

## Virginia's Warbler *Oreothlypis virginiae*

### **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: NSSU (U), Tier II  
WYNDD: G5, S1  
Wyoming Contribution: LOW  
IUCN: Least Concern  
PIF Continental Concern Score: 14

### **STATUS AND RANK COMMENTS**

Virginia's Warbler (*Oreothlypis virginiae*) does not have any additional regulatory status or conservation rank considerations beyond those listed above.

### **NATURAL HISTORY**

#### **Taxonomy:**

Virginia's Warbler, along with five other wood warbler species in the genus *Verminorva*, were recently placed in the genus *Oreothlypis*<sup>1</sup>. Virginia's Warbler is a close relative of Nashville Warbler (*O. ruficapilla*), but the species have different plumage and breeding habitat requirements<sup>2</sup>.

#### **Description:**

Virginia's Warbler is a small gray warbler with a bold white eye-ring, rufous-crown patch (not always obvious), yellow-green rump, and long tail that almost constantly pumps. It has a variable sized yellow patch on the breast, pale gray belly, and bright yellow undertail coverts. Sexes are similar, but males tend to have more rufous on the crown and more yellow on the breast<sup>3</sup>. Similar species in Wyoming include Nashville Warbler, Tennessee Warbler (*O. peregrina*), and Orange-crowned Warbler (*O. celata*). However, unlike Virginia's Warbler, Nashville Warbler has a yellow belly, Tennessee Warbler has white undertail covert's, and Orange-crowned Warbler has a broken white eye-ring<sup>4</sup>.

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

Virginia's Warbler reaches the northern extent of its core North American range in southwestern Wyoming<sup>5,6</sup>. Information on its distribution and breeding status is limited. Virginia's Warbler appears to have a patchy breeding distribution in the rest of the state, including the Laramie Mountains, along the western North Platte River near Casper, and the Big Horn Mountains near Sheridan<sup>5,6</sup>. Outside of Wyoming, its breeding range extends from southern Idaho through

appropriate montane habitat in Nevada, Utah, Colorado, Arizona, New Mexico, and the Guadalupe Mountains of Texas, plus small populations in eastern California. The discovery of a new breeding population in the Black Hills of South Dakota in 1997 suggests that additional breeding areas may exist <sup>7</sup>. Its main wintering habitat is thought to be in western and southern Mexico <sup>3</sup>.

**Habitat:**

Virginia’s Warbler nests on the ground in arid habitats with dense brush on mountain slopes, mostly from 1,219–2,793 m in elevation <sup>3</sup>. Its nest is well-concealed in a hollow or under a clump of vegetation <sup>3</sup>. Dominant shrubs can include serviceberry (*Amelanchier* spp.), mountain mahogany (*Cercocarpus* spp.), manzanita (*Arctostaphylos* spp.), currant (*Ribes* spp.), snowberry (*Symphoricarpos* spp.), Chokecherry (*Prunus virginiana*), and scrub oak (*Quercus* spp.). Over much of its range, Virginia’s Warbler is associated with pinyon-juniper (*Pinus* spp.-*Juniperus* spp.) and oak woodlands, but the species can also be found in high altitude environments dominated by large conifers <sup>2</sup>. However, it does not occur in coniferous forests that lack a deciduous component, and the species shows a strong association for breeding in steep draws, drainages, or slopes with shrubby vegetation <sup>8-10</sup>.

**Phenology:**

Virginia’s Warbler is first seen in migration stopover sites in Wyoming in mid-May, and singing birds are found on nesting territories from mid- to late May <sup>5</sup>. Females arrive on territories a week later than males, and pair-bonding and nest building follows quickly <sup>2</sup>. The female builds the nest and incubates the eggs. Most clutches contain 3–5 eggs, which hatch within 11–14 days. Young fledge at 10–14 days old and are fed by adults for another 2 weeks. In Wyoming, the main southward movement of adults starts in August <sup>5</sup>.

