

Bewick's Wren

Thryomanes bewickii

REGULATORY STATUS

USFWS: Migratory Bird
USFS R2: No special status
USFS R4: No special status
Wyoming BLM: No special status
State of Wyoming: Protected Bird

CONSERVATION RANKS

USFWS: No special status
WGFD: NSS4 (Bc), Tier III
WYNDD: G5, S2
Wyoming Contribution: LOW
IUCN: Least Concern
PIF Continental Concern Score: 10

STATUS AND RANK COMMENTS

Bewick's Wren (*Thryomanes bewickii*) does not have any additional regulatory status or conservation rank considerations beyond those listed above.

NATURAL HISTORY

Taxonomy:

A member of the Troglodytidae Family, there are 15 recognized subspecies of Bewick's Wren, although two are now extinct¹. Subspecies identification is based mainly on dorsal color, which can be complicated in study skins due to postmortem changes in color, where grays become more tannish and browns become more reddish¹. The only subspecies that occurs in Wyoming is *T. b. eremophilus*².

Description:

Identification of Bewick's Wren is possible in the field, although the species varies considerably across its range in both size and color, with individuals in more northern latitudes having a larger size and those in more humid climates showing a darker plumage¹. Bewick's Wren is medium-sized (length 13 cm, mass 11 g) with a very conspicuous, white supercilium or "eyebrow"; a relatively long tail that has barring on the middle feathers and white spots on the tips of the outer feathers; brown to grayish-brown upperparts; whitish throat and underparts; a gray wash on the sides and flanks; and grayish legs¹. Males and females are similar. Feathers on the underparts of juveniles have dusky edges that often form scallops¹. The only subspecies of Bewick's Wren to occur in Wyoming, *T. b. eremophilus*, is the grayest of all 15 subspecies. The most similar other subspecies is also the most geographically proximate to Wyoming: *T. b. cryptus* in eastern Colorado and points farther southeast. However, the dorsum of *T. b. eremophilus* is paler and grayer, and the central rectrices are a grayish-brown instead of brown¹. The species most similar

to Bewick's Wren in Wyoming is House Wren (*Troglodytes aedon*), which is smaller, has a gray throat and underparts, and lacks the white supercilium and tail spots ¹.

Distribution & Range:

Bewick's Wren ranges widely across western and south-central North America from southwestern British Columbia to southern Mexico, although distribution is discontinuous across that range ¹. The subspecies that occupies Wyoming extends from eastern California to extreme southern Wyoming and western Colorado, and south to central Mexico ¹. Bewick's Wren has been documented in 12 of Wyoming's 28 latitude/longitude degree blocks, with the majority of its range restricted to the southwestern-most counties ^{3,4}. Within that range, breeding has been documented in 4 degree blocks and circumstantial evidence of nesting has been noted in another (Uinta, Sweetwater, and Carbon Counties) ^{3,4}. Additional information is needed on observations from Albany, Laramie, and Sheridan Counties ³. Bewick's Wren is a summer resident in Wyoming ⁴, and is assumed to migrate at least short distances south for the winter. It is a year-round resident in most of the rest of its range, including Mexico ¹.

Habitat:

Across its range, Bewick's Wren occupies shrubby areas, thickets of brush and scrub in open areas, open woodlands, riparian woodlands, and chaparral ⁵. On breeding grounds, Bewick's Wren prefers dense, scrubby vegetation for nest concealment, mixed with open woodlands ⁶. In a comparison of habitat use in a Utah Juniper (*Juniperus osteosperma*) bird community in southwestern Wyoming, Bewick's Wren was found in areas of higher overstory juniper canopy cover than other avian species within the community ⁷. The species also preferred woodlands with intermediate grass cover, tree height, seedling and sapling presence, and bare ground or rock cover ⁸. In a study of avian community responses to juniper woodland structure and thinning treatments conducted on the Colorado Plateau, Bewick's Wren was found to be positively related to juniper density ⁹. Habitat used during the winter is similar to that used on the breeding range ¹.

Phenology:

