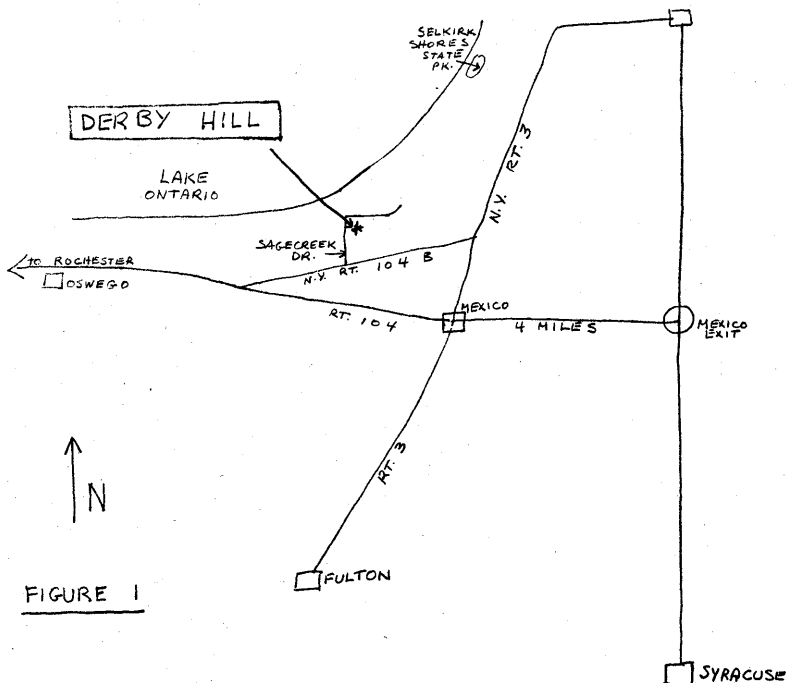


# DERBY HILL SPRING HAWK MIGRATION UPDATE

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## INTRODUCTION

The Derby Hill migration lookout is located atop a lakeshore drumlin near the southeast corner of Lake Ontario in Mexico township, Oswego County, New York. The area is well known to regular readers of *The Kingbird* as a major migration observation point, most famous for the large hawk flights which occur there from mid-February through mid-June. The main purpose of this paper is to provide a brief overview of the history and other facets of the lookout and of the hawk flights which occur there. We also wish to provide an update on the hawk flight statistics since the appearance of the last compilation on the subject (Smith, 1973).



## THE LOOKOUT: ITS PAST, PRESENT AND FUTURE

The ridge on which the lookout is located is an eroding drumlin which abuts Lake Ontario on the north, and is oriented approximately along a north-south axis. The main observation area is located in a field where the view to the west and south is fairly clear. It is at this point that most counts are taken, but as will be noted later, certain wind conditions may require a slight movement of the point of observation to the south. Figure 1 shows the routes for reaching Derby Hill from nearby areas.

The history of hawk migration observation at Derby Hill is relatively brief. Prior to the mid-1950's it was apparently completely unknown as a major hawk migration concentration point. Unlike many of the major hawk migration points in the northeast there appears to be no history of organized hawk shooting from this point. Thus it appears that unlike Hawk Mountain, Pa. (Broun 1949), Cape May, N.J. (Stone 1929) and Hawk Ridge, Duluth, Minn. (Hofslund 1966); Derby Hill lacks a bloody past. The nearest known hawk shooting occurred on the ridges west of Oswego, New York in the 1930's (C. Farnham pers. comm.) mainly involving Sharp-shinned Hawks. It is possible, however, that some small scale gunning may have occurred at Derby Hill.

From an ornithological standpoint, the hawk flights at Derby Hill were discovered by F. G. Scheider of North Syracuse, N.Y. during the mid-1950's. From then through 1962 the majority of observations were of a sporadic nature conducted on weekends and whenever observers could manage other free time. Even these relatively infrequent observations clearly hinted at the magnitude of the flights which occurred at Derby Hill. The results of these observations may be found summarized in the Region 5 reports for those years in *The Kingbird*, compiled by Dr. Scheider. These records are of great interest and are particularly enlightening from an historical standpoint. For example the previous more frequent occurrence of the Bald Eagle is clearly indicated by these records.

The first systematic studies were conducted by John R. Haugh from 1963 through 1965. During this period coverage during a majority of March and April was accomplished for the first time. Haugh, with the cooperation of several members of the Onondaga Audubon Society, including J. W. Propst, E. Estoff and C. and E. Farnham, organized daily observations from March through mid-May 1966. These observations were continued on a regular basis during 1967 and on a slightly less frequent basis during 1968. The results of Dr.

Haugh's studies, including the daily counts for 1963-1969, may be found in several papers on the subject including Haugh (1966, 1972) and Haugh and Cade (1966). Although we will touch very briefly upon some of the aspects of the spring hawk migration at Derby Hill, the reader is referred to Haugh's excellent papers. These papers presently provide the best available insight into this complex subject.

During the present decade, fairly regular observations have been conducted by the authors and other members of the Onondaga Audubon Society. The senior author first began observing hawks at Derby Hill in 1968 and the junior author in 1972. In addition to the regular observations conducted by the authors, a number of other observers, particularly Dorothy W. Crumb, F. G. Scheider, Janet Muir and C. and E. Farnham, have contributed regular observations. A number of other persons have also contributed records to a lesser degree. Without the efforts of all persons involved the spring hawk migration watch at Derby Hill would be much less complete than it has been. The efforts of all observers has usually generated between 40 and 55 days of coverage between late February and late May. Inasmuch as these efforts have been strictly on a volunteer basis, coverage has been fairly good.

When the hawk migration observations were first being conducted prior to 1965, Derby Hill was owned privately. At the time, approximately 50 acres comprising the main lookout and some nearby areas were purchased by The Nature Conservancy to protect it from potential unfavorable development.

