Bobolink

Dolichonyx oryzivorus

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 II
WYNDD: G5, S2S3
Wyoming Contribution: LOW
IUCN: Least Concern
PIF Continental Concern Score: 13

STATUS AND RANK COMMENTS

The Wyoming Natural Diversity Database has assigned Bobolink (*Dolichonyx oryzivorus*) a state conservation rank ranging from S2 (Imperiled) to S3 (Vulnerable) because of uncertainty about the actual abundance of the species in Wyoming.

NATURAL HISTORY

Taxonomy:

There are currently no recognized subspecies of Bobolink [1, 2].

Description:

Identification of Bobolink is possible in the field. Adults weigh roughly 43 g (males average larger than females), range in length from 15.2–20.5 cm, and have a wingspan of about 29.2 cm [1, 3]. Males and females have strikingly different plumage during the breeding season. Males have solid black underparts; silvery-white wing patches, lower back, and upper tail; a conspicuous, buffy yellow nape; and a black bill [1, 3]. In contrast, females have yellowish underparts; upperparts streaked with brown; faint streaking on the flanks; a buffy stripe along the top of the crown with wider, brown stripes on each side; a dark stripe behind the eyes; and a pinkish bill [1, 3]. The tail feathers of both males and females are pointed [1]. After the breeding season, males molt into non-breeding plumage prior to migration and look nearly identical to females [1]. Juveniles are similar in appearance to adult females but they lack streaking on the flanks [4]. Female, juvenile, and non-breeding male Bobolinks appear similar to many sparrow species, but can be distinguished by their larger size and pointed tail feathers [1]. Male Lark Buntings (*Calamospiza melanocorys*) are superficially similar to male Bobolinks during the breeding season, but the former are easily distinguished by a black nape and upperparts [3].

Distribution & Range:
During the breeding season, Bobolink is found across the northern half of the United States and portions of southern Canada. The species' distribution is patchy in the southwestern periphery of its range, which includes Wyoming. Bobolink migrates through the state in the spring and fall and is a summer resident [5, 6]. Bobolink has been documented in 26 of Wyoming's 28 latitude/longitude degree blocks, with confirmed or circumstantial evidence of breeding occurring in 11 degree blocks [6]. Most breeding observations are patchily distributed across the state and come from Crook County, Sheridan and Johnson Counties along the eastern edge of the Bighorn Mountains, and a small population on the National Elk Refuge in Teton County [5]. Bobolink migrates approximately 10,000 km to South America, where it winters in Bolivia, Paraguay, and Argentina following a prolonged stopover in Venezuela [1].

Habitat:
Bobolink is associated with tall grass and mixed-grass prairie ecosystems, and the species will also utilize hayfields and irrigated and non-irrigated meadows [1]. In Wyoming, Bobolink breeds in mixed prairie shrublands, grasslands, and irrigated meadows [5, 6]. Across the species' range, Bobolink prefers grassland habitat with tall and dense horizontal cover for nesting [7-9]. The species nests on the ground, with females constructing cup nests out of grasses, sedges, and forbs [1]. Herbaceous vegetation provides cover for the nest, food in the form of seeds, and substrate for preferred invertebrate prey [1].

Phenology:
In Wyoming, spring arrival of migrating and breeding Bobolinks occurs in early to late May [5]. As a polygynous species, males may breed with multiple females within their territory [1]. Nesting phenology has not been studied in Wyoming, but in Wisconsin eggs are laid in mid- to late May. Incubation lasts roughly 11–13 days, and fledging occurs at 10 or 11 days of age. Fledglings may be fed by adults for up to 28 days. Bobolink is typically a single-brood species, but may renest following loss of the first clutch [1]. In Wyoming, most Bobolinks have left the state for wintering grounds by the end of August [5].

Diet:
During the breeding season, Bobolink consumes the adults and larvae of insects, spiders, and snails, as well as the seeds of forbs. Diet during migration and the non-breeding season consists primarily of grains and forb seeds, although some insects may also be consumed. Nestlings and fledglings are fed invertebrates [1].

CONSERVATION CONCERNS

Abundance:
Continental: WIDESPREAD
Wyoming: RARE
In 2013, Partners in Flight estimated that Bobolink had a global population of approximately 8 million individuals and a Wyoming population of about 30,000 [10]; however, this abundance estimate is based primarily on Breeding Bird Survey (BBS) data and should be viewed with caution due to the low detection rate of this species in the state. The statewide abundance rank of RARE 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. Bobolink appears to be uncommon even within suitable habitat in the occupied area, occurring at relatively low density and requiring intensive surveys efforts to detect [6]. From 1968–2015, annual Wyoming BBS

detections of Bobolink ranged from 0 to 91 (average = 14), with 9 recorded in 2015 [11]. Just 1 Bobolink has been detected during surveys for the Integrated Monitoring in Bird Conservation Regions (IMBCR) program between 2009–2015 [12].

