

# THE SPRING HAWK MIGRATION AT CAPE MAY, NEW JERSEY

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Despite Cape May, New Jersey's fame as a concentration point for raptors during the autumn migration, very little has been published regarding the spring migration of hawks on the Cape May peninsula. Only scattered observations have been recorded in either *American Birds* or *Records of New Jersey Birds*, and indeed, as recently as 1979, the spring flights at Cape May were described as "none" (Heintzelman, 1979).

Spring hawk migration has been well studied in the northeastern United States at places such as Derby Hill, New York, and, more recently, in our region at Raccoon Ridge in northern New Jersey (Dunne, 1978). While the spring ridge flights have been comparatively well documented in New Jersey, little was known concerning coastal plain flights (or anywhere on the East coast for that matter) until the Cape May Bird Observatory initiated a spring hawk migration study at Sandy Hook, New Jersey, in 1977 (Clark, 1978). This count, signifying a major coastal spring movement, has been ongoing and was most recently and best summarized by LeGrand in 1983.

In an attempt to document the area's importance as a spring concentration point for raptors, the authors began a spring hawk watch at Cape May in 1978. This paper describes the spring hawk migration at Cape May from 1978 through 1983, discusses the dynamics of the flight, makes comparisons with the known flight at Sandy Hook, and discusses the potential of a full-time spring hawk migration study at Cape May.

## METHODS

Following two spring seasons of orientation in 1976 and 1977, when a substantial movement of raptors was observed, record keeping began in 1978. While an attempt was made to enumerate all migrant raptors, it should be noted at the outset that this hawk watch was part-time and that many flight days and numerous migrants were missed. It was not the full-time efforts seen recently at Raccoon Ridge and Sandy Hook. However, for six seasons, 1978 through 1983, flights were recorded whenever possible and the authors made every attempt possible to be present for suspected and predicted major flights. Therefore, this hawk watch was not a strictly random exercise.

While the observations are largely those of the authors, certain "rarities," i.e. those less-common raptors such as eagles and kites seen by other reliable observers, were added to the totals when it was clear they did not involve duplication. These few random sightings, while reflected in the spring totals, are not reflected in the number of observation days listed. An observation

day generally reflects a full day afield (six to eight hours). This method was used in an attempt to show the relative abundance of all species that were moving through Cape May on their northward migration.

The study was conducted on the southern tip of the Cape May, New Jersey, peninsula (Figure 1). All observations were made south of the Cape May Canal (Figure 2). Since most raptors would enter the Cape (from the south) on a broad front, after crossing the thirteen-mile span of Delaware Bay, Cape May Point, the official fall hawk-watch site, was not always the best place for counting spring raptors. Most observations were conducted near the "Beanery" in the Borough of West Cape May. This site, approximately one mile north of the lighthouse at Cape May Point, was optimal because it allowed an overview of Pond Creek, a freshwater marsh, where habitat (and possible thermals) attracted many of the hawks which often lingered briefly, kettling and thermaling, before resuming their movement north.