During the next several years the initial outlay of funds was repaid to The Nature Conservancy through the generosity of several persons. The future of the lookout being assured, it was deeded by The Nature Conservancy to the Onondaga Audubon Society, Inc. of Syracuse, New York, for preservation and management. Since obtaining control over the property, the Society has made a number of additions to the original parcel. In order to preserve and enhance the quality of observation and increase the value of the area for ornithological studies, it has been realized that several additions were necessary. Using its own funds the Onondaga Audubon Society has purchased a section of the bluff overlooking Lake Ontario, and some small properties to the west of the lookout where construction would impede the view. Recently, in August 1977, the Society, aided by a loan from the National Audubon Society, purchased a small house adjacent to the sanctuary. This structure will serve as a headquarters field station and will be used as a research and public infor-

mation and education center. It is hoped that using this center as a core, a number of programs can be developed which will enhance and increase research being conducted there and benefit visitors to the sanctuary by informing them on all aspects of the sanctuary and the flights which occur there. In addition to funds required for the field station, there are a number of adjacent properties which the Onondaga Audubon Society must purchase in future years to maintain the observation quality and prevent encroachment of development upon the sanctuary. The loan must be repaid to National Audubon and funds will be needed to make necessary land additions. Since the Society's financial resources are extremely limited, any contributions from interested persons or groups would be greatly appreciated. Anyone wishing to help may send their tax-deductible contributions to the Onondaga Audubon Society, Derby Hill Fund, c/o Mr. Robert Strader, R.D. 1, Erieville, N.Y. 13061.

To date, the study of hawk migration and other ornithological studies conducted at Derby Hill have provided substantial insight into many facets of diurnal migration along Lake Ontario. A number of innovations will be added in the near future, which will increase the value of ongoing studies and lead to new ones. The planned establishment of an ornithological observatory at Derby Hill in the future will lead to further dissemination of data and increased research. The potential of the Derby Hill area for the study of migration is, in our opinion, equaled by few areas in North America. Although the other aspects of migration at Derby Hill are too numerous to deal with here, suffice it to say that there is much more to migration there than just the well known raptor flights. Large scale movements of many other species occur in both spring and fall. In particular, the large fall flights of waterfowl, jaegers, gulls and terns are of exceptional interest. It also appears that some fall raptor flights, hitherto unknown, may be a regular phenomenon at Derby Hill. All these aspects of migration in this area offer inviting opportunities for future study. Regardless of the season, there are usually things of interest to the birder to be found at Derby Hill.

#### HAWK COUNTS

This section contains the finalized spring daily hawk counts for 1976 and 1977 and summarizes for the year 1963-1977. These totals represent an updated compilation using all available data and should be considered the official final data for these years.

Table 1.

## 1976 DAILY HAWK COUNTS

| Date  | Turkey Vulture | Goshawk | Sharp-shinned Hawk | Cooper's Hawk | Red-tailed Hawk | Red-shouldered Hawk | Broad-winged Hawk | Rough-legged Hawk | Golden Eagle | Bald Eagle | Marsh Hawk | Osprey | Peregrine Falcon | Merlin | American Kestrel | Unidentified | Daily Total |
|-------|----------------|---------|--------------------|---------------|-----------------|---------------------|-------------------|-------------------|--------------|------------|------------|--------|------------------|--------|------------------|--------------|-------------|
| Feb.  |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 15    | 0              | 1       | 0                  | 0             | 9               | 0                   | 0                 | 6                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 16          |
| 21    | 0              | 0       | 0                  | 0             | 9               | 0                   | 0                 | 3                 | 0            | 0          | 1          | 0      | 0                | 0      | 1                | 0            | 14          |
| 24    | 0              | 11      | 0                  | 0             | 69              | 0                   | 0                 | 11                | 1            | 0          | 3          | 0      | 0                | 0      | 0                | 1            | 96          |
| 25    | 0              | 3       | 0                  | 1             | 30              | 0                   | 0                 | 5                 | 0            | 0          | 3          | 0      | 0                | 0      | 0                | 0            | 42          |
| 26    | 0              | 1       | 0                  | 0             | 1               | 0                   | 0                 | 4                 | 0            | 0          | 1          | 0      | 0                | 0      | 2                | 0            | 9           |
| 29    | 0              | 2       | 0                  | 5             | 83              | 1                   | 0                 | 14                | 0            | 0          | 9          | 0      | 0                | 0      | 2                | 0            | 116         |
| March |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 5     | 0              | 2       | 0                  | 0             | 26              | 1                   | 0                 | 10                | 0            | 0          | 4          | 0      | 0                | 0      | 5                | 0            | 48          |
| 10    | 0              | 6       | 1                  | 2             | 51              | 3                   | 0                 | 2                 | 0            | 0          | 0          | 0      | 0                | 0      | 4                | 0            | 69          |
| 12    | 0              | 4       | 1                  | 5             | 42              | 5                   | 0                 | 7                 | 0            | 0          | 1          | 0      | 0                | 0      | 2                | 0            | 67          |
| 14    | 0              | 2       | 0                  | 0             | 49              | 2                   | 0                 | 0                 | 1            | 0          | 1          | 0      | 0                | 0      | 2                | 0            | 57          |
| 18    | 0              | 2       | 1                  | 1             | 30              | 6                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 1            | 41          |
| 19    | 0              | 2       | 0                  | 2             | 21              | 24                  | 0                 | 4                 | 0            | 0          | 0          | 0      | 0                | 0      | 2                | 0            | 55          |
| 20    | 2              | 13      | 19                 | 38            | 675             | 189                 | 0                 | 58                | 2            | 0          | 44         | 0      | 0                | 2      | 135              | 33           | 1210        |
| 21    | 0              | 0       | 0                  | 1             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 22               | 0            | 23          |
| 23    | 6              | 1       | 7                  | 3             | 94              | 22                  | 0                 | 5                 | 0            | 0          | 3          | 0      | 0                | 0      | 7                | 11           | 159         |
| 24    | 13             | 3       | 16                 | 20            | 195             | 91                  | 0                 | 4                 | 1            | 0          | 13         | 0      | 0                | 1      | 21               | 0            | 378         |
| 25    | 1              | 0       | 8                  | 2             | 64              | 10                  | 0                 | 1                 | 0            | 0          | 15         | 0      | 0                | 0      | 9                | 74           | 184         |
| 26    | 9              | 7       | 44                 | 5             | 98              | 26                  | 0                 | 2                 | 0            | 0          | 2          | 0      | 0                | 0      | 13               | 24           | 230         |
| 27    | 11             | 3       | 74                 | 15            | 285             | 3                   | 0                 | 27                | 0            | 0          | 43         | 0      | 0                | 0      | 79               | 0            | 540         |
| 28    | 3              | 0       | 5                  | 3             | 26              | 1                   | 0                 | 1                 | 0            | 0          | 0          | 0      | 0                | 0      | 1                | 11           | 51          |
| 29    | 5              | 0       | 7                  | 5             | 30              | 2                   | 0                 | 1                 | 0            | 0          | 0          | 0      | 0                | 0      | 1                | 21           | 72          |
| 30    | 8              | 1       | 60                 | 1             | 63              | 14                  | 0                 | 6                 | 0            | 0          | 16         | 0      | 0                | 0      | 12               | 0            | 181         |
| 31    | 4              | 5       | 77                 | 10            | 227             | 18                  | 0                 | 0                 | 0            | 0          | 19         | 0      | 0                | 0      | 15               | 55           | 430         |

