Every birder needs a problem to solve. Often that means mastering subtle field marks to add another tick to one’s life list. By comparison, our problem was relatively simple: we wanted to discover something new to science about birds. Not so easy in a place with eight million people, and home to some of the finest observers in birding history: Frank Chapman, Ludlow Griscom, Ernest Mayr, and Roger Tory Peterson to name a few.

When an American Kestrel pair took up residence near our home in the Bronx, we watched them for fun at first, but then wanted to know more. Thumbing through research in the scientific literature, we realized that almost nothing was known about urban kestrels. We had our problem, and it bothered us sorely.

Our first challenge was to find a sufficient number of kestrel pairs to study, but where were they? We looked in city parks with no luck. Occasionally, we saw a kestrel hunting an abandoned landfill, but outside of the migration season, these urban kestrels were rare in city parks. Christmas Counts from each of the five boroughs told the same story: local birders were not seeing them in the meadows, salt marshes or even baseball fields of city parks—in fact any of the 30,000 acres of natural area in the city. We even went so far as to place nest boxes on an abandoned landfill in the Bronx...nothing! We might as well have been looking for alligators in the city’s sewer system.

One day we struck pay dirt. We met a man whose job entailed walking along city streets. His name was Jim O’Brien, and he knew the locations of a few kestrel nests on Manhattan Island. He also provided a philoso-
and fields. For example, on Broadway, we remember seeing a female kestrel swoop down from her perch to snatch a House Sparrow feeding on crumbs in front of Zabar’s. It was a busy Saturday morning in May, and shoppers were out in number. But this female had to provide food to her growing family too. Later, a few blocks south on 68th Street we watched another pair working as a team to drive off a Red-tailed Hawk that ventured too close to their nest; north near 86th Street and Amsterdam Avenue, one of our kestrel spies reported that a male kestrel had discovered a concentration of House Finches at her bird feeder on the 20th floor. He was making frequent visits, especially in rainy weather. That kestrel had learned to burst into a feeding flock. At least one would bash itself into the glass—to become a stunned and easy meal for his family.

After we compiled a database of the reports we received, and then investigated ourselves, a picture began to emerge. There are about 60-100 pairs throughout the five boroughs, and we estimate 25 pairs on Manhattan Island alone. This is the largest population of nesting kestrels in New York State. Kestrels are the most common nesting raptor in NYC—yet we know little about their ecology here. We believe most of our adults are resident year-round, while young of the year disperse. Of the latter, one was even found (dead) in Florida in 2005. How is the NYC population doing compared to other urban populations? We don’t know—ours is the first extensive study of urban kestrels in North America.

According to our research, the critical factor for urban kestrels is availability of suitable nest sites. In NYC more than 95% of kestrel nests are in the metal cornice of a late 19th century building. Kestrel nests average about 60 feet above street level, with the highest being about 125 feet and the lowest approximately 40 feet high. Kestrels have been nesting in these city cornices since at least 1916, when the first published account of a pair in Brooklyn appeared in the magazine, Bird-Lore. This was very good news for us because some raptor professionals believed that NYC kestrels might be a “population sink”—in other words, taking away breeders that would otherwise do better elsewhere. We now had evidence that NYC kestrels were a self-sustaining population of long-standing merit and worthy of scientific investigation.

We do worry about what the future will bring to nesting kestrels in Gotham. Many of the smaller 19th century buildings with cornices have been replaced by skyscrapers, especially in Manhattan. Alternately, landlords are taught that anything living in a cornice cannot be good—it can only die or cause disturbance resulting in complaints from tenants. So we have watched a number of cornices used by kestrels for their nests be filled in, restored, or in many cases, removed entirely. Long-term, the loss of these critical nests sites will certainly have a negative effect on the population here.

The cornice nest sites offer several advantages versus “natural” cavities in trees, or even the occasional nest box in a city park. On city streets, mammalian predators such as raccoons or gray squirrels are unable to climb into a nest cavity on a building. European Starlings and Rock Doves, species that also nest in building cavities, are no match for an agile kestrel. We have watched on many occasions as a female kestrel chased starlings away from the immediate area of her nest site. After several such pursuits, starlings learn to avoid a “red” zone near the
kestrel nest. Kestrels shape starling behavior so well that we have seen both species nesting within approx. 20 feet of each other. However, kestrels will raid the nest of these neighbor starlings (and House Sparrows) for their young, making kestrels the allies of every landlord in New York City.

