

EXTENSION OF THE BREEDING RANGE OF THE BLACK ROSY-FINCH IN WYOMING

CARL W. BROWN, Biodiversity Research Institute, Portland, Maine 04103;
woodley.cb@gmail.com

SUSAN PATLA, Wyoming Game and Fish Department, Jackson, Wyoming 83001

RICHARD E. JOHNSON, School of Biological Sciences, Washington State University, Pullman, Washington 99163

The Black Rosy-Finch (*Leucosticte atrata*) is one of the least studied bird species in North America, owing to its nesting in high alpine habitat, predominantly in cliffs (Johnson 2002). It breeds in low densities from west-central Montana/northeastern Idaho east to northwestern Wyoming, south to southern Utah, and west to north-eastern Nevada/southeastern Oregon (Johnson 2002). It nests in most contiguous mountain ranges of northwestern Wyoming: the Wind River Range (Cary 1917), the Absaroka Range (Miller 1925), the Gallatin Range (Bailey 1930), the Gros Ventre Range (Fuller and Bole 1930), the Teton Range (French 1954), and the Beartooth Mountains (Hoffmann and Taber 1960) (Figure 1). The Black Rosy-Finch is known to occur in the isolated Bighorn Mountains (see Johnson 2002, Faulkner 2010), where reported incorrectly as the Brown-capped Rosy-Finch (*L. australis*) by Carpenter (1876) and as the Gray-crowned Rosy-Finch (*L. tephrocotis*) beginning with Grave and Walker (1913), an error corrected by Mengel and Mengel (1952). We here report Black Rosy-Finches breeding in the Wyoming Range (observed by Johnson in 2002 and Brown in 2015) and in the Salt River and Snake River ranges (observed by Brown in 2015) (Figure 1), where no previous nesting records are known. These mountain ranges are clustered and abut others where the species is known to breed. The inclusion of the Salt, Snake River, and Wyoming ranges bridges the gap, where suitable habitat is available, in the Black Rosy-Finch's distribution between northwestern Wyoming and northeastern Utah. We also observed nesting pairs within the species' previously documented distribution.

The field work we discuss was accomplished by Brown as preliminary work for a graduate study at the University of Wyoming; all his surveys took place at 14 locations over the course of 21 days from June to August 2015. During site selection, he considered the availability of expansive north-facing cliffs, tundra, and persistent snowpack, as well as elevation (Johnson 2002), choosing survey sites to maximize the probability of detection.

All other field work was focused on confirming nesting in ranges in Wyoming where it was suspected but previously unpublished, as well as on revisiting ranges with historical nesting records. Confirmation of breeding was based on observations of fledglings begging for food from adults or discovery of active nests with hatchlings.

On 8 August 2002, Johnson confirmed breeding in the Wyoming Range for the first time when he observed a male and a female feeding two fledglings at Roaring Forks Lakes (42° 43' N, 110° 38' W). On 18 June 2015, Brown visited that site and observed 11 adults. In addition, he observed at least four adults and two young on 20 August 2015 and found on a north-facing cliff (elevation 3200 m) a nest containing at least two chicks being fed by an adult female. On Mt. McDougal's east face in the Wyoming Range (42° 52' N, 110° 35' W), he observed two adult Black Rosy-Finches on 19 June 2015 but did not note nesting behavior.

Near Crow Creek Lakes in the Salt River Range (42° 44' N, 110° 45' W), Brown observed four adult Black Rosy-Finches on 20 June 2015 and three or more adults followed by five begging juveniles on 20 August 2015. On the western flank of Ferry Peak in the Snake River Range (43° 13' N, 110° 59' W), he observed at least one adult followed by two begging juveniles on 7 August 2015.