Table 1 (continued)

## 1976 DAILY HAWK COUNTS

| Date  | Turkey Vulture | Goshawk | Sharp-shinned Hawk | Cooper's Hawk | Red-tailed Hawk | Red-shouldered Hawk | Broad-winged Hawk | Rough-legged Hawk | Golden Eagle | Bald Eagle | Marsh Hawk | Osprey | Peregrine Falcon | Merlin | American Kestrel | Unidentified | Daily Total |
|-------|----------------|---------|--------------------|---------------|-----------------|---------------------|-------------------|-------------------|--------------|------------|------------|--------|------------------|--------|------------------|--------------|-------------|
| April |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 3     | 1              | 1       | 1                  | 0             | 6               | 0                   | 0                 | 0                 | 0            | 0          | 1          | 0      | 0                | 0      | 0                | 0            | 10          |
| 10    | 40             | 2       | 10                 | 17            | 81              | 0                   | 0                 | 4                 | 0            | 0          | 16         | 0      | 0                | 0      | 9                | 0            | 179         |
| 13    | 18             | 1       | 0                  | 1             | 10              | 0                   | 0                 | 0                 | 0            | 1          | 2          | 0      | 0                | 0      | 2                | 1            | 36          |
| 14    | 14             | 4       | 164                | 12            | 155             | 5                   | 0                 | 3                 | 0            | 0          | 35         | 0      | 0                | 0      | 17               | 11           | 420         |
| 15    | 0              | 0       | 269                | 0             | 7               | 1                   | 0                 | 1                 | 0            | 0          | 15         | 0      | 0                | 0      | 17               | 0            | 310         |
| 16    | 19             | 1       | 415                | 3             | 44              | 11                  | 34                | 2                 | 0            | 0          | 24         | 9      | 0                | 0      | 25               | 11*          | 598         |
| 17    | 34             | 1       | 410                | 11            | 87              | 19                  | 478               | 3                 | 3            | 1          | 20         | 6      | 0                | 0      | 20               | 0            | 1093        |
| 18    | 7              | 0       | 210                | 4             | 16              | 9                   | 270               | 1                 | 0            | 0          | 1          | 7      | 0                | 0      | 6                | 0            | 531         |
| 19    | 0              | 0       | 69                 | 2             | 3               | 0                   | 25                | 0                 | 0            | 0          | 1          | 2      | 0                | 0      | 0                | 0            | 102         |
| 20    | 4              | 1       | 312                | 2             | 33              | 3                   | 2048              | 2                 | 0            | 0          | 5          | 9      | 0                | 0      | 2                | 0            | 2421        |
| 22    | 0              | 1       | 164                | 1             | 27              | 1                   | 3694              | 0                 | 1            | 0          | 7          | 6      | 0                | 0      | 1                | 0            | 3903        |
| 23    | 0              | 0       | 7                  | 1             | 0               | 0                   | 7                 | 0                 | 0            | 0          | 0          | 2      | 0                | 0      | 0                | 0            | 17          |
| 29    | 0              | 0       | 11                 | 1             | 10              | 0                   | 106               | 1                 | 0            | 0          | 1          | 3      | 0                | 0      | 0                | 2            | 135         |
| 30    | 2              | 0       | 77                 | 4             | 30              | 2                   | 1289              | 1                 | 0            | 1          | 12         | 13     | 0                | 0      | 2                | 4            | 1437        |
| May   |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 1     | 14             | 1       | 334                | 4             | 51              | 0                   | 432               | 4                 | 0            | 0          | 20         | 29     | 0                | 0      | 6                | 0            | 895         |
| 2     | 8              | 0       | 214                | 1             | 34              | 0                   | 1675              | 5                 | 2            | 1          | 16         | 39     | 0                | 1      | 1                | 0            | 1997        |
| 5     | 4              | 1       | 320                | 7             | 36              | 0                   | 369               | 1                 | 0            | 0          | 26         | 17     | 0                | 0      | 7                | 17           | 805         |
| 14    | 4              | 0       | 20                 | 0             | 1               | 0                   | 1                 | 1                 | 0            | 0          | 1          | 2      | 0                | 0      | 2                | 0            | 32          |
| 16    | 2              | 0       | 25                 | 0             | 4               | 1                   | 11                | 0                 | 0            | 0          | 2          | 3      | 1                | 0      | 3                | 0            | 52          |
| Days  |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 42    | 233            | 83      | 3352               | 190           | 2812            | 470                 | 10439             | 200               | 11           | 4          | 383        | 147    | 1                | 4      | 455              | 277          | 19061       |

\*Includes one Swallow-tailed Kite.

Eagles: One adult Golden on April 17, all other eagles were immatures.