**Diet:**

Virginia’s Warbler feeds on insects gleaned from the foliage of shrubs and trees, or from the air. Prey includes lepidopteran larvae (caterpillars), flying insects, spiders (Araneida), carpenter ants (*Camponotus* spp.), stinkbugs (Pentatomidae), and weevils (Curculionidae) <sup>2</sup>.

**CONSERVATION CONCERNS**

**Abundance:**

**Continental:** WIDESPREAD

**Wyoming:** RARE

Using North American Breeding Bird Survey (BBS) data, the Partners in Flight (PIF) Science Committee estimated the global population of Virginia’s Warbler to be 1.1 million birds <sup>11</sup>. Approximately 0.1% of the global population, or around 1,000 birds, is estimated to breed in Wyoming <sup>12</sup>; however, this abundance estimate should be viewed with caution given the low detection rate of this species in the state. The statewide rank of RARE is based on the rather small area of the state known to be occupied in any given season, and the small coverage of suitable habitat within that area. In addition, within suitable habitat in the occupied area, Virginia’s Warbler appears to be uncommon, occurring in relatively low densities and requiring intensive survey efforts to detect the species <sup>6</sup>. BBS data show Virginia’s Warbler to be most abundant in physiographic regions of piñon-juniper woodlands, while over most of its range it occurs in numbers of < 1 detection per route <sup>13</sup>. From 2009–2015, the Integrated Monitoring in Bird Conservation Regions (IMBCR) program detected just 2 Virginia’s Warblers on surveys

conducted in Wyoming<sup>14</sup>. There are no robust estimates of density available for Virginia's Warbler in Wyoming.

**Population Trends:**

**Historic:** UNKNOWN

**Recent:** UNKNOWN

Population trends are not available for Virginia's Warbler in Wyoming due to a limited distribution in the state and low detection rates during monitoring surveys. Currently, there are no robust North American BBS trend data for Virginia's Warbler in Wyoming<sup>13</sup>. However, 1966–2013 BBS western region trend analyses for this species suggest a statistically significant annual population decline of 1.37% ( $N = 132$  routes; 95% CI: -2.51 to -0.28).

**Intrinsic Vulnerability:**

MODERATE VULNERABILITY

Virginia's Warbler is moderately vulnerable to extrinsic threats. The species' primary vulnerability stems from its restriction to a narrow range of mid-elevational habitat in relatively xeric portions of western U.S., which limits its distribution and abundance<sup>2</sup>.

**Extrinsic Stressors:**

MODERATELY STRESSED

Stressors to Virginia's Warbler populations in Wyoming and range-wide are primarily from degradation and long-term drought in mid-elevation, arid, shrubby habitats, which are subject to development, invasive plant species such as Cheatgrass (*Bromus tectorum*), livestock grazing, prescribed burning, and shrub removal treatments. The condition of mountain-foothills shrubland habitat in Wyoming is thought to be in decline as a result of wildfire suppression, as well as over browsing by native ungulates and domestic livestock<sup>15</sup>. However, prescribed burns may be especially harmful to this species. A study of controlled burns to remove the understory in Ponderosa Pine (*Pinus ponderosa*)-oak habitat in Arizona found that Virginia's Warbler nests were eliminated in the burned areas<sup>16</sup>. Additional research in Arizona showed this species exhibited some plasticity in habitat choice in extremely dry years, but also experienced higher nest mortality because of greater nest predation<sup>10</sup>. Considering the potential for future global climate change, this species could face serious demographic hurdles. Virginia's Warbler may be very vulnerable to cowbird (*Molothrus* spp.) parasitism in areas where cowbirds are abundant<sup>2</sup>.

**KEY ACTIVITIES IN WYOMING**

Virginia's Warbler is listed as a Species of Greatest Conservation Need (SGCN) in Wyoming by the Wyoming Game and Fish Department (WGFD), and as a Level III Priority Species in the Wyoming Bird Conservation Plan<sup>15</sup>. Little information exists on this species in Wyoming.

