



ASSACHUSETTS WILDLIFE No. 4

ol. 72 **FEATURES**

OUR JOURNEY WITH PEREGRINE FALCONS

— Ursula and David Goodine

The allure of peregrine falcons led this couple on a voluntary, decades-long journey to monitor and report valuable data on pair bonding, nesting, and fledging to MassWildlife, and to coordinate with nest site hosts.

THE FINAL PIECE OF THE WATATIC PUZZLE 20

— Anne Gagnon

The recent acquisition by the Department of Fish and Game and MassWildlife of 186 acres that includes the South Peak of Mount Watatic was made possible by a cooperative effort with their partners and creates 3,650 acres of preserved land that includes the Ashby WMA.

MANAGING DROUGHT

— Adam Kautza

Although Massachusetts would not be considered a dry state, it does get its share of periodic droughts, which may be increasing due to climate change. Fortunately, the state's Drought Management Task Force works to minimize human impacts on the landscape and aquatic ecosystems and the fish and wildlife resources they support.

WHEN WATER RECEDES: A PHOTO ESSAY 26

— Troy Gipps and Dean Cerrati Two photographers focused their cameras on a rapidly shrinking beaver pond during the worst of the drought. Their images capture the struggle of water-dependent species to compete, adapt, and survive when resources are scarce.

Editorial: A Changing of the Guard Faces of Conservation

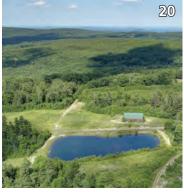
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On the Cover: An inquisitive red fox reacts to the snap of a camera's shutter. Red and gray fox, two distinct species, are both common in Massachusetts and remain active throughout the winter. Photo © Josh Gahagan

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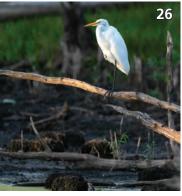




Photo © Terry Holland



OUR JOURNEY WITH PEREGRINE FALCONS



BY URSULA AND DAVID GOODINE

rash is an odd name for a peregrine falcon (Falco peregrinus). After all, the species is known for masterful aerobatics that allow it to attain a controlled dive of over 240 miles per hour—the fastest speed of any animal on Earth. It strikes prey in midair like a sledgehammer. But Crash was the runt of the brood. As he and his siblings began to stretch their wings for the first time on a nest box atop the Brady Sullivan Tower in Manchester, New Hampshire, it was clear that his path to a life in flight

would be a bit more challenging. With birding friends Barbara and Michael, we watched intently as Crash mastered takeoff but botched the technique of landing. After a while, he did get the hang of it. The brood was banded by New Hampshire Audubon before fledging and these numbered and lettered colored-metal bands would identify the birds for the rest of their lives. Crash wore Black 6/Green 4.

That was in 2001, and although our interest in birding began many years before, our love of peregrines was solidified by our time observing Crash, his nestmates, and the

adult peregrines who raised them, and has led to nearly two decades of serving as volunteers for MassWildlife's Natural Heritage and Endangered Species Program (NHESP). Once listed as Endangered, peregrine falcons now have Special Concern status under the Massachusetts Endangered Species Act, a direct result of our collective conservation efforts.

Our monitoring has involved locating and observing pairs as they exhibit bonding behavior, which leads to mating, nesting, and raising their eyases, or unfledged chicks. MassWildlife is keenly interested in observers homing in on peregrine hatch dates because banding occurs 21–28 days after hatching. At that age, a chick is both docile and developed enough to determine its sex, which is important because females are one-third larger than males, so their legs require a larger-sized band. Black and green metal bands are attached to the left leg, and a federal silver band goes on the right leg. The alphanumerics on each band

are documented in both MassWildlife and United States Geological Survey databases and are used to track each individual peregrine. Banded-bird sightings can be reported to these agencies (bandreports@usgs. gov) and, in return, the observer receives an accurate history of the bird's birthplace, year hatched, sex, bander, and other pertinent information. The bander is also alerted to the sighting.

In addition to observing peregrine nesting activities, we have also been involved with contacting potential hosts about the possibility of permitting a nest

box or gravel tray to be installed on their premises. This occurs when we discover a new pair that has been frequenting a particular building or bridge and needs a safe home to raise its brood. Our explanation of the importance of peregrine conservation, emphasizing the added benefit of pigeon-culling, often inspires the owner to cooperate. We acquire the owner's contact information and pass it on to MassWildlife staff, which has been a big help to the agency as its staff has many other duties.