Table 2

## 1977 DAILY HAWK COUNTS

| Date  | Turkey Vulture | Goshawk | Sharp-shinned Hawk | Cooper's Hawk | Red-tailed Hawk | Red-shouldered Hawk | Broad-winged Hawk | Rough-legged Hawk | Golden Eagle | Bald Eagle | Marsh Hawk | Osprey | Peregrine Falcon | Merlin | American Kestrel | Unidentified | Daily Total |
|-------|----------------|---------|--------------------|---------------|-----------------|---------------------|-------------------|-------------------|--------------|------------|------------|--------|------------------|--------|------------------|--------------|-------------|
| Feb.  |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 12    | 0              | 0       | 0                  | 0             | 0               | 0                   | 0                 | 1                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 1           |
| 18    | 0              | 0       | 0                  | 0             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 0           |
| 22    | 0              | 0       | 0                  | 0             | 1               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 1           |
| 24    | 0              | 1       | 0                  | 0             | 13              | 0                   | 0                 | 3                 | 0            | 0          | 1          | 0      | 0                | 0      | 0                | 0            | 18          |
| 26    | 0              | 0       | 0                  | 0             | 2               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 2                | 0            | 4           |
| 27    | 0              | 6       | 1                  | 0             | 160             | 0                   | 0                 | 33                | 0            | 0          | 25         | 0      | 0                | 0      | 4                | 6            | 235         |
| March |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 2     | 0              | 2       | 0                  | 0             | 6               | 0                   | 0                 | 2                 | 0            | 0          | 2          | 0      | 0                | 0      | 0                | 0            | 12          |
| 3     | 0              | 1       | 0                  | 0             | 3               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 1                | 0            | 5           |
| 4     | 0              | 0       | 0                  | 0             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 0           |
| 5     | 0              | 3       | 0                  | 1             | 43              | 1                   | 0                 | 1                 | 0            | 0          | 2          | 0      | 0                | 0      | 1                | 0            | 52          |
| 7     | 0              | 0       | 0                  | 0             | 4               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 4           |
| 8     | 0              | 2       | 1                  | 1             | 106             | 3                   | 0                 | 3                 | 0            | 2          | 4          | 0      | 0                | 0      | 0                | 0            | 122         |
| 9     | 1              | 7       | 9                  | 2             | 335             | 58                  | 0                 | 11                | 1            | 0          | 10         | 0      | 0                | 0      | 3                | 5            | 442         |
| 10    | 1              | 5       | 9                  | 3             | 83              | 27                  | 0                 | 5                 | 0            | 0          | 8          | 0      | 0                | 0      | 4                | 10           | 155         |
| 11    | 1              | 1       | 4                  | 3             | 12              | 18                  | 0                 | 4                 | 0            | 0          | 1          | 0      | 0                | 0      | 1                | 0            | 45          |
| 12    | 2              | 2       | 47                 | 18            | 159             | 139                 | 0                 | 13                | 1            | 0          | 35         | 0      | 0                | 1      | 19               | 7            | 443         |
| 15    | 0              | 2       | 9                  | 20            | 524             | 160                 | 0                 | 16                | 1            | 0          | 10         | 0      | 0                | 0      | 0                | 6            | 748         |
| 19    | 0              | 1       | 0                  | 0             | 16              | 7                   | 0                 | 0                 | 0            | 0          | 1          | 0      | 0                | 0      | 1                | 1            | 27          |
| 20    | 0              | 0       | 3                  | 4             | 8               | 16                  | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 6                | 1            | 38          |
| 26    | 1              | 1       | 0                  | 0             | 17              | 5                   | 0                 | 1                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 25          |
| 27    | 0              | 0       | 7                  | 10            | 74              | 23                  | 0                 | 0                 | 1            | 0          | 2          | 0      | 0                | 0      | 10               | 17           | 144         |
| 28    | 6              | 3       | 28                 | 20            | 145             | 84                  | 0                 | 4                 | 0            | 0          | 11         | 0      | 0                | 0      | 55               | 5            | 361         |
| 29    | 70             | 2       | 82                 | 37            | 589             | 266                 | 0                 | 12                | 3            | 1          | 10         | 1      | 0                | 1      | 28               | 52           | 1154        |
| 30    | 157            | 0       | 438                | 50            | 393             | 89                  | 0                 | 5                 | 5            | 1          | 26         | 3      | 0                | 0      | 26               | 38*          | 1231        |
| 31    | 4              | 0       | 2                  | 0             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 6           |

Table 2 (continued)

## 1977 DAILY HAWK COUNTS

| Date  | Turkey Vulture | Goshawk | Sharp-shinned Hawk | Cooper's Hawk | Red-tailed Hawk | Red-shouldered Hawk | Broad-winged Hawk | Rough-legged Hawk | Golden Eagle | Bald Eagle | Marsh Hawk | Osprey | Peregrine Falcon | Merlin | American Kestrel | Unidentified | Daily Total |
|-------|----------------|---------|--------------------|---------------|-----------------|---------------------|-------------------|-------------------|--------------|------------|------------|--------|------------------|--------|------------------|--------------|-------------|
| April |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 1     | 1              | 0       | 0                  | 0             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 1           |
| 2     | 4              | 0       | 10                 | 4             | 3               | 0                   | 0                 | 0                 | 0            | 0          | 6          | 0      | 0                | 0      | 9                | 1            | 37          |
| 3     | 6              | 0       | 1                  | 0             | 2               | 0                   | 0                 | 0                 | 0            | 0          | 1          | 0      | 0                | 0      | 2                | 0            | 12          |
| 4     | 0              | 0       | 4                  | 1             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 5           |
| 5     | 1              | 0       | 1                  | 0             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 2           |
| 6     | 4              | 0       | 2                  | 0             | 0               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 6           |
| 7     | 6              | 0       | 11                 | 0             | 10              | 0                   | 0                 | 1                 | 0            | 0          | 0          | 0      | 0                | 0      | 3                | 0            | 31          |
| 9     | 12             | 0       | 0                  | 2             | 2               | 0                   | 0                 | 2                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 18          |
| 10    | 43             | 0       | 39                 | 7             | 87              | 3                   | 0                 | 5                 | 0            | 0          | 10         | 1      | 0                | 0      | 4                | 11           | 210         |
| 11    | 99             | 1       | 384                | 19            | 266             | 10                  | 0                 | 6                 | 0            | 0          | 16         | 2      | 1                | 0      | 24               | 0            | 828         |
| 12    | 6              | 0       | 384                | 9             | 25              | 2                   | 0                 | 0                 | 0            | 0          | 14         | 2      | 0                | 0      | 11               | 1            | 454         |
| 13    | 65             | 0       | 186                | 16            | 130             | 5                   | 198               | 5                 | 1            | 0          | 21         | 4      | 0                | 0      | 9                | 3            | 643         |
| 15    | 0              | 0       | 47                 | 3             | 11              | 3                   | 68                | 0                 | 0            | 0          | 1          | 1      | 0                | 0      | 3                | 0            | 137         |
| 16    | 0              | 0       | 35                 | 2             | 25              | 3                   | 27                | 2                 | 0            | 0          | 1          | 0      | 0                | 0      | 2                | 0            | 97          |
| 17    | 0              | 0       | 53                 | 1             | 18              | 1                   | 27                | 2                 | 0            | 0          | 1          | 1      | 0                | 0      | 3                | 1            | 108         |
| 18    | 3              | 0       | 15                 | 2             | 10              | 1                   | 68                | 0                 | 0            | 0          | 2          | 1      | 0                | 0      | 0                | 5            | 107         |
| 19    | 6              | 0       | 105                | 2             | 34              | 0                   | 56                | 1                 | 1            | 0          | 1          | 0      | 0                | 0      | 2                | 7            | 215         |
| 20    | 7              | 0       | 357                | 6             | 59              | 1                   | 391               | 6                 | 1            | 0          | 8          | 10     | 0                | 1      | 7                | 10           | 864         |
| 21    | 101            | 0       | 982                | 8             | 130             | 3                   | 8105              | 44                | 10           | 0          | 57         | 22     | 0                | 1      | 16               | 0            | 9479        |
| 22    | 8              | 0       | 285                | 7             | 47              | 0                   | 4035              | 12                | 0            | 0          | 29         | 16     | 1                | 0      | 6                | 9            | 4455        |
| 23    | 0              | 0       | 0                  | 0             | 1               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 1      | 0                | 0      | 2                | 0            | 4           |
| 28    | 4              | 0       | 0                  | 0             | 1               | 0                   | 5                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 10          |
| 30    | 20             | 0       | 30                 | 1             | 23              | 1                   | 500               | 0                 | 0            | 0          | 5          | 0      | 0                | 0      | 4                | 0            | 584         |

