

**Survey for Yellow-billed Cuckoos (*Coccyzus americanus*) on Wolf
Creek Ranch, Sheridan County, WY**

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Table of Contents:

Summary 1

Current Federal Status..... 1

Background 2

Methods..... 3

 Wolf Creek Ranch 3

 North Central & Eastern Wyoming 3

Results 3

 Wolf Creek Ranch 3

 Yellowtail WHMA 4

 Rawhide WHMA 4

 Morad State Park 4

 Edness K. Wilkins State Park 4

Discussion 4

Figure 1 6

Figure 2 7

Literature Cited 8

Appendix 10

Summary:

The purpose of this survey was to determine breeding status of Yellow-billed Cuckoos (*Coccyzus americanus*) along two stream reaches of Wolf Creek Ranch, located 12 miles west of Sheridan, WY. Cottonwood/willow riparian areas of the ranch were systematically surveyed for the presence of Yellow-billed Cuckoos. Surveys were conducted using playback recordings and visited three times during summer 2001 (protocol developed by Laymon 1998). Included in the survey were portions of Soldier Creek, Wolf Creek and East Wolf Creek (Figures 1 & 2). One Yellow-billed Cuckoo was detected along Wolf Creek during the first visit, but subsequent visits resulted in no observations in any of the surveyed areas. The individual was likely transient and it is unlikely that Yellow-billed Cuckoos were resident on Wolf Creek Ranch during the survey period. Several other areas in Wyoming that have recent and historical observations of Yellow-billed Cuckoos were also visited, but no observations were made (see text for locations).

Current federal status:

The 12-month finding for a petition to list the Yellow-billed Cuckoo as threatened or endangered in the Western Continental United States was released on 25 July, 2001. The U.S. Fish and Wildlife Service (USFWS) found that the petitioned action was warranted, but precluded by higher priority listing actions. This finding identifies the Western Yellow-billed Cuckoo as a Candidate species, which receive no statutory protection under the ESA. The Service reviews Candidate species for possible listing action annually. In Wyoming, only cuckoos found west of the continental divide are classified as belonging to the western population, which does not include the surveyed area.

Background:

The Yellow-billed Cuckoo is a slender, long-tailed, robin sized bird with stout, de-curved bill. Its lower mandible is yellow at the base with dark tip. The overall body color is brownish above and dull white below. The outer tail feathers have distinctive broad white tips giving the appearance of 6 large white spots on the underside. More often heard than seen, cuckoos may best be distinguished by call, which consist of either 8-12 guttural, wooden-sounding syllables becoming slower and more drawn out towards the end, or a harsh, rattled, rapid series of notes that resemble a metal doorknocker hitting a plate.

Yellow-billed Cuckoos are rare summer residents of Wyoming and can be found in relatively large stands of cottonwood/riparian habitat with a well developed understory below approximately 7000 feet (habitat requirements summarized by Hughes 1999). This habitat is limited in Wyoming, occurring mainly in scattered locations along the Bighorn, Powder, Laramie, Cheyenne, and North Platte River drainages. During migration cuckoos can also be found in urban park areas (WGFD 1997) and open woodlands.

Yellow-billed Cuckoos are long distance neo-tropical migrants that arrive in Wyoming during late May and begin to depart for wintering grounds during late August (Dorn and Dorn 1999). Pair formation and nest building begins soon after arrival from wintering grounds. Both members of the pair build a well-concealed nest of twigs in dense foliage within 10m of the ground (Laymon 1980). Breeding periods may vary seasonally and often coincide with the appearance of large numbers of cicadas, caterpillars, or other large insects (Ehrlich et al. 1992).

Yellow-billed Cuckoos are of concern because populations are declining precipitously throughout their range. Although more common in the eastern U.S., they have been nearly extirpated in the West and are restricted to small isolated populations. Once common in many areas of the West, Yellow-billed Cuckoos are no longer found in British Columbia, Washington, Oregon or Nevada. Approximately 30 pairs remain in California where once they numbered in the thousands (Laymon and Halterman 1987; USDI FWS 2001). There have been relatively few observations reported in Wyoming and still fewer that have documented breeding.

Population declines across the West have been attributed to loss of cottonwood/willow riparian habitat as a result of conversion to agriculture, dams and river flow management, bank protection, overgrazing, and competition from exotic plants such as tamarisk (Laymon 1987, 2000; Hughes 1999; USDI FWS 2000, 2001). Yellow-billed Cuckoos are also threatened by their low population size, extreme population fluctuations, and patchy distribution (Finch 1992). Pesticides may also negatively affect populations (Laymon and Halterman 1987).

