ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** ABNRB02020
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Coccyzus americanus*
COMMON NAME: Yellow-billed Cuckoo (Western U.S. DPS [Distinct Population Segment]), Yellow-billed Cuckoo, Chow-chow, Kow-kow, Rain Bird, Rain Crow, Rain Dove, Storm Crow, California Cuckoo (referring only the Western DPS)
SYNONYMS: *Coccyzus americanus occidentalis* Ridgeway
FAMILY: Cuculidae

AUTHOR, PLACE OF PUBLICATION: *Cuculus americanus* Linnaeus, Syst. Nat., ed. 10, vol. 1, 1758, p.111. Subspecies *C.* [*occyzus*] *americanus occidentalis* Ridgway, Man. North Amer. Birds, 1887, p. 273. (AOU 1957[1961]).

TYPE LOCALITY: Species: In Carolina = South Carolina.
**Western DPS: "Western United States = Gardner's Ranch on the western side of the Santa Rita Mountains, Arizona."

TYPE SPECIMEN: US 99204, E.W. Nelson, 29 June 1884.

TAXONOMIC UNIQUENESS: 13 species in the genus, three of which occur in the United States. Only species in the genus to occur west of the Rocky Mountains in the United States.

Although the western Yellow-billed Cuckoo has been described as a subspecies called the California Cuckoo (*Coccyzus americanus occidentalis*) (Ridgeway 1887, AOU 1957), there has been debate about its taxonomic status. There is research that both supports (Franzreb and Laymon 1993, Pruett et al. 2001), and refutes subspecies status (Banks 1988 and 1990, Fleischer 2001). The U.S. Fish and Wildlife Service listed as a Candidate species, the Western Distinct Population Segment (DPS). This includes those yellow-billed cuckoos west of the Rocky Mountains; please see 2001 Federal Register for complete delineation of range.

DESCRIPTION: A long and slender medium-sized bird of about 30 cm (12 in)in length, weighing about 60 g (2 oz), with relatively short dark legs. The species has a slender, long-tailed profile, with a stout and slightly down-curved bill. The bill is blue-black with yellow on the basal half of the lower mandible (bill). Adults have a narrow, yellow eye ring. The plumage is grayish-brown above and white below, with rufus primaries flight feathers. Tail feathers are boldly patterned with black and white below. Juveniles resemble adults, except the tail patterning is less distinct, and the lower bill may have little or no yellow; the plumage is held well into fall. Juveniles may be confused with *C. erythropthalmus* (Scott 1987). Adult males

and females slightly differ, as males tend to have a slightly larger bill, and females average larger than males. (Corman 1992, USFWS accessed 10-31-2011).

AIDS TO IDENTIFICATION: Bright white chest, long tail, and the grey-brown head contrasting with white throat are distinctive. "Song sounds hollow and wooden, a rapid staccato *kuk-kuk-kuk* that usually slows and descends to a *kakakowlp-kowlp* ending" (Scott 1987).

ILLUSTRATIONS:

Color drawing (Robbins et al. 1983:172)
Color drawing (Scott 1987:237)
Color drawing (Peterson 1990:213)
Color photo (Terres 1980:130)
Color photo (Halterman et al. 2015)

TOTAL RANGE: The Western Distinct Population Segment (DPS), nests west of the Rocky Mountains in North America south to southern Baja California. All yellow-billed cuckoo winter in Central and South America (Terres 1980).

Western Yellow-billed Cuckoos historically bred throughout riparian systems of western North America from southern British Columbia to northwestern Mexico (Hughes 1999). Since at least the 1850's, populations have declined and breeding cuckoos have been extirpated over much of the western range, including British Columbia, Oregon, and Washington (Hughes 1999).

Currently, breeding populations are known from California, Arizona, and New Mexico. Small or occasional breeding populations are known or reported from Colorado, Idaho, and Nevada. There are no known breeding populations in Oregon, Washington, or British Columbia (Halterman et al. 2015).

RANGE WITHIN ARIZONA: In Arizona, cuckoos are known to breed primarily within the Bill Williams, Big Sandy, Agua Fria, Verde River, Gila River, Santa Cruz, and San Pedro river watersheds, as well as multiple restoration sites along the lower Colorado River (Corman and Magill 2002, Halterman 2009, Johnson et al. 2010, McNeil et al. 2013).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Neotropical migratory species, traveling between wintering grounds in Central and South America and breeding grounds in North America. The arrival and nesting of cuckoos typically coincides with seasonal availability of prey, which is later in the Western Distinct Population Segment than in the eastern United States (Hughes 2020). The San Pedro River and the Lower Colorado River watersheds appear to be migratory corridors (Halterman 2009). Western yellow-billed cuckoos appear to stage in southern Arizona and Northern Mexico pre- and post-breeding (McNeil et al 2015). In New Mexico, cuckoos have been observed foraging up to 0.5 mi (0.8 km) from nest sites (Sechrist et al. 2009). Home range is highly variable, but

averages 42.8 ac (19.5 ha) to 104.5 ac (24.3 ha), depending on location, breeding status, and gender (Halterman 2009, McNeil et al. 2013). Yellow-billed cuckoo are difficult to survey for, as unsolicited calling is low, birds tend to be secretive, and males and females are sexually monomorphic.

