

# Bushtit

## *Psaltriparus minimus*

### **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: NSS3 (Bb), Tier II  
WYNDD: G5, S2S3  
Wyoming Contribution: LOW  
IUCN: Least Concern  
PIF Continental Concern Score: 11

### **STATUS AND RANK COMMENTS**

The Wyoming Natural Diversity Database has assigned Bushtit (*Psaltriparus minimus*) a state conservation rank ranging from S2 (Imperiled) to S3 (Vulnerable) because of uncertainty about the abundance, proportion of range occupied, and population trends for this species in Wyoming.

### **NATURAL HISTORY**

#### **Taxonomy:**

Bushtit is the only member of the long-tailed tit family (*Aegithalidae*) found in the New World<sup>1</sup>. The taxonomy of Bushtit is poorly understood and further complicated by polychromatism within the species<sup>1</sup>. The 6–9 recognized subspecies are divided between three groups (i.e., *minimus*, *plumbeus*, and *melanotis*), which are distinguished by distribution and variations in color and head markings<sup>1-5</sup>. Of the currently recognized subspecies, only *P. m. plumbeus* of the *plumbeus* group is found in Wyoming<sup>1,2</sup>.

#### **Description:**

Identification of Bushtit is possible in the field. Adults are small (7.0–8.0 cm long, approx. 5.3 g) with round bodies, short wings (wingspan approx. 15.2 cm), and distinctly long tails (4.6–6.2 cm) for their body size<sup>1,6</sup>. In Wyoming, both sexes are plain leaden gray with light gray underparts, a pale brownish mask around the eyes, black legs, and a very short black bill<sup>1,6</sup>. As adults, the sexes are easily identified by the color of the iris, which is dark brown in males and white, cream or yellow in females<sup>1</sup>. The plumage coloration of Bushtit is similar to Juniper Titmouse (*Baeolophus ridgwayi*), but Juniper Titmouse has a short crest and is substantially larger (i.e., wingspan 22.9 cm and weight 17 g)<sup>6</sup>.

#### **Distribution & Range:**

Bushtit only occurs in parts of North and Central America, and the species is found year-round in extreme southwestern British Columbia, the western United States, and Mexico<sup>1</sup>. Southwestern

Wyoming is on the eastern edge of the core range of Bushtit<sup>1</sup>, and the species is a year-round resident in the state<sup>2</sup>. Although the species has been observed as far north as Sheridan, most observations come from an isolated population in Casper and from southwestern Wyoming<sup>2</sup>. Confirmed or suspected breeding has been documented in just 2 of the 28 latitude/longitude degree blocks in the state, both in southwestern Wyoming<sup>7</sup>.

**Habitat:**

Bushtit is a habitat generalist that inhabits a wide range of environments across its continental distribution, but it is most commonly associated with open, mixed pine or oak woodlands with an understory of evergreens or shrubs<sup>1</sup>. However, this species is considered a juniper obligate in Wyoming, where it is found along the edges of Utah Juniper (*Juniperus osteosperma*) woodlands with understory shrubs such as Mountain Mahogany (*Cercocarpus montanus*) and sagebrush (*Artemisia* spp.)<sup>8-10</sup>. Bushtit nests in trees, with pairs creating intricate, sack-like, hanging nests out of spider web silk, plant material, lichen, feathers, and fur<sup>1,8</sup>.

**Phenology:**

Little is known about the specific breeding habits of Bushtit in Wyoming. The species is believed to be non-migratory, with the exception of some short-distance movements outside of the breeding season<sup>1,2</sup>. Bushtit is highly social year-round, moving and foraging in flocks of up to 40+ individuals that may include other bird species<sup>1</sup>. Timing of nest and egg initiation is not well known in the state, but one pair in southwestern Wyoming was observed building a nest in mid-May, young were heard within the nest in late June, and young had fledged by late July<sup>8</sup>. Clutch size typically ranges from 4–10 eggs (average 6 eggs), and both sexes incubate<sup>1</sup>. The species is considered a plural cooperative breeder, with breeding pairs commonly accepting the presence of multiple nest helpers of both sexes and all ages<sup>1</sup>. These helpers may aid in nest construction, feed nestlings and fledglings, sleep in the nest at night, and male helpers may occasionally mate with the female of the nesting pair<sup>1</sup>. Bushtit is known to produce a second brood in parts of its range<sup>1</sup>.

**Diet:**

Bushtit is a specialized foliage-gleaner that forages in trees and shrubs<sup>1</sup>. Its diet is comprised almost entirely of small insects and spiders, although it may occasionally consume fruits and small seeds<sup>1</sup>.