Figure 1

REGIONAL LOCATION OF CAPE MAY SPRING HAWK MIGRATION STUDY

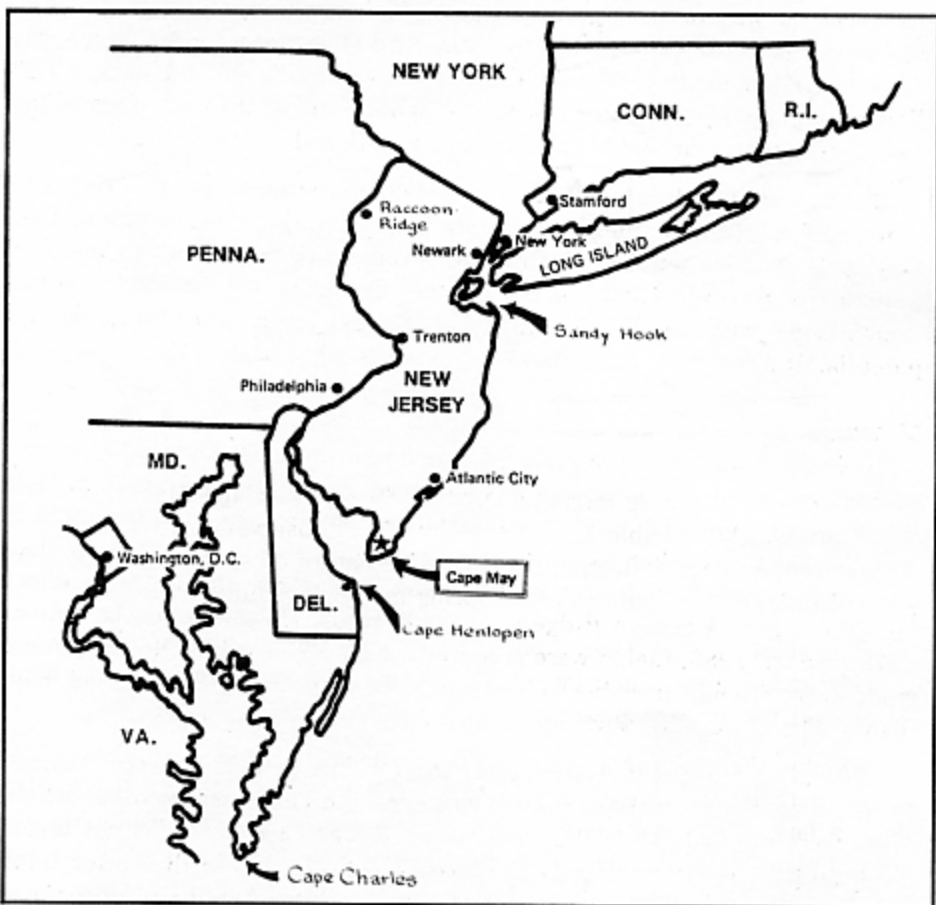
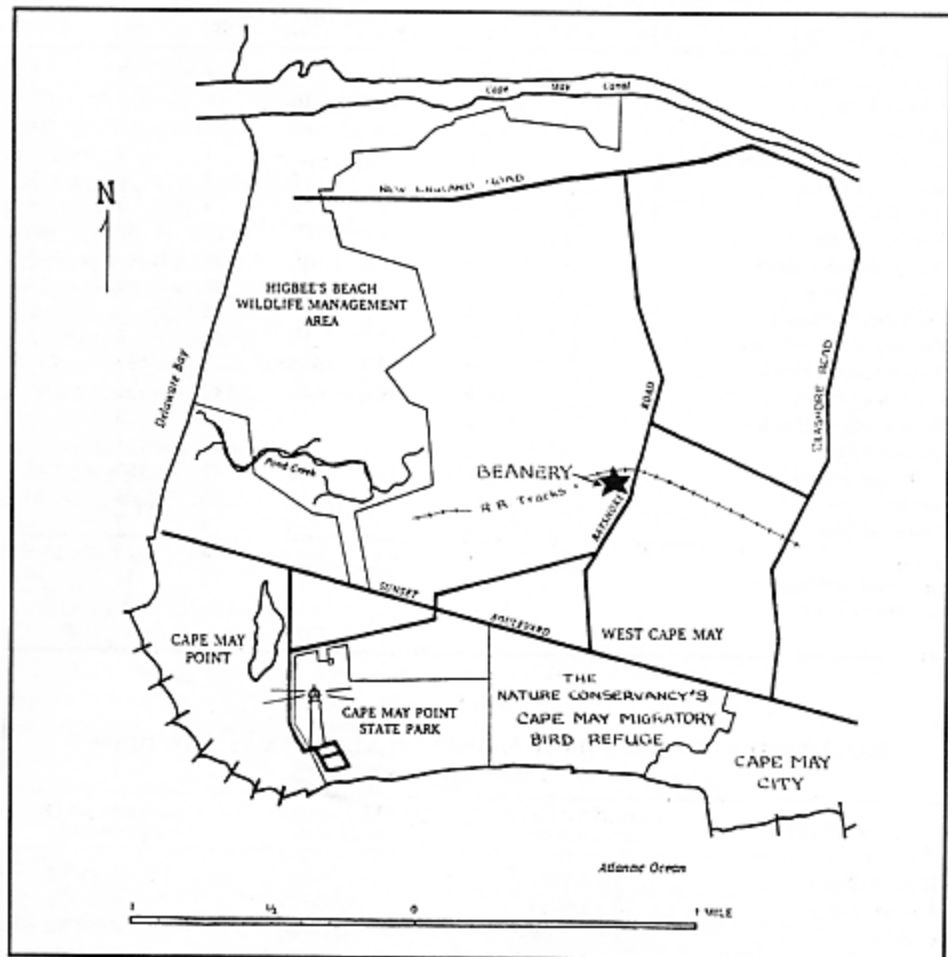


