (sight record)
Reading PA, downtown	5/31/2013	1947-07029	71/AR	Bl/Gr	F	8/1/2013	Eastham, MA	Injured, in captivity

^a Third band encounter. First encounter was 9/23/2004, Assateague Island, VA, captured and released at banding station; second was 6/7/2008, American Legion Bridge, Cabin John, VA, nesting successfully.

^b Second band encounter. First encounter was 3/6/2011, Rocky River Metropark, Brookpark, OH, Nesting unsuccessfully.

^c Second band encounter. First encounter was 9/13/2012, Hawk Cliff, Port Stanley, Ontario, Canada, captured and released at banding station.

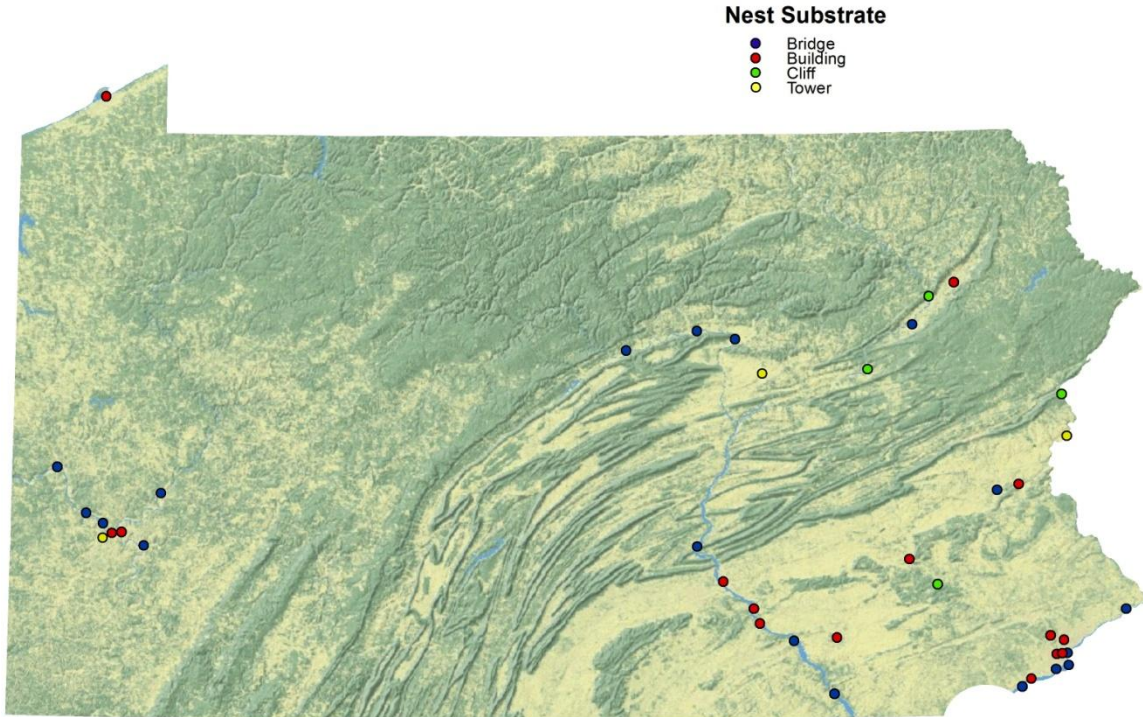


Figure 1. Locations of peregrine falcon nests in Pennsylvania, 2013.

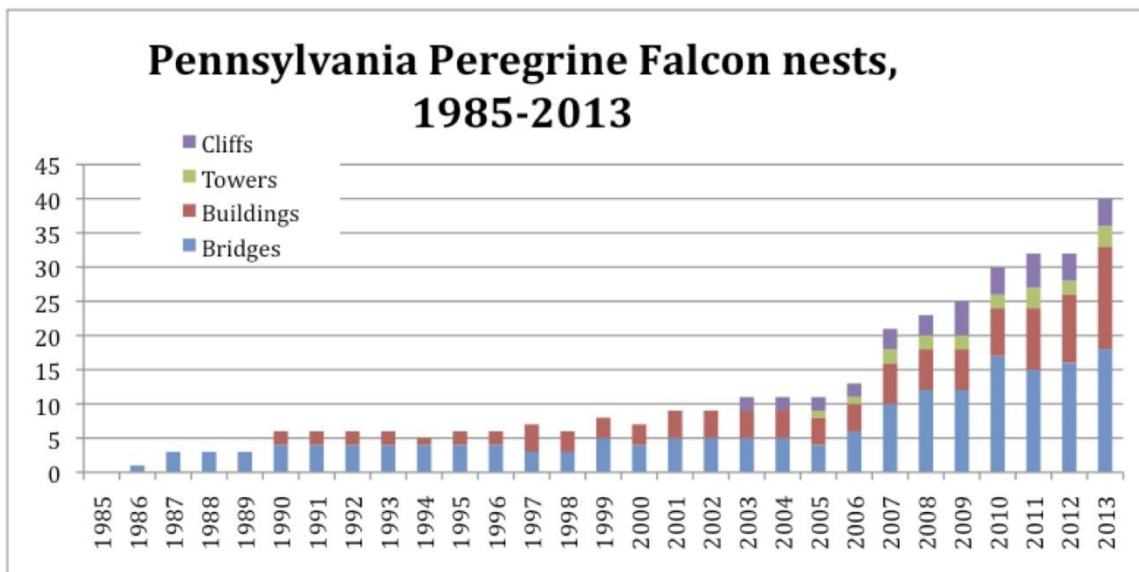


Figure 2. Number of occupied Peregrine Falcon nests in Pennsylvania, 1985-2013.