Table 2 (continued)

## 1977 DAILY HAWK COUNTS

| Date | Turkey Vulture | Goshawk | Sharp-shinned Hawk | Cooper's Hawk | Red-tailed Hawk | Red-shouldered Hawk | Broad-winged Hawk | Rough-legged Hawk | Golden Eagle | Bald Eagle | Marsh Hawk | Osprey | Peregrine Falcon | Merlin | American Kestrel | Unidentified | Daily Total |
|------|----------------|---------|--------------------|---------------|-----------------|---------------------|-------------------|-------------------|--------------|------------|------------|--------|------------------|--------|------------------|--------------|-------------|
| May  |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 1    | 12             | 0       | 143                | 7             | 28              | 4                   | 849               | 2                 | 0            | 0          | 1          | 18     | 0                | 0      | 1                | 0            | 1065        |
| 2    | 0              | 0       | 4                  | 0             | 0               | 1                   | 51                | 0                 | 0            | 0          | 2          | 2      | 0                | 0      | 0                | 0            | 60          |
| 3    | 0              | 0       | 4                  | 0             | 0               | 0                   | 13                | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 17          |
| 4    | 2              | 0       | 78                 | 1             | 4               | 0                   | 163               | 0                 | 0            | 0          | 8          | 28     | 1                | 1      | 2                | 0            | 288         |
| 5    | 0              | 0       | 38                 | 0             | 10              | 0                   | 119               | 0                 | 0            | 0          | 1          | 3      | 0                | 0      | 0                | 0            | 171         |
| 6    | 5              | 0       | 45                 | 0             | 44              | 0                   | 1231              | 1                 | 0            | 1          | 4          | 7      | 0                | 0      | 10               | 0            | 1348        |
| 12   | 2              | 0       | 7                  | 0             | 1               | 1                   | 3                 | 0                 | 0            | 0          | 0          | 2      | 0                | 0      | 1                | 0            | 17          |
| 15   | 2              | 0       | 1                  | 0             | 1               | 0                   | 0                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 4           |
| 16   | 0              | 0       | 3                  | 0             | 3               | 0                   | 6                 | 0                 | 0            | 0          | 0          | 1      | 0                | 0      | 0                | 0            | 13          |
| 17   | 8              | 0       | 22                 | 2             | 22              | 0                   | 126               | 0                 | 0            | 0          | 0          | 3      | 0                | 0      | 0                | 0            | 183         |
| 21   | 0              | 0       | 1                  | 0             | 0               | 0                   | 4                 | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 0                | 0            | 5           |
| 22   | 9              | 0       | 2                  | 0             | 8               | 0                   | 61                | 0                 | 0            | 0          | 0          | 0      | 0                | 0      | 1                | 0            | 81          |
| June |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 2    | 4              | 0       | 0                  | 0             | 3               | 0                   | 1                 | 0                 | 0            | 0          | 0          | 1      | 0                | 0      | 0                | 0            | 9           |
| Days |                |         |                    |               |                 |                     |                   |                   |              |            |            |        |                  |        |                  |              |             |
| 61   | 683            | 40      | 3919               | 269           | 3701            | 935                 | 16107             | 203               | 25           | 5          | 337        | 130    | 3                | 5      | 283              | 196          | 26841       |

\*Includes Black Vulture

## 1963-1977 DERBY HILL HAWK SUMMARY

[illegible]

## THE HAWK FLIGHTS

### A. Timing and Weather

Some hawks may be observed passing the lookout any time from mid-February through mid-June depending upon the weather conditions. Flights of 100 or more hawks in a day are generally restricted to the period 10 March to 20 May except under unusual conditions. An approximate overview of the timing and peak period for each raptor species is listed below.

#### Timing and Peak Period of Migrant Hawks

| Species             | Average Date Range    | Usual Peak Period    |
|---------------------|-----------------------|----------------------|
| Turkey Vulture      | 25 March to 20 May    | 1 to 25 April        |
| Goshawk             | 20 February to 10 May | 10 March to 10 April |
| Sharp-shinned Hawk  | 20 March to 25 May    | 5 to 25 April        |
| Cooper's Hawk       | 5 March to 15 May     | 10 March to 5 April  |
| Red-tailed Hawk     | 25 February to 1 June | 10 March to 15 April |
| Red-shouldered Hawk | 5 March to 10 May     | 15 March to 5 April  |
| Broad-winged Hawk   | 12 April to 10 June   | 16 April to 3 May    |
| Rough-legged Hawk   | 20 February to 15 May | 20 March to 20 April |
| Golden Eagle        | 10 March to 5 May     | 25 March to 25 April |
| Bald Eagle          | 20 March to 15 May    | 10 April to 10 May   |
| Marsh Hawk          | 25 February to 25 May | 20 March to 15 April |
| Osprey              | 10 April to 10 June   | 25 April to 15 May   |
| Peregrine Falcon    | 30 March to 10 May    | 15 April to 5 May    |
| Merlin              | 20 March to 10 May    | 1 to 30 April        |
| American Kestrel    | 5 March to 20 May     | 20 March to 15 April |

The peak period for migration in terms of numbers is during the Broad-winged Hawk movement of the last two weeks of April. The peak period in terms of variety is usually the first three weeks of April. The best time to observe hawks and see them well is from 20 March to 15 April as the birds often pass at fairly low altitudes during that period. Later in April and May, the migrants may pass at great altitudes, riding well-developed thermals.