Figure 2

## CAPE MAY SPRING HAWK MIGRATION STUDY AREA



## FINDINGS

The totals of spring migrant raptors observed at Cape May, from 1978-1983, are shown in Table 1. The number of full observation days involved is also shown, a figure reflecting the part-time nature of the study yet allowing comparability of this data to other spring migration studies.

The seasonality of Cape May's spring hawk migration is shown in Table 2. This includes early and late flight dates; also shown are peak flights and dates over the six-year period.

Finally, the six-year average for each species is shown in Table 3. Also shown here is the seven-year average derived from published Sandy Hook data (Clark, 1978; LeGrand, 1983). These figures allow a comparison of coastal plain flight data from opposite ends of New Jersey and allow for some assessment of the impact of the Delaware Bay on coastal migrant raptors.

TABLE 1

SPRING HAWK WATCH TOTALS AT CAPE MAY, N.J.: 1978-1983

SPECIES	1976	1977	1978	1979	1980	1981	1982	1983
Black Vulture		1		2		2	2	5
Turkey Vulture			78	44	110	58	171	102
Osprey			41	19	55	52	65	84
Am. Swallow-Tailed Kite	1		1	2	3	1	2	1
Mississippi Kite	1	1	2	2	7	9	6	5
Bald Eagle	2	2	1	2	3	4	3	2
Northern Harrier			22	3	7	16	90	69
Sharp-shinned Hawk			9	3	54	36	45	168
Cooper's Hawk			5	1	38	38	50	72
Northern Goshawk			1			3	1	1
Red-shouldered Hawk			8	12	16	11	9	9
Broad-winged Hawk			329	295	836	424	193	735
Red-tailed hawk			39	22	139	143	190	85
Rough-legged Hawk			3				3	
Golden Eagle							1	
American Kestrel			NC	46	669	15	105	222
Merlin			13		11	16	36	39
Peregrine Falcon			1		4	1	1	3
Total	NC	NC	553	454	1952	829	973	1602
Observation Days	-	-	16	12	17	13	19	10
NC - Not Counted								

TABLE 2

SEASONALITY OF SPRING HAWK MIGRATION AT CAPE MAY, NEW JERSEY  
(# of birds seen - date)

SPECIES	EARLIEST DATE RECORDED	PEAK FLIGHT AND DATE	LATEST DATE RECORDED
Black Vulture	1 - 2/9/77	3 - 5/6/83	1 - 5/23/83
Turkey Vulture	10 - 2/9/77	50 - 3/28/72	4 - 6/25/79
Osprey	1 - 3/12/80	35 - 4/27/83	1 - 6/20/82
Am. Swallow-tailed Kite	1 - 4/20/76	1 - 10 records in last 6 years	1 - 6/18/82
Mississippi Kite	1 - 4/19/81	5 - 6/2/82	1 - 6/11/78
Bald Eagle	2 - 3/1/76	2 - 3/1/76 & 5/26/80	1 - 7/5/77
Northern Harrier	1 - 3/5/77	30 - 4/27/83	1 - 6/20/82
Sharp-shinned Hawk	2 - 2/2/80	125 - 4/27/83	1 - 6/4/80
Cooper's Hawk	1 - 4/1/80	40 - 4/27/83	1 - 5/27/83
Northern Goshawk	1 - 3/7/78 & 3/7/81	2 - 3/22/81	1 - 4/17/83
Red-shouldered Hawk	1 - 3/7/78	10 - 5/6/79	2 - 6/11/78
Broad-winged Hawk	1 - 4/16/81	335 - 5/25/83	12 - 7/6/79
Red-tailed Hawk	2 - 2/2/80	50 - 4/6/80	1 - 6/25/79
Rough-legged Hawk	1 - 3/8/78	2 - 3/17/78	1 - 4/29/82
Golden Eagle	1 - 2/28/82	1 - 2 records	1 - 5/1/64
American Kestrel	3 - 3/5/77	300 - 4/11/80	1 - 6/25/79
Merlin	1 - 3/17/82	32 - 4/27/83	1 - 5/23/81
Peregrine Falcon	1 - 3/6/80	1 - 10 records in last 6 years	1 - 5/26/82

