Black-billed Cuckoo

Coccyzus erythropthalmus

REGULATORY STATUS

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

CONSERVATION RANKS

USFWS: Bird of Conservation Concern
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 Black-billed Cuckoo (*Coccyzus erythropthalmus*) a state conservation rank ranging from S2 (Imperiled) to S3 (Vulnerable) because of uncertainty about the abundance and amount of suitable habitat for this species in Wyoming.

NATURAL HISTORY

Taxonomy:

There are no recognized subspecies of Black-billed Cuckoo [1]. Although Yellow-billed Cuckoo (*C. americanus*) is also found in Wyoming, the 2 species do not hybridize. The species most closely related to the Black-billed Cuckoo is the Gray-capped Cuckoo (*C. lansbergi*) of South America [2].

Description:

Black-billed Cuckoo (28–31 cm long, 45–55 g) is a long-tailed, slender passerine that is identifiable in the field [2]. Underparts are a dull grayish white, with the upperparts and top half of the head a grayish-brown with olive tones. Tail is 15 cm, plain, grayish brown on top, and darker underneath. Bill is dark below and above, curved, 24 mm long, with a hooked tip on the upper mandible. Breeding adults have bright red eye ring, but it may be yellow on the wintering grounds (far south of Wyoming). Females are slightly larger than males. Otherwise, adults/juveniles and males/females appear similar. Black-billed Cuckoo is zygodactylous (two toes point forward, two point backwards). The most similar species in Wyoming is Yellow-billed Cuckoo, which can be differentiated by its yellow lower mandible, yellowish eye ring, and prominent rufous patch on the inner web of its primaries. Juveniles can be confused between the two species. The best way to differentiate between the two species is by the size of the undertail white spots, which are smaller in Black-billed Cuckoo.

Distribution & Range:
Black-billed Cuckoo breeds from New England west to the Rocky Mountain front, as far north as central Alberta and south to Tennessee [2]. Wyoming forms a portion of the far eastern extent of breeding range. The species has been observed in 23 of Wyoming's 28 latitude/longitude degree blocks, with most detections in the eastern two-thirds of the state [3]. Confirmed or suspected breeding has been documented in 11 of those 23 degree blocks. Black-billed Cuckoo is a summer resident in Wyoming, migrating annually through the southeastern U.S. and Mexico to winter range in South America. It is thought to winter in portions of Colombia, Venezuela, Peru, Bolivia, and Ecuador [2, 4, 5].

Habitat:
During the breeding season, Black-billed Cuckoo prefers habitats composed of trees, forest edges, and thickets, typically near water [2]. In Wyoming, it is most often found in riparian corridors composed of mature cottonwood (*Populus* spp.) with dense understories [6]. Black-billed Cuckoo is not found above 2,134 m in elevation. Plant use varies by region, but species used by Black-billed Cuckoo include: cottonwood, aspen and poplar (*Populus* spp.), birch (*Betula* spp.), hawthorn (*Crataegus* spp.), willow (*Salix* spp.), maple (*Acer* spp.), hickory (*Carya* spp.), oak (*Quercus* spp.), oak-chestnut (*Castanea* spp.), pine (*Pinus* spp.), hemlock (*Tsuga* spp.), alder (*Alnus* spp.) and to a lesser extent fir (*Abies* spp.) and spruce (*Picea* spp.) [7-14]. Habitat use is similar to Yellow-billed Cuckoo, but Black-billed Cuckoo typically inhabits higher elevations and extensive woodlands more often [12, 14]. During migration it uses thickets, groves, meadow and forest edges, and wooded areas, especially near streams and ponds [2, 15, 16]. Black-billed Cuckoo winters in scrub and woodland habitats in South America [2, 4, 17].

