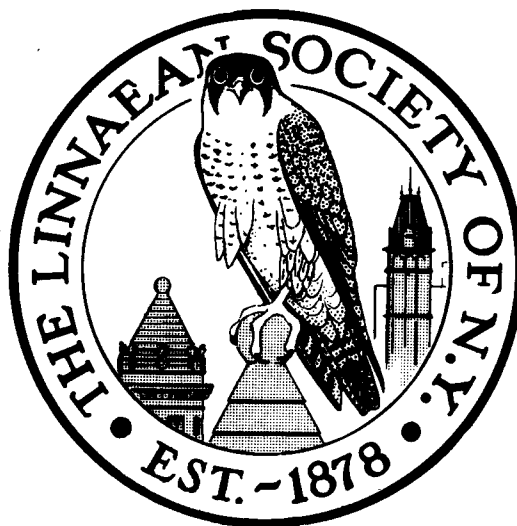


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**A NOTE ON MIGRATION AND PREDATION**

Robert DeCandido

Blind men! let the birds live in the woods and build and feed and sing and roam. Sluggards! spread the wings of your mind to the sky, and rise from the earth. Strive not to catch but to become birds!

Petrarch

Those persons who have visited the Pelham Bay Park hawk-watch in the Bronx since 1988 are well aware of the correlation between the best hawk flights and northwest winds. Not only are the highest number of migrants seen on these winds but species diversity is greatest as well. Overall, during the last three fall seasons we have counted a total of approximately 40,000 hawks of 17 species in migration. Pelham Bay ranks third of all fall hawk-watches behind Cape May and Lighthouse Point in the number of Ospreys counted in migration each year, with a one-day high of 231 seen on September 12, 1989. Other significant flight days have been September 11, 1988, when 1,169 Broad-winged Hawks and four Bald Eagles were counted; September 11, 1990, with 15,459 Broad-wings and five Bald Eagles; and October 22, 1989, with 373 Sharp-shinned Hawks, 24 Merlins and two Golden Eagles. However, it is my belief that the significance of Pelham Bay resides not so much in the hawks we count passing overhead, but the diversity of raptors seen in the fall throughout the park hunting and capturing prey. The Osprey, our most familiar migrant, is the best case in point.

Ospreys first arrive on migration at Pelham Bay in late August and become temporary residents in the park. From the hawk-watch we regularly see these birds soaring and hovering over park waters, actively hunting for fish. In fall 1990 alone we observed them dive into the water 372 times and catch 142 fish (38% success). On our best day, September 18, Ospreys hit the water 31 times and captured 18 fish. In addition, throughout this season Ospreys have returned to the hawk-watch area with 366 fish caught in more remote sections of the park. In all, at least 508 fish were taken from the waters of Pelham Bay, with many (perhaps 100 - 200) more fish captured that went undetected. The size of the fish taken most often ranged from 7 to 14 inches, although on several occasions 2 to 3 inch fish were captured. If we assign an average weight of eight ounces per fish to the season's catch, Pelham Bay then contributed quite a lot of fuel to the survival of a species during an important part of the life cycle. So far as I can determine from the literature, Pelham Bay Park is the only reported place in North America where Ospreys are foraging during migration in such numbers.

On its annual migration an Osprey encounters a variety of habitats; not only coastal marshes and bays such as at this site, but inland lakes, ponds and rivers as well. To survive, an Osprey must be able to exploit these habitats and the different prey items at

each site. The Osprey, one could argue then, is a consummate generalist. Again, as I search the literature, virtually nothing is published on the foraging activities of raptors in migration. Pelham Bay can be regarded not only as an important foraging habitat but a place where significant ecological questions can be addressed.

To a foraging Osprey, the park presents several habitats within a fairly restricted area: an array of salt marshes and coves, an estuary, sheltered beach and Long Island Sound proper. In addition, Pelham Bay is one of the few parks in the region where human disturbance is minimal and habitat optimal. (Although Ospreys can co-exist wonderfully with people fishing in boats or sculling, water-skiers and jet-skiers drive hunting Ospreys away.) Ospreys will utilize these different habitats within the park depending on the weather. For example, on very windy days open stretches of water become choppy and murky, making prey detection difficult. However, the sheltered channels that course through salt marshes will remain relatively calm and clear under these conditions. In addition, the shallow water of the marsh areas keeps fish closer to the surface, making them easier to see and prohibiting a vertical escape. Further, salt marshes (and the parking lot) which surround one of the best foraging locations for Ospreys in the park, are prime areas for thermal development. These thermals allow a hunting bird to conserve energy while following its target, or to easily regain altitude after a dive. Finally, areas such as Turtle Cove which are bordered by the Hutchinson River, Long Island Sound and landfill are veritable gardens of phytoplankton. As a result, fish such as the Mossbunker, or Menhaden, (*Brevoortia tyrannus*), a plankton-feeding member of the herring family, collect to feed in these areas.

The Mossbunker, or "Bunker", is present in the park in greatest numbers from late August through October, peaking in mid to late September. En route to the North Carolina coast where they spend the winter in deeper (warmer) water, Bunker fall prey to a variety of predators including whales, porpoises, sharks and swordfish. In our area, Double-crested Cormorants and the Bluefish (*Pomatomus saltatrix*) exact the heaviest toll. It is no wonder why: Bunker are slow-moving, range in size from 4 to 6 inches in length, lack teeth and form dense schools which remain close to the surface in order to filter-feed upon the best concentrations of plankton. Bluefish will often drive big schools into the coves and shallow water of the marsh, where the Bunker are extremely vulnerable. In some of these situations,

available oxygen can become depleted and vast numbers of fish perish. This phenomenon is not new or unusual -- the Dutch colonists of the 17th century noted such events.