TABLE 3

AVERAGE YEARLY COUNT FOR EACH SPECIES AT  
CAPE MAY AND SANDY HOOK, NEW JERSEY

SPECIES	CAPE MAY	SANDY HOOK
BLACK VULTURE	2	(2 records)
TURKEY VULTURE	94	68
OSPREY	53	68
AM. SWALLOW-TAILED KITE	2	(1 record)
MISSISSIPPI KITE	5	—
BALD EAGLE	3	1
NORTHERN HARRIER	35	290
SHARP-SHINNED HAWK	53	2,349
COOPER'S HAWK	34	177
NORTHERN GOSHAWK	1	3
RED-SHOULDERED HAWK	11	111
BROAD-WINGED HAWK	469	87
RED-TAILED HAWK	103	67
ROUGH-LEGGED HAWK	1	1
GOLDEN EAGLE	(1 record)	(1 record)
AMERICAN KESTREL	211	2,330
MERLIN	19	144
PEREGRINE FALCON	2	3
TOTAL	1,060	5,698
AVERAGE NUMBER OF OBSERVATION DAYS	14.5	67

Cape May's average computed on 6 years of observation data, 1978-1983.

Sandy Hook's average computed on 7 years of observation data, 1977-1983.

(Source: Clark, 1977; LeGrand, 1983)

## DISCUSSION

A substantial spring raptor movement has been documented for Cape May with some surprising characteristics regarding individual species.

Spring migration is of lengthy duration at Cape May with the earliest witnessed definitive movement being two Sharp-shinned Hawks that came in off Delaware Bay on February 2 (1980). This migration continues, to some degree, at least until July 6 (1979) when twelve Broad-winged Hawks were observed soaring over Cape May Point.

While most peak flight dates are comparable to those of other northeastern hawk migration watches, a careful look at Cape May's daily spring count charts (on file) shows an interesting phenomenon, wherein a second, and later, peak seems to occur for each species. This late movement, theoretically, represents mostly (if not all) non-breeding subadult birds, a phenomenon rather unknown at most other northeastern watch sites, but recently documented for Derby Hill, New York (Smith and Baker, 1983). These late wanderers represent a sizable portion of Cape May's total flight. It is easy to theorize that these immature birds not yet beckoned to a specific

breeding site are more likely to be susceptible to wind drift and resultant lingering.

Another significant aspect of Cape May's spring flight is that many of the species more prone to soaring *clearly* enter the Cape from the north, linger, and then disappear to the north again. To some degree this reverse migration makes counting more difficult at Cape May than at comparable ridge sites. On some wind and thermal conditions considerable loitering occurs over the Cape; one must be careful to follow specific birds and not recount lingering individuals.

Species accounts follow and are summarized in an additional discussion.