Many of the metal cornice nests face east. We believe that after a cold spring evening, the nest warms up quickly in the morning sunshine. Later in the day, the overhang of the cornice shields the nest from the direct rays of the hot afternoon sun. This temperature moderation allows the female to leave the nest to hunt nearby. Also, urban kestrels begin nesting earlier in the year than their rural counterparts at similar latitudes. Pairs often nest close to a small community garden or “pocket park.” This allows the female to watch her growing brood from a prominent perch, while also scouting for House Sparrows feeding on the ground in these small green spaces, or nesting on nearby buildings. Throughout the city, sparrows comprise the bulk of the food taken by kestrels. Other prey items include small birds during spring and autumn migration, and the occasionalroach, dragonfly or small rodent.

In May 2008 we received a report from a kestrel spy in Queens that his falcons were eating lizards. We were stunned—there are no native lizards on city streets. In late spring 2009, similar reports came in from the Upper East Side of Manhattan, then from the West Side, and from Brooklyn. NYC kestrels had discovered several discrete populations of non-native Italian wall lizards (Podarcis sicula campestris). According to Dr. Russell Burke of Hofstra University, who studies the herpetofauna of the region, these observations were the first in North America to document bird predation on these lizards.

More recently our investigations have led us away from the streets and into the laboratory. Working with Dr. Chad Seewagen of the Wildlife Conservation Society, Bobby and Cathy Horvath who re-hab many injured raptors in New York City, and Dr. Dan Cristol of the College of William and Mary, we are collecting breast feathers from young kestrels that end up on the ground, and are sent to raptor re-hab. About 15-25 young kestrels are received by Bobby and Cathy each year. This gives us a wonderful opportunity to test for toxicants such as lead and mercury. And we are teaming up with researchers at the Hawk Mountain Sanctuary to compare how levels of toxicants in New York City compare to those in rural Pennsylvania.

From farther afield, we regularly receive information about kestrels from different parts of North America, as well as from several cities in Europe and Asia. In Berlin, there are over 300 pairs of the Eurasian Kestrel (Falco tinunculus), nesting within city limits—most in nest boxes on buildings. In Israel, Drs. Motti Charter and Yossi Leshem have published on the nesting ecology of urban versus rural kestrels from Tel Aviv to the Negev. Here in North America, we receive reports from kestrel banders and nest box monitors from the high desert of Oregon to California all the way east to Pennsylvania and Massachussets. Our newsletter has become a clearinghouse for anyone interested in comparing when females lay eggs; hatching times; clutch size—from urban to rural areas.

Though New York City epitomizes the environment many who seek out the “natural” love to hate, it is not an unusual one. Most people in the world now live in an urban area. We cannot ignore urbanization, or wish it away—there will only be more and growing cities in the future. For scientists, urban areas represent a new frontier where people, wildlife and the environment interact closely. It is possible to discover something new to science about birds in cities—few people have closely studied species here. Meanwhile, we raised the bar in our goals: how can we protect birds in an increasingly urban world? We don’t know just yet, but the preservation of a small falcon living on city streets is a good place to start. The smiles and nods of our investors tell us there is keen interest in this blue-chip investment.
A request for information prospectus was posted in 14 languages in every ethnic neighborhood in NYC. © Robert DeCandido and Deborah Allen

American Kestrel nest inside building cornice at East 57th Street, 4 June '09. © Robert DeCandido and Deborah Allen
American Kestrel nest location at the corner of 11th Street and St. Nicholas Ave. in Manhattan. 2 May '08. © Robert DeCandido and Deborah Allen

Female delivers food to the entrance of a cornice nest. © Robert DeCandido and Deborah Allen
The Falcon that Nests on Broadway

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Male American Kestrel at entrance to cornice nest. © Robert DeCandido and Deborah Allen

Cornice nest at W 80th Street and Broadway. 16 May ’09. © Robert DeCandido and Deborah Allen
American Kestrel nest in a building cornice on the Upper West Side. 8 June '09. © Robert DeCandido and Deborah Allen

Fledgling waiting to be fed. © Robert DeCandido and Deborah Allen