Across most of its range Bewick's Wren is a year-round resident or short-distance migrant ¹. Migration does not appear to occur in southwestern British Columbia ¹⁰, but is assumed to occur in northerly interior population segments such as those in Wyoming, Kansas, and Missouri ¹. Overall, little information is available on Bewick's Wren migration. In Wyoming, the earliest date reported for spring migration is 17 April in Sweetwater County ³. The species is known to migrate through western Colorado in mid-March ¹¹; thus, it may arrive in Wyoming in late March or early April ³. Limited autumn reports of Bewick's Wren from Wyoming suggest it departs in September, but some individuals winter in Colorado and Utah. More information is needed on how many Wyoming birds leave, when they depart, and how far south they travel ³. During mild winters, a few individuals may stay in Wyoming ¹². During the breeding season, Bewick's Wren initiates nest building soon after males arrive on their territory ¹. The species is an opportunistic cavity nester, using a variety of available sites ¹. Clutch size is typically 5–7 eggs (range 3–8), with 1 egg laid per day until the clutch is complete ^{1,13}. Second clutches have been confirmed in Kansas for Bewick's Wrens with early first clutches ¹. Incubation is 14–16 days, and young fledge 16 days after hatching ¹. Bewick's Wren is an uncommon cowbird (*Molothrus* spp.) host ¹⁴, but reports of brood parasitism indicate that individuals may either desert the nest ¹⁵ or remove the parasitic egg ¹⁶. House Wren is known to compete for nest sites and even destroy eggs of Bewick's Wren ¹.

Diet:

Bewick’s Wren consumes a variety of adult and larval Arthropods of various families (e.g., insects, spiders, beetles, bees, grasshoppers, crickets, and flies), as well as butterflies and moths (*Lepidoptera*)^{1, 14}. Young are fed mostly caterpillars (*Lepidoptera*), plus a variety of spiders (*Araneae*), grasshoppers (*Orthoptera*), insect pupae, and small arthropods^{16, 17}. Prey are taken by hopping about and gleaning items from the ground and from the leaves, branches, and trunks of low vegetation, brush, and trees; as well as by probing crevices of branches and trunks and flipping and probing under dead leaves¹. Fruit and other plant material is eaten infrequently, and likely mostly in winter¹.

CONSERVATION CONCERNS

Abundance:

Continental: WIDESPREAD BUT PATCHY

Wyoming: UNCOMMON

Using North American Breeding Bird Survey (BBS) data, the Partners in Flight Science Committee estimated the global population of Bewick’s Wren to be 5.6 million birds¹⁸. Approximately 0.10% of the global population, or an estimated 6,000 birds, breed in Wyoming¹⁹. The statewide rank of UNCOMMON is based on the limited area of the state known to be occupied in any given season, and the relatively small coverage of suitable habitat within that area. Within suitable habitat in the occupied area, Bewick’s Wren also appears to be uncommon, occurring in relatively low densities and requiring intensive survey efforts to detect the species⁴. Currently, there are not enough data from the Integrated Monitoring in Bird Conservation Regions (IMBCR) survey efforts to reliably estimate Wyoming densities or occupancy rates^{20, 21}.

Population Trends:

Historic: UNKNOWN

Recent: UNKNOWN

Population trends are not available from the BBS for Bewick’s Wren in Wyoming due to a limited distribution in the state and low detection rates during monitoring surveys. Substantial population declines are known from the eastern portion of Bewick’s Wren range, and some increases have been documented in the southwestern U.S.¹.

Intrinsic Vulnerability:

MODERATE VULNERABILITY

In Wyoming, Bewick’s Wren has a moderate level of intrinsic vulnerability. This stems primarily from its apparently low density and somewhat strong specialization to a relatively rare set of habitats in the state^{3, 7, 22}. Also, although apparently robust to some human activities, Bewick’s Wren is primarily insectivorous which may place it at some risk of prey reduction and toxin bioaccumulation via pesticide application, although the degree to which this occurs in Bewick’s Wren Wyoming range may be limited.

Extrinsic Stressors:

SLIGHTLY STRESSED

Stressors to Bewick’s Wren populations in Wyoming are most likely associated with land use practices in preferred breeding habitat, specifically mature juniper woodlands. Juniper woodlands are extremely limited in Wyoming and are generally concentrated in the southwestern reaches of the state. These areas may be subjected to heavy livestock grazing, oil and gas

development, recreational uses, invasive species, altered fire regimes, and cowbird nest parasitism, as well as juniper thinning and removal treatments^{9, 22}. While local, state, and federal land use agreements may limit adverse impacts to these areas and provide specific guidelines for alterations, particular efforts should be made to maintain multi-aged juniper woodlands with a multi-layered native understory plant community²². Finally, because this taxon is a cavity nester, maintaining a network of spreading, older-growth trees is crucial for long-term productivity⁷. Pesticide application also has the potential to reduce prey populations and contaminate birds themselves.

KEY ACTIVITIES IN WYOMING

Little work has been done specific to Bewick's Wren in Wyoming since it was first noted in the state in 1982^{12, 23}. Bewick's Wren is classified as a Species of Greatest Conservation Need (SGCN) by the Wyoming Game and Fish Department (WGFD), and a Wyoming Partners in Flight Level III Priority Species due to restricted habitat and a lack of information on breeding status and population trends in the state²². Bewick's Wren is not adequately monitored by current national or regional avian monitoring efforts in Wyoming, including the IMBCR program initiated in 2009²¹ and the BBS program conducted on 108 established routes since 1968²⁰. Observations of this species are reported to the WGFD and vetted through the Wyoming Bird Records Committee (WBRC). Bewick's Wren is a species for which the WBRC requests documentation on first latitude/longitude degree block sightings and all nesting observations. In 2016 and 2017, the WGFD will conduct a project focused on addressing data deficiencies for Utah juniper obligate species, including Bewick's Wren, in southwestern Wyoming. This project will address a number of objectives, including evaluating species distribution and richness, estimating relative abundance and occupancy rates, and quantifying and evaluating habitat characteristics.