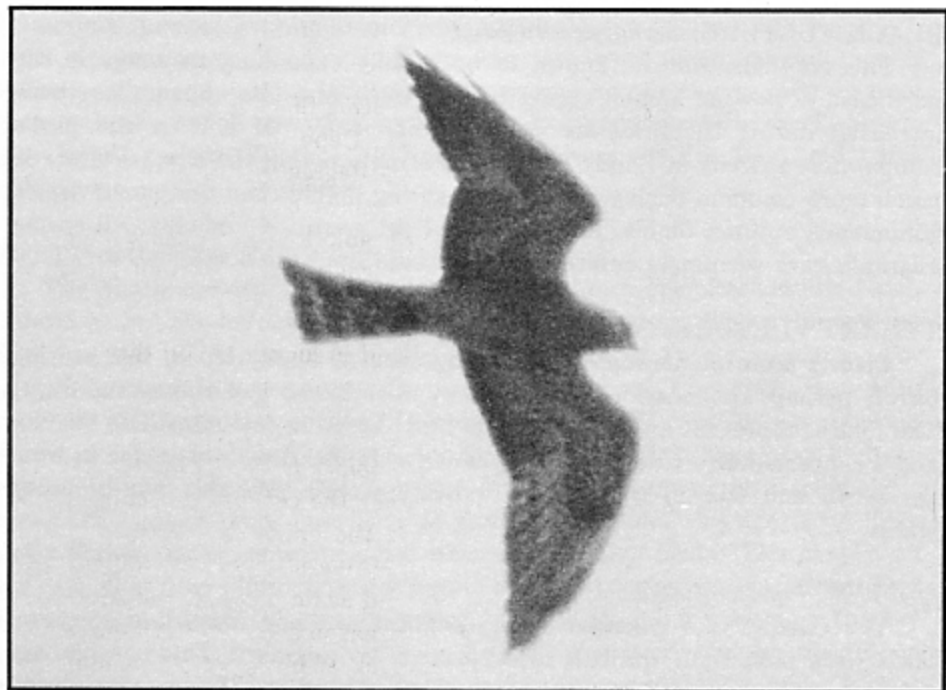
#### AMERICAN SWALLOW-TAILED KITE, *Elanoides forficatus*

While previously documented (Sutton, 1982), the continued occurrence of kites at Cape May is significant; the Cape is the only spot north of South Carolina where both the Mississippi Kite and American Swallow-tailed Kite are annual. First seen at Cape May in 1972 and again in 1976, the American Swallow-tailed Kite has only been missed one season since, in 1977, no doubt due to a lack of observers as opposed to a lack of birds. While annual, the American Swallow-tailed Kite has been the hardest hawk to see at Cape May due to its tendency not to linger (as compared to the Mississippi Kite). Several of the late season kites sighted at Cape May were thought to be returning south. Birds were sighted by the authors in 1979 and 1980; the other records represent miscellaneous sightings by other observers.

#### MISSISSIPPI KITE, *Ictinia mississippiensis*

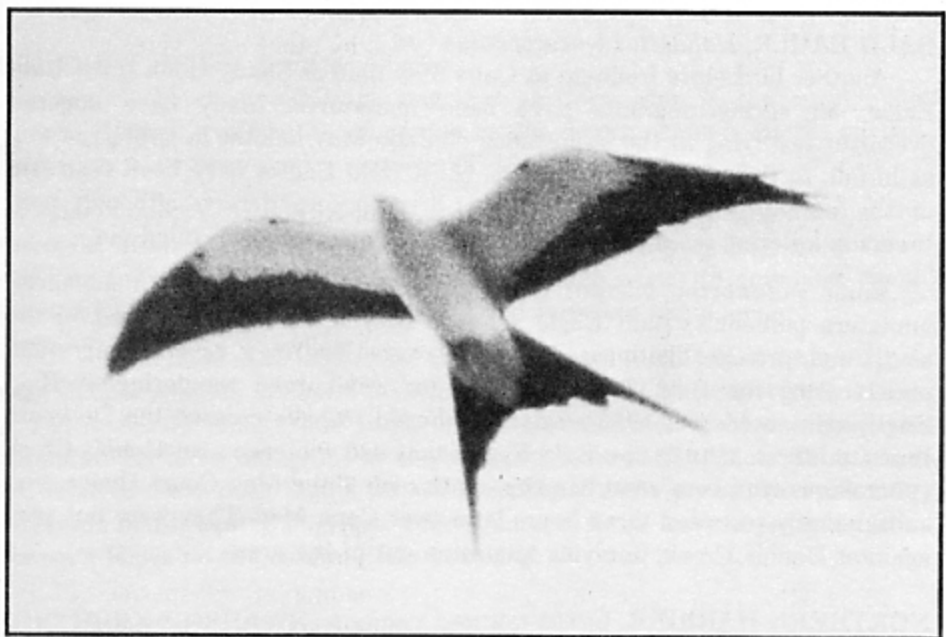
The well know occurrence of the Mississippi Kite at Cape May Point has prompted hundreds of birders to come to the Cape to see this bird. Because of this kite's tendency to linger, many birders have succeeded. First seen in 1976, a yearly high of a least nine individual birds was estimated (out of at least eighteen daily sightings) in 1981. The peak daily flight was the five kites seen together on June 2, 1982 by Al Nicholson (who was responsible for discovering the presence of kites at Cape May in 1976). The time table for the Mississippi Kite is quite predictable. It can be seen almost any day of good lift or wind conditions between May 24th and June 4th.