**CONSERVATION CONCERNS**

**Abundance:**

**Continental:** WIDESPREAD

**Wyoming:** VERY RARE

Partners in Flight estimated the global population of Bushtit at approximately 3.2 million in 2013<sup>11</sup>. There are no robust estimates of abundance available for Bushtit in Wyoming. The species has a statewide abundance rank of VERY RARE but appears to be uncommon within suitable environments in the occupied area<sup>7</sup>. From 1968–2015, annual Wyoming Breeding Bird Survey (BBS) detections of Bushtit ranged from 0 to 13, with none recorded in most years<sup>12</sup>. Bushtit was not detected during surveys for the Integrated Monitoring in Bird Conservation Regions (IMBCR) program between 2009–2015<sup>13</sup>. More targeted surveys in juniper woodland habitat may be necessary to adequately detect Bushtit in Wyoming.

**Population Trends:**

**Historic:** UNKNOWN

**Recent:** UNKNOWN

Robust population trends are not available for Bushtit in Wyoming because the species is infrequently detected during monitoring surveys. Survey-wide trend data from the North American BBS indicate that Bushtit numbers declined annually by 0.74% from 1966–2013 and 0.48% from 2003–2013, but neither trend estimate was statistically significant <sup>14</sup>.

**Intrinsic Vulnerability:**

MODERATE VULNERABILITY

The intrinsic vulnerability of Bushtit in Wyoming is not well understood. The species appears to be inherently tolerant of disturbance, and is known to utilize a wide variety of natural, managed, disturbed, developed, and even urban environments across its continental distribution <sup>1, 15-22</sup>. However, Bushtit is strongly associated with juniper woodlands within its very restricted distribution in Wyoming, and is not known to breed in any other environments in the state <sup>7</sup>. Therefore, this species likely has higher intrinsic vulnerability in Wyoming than it does in other parts of its continental distribution.

**Extrinsic Stressors:**

SLIGHTLY STRESSED

Habitat loss, degradation, and disturbance could negatively impact Bushtit in Wyoming, although this species may tolerate some level of habitat alteration. Piñon and juniper woodlands have been expanding in many areas of the western United States since the mid-1800s <sup>23</sup>, and Bushtit has been shown to utilize developing juniper woodlands in northern Arizona <sup>24</sup>. However, existing juniper woodlands in Wyoming are vulnerable to changes in fire regime; invasive species such as Cheatgrass (*Bromus tectorum*); drought and climate change; habitat fragmentation; and human disturbance, including juniper removal and thinning programs <sup>10</sup>. In addition, juniper woodlands in southwestern Wyoming are often associated with rocky habitats, which are threatened by potential energy development and exposure to anthropogenic disturbances from recreational activities <sup>10, 25</sup>. Wyoming is predicted to lose a majority of its Utah Juniper woodlands over the next century due to changing climate conditions <sup>26</sup>. However, Bushtit has utilized and even thrived in disturbed and developed habitats in other parts of its continental distribution, including urbanized environments in California, Washington, British Columbia, and Mexico <sup>15, 17, 18, 20</sup>; mechanically-thinned piñon-juniper woodlands in Colorado <sup>16</sup>; second-growth pine-oak forest in Mexico <sup>19</sup>; restored coastal habitat in California <sup>21</sup>; and woodland fragments in vineyard landscapes in California <sup>22</sup>. Currently, it is not known how potential extrinsic stressors may impact this species in Wyoming.

**KEY ACTIVITIES IN WYOMING**

Bushtit is classified as a Species of Greatest Conservation Need (SGCN) by the Wyoming Game and Fish Department (WGFD), and as a Level II Priority Bird Species requiring monitoring in the Wyoming Bird Conservation Plan <sup>27</sup>. Current statewide activities for monitoring annual detections and population trends for Bushtit in Wyoming include the BBS program conducted on 108 established routes since 1968 <sup>14</sup>, and the multi-agency IMBCR program initiated in 2009 <sup>13</sup>. In 2016, the WGFD began a two-year project designed to collect data on the distribution, relative abundance, and habitat use of piñon-juniper obligate species, including Bushtit, in the woodlands of southwestern Wyoming.

## **ECOLOGICAL INFORMATION NEEDS**

Bushtit would benefit from research to determine its detailed distribution, habitat use, and actual abundance in Wyoming. Very little is known about the specific breeding habits of this species in the state, and nothing is known about nest success or fledgling survival. Additional research is needed to determine how Bushtit populations in Wyoming might respond to natural and anthropogenic disturbances to existing habitat.

## **MANAGEMENT IN WYOMING**

*This section authored solely by WGFD; Andrea C. Orabona.* Bushtit 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 BBS <sup>14</sup> and IMBCR <sup>13</sup>. 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 Bushtit at adequate levels, suggesting targeted, species-specific monitoring efforts are needed. Initial work and written species accounts on avian Utah Juniper obligate species, including Bushtit, occurred in 1988 <sup>28</sup>. However, higher priorities and limited personnel and funding precluded conducting additional work on these species. Best management practices to benefit Bushtit 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 Bushtit 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 Bushtit; coordinating Utah Juniper management to provide a mosaic of juniper woodland conditions <sup>29</sup>.

