

WINTER MOVEMENTS BY ROSY FINCHES IN MONTANA

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Abstract.—During the winter of 1985–1986 Rosy Finches (*Leucosticte arctoa*) were trapped and banded at two sites, 40 km apart, in southwestern Montana. We documented between-site movement by seven finches, representing two color phases, both sexes, and movement in both directions. Wintering Rosy Finches feed on seeds, a patchy and ephemeral food source. They may move within a large area during winter to locate alternate food sources.

MOVIMIENTOS DURANTE EL INVIERNO DE *LEUCOSTICTE ARCTOA* EN MONTANA

Resumen.—Durante el invierno del 1985–1986 se anillaron especímenes de *Leucosticte arctoa* en dos localidades del suroeste de Montana distanciadas por 40 km. Aves (un total de siete) de ambos sexos y de dos fases de coloración se movieron en ambas direcciones entre las localidades. Las aves se alimentaron de semillas; fuente de alimento efímera y localizada en parchos. Se especula que durante el invierno, los pajaros se muevan dentro de un área de considerable tamaño tratando de localizar fuentes alternas de alimentos.

Very little is known about the extent of winter movements by Rosy Finches (*Leucosticte arctoa*). In winter, Rosy Finches visit artificial feeders most regularly during inclement weather. During milder conditions, they characteristically use feeders much less frequently, and appear to move to other sites, where they presumably forage on naturally available food (Bailey 1974, pers. obs.). Use of winter roosts by Rosy Finches also varies through the winter and seems to be related to weather conditions, especially snow cover (Hendricks 1981, King and Wales 1964, Mewaldt and Farnier 1953). Data in French (1959) suggest that winter movements of Rosy Finches are rather small, at least in Utah. He recaptured 49 Rosy Finches at two roost sites “a few miles apart” and found only two between-site movements, both by males. One movement occurred during one win-

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ter, and the other occurred between two winters. Here we present data on the magnitude of winter movements by Rosy Finches in southwestern Montana.

STUDY AREAS AND METHODS

We captured Rosy Finches at two artificial feeders. One was in Livingston, Park County, Montana (45°40'N, 110°34'W, elevation 1601 m), where feeding and banding were conducted during the winters of 1983–1984 through 1985–1986. This site was located on a grassy hill dominated by junegrass (*Koeleria cristata*), Idaho fescue (*Festuca idahoensis*), and bluebunch wheatgrass (*Agropyron spicatum*). The second site was 8 km north of Bozeman, Gallatin County, Montana (45°45'N, 111°6'W, elevation 1578 m), where feeding began in the winter of 1980–1981, but banding was initiated during the winter of 1985–1986. This site was on a flat grassy bench, most of which had been converted to dryland wheat fields or subdivisions, and was about 3 km west of the foothills of the Bridger Range. The two sites were separated by 40 km straight-line distance and a mountain range (Bridger Range) with elevations varying between 1874 and 2985 m. The highest elevation along a straight line between the two sites was about 2475 m, but the lowest pass in the range (1741 m) was near this line.

At both sites birds were fed commercial bird seed throughout the winter and were trapped in walk-in traps and manually-controlled box traps. We only present data from 1985–1986 because both sites were operated simultaneously during that winter only, and no birds banded in Livingston in previous years were trapped at Bozeman in 1985–1986. All captured birds were banded with U.S. Fish and Wildlife Service size 1B aluminum bands. Sex was assigned by examining the amount of rose color, especially under the wings (Bailey 1974). Although this technique was developed on the Alaska Peninsula, Merrill (1880) was also able to correctly distinguish sex, based on plumage coloration, in Rosy Finches overwintering in Montana. Determinations of sex, based on plumage coloration, of seven birds captured at both sites were made independently and agreed in every case.

RESULTS AND DISCUSSION

At Livingston, 179 captures were made, including 161 unbanded birds, 17 recaptures banded at Livingston, and one recapture banded at Bozeman. At Bozeman, 408 captures were made, comprising 337 unbanded finches, 65 recaptures of birds banded there, and six recaptures of finches banded at Livingston. Thus, we know that at least seven birds fed at both sites. We documented between-site movement in both color phases, both sexes, and in both directions (Table 1). The elapsed time between captures of finches moving between the two sites varied between 13 and 92 d.

The Bozeman site was 40 km WNW of the Livingston site. During the 1983–1984 winter, we received reports from bird enthusiasts of several banded Rosy Finches at two artificial feeders located 9 km ESE

TABLE 1. Banding and recapture data for Rosy Finches captured at artificial feeding sites at both Livingston and Bozeman, Montana, winter 1985-1986.

Band No.	Sex	Color phase	At banding		At recapture	
			Loca- tion ^a	Date	Loca- tion ^a	Date
1311-20556	M	Hepburns ^b	B	13 Dec. 85	L	13 Feb. 86
1381-41111	F	Gray-crowned ^c	L	16 Nov. 85	B	08 Dec. 85
1381-41113	F	Gray-crowned ^c	L	17 Nov. 85	B	17 Feb. 86
1381-41140	F	Gray-crowned ^c	L	24 Nov. 85	B	08 Dec. 85
1381-41144	F	Gray-crowned ^c	L	25 Nov. 85	B	09 Dec. 85
1381-41147	M	Gray-crowned ^c	L	26 Nov. 85	B	09 Dec. 85
1381-41172	F	Gray-crowned ^c	L	03 Jan. 86	B	12 Feb. 86

^a B = Bozeman, L = Livingston.

^b Formerly *Leucosticte tephrocotis littoralis*.

^c Formerly *L. t. tephrocotis*.

and 9 km NE of the Livingston site. As we knew of no one else banding Rosy Finches in this area, they were most likely banded at the Livingston site.

Interchange appeared to be relatively common between the feeding stations at Livingston and Bozeman. The additional sightings of banded Rosy Finches 9 km in the opposite direction of Bozeman from Livingston supports the conclusion that Rosy Finches move about within a large area during winter, perhaps as large as 5025 km², based on a circle with a 40 km radius. We suggest that this is a strategy used by Rosy Finches to find alternate food sources within their wintering range during mild weather conditions, when it is energetically feasible to do so. Because Rosy Finches feed on seeds, their food supply is both patchy and ephemeral. Even large food patches can quickly become unavailable when covered by snow or depleted by foraging birds. Rosy Finches usually overwinter in the mountain foothills, but they move far out into the northern Great Plains when food is scarce (Hendricks and Swenson 1983). By being aware of food supplies in a relatively large area, they can avoid making this long additional movement, unless it is absolutely necessary, and can move quickly to alternate foraging patches when others become depleted or unavailable.

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