While most birds are seen late in the season and are no doubt non-breeding wanderers, sightings of full adult kites and of several "early" migrants indicate the possibility of northern breeding for this species which is known to be rapidly increasing its range throughout North America. The discovery of numerous Mississippi Kites at Cape May was certainly one of the highlights of this spring hawk watch.



Immature Mississippi Kite over Cape May, New Jersey, May 31, 1981.

Photo by Clay Sutton.



The American Swallow-tailed Kite is an annual spring migrant at Cape May.

Photo by Clay Sutton.

#### BLACK VULTURE, *Coragyps atratus*

This southern vulture, known to be rapidly expanding its range in the northeast, is now an annual spring bird at Cape May. Its appearances have increased during the brief six years of this study. Of note is the bird's comparative scarcity at Sandy Hook. Also of note is that the Black Vulture is much more common during Cape May's spring flights than during the area's voluminous autumn flights, where it is not yet recorded annually. All spring migrants have seemingly entered the peninsula from the north.

#### TURKEY VULTURE, *Cathartes aura*

Clearly more numerous at Cape May than at Sandy Hook, this soaring bird is perhaps the most susceptible to weather-forced lingering at the Cape. The figures represent migrants since no birds breed in the immediate vicinity and a concerted effort was made to eliminate duplication. Most came in from the north and late in the season, indicating their probable non-breeding status.

#### OSPREY, *Pandion haliaetus*

The Osprey is a common spring migrant at Cape May. Local nesting birds were potentially difficult to separate from migrants. This species was seen migrating into mid-June (theoretical non-breeders). The numbers seen over the six-year period, though similar, show the expected increase known to be occurring for the Osprey in the Northeast.

#### BALD EAGLE, *Haliaeetus leucocephalus*

Another bird more frequent at Cape May than at Sandy Hook is the Bald Eagle; all spring migrants have been immatures. Many have lingered overnight testifying to the importance of Cape May habitat in spring, as well as in fall, to this endangered species. Most Bald Eagles have been seen late in the period implying southern post-breeding wanderers, although non-breeding loitering (as exhibited for other species) cannot be ruled out.

Some noteworthy migrant dates and movements follow. An advanced immature (subadult) Bald Eagle seen on May 3, 1981 disappeared to the south and presumably crossed the Delaware Bay in a reverse migration, underscoring the Bald Eagle's affinity for widespread wandering. A Bald Eagle seen on May 6, 1983 was also believed to have crossed the Delaware Bay. On March 1, 1976 two Bald Eagles that had wintered near Dennis Creek (17 miles north) were seen heading south over Cape May Court House, and subsequently recorded three hours later over Cape May. They were not seen again at Dennis Creek, implying migration out of the area.

#### NORTHERN HARRIER, *Circus cyaneus*

While a part-time watch can hardly assess population trends in its first six years; nonetheless, the ninety Northern Harriers recorded in 1982 were clearly part of a spring incursion into the area well above the average.

Numerous harriers paused over Pond Creek Marsh to feed. On April 27, 1983 approximately thirty Northern Harriers were seen coming in off Delaware Bay and making landfall; however, one harrier clearly came in from the north, thermaled over the lighthouse and disappeared out over Delaware Bay, heading south. Of the 159 Northern Harriers seen in 1982 and 1983, only nine were adult males.