Phenology:
Black-billed Cuckoo is a late migrant, arriving in Wyoming in early June [6]. There is limited fall migration information, with only one modern sighting near Cheyenne in late August 1987. Most migratory travel occurs at night [18], and the species may be at least somewhat nocturnal during the breeding season as well. Little information is known about Black-billed Cuckoo pair formation and nesting, but they likely occur in late May to early June, and during the month of June, respectively [2, 19, 20]. Although the relationship between food supply and breeding is poorly understood, it is suggested that timing of first clutch might be influenced by the timing of cicada, grasshopper, and caterpillar outbreaks [2, 21-24]. Nesting dates in South Dakota ranged from 30 May–23 August [25]. Eggs are typically laid every second day, with average clutch size 2 to 3 eggs [7, 26, 27]. Chicks often hatch in the early morning after a 10 to 11 day incubation period [27]. Chicks are altricial at hatching, leave the nest at day 6 or 7, and are unable to fly until 3 weeks [2, 27]. Black-billed Cuckoo likely produces only one clutch per year, but little information on this is available [23], especially in Wyoming. Black-billed Cuckoo occasionally acts as an intraspecific and interspecific brood parasite – i.e., it reproduces by laying eggs in other birds' nests and relies on their parental care to fledge cuckoo chicks. This reproductive strategy appears to be used infrequently, but the rate has not been quantified anywhere in the species' range [2].

Diet:
Black-billed Cuckoo primarily consumes large insects, including caterpillars (especially during outbreaks), katydids, cicadas, crickets, grasshoppers, and butterflies [21, 24, 28, 29]. It will also consume, to a lesser extent, eggs of other bird species [30], small mollusks, fish, aquatic larvae, fruits, and seeds [26]. A pellet of caterpillar hair and cuckoo stomach lining will be regurgitated when the mass obstructs digestion [2, 31].

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 Black-billed Cuckoo to be 870,000 birds [32]. Extrapolation suggests approximately 0.30% of the global population, or around 3,000 birds, could breed in Wyoming [33], but this estimate is likely high and should be viewed with caution. 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 with that area. Within suitable habitat in the occupied area, Black-billed Cuckoo appears to be uncommon, occurring in relatively low densities and requiring intensive survey efforts to detect the species [3].

Population Trends:
Historic: UNKNOWN
Recent: UNKNOWN
Robust population trends are not available for Black-billed Cuckoo in Wyoming due to limited distribution in the state and low detection rates during monitoring surveys. Black-billed Cuckoo population trend data from the BBS in Wyoming are available from 1968–2013 and suggest a substantial decline of -7.15 annually (N = 18 routes, 95% CI: -12.21 to -2.56) [34]. However, these results fall within a credibility category containing data with 'important deficiencies' and should be viewed with caution. Low relative abundance and number of routes with Black-billed Cuckoo detections likely contribute to this classification [34].

Intrinsic Vulnerability:
MODERATE VULNERABILITY
Large insects are the main food source of Black-billed Cuckoo, and long-term population viability might depend on periodic insect irruptions [2]. This high position on the trophic chain, coupled with a relatively high degree of habitat specialization in Wyoming, suggests MODERATE VULNERABILITY for the species.

Extrinsic Stressors:
SLIGHTLY STRESSED
Black-billed Cuckoo is susceptible to pesticides (via reductions in insect prey as well as bioaccumulation of pesticide toxins in cuckoos themselves), collisions with anthropogenic infrastructure, and habitat degradation. Use of pesticides to control caterpillars might especially affect cuckoo populations [2]. Caterpillars are a substantial prey item for cuckoos, and hydrocarbon pesticides have been shown to accumulate in adipose tissue of Black-billed Cuckoo [35]. A nocturnal migrant, Black-billed Cuckoo can be fatally injured by collisions with buildings and television towers [36]. Although as-yet unstudied, the proliferation of wind turbines in Wyoming and the region may be increasing this source of mortality. Additionally, habitat patch size influences cuckoo presence, with birds occurring only in patches of suitable habitat > 4,555 square meters in South Dakota [37] and only in "larger" aspen groves in Saskatchewan [38].

