

A.5 WESTERN YELLOW-BILLED CUCKOO (*COCCYZUS AMERICANUS OCCIDENTALIS*)

A.5.1 Legal and Other Status

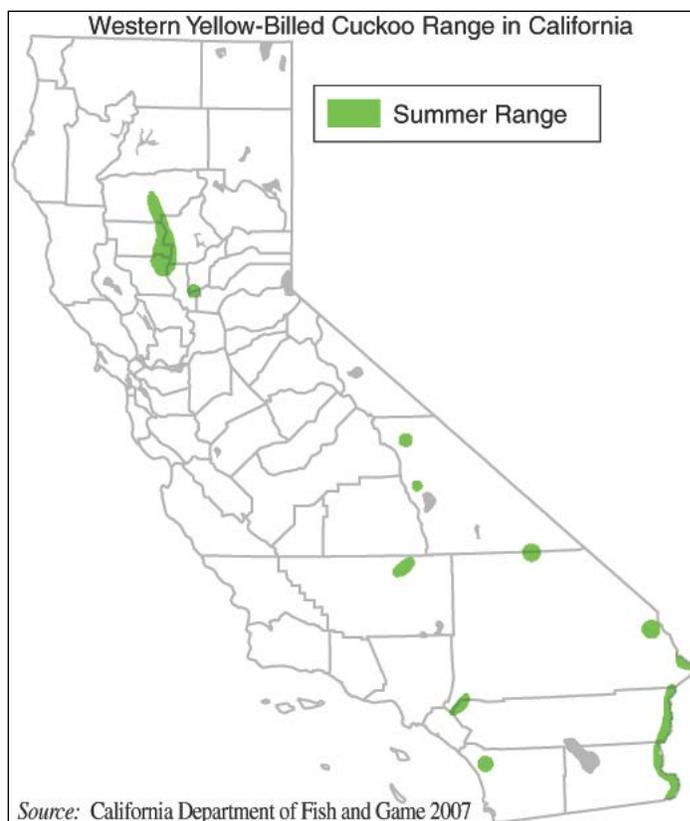
The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is listed as threatened under the Endangered Species Act and as an endangered species under the California Endangered Species Act.

A.5.2 Species Distribution and Status

A.5.2.1 Range and Status

Currently, there are two recognized subspecies of yellow-billed cuckoo. *Coccyzus americanus occidentalis* is found west of the Rocky Mountains, and *Coccyzus americanus americanus* is found in deciduous forests east of the Rocky Mountains. The ongoing debate over the taxonomic separation of the two subspecies is based primarily on morphological and plumage differences (Banks 1988, Franzreb and Laymon 1993), and more recently on genetics studies initiated by the USFWS during the status review for federal listing.

Historically, the range of western yellow-billed cuckoo extended from southern British Columbia in the north to the Rio Grande River in northern Mexico in the south, and east to the Rocky



Mountains (Bent 1940). Currently, the only known populations of breeding western yellow-billed cuckoo are located in several disjunct locations in California, Arizona, and western New Mexico (Halterman 1991). Yellow-billed cuckoos winter in South America from Venezuela to Argentina after an August to October southern migration period (Laymon and Halterman 1985). Yellow-billed cuckoos migrate north in late June and early July (DeSchaunsee 1970).

Studies conducted since the 1970s indicate there may be fewer than 50 breeding pairs in California (Gaines 1977, Laymon and Halterman 1987, Halterman 1991, Laymon et al. 1997). The only locations in California known to currently sustain breeding



populations include the Colorado River system in Southern California, the South Fork Kern River east of Bakersfield, and isolated sites along the Sacramento River in northern California (Laymon and Halterman 1989, Laymon 1998).

A.5.2.2 Distribution and Status in the Plan Area

As noted above, the current range of the western yellow-billed cuckoo includes a portion of the Sacramento River in Northern California. The largest portion of this area, as described by the DFG California Wildlife Habitat Relationships Program, occurs along the western border of the Plan Area. Thus, the entire western border of the Plan Area is considered within the current range of the species. At least four confirmed or probable breeding locations occur within this area along with numerous other detections. Breeding pairs have also been reported from portions of the Feather River between Oroville and the Butte County border. The California Natural Diversity Database (CNDDDB) also reports occurrences along Butte Creek in the 1970s and 1980s (see Figure A.5-1, *Western Yellow-Billed Cuckoo Modeled Habitat and Recorded Occurrences*).

Yellow-billed cuckoos occupy the Plan Area only during their abbreviated breeding season from approximately late June to August, when they begin their migration to South America (Laymon and Halterman 1985).

A.5.3 Habitat Requirements and Special Considerations

The western yellow-billed cuckoo is a riparian obligate species with a primary habitat association of willow-cottonwood riparian forest; however, species such as alder (*Alnus glutinosa*) and box elder (*Acer negundo*) can also be important habitat elements (Laymon 1998). Nests are found primarily in willow (*Salix* spp.) trees.

Other tree species used for nesting include cottonwood (*Populus fremontii*) and alder. Along the Sacramento River, English walnut trees have also been reportedly used for nesting (Laymon 1980). The average nest site height in willow trees is 14 feet (4.3 meters [m]), while nests in cottonwood trees have been reported at 100 feet (30.5 m). The desired canopy cover is typically dense (averaging 96.8 percent at the nest); and large patch sizes, generally greater than 50 acres (20.23 hectares), are typically required (Laymon 1998).