Due to severe declines throughout the west, the USFWS was petitioned in 1986 to list the western subspecies (*C. a. occidentalis*) under the Endangered Species Act (ESA). The USFWS published a 12-month finding in 1988 stating that the petition was not warranted due to the fact that the petitioned area did not encompass a distinct population segment. On February 2, 1998 another petition was filed by the Southwest Center for Biological Diversity and a coalition of 23 groups to list the Yellow-billed Cuckoo or the western subspecies under the ESA (Suckling et al. 1998). On February 17, 2000 the USFWS published a 90-day finding that ESA protection may be needed for the western Yellow-billed Cuckoo, but not the full species over its entire range

(USDI FWS 2000). As stated above, the 12-month finding was released on 25 July 2001, which identified the western population as a Candidate species.

In order to help determine the status of the Yellow-billed Cuckoo in Wyoming, the Wolf Creek Charitable Foundation provided funds to support a survey of Wolf Creek Ranch and several other locations east of the Continental Divide in Wyoming. The survey was initiated prior to the July 25 release that identified only the western population as a candidate taxon. Yellow-billed Cuckoos have been observed periodically at Wolf Creek Ranch in the past and breeding was suspected (Robert Berry- owner, personal communication).

Methods:

Wolf Creek Ranch: Portions of Wolf Creek, East Wolf Creek and Soldier Creek within Wolf Creek Ranch were surveyed using methods outlined by Laymon 1998. Areas with cottonwood/aspen overstory and willow understory were identified on USGS 7.5 minute topographic maps with the aid of Robert Berry and Rande Money. Sites were then surveyed by foot using a playback recording of the “kowlp” call. The call was played 5 times every 100 to 200m along each stream reach with an approximately 1min pause between calls. All sites of interest were visited on 3 occasions between June 13 and July 21, 2001. The call of the Black-billed Cuckoo (*Coccyzus eurythrophthalmus*) was also played periodically during the second and third visits to detect its presence. Surveys were conducted between sunrise and 14:00h and temperature did not exceed 90° F. All birds observed during surveys were recorded.

North Central and Eastern Wyoming: Several locations in Wyoming for which Wyoming Natural Diversity Database (WYNDD) has records of recent or historical sightings of Yellow-billed Cuckoos were visited during the survey period. During these surveys the area was visually evaluated to determine if habitat was appropriate to support breeding Yellow-billed Cuckoos. The cuckoo calls were played opportunistically and sites were visited only once. All surveys were conducted by Jason Bennett, biologist with WYNDD.

Results:

Wolf Creek Ranch: Much of the cottonwood/willow habitats on Wolf Creek Ranch have a well-developed understory and are extensive enough to potentially provide breeding habitat for the Yellow-billed Cuckoo. Approximately 10km of habitat was surveyed using the survey protocol (Figure 2). One Yellow-billed Cuckoo responded to the playback along Wolf Creek during the first survey. After the fifth call the individual flew to a nearby willow approximately 50m from survey point and watched me. After 5min the call was played once more and it flew closer and gave a vocal response. During the next survey point a vocal response was heard from the direction of the first observation and was likely the same individual. No other visual or vocal responses of Yellow-billed Cuckoos were detected during the following surveys. One Black-billed Cuckoo was detected during the second visit to Wolf Creek. It responded to the playback recording by flying clandestinely to a nearby tree and looking in my direction. It made no vocal response to the call. No other detections of Black-billed Cuckoos were made.

Avifauna: A total of 76 species were observed (see appendix), including 7 Species of Special Concern (WYNDD 2001). Of these, 36 species were confirmed breeders and 16 were suspected breeders.

Yellowtail Wildlife Habitat Management Area: Yellowtail WHMA is located in Bighorn County, along the Shoshone and Bighorn Rivers at the confluence with Bighorn Lake. Although Yellowtail is far too large an area for a single surveyor to cover in a reasonable amount of time, several locations within the WHMA were visited on 2 occasions. The areas include a section of the cottonwood riparian habitat along the Shonone River (T56 R95 S1, 2, 4 and T56 R94 S28, 33). There was little understory in the cottonwood riparian habitat surveyed and no cuckoos were observed. WYNDD has no records of Yellow-billed Cuckoos within Yellowtail WHMA, but Yellowtail was a potential site due to the extent of cottonwood riparian habitat.