## **CONTRIBUTORS**

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Figure 1: Female Bushtit (note light iris) in Pueblo County, Colorado. (Photo courtesy of Bill Schmoker)

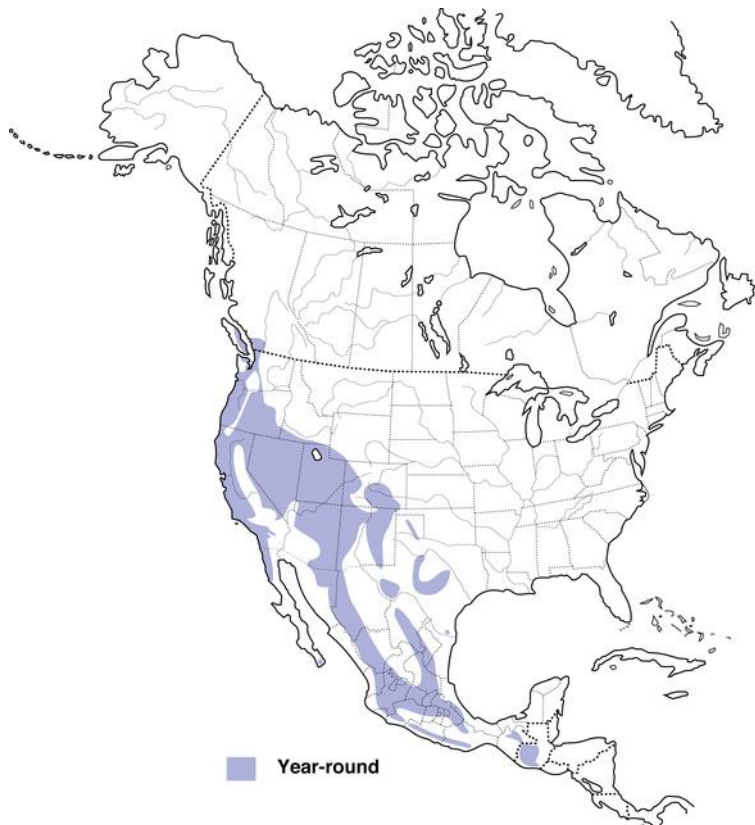


Figure 2: North American range of *Psaltriparus minimus*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)



Figure 3: Bushtit habitat in southwestern Wyoming, dominated by Utah Juniper. (Photo courtesy of Leah H. Yandow, WGFD)

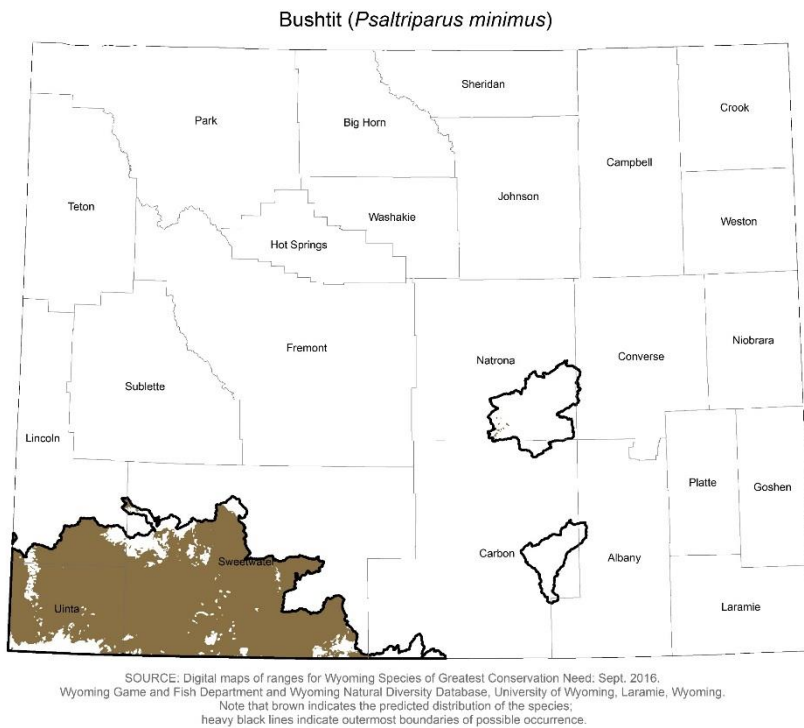


Figure 4: Range and predicted distribution of *Psaltriparus minimus* in Wyoming.