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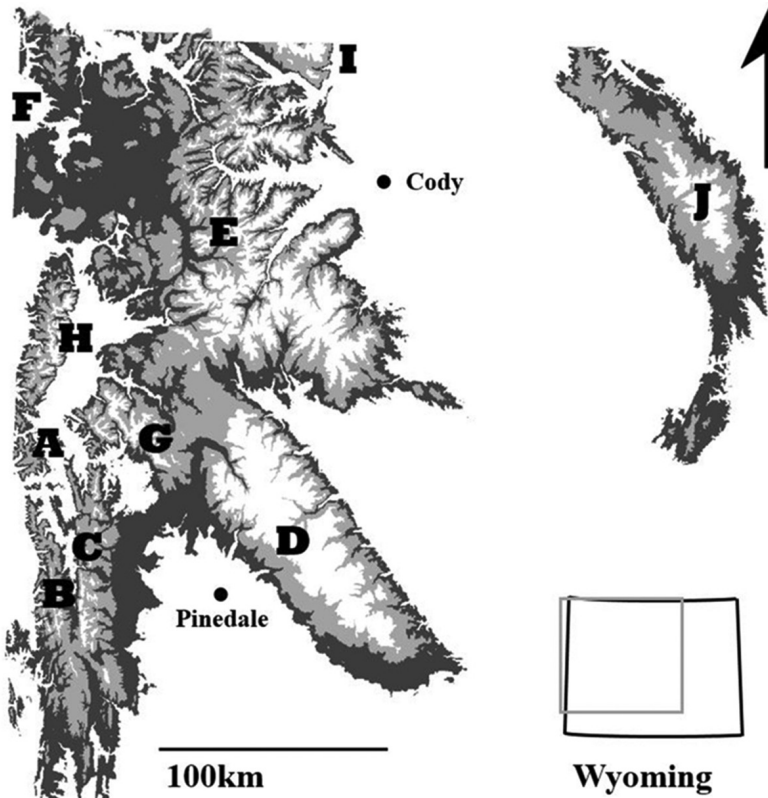


Figure 1. Range extension of the Black Rosy-Finch in northwestern Wyoming's Snake River Range (A), Salt River Range (B), and Wyoming Range (C). Mountain ranges previously reported occupied: Wind River Range (D), Absaroka Range (E), Gallatin Range (F), Gros Ventre Range (G), Teton Range (H), Beartooth Range (I), Bighorn Mountains (J).

Little is known about the Black Rosy-Finch's nesting ecology. Previously, only four authors have reported reaching the species' nests (Miller 1925, French 1959a, b, Johnson 1965, McDonald 2002). Therefore, we take this opportunity to present additional observations of nests. On 16 July 2015, Brown rappelled down a north-facing cliff in the Beartooth Mountains near Twin Lakes ($44^{\circ} 59' N$, $109^{\circ} 26' W$) to observe an active nest with four chicks (elevation 3300 m) tucked into an angled, fist-sized crack and built on a moss-covered shelf with wedged stones and vegetation providing protection from above (Figure 2). He also found an unoccupied nest with rosy-finch flight feathers in a separate crack system 3 m above the occupied nest. Both nests faced east.

In the Teton Range, Brown located two nests. The first, found on 25 July 2015 at 3200 m on the north face of Peak 10753 ($43^{\circ} 35' N$, $110^{\circ} 53' W$), had nestlings that begged in synchrony upon an adult's arrival. The second nest was found on 2 August 2015 in an east-facing tundra-lined crack on Cloud Veil Dome's north face

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Figure 2. Black Rosy-Finch chicks on nest in the Beartooth Mountains, Wyoming, 16 July 2015.

Photo by C. W. Brown

(43° 43' N, 110° 48' W) at 3450 m, where both adults were seen making frequent feeding runs to the nest, when begging young could be heard.

In Wyoming, away from the southeast where the Brown-capped occurs, all breeding rosy-finches are Black (Johnson et al. 2000, Johnson 2002, Faulkner 2010). Given that the Black Rosy-Finch's breeding habitat in Wyoming is located above timberline and appears to be tightly linked to both tundra and persistent summer snowpack (French 1959b), it is a species threatened by climate change (Romme and Turner 1991, Gottfried et al. 2012). The Wyoming Game and Fish Department (2010) has designated the Black Rosy-Finch a "species of greatest conservation need" because of the lack of knowledge of its demographics in the state.

The range extension we present here is not unexpected, but rather fills an important gap in our understanding of the Black Rosy-Finch's breeding distribution in Wyoming. The additional information on observations of nests furthers our understanding of the species' ecological niche, which is needed to improve our ability to predict how the species might react to a changing climate in future years.

Brown's field work in 2015 was funded by the Meg and Bert Raynes Wildlife Fund, through the Biodiversity Research Institute (BRI) of Portland, Maine. Current work on the species is under the guidance Anna Chalfoun of the Wyoming Cooperative Fish and Wildlife Research Unit of the University of Wyoming's Department of Zoology and Physiology and paid for by Wyoming's State Wildlife Grant Program. Thanks to Anya Tyson, Nick Rosenberger, Sean Beckett, Walter Scherer, and many other survey partners. Thanks also to reviewers Douglas W. Faulkner and Lucas H. DeCicco for helpful suggestions and comments. Finally, many praises to Vincent Spagnuolo of BRI for supporting this project and ensuring its execution.

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Accepted 11 October 2017