American Kestrel Comeback in the Northeast?

Northeast region includes New England & Mid-Atlantic states: VA, VT, RI, PA, NY, NH, NJ, MA, MD, ME, DE, CT

Female kestrel keeping the newborn kids warm on a cold day
Photo by Steve Eisenhauer (all other report photos by Peter Green)

2018 Summary Report (January 17, 2019)

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On October 12, 2018, a record 5,600 American Kestrels were counted migrating over the Cape May Hawk Watch Station. In 2018, 22 kestrel nest box organizations, individuals and wildlife rehab centers in the Northeast reported 1,868 kestrel nestlings or fledglings banded, with a high count of 270 by Mark Manske and associates in upstate New York. New York City's breeding kestrels were estimated as high as 150 pairs in 2011 (Elbin 2012): fluctuating annually but documented as a consistent presence since at least the late 1800s (Buckley et al. 2018). In Providence, Rhode Island, Peter Green photographed a kestrel pair that double-brooded[1] in a junkyard building vent, and another pair bred nearby in 2018 in a rotted eave of an abandoned home (personal communication, December, 2018). Tom Sayers in Connecticut reports on his state's kestrel nest box program: "Our collective numbers over the last three years have significantly increased" (personal communication, November, 2018). In 2015, kestrels were down-listed from threatened to special concern in Connecticut, primarily due to the success of the state's nest box programs. Are we seeing an overall positive trend, or is the steady 60-year kestrel decline continuing in the northeastern 11-state area? How comfortable are we with Pete Dunne's assertion in his 2016 book, *Birds of Prey*, that the American Kestrel's "newfound ability to expand into urban areas" is one factor that will allow kestrels to become a more familiar species to people?

The short answers are:

- Explanations of the Cape May record American Kestrel count focus on unusual weather conditions that caused the birds to mass on the New Jersey side of Delaware Bay until favorable winds and weather facilitated movement south.
- Nestling and fledgling banding counts are a good local measure of success, but more extensive and inclusive counts are needed to draw conclusions about the region-wide trend.
- New York City's somewhat stable kestrel breeding population is an anomaly. No other significant urban kestrel populations are known in America's urban cities. The New York City kestrel count is generally considered a rough estimate or an educated guess.
- Kestrel numbers in the northeastern states are probably still trending downward (Schulwitz et al 2017). We don't know for sure. Some local area populations are definitely increasing. But are they drawing from other areas?

As usual, the devil (sometimes an angel) is in the details. A closer look:

<u>The record one-day 2018 Cape May Hawk Watch Kestrel count</u>

Cape May County-based ornithologist and author Clay Sutton explains (personal communication, December, 2018):

We were fortunate to be at Cape May Point for the amazing Kestrel flight on October 12. It certainly was the best flight seen in many years. The number is a very good count, despite doubt expressed by some people. While buteos may mill about on north winds and possibly be double-counted, on a strong northwest wind like we had on Oct. 12, Kestrels (and Sharp-shins) move through rapidly, with no loitering or doubling back. That flight line takes them up the Delaware Bay, and they eventually cross where the Bay is narrower and there is less peril.

[1] In reviewing this report, Jill Morrow in Virginia points out her concern with the use, and possible misuse, of the term "double-brood": *Unless the adults were banded or color marked and you can prove this was the same pair, you should revise to say "double occupancy" which could mean 2 different pairs raised 2 broods in the same location/same season. We have many more double occupancies than true double brooding (implies the same pair bred twice).* Since Jill and her husband, Lance, have extensive experience banding both thousands of nestlings and adults in their nest boxes, this point is important to acknowledge. However, the more commonly-used (or misused) term is in this report. If someone has reported one or more double-broods, this term appears as reported.

I think the pre-flight staging occurred on the Atlantic Coast side of NJ, rather than along the Delaware Bay; the strong winds probably brought birds from New York State and even New England over the course of the day. This flight occurred as the result of a "back-up", following many days of both inclement as well as nice weather with winds that were unsuitable for migration. With the cold front and the howling northwest winds, it was as if someone opened the floodgates for Kestrels to move. It was magnificent.