The authors at a peregrine falcon nesting

The Allure of Peregrines

An inspirational figure in our peregrine journey was a hawk-watching friend, Joe Hogan, who, unbeknownst to us, discovered Crash in 2003, as the falcon flew over Merrimack Street in Lawrence. Crash was not alone, but in the company of an unbanded female, and Joe watched as they performed an aerial flight that would forever bond them as a pair. Joe had reported his sighting, and later, the arrival of three chicks at their Ideal Box Company building nest site, to Tom French, MassWildlife's former Assistant Director, NHESP, who subsequently banded them. Tom was also able to capture the female as she flew at him to protect her chicks

and tagged her as well. Black V/Green 5 were her bands. We were unaware of Joe's link to the peregrines, and, through a birding blog, had learned that there were peregrines in Lawrence at an undisclosed location. Our curiosity led to finding the nest, only to have Joe angrily confront us about our intentions. As a fierce protector of these nesting peregrines, he swore us to secrecy. We were thrilled to see that the male was indeed Crash, the Manchester runt who had survived in the wild and was raising a family of his own with his mate, who we named Victoria.

The pair was again productive in 2004, hatching three chicks, which Tom also banded. We were puzzled that Joe was not around to witness that event and wondered where he could be. Our phone call was forwarded to his daughter, and we were shocked and deeply saddened to learn that Joe had passed away in April of that year. David and I resolved to follow this peregrine family in his stead and honor his commitment by calling these falcons "Hogan's Heroes."

We were very disappointed in 2005 when the adults failed to return to their nest site. Where were they? Despite many searches that year, we came up empty.

But our luck returned the following year. We found Crash and Victoria nesting on the fourth floor of an old mill building on Canal Street in Lawrence. They had accessed the site through a broken window. They were productive there each spring until 2010, when they moved to a box erected by MassWildlife in the Ayer Mill Clock Tower, also in Lawrence. Each year, MassWildlife has banded their chicks.

It was during our monitoring of Crash and Victoria in 2007 that we took a phone call from Tom French that would ultimately lead to one of our greatest successes as volunteers: the strategy of rescuing eyases in crisis and fostering them with other peregrine parents. Tom asked if

we would look for a pair of peregrines in Lowell whose chicks he had banded at a rehabbed building nest site in 2005 but that had gone missing in 2006. After many fruitless visits to Lowell, we were rewarded when David spotted a male peregrine flying over us and then landing on the antenna of a dormitory building at UMass Lowell. He was soon joined by a female: We had found the pair. The male, Victor (Black 6/Red V), was banded in Fall River in 2000, and the female, Eve (Black E/Green 5), pictured on page 8, was banded at the

Custom House in Boston in 2002. In April, we joined Pat Huckery, MassWildlife's Northeast Wildlife District Manager, and the UMass Lowell facilities manager on the dormitory roof, to find the female huddled in a corner incubating eggs. Due to a very snowy and cold spring the eggs never hatched, but arrangements were made with the university to install a nest box the following February. We were elated that spring when Victor and Eve took up residence in their new home and began incubating eggs.

However, there was trouble back in Lawrence. Crash and Victoria had one very healthy chick, but the other was visibly scrawny. Tom said the runt's chances of survival were slim because



its sibling was gobbling up most of the food. Another disappointment awaited us in Lowell when Tom opened Victor and Eve's dormitory nest box to find four unhatched eggs. He surmised that the wrong gravel had been placed in the box and had perforated the eggs. Again Victor and Eve would have no chicks to raise. This disturbing turn of events prompted me to suggest that the runt in the Lawrence nest be rescued and placed in the Lowell nest box, to be nurtured by the chick-less parents there. And so, it was done. In short order, one of the university supervisors called to say that it was like a birthday party when the adults discovered a live and hungry chick. He reported that feathers were flying everywhere as the peregrines plucked prey to feed their new chick. Weeks later, both male siblings fledged from their respective nests, the runt only three days after his brother, proof that his foster parents had more than saved him from a certain death.

