

## WHITE-WINGED CROSSBILL BREEDING IN SOUTHERN COLORADO, WITH NOTES ON JUVENILES' CALLS

JEFFREY G. GROTH, Museum of Vertebrate Zoology, University of California, Berkeley, California 94720

From 3 to 11 June 1987 I camped near Spring Creek Pass, elevation 11,100 ft., San Juan Mountains, Hinsdale County, Colorado, to record and collect Red Crossbills (*Loxia curvirostra*). The site was in forests dominated by Engelmann Spruce (*Picea engelmannii*) and Quaking Aspen (*Populus tremuloides*) with interspersed grassy meadows. Patches of deep snow were present under trees and in shadier areas. The spruces had a heavy crop of cones which were drying and losing seeds. Moderate numbers of Red and White-winged (*L. leucoptera*) crossbills occurred around the camp. Single individuals and small groups of two to three birds of a single species were most frequent (some larger flocks were noted), and many of the 22 Red Crossbills I collected at this locality were in breeding condition. Pine Siskins (*Carduelis pinus*) were also conspicuous and performing circular courtship flights in the area. Mixed aggregations consisting of dozens of the three species were seen on some afternoons, with all three species in song. Birds foraged in the spruces and came down to the ground to eat snow and grit.

A female White-winged Crossbill was collected (MVZ 171432) on 6 June. The specimen had a slightly enlarged oviduct and the diameter of its largest ovarian follicle was 1.5 mm, indicating the bird was near breeding condition. The following day (7 June) I observed a bright pink male White-winged Crossbill giving loud barking calls and attacking two Gray Jays (*Perisoreus canadensis*) low in the spruces near the camp. This interaction was near a tree next to which I had placed a caged female Red Crossbill. The Gray Jays retreated and were chased by the male White-winged Crossbill for a few meters. I then collected the White-winged Crossbill (MVZ 171433). Its testes were greatly enlarged by crossbill standards (left, 7.1 × 4.9 mm; right, 6.6 × 6.2 mm). After I retrieved the specimen, I noticed a tiny juvenile White-winged Crossbill on the ground near the place of commotion with the jays. The baby hopped toward the caged Red Crossbill and began to give loud begging calls and flutter its wings. This behavior continued for several minutes. Calls of the bird were different from those I have recorded from many juvenile Red Crossbills (Figure 1), and the calls' distinctiveness may allow observers to identify these otherwise cryptic birds in the field. The juvenile had the white wingbars typical of White-winged Crossbills, but these were difficult to observe except at very close range. It was too young to fly, and I captured it by hand and prepared it as a specimen (MVZ 171434). It was a female with an ovary 2.5 × 2.0 mm, an uncrossed bill with a length (from nostril) of 8.7 mm, a wing chord of 72.1 mm, a tail length (to longest rectrix) of 40.1 mm, and a body mass of 17.8 grams, all measurements much smaller than those of full-grown White-winged Crossbills. The outer rectrices of adult crossbills are typically much longer than the inner ones, but the juvenile's longest rectrices were the medial ones, showing incomplete growth of the tail. My observations of Red Crossbill nestlings suggest that the exit of the juvenile White-winged Crossbill from its nest was premature. The adult male's mobbing behavior suggests that it was the father of the juvenile.

No nests of the White-winged Crossbill have yet been found in Colorado, but flying juveniles have been observed in recent years. For the summer of 1988, Kingery (1988) stated "two pairs of White-winged Crossbills near Cameron Pass, CO, had young with them too independent to qualify for Colorado's first breeding record." For the winter of 1988–1989, Kingery (1989) reported "6 pairs seen at Cameron Pass,

## NOTES

one gathering nesting material." Since it could not fly, the baby bird I collected must have fledged in the area right around the camp, providing the most direct evidence yet for nesting of this species in Colorado. Other evidence suggesting breeding in Colorado includes my observation of a pair of White-winged Crossbills on 6 August 1985 drinking water from a pond on the White River Plateau, 10 mi. S and 2 mi. E of Buford, elevation 10,000 ft., Rio Blanco County, in Englemann Spruce and aspen forests. I collected the female of the pair (MVZ 171137); it had a well-developed incubation patch, enlarged oviduct, and a largest follicle 1.6 mm in diameter. I saw or heard no additional White-winged Crossbills at that locality.