KEY ACTIVITIES IN WYOMING
Black-billed Cuckoo is listed as a Species of Greatest Conservation Need (SGCN) in Wyoming by the Wyoming Game and Fish Department (WGFD), and as a Level II Priority Species requiring monitoring action in the Wyoming Bird Conservation Plan [39]. The species is not

adequately monitored by current national or regional avian monitoring efforts in Wyoming, including the IMBCR program initiated in 2009 (0 detections since initiation) [40] or the BBS program conducted on 108 established routes since 1968 [34]. No systematic survey of Black-billed Cuckoo has been conducted in Wyoming, and there are no new or on-going research or monitoring projects designed specifically for this species in the state. Observations of this species are reported to the WGFD and vetted through the Wyoming Bird Records Committee (WBRC). Black-billed Cuckoo is a species for which the WBRC requests documentation on first latitude/longitude degree block sightings and all nesting observations.

ECOLOGICAL INFORMATION NEEDS

Information on Black-billed Cuckoo population size, habitat associations, and statewide distribution, especially during the breeding season, would assist resource managers in integrating Black-billed Cuckoo into management plans and actions [6]. Also, a better understanding of the spatial pattern, and timing, of arthropod productivity in eastern Wyoming woodlands would provide important information on how to manage landscapes for the benefit of Black-billed Cuckoo.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Andrea C. Orabona. Black-billed Cuckoo 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 North American BBS [34] and the multi-partner IMBCR [40]. While these monitoring programs provide robust estimates of occupancy, density, or population trend for many species in Wyoming, survey efforts do not adequately detect Black-billed Cuckoo, suggesting that targeted, species-specific monitoring efforts are needed. Best management practices or key management recommendations to benefit Black-billed Cuckoo include maintaining dense shrubs and diverse vegetation heights in plains/basin riparian habitats, and limiting use of insecticides in riparian areas to ensure a food source exists for this and other insectivorous species [39].

CONTRIBUTORS

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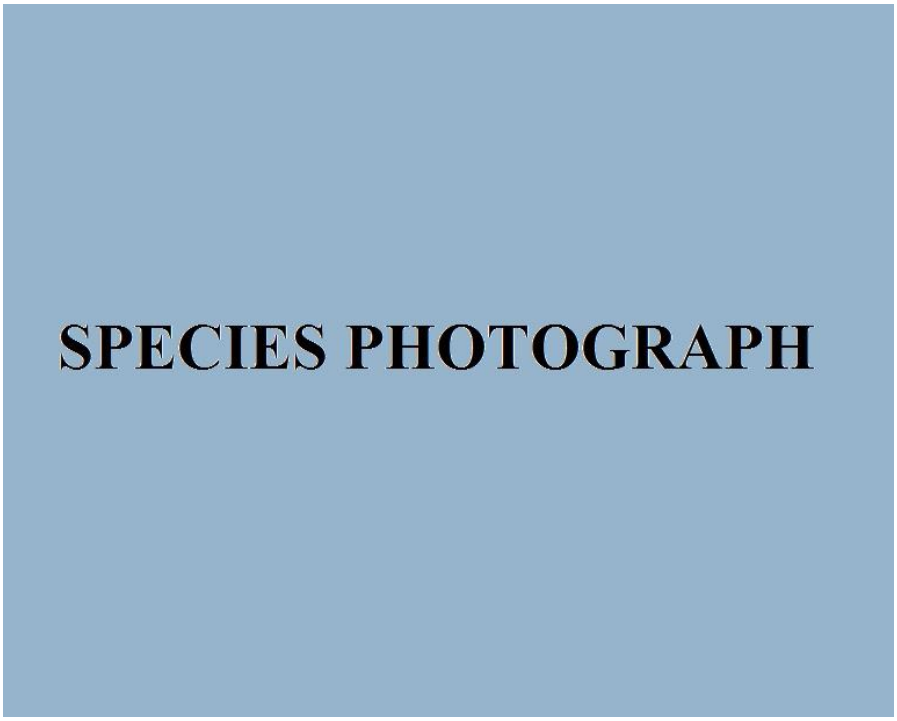

Figure 1: Photo not available.