Rawhide Wildlife Habitat Management Area: Rawhide WHMA is located in Goshen County, 11km west of Torrington, along the North Platte River. The southwest portion (2 stream km) of Rawhide was surveyed and no cuckoos were observed. Cottonwood/willow riparian areas were thin and patchy with little developed understory. Digital Orthophoto quads (aerial photos) indicated that the remaining cottonwood/willow habitat within the WHMA was similar and unlikely to support breeding Yellow-billed Cuckoos. WYNDD has one element occurrence record for Rawhide WHMA, which includes several observations of Yellow-billed Cuckoos between 1980 and 1984.

Morad State Park: Located in Natrona County within the city limits of Casper. A portion of North Platte River within the State Park was surveyed and no cuckoos were observed. The cottonwood/willow riparian habitat was thin and patchy with little understory. WYNDD has one element occurrence observation from Morad State Park, which includes several observations between 1983 and 1988.

Edness K. Wilkins State Park: Located in Natrona County, 7km east of Casper. A portion of North Platte River within the State Park was surveyed and no cuckoos were observed. The cottonwood/willow riparian habitat was thin and patchy with little understory. WYNDD has one element occurrence observation from Edness K. Wilkins State Park, which includes 4 observations between 1994 and 2000.

Discussion:

Yellow-billed Cuckoos were probably never common in Wyoming and there are relatively few records for the state (Bennett and Keinath 2001). Wyoming lies on the periphery of the Yellow-billed Cuckoo's range and its habitat requirements preclude it from being abundant in the state. Yellow-billed Cuckoos likely breed at least occasionally in isolated areas of Wyoming that contain large tracts of cottonwood/willow riparian habitat with a well developed understory. WYNDD records indicate that most cuckoos observed in Wyoming were transient individuals and habitat observed at several locations visited during this survey support this assumption. The single Yellow-billed Cuckoo observed during this survey at Wolf Creek Ranch was likely transient as well, although habitat appears to be appropriate for breeding. Previous observations from Wolf Creek Ranch suggest that breeding has occurred in the past and indeed cuckoos may breed at there periodically.

Observations of Yellow-billed Cuckoo in Wyoming are too few to estimate population trend, although they have been extirpated across much of its former range in the west and are declining where they are still found. The recently published 12-month finding for a petition to

list the Yellow-billed Cuckoo as threatened or endangered in the Western Continental U.S. under the ESA resulted in Candidate status (warranted but precluded) for the population. This includes only individuals found west of the continental divide in Wyoming, Montana and northern Colorado. Individuals found east of the continental divide, including areas covered by this survey, are not considered part of the Candidate taxon.

The issue of the validity of separation of the Yellow-billed Cuckoo into two subspecies has been debated with evidence provided to support both views (Amundson *et al.* 2000, Banks 1988, 1990; Franzreb and Laymon 1993, USDI FWS 2000, 2001). In order to help resolve the issue and to aid in preparation of the 12-month finding, the USFWS requested a committee review consisting of 6 professional ornithologists to review the taxonomic validity of the subspecies. The committee determined that the Yellow-billed Cuckoo should be considered monotypic (USDI FWS 2001). The Service also funded a genetic study to investigate the same question. The results of the study concluded that genetic differences in mtDNA across the species range are not distinct enough to support valid subspecific designations (Fleischer 2001). Fleischer (2001) suggests that future research using microsatellite markers has the potential to reveal significant genetic structure where analysis of mtDNA could not.

Although the USFWS does not recognize Yellow-billed Cuckoo subspecies, it classifies the western region of Yellow-billed Cuckoo distribution as a Distinct Population Segment (DPS), which can be considered for listing if there is sufficient information to indicate that such action may be warranted. To meet the requirements of a DPS, a population must be discrete from and significant to the remainder of the taxon. The Western Yellow-billed Cuckoo satisfies the condition of being discrete from other populations as a consequence of physical, morphological, physiological, behavioral and genetic differences. The 12-month finding describes these differences in detail. The defined DPS roughly follows the boundary currently recognized by the American Ornithologists' Union (AOU 1983) for the western subspecies, which coincides with the continental divide from Montana south through Wyoming and northern Colorado. From southern Colorado the boundary continues along the eastern boundary of the Rio Grande River drainage through New Mexico and south to the Big Bend area of west Texas.