A complete description and analysis of weather conditions and their relation to hawk flights at Derby Hill may be found in Haugh (1966, 1972). We will only briefly outline the general conditions which produce the large hawk flights at Derby Hill.

The most important weather component required to concentrate a flight in the vicinity of Derby Hill is a 10 to 30 mph wind from any southerly quarter. Southwesterly winds usually generate the largest

flights, but southeasterly winds are often more desirable from the standpoint of observation as the hawks often pass closest to the lookout on southeast winds. Southerly winds are usually generated by the approach of a low pressure area from the west, and/or the retreat of a high pressure area to the east. Under such conditions good south winds are generated by the positions of these systems and the resultant pressure gradient between them. The approaching low is an essential ingredient in the proper weather pattern required to produce large flights. Without a low moving eastward, large flights rarely develop.

A particular circumstance of weather which often develops during the Broad-wing season of late April is somewhat confusing to many visitors to Derby Hill. Often, a strong high pressure area anchored off the east coast will impede the progress of frontal systems to the west, causing them to "stall out" and not move east for up to several days. Under such conditions, the air circulation to the west of the high pressure area will consist of south to southwest winds at 5 to 15 mph. At such times, many people rush to Derby Hill in expectation of a large flight. There are a couple of problems with this pattern, however. First, the lack of an advancing low and associated drop in barometric pressure apparently means fewer birds are stimulated to move than might otherwise. In addition, those that are moving are often dispersed inland from Lake Ontario by the "lake breeze" phenomenon. This is a bubble of cold air over the waters of Lake Ontario which often spills inland for a distance of several miles. It is due to the differential heating of the land and water which usually results in a 5 to 12 mph breeze from the water to the land. Under the high pressure pattern previously described, the strong southerly winds required to hold the cold air out over Lake Ontario are lacking. The resultant lake breeze conditions disperse the flight varying distances inland, depending on the strength of the wind, and relatively few birds are seen.

The ideal locations and pattern for weather systems to produce a large hawk flight at Derby Hill is roughly as follows. A low pressure area should be located over the upper Great Lakes somewhere between Lake Superior and Lake Huron. A warm front, extending eastward from the low and moving from south to north, should have passed or will pass soon to the north of Lake Ontario. A cold front, extending south from the low through the Midwest, should be moving eastward. Under such conditions, there is a wedge of warm air to the south of the warm front and east of the cold front. The air

in this wedge is characterized by strong southerly winds, warm temperatures and limited precipitation. Most of the large hawk flights which have been noted at Derby Hill in recent years have occurred in such wedges of warm air. If such conditions exist over upstate New York during any day from mid-March through early May, a superb flight is guaranteed.

While such conditions are ideal they are by no means required for a substantial flight. Under certain circumstances, large flights may occur prior to the passage of a warm front depending upon the amount of precipitation in that air mass. In addition, substantial flights may occur behind a cold front with west or northwest winds. Such flights occur most often when the air before the front was saturated, and during the Broad-winged Hawk migration. Since this species is more closely tied to a restricted migration period than most raptors, flights may occur more often under what appears to the observer to be unfavorable conditions. Under such conditions, the flights are often noted from .5 to 2.0 miles south of the lakeshore. Such flights are often so dispersed that organized flight lines are difficult to detect. The most favorable known lookout for observing such flights is located approximately .5 miles south of the lakeshore. It is likely that substantial numbers of hawks pass near Derby Hill under such conditions, but are so dispersed as to escape detection.

#### **B. Comments on the Status and Trends of Hawks at Derby Hill**

There have been a number of changes in the status and period of occurrence of some species at Derby Hill since the most recent papers on the subject (Haugh 1972, Smith 1973). These trends are in addition to normal yearly fluctuations and while some may be due in part to improving coverage, others are actual changes in status of occurrence. The overall summary of hawks for 1963-1977 may be found in Table 3. The present status and trends in each species follows.

#### **Turkey Vulture**

The increase in this species noted throughout the northeast has been very evident at Derby Hill. The yearly counts have risen from the 30 in 1963 to 683 in 1977. Most yearly totals during this decade have ranged between 220 and 310. The highest count prior to the 1977 explosion was 365 in 1974. Whether the extraordinary 1977 flight is a one-time occurrence, or another step in the continuing

increase of the species, remains to be seen. The overall increase in numbers has been accompanied by a trend toward a somewhat earlier arrival. Larger numbers are more frequent prior to the 10th of April than previously. In addition, Turkey Vultures are now regular breeders in areas near Derby Hill. The presence of these local birds now makes the determination of a departure date difficult, as small groups passing during late May and early June could be local breeders. There are few sights observed during the hawk flights that are as impressive as vulture squadrons of 10 to 30 birds, each floating past the lookout driven by gusty southerly winds.

### **Black Vulture**

The local records of this southern vagrant occurred on 22 April 1974 and 30 March 1977. The weather patterns associated with these occurrences suggest that these birds probably originated from the Ohio Valley populations rather than from coastal populations. Since the species is appearing more frequently at hawk lookouts in the Northeast, it is possible that more Black Vultures will soon appear at Derby Hill.

### **Swallow-tailed Kite**

One individual of this species appeared at Derby Hill on 19 April 1976. This sighting occurred during a period of warm weather due to a high pressure area anchored off the east coast of the United States which was similar to that described above.

### **Goshawk**

The large invasion of Goshawks which occurred throughout much of eastern North America during the autumns of 1972 and 1973 was clearly reflected by the spring flights of 1973 and 1974 at Derby Hill. These massive flights of 398 and 200+ Goshawks are unprecedented in the brief history of our lookout. As would be expected following such large irruptions, the counts have decreased, greatly reflecting the expected population collapse of the species. The 40 birds recorded in 1977 are the lowest total since regular observations began in 1963. Recent observations have revealed that substantial numbers of Goshawks regularly pass the lookout during late February and early March. Some may be expected as soon as favorable weather patterns develop after mid-February. During years of poor flights, when adults constitute most of those seen, a large portion of the birds may pass before 15 March (see 1977 Derby Hill counts Table 3).