Virginia's Warbler is not adequately monitored by current national or regional avian monitoring efforts in Wyoming, including the BBS program conducted on 108 established routes since 1968<sup>13</sup> or the IMBCR program initiated in 2009<sup>14</sup>. No additional, targeted, systematic survey of Virginia's Warbler has been conducted in Wyoming. Observations of this species are reported to the WGFD and vetted through the Wyoming Bird Records Committee (WBRC). Virginia's Warbler is a species for which the WBRC requests documentation on first latitude/longitude degree block sightings and all nesting observations.

## **ECOLOGICAL INFORMATION NEEDS**

Virginia's Warbler breeding distribution and population size in Wyoming is not well known<sup>5</sup>. The recent discovery of a nesting population in the Black Hills of South Dakota indicates that other patches of nesting birds may be discovered that are not currently covered by BBS or IMBCR survey efforts. Information is also lacking on the species' migration and winter habits, as well as knowledge of reproductive success in the range of habitat types this species might use in Wyoming and range-wide. Future climate change in the western U.S. may increase the importance of Wyoming as a breeding location for this species. There is demonstrated concern for this species by federal, state, and private agencies; yet, there have been no refined estimates of population trends or methods estimating the overall health of populations<sup>2</sup>.

## **MANAGEMENT IN WYOMING**

*This section authored solely by WGFD; Susan M. Patla.* Virginia's Warbler is classified as a SGCN in Wyoming, as it occurs in low numbers, has a patchy distribution, and information is lacking on population and distribution. Two separate but compatible survey programs are in place to monitor populations of many avian species that breed in Wyoming; the BBS<sup>13</sup> and the multi-partner IMBCR<sup>14</sup>. While these monitoring programs provide robust estimates of occupancy, density, or population trend for many species in Wyoming, a targeted, species-specific survey method may be warranted to obtain these data for Virginia's Warbler. Surveys for breeding Virginia's Warblers should be conducted prior to habitat treatments or prescribed burns in shrub habitats, especially in southwestern Wyoming. Regional work with the Western Working Group of PIF and the Southern Wings program could help coordinate and increase conversation efforts for this species range-wide.

## **CONTRIBUTORS:**

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Figure 1: Female Virginia's Warbler in hand following capture in El Paso County, Colorado. (Photo courtesy of Bill Schmoker)

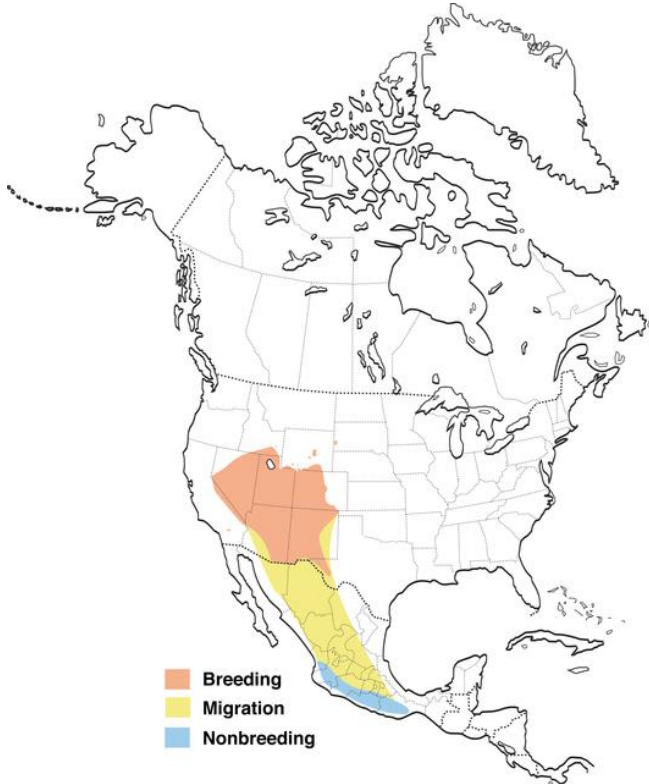


Figure 2: North American range of *Oreothlypis virginiae*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)

