Block Island Project Finds Route of Falcon Migration

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Rick Gray holding a merlin, one of the falcons he captured on Block Island for his study of falcon migration. (Todd McLeish/ecoRI News)

By TODD McLEISH/ecoRI News contributor

BLOCK ISLAND, R.I. — During the peak of this year's fall raptor migration season, scientists from the Biodiversity Research Institute in Maine completed a five-year effort to monitor the movement of falcons on offshore islands along the East Coast. Much of their effort was focused on Block Island, which the researchers say is among the most important stop-over sites for migrating falcons.

Their aim was to capture peregrine falcons and affix them with satellite tracking devices to map the birds' movements so scientists can better understand their migration routes, how they use the coastline and how they may be affected by offshore wind farms.

The findings so far have been somewhat unexpected.

Block Island is perfectly situated as a jumping-off point for birds migrating south, according to Rick Gray, one of the researchers leading the project. It attracts an abundance of songbirds — the primary food of peregrine falcons

— and it's situated between Long Island, Nantucket and Martha's Vineyard, which the birds also visit during migration.

"We're very excited that we found this gem of a site," Gray said. "Falcons are coastline migrants, so Block Island is an ideal location for this kind of study."

Since 2012, Gray and his colleagues have captured more than 550 falcons on Block Island and attached transmitters to 38 peregrines and 80 merlins — the latter a smaller cousin of the peregrine. The scientists hid in a portable blind at the edge of a bluff on Lewis Farm, a site where the birds are regularly observed soaring on thermals and hunting for food.

When a falcon was lured into a series of nets, the researchers conducted a health assessment of the captured bird, collected blood and feather samples, fit it with a transmitter and released it.

The first surprise the researchers discovered was that falcons often make long flights far out over the ocean.

"When the birds leave Block Island, they typically hug the coast to the Outer Banks (of North Carolina) and then do long overwater flights to Florida and the Bahamas," Gray said, noting that the birds then continue on to wintering grounds in the Caribbean and Central and South America. "One of the first males we tracked in 2014 was a total outlier, though. It left Block Island and went straight out into the ocean. We're convinced it was hunting pelagic birds following ships."

Another somewhat surprising finding was that the researchers have caught just four adult female peregrine falcons during the five years of the study, and they haven't seen even one adult male. Almost all of the birds they capture on Block Island are young birds migrating for the first time, and almost all are of a subspecies that breed in the Arctic, not the subspecies that breeds in the northeastern United States.

Gray said little is known about the migration route of adult male peregrines — few have been captured at any bird-banding location on the East Coast — and the small number of adult females tracked have followed the coastline closely throughout their migration.

"Migration routes are probably learned. On their next migration, the young birds are probably not going to do an oceanic flight," Gray said. "It's the same with ospreys. Hatch-year birds do crazy oceanic flights, and the next year they don't. They only do that long overwater flight one time. I wouldn't be surprised if it's the same thing with peregrines."

Mortality of falcons on their first migration is quite high, probably in part because of the long routes they take over the ocean. But the researchers say they also don't appear to be very cautious during their first migration.

"We found one of our transmitters underneath an eagle nest on Assateague Island in Virginia," Gray said. "Our thought is that the bird had probably killed something and wasn't paying attention and was taken by an eagle."

Having wrapped up their study of peregrine falcons this year, Gray said the researchers hope to focus more on merlins in coming years. They hadn't expected to see so many merlins on Block Island, so in 2014 and 2015 they began attaching them with a small device called a nanotag that provides a GPS reading when the birds fly by one of the many antennas set up along the East Coast to monitor bird migration.

"This is the first time that merlins have been tracked anywhere, and their track is very similar to peregrine migration," Gray said. "They do over-ocean flights, but not as great distances as the peregrines. We don't have the ability yet to see exactly where they go over the ocean, but they're definitely using the coastline the same way as peregrines."

The falcon research project is supported in part by the Rhode Island chapter of The Nature Conservancy, which hopes to use what is learned in future land protection and wildlife management efforts.

"The raptor research at Lewis Farm is producing cutting edge scientific discoveries, giving us a more comprehensive view of raptor migration than ever before," said the Conservancy's Clair Stover. "By supporting and hosting the Biodiversity Research Institute, The Nature Conservancy and others in the conservation field are learning more about raptors and their migrations, and as a result, we are able to better manage and protect nesting, stopover, and wintering habitats that are key to the species' success."

Rhode Island resident and author Todd McLeish runs a wildlife blog.