We were thrilled to have made such a difference because every peregrine chick counts when it comes to restoration. Statistically, when a peregrine pair produces four hatchlings, only one will be

alive at the end of the first year. Learning the skills of flight and hunting takes a toll on the newest members of their population. That's why it is so important to continue observing the young as they fledge. There have even been times when we have had to rescue a fledgling and transport it to the Tufts Wildlife Clinic (TWC) in North Grafton for treatment.

In 2009, a webcam was installed in the Lowell box, permitting the public to observe this pair, and providing us with accurate laying and hatching dates so



Tom French, MassWildlife's former Assistant Director, NHESP, holds "Eve" (Black E/Green 5) at UMass Lowell in 2017. She was banded 15 years earlier at the Custom House in Boston.

we could report to Tom when the chicks could be banded. This innovation made our monitoring much easier. Two years later, the New Balance Company provided a public cam for the Lawrence nest as well, so the activities of both families could be seen and recorded.

The year 2009 was also remarkable for a random peregrine sighting on the Forrester Building in Cambridge that revealed a nesting pair that produced three chicks, though inaccessibility prevented banding. The couple then moved in 2010 to the Whitehead Institute in Cambridge,

where we arranged permission with the administration to allow MassWildlife to band annually. This was another pair of peregrines whose personalities would captivate our minds and hearts, and we would follow them for years. The adult male, Whitey (Black 2/Green 1), was tagged on Rattlesnake Mountain in Rumney, New Hampshire, in 2005. His mate, Hedy (Black 80/Green AD), was banded by MassWildlife in 2013. Disappointingly, the building administrator evicted them in spring of 2014 by screening off their nesting place, so, that year, they were not to be found. Luckily, observer reports led us to the Sullivan Courthouse in Cambridge in 2015, where we identified their bands. Whitey and Hedy were at it again, laying eggs on a cement floor where they didn't hatch. The next spring, we contacted the management company, which allowed Tom to make an inspection of the balcony, where he found Hedy incubating two eggs on the cement floor. Startled, she flew off, so he quickly placed a gravel tray beneath them, and made a hasty retreat. Hedy immediately returned to incubate her eggs. Only one chick hatched that year, and Tom banded it weeks later. That fall, a nest box was installed, and the pair successfully produced young there until 2018, when Whitey was challenged by an unbanded male we called Lopez who wounded him severely, necessitating a long recuperation at TWC. With no choice, Hedy accepted this interloper, because she was already incubating Whitey's fertilized eggs. Two chicks hatched and were banded, along with three foster chicks that had been transplanted from the Westover Air Force Base. Fortunately, Lopez was an excellent provider and helped raise the chicks as his own. The following two years were productive, but unfortunately the courthouse building was sold and demolition began, necessitating nest box removal: evicted again. Not to be deterred, Hedy again laid her eggs on the cement floor in the spring of 2021, another doomed attempt.

Meanwhile, we knew Hedy would not be dissuaded and were looking for a nearby alternative site for her, so I contacted the Boston Museum of Science



"Hedy" (Black 80/Green AD) perches on the Whitehead Institute in Cambridge. Tragically, the 15-year-old matriarch disappeared in 2022, but the 29 chicks she nurtured during her lifetime contributed significantly to the recovery of her species.

(MOS) administration in 2020 about the possibility of placing a nest box on its roof. Paul Ippolito, Vice President of Facilities—who we had previously known as a fellow birder—answered with a resounding yes. MassWildlife Endangered Species Review Biologist Dave Paulson then visited Paul at the MOS, where a roof site was chosen and nest box plans were provided. To our delight, Paul announced that a public webcam would also be installed. Unfortunately, Hedy and Lopez had continued their unsuccessful nesting efforts at the courthouse during 2021, ignoring the nest box at the MOS. Widespread disappointment then gave way to joy the following year when Paul informed us on April Fools' Day that he saw the pair on video investigating the box, with Hedy spending the night inside. Everyone was jubilant for this couple, which had finally found a safe nest site to raise their young, hosted by a museum that wanted them. By April 8, Hedy was faithfully incubating four eggs, being watched by countless admiring viewers on the webcam. Hatching was estimated for May 12. But, on the afternoon of April 25, tragedy struck after Lopez relieved Hedy on the nest and she did not return. After heroic attempts to incubate their eggs, Lopez abandoned them the following day, apparently realizing that Hedy was gone. Many questions about her disappearance went unanswered, but we knew Hedy would never leave her eggs, and surmised that she died either by accident or from attack. Days later, we found Lopez alone on the courthouse, below where their nest box used to be. He was looking around and clearly calling for Hedy, to no avail. There are no words to describe the sense of loss we felt for this 15-year-old matriarch, who nurtured 29

chicks during her lifetime. Hopefully, Lopez will find another mate and use the museum's nest box next spring.

