

Blue Grosbeak

Passerina caerulea

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, S1
Wyoming Contribution: LOW
IUCN: Least Concern
PIF Continental Concern Score: 8

STATUS AND RANK COMMENTS

Blue Grosbeak (*Passerina caerulea*) does not have any additional regulatory status or conservation rank considerations beyond those listed above.

NATURAL HISTORY

Taxonomy:

Six subspecies of Blue Grosbeak are recognized, but only *P. c. caerulea*, *P. c. interfusa*, and *P. c. salicaria* are known to breed in the United States^{1, 2}. In Wyoming, *P. c. interfusa* is the only known subspecies¹; it breeds in the southwest United States and northwest Mexico, and typically winters in western Mexico. Regional differences in body measurements and coloration have largely contributed to designating subspecies^{2, 3}. Recent molecular phylogeny indicates that the Blue Grosbeak is closely related to Lazuli Bunting (*P. amoena*)⁴. Previously, there had been disagreement about whether Blue Grosbeak belongs in the genus *Guiraca* or *Passerina*⁵⁻⁷.

Description:

Blue Grosbeak is a large bunting in the Cardinalidae family. It is readily identifiable in the field during breeding season. Male Blue Grosbeaks are an overall vibrant blue with a large head, tiny black mask anterior to the eyes, and two reddish-brown wing-bars⁸. The back feathers may display black or brown edges, subject to age and wear³. Females also have two reddish-brown wing-bars, but the plumage is uniformly brown with occasional blue feathers on the upperparts. Both females and males have heavy beaks, with a silver lower mandible and a black upper^{9, 10}. Legs are black in both sexes². Weight and body measurements tend to be about the same, regardless of gender⁸. Subadult females tend to look like adult females, while subadult males are a lighter brown with different amounts of blue. At first glance, Indigo Bunting (*P. cyanea*) and Lazuli Bunting share basic similarities with Blue Grosbeak for females and males, and female Blue Grosbeaks can also be confused with female Brown-headed Cowbirds (*Molothrus ater*).

However, differences in overall size, wing coverts, and especially bill volume all contribute to Blue Grosbeak identification ².

Distribution & Range:

Wyoming forms an extremely limited portion of the western edge of Blue Grosbeak's established central North American breeding range ². The species has been documented in 19 of Wyoming's 28 latitude/longitude degree blocks, with confirmed breeding occurring in 7 degree blocks ¹¹. Only 2 of the 19 degree blocks in which sightings have occurred include confirmed observations as accepted by the Wyoming Bird Records Committee; one is located in the far western portion of the state, while the other is in the far northeastern corner ¹². While rare in the state, Blue Grosbeak is known to be locally abundant within the North Platte River corridor from Torrington to Guernsey, Wyoming ¹. This species winters outside of Wyoming in Mexico, Central America, and the Greater Antilles islands. Blue Grosbeaks that summer in Wyoming are believed to winter in western Mexico, as far southeast as the Valley of Mexico, and Baja California Sur ¹³. No information about distribution in Wyoming during migration is available.

Habitat:

In Wyoming, Blue Grosbeak generally prefers cottonwood (*Populus* spp.)-dominated riparian areas that include a shrubby layer, but the species can also be found in shrub-dominated water edges and even urban and rural developed areas ^{1, 11}. In North America, the species can be found in a variety of landscapes, including human-influenced areas such as old fields, utility-line corridors, post-logging slash areas, and fallow fields reverting to woodland ^{2, 8}. In less altered landscapes, the species can be found in an array of habitats on a regional basis. For instance, in Arkansas Blue Grosbeak prefers upland areas in proximity to the Mississippi River and, generally, areas with low canopy cover and shrub concentration ^{14, 15}, while in southern California the species favors vegetated areas adjacent to water and grassy habitats ¹⁶.

Phenology:

Blue Grosbeak arrives in Wyoming in mid-May, although there is a 5 May report ¹. Pairs are present by early June, with some individuals possibly still migrating. The species lays a clutch consisting of 3–5 eggs (typically 4), laid at an approximate rate of 1 per day. Chicks hatch after a 12–13 day incubation period ². While there is little known about nestling period length, there are reports of young leaving the nest 9–10 days after hatching ^{17, 18}. While there are no documented records in Wyoming, a second brood is characteristic and Blue Grosbeak is known to re-nest after failure ^{1, 2}. Brown-headed Cowbird (*M. ater*) and Bronzed Cowbird (*M. aeneus*) are known to parasitize Blue Grosbeak nests, although the female Blue Grosbeak will, at times, eject the egg from the nest or bury it within the nest ¹⁹. Blue Grosbeaks in Wyoming tend to depart for wintering grounds by mid-September, although there is a report of an active nest on 23 September ¹.

Diet:

Blue Grosbeak feeds primarily on insects, snails, and the seeds of wild and planted grasses. Its bill is able to manage seeds as large as corn and insects such as mantids (Mantidae) and sphinx moth (Sphingidae) caterpillars ^{18, 20}. Food capture techniques may include gleaning, fly-catching, and plucking vegetation from the air and ground ²⁰⁻²³. When feeding nestlings, the prey's appendages are removed prior to being delivered ².

