A WINTER RAPTOR SURVEY - BACKGROUND AND RESULTS

by Wayne R. Peterson, Whitman

Why a Winter Raptor Survey?

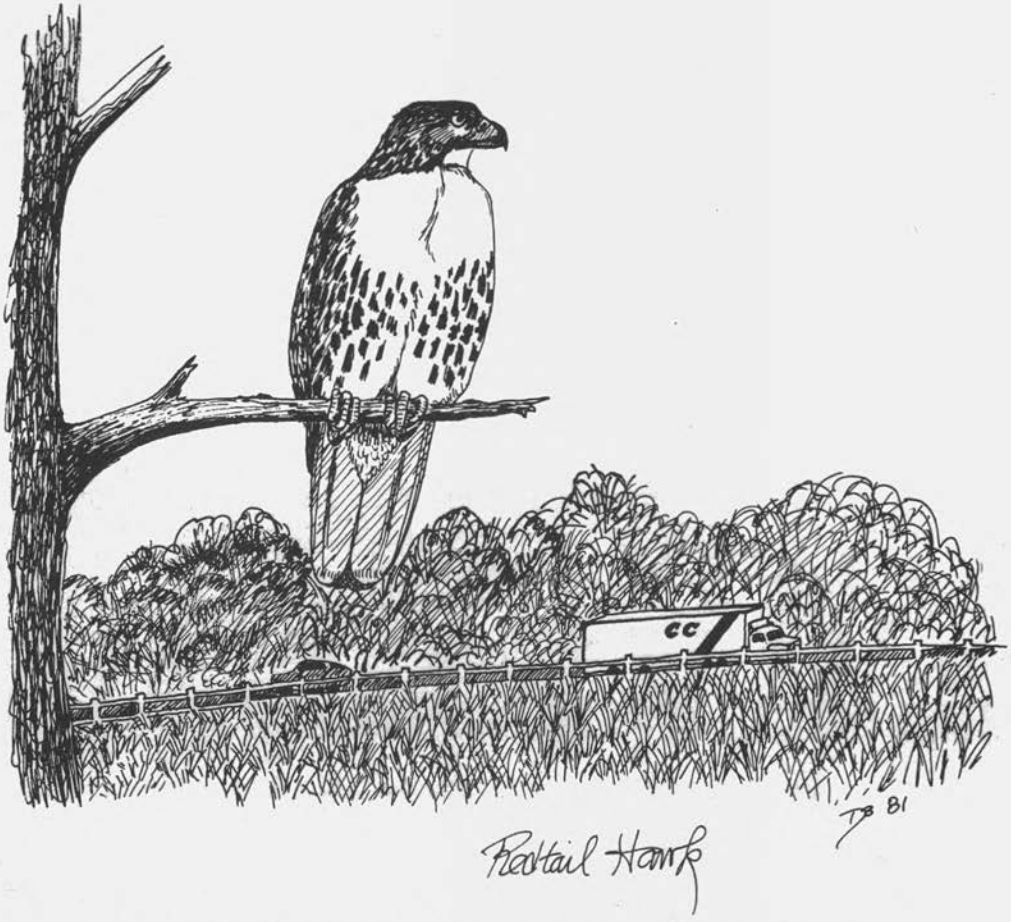
Frequently in our regular birding pursuits we fail to concentrate our observations on specific species or to confine our efforts within clearly defined boundaries. On Christmas counts the emphasis is often on diversity, while in the summer, census work centers around breeding species. While these types of field study do allow a longterm measure of comparison, they frequently lack the precision needed to be fully reliable as an index for measuring the subtle fluctuations in bird populations. Aside from the National Audubon Society's Winter Bird-Population Census, there are few systematic efforts being made to monitor winter bird life.

Realizing this, in February of 1981 the South Shore Bird Club initiated a winter raptor survey in an effort to put winter raptor populations into a perspective based upon systematic data collecting techniques. The initial plan called for a census area that would be small enough to manage and yet large enough to insure enough raptor diversity to maintain the interest of amateur observers. The reason that raptors were selected for this project were manifold: 1) raptors are generally of high interest to birders; 2) raptors are often among the more conspicuous birds of the winter landscape; 3) the census area selected contains much suitable winter raptor habitat; and 4) while raptors as a group are presently being studied from many aspects, winter populations in this locality are not under close scrutiny.