Although Yellow-billed Cuckoos found east of the continental divide are not classified with the candidate taxon, it is important to determine the status and distribution of cuckoos across Wyoming. Yellow-billed Cuckoos are not well documented along the periphery their range and distribution across the DPS boundary is not clear. Due to their cryptic behavior, breeding status of Yellow-billed Cuckoos is difficult to determine without conducting playback surveys. Since most records across the region are incidental sightings of transient individuals, systematic surveys for Yellow-billed Cuckoos need to be conducted for both the western and eastern populations in Wyoming. Locating resident cuckoos on both sides of the DPS boundary is critical to aid both local management decisions and the USFWS annual status review of the candidate taxon.

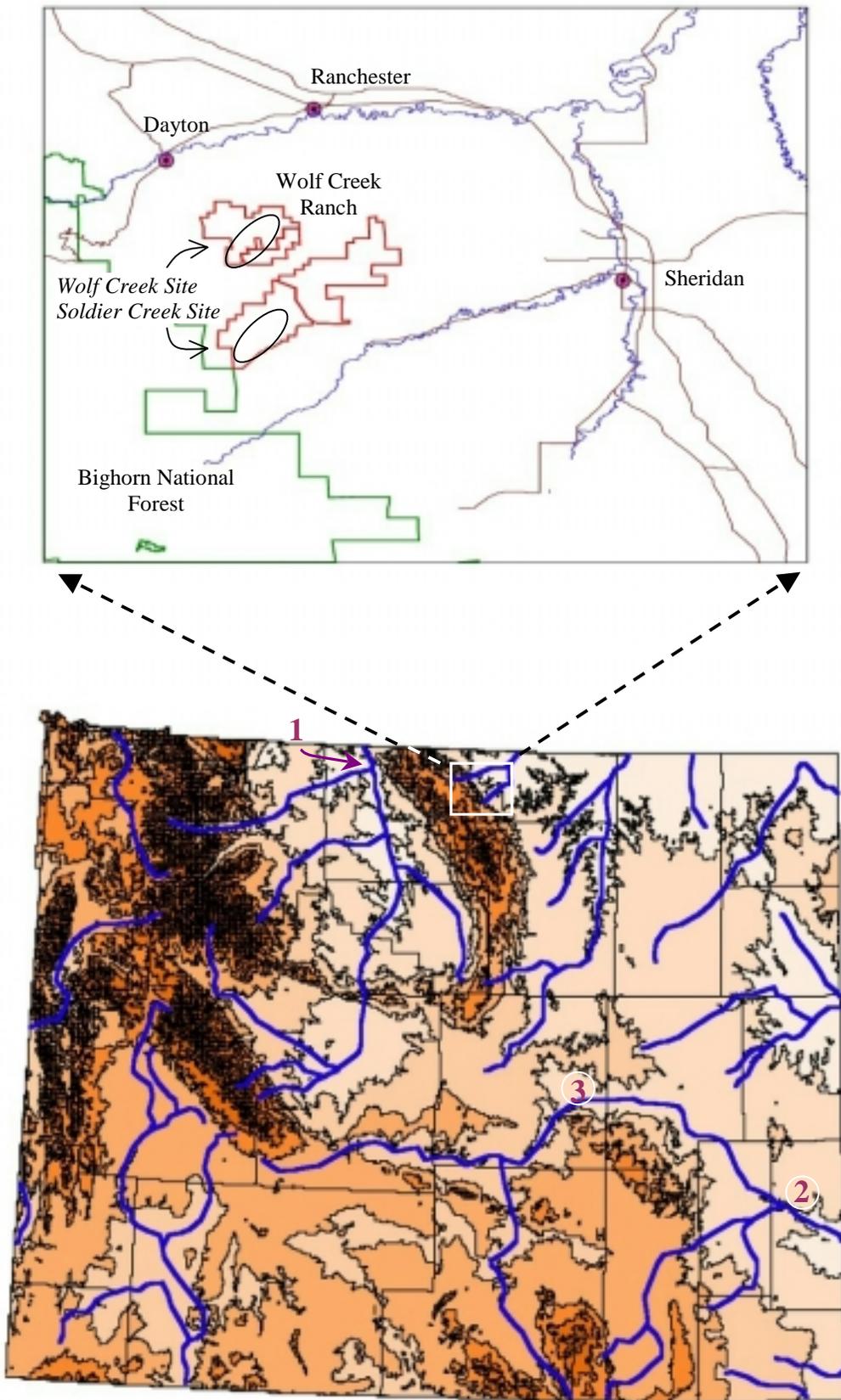


Figure 1. Top: Relative location of Yellow-billed Cuckoo survey sites at Wolf Creek Ranch. Bottom: Other areas surveyed in Wyoming. 1) Yellowtail WHMA. 2) Rawhide WHMA. 3) Morad and Edness K. Wilkins State Parks.