The count was a modern-day record (figuring back to 1976), but we must remember that the old record for Kestrels was the 24,875 counted at Cape May Point on October 16, 1970, in a season-long count conducted by the New Jersey State Museum. The total count that year was 30,268, so most indeed came through on that single day. Same deal: the flight was a result of a huge back-up created by rainy, cloudy weather over the Northeast for a long period before the cold-front finally broke through on Oct. 16. Note that the total Cape May Bird Observatory count for Kestrel fall migration in 2018 was 10,533: about a third of 1970.

Kestrel fledgling in Providence, Rhode Island in 2016

Kestrel young banded as a measure of success

Kestrel nestlings fledge about 30 days after hatching, with banding preferably done between 16 and 22 days: old enough to figure they'll fledge and to determine sex, but before premature fledging is a concern. Banded birds are easily documented, whereas "birds fledged" – used in the past and occasionally today to measure nest box program success – takes more effort to document and define. Does it mean being able to fly after a few hours, a few days, a week? Most established kestrel nest box programs band nestlings. Many also band adult females and occasionally males. The more research-based a program is the more information it seeks from banding and from tracking devices like geo-locators. The more propagation-based programs (and individuals who might only have one or two kestrel nest boxes) may not band even the nestlings, but focus on producing more kestrels each year: just as admirable and may occasionally be even more productive and is certainly easier to replicate. Licensed banders are not available in many areas, and nest boxes/cavities can be difficult or impossible to safely access.

The Virginia Society of Ornithology (VSO) used "nest boxes installed" as its measure of success, and completed a funded effort in 2018 to install 450 boxes (VSO's American Kestrel Nest Box Project, 2019). Dan Bieker reports that boxes are no longer being installed: VSO is now concentrating on educating landowners on habitat protection and enhancement (personal communication, December, 2018). No banding of young or adults is currently occurring. VSO Associate Patti Reum monitors, with a pole-mounted camera, 60 boxes in one county and a reported 70% occupancy rate. She believes she has found someone who can band in 2019 (personal communication, December, 2018). Criticism from kestrel enthusiasts abounds for efforts where boxes are installed with limited monitoring and maintenance. But, particularly when coupled with an education program, they can create immediate results and can motivate individuals and organizations to learn more about kestrels, and perhaps to install and maintain nest boxes on their own.

The "Over 200 Kestrel Nestlings Banded Club" for the Northeast is composed of a group that blends research with productivity. The Virginia Shenandoah Valley team of Lance and Jill Morrow sets a high bar. Their excellent research is available online on the *ResearchGate* website. The article utilizing drone-generated photographs of kestrel habitat and nest box placement (Morrow and Morrow 2017) is particularly interesting. Their productive nest box mounting system – on the northeast side of utility poles to keep boxes cooler due to pole shading – counters most south/southeast orientation recommendations (personal communication, December, 2018). Mark Manske in New York is similarly willing to share: his online video is captivating (Manske 2013). Bill Pitts of NJDEP in New Jersey often shares his extensive kestrel knowledge: he visited Delaware in 2018 to instruct staff there on how to band adults (personal communication, December, 2018). The Connecticut team of Gingert, Sayers and Dudek freely spread the knowledge behind their phenomenal success. And in Bucks County, PA, Devich Farbotnik's 217 Kestrel nestlings banded tops the Pennsylvania state list this year (personal communication, December, 2018).

Kestrel nestlings peering from rotted eave of urban house in Providence, Rhode Island, in 2018

The 1,868 kestrel nestlings banded in 2018 includes the geographic region from Virginia to Maine: an area where kestrels have been in steady decline at least since the 1960s. Although this count certainly misses many kestrel young – both banded and unbanded – from nest boxes and natural cavities, it does present a baseline measure, with the hope that additional programs and individuals will add figures, findings and nest boxes in coming years. The kestrel nestling banding totals, by state, of those who contributed to this report are:

Pennsylvania: 552
217 by Devich Farbotnik in Bucks County
93 by Jere Schade and Paul Karner in Northampton County
80 by J.F. Therrian in Berks County area around Hawk Mountain Sanctuary
48 by Nick Kerlin and Steve Eisenhauer in 3-county area around State College
44 by Nate McKelvie in Harrisburg area
35 by Jere Schade and Steve Benningfield in Bucks County
35 by Emily Hope Thomas in northwest PA area
New York: 338
270 by Mark Manske or under his permit of Adirondack Raptors (17 by student in Albion area)
43 by The Raptor Trust (most came from NYC's Wild Bird Fund)
25 by Zach Smith
New Jersey: 263
127 by Bill Pitts in central and northern New Jersey
84 by Bill Pitts and Steve Eisenhauer in southern NJ
52 by John Smallwood in Sussex and Warren Counties
Virginia: 260
260 by Lance & Jill Morrow in Shenandoah Valley
Connecticut: 306
149 by Tom Sayers
156 by Art Gingert and Mike Dudek
1 by Larry Fischer
Maine: 53
53 by Marek Plater
Massachusetts: 37
27 by Anthony Hill with Kestrel Land Trust
5 by Grafton Land Trust
5 by Essex County Ornithological Club
Maryland: 36
36 by Suzanne Shoemaker in Montgomery and Frederick Counties
Delaware: 15
15 by Jordan Terrell and Kate Fleming
New Hampshire: 8
8 by former Mark Manske student under his permit

Nationally, kestrel research and nest box programs are promoted by The Peregrine Fund, a Boise, Idaho-based organization with a broader mission that includes other raptors (The Peregrine Fund, 2019). Regionally, The Peregrine Fund supports and gathers information from organizations and individuals with similar raptor goals. Sharing information with this national organization is important. Kestrels don't heed human-defined geographic boundaries.

John Smallwood and others have documented how a number of kestrel nest box programs have shown early success, with rising annual counts, and then slow declines after a decade or so (Smallwood, 2017). Is this due to habitat loss, or to the overall decline in kestrel numbers, Cooper's Hawks moving into the area, or other factors? Not all programs experience this decline. Mark Manske in New York doesn't seem to be experiencing this decline. Nate McKelvie in the Hershey, PA, area reports a decline in Barn Owls, but an increase in kestrels using owl boxes for nesting (personal communication, December, 2018). Connecticut's kestrels seem to be on the rebound. Lance Morrow – with 260 kestrel young banded this year – also hasn't seen a similar decline in his Virginia boxes (personal communication, December, 2018). Nearly all his kestrels overwinter in the same habitat in which they breed: does this avoidance of migration's hazards explain the stability of his population? Banding more kestrel young (adults too) – and sharing widely with fellow kestrel experts, enthusiasts and the general public – should help answer these questions.

One nest box variable worth mentioning is how new boxes and programs affect existing ones. I'm proud of my southern New Jersey program that has increased the successful kestrel nest box count from one to 20 in five years, but am I simply stealing from John Smallwood's nest box program in northwestern New Jersey and from Bill Pitts' boxes in central and northern New Jersey? Do the birds find good habitat and my new nest boxes as they migrate northward and therefore stop their search early? Since Pitts is my mentor and Smallwood's research maps showing the best habitat in southern New Jersey are my box placement guide, I'd feel a tinge of guilt if I am, in fact, intercepting birds headed their way. In Virginia the question has been raised whether the recently-installed 450 kestrel nest boxes will draw birds away from the Morrows' well-established colony; will it be a feeder system; or will the effect be negligible?

Male kestrel leaving vent home at junkyard in Providence, RI, in 2016

New York City – and other urban – Kestrel populations

Kestrel threats, trends and opportunities in our region are both similar and very different from other regions. Our urban kestrels are a good example, since nowhere else in the country are kestrels utilizing the urban environment for breeding at the level seen in New York City. In the city's five boroughs at least 16 kestrel territories are known. Julie Feinstein, formerly with the American Museum of Natural History, notes: "I have seen kestrels flying down Broadway in Manhattan, sitting on windowsills of fancy apartment buildings, and perching on traffic lights at busy intersections." (Feinstein 2012) Donald Davis, an avid urban birder, for many years has closely monitored kestrels in his neighborhood, a roughly

square mile or so area of Chinatown and the Lower East Side. Kestrels regularly nest there, occasionally double brooding. 2016 was an exceptional year: six pairs fledged 30 chicks, with four of the pairs double-brooding. Due to the dangerous day or two after chicks leave the nest, when first flight attempts can end on the street or sidewalk, Davis only counts a fledgling after he's seen it fly around for a few days (personal communication, December 5, 2018).