ECOLOGICAL INFORMATION NEEDS

In Wyoming, assessment of the status of Bewick's Wren is hampered by a lack of basic ecological and population data. Additional information is needed on distribution and habitat use, and the timing and frequency of migration. Estimates of abundance and occupancy rates are needed to assess status, monitor populations, and evaluate trends. Research is needed on the effects of habitat alterations and the impact of brood parasitism. Traditional state-wide survey efforts do not tend to detect Bewick's Wren, suggesting targeted, species-specific monitoring efforts are needed. Furthermore, the distribution of juniper forests in Wyoming is far more vast than the distribution of Bewick's Wren, and thus a better understanding of habitat use and requirements at this northernmost range boundary is needed. Additional information is also needed to determine the extent of the species' occupation of other parts of Wyoming where observations have been documented, including Fremont, Natrona, Sheridan and Albany Counties³. A better understanding of the spatial pattern, and timing, of arthropod productivity in southwestern Wyoming would provide important information on how to manage landscapes for the benefit of Bewick's Wren and other insectivorous birds.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Andrea C. Orabona. Bewick's Wren is classified as a SGCN in Wyoming due to unknown population status and trends in the state; a need for robust information on breeding status; limited distribution of required breeding habitat; loss,

degradation, and fragmentation of Utah Juniper habitat due to industrial developments; and incompatible management practices. Two separate but compatible survey programs are in place to monitor populations of many avian species that breed in Wyoming; the BBS²⁰ and IMBCR²¹. While these monitoring programs provide robust estimates of occupancy, density, or population trends for many avian species in Wyoming, survey efforts do not tend to detect Bewick's Wrens at adequate levels, suggesting targeted, species-specific monitoring efforts are needed. Best management practices to benefit Bewick's Wren are similar to those for sympatric Utah Juniper obligate species and include implementing a sufficient monitoring technique; maintaining mature stands of Utah Juniper habitat where Bewick's Wren nests, including herbaceous vegetation and shrubs for foraging; implementing prescribed and natural fire management to maintain savannah-like stands of juniper woodlands in areas occupied by Bewick's Wren; and coordinating Utah Juniper management to provide a mosaic of juniper woodland conditions²².

CONTRIBUTORS

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Figure 1: Adult Bewick's Wren in Sweetwater County, Wyoming. (Photo courtesy of Shawn Billerman)

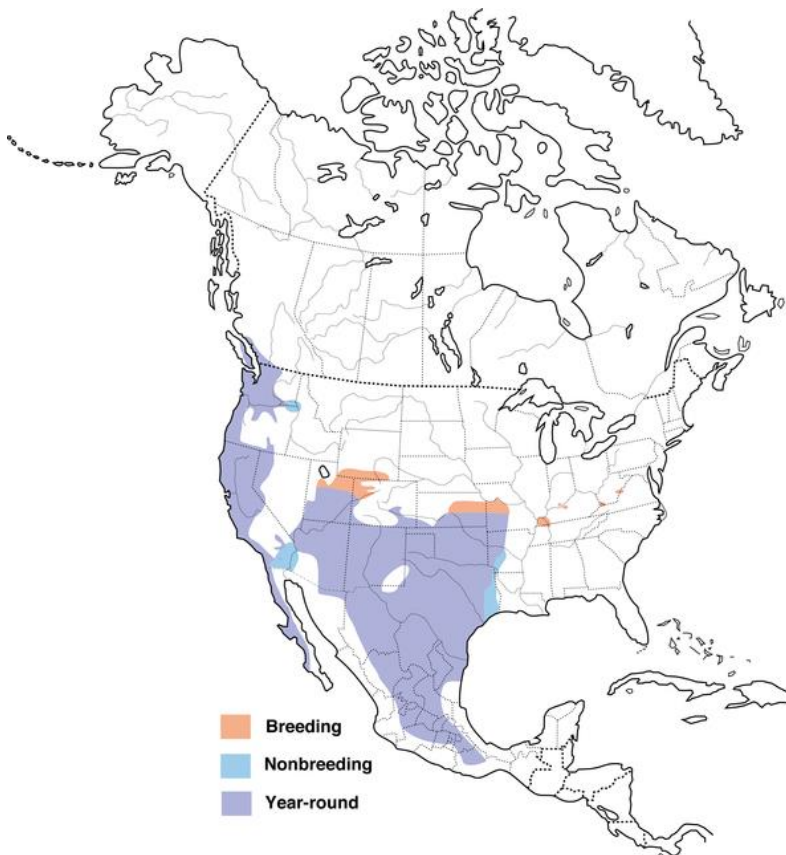


Figure 2: North American range of *Thryomanes bewickii*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)

