

PELHAM BAY PARK HAWKWATCH RESULTS, 1990

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For the third consecutive fall since 1988, the Pelham Bay Park hawkwatch was held in Bronx County, New York City. Pelham Bay Park is located on the Long Island Sound in the northeastern most section of the city and is one of a number of full time hawkwatches in the New York City region (DeCandido 1989).

During the 1990 season, 21,951 raptors of 14 species were tallied in migration (Table 1). New daily high totals were set for two species: Bald Eagle (5) and Broad-winged Hawk (15,459). For the season, new record totals were established for Cooper's Hawk (52), Northern Goshawk (3), Broad-winged Hawk (18,739), and Red-shouldered Hawk (16), as well for the total number of hawks counted for the season (21,951). Conversely, both Northern Harrier and American Kestrel totals for the season decreased significantly as compared with previous years' results.

As in previous years, the best flights occurred on days of northwest winds. It is hypothesized that the raptors counted in migration on these days have drifted from the inland ridges to the coast with the prevailing wind (Trowbridge, 1895; Mueller and Berger, 1967; Single, 1980); for alternative hypotheses see Murray (1964) and Kerlinger (1989, 1990). Upon arriving at the coast with the northwest winds, some individuals of certain species such as Osprey, American Kestrel and Sharp-shinned Hawk, will cross the Long Island Sound. Most others continue south along the western shore of the sound until passing over Pelham Bay Park. At this point, we see raptors proceeding in two distinct directions from the hawkwatch: south toward Manhattan or west toward New Jersey. In the former case, raptors simply continue south along the coast, a route often utilized by Osprey. In the latter case, we see most of the soaring hawks such as Turkey Vulture, Bald Eagle, Red-shouldered Hawk and Broad-winged Hawk, heading inland ostensibly to the ridges of northeastern New Jersey. Indeed, many more of these latter four species are normally observed at the inland hawkwatches, while numbers of Osprey and falcons are greatest along the coast. This migration pattern at Pelham Bay Park applies only to days of northwesterly winds.

Table 1. Summary of the Raptors counted in migration at the Pelham Bay Hawkwatch, 1990

Species	1990	Three year average
Turkey Vulture	22	21.3
Osprey	1437	1501.3
Mississippi Kite	0	0.3
Bald Eagle	15	14.3
Northern Harrier	119	211.0
Sharp-shinned Hawk	1000	1140.3
Cooper's Hawk	52	46.3
Northern Goshawk	3	2.0
Red-shouldered Hawk	16	11.6
Broad-winged Hawk	18739	9779.3
Swainson's Hawk	0	0.3
Red-tailed Hawk	161	267.3
Rough-legged Hawk	0	1.3
Golden Eagle	1	1.0
American Kestrel	288	483.3
Merlin	36	42.0
Peregrine Falcon	27	25.0
Unidentified	38	25.6
Total	21951	13573.0
Observation Hours	376	445.3

As a case in point, the peak Broad-winged Hawk flight day observed at Pelham Bay on 17 Sep 1990, when 15,459 Broad-winged Hawk were counted, is the best example. Kettles of these hawks were observed arriving from the north, being pushed by the strong (12-20 mph) north-northwest winds to the strip of land bordering the Long Island Sound. Here, the kettles would utilize thermals created by the warm land air overriding the cooler air above the water to gain altitude. After gaining sufficient height, Broad-winged Hawk left the park heading west and west-northwest; *i.e.*, almost directly into the prevailing wind. Interestingly on this same day, large kettles of Broad-winged Hawk were observed coming from the direction of Pelham Bay Park and heading west over the Bronx Zoo and toward New Jersey by an ornithologist familiar with the species (P. Rodewald, *pers. comm.*). Finally, large kettles of Broad-winged Hawk were also seen well to the east of the hawkwatch

at Montclair, New Jersey, on this day (Walter, 1990). However, none of the nearby inland ridge hawkwatches north of Pelham Bay, such as Hook Mountain near Nyack, the Butler Hawkwatch in Mt. Kisco, or Quaker Ridge in Greenwich, Connecticut, recorded large numbers of Broad-winged Hawk in migration on this day.

To summarize, it is hypothesized that, on northwest wind days during the fall migration, raptors drift with the prevailing wind to the coast. Most individuals then continue southwest by following the leading line of the shore. Upon arriving at Pelham Bay, many of the broad-winged soaring species then head due west toward the inland ridges of northeastern New Jersey.

One of the advantages in having so many hawkwatches in a fairly restricted area is that this concentration of effort forms an interception line (Currie *et al.*, 1985), a region wide hawk count, which can accomplish two goals. First, it will permit more accurate census of a portion of the hawks migrating through the area on a given day and over the course of an entire season. Second, our knowledge of the migration routes that raptors follow in response to different winds, changing meteorological conditions, or concentrations of food resources will be enhanced.

OSPREY FORAGING

During the fall of 1990, Pelham Bay Park continued to be an important foraging area for migrating Osprey, with the peak of activity occurring in the month of September as in previous years. However, unlike in 1989 when foraging activity was minimal due to the paucity of Mossbunker (*Brevoortia tyrannus*), the main prey species of the Osprey, this fall Mossbunker was abundant in the waters of the western Long Island Sound and Pelham Bay Park. In addition, many Osprey were observed returning to the area of the hawkwatch with fish caught in more remote sections of the park.

Table 2. Summary of Osprey Foraging Activity at the Pelham Bay Hawkwatch, 1990

For the results of the Osprey foraging survey for 1990 and four year totals, see Table 2. Preliminary analysis of the data collected in this study suggests that, although Osprey prefer certain conditions while

foraging (e.g., prey from 8-14 inches in length, moderate head wind, full sun illuminating the dive area, a high tide and calm waters), so long as fish are present, Osprey can locate and capture prey under a variety of conditions.

Hrs - Number of hours of observations made.; Att - Number of hunting attempts observed; Suc - Number of successful hunting attempts observed; PCT - percent of hunting attempts that were successful; Peak - day with the most number of hunting attempts for the month; Ret - number of Osprey observed returning to the hawkwatch area with fish caught in other sections of the park; Att/Suc - hunting attempts and successes observed on peak day

1990							
Month	Hrs	Att	Suc	PCT	Ret	Peak	Att/Suc
August	12	17	7	41%	4	30 Aug	11/4
September	188	307	124	40%	283	23 Sep	31/18
October	155	41	9	24%	79	2 Oct	0/0 ¹
November	21	7	2	28%	0	6 Nov	7/2
total	376	372	142	38%	366	23 Sep	31/18
1987-1990							
	Hrs	Att	Suc	PCT		PEAK	Att/Suc
August	153	70	35	50%		30 Aug '88	7/4
September	428	448	183	41%		23 Sep '90	31/18
October	364	78	24	31%		3 Oct '88	18/6
November	126	7	2	29%		6 Nov '90	7/2
total	1071	603	244	40%		23 Sep '90	31/18

1. Osprey returned to the hawkwatch area with 15 fish caught in other sections of the park on this date.

Osprey were not the only species exploiting the abundant prey. On 15 Oct, an adult Caspian Tern was observed returning several times to feed an immature Caspian Tern with Mossbunker and small Bluefish (*Pomatomus saltatrix*). Further, Osprey carrying fish were often pursued by Laughing, Ring-billed and Herring Gulls. While perched, Osprey occasionally were challenged for their fish by Great Blue Herons. Osprey never relinquished prey to these species. However, on 19 Oct, a partially eaten fish was pirated from an Osprey in midair by an immature Bald Eagle.

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