

## FIRST NESTING RECORD OF BLACK-THROATED GRAY WARBLER (*DENDROICA NIGRESCENS*) FOR MONTANA

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The Black-throated Gray Warbler (*Dendroica nigrescens*) in the Rocky Mountain region of North America reaches the northern limit of its breeding range in central to northwestern Wyoming and southern Idaho (Dunn and Garrett 1997, Guzy and Lowther 1997, American Ornithologists' Union 1998). According to Fitton and Scott (1984) and Dorn and Dorn (1990), breeding in Wyoming is confirmed or likely in Utah juniper (*Juniperus osteosperma*) woodlands of the southwestern and south central parts of the state and suspected (breeding season records) in the Thermopolis area of the northwest. In Idaho the species is a confirmed breeder in juniper woodlands across the south and as far north as the Snake River corridor east of Idaho Falls (Burleigh 1972, Stephens and Sturts 1998). In Alberta there are a few breeding season records, but as yet no evidence of breeding (Guzy and Lowther 1997, Slater and Hudon 2002).

Breeding of the Black-throated Gray Warbler in Montana has not been documented, although the species has been reported in the state on 5 prior occasions (Wright 1996), all but once (15 December) in spring and early summer (25 March–15 June). Here I provide details of the 1st nesting record (6th state record) in Montana, 350 km north of the nearest area in Wyoming where breeding has been confirmed near Rock Springs and about 150 km north of the nearest area where breeding is suspected near Thermopolis (Fitton and Scott 1984, Dorn and Dorn 1990); the record was briefly noted previously by Martin (2001). An additional sighting (an unpaired adult male observed on 23 May 2003 in the Sweetgrass Hills, Liberty County) has since been accepted by the Montana Rare Birds Committee (J.

Marks personal communication), and most recently I observed a singing male on 29–30 May 2004 about 0.8 km down-canyon from the nest location described in this paper.

On 3 June 2001, Lisa Hendricks and I discovered a pair of Black-throated Gray Warblers in T9S, R26E, Sec. 3 of Bear Canyon in the Pryor Mountains, Carbon County, Montana (45°05'N, 108°31'W; 1646 m elevation), about 29 km northwest of Lovell, Big Horn County, Wyoming. The slopes along the part of Bear Canyon where the warblers were observed are dominated by Utah juniper and limber pine (*Pinus flexilis*), and the canyon bottom proper is dominated by a dense growth of sagebrush (*Artemisia tridentata*), other shrubs, and narrowleaf cottonwood (*Populus angustifolia*). The pair of warblers was active in the canyon bottom, foraging in medium-sized shrubs (3–4 m tall) of skunkbrush (*Rhus trilobata*) and mountain maple (*Acer glabrum*). The male did not sing, and we observed no behavior that suggested breeding was underway. Jeff Marks visited Bear Canyon on 6 June, drew the male close with a taped song, and captured him in a mist net on the nearby slopes of Utah juniper where the male was photographed and released; age of the male was later determined from the photograph as after 2nd year (ASY). The female was neither seen nor heard.

On 16 June at the same site, I heard the male warbler singing early in the morning from the crowns of the surrounding cottonwoods in the canyon bottom, heard the female “chip” nearby, and found the nest when she returned to it and settled to incubate. The nest was an open cup anchored within a dense growth of vines (*Clematis ligusticifolia*) suspended from the sides of a cottonwood snag in the center of the

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canyon bottom. The nest rim was 3.3 m above-ground and about 0.8 m out from the cottonwood trunk. I observed the nest for about 90 minutes, during which the female departed the nest after incubation bouts of 20 minutes, and was absent 3–5 minutes each time; the male never fed her at the nest nor visited the nest. Both birds concentrated their foraging in the deciduous vegetation of the canyon bottom within 100 m of the nest.