Population Trends:
Historic: MODERATE DECLINE
Recent: UNKNOWN
Robust population trends are not available for Bobolink in Wyoming because the species is infrequently detected during monitoring efforts. Historic population declines occurred across the species' distribution due to conversion of native grassland habitats for agricultural use [1]. Survey-wide trend data from the North American BBS indicate that Bobolink numbers experienced statistically significant annual declines of 2.04% from 1966–2013 and 1.19% from 2003–2013 [13].

Intrinsic Vulnerability:
MODERATE VULNERABILITY
Bobolink has moderate intrinsic vulnerability in Wyoming because it appears to occur at relatively low density and has ground nesting behaviors that may leave the species susceptible to nest loss. Bobolink prefers undisturbed tall or mixed grass prairie habitat during the nesting cycle, with greater abundance and higher breeding success observed in large, unfragmented tracts of preferred habitat [1, 14-16]. This species nests on the ground among vegetation, which exposes it to natural and anthropogenic ground disturbance, especially in agricultural landscapes. Bobolink has high fidelity to breeding sites [1, 17], which may leave returning individuals vulnerable to the sudden loss or conversion of breeding habitat.

Extrinsic Stressors:
MODERATELY STRESSED
Prairie grassland habitats in the state are vulnerable to development for energy, infrastructure, and agriculture; invasive plant species such as Cheatgrass (*Bromus tectorum*) and Canada Thistle (*Cirsium arvense*); anthropogenic disturbance from off-road recreational activities; altered fire and grazing regimes; and drought and climate change [6]. Habitat loss and conversion represent significant threats to Bobolink; specifically, the loss of tall and mixed grass prairie and conversion of meadows and hayfields to other agricultural crops can reduce available breeding habitat for the species [1]. Early summer mowing of cultivated fields can destroy existing nests and eggs, kill nestlings and fledglings, and reduce future habitat quality for those that survive the disturbance [1, 5, 18, 19]. Bobolink responses to grazing are mixed across its distribution, but heavy grazing may reduce habitat quality for this species [1]. Studies in other parts of its distribution have found lower Bobolink density in grazed versus ungrazed habitat [20] and lower abundance in heavily grazed habitat compared to ungrazed or moderately grazed habitat [21, 22]. Several recent studies have suggested that Bobolink is tolerant of, and may even prefer, habitats with introduced and non-native grasses [23, 24]. It is unknown how Bobolink is affected by potential extrinsic stressors in Wyoming.

KEY ACTIVITIES IN WYOMING

Bobolink is classified as a Species of Greatest Conservation Need (SGCN) by the Wyoming Game and Fish Department, and as a Level II Priority Bird Species requiring monitoring in the Wyoming Bird Conservation Plan [25]. Current statewide activities for monitoring annual detections and population trends for Bobolink in Wyoming include the BBS program conducted on 108 established routes since 1968 [13], and the multi-agency IMBCR program initiated in 2009

[12]. BBS routes across the state detect the species annually, but not at a high enough frequency to produce viable population or trend estimates [13]. There are currently no research projects designed specifically for Bobolink in Wyoming. Observations of this species are reported to the Wyoming Game and Fish Department and vetted through the Wyoming Bird Records Committee (WBRC). Bobolink is a species for which the WBRC requests documentation on first latitude/longitude degree block sightings and all nesting observations [26].

ECOLOGICAL INFORMATION NEEDS

In Wyoming, Bobolink would benefit from research to determine its actual abundance, detailed distribution, and breeding phenology. Additional research is needed to examine if current harvesting practices in the state are potentially impacting the reproductive success of breeding Bobolinks that nest in cultivated fields in Wyoming.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Andrea C. Orabona. Bobolink is classified as a SGCN in Wyoming due to insufficient information on breeding, distribution, population status and trends, and impacts of habitat loss and degradation on grassland habitats [27]. Two separate but compatible survey programs are in place to monitor populations of many avian species that breed in Wyoming; the BBS [13] and the multi-partner IMBCR [12]. While these monitoring programs provide robust estimates of occupancy, density, or population trend for many species in Wyoming, survey efforts do not tend to detect Bobolink at adequate levels, suggesting targeted, species-specific monitoring efforts are needed. Best management practices to benefit Bobolink include managing for large expanses of grassland habitats that have dense grass, a heavy cover of forbs, and thick litter depth; limiting high intensity fire regimes and livestock grazing; rotating livestock grazing; delaying spring mowing; avoiding nighttime and annual mowing; using a flush bar on mowers; implementing mowing and prescribed in the fall to avoid the nesting season; and minimizing insecticide use to maintain a food source for Bobolinks [25]. Key recommendations for Bobolink include limiting habitat conversions of large expanses of existing grasslands; minimizing conflicts during the breeding season with energy extraction and development, recreation, and landowners; and reducing disturbance (e.g., haying, burning, moderate to heavy grazing) during the breeding season [25, 27].