Raptors include both the diurnal hawks and the nocturnal owls. In its first winter raptor survey, the South Shore Bird Club concentrated on the diurnal hawks. Future efforts may include night census work as well so that a better understanding of the wintering population can also be obtained.

Problems and Considerations Associated with Censusing Raptors

The accurate censusing of a winter raptor population requires many days and hours of field work within a census area. In a one-day census, only a fraction of the raptors actually present will likely be recorded. Regardless of the amount of effort put into a raptor census, there are several basic factors that must be considered in planning the census and analyzing the counts. In general, these include 1) the extent of coverage within the census area, 2) the weather conditions during the census, 3) the nature of the habitat being covered, 4) the time of day of



censusing, and 5) the abundance of suitable prey in the census area. Any one of these factors can influence the degree of success of a one-day census. Nonetheless, such a census employs techniques that are instructive to participants and provides data that are meaningful from a statistical point of view. These benefits should offset the inherent limitations of a one-day census.

To locate wintering raptors in a one-day effort, it is useful to keep in mind certain facts about diurnal raptor biology. These include the following: 1) most hawks in mid-winter do not maintain or defend a feeding territory but instead cover a loosely defined winter range; 2) winter hawk distribution is often concentrated by available habitat or high prey density; 3) soaring is most frequent at mid-day or during sunny, breezy weather; 4) buteos and American Kestrels (Falco sparverius) spend considerable time perched at meadow and woodland edges; and 5) accipters confine much of their hunting to woodland areas.

What Data to Record When Censusing Raptors

To provide data that support many aspects of raptor study, it is worthwhile to record the following information:

1) Specific weather data at the start and finish times of the survey, and significant weather changes during the survey.
2) Mileage covered during the survey - both by car and on foot.
3) Time and precise location of each raptor encounter.
4) Species and, if observed, additional individual characteristics as follows:
   a. age of buteos
   b. sex of kestrels and Northern Harriers (Circus cyaneus)
   c. color morphs of Rough-legged Hawks (Buteo lagopus)
5) Behavior observed, e.g.:
   a. perching
   b. flying
   c. flight hunting
   d. soaring
   e. feeding (try to record prey type)
6) Any intra-specific or inter-specific social activity.
7) The habitat type where each individual is first observed.

To facilitate recording the above information, observers should be provided with a topographical map of their region, as well as a standardized data collection sheet

Summary of the First South Shore Bird Club Winter Raptor Survey

Using the techniques briefly described above, the South Shore Bird Club ran a pioneer winter raptor survey in 1981. The club chose as its census area the Whitman and Bridgewater topographical map quadrangles in Plymouth County. The census took place from 9:00 AM to 1:00 PM on 15 February 1981. Five parties of observers traveled a total of 200 miles under ideal census conditions. Temperatures ranged from 28 F to 45 F and skies were clear. Winds were light SW and the ground was totally free of snow. Highlights of the census results are presented below.

1) Species totals were as follows:

Red-tailed Hawk	40
Red-shouldered Hawk	5
Rough-legged Hawk	8
Northern Harrier	1
American Kestrel	26

2) No exceptionally high single-location concentrations of raptors were found, possibly suggesting no abnormally high prey concentrations this season.
3) Of three recorded feeding encounters, Microtus (Meadow Vole) was the prey item.
4) The virtual absence of accipters indicates either a void in their local winter distribution or a problem

with census technique itself. Likely, each of these explanations is partially true.

5) All observed Red-tailed Hawks (Buteo jamaicensis) were adults. Also, a number of birds were mated pairs. Do the young winter elsewhere?
6) Of the kestrels, 12 were males and 9 were females, suggesting a fairly even wintering distribution of the sexes. A number of these may also have been mated pairs, but were simply not as obvious as the earlier-nesting redtail pairs.
7) Redtails and kestrels showed a strong affinity to power lines, thus demonstrating the possible significance of these human artifacts to their winter ecology.

Plans for Future Winter Raptor Surveys

In spite of its preliminary nature, this survey, a first of its kind in Massachusetts, was met with such enthusiasm that the author is confident of its establishment as a successful continuing project. As such, these surveys could provide a valuable data base in the future. Readers interested in participating in the coming season's surveys are invited to contact the author, care of Bird Observer of Eastern Massachusetts. The first survey of 1982 is scheduled for Sunday, 17 January.

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