SHORT COMMUNICATIONS

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FIRST RECORDS FOR THE BOREAL OWL IN NEW MEXICO[1]

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In North America the Boreal Owl (*Aegolius funereus*) was long believed to breed only in Canada and Alaska (AOU 1957). A juvenile of this species collected in August 1963 in north-central Colorado (Baldwin and Koplin 1966) was the first indication that the species might breed much farther south, particularly in the Rocky Mountain chain. Increased efforts by biologists and birdwatchers led to the discovery of nests in Minnesota (Eckert and Savaloja 1979), Idaho (Hayward and Garton 1983), and Colorado (Palmer and Ryder 1984). Fledged young have been seen in Washington (Batey et al. 1980) and Montana (Rogers 1973). Spring records of singing males indicate that breeding populations are widespread in Idaho, Montana (Hayward et al. 1987a), and Colorado (Ryder et al. 1987). The accumulation of breeding season records in recent years is more likely the result of greater human penetration of Boreal Owl habitat during the peak singing period, generally March through early May, rather than an increase in owl numbers or a range expansion into the region (Palmer and Ryder 1984). Summer and autumn records in eastern Washington and Oregon indicate that the species is resident there (Whelton 1989). Autumn records from 1896, 1903, and 1929 in Colorado (Bailey and Niedrach 1965) suggest that the species has been resident there historically in suitable habitat (Baldwin and Koplin 1966).

The Boreal Owl had not been reported in New Mexico since the arrival of Europeans, but bones attributed to *Crypotoglaux* (=*Aegolius*) *funerea richardsoni* were found among Pleistocene bones in Shelter Cave, Dona Ana County, New Mexico (Howard 1931). Since the species had been documented in Colorado only 56 km north of the New Mexico border in 1985 (Ryder et al. 1987), we initiated surveys for the Boreal Owl near Cumbres Pass on the Colorado/New Mexico border in the spring of 1987 and expanded our efforts south into New Mexico in succeeding seasons.

Most Boreal Owl records for Colorado are from elevations in excess of 2,700 m and in climax Engelmann spruce-subalpine fir (*Picea engelmanni–Abies lasiocarpa*) forests interspersed with meadows and other small openings (Ryder et al. 1987). We conducted surveys between April 1987 and April 1989 in the Sangre de Cristo, San Juan, and Jemez mountains (Fig. 1), concentrating on this habitat type. Breeding season surveys (18 nights) were conducted as described by Ryder et al. (1987) while autumn surveys (16 nights) followed the protocol of Palmer and Rawinski (1986). Both surveys involved playback of the Boreal Owl staccato song (Bondrup-Nielson 1984) for 5-min intervals at stations spaced 200 to 800 m apart. Documentation required a vocal response (staccato song) or a sighting in the spring. We report only sightings of Boreal Owls in the autumn because the Northern Saw-whet Owl (*A. acadicus*) has similar call notes, though Whelton (1989) also reported summer and autumn Boreal Owls based on calls.

Boreal Owls were recorded at five locations in New Mexico and three locations in adjacent southern Colorado (Fig. 1, Table 1). Two autumn sightings were made more than 45 km south of Colorado and one spring sighting occurred 107 km to the south of the state line. A photograph of the first New Mexico record was published (Hubbard 1987) and photographs of it and two other owls were deposited in the New Mexico Ornithological Society Archives.

We heard six Northern Saw-whet Owls and saw another. All these owls sang their typical courtship song; five were heard in the spring. Unidentified *Aegolius* respondents were seen or heard at seven other New Mexico locations during autumn surveys (Fig. 1). These may also have been Boreal Owls; at two autumn locations (B and C; Fig. 1) we saw Boreal Owls in the same vicinity where *Aegolius* owls responded during earlier surveys. Whelton (1989) had 40 contacts with Boreal Owls, but saw only seven of those perched. He identified the remainder by physical and flight characteristics (eight) or their calls (25). He recorded only three saw-whet owls, or only 11% of a total of 28 unseen

