Naturally, there are more, and many naturalists would question my omission of their own favored areas. I am merely suggesting the nucleus of a list to which I hope others will add those areas they consider the most important to be preserved, and for which they would be prepared to work selflessly.

On Long Island, man has been the dominant species for a long time. He has not used his dominance with thrift or wisdom; he can never bring back those priceless natural assets he has already squandered by greed and carelessness. We can only hope that these past attitudes will change and that, with a greater and more universal awareness for the beauty and complexity of undisturbed nature, some small oases can be saved. It must be the inspired mission of the amateur naturalist to convert more to his ranks, before the Island has become a tragic monument of concrete, steel, brick and billboards to a natural paradise that has gone forever.

Upton, L. I.

FALCON FLIGHTS ON LONG ISLAND

JOHN J. ELLIOTT

For thousands of years the tumbled sand-dunes along the ocean on the South Shore of Long Island and the sandy cliffs along eastern Long Island Sound lay wild and unoccupied except for some roving Indians who made little impression on the terrain. Also, with the coming of white settlers, little change came over these remote outer tracts, for with sparse population and attention directed inland, building, if any, was spotty. Sixty years ago many of the barrier beaches were approachable only by boat and the old naphtha launch and sailboat were not conducive to expansive building.

So it is within the lifetime of the present average adult, in fact within the past 20-30 years, that great transitional changes have taken place, and now eastern Long Island's residential building on the dunes is keeping apace with that inland. Also, the very destructive 1938 hurricane and more recent ones have apparently acted as little or no deterrent to the construction, an example of which is the almost continuously occupied ocean front from Westhampton to Shinnecock Inlet, and on western Long Island from Point Lookout to Brooklyn.

Likewise, presumably for thousands of years during late summer and fall migrating hawks, especially Falcons, have used the dune-lines, generally beating their way along these on days of northwest winds. So it is the privilege of the present generation, unique in history, to study the changes in migration routes due to human occupancy of the coastline. Some of this has already been accomplished, much remains to be done, or at least to be accumulated into written material.

Roy Latham, of Orient, for many years studying hawk migration along the Sound on the eastern end of the north fork has given some thought to this subject. He states that the route along the Long Island Sound shore is the best one in Orient and the sandy beaches along the bay a poor second and that very few hawks come west in between. With the Sound shore starting to build up with fishing station and summer homes, he has not yet determined if this has made drastic changes in the hawk flights, but believes

that they would go by offshore past occupied tracts and later swing in over the land. Regarding this he writes: "In the past most of these have followed the bank inshore of the surf".

Unlike the Long Island Sound shore on eastern Long Island, Falcon flights are progressively poorer down the western Sound shore with most birds proceeding along the Atlantic Coast dune tracts. It is suggested here that further investigation and studies be made where the cross-over points are and how proportionately most of the birds reach the dune areas: whether by way of Block Island and Montauk; from the eastern Connecticut shore to Fischers Island and Orient, then across Peconic Bays to the South Shore; or down the Connecticut River Valley and across the Sound to the South Shore. We know that the flight is good at Mecox and along the dunes at Shinnecock, Moriches, and on Fire Island to Democrat Point, south of Fire Island Inlet.

Although there are some Falcon reports from the major flyways in the interior, Long Island's South Shore flight is considered by far the greatest one, and the main route is down the outer strip between ocean and bay. As with Latham we usually find these birds strictly following the unoccupied dunes inshore of the surf when migrating, although spreading out into favorable hunting grounds, or bypassing occupied areas. A few decades ago when hawks were unprotected, small Falcons might be found dead on eastern Long Island's dunes or on the roadside where shot by gunners. A. D. Cruickshank, 1942, in "Birds Around New York City," remarks that Dr. Helmuth of East Hampton wrote to him and stated that 27 Pigeon Hawks were killed and thrown into the road at Mecox, September 13, 1933. Hawk protection and residential construction on the ocean front have caused a general discontinuance of this.