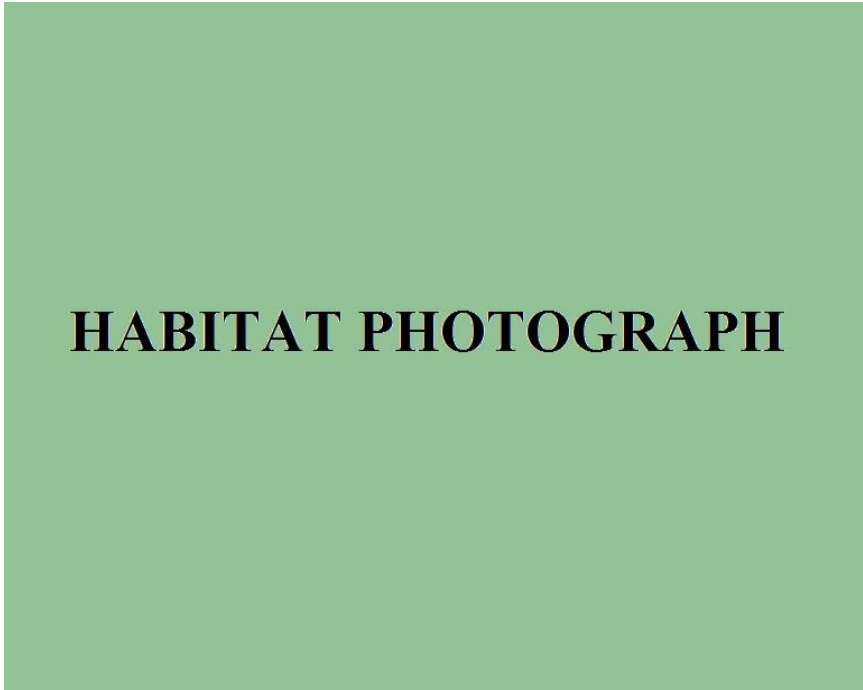


Figure 3: Photo not available.

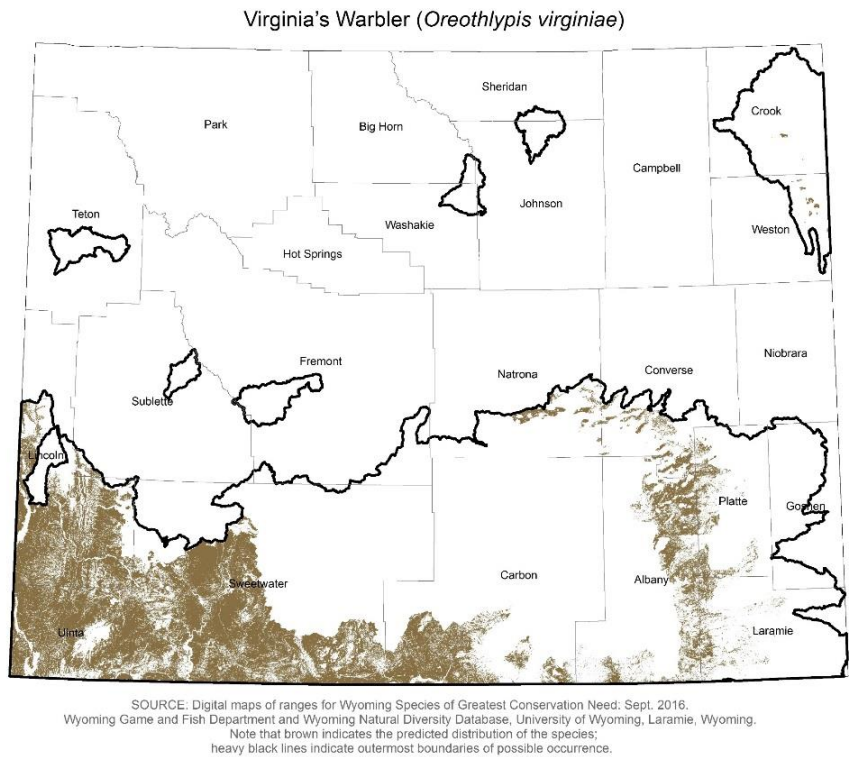


Figure 4: Range and predicted distribution of *Oreothlypis virginiae* in Wyoming.