Backtracking to our Lawrence adventure, Crash and Victoria raised four chicks in their new nest box on the Ayer Mill Clock Tower in 2010, which was notable for several reasons. One female chick, Ayer (Black 38/ Green AE), became internet-famous on April 26, 2011, when a Vermont college professor filmed her attacking a white-faced ibis on Plum Island in Newburyport. His ornithological class witnessed the event and posted the video to YouTube. A search for "peregrine falcon and ibis" reveals Ayer drowning the lbis, but this clip is not for the faint of heart, so beware.

Ayer's sibling, Lance (Black 14/ Green X), would be seen and photographed many times at Plum Island and Sandy Point State Reservation in 2010 and

2011, after which he went undetected until 2014, when he appeared briefly at the UMass Lowell nest. After an apparent altercation with another male, he was reported injured in a Lowell junkyard on July 7. We were able to rescue him, and he was transported to TWC with a wing laceration. Lance was released and soon flew back to the Lowell nest, where he sired four chicks in 2015. Unfortunately, he was injured again the following year during another male's challenge, was found grounded and emaciated at Governor's Academy in Newbury, and was taken to TWC, where he did not survive.



It was "Crash" (Black 6/Green 4), shown above at age 17, that captivated Ursula and David Goodine in 2001, when he hatched at the Brady Sullivan Tower in Manchester, NH—an event that propelled them on a decades-long journey observing peregrine falcon nesting activity and working with potential nest site hosts.

Lowell's Victor and Eve were routinely productive, and one female chick named Foxy (Black 63/Green AE) from the 2010 nest was immortalized by artist Paul Donohue, when he used David's photo of the juvenile Foxy as a model for one of his paintings. She became the dominant female in Providence, Rhode Island, from 2014 to 2018, after which she disappeared.

Sadly, our bond with the beloved Lawrence couple would end when 14-yearold matriarch Victoria was apparently challenged and replaced in 2015 and 17-year-old patriarch Crash succumbed to a territorial battle in 2018. Together for 12 years, they had raised 31 chicks, and Crash would go on to sire a total of 42 peregrines: truly remarkable. We shall always remember them with great affection and are grateful to have been part of their world.

Tobin Bridge

One definite challenge for us was the Tobin Bridge: Imagine trying to find peregrines nesting on that expansive behemoth with its many hiding places. We were able to see a pair fly up into the structure from many angles, but where was the nest? In 2011, after three years of



intermittent searching from both the Chelsea and Charlestown sides. I spotted the female plucking food on an abutment, then flying up into the nest. Hallelujah! Through our scope, we could see her feeding four chicks on a steel platform that was loaded with pigeon poop, which provided insulation. Tom was glad to hear the news. but it was too late to band the chicks. Fortunately, we had contacted the folks at the nearby Chelsea Yacht Club, providing them with peregrine photos and information in case they found a fledgling on their wharf. Four days later, the commodore called to say a youngster had crashed onto their deck. The Chelsea Animal Control Officer managed to capture him and was in contact with Tom. Permission to give us the fledgling was granted, and we met Tom in a parking lot on Route 9 so he could band the bird. Since Hogan's Heroes in Lawrence had only one chick

that year, the plan was for us to transfer our rescue there to be fostered. A New Balance company security officer took us to the roof the next day, and I released Toby (Black 91/Green AB), who was accepted by Crash and Victoria. Three days afterwards, the commodore notified us that a second fledgling had landed on a moored boat and was captured. We kept her until the next day, and Tom met us at the Tobin Bridge, where she was banded. Chelsea (Black 30/Green AE) was a feisty female who screamed as Tom released her on a nearby roof. Happily, five months



MassWildlife's former Senior Endangered Species Review Biologist and DOT liaison, Dave Paulson (center), with DOT staff at the Tobin Bridge in 2021, holding one of the two chicks they were able to band that day out of four found.

later (on October 6), Tom was notified that Chelsea was trapped then released in Assateague, Maryland, by researchers for the Earthspan Peregrine Falcon Migration Study. Tom said that Chelsea's location, after a flight of 368 miles, was the farthest south that one of his banded birds had been identified.