There is evidence for a general southward expansion of the range of the White-winged Crossbill in western North America (see Gordon et al. 1989). In earlier decades of this century, this species was apparently more rare in the Rocky Mountain region. Bailey and Niedrach (1965) described its status in Colorado as a "rare straggler." More recently, Worthen (1973) reported three summer specimens from Utah, with the two males having testes near the size of those of breeding crossbills (5 × 4 and 6 × 5 mm; the single female was not in breeding condition). Smith (1978) found a breeding population of 30–50 individuals in the Bear River Range of Utah, providing the southernmost confirmation of breeding of the species (with the exception of the Hispaniolan subspecies, *L. l. megaplaga*). Hubbard (1982) reported a pair feeding a fledgling on Wheeler Peak in the Sangre de Cristo Mountains of New Mexico on 20 September 1981, suggesting breeding somewhere in the southern

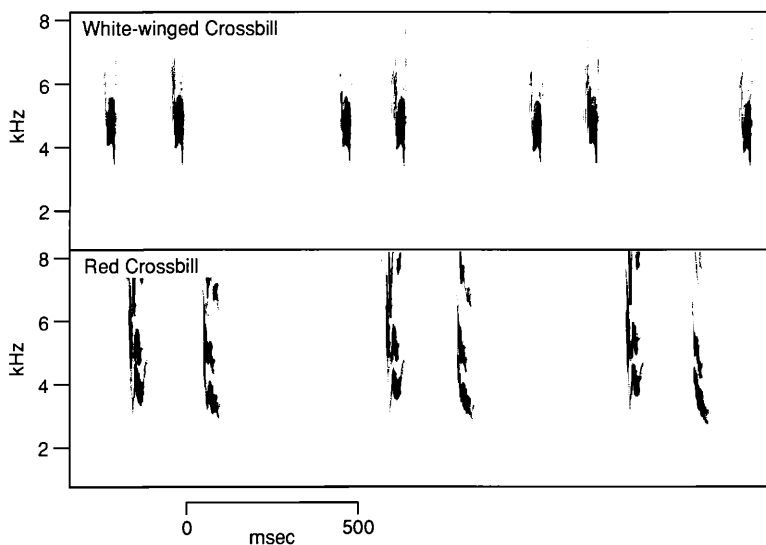


Figure 1. Audiospectrograms of begging calls of juvenile White-winged and Red Crossbills. Note that the Red Crossbill has two structurally different notes ("chit-too") while the White-winged Crossbill repeats a single note ("chit"). The audiospectrograms were prepared on a Kay Elemetrics 6061B spectral analyzer at the 80–8000 kHz frequency setting with the wide band pass filter. The juvenile Red Crossbill was recorded in Lodgepole Pine (*Pinus contorta*) forest at Barnes Flat, 11 mi. N and 4 mi. W of Westwood, elev. 5500 ft., Lassen Co., California, on 30 August 1987.

## NOTES

Rocky Mountain region, probably in New Mexico. The AOU Checklist Committee (1983) described the southwestern limits of the breeding range of *L. l. leucoptera* as "isolated populations breeding irregularly in northern Utah, northwestern Wyoming, and probably north-central New Mexico"; however, nesting has not been documented farther south than Smith's (1978) record. My discovery provides a southernmost record of breeding of *L. l. leucoptera* for North America, but further breeding accounts may be forthcoming if the range expansion continues and observers pay attention to crossbills.

These observations were made while I was supported by a dissertation improvement grant from the National Science Foundation (BSR-8700999). I thank Ned K. Johnson and John Trochet for their useful comments on the manuscript.

## LITERATURE CITED

- American Ornithologists' Union. 1983. Check-list of North American Birds, 6th ed. American Ornithologists' Union, Lawrence, KS.
- Bailey, A. M., and Niedrach, R. J. 1965. Birds of Colorado, vol. 2. Denver Mus. Nat. Hist., Denver.
- Gordon, P., Morlan, J., and Roberson, D. 1989. First record of the White-winged Crossbill in California. *W. Birds* 20:81-87.
- Hubbard, J. P. 1982. The autumn migration. New Mexico. *Am. Birds* 36:205-207.
- Kingery, H. E. 1988. The nesting season. Mountain West region. *Am. Birds* 42:1321-1324.
- Kingery, H. E. 1989. The winter season. Mountain West region. *Am. Birds* 43:345-347.
- Smith, K. G. 1978. White-winged Crossbills breed in northern Utah. *W. Birds* 9:79-81.
- Worthen, G. L. 1973. First recorded specimens of the White-winged Crossbill from Utah. *Wilson Bull.* 85:243-244.

*Accepted 4 June 1991*



White-winged Crossbills

*Sketch by David Sibley*