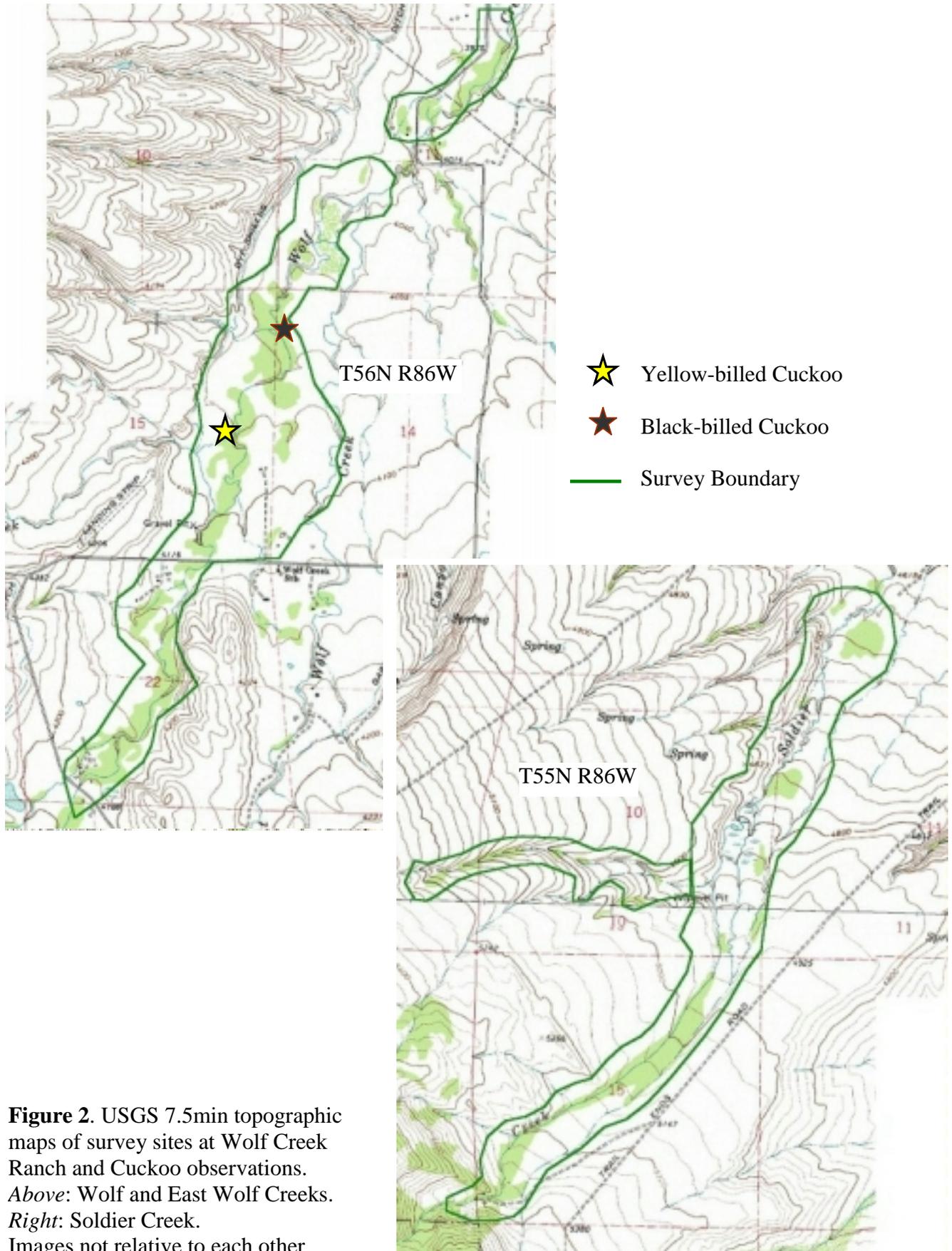


Figure 2. USGS 7.5min topographic maps of survey sites at Wolf Creek Ranch and Cuckoo observations. *Above:* Wolf and East Wolf Creeks. *Right:* Soldier Creek. Images not relative to each other geographically.

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Appendix. List and breeding status of birds observed on Wolf Creek Ranch during surveys.