CONTRIBUTORS

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Figure 1: Adult male Bobolink in breeding plumage in Boulder County, Colorado. (Photo courtesy of Bill Schmoker)

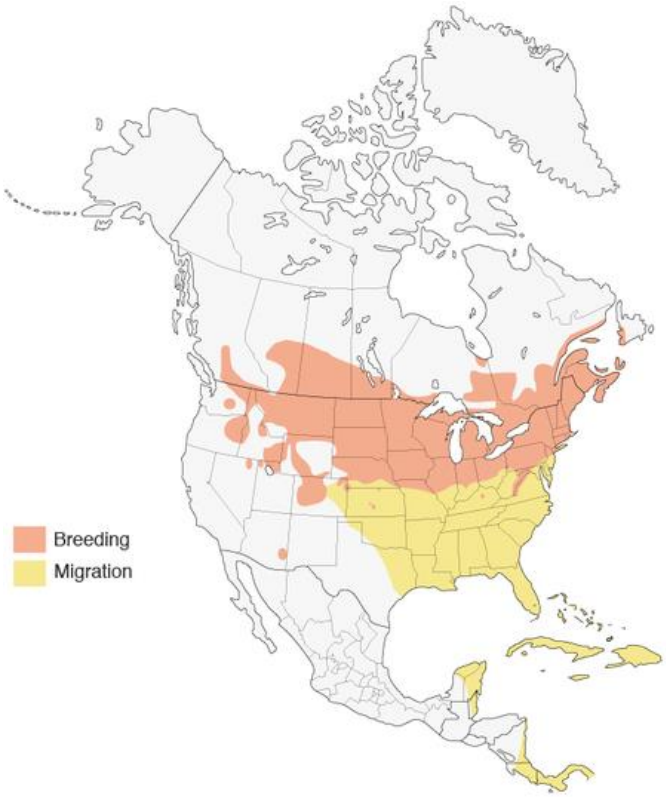

Figure 2: North American range of *Dolichonyx oryzivorus*. (Map courtesy of Birds of North America, http://bna.birds.cornell.edu/bna, maintained by the Cornell Lab of Ornithology)

Figure 3: Mixed grass prairie habitat. Potential habitat for Bobolink in Thunder Basin National Grassland, Wyoming. (Photo courtesy of Michael T. Wickens)

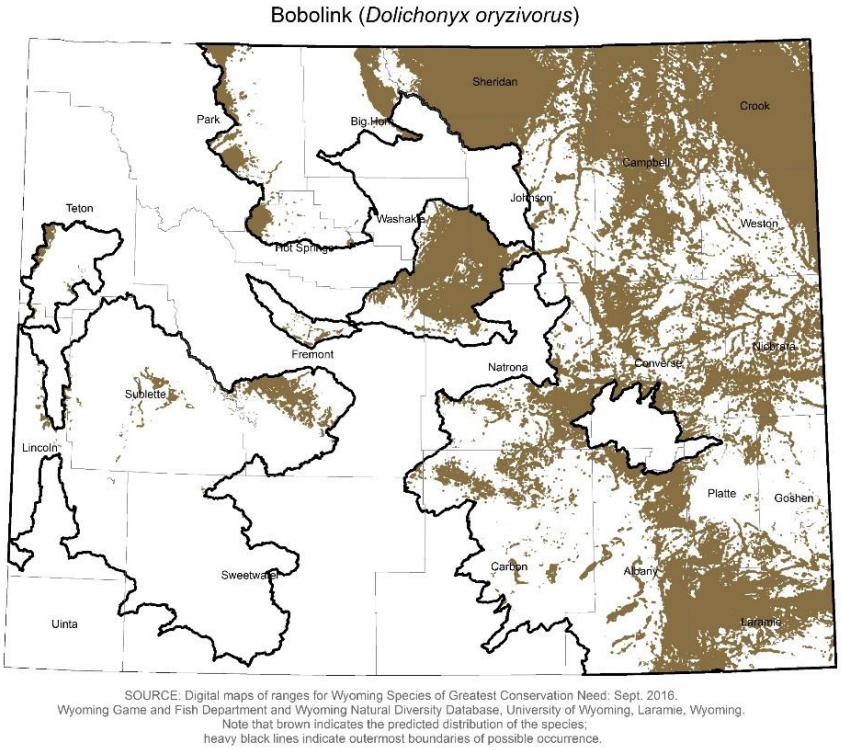

Figure 4: Range and predicted distribution of *Dolichonyx oryzivorus* in Wyoming.