

White-winged Crossbill

Loxia leucoptera

Crossbills are exceptionally specialized birds; the four members of the genus *Loxia* share the striking parrotlike crossed bill that results from the lateral displacement of the mandibles. The bill is used to extract seeds from evergreen cones, the principal food of these birds. Bill depth and length are adapted to the respective food trees of the four species. The White-wing possesses the slightest bill among the crossbills; it feeds principally on the smaller-coned spruces and larches, and, outside of the boreal forest, the small cones of the eastern hemlock and cedar.

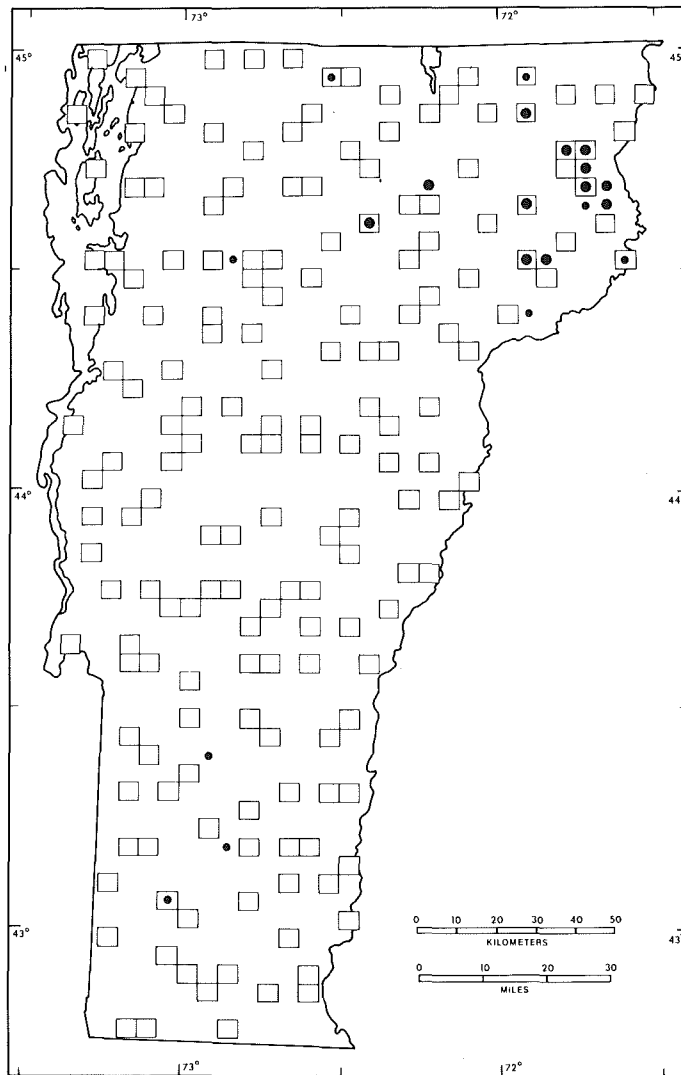
The availability of food dictates the White-winged Crossbill's annual cycle. Crossbills nest in areas with good cone crops and move once annually to new locations that are usually no more than several hundred km (300–400 mi) away (Newton 1973). When the boreal cone crop is unsuccessful, this species and the closely related Red Crossbill may venture well south of the north woods; this phenomenon is usually referred to as an irruption or invasion (Newton 1973; Bock and Lepthien 1976). To compensate for the nomadic behavior involved in following successive cone crops, North America's two species of crossbill have evolved a capacity for breeding year-round (Newton 1973). The mechanism controlling the onset of breeding in these birds is currently unknown.

Vermont appears to be at the southern limit of the breeding range for the White-winged Crossbill. There are two historical references to breeding for the state. W. E. Balch collected two nests with young in Lunenburg on March 22, 1878 (Howe 1902), and Potter (1944) noted a female feeding two juveniles at Clarendon on May 5, 1943. The species was not confirmed as a breeder in Vermont during the Atlas Project, but because of the number of possible and probable reports received and because of the historical breeding records, the atlas includes



the species among the confirmed breeders. The most intensive fieldwork on these birds was done from December 1979 to February 1980. Although positive evidence for breeding was lacking, the birds displayed actively and behaved territorially throughout this period. The species may have bred during late summer or early autumn, when little fieldwork was done in the principal areas of occurrence. In the winter of 1985, White-winged Crossbills bred in Reading, Vermont: A pair was observed gathering nesting material on February 23, and a male was observed feeding a juvenile on March 3 (ASR, F. Hunt).

Very little is known about the breeding biology of the White-winged Crossbill. The incubation and nestling periods of the species are unknown. A nest recorded by Tufts and cited by Taber (1968) was half built on April 2 and contained a half-incubated clutch on April 19, suggesting a 13- to 16-day incubation period. Taber (1968) cited records of nests from January to August, with seven records from February to April. The nest is a well-built cup of twigs, grass, and lichens, and is often lined with black rootlets or fungal filaments and, occasionally, hair or feathers (Taber 1968). The nest is placed in a conifer, 1–12 m (3–40 ft) above ground (Taber 1968). The eggs are bluish with brown and purplish spotting, and normally number 3 or 4 per clutch (Harrison 1975). The male feeds the female



No. of priority blocks in which recorded

TOTAL 11 (6%)
 Possible breeding: 4 (36.4% of total)
 Probable breeding: 7 (63.6% of total)
 Confirmed breeding: 0 (0% of total)

Physiographic regions in which recorded

	no. of priority blocks	% of region's priority blocks	% of species' total priority blocks
Champlain Lowlands	0	0	0
Green Mountains	2	4	18
North Central	1	5	9
Northeast Highlands	8	50	73
East Central	0	0	0
Taconic Mountains	0	0	0
Eastern Foothills	0	0	0

on the nest; the most reliable method for locating nests is to watch males return to the nest (Harrison 1975).

Records of the White-winged Crossbill in Vermont during the Atlas Project were confined to three regions: the Northeast Highlands, the North Central region, and the Green Mountains. All of the probable breeding records of 1979–80 were confined to the Northeast Kingdom. Voous (1960) indicated that the breeding distribution of the White-winged Crossbill in the Palaearctic apparently lies within the 12.8°–20° C (55°–68° F) isotherms; almost all Vermont Atlas Project records are in areas with an average

temperature of 20° C (68° F) or less in July. It is interesting to note that during 1979–80 the White-winged Crossbill did not irrupt south of the northern U.S. (Able 1980); this implies that the birds recorded during those years inhabited the southern edge of their normal boreal distribution.

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