#### SHARP-SHINNED HAWK, *Accipiter striatus*

The Sharp-shinned Hawk was the most numerous accipiter recorded and, indeed, one of the hardest to count due to its broad-based flights through the Cape as well as the direct (non-soaring) nature of its spring migration. For sure, many more Sharp-shinned Hawks passed through Cape May than were counted. The peak daily flight of 125 birds on April 27, 1983 is a number no doubt possible on some days every year; peak flights have clearly been missed by this part-time watch, particularly in its early years. Nonetheless, this bird is much more numerous at Sandy Hook than at Cape May. Peak daily flights there sometimes are over a thousand birds. This seems to indicate that the Sharp-shinned Hawk does not cross the Delaware Bay directly from Cape Henlopen, Delaware, to Cape May, but travels up the bay to make a shorter crossing further north. (This is borne out by the fifteen plus Sharp-shinned Hawks seen by the authors crossing the Delaware Bay at Bayside, Cumberland County, N.J., on April 16, 1977 in two hours of observation.) These preliminary data indicate that the bulk of the Sharp-shinned Hawk flight bypasses Cape May in spring.

#### COOPER'S HAWK, *Accipiter cooperii*

One of the most intriguing migrants at Cape May in the spring, the Cooper's Hawk, is often as numerous as the Sharp-shinned Hawk; on two years they have been more numerous (Table 1).

The Cooper's Hawk, though an accipiter, makes exceptional use of thermals, often soaring during migration. This tendency to soar (relative to other accipiters) makes the Cooper's Hawk much easier to spot and count because of the associated concentration and lingering phenomena.

Of considerable note is that the Cape May peak flight (April 27, 1983) of forty Cooper's hawks is higher than the all-time peak flight (March 10, 1982) of 28 at Sandy Hook. The implications are that the Cooper's Hawk is comparatively more numerous at Cape May than at Sandy Hook. Comparing the dates of these peak flights we see that Cape May's probably represents numerous non-breeding lingerers. Much remains to be learned regarding the Cooper's Hawk on the coastal plain in spring.

#### NORTHERN GOSHAWK, *Accipiter gentilis*

Only six Northern Goshawk have been recorded at Cape May in the six springs of this study, yet there is no doubt that more birds would be seen if

Six years of spring hawk migration study have yielded considerable insight into the coastal plain movement. Comparing data with the valuable Sandy Hook data tends to answer some questions and pose others.

Spring migration at Cape May clearly occurs under the same conditions that produce fall flights: the passage of a cold front and brisk northwest winds. Six years of spring data show that, as in the fall, the second day following the passage of a front (as the winds moderate) produces more birds. These same data show that winds from the north to northeast tend to produce greater raptor variety, particularly with the addition of buteos, if not greater numbers. Gentle winds from the northwest to the northeast and thermal conditions seemed popular for cross-bay flights. Good flights were also noted on south and southwest winds, although it is theorized that this precipitated broad front movement and little concentration.

The spring migration is protracted. While some movement would be witnessed under almost any weather conditions in April and early May, peak conditions were clearly needed to produce a flight earlier and later in the season.

The dynamics of spring flights are similar to those of the fall when northwest winds push birds into the peninsula and hold them there. Of interest, though, is the relative spring abundance of buteos (except Red-shouldered Hawks) at Cape May, but fewer accipiters (except Cooper's Hawks) and falcons than at Sandy Hook. This is exactly the opposite of the fall migration when falcons and accipiters dominate the flight with comparatively few buteos to be seen. Red-tailed Hawks and Broad-winged Hawks are relatively as common, on the average, in spring as are American Kestrels and Sharp-shinned Hawks. This will amaze Cape May fall hawk watch veterans, but underscores that birds which rely primarily on soaring cannot always go directly where they wish. The geography and prevalent winds of eastern North America do not lend themselves to buteos riding the ridges north in spring, a situation which results in many buteos on the coastal plain at Cape May.

The bulk of raptors at Cape May in spring (as in the fall) are immatures. The comparative lateness of peaks suggests that many more non-breeding birds are involved in Cape May flights than those at Sandy Hook.

It remains difficult to compare an intermittent count (even one which has attempted to monitor suspected peak flight conditions) to any established counts such as Derby Hill or Sandy Hook. However, some comparison is possible. In 1980, Cape May's best spring flight, 1,952 raptors were seen in just 17 days of observation, for an average of 115 birds per day. This compares very favorably with Sandy Hook's average of 119 birds per day, 6,795 birds in 57 days of observation. At Cape May in 1983, ten days yielded 1,602 birds or 160 birds per day, compared to 103 birds per day at Sandy Hook, or 7,818 birds in 76 days.