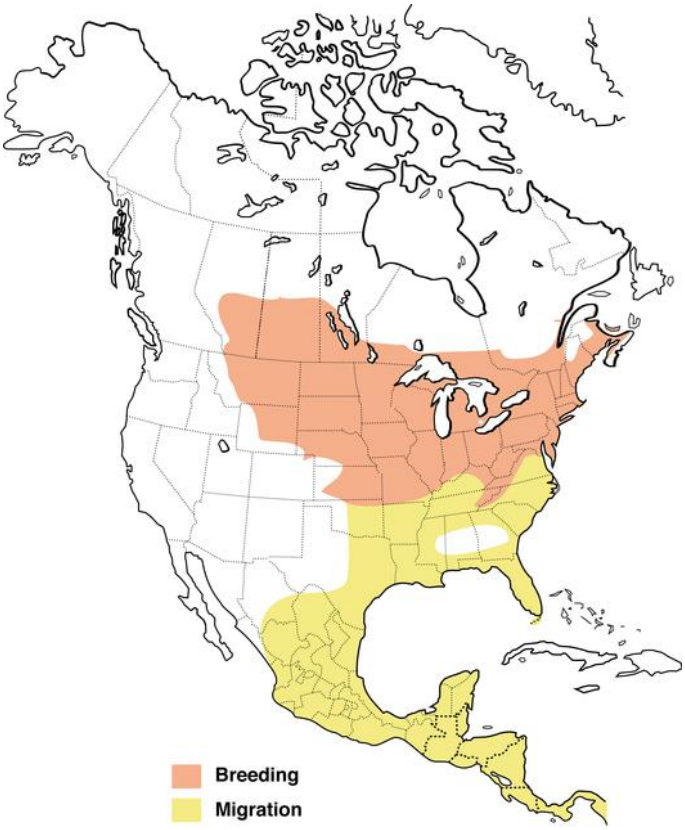

Figure 2: North American range of *Coccyzus erythropthalmus*. (Map courtesy of Birds of North America, http://bna.birds.cornell.edu/bna, maintained by the Cornell Lab of Ornithology)

HABITAT PHOTOGRAPH

Figure 3: Photo not available.

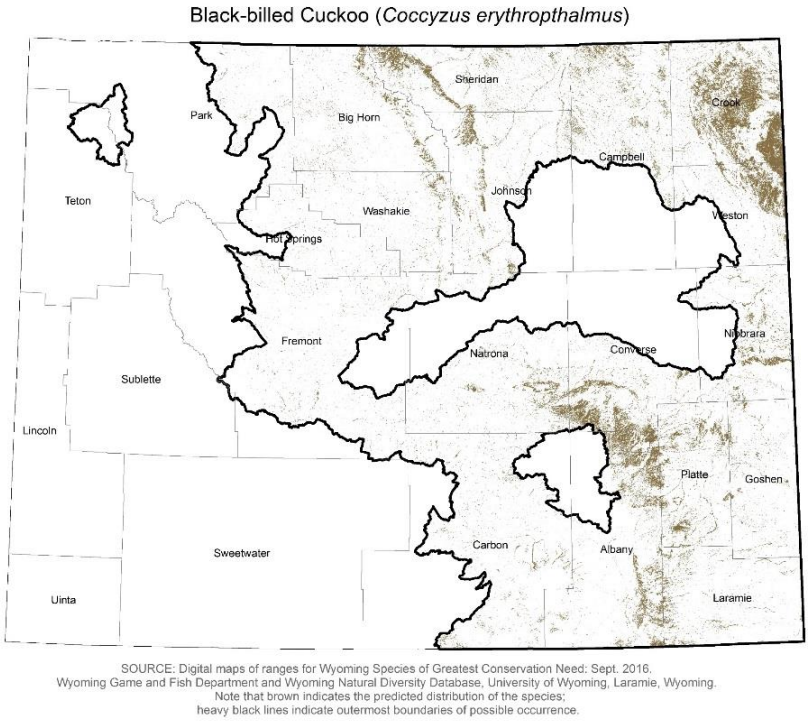

Figure 4: Range and predicted distribution of *Coccyzus erythropthalmus* in Wyoming.