On 28–29 June, Jeff Marks, John Carlson, and I visited Bear Canyon to inspect the nest contents and take some additional measurements. During our stay we neither saw nor heard the pair of warblers. It is possible that the pair abandoned their nest during one of the severe snow and rainstorms that passed over the Pryor Mountains that year in late June. The nest contained 3 cold eggs ( $18.9 \times 13.0$  mm,  $18.8 \times 13.0$  mm, 3rd egg broken) of whitish base color with fine brown maculations scattered generally uniformly over the eggshell. Outside nest measurements were 7.3 cm diameter at the rim and 7.0 cm deep; inside (cup) measurements were 4.7 cm diameter at the rim and 4.1 cm deep. The nest, anchored to the vine by only 2 stems, was built of plant fibers and stems with strips of sagebrush bark and a few feathers woven in; the lining was mostly feathers, with lesser amounts of fine fur and guard hairs. We collected the nest and eggs; unfortunately, the 2 intact eggs were broken during attempts to blow them. The egg fragments and nest are deposited in the Philip L. Wright Zoological Museum at the University of Montana, Missoula (UMZM 18328).

In western North America, particularly in the Great Basin, the Black-throated Gray Warbler is associated with arid pine and juniper habitats, especially pinyon–Utah juniper woodlands (Fitton and Scott 1984, Dorn and Dorn 1990, Dunn and Garrett 1997, Guzy and Lowther 1997). In southern Wyoming this warbler breeds in areas with greater-than-expected nearby availability of pinyon pine, greater stem density of Utah juniper, and greater prevalence of large shrubs in the understory (Pavlacky and Anderson 2001), a description that broadly matches the general habitat occupied in Montana. The southern lower-elevation slopes (1300–1900 m elevation) of the Pryor Mountains and nearby Bighorn Mountains in Montana have many floral elements typical of Great Basin vegetation (Dorn 1978, Kratz 1988), including the only Utah juniper woodlands in

the state; in this juniper-dominated landscape deciduous shrubs are especially concentrated along streambeds in canyon bottoms. There are areas of the Pryor Mountains where the slopes lining lower canyons are covered with extensive mixed stands of Utah juniper and limber pine, making the region appear much like typical pinyon-juniper habitat. Indeed, the 1st documented breeding in Montana of the Blue-gray Gnatcatcher (*Poliophtila caerulea*), another bird species closely associated with Utah juniper habitat in the Great Basin (Fitton and Scott 1984, Pavlacky and Anderson 2001), occurred during the last decade in the same Montana canyon (Wright 1996).

In Wyoming the breeding range of the Black-throated Gray Warbler through the 1970s included only the southwestern portions of the state (Cary 1917, McCreary 1939, AOU 1957, 1983). Beginning in the 1980s it was considered locally common in juniper stands of the Casper area in central Wyoming (Fitton and Scott 1984, AOU 1998). In Montana ornithological inventories in Utah juniper habitat of the Pryor Mountains and Bighorn Canyon National Recreation Area of Carbon County during the 1960s and 1980s failed to document the presence of Black-throated Gray Warbler (DeLap and Thompson 1962, Anderson et al. 1987). These data, though limited in scope and intensity, suggest a recent northward expansion of the breeding range for this species in Wyoming and into Montana, similar to range expansions for several other species elsewhere in the West (Johnson 1994), but especially the Blue-gray Gnatcatcher (McCreary 1939, Findholt 1983, Fitton and Scott 1984, Dorn and Dorn 1990, Wright 1996, Walsh et al. 1998), another juniper specialist. Unlike the gnatcatcher, there is as yet no evidence that a breeding population of Black-throated Gray Warbler has become established in Montana (personal observation), although the appearance of another male in 2004 indicates that eventual regular breeding is possible.

Factors leading to the recent appearance of breeding Black-throated Gray Warblers and Blue-gray Gnatcatchers in Montana are not known with certainty, but may be related to regional changes in climate and/or land management practices. Evidence suggests that Utah juniper stands in southern Montana and elsewhere along the margins of the Bighorn Basin were quite isolated from major areas of occurrence to the south and west until the last

2000 years BP (Jackson et al. 2002); distribution and establishment of juniper may be limited to thermal belts where less frequent frosts occur (Knight 1994). Thus, the gradual spread of juniper would be expected in the presence of an increasingly moderate climate, such as has occurred during the past 100 years, and especially since 1976 (Walther et al. 2002, Root et al. 2003). In addition, fire suppression during the last century has contributed to the invasion of juniper in many areas of the West (Burkhardt and Tisdale 1976, Knight 1994), including the Big Horn Basin of Wyoming. The combination of warmer climate and fire suppression could have contributed indirectly to the recent northward expansion of the breeding distribution of some juniper-specialist birds into Montana through an increase in suitable breeding habitat over their region of occupancy.

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