



Fred R. Conrad/The New York Times

From left, Carl Howard, Mark Kolakowski and Robert DeCandido watched for birds from the observation deck of the Empire State Building on Sept. 13.

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## 86 Floors Up, No Elevator Required

By JAMES BARRON

**O**n the observation deck at the Empire State Building, Robert DeCandido is hard to miss. As the crowds elbow by just after sunset, he is the one who is looking not down, but up.

He is the one holding the counter with the thumb tab that can be punched when he sees a bird flying by. Dr. DeCandido, who has studied bird migrations in Nepal, Thailand, Malaysia, Turkey, Spain and Israel, is counting the birds that flap, float or flutter by his 86th-floor perch between sunset and 11:45 p.m., when the observation deck closes.

His tally of birds heading south is the first ever conducted at the Empire State Building and the first step in a research project he hopes will lead to answers to at least two basic questions: Are migrating birds attracted to the bright lights of tall buildings at night? And, if so, what keeps the migrating birds from slamming into the buildings?

After spending every night since Aug. 15 at the Empire State Building, Dr. DeCandido, a researcher who is 45 and was an urban park ranger with the Parks Department from 1991 to 2002, still does not have an answer.

Some nights, his thumb gets a workout. One night in late August, he found himself in "a whirling vortex of birds," so many that their chirping drowned out the hum of the city and the chatter of the tourists. He counted 400 birds between 10:30 p.m. and 11:45 p.m.

Other nights, he sees fewer migrants than that - and a peregrine falcon, which does not go as far as the smaller birds, if it migrates at all. Usually, it arrives minutes after the sun goes down, circling the illuminated tower above the gift shop and landing on a ledge. But some nights the falcon is as late as 10:20. "Does it wake up in the middle of the night and decide, 'I'll go find a snack?' " he asked on a night when it appeared early.

Sometimes, two or three falcons appear. And one night recently, he and Mark Kolakowski, another experienced bird-watcher who sometimes joins him on the observation deck, saw something they said was a first: an osprey migrating over land. After doing some checking the next morning, Dr. DeCandido said that the nocturnal migration of ospreys had been documented only once before, in Malta in the 1970's.

And those were just the birds they could identify. There were dozens that did not fly close enough to be recognized.

"Great blue herons, you can see," he said, looking through his binoculars. "Cuckoos, you can identify because of the spotting of their tails. Beyond that, it's size classes." In other words, he will say he saw a bird "the size of a warbler" - about 5 inches long at most, or smaller than a thrush (8 to 10 inches) or a common nighthawk (12 to 14 inches). He can also identify birds by the speed and rhythm of their wingbeats.

"They're very aware of the building," he said. "They seem to get attracted to the light. They'll circle once or twice. They get tired of fighting the headwind on nights when there is one."

The birds followed a similar pattern last spring. In May, he and other birders counted more than 3,000 migrating birds in five weeks in late April and May. One night, he said, more than 800 flew by in a little more than three hours.

Dr. DeCandido began his nightly count thinking that migrating birds crashed into with the Empire State Building every night. He and Deborah J. Allen, a photographer and researcher with the Linnaean Society of New York who worked on the spring count, worried that the lights of the Empire State Building attracted birds that would then crash into the building. Dr. DeCandido said he had seen birds die when peregrine falcons swooped down and grabbed them in their talons - nature at its rawest - but had not seen a single bird hit the building.

He and Ms. Allen traced the first newspaper report of birds slamming into a tall structure to 1887, when the torch of the year-old Statue of Liberty was the tallest landmark in New York. "Almost as soon as the lights were kept on overnight on Liberty's torch, birds began colliding with it," Dr. DeCandido and Ms. Allen said in a research paper that they wrote after their spring count and submitted to a birders' journal. Birds that died at the statue were taken to the American Museum of Natural History, where the chairman of the ornithology department was an expert on birds' flying into lighthouses. He had published a scientific paper on it.