In 2012, arrangements were made for a "snooper truck" equipped with long arm and bucket to deliver Tom to the Tobin nest, which was located under the apex of the bridge and beneath the roadway. He retrieved three chicks, which were

then transported to Norman Smith (of Mass Audubon) and Dave Paulson, who were waiting to band them on the bridge. While adult male Maurice (Black 91/Green X), banded by Tom at the Custom House Tower in 2008, was not disturbed, his mate, unbanded Charlene, was fiercely protecting her chicks. To her surprise, she was quickly grabbed, stuffed into a bag, and received the bands Black 90/ Green AD for her protests. When Tom returned the chicks to their nest, one agitated female was flapping her wings aggressively and fell into the Mystic River. While MassWildlife's biologists take every precaution to protect the safety of the birds, there is always some risk involved. Luckily, an Environmental Police Officer was stationed in a boat below and he managed to capture Esther (Black 89/Green AD) with a net. She was unharmed and doing the breaststroke. Tom placed the Esther Williams wannabe back in the nest.

Unfortunately for the Tobin pair, a multi-year painting project was planned in 2013 and sandblasting required the installation of screening, which prevented them from accessing their nest. Charlene did lay eggs that year on an exposed I-beam, but this attempt failed. A nest box was provided on a cement abutment at the farther end of the bridge but was not used because the couple moved to the Everett Exelon Mystic Generating Station in 2014, raising chicks that were inaccessible for banding because of asbestos contamination. We observed them there annually until 2018, when they disappeared from Exelon.

Meanwhile, two other adults took up residence in the uninhabited Tobin box in 2018. Domino, the male, was unbanded, but the female, Betty Ann (Black 51/Green BA), was hatched in 2013 at the Riverside Church in Manhattan, New York. Interestingly, she was the resident female at an inactive quarry nest (described below) in 2015, staying there for only a year and then leaving after her two chicks died from exposure during a horrendous rainstorm. The Tobin newlyweds continued nesting there, with their eyases being banded annually by MassWildlife



"Esther" (named after Esther Williams) with Environmental Police Officer Jack Chaplin after he recovered the falcon in the Mystic River after it fell from its nest.

up to 2022. Again, major bridgework to the abutments necessitated moving this year's brood of four to be fostered by the UMass Lowell pair, which only had one chick. Initial efforts to transport them to another box on a nearby roof were thwarted by the presence of multiple nesting gulls, who would have loved to feast on those tiny morsels. Our hearts sank as they were removed from the nest under the vociferous protests of their parents. It was truly one of the most depressing days for us. The good news was that the four were successfully fostered in Lowell.

Quarry Nest

In 2011, a friend called to say he and his buddy saw a peregrine flying overhead and followed the bird to a local quarry. The male was joined by a female (both unbanded), who was too young to breed that year. One chick was tagged the fol-

lowing year, when Tom rappelled down to the eyrie (cliff nest). In the succeeding years, monitoring this location would be a roller coaster ride. with three resident males and four females jockeying for dominance over a span of 11 years. Various nest sites proved problematic as a favored place got wet during downpours and eggs failed to hatch. When breeding was successful, rappelling was the only way to band the chicks. After Tom, additional MassWildlife staff were able to accomplish the task in 2014, 2018, 2020, and 2021. However, the quarry's increasing instability necessitated abandoning this tactic. During this timeframe, 17 chicks hatched, 13 were banded, 2 were not, and 2 died of exposure at 10 days old. Peregrine falcons continue to use the quarry for nesting because it simulates natural cliff-face habitat. We also monitored a productive pair at a working quarry in Saugus, 2007–2011, but due to liability issues the owners eventually denied us access to the property, which was understandable.

