Movements of Adult Male Red-winged Blackbirds Color-tagged in Colorado

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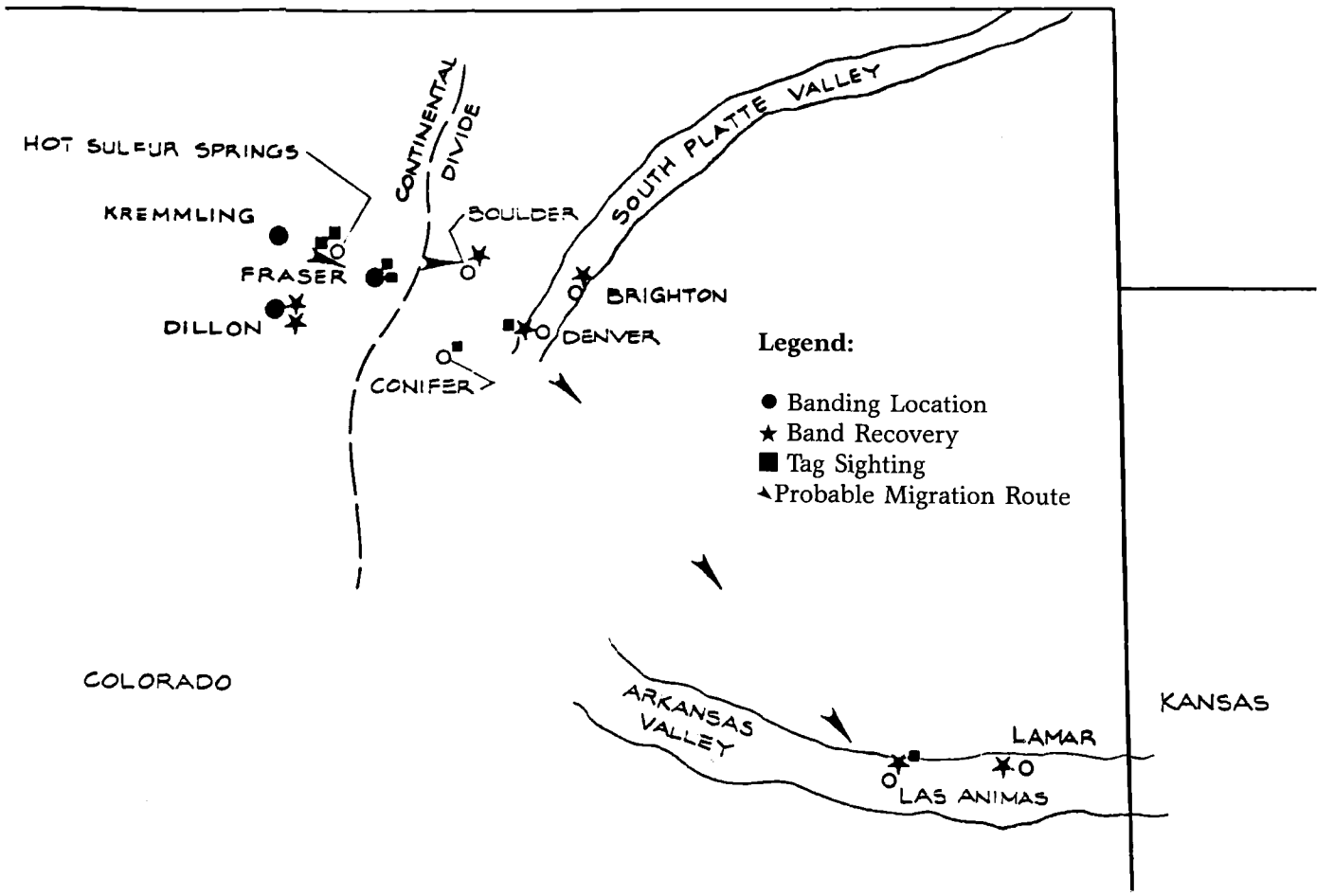
The Red-winged Blackbird *(Agelaius phoeniceus)* is an abundant species in the central United States (Dolbeer and Stehn 1979). Although a great deal of information is known about Red-winged Blackbird population movements and migration routes (Neff 1949, Fankhauser 1968, Royall et al. 1972, Bray et al. 1977, Dolbeer 1978, Royall et al. 1980), information is lacking on isolated populations, especially Red-wings that breed at high altitudes (>2000 m). Bray et al. (1977) evaluated approaches to determine movements of Red-wings from breeding to wintering areas. They showed that significantly more information was obtained from capturing and color-tagging male Red-winged Blackbirds on breeding territories than banding and color-tagging Red-wings in wintering areas or banding nestlings. Guarino (1968) reported that color-tagging Red-wings increased the recovery rate three times over banding with aluminum bands.

The purpose of this study was to link breeding and wintering areas of a small mountain population of Red-winged Blackbirds in Summit and Grand Counties, Colorado, by banding and color-tagging territorial males on their breeding grounds.