Unlike their European cuckoo counterparts, the Western yellow-billed cuckoo only occasionally parasitizes black-billed cuckoo nests. Breeding often coincides with outbreaks of cicadas and tent caterpillars and may lay more eggs in prey-abundant years. Extra eggs may be parasitized in other birds' nests.

REPRODUCTION: Breeding generally occurs from June through September, peaking in July, with May breeding occurring less commonly. Both male and female build the nest, often in willow or mesquite thickets, generally 4 to 30 ft above ground. Nest is a stick platform, thinly lined with leaves, mesquite and cottonwood strips, grass and catkins with little depression to hold eggs, but well concealed by surrounding foliage (Corman 1990). Clutch of two to four unmarked, pale greenish-blue eggs (very occasionally one and five egg clutches have been observed) (McNeil et al. 2013). Western yellow-billed cuckoos have evolved larger eggs and thicker eggshells to help cope with higher water loss in the hotter and drier Southwestern conditions (Hamilton and Hamilton 1965, Ar et al. 1974, Rahn and Ar 1974). Eggs are incubated from nine to eleven days, and altricial young fledge five to eight days after hatching (Laymon and Halterman 1985, Halterman 2009). Males incubate eggs at night, and both sexes alternate incubation and nestling care during the day (Halterman 2009, Payne 2005). Due to the cuckoo's relatively large size and short hatch-to-fledge time, adults must have access to abundant food sources to successfully rear offspring (USFWS 2021). Hughes (2015) suggests that time spacing of egg dates allows many nesting pairs in a single are to partition resources and share localized short-term abundance of food. Fledglings continue to be dependent on adults for approximately 14-21 days, occasionally up to 32 days of age (Halterman 2009, McNeil et al. 2013). Males appear to be the primary caregiver of fledglings (Halterman 2009).

In areas and years of abundant food resources, double and even triple brooding has been observed. Double broods have been regularly observed on the upper San Pedro River and the lower Colorado and Bill Williams Rivers (Halterman 2009, McNeil et al. 2013). Common nest predators include Common Ravens (*Corvus corax*), American Crows (*Corvus brachyrynchos*), jays, magpies, and accipiters.

FOOD HABITS: Yellow-billed cuckoos feed on large insects (cicadas, caterpillars, katydids, grasshoppers, crickets, large beetles, spiders, and moth larvae) and small vertebrates (frogs and lizards) (USFWS 2021). Cicadas are an important food source in Arizona (Halterman 2009).

HABITAT: Riparian obligate. Highest quality habitat consists of rivers and streams of lower gradients in open valleys with a broad floodplain containing riparian woodland habitat with overstory and understory comprised of a variety of plant species (generally dominated by willow or cottonwood). In arid southwestern breeding habitat more arid riparian and xeroriparian habitat, desert scrub and desert grassland drainages with a tree component, and Madrean evergreen woodland drainages are also used frequently. Intermittent and ephemeral

drainages and immediately adjacent upland habitat are important for nesting and foraging habitat (USFWS 2021).

Nesting sites are primarily in riparian habitats with cooler and more humid conditions than the surrounding environment (Corman and Magill, 2000). Southwestern breeding habitat is more variable than in the rest of the range of the DPS, occurring within or along perennial, intermittent, and ephemeral drainages below 6,00 ft (1,829 m). Canopy closure is variable, and may be dense only at the nest tree. Suitable habitat west of the Continental Divide is limited to narrow, and often widely separated. Nesting occurs in riparian cottonwood-willow galleries; tamarisk is also used by cuckoos. Dense understory foliage appears to be an important factor in nest site selection (USFWS accessed 10-31-2011). In addition to cottonwood-willow galleries, cuckoos in Arizona can be found in larger mesquite bosques. They are rarely observed as transients in xeric desert or urban settings (Corman 1992).

Western yellow-billed cuckoos nesting along the Colorado River tend to use larger riparian habitat sites for nesting than cuckoos nesting in interior Arizona. Along the Colorado river, the optimal size of habitat patches is generally greater than 200 ac (81 ha) in extent (Laymon and Halterman 1989). In interior Arizona, breeding habitats of less than 40 ac (16 ha) may be used for breeding (Sechrist et al. 2009).

ELEVATION: 3,564 to 5,480 ft (1,086 to 1,670 m) (MacFarland and Horst 2015).

