APPENDIX 2
CONTINUED

Species	Habitats								
	G[b]	SC	YSF	OSF	ML	CF	SA	MA	R
Molothrus bonariensis	—	2	—	—	—	—	—	—	—
Scaphidura oryzivora	—	2	—	—	—	—	—	—	—
Psarocolius decumanus	—	5	3	2	4	5	—	2	1
Quiscalus lugubris	6	1	—	—	—	—	4	9	6
Sturnella militaris	3	—	—	—	—	—	—	—	—
Coereba flaveola	—	10	10	10	10	10	9	10	10
Thraupis episcopus	—	6	4	4	6	—	2	2	5
Tachyphonus rufus	—	2	—	—	—	1	—	—	—
Volatinia jacarina	10	9	3	—	—	—	9	—	8
Tiaris bicolor	10	5	—	—	—	—	8	—	10

[b] For acronyms and explanation see footnote of Appendix 1.

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Seasonal distribution of subadult Bald Eagles in three Minnesota habitats.—Although the biology of breeding and wintering Bald Eagles (*Haliaeetus leucocephalus*) has been much studied, little is known of the biology of subadults during the breeding season. In this note we describe seasonal changes in abundance of subadult Bald Eagles in three types of shoreline habitat.

The study was conducted on a 1500 km² area in the center of the Chippewa National Forest (CNF) in north central Minnesota. The area is mostly glacial outwash and lacustrine plain and has numerous rivers, creeks, and lakes. We observed segments of shoreline from fixed-wing aircraft at approximately weekly intervals (6–10 days) from 21 March to 30 September in 1977 and 1978. We flew at 30–60 m above the ground and recorded the plumage and location of all eagles observed. The area surveyed on each flight included approximately 39 km of river shoreline (Mississippi and Leech Lake rivers), 26 km of small (1–210 ha) lake shoreline, and 128 km of large (370–44,280 ha) lake shoreline. In this note, subadult eagles refers to those with off-white to brown heads and tails (Southern's plumages A–E, Jack-Pine Warbler 45:70–80, 1967). Counts are reported as means ± 1 SE.

We recorded 1159 observations of subadult Bald Eagles on 56 aerial surveys. The mean number of birds observed per flight was 20.7 ± 1.7 (range 0–62). Few birds were observed in March, September, and October; peak counts occurred in mid-April, and intermediate numbers were seen in May–August (Fig. 1). The mean number of subadults per flight in September–October was lower than for any other month except March. We observed 860 birds on large lakes, 83 on small lakes, and 216 on rivers. These frequencies differed from the numbers expected (769, 156, and 234, respectively) based on the relative amounts of the three types of shoreline surveyed ($\chi^2 = 46$, df = 2, $P < 0.001$).

Most lakes in the study area were ice-covered until early or mid-May, and eagles exhibited greater use of rivers in March through May than during the balance of the year ($\chi^2 = 115$, df = 1, $P < 0.001$) (Fig. 1). Eagles observed on lakes before ice-out often were near fish discarded by ice fishermen.

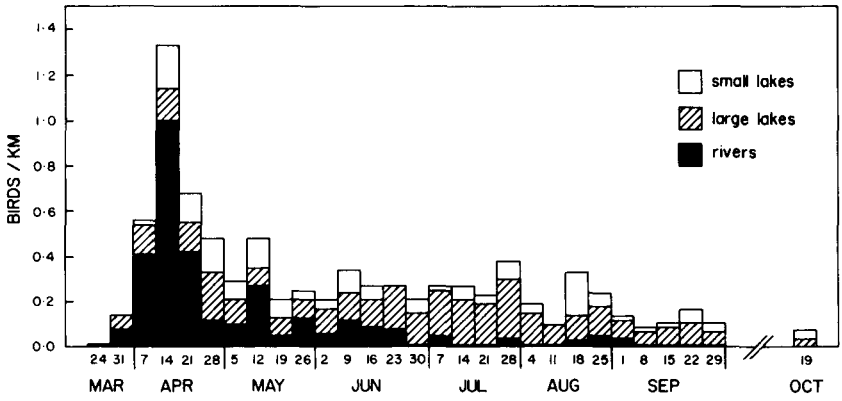

FIG. 1. Subadult Bald Eagles observed/km of shoreline during aerial surveys, Chippewa National Forest, Minnesota, 1977–78.

We interpret the mid-April peak as a migratory wave. The decline that followed may be due partly to continued northward migration and partly to shifts to small creeks not covered by our surveys. Several groups of eagles were observed on such creeks and may have been attracted by spawning suckers (*Catostomus commersoni, Moxotoma macrolepidotum*), which are important Bald Eagle foods in the Spring (Dunstan and Harper, J. Wildl. Manage. 39: 140–143, 1975). We suggest that as the number of spawning fish declines, eagles begin to search for food, and tend to move to large lakes where more abundant food supplies may exist during summer and autumn. Because riparian areas are being developed rapidly for housing and recreation, inventory of existing undeveloped shoreline and the acquisition of habitat or conservation easements by responsible agencies seems appropriate.

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Skua predation on penguin eggs: the influence of egg quality and location.—Versatile predatory birds such as the *Catharacta* skuas (Murphy, Oceanic Birds of South America, American Museum of Natural History, New York, New York, 1936) face two potentially conflicting requirements. On the one hand they must be able to assess prey profitability with