Methods

From 1973 to 1980, 370 adult territorial male Red-winged Blackbirds were captured, banded, color-marked with a colored leg-tag, and released on breeding territories near Dillon, Kremmling, and Fraser, Colorado (Figure 1). Each

Figure 1. Banding locations, band recoveries, tag sightings, and probable migration routes of male Red-winged Blackbirds, 1973-1980.



year banding and marking occurred from the last week in May to 30 June. Red-wings were captured with a portable decoy trap similar to the one described by Bray et al. (1975). Birds captured from 1973 to 1975 were color-marked with a numbered 2.5 × 7.4-cm Saflag* leg tag attached to a U.S. Fish and Wildlife Service size 3 band (Guarino 1968). From 1976 to 1980, Red-wings were marked with a colored 1.3 × 10.0-cm Saflag leg tag attached with a Dennison Buttoneer. The latter attachment method increases tag longevity about 8 months over the band attachment method (Cummings unpubl. data). Tags were numbered with Ramcote* vinyl paint (Evergreen Park, Illinois 60642) to identify specific individuals (Hester 1963).

To determine the migration routes and wintering grounds of this mountain population of Red-wings, a poster that showed a male Red-wing with a colored leg-tag from that year and that requested information on sightings of marked birds was circulated each year during August to various federal, state, and private agencies in Colorado, New Mexico, Kansas, Oklahoma, and Texas. In addition, during 1979, newspapers in those states publicized information concerning marked Red-wings.

Results

From 1973 to 1980, 206, 95, and 69 male Red-wings were banded and color-marked at Dillon, Kremmling, and Fraser, respectively (Table I). Data from band recoveries and tag sightings, from October through March, were used to determine distributional patterns (Figure 1). Of seven band recoveries (all found dead) 1 to 3 years later, two were in the South Platte Valley, Colorado, one was near Boulder, Colorado, two were in the Arkansas Valley of southeastern Colorado, and two were found near the original banding sites. The overall recovery rate was 1.8%. The recovery rate for banded and tagged red-wings in a study conducted by Guarino (1968) was 0.96%.

Table 1. Recoveries and tag sightings of male Red-winged Blackbirds from Dillon, Kremmling, and Fraser, Colorado 1973-1980.

BANDING				RECOVERY		
NUMBER	DATE	LOCATION	ELEVATION(m)	DATE	LOCATION	ELEVATION(m)
74379661	30 May 1973	Dillon	2712	09 May 1974	Dillon, CO	2712
87339722	02 June 1974	Dillon	2712	11 January 1975	Las Animas, CO	1186
87338146	29 June 1975	Dillon	2712	22 October 1978	Dillon, CO	2712
87338147	29 June 1975	Dillon	2712	24 February 1976	Denver, CO	1609
99331004	05 June 1976	Dillon	2712	? May 1977	Brighton, CO	1495
73206421	03 June 1978	Fraser	2572	04 December 1978	Boulder, CO	1628
73213986	14 June 1979	Dillon	2712	23 January 1981	Lamar, CO	1103

	SIGHTING		
TAG COLOR[1]	DATE	LOCATION	ELEVATION(m)
Blue	03 July 1976	Conifer, CO	2499
Blue	02 October 1976	Hot Sulfur Springs, CO	2337
Blue	02 October 1976	Hot Sulfur Springs, CO	2337
Blue	04 October 1976	Fraser, CO	2572
Blue	04 October 1976	Fraser, CO	2572
Red	22 January 1980	Las Animas, CO	1186
Red	02 April 1981	Denver, CO	1609

[1]The same tag color was used at each banding location.

Generally, tag sighting locations overlapped band recovery sites. The seven tag sightings of Red-wings indicated that fall movement from all three breeding areas started in late August each year. Observations of tagged Red-wings support a general migration route from Dillon to Kremmling, then to Hot Sulfur Springs, Fraser, and on to the South Platte Valley on Colorado's eastern slope. During migration, two birds with numbered tags were observed at a bird feeder in Hot Sulfur Springs on the 2 October 1976 and the same two birds were observed 2 days later in Fraser. I assume that the Red-wings crossed the Continental Divide at Corona Pass, an elevation of 3537 m, since tagged birds were sighted on either side and the pass offers a low passage point.

Discussion

This banding and color-tagging study resulted in the linking of Red-wing breeding areas near Dillon (el 2717 m), Kremmling (el 2000 m), and Fraser (el 2572 m), with wintering areas in the South Platte and Arkansas Valleys of Colorado. Elevations of the wintering areas are 1495 m and 1168m, respectively. This altitudinal migration is common among some bird species that breed in mountainous areas (Thomson 1949, Lincoln 1950, and Zwickel 1968). Red-wing movement to lower elevations can be attributed to adverse weather conditions (low temperatures and snow cover) and the availability of winter food in the South Platte and Arkansas Valleys. Both areas have small

grain farming and an abundance of cattle feedlots. The distance from breeding to wintering areas is relatively short (97 to 322 km) compared to most documented migrations. However, Royall et al. (1972) have noted similar movement of other mountain Red-wing populations from Estes Park (el 2325 m) and Red Feather Lakes (el 2513 m), Colorado to the South Platte and Arkansas Valleys.

The return rate of breeding males for the Dillon, Kremmling, and Fraser populations (mean of 12%) was much lower than the 58% return rate for a population of plains Red-wings banded near Lafayette (1575 m), Colorado (Monahan and Cameron 1982), suggesting that mountain populations of Red-wings might expeience lower survival or lower site fidelity or both. It was not possible to determine whether color tags affected natural mortality. Two other factors possibly influenced the return rate. In 1976 and 1977, snow was present on the breeding areas early in the breeding season and in 1979, dry conditions reduced the amount of nesting habitat. Monahan and Cameron (1982), reported a lower return rate under similar conditions.

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