### **Sharp-shinned Hawk**

The Sharp-shin totals usually range between 3,000 and 3,500 per year during recent years. In addition, it is likely that many pass undetected. Following the passage of a cold front when clear skies and westerly winds prevail, many Sharp-shins may migrate. Under such conditions the lookout is often unmanned. It is likely that daily coverage could substantially increase the yearly totals. Such coverage during April and May could result in at least 1,000 or more additional birds being seen. While there is no well-documented trend in the numbers of Sharp-shins passing Derby Hill, it appears on the basis of limited evidence that they may be increasing. The large flight of this species that occurred during the autumn of 1976 was not reflected in the spring 1977 count. It remains to be seen if the large north-eastern fall flight of 1977 (W. Friton pers. comm.) will be reflected in the 1978 spring flight. A future increase in Derby Hill numbers would be expected if these large fall movements continue.

### **Cooper's Hawk**

Despite the small yearly totals of this species, the numbers fluctuate considerably from year to year. No definite trend is obvious and it appears that the migrant populations are remaining fairly stable. The Sharp-shin to Cooper's ratio, based on 1963 through 1977 data, is about 16 to 1.

### **Red-Tailed Hawk**

The counts of Red-tails fluctuate considerably depending upon the weather conditions of mid-March through mid-April in a particular year. Although it is difficult to be certain it appears Red-tails are slowly increasing. Most counts for recent years average 3,000 to 3,300 per year. Red-tails have the longest migration period of any hawk at Derby Hill and migrants may be seen passing any time from 20 February through 10 June. Of particular interest are the apparently adult birds which are often seen passing during May. At that time, breeding adults should be on territory throughout the species' range. It may be that these birds are part of a pool of non-breeding adults from which individuals may be drawn to replace breeding adults killed during the nesting cycle.

### **Red-shouldered Hawk**

This species is the best Derby Hill example of the problems inherent in using short term counts of migrant hawks in assessing popula-

tion status. For example, Red-shoulders were more common during the early to mid-1960's than thereafter. Since the species has been steadily declining throughout its range, dire predictions were forthcoming when a record low of barely 300+ were seen during 1975. However, during 1977, just two years after many observers were writing the species off, 935 passed the lookout. Such fluctuations indicate the need for caution in drawing conclusions from limited data. Such data may only reinforce subconscious, preconceived ideas that all observers possess to some degree, based on previous field work. The reason for the low 1975 total is clear since the entire period of late March through mid-April was dominated by cold and strong westerly winds. Under such conditions, it appears that several species of hawks may simply slip through undetected due to the lack of favorable weather for concentrating them at Derby Hill. In turn, the high count of 1977 may be due in part to the relatively favorable weather patterns which occurred during the species' migration period. It is clear that any assessments that are made on the basis of short term data should be considered tentative in the light of potential meteorological and other variables. While such variables also affect conclusions drawn on the basis of long term data, there is more of a balancing-out effect over the long term. At this time, it is difficult to ascertain any definite trend in Red-shoulders although the large flight of 1977 may provide a reason to be guardedly optimistic.

### **Broad-winged Hawk**

Like other hawk lookouts north of southern Texas, the counts of this species at Derby Hill vary greatly from year to year. During most of this decade the Broad-wing flights have been poor due primarily to the lack of intense frontal systems during the optimum period for Broad-wing movement. When such conditions are lacking during late April, these birds move over a wide front and many escape detection. The spectacular flights, when the sky is filled with Broad-wings, which draw many birders hopefully to Derby Hill, have been infrequent during the 1970's. One exception to this pattern occurred on 21 April 1977 when 8,000 were seen, followed by 4,500 on the 22nd. The great fluctuations in annual counts make detection of any population trends very difficult. In addition, it is apparent that large numbers of immature Broad-wings pass the lookout from mid-May through early June. Such flights were first detected during the early 1970's and have since been observed occasionally. However, observ-

ers are rarely present during this period. It is likely that regular coverage, particularly during the last three weeks of May, would substantially increase the counts of this species at Derby Hill.

### Swainson's Hawk

The only definite record of this western vagrant is of a light phase adult which occurred on 22 April 1973. Swainson's Hawks should be looked for during the large Broad-winged Hawk flights of late April. It is quite conceivable that another Swainson's could take a "wrong turn" with a group of Broad-wings in Texas and wind up at Derby Hill.

### Rough-legged Hawk

Rough-legs are synonymous with the name Derby Hill in the minds of many hawk watchers from more southern climes. More of these large arctic *Buteos* pass Derby Hill than at any other hawk lookout in the Northeast. The observer who hawk-watches on the Appalachian ridge or the mid-Atlantic coast may be somewhat impressed by several dozen Rough-legs in a single day at Derby Hill. For example, on 21 April 1977, 44 birds of this species passed the lookout during the course of that extraordinary day. One veteran downstate "hawker" present appeared slightly overwhelmed by the necessity of choosing between watching the 7 to 8 Rough-legs or the 3 Golden Eagles that were swirling amongst a boil of 500 Broad-winged Hawks. While such a "problem" was no doubt slightly frustrating, it was also undoubtedly enjoyable. During recent years, an average of 180 to 225 Rough-legs have been counted during most springs. A great majority of these birds are immatures, although a few adults of both phases occur, usually early in the season. As would be expected for an arctic breeder, numbers of Rough-legs vary considerably from year to year and determining trends is difficult.

### Golden Eagle

There has been a great change in the status of this species as a migrant at Derby Hill since 1973. Prior to that time, 5 to 6 Golden Eagles in a season were considered to be a normal number. Since then, many more have been noted and with the exception of the north-wind year of 1975, 10 to 20 Golden Eagles per year has become the normal number. The reasons for the dramatic shift are not known but there are a number of possibilities. The abrupt increase beginning in 1973 could indicate that a shift of flight line occurred during that year. If this shift involved mainly young birds, it is possible that

they and their offspring would continue to use this route on a long-term basis. It is also possible that a combination of factors, including good reproduction in 1972, was involved. Although the reasons for this increase are unclear, the benefits are not, as 1977 produced a record high 25 Golden Eagles for the season. A one-day record of 10 was also set for these magnificent birds on 21 April 1977. While the actual increase is great news, equally heartening is the fact that immatures and subadults constitute the great majority of the birds. During 1977, the immature to adult ratio was 5 to 1, consisting of 21 immatures and 4 adults. Whatever the status of this species in the Northeast, there apparently is a breeding population that is migrating past Derby Hill. For the time being at least, the news on the Golden Eagle at Derby Hill is good, and one hopes this trend will continue.