In ecological terms my study of Osprey foraging in migration at Pelham Bay Park reaffirms the tenet that predators are a function of their prey. Although Ospreys prefer certain conditions while foraging (a moderate headwind and full sun), if Bunker are present somewhere in the park, Ospreys will locate and capture them in any kind of weather. Even late in the season when schools of Bunker are scattered and contain few individuals, Ospreys can still locate prey by picking up cues from one another, much like a network of vultures across the African plains. For example, a distant Osprey circling or diving will cause others to come over and investigate. Similarly, as an Osprey returns with a schooling fish toward a group of perched Ospreys, one or two individuals will head off in that direction. This social aspect of Osprey behavior, seen both in migration and on the breeding grounds, promotes the success of the species.

Along with competition and disturbance, predation is a major force which affects populations of organisms. As prey species become locally abundant and/or vulnerable, raptors have a knack of quickly locating a concentration of prey and exploiting it. During the fall at the farms of eastern Pennsylvania near the Hawk Mountain Sanctuary, migrating kestrels gather *en masse* above the newly plowed fields to have an easy meal of voles and mice. Similarly, at Fire Island and Cape May, Merlins make hay of the flocks of passerines exposed along the dunes. At Pelham Bay on October 19, 1990, Steve Allen and I watched as an immature Bald Eagle pursued and forced an Osprey to drop a fish which was then caught by the eagle in mid-air. The moral of all this is that where there is food some predator is lurking; and this science we call ecology. It can happen in cities just like on the television or even real nature.

Across our region hawk-watches form a network of information, much like a string of tiny islands. We are surrounded not by the ocean, but rather people and buildings. Although we collect a significant amount of data which can be used to assess gross trends in raptor populations, in many instances we are just beginning to understand what raptors do locally in response to changing weather conditions or concentrations of prey. We also have the good fortune of being field biologists with a captive audience; even those who regard birdwatching as a loon's cry will stop dead in their tracks when I

point out a soaring hawk to them. However, this is only the beginning: hawk-watches not only provide information about the patterns of raptor migration and the activities of the local hawks, but keep people aware of what is going on in their home parks and environment.

There are many hawk-watches that will record great totals of migrating hawks and note rare species of birds (indeed, someone at Raccoon Ridge once reported seeing Elvis). Hawks will come and go; people and habitats remain. How we strike a balance between the two will determine what happens to the hawks and ultimately to the quality of life for us. Although sometimes I wish it were not the case, my feet are still firmly ensconced on the ground. I will continue to think globally, sing locally.

Predation ... is a regulatory force continually operating to lower prey increase in proportion to prey density and to do this before more drastic and steadily functioning forces become effective. These other forces seldom, if ever, affect the total prey population simultaneously, but are confined to specific prey only. Disease may strike one prey, while food shortage may regulate another. In contrast, predation strikes all components of the collective prey simultaneously and continually.

J. Craighead and F. Craighead  
*Hawks, Owls and Wildlife*, 1956

It is the species that depend largely on cold-blooded prey that withdraw most completely from Canada and the United States in autumn, namely the Osprey, Mississippi Kite, Broad-winged Hawk and the Swainson's Hawk. In any one breeding area, the species that depend on cold-blooded prey are normally resident for a shorter period each year than are those that depend on warm-blooded prey.

Ian Newton  
*Population Ecology of Raptors*, 1979

## A FALL TO REMEMBER

[The fall of 1990 was marked by an unusual number of rarities in the New York area. The sightings and the rarities will undoubtedly be documented in due course in *The Kingbird* and *American Birds*. Max and Nellie Larsen wrote an account of their fall's birding to their friend Jack Dineen which nicely summarized many of the highlights. It is reprinted here with minor changes. -- The Editor]

Dear Jack,

It was nice to hear from you and to learn that you are enjoying your new home on Point Reyes. But, please be assured that we really miss you and your expertise.

Still, we've been having a pretty good fall. In early August we took a one-day boat trip out of Northeast Harbor, Maine and got a new bird for our list - a Manx Shearwater. We also saw Arctic Tern, Black Guillemots, Wilson's Storm-Petrels, Atlantic Puffins, Greater and Sooty shearwaters. In addition to the birds there were Gray and Harbor Seals, one Minke whale and a pod of 400 White-sided Dolphins.

It was a very enjoyable trip until, on the way back, we came upon the body of a man floating in the water. Our Captain, Bob Bowman knew him. He said the man was lost when his fishing boat failed to return to port. Bob radioed the Coast Guard and a fishing boat stayed with the body until the Coast Guard arrived.

Bob told us that about a month earlier he'd helped rescue an 82-year-old man when a wave capsized his boat. The man was Roger Tory Peterson. You probably read all about it in the November/December issue of *Bird Watcher's Digest*.

After a few days at home, we drove up to Cape Cod to look for the Spotted Redshank present at the Wellfleet Audubon Sanctuary for a couple of weeks. Unfortunately, as sometimes happens, the bird departed the day before we arrived.

Our journey to San Diego in early September was most productive. We saw lots of Least Petrels on the pelagic trip, but no Red-billed Tropicbird. Of course, the pelagics out of Monterey are much more exciting than the San Diego trip, but it was a pleasant diversion. We saw David Bradford (you remember him from Central Park) on the trip. He'd just returned from a quick run to Arizona where he'd seen both White-eared and Violet-crowned hummingbirds.

The San Diego RBA gave Don Hastings' name and number and said he'd be happy to help out-of-town birders. When we called to ask where we should look for a California Gnatcatcher, he escorted us to a brush-covered hill above the Sweetwater Reservoir where we found four.

The next day we drove over to the Salton Sea where it was really rather warm. We found Yellow-footed Gulls in surprising numbers, but just one Blue-footed Booby.

Since we were doing so well with our hit list,