Table 3, showing the six-year average for Cape May and seven for Sandy Hook, gives additional insight. At Cape May an average of 73 birds per day was seen over the six-year period. Sandy Hook averaged approximately (exact data unavailable) 85 birds per day. Finally, Raccoon Ridge (Dunne, 1978) yielded 3,838 raptors in 54 observation days in 1977, for an average of 71 birds per day.

By this method, coastal plain flights can be compared at opposite ends of New Jersey, as well as to New Jersey's only ridge count, Raccoon Ridge. The significance of the Cape May spring hawk migration is its comparable species composition.

The relative abundance and diversity of spring migrants recorded at Cape May hints at the potential of a full-time watch for the area. Extrapolation of data hints at a highly significant number and variety of raptors passing through Cape May each spring.

#### SUMMARY

On the basis of six springs of intermittent hawk migration study at Cape May we have documented a substantial hawk migration on the peninsula. Theoretically, there is little geographical reason for hawks to concentrate here in the spring. However, for unknown reasons, many birds come in from the north and gather at the Cape much as they do during the famous autumn flights.

We have compared and contrasted Cape May's spring flights to Sandy Hook's established count. Roughly, Cape May spent one-third of Sandy Hook's observation time and recorded approximately one-third the number of raptors seen at Sandy Hook. Yet buteos were comparatively much more common at Cape May. Falcons and accipiters moved through on a broad front and therefore were less evident.

Cape May has long been known for extralimital bird occurrences, and the spring migration of soaring birds is no different. The American Swallow-tailed Kite is annual at Cape May and the Mississippi Kite must be listed as regular. Other soaring migrants noted during the study included two American White Pelicans (*Pelecanus erythrorhynchos*) on March 30, 1983 and a single one seen soaring with a small kettle of buteos and vultures, on April 12, 1983.

Other highlights included a June Bald Eagle which stooped upon, killed, and leisurely fed on a Herring Gull (*Larus argentatus*) near Cape Island Creek; and an immature Peregrine Falcon, which soared until a speck and then executed the classic stoop, diving straight at the earth at indescribable speed to take a gull. . . fuel for its journey to the tundra.

On two particularly memorable days buteos and Cooper's Hawks were seen converging over Pond Creek Marsh. Some birds clearly came in off the

Delaware Bay, hit land, and thermaled. Other birds entered the Cape from the northeast, joined the fresh arrivals from the Bay; then all the birds kettled together and streamed due north. The memories of waiting for kites are vivid. We watched as the ragged, molting broadwings floated in May's morning haze high over Cape May Point, until finally, the Mississippi Kites appeared; one, two, three, and, finally, four birds intermittently glided through the mixed kettles and then hawked insects over the cat-tails of Pond Creek Marsh. Such visions illustrate that hawk migration study is not just a matter of numbers.

While establishing a major spring hawk movement at Cape May, this study clearly indicates that a great deal is yet to be learned. Fortunately, the pleasant memories of warm spring days and hazy skies filled with floating hawks means that this study, though intermittent, will be ongoing.

#### ACKNOWLEDGEMENTS

Many people generously offered their detailed sightings to be included in this study. As noted, the less common or "rare" hawks seen by others were added to our daily totals. Those who were on hand to record them are too numerous to note, and we thank all who have helped in perpetuating the ornithological significance of Cape May. We particularly thank Pete Dunne for offering his detailed observations for the six years of this study and Keith Seager who contributed significant data. We are indebted to David Sibley for not only his observations of the 1982 and 1983 spring flights, but also for his insight on the dynamics of the migration.

Finally, we are indebted to Al Nicholson for his ongoing insights into the mysteries of the migration at Cape May. Al not only "discovered" the kites at Cape May, but he kept significant and detailed data on the 1978 season, data which alerted us to the scope of the spring migration and which originally aroused our interest in this study. We could not have written this paper without his perception of the wonders of the Cape May migration.

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