* Indicates Species of Special Concern.

| Species | Abundance | Status | Rationale |
|------------------------|-----------|--------|-----------|
| American Crow | A | S | pa |
| American Goldfinch | SA | B | bpa |
| American Kestrel | R | U | |
| American Redstart | U | S | a |
| American Robin | SA | B | ybpa |
| Barn Swallow | U | U | |
| Belted Kingfisher | U | B | bpa |
| Black-billed Magpie | C | S | pa |
| Black-billed Cuckoo * | R | U | |
| Black-capped Chickadee | A | B | bpa |
| Black-headed Grosbeak | C | B | bpa |
| Bobolink * | C | S | pa |
| Brewer's Blackbird | U | U | |
| Brown Thrasher | R | S | pa |
| Brown-headed Cowbird | A | B | bpa |
| Bullock's Oriole | U | B | ba |
| Calliope Hummingbird * | R | S | a |
| Cedar Waxwing | A | B | nbpa |
| Chestnut-sided Warbler | R | M | |
| Chipping Sparrow | R | U | |
| Cliff Swallow | A | S | pa |
| Common Grackle | A | S | pa |
| Common Nighthawk | R | U | |
| Common Raven | U | S | a |
| Common Snipe | U | S | a |
| Common Yellowthroat | SA | B | bpa |
| Cooper's Hawk | R | U | |
| Cordilleran Flycatcher | U | S | a |
| Dark-eyed Junco | R | U | |
| Downy Woodpecker | R | S | a |
| Eastern Kingbird | SA | B | nbpa |
| European Starling | SA | B | bpa |
| Gray Catbird | SA | B | bpa |
| Great Blue Heron | R | U | |
| Great Horned Owl | R | B | ya |
| House Wren | A | B | bpa |
| Killdeer | U | B | ybpa |
| Lazuli Bunting | R | U | |
| Least Flycatcher | A | B | bpa |
| Long-billed Curlew * | U | U | |
| MacGillivray's Warbler | R | M | |
| Mallard | U | U | |
| Mountain Bluebird | C | B | ypa |
| Mountain Chickadee | R | U | |
| Mourning Dove | A | S | pa |
| Northern Flicker | C | B | bpa |

| Abundance |
|----------------------------------|
| R (Rare) = 1 to 2 |
| U (Uncommon) = 3 to 5 |
| C (Common) = 6 to 10 |
| A (Abundant) = 11 to 20 |
| SA (Super Abundant) = 20+ |
| |
| Status |
| B = Breeding confirmed |
| S = Breeding suspected |
| M = Migratory, likely |
| U = Undetermined |
| |
| Rationale |
| n = nest found |
| y = young observed |
| b = breeding behavior observed |
| p = persistent in area |
| a = appropriate breeding habitat |

| Species | Abundance | Status | Rationale |
|-------------------------------|-----------|--------|-----------|
| Northern Harrier | R | U | |
| Northern Rough-winged Swallow | A | B | bpa |
| Orange-crowned Warbler | R | S | a |
| Pine Siskin | SA | B | bpa |
| Red-breasted Merganser | R | M | |
| Red-tailed Hawk | R | B | bpa |
| Red-winged Blackbird | A | B | bpa |
| Ring-necked Pheasant | C | S | pa |
| Ruffed Grouse | R | S | ba |
| Sandhill Crane | R | U | |
| Savannah Sparrow | C | B | bpa |
| Say's Phoebe | R | B | ba |
| Song Sparrow | A | B | bpa |
| Spotted Sandpiper | U | S | pa |
| Spotted Towhee | C | B | bpa |
| Tree Swallow | A | B | bpa |
| Turkey Vulture | R | M | |
| Veery | A | B | ybpa |
| Vesper Sparrow | A | B | bpa |
| Violet-green Swallow | U | U | |
| Warbling Vireo | A | B | bpa |
| Western Meadowlark | A | B | bpa |
| Western Tanager | C | B | bpa |
| Western Wood-Pewee | A | B | bpa |
| White-faced Ibis * | R | U | |
| Wild Turkey | U | U | |
| Willow Flycatcher * | C | B | bpa |
| Yellow Warbler | SA | B | ybpa |
| Yellow-billed Cuckoo * | R | U | |
| Yellow-breasted Chat | U | B | bpa |

| Abundance |
|----------------------------------|
| R (Rare) = 1 to 2 |
| U (Uncommon) = 3 to 5 |
| C (Common) = 6 to 10 |
| A (Abundant) = 11 to 20 |
| SA (Super Abundant) = 20+ |
| |
| Status |
| B = Breeding confirmed |
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| |
| Rationale |
| n = nest found |
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