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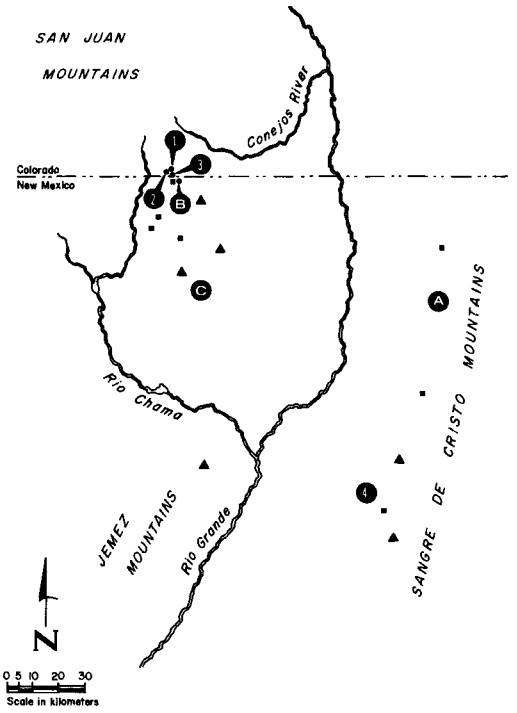

FIGURE 1. Survey areas and documented locations of Boreal Owls in south-central Colorado and north-central New Mexico. 1–4 = documented breeding season locations. A–C = documented autumn locations. Squares = unidentified *Aegolius* owl locations. Triangles = additional survey areas. Most areas were surveyed more than once.

owls. We believe that most of our seven *Aegolius* owls were Boreal Owls, but could not safely identify them by calls (five) or when seen only briefly in flight (two).

The work of Bondrup-Nielson (1984) and Hayward et al. (1987a) indicate that singing males represent breeding populations. We documented singing males at only two New Mexico locations (nos. 3 and 4; Fig. 1), but their wide separation plus three interspersed autumn records are indicative of a breeding population dispersed throughout spruce-fir habitat in northern New Mexico. One singing male was present near the Colorado border in both 1987 and 1988. This male was close to three additional singing males in southern Colorado in 1987 (Table 1). The second singing male was found in the Pecos Wilderness Area, 107 km south of Colorado, in 1989. This area includes at least 20,000 ha of spruce-fir habitat.

We also believe that autumn observations of adult Boreal Owls are indicative of breeding populations. Twelve radio-tagged Idaho owls had larger winter than summer home ranges, but remained resident in the area year-round (Hayward et al. 1987b). Two radio-tagged Colorado owls remained on their high elevation home ranges throughout the year (Palmer 1986). We expect that the Boreal Owl will eventually be documented as a breeding species at our autumn sighting locations and at most unidentified *Aegolius* locations.

One Colorado owl was found in aspen (*Populus tremuloides*) parkland with small islands of spruce-fir. One autumn sighting in New Mexico was in an area that had burned about 100 years before. There large trees were found in islands that had survived that fire. All other owls were recorded in mature spruce-fir forest/meadow habitat, with numerous trees of 50 cm diameter at breast height. All New Mexico sightings occurred in forests where stumps or other signs of timber harvest were not in evidence. Two sightings were within designated wilderness areas. It is important to

TABLE 1. Boreal Owl records for New Mexico (NM) and southern Colorado (CO).

Date	Figure 1 location	State	County	Elevation (m)	Latitude (N)	Longitude (W)	Documentation[1]	
							Song	Visual
Spring								
14 April 1987	1	CO	Conejos	3,030	37°01′21″	106°26′43″	S	N
	2	CO	same	2,950	37°00′47″	106°27′50″	U	Y
15 April 1987[2]	3	CO	same	2,990	36°59′46″	106°26′40″	S	N
	3	NM	Rio Arriba	3,050	36°59′28″	106°27′03″	S	P
19 April 1987	3	NM	same	same	same	same	S	Y
6 June 1987	3	NM	same	same	same	same	U	N
2 April 1988	3	NM	same	same	same	same	S	Y
15 April 1989	4	NM	Mora	3,300	35°53′38″	105°38′13″	S	P
Autumn								
3 October 1987	A	NM	Taos	3,300	36°34′04″	105°21′30″		Y
5 October 1987[3]	B	NM	Rio Arriba	3,150	36°58′54″	106°24′41″		Y
24 September 1988	C	NM	same	3,220	36°35′35″	106°20′22″		P

[1] For Song: S = Solicited by tape playback; U = Unsolicited. For Visual: Y = Yes; N = No; P = Photograph.
[2] Two owls singing simultaneously; the state border is at 36°59′45″.
[3] Probably more than one owl present.

note that, as previously mentioned, we concentrated our survey efforts in this mature timber type.

Our records from five locations over a 2-year period indicate that the Boreal Owl is a permanent and probably breeding resident in at least three counties and two national forests in northern New Mexico. These owls are linked with Colorado owls by contiguous forest habitat and their documentation here was predictable. It is yet to be determined if relict populations exist in some of the isolated mountain ranges of southern New Mexico and Arizona, though the Pleistocene record from southern New Mexico (Howard 1931) suggests that this is certainly possible.

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