To a rural kestrel nest box enthusiast like me, Davis's records for his neighborhood are riveting. Between 2002 and 2013 two kestrel pairs typically nested there, with an average of 1.7 chicks fledging each year. In 2013, a third pair showed up. In 2014, the Chinatown pair double-brooded. Then the 6 pairs in 2016. In 2018, it looked like there were four pairs, but three then left, with the remaining pair fledging one chick. 2018's failures he attributes to West Nile Virus, although the return of Crow flocks was also a problem, and one female kestrel was taken out by a Cooper's Hawk, which were more common than usual in the winter, but typically leave by spring when the kestrels start nesting. Davis wonders if kestrels were more common in the city before automobiles replaced all the horses, carriages and stables (and the associated sparrows, small rodents and no pesticides). He notes his earliest fledge date for a nest was in 2016: May 9th, a date questioned until he provided photos from his associates Jean Shum and Francois Portmann (personal communication, January 4, 2019).

The count of kestrels delivered to the city's rehabilitators is eye-opening. Robert Horvath, a rehabilitator receiving the city's wildlife for over 25 years, reports he handled 50 to 60 Kestrels (mostly nestlings and fledglings) annually for many years: usually just feeding and then banding them before their release. In 2012, he reported the number of kestrels he'd been receiving each year were "more than any other bird" (Greenspan 2012), but he has received fewer since another rehab center, the Wild Bird Fund, opened in 2012. Horvath believes the city's kestrel population is still going up. He finds they disperse quickly once they fledge. One fledgling he banded was recovered two weeks later in Florida (personal communication, December, 2018). The Wild Bird Fund reports receiving from 20 to 30 kestrel young in a typical June month (Spivach 2018).

The Raptor Trust is a wild bird center located in Millington, New Jersey, not far from NYC. The Wild Bird Fund transfers many birds to them. Raptor Trust Executive Director Christopher Soucy reports: "In 2018 we admitted 54 total kestrels. 11 were injured adults, so the remaining 43 were juvenile/fledgling birds. Of those 43 almost all were transferred here from the Wild Bird Fund in NYC. That's where they come from these days. We do band them." (personal communication, December 29, 2018)

Most city kestrel nests are on three to six story buildings – primarily in holes in degraded metal architectural cornices. Some are on covered ledges. Territories can be tight, with some kestrels nesting within a couple blocks of each other. Attempts to attract them to nest boxes have, so far, largely been unsuccessful. The suggestion has been made that – as the degraded cornices are being repaired or replaced – perhaps "cornice-shaped" artificial nest boxes need to be hung from rooflines and windowsills.

For a few years, until 2011, Robert DeCandido produced an excellent newsletter about the NYC kestrels, with much valuable information and photographs being shared, including email exchanges from enthusiasts and scientists. He estimated 60 to 100 kestrel pairs breeding in the city in 2010. Flyers were sent out in 14 languages, with kestrel photos included, asking for reports of sightings. The newsletter copies are accessible online, and DeCandido continues to research kestrels in the city (DeCandido 2018), but he declined to provide any current information for this report. Joe Giunta has provided a more recent 2017 estimate of the city's breeding kestrel pairs at "more than 70" (Giunta 2017).

Kestrel literature regularly references their breeding presence in urban areas. The readily-accessible documentation for this is scant. There's the well-documented example of the double brood in 2016, as well as another successful 2018 brood in separate urban locations of Providence, Rhode Island (Green, 2016), as supported by photographs in this report. There are Chicago reports, and a number of reports from Canadian cities. In 1993, Ian G. Warkentin estimated there may be as many as 15 pairs nesting in Saskatoon (Bortolotti, 1993). In 2000, Marcel Gahbauer estimated the nesting pair total in Toronto to be around 50 (personal communication, December, 2018), but he notes he hasn't lived in Toronto since that time and believes the count is likely lower now. However, *Nathalie Karvonen* of the Toronto Wild Bird Centre reports in 2018 that they "work with a lot of kestrels - many from very urban areas, few from rural areas." The Centre handled 13 kestrels in 2018: 4 adults and 9 identified as babies/fledglings/juveniles (personal communication, January, 2019). In Montreal, Dr. David Bird reports:

Aside from a few pairs nesting in the cavities of residential and industrial buildings, the American Kestrel, a bird I studied for four decades, is facing a serious decline in population all over northeastern North America for reasons yet unknown. I will never forget one of the last games played by the Expos in the Olympic Stadium, when the evening crowd was treated to the sight of a kestrel hawking insects around the dazzling lights. (Well, at least I was!). . . Two other bird-eating raptor species, the merlin and Cooper's hawk, are becoming quite common in Montreal's suburban neighbourhoods, much to the chagrin of those operating bird feeding stations in their backyards. (Bird 2015)

DeCandido noted in a 2010 newsletter that "Here in NYC, Dr. Andrew Farnsworth reported to us that he has seen kestrels chasing insects at night at the new Yankee Stadium". Similarly, in 2010 Sharon Stiteler reported on a kestrel catching moths at a Minnesota Twins baseball game, and further noted "I've seen them nesting in the Uptown area of Minneapolis in old holes leading into an attic or duct work". When contacted for a 2018 update Stiteler notes:

We have a few in Minneapolis, I don't think "Kirby" the kestrel is still at the Twin's Stadium. The last time I saw footage of what the Twins were calling Kirby it was actually a peregrine falcon. We did have a pair nesting in downtown by the Mississippi River. I never found the nest cavity but could see the birds hunting on the banks of the Mississippi River near the Stone Arch Bridge. (personal communication, 2018)

Kirby the Kestrel is particularly noteworthy since he had his own Twitter account, with the byline: "I love to perch on the right foul pole and shag flies. Don't let the name fool you: I'm really a falcon." He had 532 followers. His site is still available for viewing: https://twitter.com/TargetFieldHawk
A video of him in action is also available online: https://www.youtube.com/watch?v=sglCuyWTm6U

Using wildlife rehab center tallies as a gauge for other urban populations, Lori Arent at The Raptor Center of the University of Minnesota reports only receiving one kestrel fledgling in 2018 from Kirby's home base of Minneapolis (personal communication, January 1, 2019). Jill Argall of The Wildlife Center in Pittsburgh reports (personal communication, January, 2019): "Our wildlife center did not receive any kestrels in 2018. We have seen a drastic decrease in the past 10 years." Lisa Gruber of the Philadelphia Metro Wildlife Center reports receiving only three kestrels in 2018: two from the suburbs and one from an unknown location.

For those of us concerned with the kestrel's apparent downward slide in our region the lack of information about urban nesting populations is maddening. Is the slide also happening in cities; is there anything we can do about it; and how can such a colorful, distinctive, beneficial – house sparrow and small rodent controlling – bird species be missed by so many people? If New York City is a valid

example, perhaps the best way to survey for breeding kestrels in urban areas is to contact wildlife rehabilitators in a wide range of cities to see how many young they receive each year. But how valid a measurement is this? Are there roughly three active kestrel nests for every young bird brought in (as seems might be the case in NYC), or ten, or will this vary dramatically from one urban area to another? Right now, it's all wild guesses.

Clay Sutton points out the Lesser Kestrel that breeds in Europe and Asia is a similar-sized falcon species that often nests in cities and villages (personal communication, January, 2019). The recently-published New York City birding guide, *Urban Ornithology*, notes that "breeders are significantly underestimated citywide", and recommends "Strategic placement of predator-proofed, properly crafted nest boxes in each of the 4 extant subareas would help mitigate local declines in breeders" (Buckley et al. 2018). It also notes Breeding Bird Atlas findings of "greatly diminished numbers since the 1960s", and "From NYSBBA I in 1980-85 to NYSBBA II in 2000-05, kestrels in and around New York City almost disappeared", but acknowledges: "the atlases were designed to a scale allowing their own realistic goals to be met, for purposes of uncovering all species breeding with the study area, they are of limited use to us"[2]. The urban kestrel story may be even more complex than that in rural areas. Are they simply blending in with – and occasionally consuming – the everywhere-present avian riffraff?