CONSERVATION CONCERNS

Abundance:

Continental: WIDESPREAD

Wyoming: RARE

Using North American Breeding Bird Survey (BBS) data, the Partners in Flight Science Committee estimated the global population of Blue Grosbeak to be 24 million birds²⁴.

Approximately 0.1% of the global population, or an estimated 30,000 birds, breeds in Wyoming²⁵; 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. Within suitable habitat in the occupied area, Blue Grosbeak also appears to be rare, as it occupies only a small percentage of preferred habitat within its range and may not be readily detected during surveys expected to indicate its presence¹¹. Blue Grosbeak density (number of birds per square km) and population size estimates for Wyoming are available from the Integrated Monitoring in Bird Conservation Regions (IMBCR) program for the years 2009, 2010, 2014, and 2015, although sample sizes are extremely small so data must be interpreted with caution²⁶.

Population Trends:

Historic: UNKNOWN

Recent: UNKNOWN

Population trends are not available for Blue Grosbeak 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 Blue Grosbeak in Wyoming due to a lack of observations of this species during surveys since initiation in 1968²⁷. Regional BBS data, however, indicate a stable population in the west²⁷.

Intrinsic Vulnerability:

MODERATE VULNERABILITY

In Wyoming, Blue Grosbeak has moderate intrinsic vulnerability to extrinsic stressors, which stems from its peripheral breeding range status (despite confirmed breeding records throughout the state) and low density¹. Additionally, the taxon's preferred breeding habitat in Wyoming is generally restricted to low elevation riparian habitats and reservoirs^{1,2}.

Extrinsic Stressors:

SLIGHTLY STRESSED

Stressors to Blue Grosbeak populations in Wyoming are most likely associated with land use practices in vegetated multi-story riparian corridors, as well as reservoir shores with established shrub shorelines. Riparian lands constitute a small percentage of Wyoming's landscape²⁸ and their importance to avian migration, nesting, and foraging is well documented²⁹. While local, state, and federal measures may limit certain impacts in these areas, the cumulative effects of development (e.g., agriculture, ranching, energy, urbanization, recreation), invasive species, and hydrologic regime change (e.g., impoundments, irrigation withdrawals, channel alterations) contribute to the degradation of riparian lands in Wyoming²⁸. Despite various stressors, it is possible that the Blue Grosbeak benefits from the presence of shelterbelts and shrub plantings associated with rural and residential development, as well as human disturbed areas such as transmission corridors, old fields, and slash openings left post-logging^{1,2}.

KEY ACTIVITIES IN WYOMING

The Wyoming Game and Fish Department classifies Blue Grosbeak as a Species of Greatest Conservation Need (SGCN). No systematic survey of Blue Grosbeak has been conducted in Wyoming, and existing data are not robust enough to support estimates of occupancy, density, or population trend. There are no new or on-going research or monitoring projects designed specifically for this species in the state.

ECOLOGICAL INFORMATION NEEDS

In Wyoming, Blue Grosbeak would benefit from research to determine its nesting and population status in the state. Beyond approximate arrival and departure dates, very little is known about the specific breeding habits of this species in Wyoming. It would be valuable to examine how current and future land use practices and the potential impacts of climate change could affect the availability and quality of already limited riparian habitat in Wyoming, as these stressors could influence the future persistence of this species in the state.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Andrea C. Orabona. Blue Grosbeak is classified as a SGCN in Wyoming due to insufficient information on breeding, distribution, and population status and trends. Two separate but compatible survey programs are in place to monitor populations of many avian species that breed in Wyoming; the BBS²⁷ and the multi-partner IMBCR²⁶. 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 Blue Grosbeak.

CONTRIBUTORS

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Figure 1: Adult Blue Grosbeaks: male (top) in Jefferson County, Colorado and female (bottom) in Socorro County, New Mexico. (Photos courtesy of Bill Schmoker)