That led to a forerunner of Dr. DeCandido's nighttime work. A 19th-century Princeton professor, staring at the moon through a telescope, noticed birds flying across his field of vision. When the natural history museum heard about that, a young museum employee, Frank M. Chapman, was assigned to watch for birds at night. (He went on to found what became Audubon magazine.)

After their work in the spring, Dr. DeCandido and Ms. Allen concluded that the Empire State Building is not a significant hazard to migrating birds. Still, Dr. DeCandido wonders what happens after the observation deck closes at 11:45 p.m. "Something qualitatively different happens later on foggy nights,"

he said.

That is a point echoed by Greg Butcher, the director of bird conservation for the National Audubon Society. He has not been involved with Dr. DeCandido's study. On foggy nights, Mr. Butcher said, birds tend to become disoriented and swirl around bright lights on tall buildings. Then, he said, "they run into whatever obstacles are in the neighborhood."

As Dr. DeCandido discovered early in his research, five hours a night on the observation deck requires a strong neck. Looking up at the sky through binoculars can be tiring, he said one night recently.

Dr. DeCandido, who is allowed to take a limited number of guests on his nightly excursions, has put out the word through e-mail messages to bird-watchers to meet at a McDonald's on Fifth Avenue.

The Empire State Building allows the bird-watchers to enter without paying the \$12 admission fee, and building employees wave when they arrive. One guard calls Dr. DeCandido "Birdman."

Before the peregrine falcon arrived, he and Mr. Kolakowski talked about how they had both attended Regis High School on the Upper East Side. "He was the biggest jock," Mr. Kolakowski said.

Dr. DeCandido said he hated science back then. Later, on a cross-country trip, he discovered national parks. "I said, 'It would be wonderful to work in a place like this,' " he recalled.

That sparked an interest in bird-watching, he said as the falcon sailed by.

"That's him," Dr. DeCandido said.

Carl Howard, a lawyer who had joined the group at McDonald's, marveled at the falcon's grace.

A few minutes later, something else flapped by. A bat, Dr. DeCandido said. "It isn't known in the literature how high they fly," Mr. Kolakowski said.

No, Dr. DeCandido said. "They're mammals," he said. "I don't know that much about mammals."



Peregrine Falcons photographed in Malaysia by Laurence Poh



ESB Peregrine at night 2004/ NY Times.



Fledgling Peregrine Falcon at the Brooklyn Bridge by rdc (2004) .



Asian Peregrine Falcon by Laurence Poh (Malaysia/2002).

### My Notes from Sunday, October 10<sup>th</sup>, 2004:

Despite the blustery conditions, there were some exciting moments for the remainder of the night on Sunday night. The skies became mostly clear after 9pm, and this facilitated picking up the migrants against a black background. People on the deck watched as a Peregrine, soaring about 75 feet above, made repeated stoops at the migrants from about 9:15pm onwards. About 40 people from several countries watched the Peregrine make 29 dives and catch 7 birds in the span of about 25 minutes. The falcon would catch a bird, drop it off on the building, zoom out again and then "wait on," hanging in mid-air above the Observation Deck for the next group of migrants (or an individual) to appear. There were many misses too, but it seemed like the falcon was sometimes not fully engaged in those attacks. After 10:30pm, two falcons were flying about the Tower, mostly out of my sight on the south side of the building. I had to leave at 10:55pm.

There were about 415 migrants between 10-11pm, and approx. 700 for the night (7-11pm). No birds collided with the building, and the flight pattern of the migrants was similar to past nights when winds were strong (> 15mph): birds primarily came around the west side of the building, facing into the wind (so they looked sideways when they were above us) and flapping madly. I believe they do this so that they have more control in the way they pass a structure that they perceive could be a hazard if not negotiated properly. By facing into the wind, the migrants can exercise finer maneuvers than if they just let the wind carry them (ie., a tail wind). Once they make the right turn and are mid-way past the building (and were then directly above us), they then turn south and let the wind carry them at more or less full speed, and we watched them zoom away.