<u>Bald Eagle, Osprey, Peregrine Falcon and Cooper's Hawk Recovery; Eastern Screech Owl expansion in suburbs. What's with the American Kestrel?</u>

"Not so fast!" would be the response to a claim American Kestrel populations in the Northeast are rebounding like the other raptors whose numbers plummeted to dangerously-low levels and have since recovered. The other-raptor success stories show that human intervention – such as the ban on DDT, construction of nest platforms and boxes, increasing penalties for disturbance or killings – can have dramatic positive results. What is different with kestrels? They seem to appreciate our drier, cleaner and more predator-resistant nest boxes, and often move into our boxes from tree cavities. Are we

[2] This quote from page 42 of *Urban Ornithology* probably needs to be considered within the context of the book's entire section on Breeding Bird Atlases, which emphasizes their great value but notes some understandable limits.

taking their decline seriously enough? Are we sharing enough information: success stories, failures, innovative new techniques?

Kestrels obviously have a lot going for them. They're a charismatic, colorful, adaptive species called an OFB (Our Favorite Bird) in some birding circles. They have practical, even economic, value on farms, since they consume innumerable small rodents like mice and meadow voles, and large insects like grasshoppers. One Michigan cherry grower, Jim Nugent in Suttons Bay, installed a nest box on his orchard in the mid-90s, and reports it has been occupied almost every year since. He notes: "Our problems with birds have really dropped off. They (kestrels) are quite effective, and it doesn't require much management on the grower's part." (SARE, 2018) Michigan State University professor, Catherine Lindell, has done much kestrel nest box research on cherry orchards and blueberry farms, and found "that while kestrels do eat some birds, they end up scaring away even more birds. So, it's true: cherry orchards with kestrels have fewer fruit-eating birds than orchards without kestrels." (Shave et al. 2018)

Like many animals, plants and humans, kestrels have territorial and colonial aspects to their personalities, but with their own blend of seasonal shifts. Within our region differences can be extreme. Lance and Jill Morrow – who banded hundreds of kestrel young and adults this year in and around their boxes – report that essentially all their Shenandoah Valley, Virginia, kestrels are non-migratory. Many pairs stay together in consecutive years and few kestrels from other areas establish in their study area (personal communication, December, 2018). With their box program now into its second decade, and research that focuses on banding and recapturing adults as well as young, the Morrows sense a tribal aspect to their kestrel population, with resident birds keeping out migrating and dispersing birds. This differs from most other program findings, where nesting pairs rarely stay together year-to-year, and migrants regularly move into new areas.

Still a little white fluff on the head of this 2018 fledgling in Providence, RI

For those of us who work with rural kestrels, it's hard to imagine one of our birds settling down in the urban environment in some old rusted cornice filled with decades of rotted debris from past nestings. But, who knows, maybe a rural-raised male just-passing-through the big city catches the eye of a good-looking street-wise urban female, and before you know it he's chasing down house sparrows for a family of five.

An unsettling – to nest box proponents like myself – question comes from Canada: "Do extensive agricultural lands act as ecological traps?" (Touihri et al. 2018) The resultant study arrives at the following tentative conclusions:

- *Kestrels were attracted by meadows and pastures destined for farming in early spring when selecting their nesting habitat*
- *Fledging success was more likely to increase with the amount of young forests, rather than with the amount of extensive agricultural lands*
- *Agricultural lands frequently disturbed during the breeding period may act as an ecological trap for kestrels*
- *However, this hypothesis must be considered with caution because fledging success alone does not determine fitness or population dynamics.*

In assessing the American kestrel in our northeastern states, the extensive Canadian research – particularly that done by Dr. David Bird and his associates – cannot be ignored. How many of those 5,600 kestrels that migrated through Cape May on October 12, 2018 were Canadian breeders? But Canadian kestrels may behave quite differently than NYC, Virginia's Shenandoah Valley or New Jersey's semi-rural (not quite suburban) kestrels.

Kestrels are highly intelligent birds capable of learning and adapting. Just ask falconers who train them. One visual example is provided by the falconer who, by launching his American Kestrel from the open window of a slowly-moving car in suburban neighborhoods, succeeded in a mission, as he describes: "My goal was to catch 100 Starlings and we did so in 39 days of hawking. It was a nice change of pace from my usual falconry." Available for viewing at: https://www.bing.com/videos/search?q=video+kestrel+catching+starlings&view=detail&mid=1782D599DB54BC33DD261782D599DB54BC33DD26&FORM=VIRE

The bottom line is that American Kestrels want to live and work with us in urban and rural (and some almost-suburban) areas. We just need to understand them better so we can be good neighbors.

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