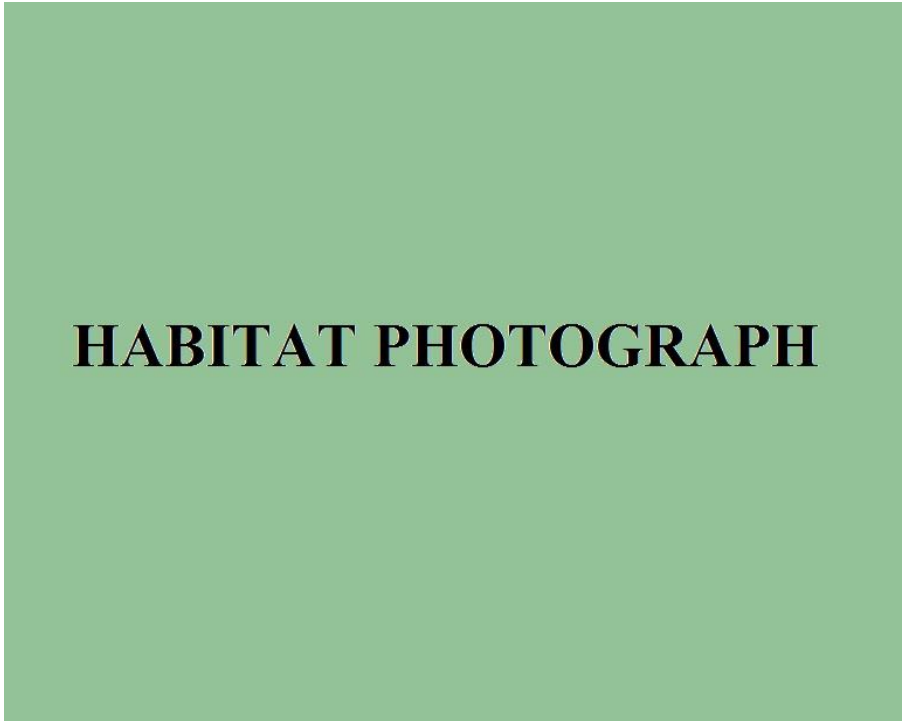
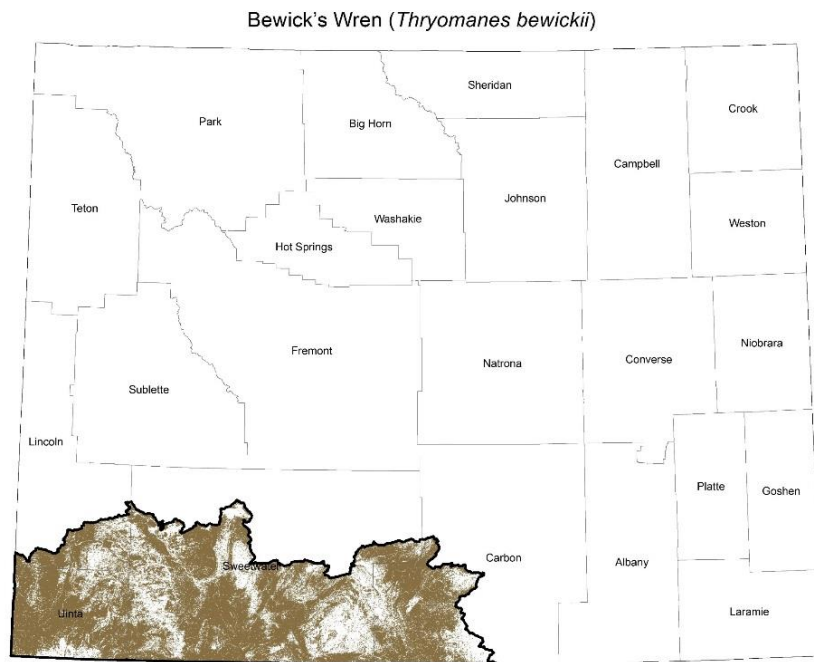


Figure 3: Photo not available.



SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: Sept. 2016.
Wyoming Game and Fish Department and Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming.
Note that brown indicates the predicted distribution of the species;
heavy black lines indicate outermost boundaries of possible occurrence.

Figure 4: Range and predicted distribution of *Thryomanes bewickii* in Wyoming.