PLANT COMMUNITY: In Southwestern breeding habitat, riparian and xeroriparian habitats bisecting Madrean woodland, desert grassland, and desert scrub are common (USFWS 2021). For the remainder of the Western DPS, nesting occurs mainly in mature cottonwood-willow stands, and to a lesser extent willows or isolated cottonwoods mixed with tall mesquites (Rosenberg et al. 1990).

POPULATION TRENDS: In the western United States, the loss, degradation and fragmentation of riparian habitats, has been identified as the primary factor causing yellow-billed cuckoo declines. Estimates of losses in riparian habitat include 90-95 percent for Arizona, 90 percent for New Mexico, 90-99 percent for California, and more than 70 percent nationwide. (USFWS accessed 10-31-2011). North American Breeding Bird Surveys indicate population declines of 1.6% per year in North America. Only 680 to 1,025 breeding pairs are estimated to remain range wide (WDFW 2017).

Although regional declines have occurred, the yellow-billed cuckoo is relatively common as a breeding bird in much of the eastern United States.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LT (USDI, FWS, 2014)
[C Western DPS, USDI, FWS 2001]

[C USDI, FWS 2002, 2004-2011]

STATE STATUS: 1 (AZGFD, AWCS 2022)
[1A (AGFD SWAP 2012)]
[WSC (AGFD, WSCA 1996 in prep)]
[Threatened (AGFD, TNW 1988)]

OTHER STATUS: Group 2, full species level (NNDFW, NESL 2005, 2008)
[Group 3 (NNDFW, NESL 2000)]
Forest Service Sensitive (USDA Region 3 2000, 2007, 2013)
Bureau Sensitive (Bureau of Land Management, Arizona 2017)

MANAGEMENT FACTORS: The decline of the western Yellow-billed Cuckoo is primarily the result of loss of and degradation of riparian habitat. Within the three states with the highest historical number of Yellow-billed Cuckoos, past riparian habitat losses are estimated to be about 90 to 95 percent in Arizona, 90 percent in New Mexico, and 90 to 99 percent in California (Ohmart 1994, Noss et al. 1995). Main causes of habitat degradation in the range have occurred from altered hydrology due to dams, water diversions, channelization, levees and other forms of bank stabilization. Losses are compounded by conversion of floodplains for agricultural uses, and conversion of native habitats to monotypic stands. Other factors include clearcutting, grazing, and pesticide use in riparian areas.

Until recently, encroachment of nonnative tamarisk was believed to be a threat to Yellow-billed cuckoos, but recent surveys have confirmed nesting of cuckoo in tamarisk stands. There is now concern that removal of tamarisk and defoliation by tamarisk leaf beetles may decrease nesting habitat for cuckoos.

Climate change is expected to negatively effect the species and its habitat. Increasing temperatures and drought may reduce available nesting sites and patch size, effect prey abundance, increase likelihood of souring flood events (USFWS 2021). Habitat suitability models predict that changes in climate will increase habitat fragmentation and decrease breeding habitat patch sizes (USFWS 2021). In addition, climate change may disrupt the synchrony of Western Yellow-billed Cuckoo nesting and food availability (USFWS 2021).

PROTECTIVE MEASURES TAKEN: Critical Habitat established 2021. Standardized survey protocol was developed in 2015 and surveys are conducted over much of the potential range of the species. Public education efforts have been undertaken by AZGFD and other entities (USFWS 2021).

SUGGESTED PROJECTS: Monitoring and regulating stream flows below reservoirs to mimic natural flood regimes and hydrologic processes to help maintain habitat; establishing permanent conservation easements or land acquisition; minimizing habitat disturbance, fragementation and destruction; and providing buffers around western yellow-billed cuckoo

habitat. Further research is needed to determine habitat use and species requirements in wintering areas, migration corridors, and staging areas.

LAND MANAGEMENT/OWNERSHIP: **BIA** – Cocopah and San Xavier Reservations, and Tohono O'Odham Nation; **BLM** – Havasu, Kingman, Phoenix, Safford, Tucson and Yuma Field Offices; **BOR** – Phoenix Area; **DOD** – Fort Huachuca Military Reservation and Yuma Proving Ground; **NPS** – Montezuma Castle National Monument; **USFS** – Apache-Sitgreaves, Coconino, Coronado, Prescott and Tonto National Forests; **USFWS** – Bill Williams, Buenos Aires, Cibola, Havasu and San Bernardino National Wildlife Refuges; Arizona State Land Department; Red Rock and Patagonia Lake State Parks; **AGFD** – Alamo Wildlife Area, Base Meridian/Amator Wildlife Area, Mittry Lake, Page Springs Fish Hatchery, Upper Verde River Property and Wenima Riparian Corridor; Pinal County; City of Prescott; **TNC** – Canelo Hills Cienega, Dudleyville-Cooks Lake Preserve, Hassayampa River Preserve, Muleshoe Ranch Preserve, Patagonia-Sonoita Creek Preserve and San Pedro Riparian Preserve; Audubon Research Ranch; Private.

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ADDITIONAL INFORMATION:

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