Apparently the Falcon migration continues westward from Fire Island Inlet down the Jones Beach strip except for the Peregrine. Harry Darrow, of Bronxville, New York, who has records based on 12 years experience at Democrat Point, finds that from 70 to 80 percent of the Peregrines which followed the Fire Island beach front westward alter this direction by some 30 to 45 degrees once they come to the jutting Democrat Point and fly out over the ocean. He explains that the bearings used were between 228 and 236 dgrees which compares favorably with the shore birds whose average was 232 degrees. This spread of 8 degrees at Democrat Point means considerable miles of beach front in New Jersey — approximately a point south of Sea Girt (236 degrees) to about Beach Haven (228 degrees). Darrow remarks: "those holding a course any more southerly than 228 degrees could well miss New Jersey completely and hit it on the Delaware coast or Delmarva peninsula. As to other hawks, with the exception of an occasional Osprey, they all leave Democrat Point and cross over to Jones Beach."

Regarding flight days and wind velocity, perhaps the all-time high for the Sparrow Hawk was on October 1, 1960, when, with very strong northwest winds Darrow counted 644 at Democrat Point between 9:00 a. m. and 3:30 p. m. with birds still coming through at 5:00 p. m. South of Brookhaven, the same day, Dennis Puleston of Brookhaven counted two Peregrines, 15 Pigeon Hawks and 200 Sparrow Hawks (time of observations not mentioned).

In the fall of 1955, under Chandler S. Robbins' Fish and Wildlife Service hawk count, several surveys were made on eastern Long Island. Roy Latham of Orient on September 17, from 7:00 a. m. to 7:00 p. m. counted 15 hawks of eight species with an easterly wind of from five to seven miles an hour. There were nine Falcons; three Sparrow Hawks and six Pigeon Hawks. Except for a small flight of Pigeon Hawks flying low westward, all others appeared to be tarrying or feeding locally. The same day was very poor on the South Shore, with Mrs. Wilfred Walter of East Quoque observing one Pigeon Hawk and two Sparrow Hawks from 8:00 a. m. to 4:00 p. m., Quogue to Mecox; and Roy Wilcox of Speonk counting one Pigeon Hawk and eight Sparrow Hawks, between Westhampton and Bridgehampton, in the morning of that day. Later in the season, on September 21, with a 15 mile-per-hour northwest wind, Wilcox counted 10 Sparrow Hawks and 35 Pigeon Hawks between Westhampton and Shinnecock in one hour, from 11:15 a. m. to 12:15 p. m. This is perhaps an all-time high for Pigeon Hawks in one hour's time. On September 22, Westhampton to Moriches, with a light five mile-per hour north wind, he totaled 19 Sparrow Hawks and 11 Pigeon Hawks in two hours — 9:45 to 11:45 a. m. From Westhampton to Mecox 1:50 p. m. to 4:50 p. m. same day, he observed one Duck Hawk, 16 Sparrow Hawks and five Pigeon Hawks.

Easterly winds, fairly strong, around 15 miles per hour or more, may occasionally be productive, as on September 24, 1960, at Jones Beach, when in one-half hour's time, beginning at 11:00 a. m., a dozen small Falcons and a Peregrine were seen very high above Jones Beach (Baldwin Bird Club). These birds were practically out of sight; and such observations indicate that some Falcon movements may pass through entirely unobserved unless a careful scanning of the upper skies is made.

Westward of Jones Beach, John Mayer and George Rose have made Falcon counts at Broad Channel, and John Bull at Far Rockaway on different occasions, with some success. Bull is of the opinion that, as with the Peregrine at Fire Island Inlet, other Falcons, including the smaller Sparrow and Pigeon Hawk, head out over the ocean from Rockaway Point (on a much shorter tangent than from Fire Island) toward the New Jersey shore.

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HAWK MIGRATIONS AT JONES BEACH

Cornelius Ward

Approximately 17 days of hawk watching along Jones Beach produced a total of 614 hawks in the fall of 1958. Of this total 75 percent were seen on six "hawk days"; days during which the winds were northwesterly, a prerequesite for good flights.

Sparrow Hawks made up the largest number among the migrants, followed by Pigeon Hawks. The latter outnumbered the Sparrow Hawks in late October and early November. Marsh Hawks and Ospreys were next in numbers followed by the Accipiters and Peregrine Falcons. Of the 12 Perigrines seen, half of them showed up on "off days". On one day of