Some birds are never affected by building lights at night in NYC: this list includes Peregrine Falcons as well as migrating shorebirds, ducks, geese and some others. They fly past with no problems that I have ever seen. And of the birds that are killed, not all members of that species are attracted to lights...What I am saying here is that response to night light varies from bird to bird. Some birds will be killed on every night in NYC: some will be attracted to lights; some will hit buildings; some will hit plate glass; some will end up starving because they landed in poor quality (stopover) habitat the next day; others will be blown out over sea and perish (unless they land on a ship). So birds are going to die for many reasons. Habitat loss, and degradation of existing NYC habitats is a critical one. Again, we have no idea of how birds fare once they land in and begin feeding in NYC parks.

Even on foggy nights birds know where the Empire State Building is. I have seen how they fly round and round and then move off...That birds collide on such nights is well known and documented, and I can email anyone interested a list of articles and newspaper accounts of such nights. So on nights when many birds are killed, something qualitatively different is happening after midnight than during the hours when I can watch them (8-11:45pm). Whether turning off the lights of New York City's tall buildings (or leaving them on) is better or worse for birds, is unknown. That needs to be studied. I can make a case for both sides of the issue, but until someone actually sees and studies what happens when birds collide here in NYC, everyone is speculating...The policy of lights out or on

may vary from building to building depending on whether the building is mostly glass (Trump Tower/United Nations) or mostly solid (like the ESB). Overall, plate glass (especially on lower floors of buildings) and migrating birds is an issue that needs to be examined in greater detail.

Tonight (Monday) will be good again to see migrants, and it sounds like Friday night after the next cold front passes will be good again. To watch the birds migrating is a wonderful experience, and one that everyone seems to enjoy. To hear them calling at night, is great too. It can be downright noisy at times. Put a Peregrine up there, and it adds to the experience. The night migration of birds could be such a spectacular experience for many people and birders here in NYC. People know conceptually that most birds migrate at night. To see and experience the migration with one's own eyes, surrounded by the spectacular view of NYC at night, is to make that knowledge real. That is the real challenge then, how to make this a fun experience for as many people as possible so that they come away wanting to know more about birds, and wanting to become stewards of the environment.

**FROM Dr. PAUL KERLINGER (11 October 2004):**

This is really important stuff, both from a biological and conservation perspective. My first reaction to the ESB studies is that they would be neat, but would they be valuable from a bio and conservation perspective? However, as I read the new messages from Bob and his team, some real patterns are emerging that we can really learn from.

The following points are what I'm getting out of Bob's obs:

1. Birds are plastic in their behaviors - like Peregrines foraging at night in city lights. We often view birds as unable to learn or adapt quickly, but ... it seems some do.

2. Some hawks migrate at night.

3. Variability among individuals with respect to attraction to lights. Communication tower lights and other lights have been around for more than 50-100 generations of birds, making me wonder if there hasn't been selection against those birds that are most attracted to the lights. This could, possibly, result in adaptation. We are seeing far fewer birds collide with the tall comm towers now than decades ago. That can be explained by smaller bird populations, more lights in the night sky - therefore less attraction to a single tower (diffusion of fatalities over a larger number of towers and fewer large-scale events), and, or by adaptation to lights such that fewer individuals are attracted. Those birds that are most susceptible to attraction are dying and not leaving their genes... Possible?? After 50-100 generations of lights in the night sky ...

4. Waterfowl, shorebirds, and some other birds are not attracted to lights. This is very important because these birds aren't involved in large scale fatality events at communication towers or wind turbines. Some of us have suspected for some time that these birds simply aren't attracted to tower and other lights, which would explain their scarcity on fatality lists at towers and wind turbines.

I look forward to seeing Bob et al. publish some papers so that more of this story can be told and told to more people. It's great stuff!

Paul Kerlinger