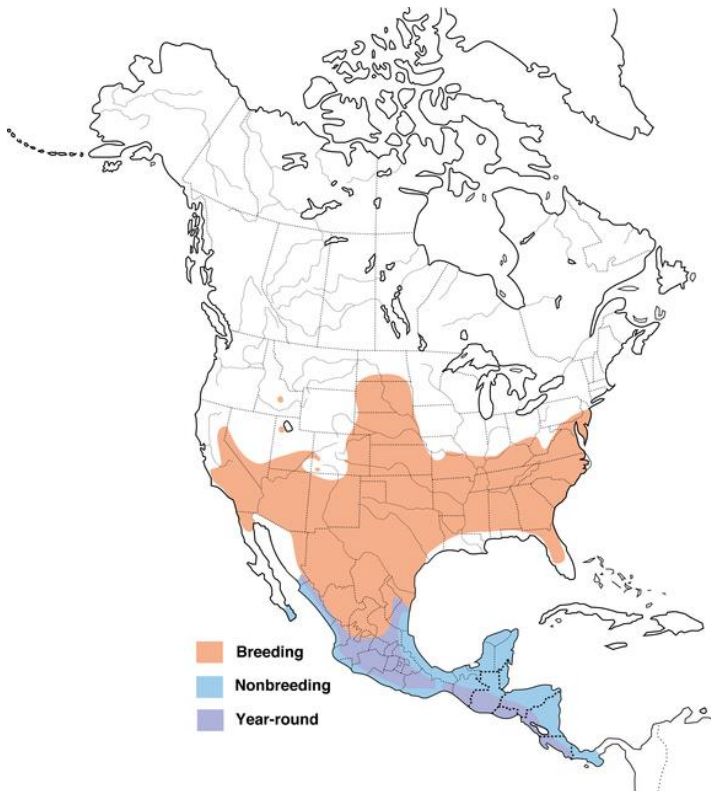


Figure 2: North American range of *Passerina caerulea*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)

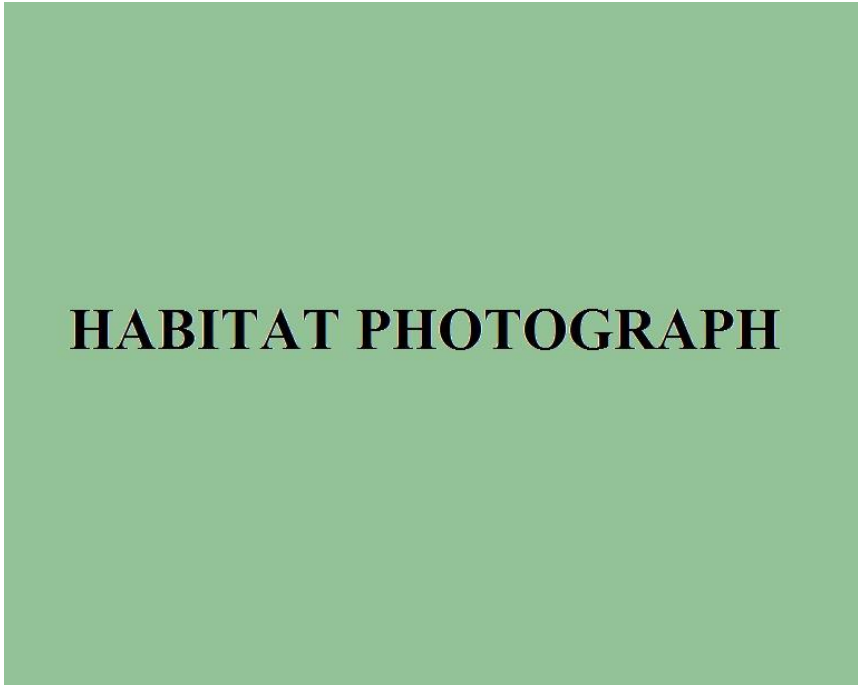


Figure 3: Photo not available.

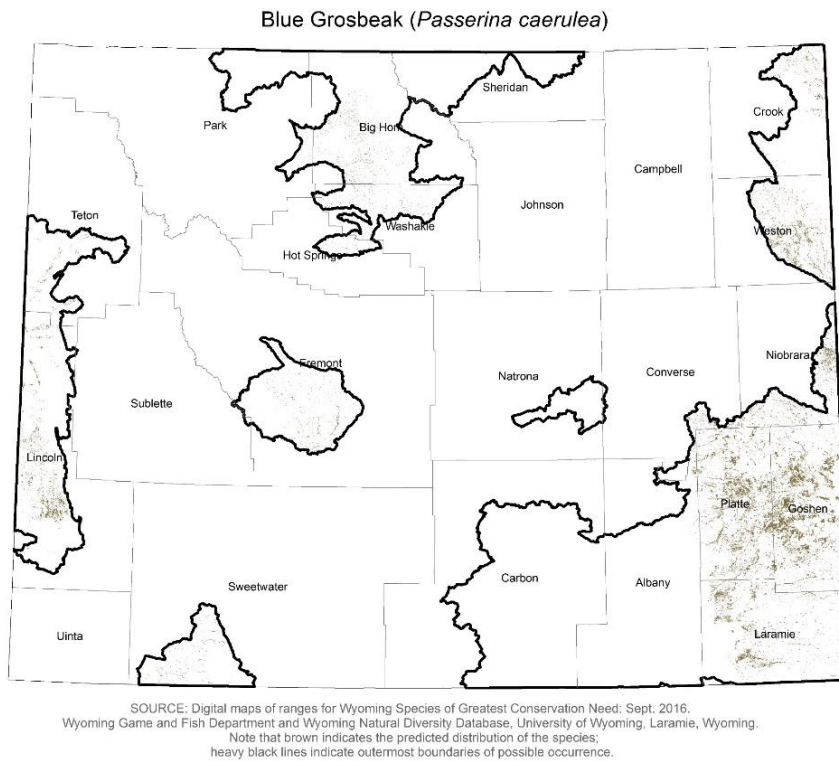


Figure 4: Range and predicted distribution of *Passerina caerulea* in Wyoming.