### **Bald Eagle**

While the news on the Golden Eagle is good, the news on the Bald Eagle is terrible. The long-term decline of this species continues and there is no present reason for optimism. During the mid- to late 1960's the "normal" average total for a season was about 10 Bald Eagles. During the present decade, the yearly average is about 5. Prior to the mid-1960's this species was more common than the Golden Eagles at Derby Hill. From about 1965-66 through the early 1970's, the two species were approximately equal and since then the Golden has become the "common" eagle. This turnabout, while in part due to the increase in the Golden, is in larger part due to the decline of the Bald.

There appear to be two distinct groups of Bald Eagles passing Derby Hill. The first group probably consists of northern breeders returning to their breeding grounds and generally involves birds which are seen prior to 5-10 April. This group has become almost nonexistent at Derby Hill during recent years, and Bald Eagles are generally rare prior to 10 April. The second group consists of birds seen after mid-April and most probably involves Florida breeders moving north to summer. The great majority of the Bald Eagles seen at Derby Hill belong to this group. At present, the future of the Bald Eagle as a migrant at Derby Hill seems rather grim. It is a far cry from the late 1950's when 12 Bald Eagles could be seen in a single day and observers present were entertained in dull moments by the adult eagles from what was the last nest along the Lake Ontario shore. The idiocy which has dictated the environmental degradation of the last 30 years has left us all a great deal poorer.

## **Marsh Hawk**

Annual counts of Marsh Hawks at Derby Hill usually range between 350 and 425 per year. While no firm trend is evident, they seem to be declining slowly. The first Marsh Hawks are usually noted passing the lookout during the last week of February.

The first migrants are invariably adult males, and males predominate prior to 15 March. From 15 March to early April, the flight consists of a mixture of grey and brown birds. After early April, females and immatures predominate, and adult males are infrequent after late April. There is at present no evidence that the populations which migrate past Derby Hill are suffering from a decline similar to that of breeding populations in upstate New York.

## **Osprey**

The annual Osprey counts average 130 to 180 birds per season. It is interesting to note that these numbers are quite low when compared with the totals of many fall northeastern hawk lookouts. The over-winter mortality may account for some of these differences, but it does not account for most of the difference. Either Ospreys are disproportionately scarce along this flyway, compared to Hawk Mountain, Pa., for example, or we are missing a considerable number of these birds. It is likely we miss many Ospreys due to the timing of their migration. They are one of the latest migrant raptors and many probably pass the lookout during May when coverage is poor. It is likely that intensive May coverage could substantially increase the numbers of Ospreys seen. At present, there is no clearly discernible trend in the Osprey populations that pass Derby Hill. However, some limited evidence indicates that the species may be increasing as a migrant through our area.

## **Gyrfalcon**

We have one record of this arctic vagrant at Derby Hill, consisting of a white phase individual seen by John R. Haugh on 12 April 1963.

## **Peregrine Falcon**

The rarest regular raptor at Derby Hill is the Peregrine and an average total for a season is two. They most often occur here during the last two weeks of April. They are so rare that the senior author, who generally sees 15,000 to 18,000 hawks per year at Derby Hill, feels fortunate if a single Peregrine is included. There are three major factors that may be at least partially responsible for this scarcity. First, the species' populations in the eastern Arctic are in poor condition,

and since spring migrants through our area would come from these populations there may just be very few birds to pass. Second, these powerful flyers are less dependent on "favorable" winds than some other species and they may move regardless of the weather, thus passing the lookout on "poor" days when observers are absent. In addition, Peregrines regularly fly large distances over water, crossing the Gulf of Mexico and flying directly from Long Island to Virginia during fall migration. Thus they would probably not be deterred by a 40+ mile crossing of Lake Ontario, and many may fly directly north rather than paralleling the shore. While the first two possibilities probably contribute to the species' scarcity, it is likely that the direct lake crossing is the more important factor. Due to the limited number of birds seen no trends can be discerned.

### **Merlin**

Like the Peregrine, this falcon is quite scarce at Derby Hill although numbers vary considerably. Most counts in recent years have averaged 5 to 10 per season. The scarcity of Merlins may also be due in part to the same factors that were discussed under the Peregrine. In addition, there is a problem of Merlin observation due to their inability to escape detection until almost past the lookout.

Rarely at Derby Hill does one hear, "Here comes a Merlin!", but usually the call is, "There goes a Merlin." The birder who wants to study falcons is advised to go to Cape May, New Jersey, or Long Island in the fall, and not to Derby Hill in spring. The limited numbers of this species at Derby Hill make detecting a trend difficult.

### **American Kestrel**

The relatively small numbers of this species, an average of 300 to 500 per year, passing Derby Hill present somewhat of an enigma. When compared with the fall totals at Hawk Cliff, Ontario, the Derby Hill Kestrel flight is miniscule. Why, relatively, we see so few of what is one of the most common hawks in North America is puzzling. While it is possible that some pass over Lake Ontario, this appears rather unlikely.

Far more likely is that many pass on days of westerly winds when the lookout is not covered. Whatever the reason, American Kestrels are surprisingly uncommon at Derby Hill.

### **SUMMARY**

While much has been learned about the timing, scope and mechanics of the hawk flight at Derby Hill during the last two decades,

much more work is needed. The primary need at the moment is increased and improved coverage so that the data taken will be of greater value in monitoring and assessing the status of these hawk populations. The planned creation of a data center and observatory at Derby Hill will hopefully contribute to the goal of increased coverage. It is hoped that additional research will be undertaken in the area. In addition to improving the studies being conducted, the Onondaga Audubon Society needs to obtain funds to make necessary additions to the study area. Such additions are needed to protect the area from possible disruption.

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David Muir is a native of the Buffalo area, who completed his education with a doctorate at Syracuse University, and at present is Asst. Prof. of Philosophy at Onondaga Community College in Syracuse. According to a veteran Derby Hill observer, he and his wife Janet make the "best husband-wife hawk watching team I have ever seen."