Years Flew By

As the years flew by, we were involved annually with many other nests at Boston University, the Massachusetts Water Resource Authority Plant in Winthrop, bridges in Chelsea and Newburyport, and sites in Watertown and Peabody. Along the way, we have been privileged to meet more peregrine enthusiasts who, as kindred spirits, have joined us in this endeavor. A few of them are now the primary monitors in Lowell, Winthrop, Woburn, and Newburyport. Inspired by Joe Hogan decades ago, we have tried to "pay it forward" by motivating others to take an interest in these birds of prey, and to help in whatever way they can. One cannot underestimate the power of peregrine falcons to mesmerize those who follow them. While we realize they are wild creatures and not pets and give them nicknames for expediency, our attachment to the species and individual peregrines feels mystical. Watching them



The authors glass the cliff walls of an inactive quarry for signs of peregrine falcons and nesting activity. It is one of 15 nest sites the couple has routinely monitored while serving as volunteers with MassWildlife over the past 19 years.

perform a graceful aerial tango that solidifies their relationship is truly amazing. The male brings gifts of food to win the female's favor, to demonstrate that he will be a good provider. At times, they bow to each other and vocalize at the nesting site, acknowledging a commitment that may continue for years. Do humans realize that we are not the only animals in nature who observe such bonding customs? These birds are fierce defenders of their realm and young, fighting off any invaders. Having witnessed these attacks, we often cringe at the sight, hoping there are no injuries incurred as a result. Yet the female feeds minute bits of food to her tiny chicks with such tenderness, it is apparent to us that maternal instincts extend far beyond mankind. Observing



An unbanded peregrine falcon protects hereggs at a nest box site on a Massachusetts Water Resources Authority property. The pea gravel substrate simulates natural cliff nesting conditions, providing drainage, insulation, and cupping the eggs to prevent rolling and perforation.

these activities has been an unexpected benefit and gift that is meaningful in our work.

For us, it has always been about the peregrines and their survival, and playing an active role in helping them beat the odds has been the driving force behind what we do as volunteers. They have made outstanding progress, and more peregrines are fulfilling what Mother Nature requires of them: finding and establishing a territory, securing a mate, and procreating their species. They do everything possible to protect their young and each other, sometimes to the death. They would never have it any other way.

An adult peregrine falcon drops a prey item to train its fledgling to hunt.

The Future

As mentioned earlier, our friends at MassWildlife were able to downgrade the conservation status of the peregrine falcon from Endangered to Threatened in 2017 and to Special Concern in 2020, a testament to the substantial conservation efforts of the staff. Peregrine numbers have grown to nearly 50 known pairs in the Commonwealth, and over 979 wild-hatched chicks have fledged from their nests since restoration began. And these efforts have been effective not only in the Commonwealth, but across the nation.

Currently, we are developing a relationship with a cooperative church pastor in north central Massachusetts, hoping he will accommodate a pair of peregrines that intends to make that church home. W (Black 66/Green BS) was hatched from the 2015 Lowell nest and Maizey (Black 50/Green BD) was the only chick hatched at a quarry nest in 2021. Hopefully this alliance will be successful and there will be two fruitful adults and their chicks occupying the steeple next spring.

After spending thousands of hours observing peregrines and witnessing over 200 bandings, we have been blessed with experiencing all the extraordinary facets of their personalities. As octogenarians, we will continue this rewarding journey with our beloved peregrine falcons so long as we can see, walk, drive the car to their many nesting places, and find our way back home. Wish us luck!

About the Authors

As volunteer monitors for MassWildlife, Ursula and David Goodine are peregrine falcon advocates who strive to ensure the species' safety and prosperity and encourage others to do the same. They are members of Eastern Mass Hawk Watch, a club that observes spring and fall raptor migrations, where Ursula served on the board of directors and is a past president. Both retired, Ursula was an operating room nurse and David was an equities sales representative and music editor; they live in Medford.

MASSACHUSETTS DIVISION OF FISHERIES & WILDLIFE

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Historically, peregrine falcon (*Falco peregrinus*) nesting sites—called eyries—within Massachusetts were located on rocky cliffs. Although extirpated as a breeding bird in the state by the late-1950s, restoration efforts in Massachusetts began in 1972. As a result, peregrines have returned as a nesting bird with approximately 50 nesting pairs in Massachusetts. Peregrines now nest at many of the 14 historical cliff nesting sites, the cliffs of quarries, and, most frequently, on tall man-made structures like buildings and bridges. In recent years their status within Massachusetts has improved dramatically, from Endangered to Special Concern. Photo © Gregg Ohanian



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