Cottonwood trees are important foraging habitat, particularly as a source of insect prey. Studies of yellow-billed cuckoo indicate a significant association of the cuckoo with large stands of mature cottonwood-willow forests; however, yellow-billed cuckoos have been observed to occupy a variety of marginal habitats, particularly at the edges of their range (Laymon 1998). Habitat succession has been identified as an important factor in sustaining yellow-billed cuckoo breeding populations (Laymon 1998). Meandering streams allow for constant erosional and depositional processes. This creates habitat for new rapidly growing young stands of willow, the preferred nesting sites of the yellow-billed cuckoo. Channelized streams or levied systems that do not allow for these natural processes become over-mature and, presumably, less optimal.

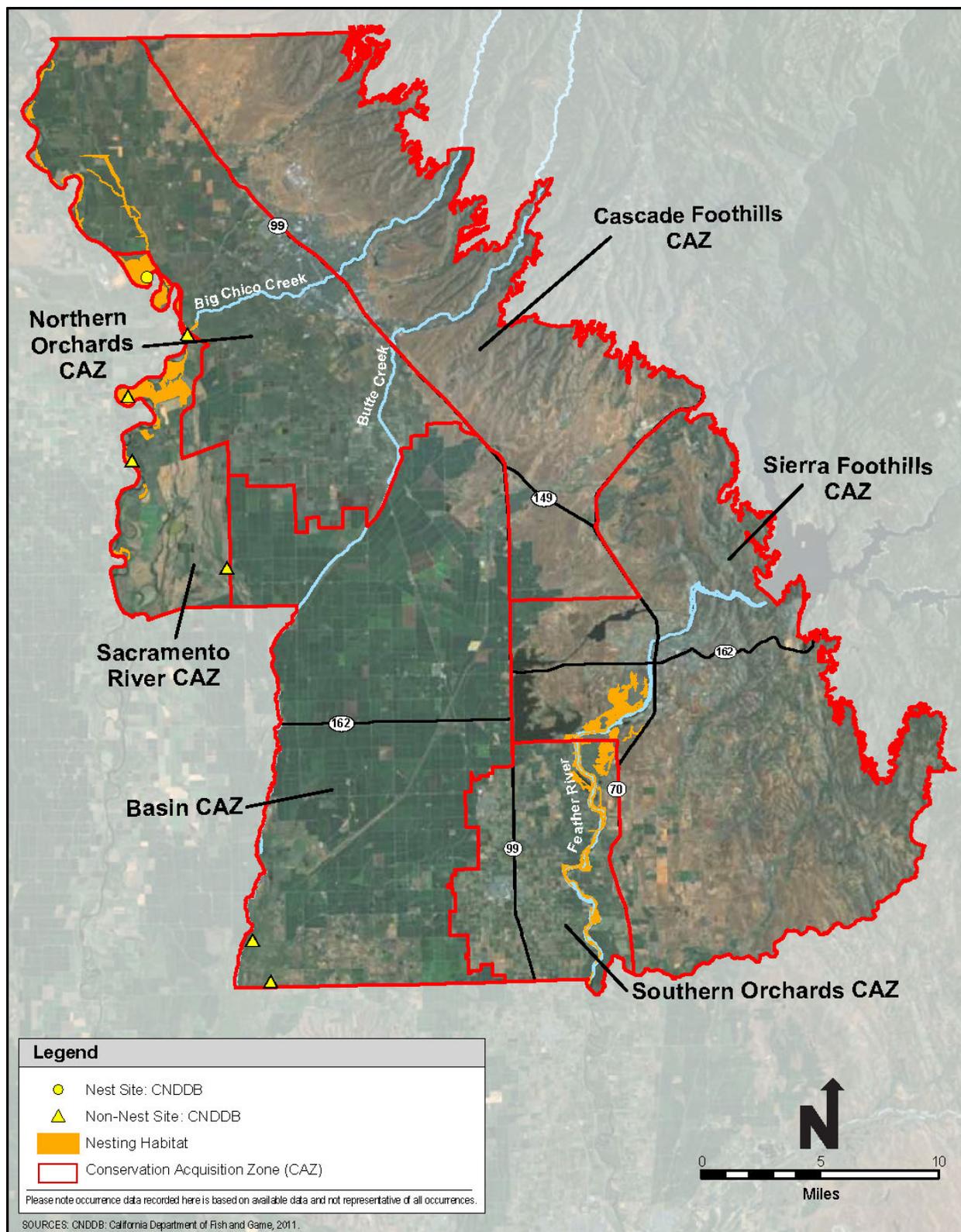


Figure A.5-1. Western Yellow-Billed Cuckoo Modeled Habitat and Recorded Occurrences

Occupied habitat within the Plan Area is described as great valley cottonwood riparian forest and great valley mixed riparian forest, including willows, box elder, and white alder (Halterman 1991). Potential habitat also occurs in valley marshland with willow riparian corridors, such as those found in the Llano Seco area.

A.5.4 Life History

A.5.4.1 Seasonal Patterns

In California on the Sacramento River, western yellow-billed cuckoos arrive onto breeding territories and form pairs from late June to mid-July following their northward migration from South America; this is followed by nest building and the raising of young (Halterman 1991). Western yellow-billed cuckoo breeding is restricted to the mid-summer period, presumably due to a seasonal peak in large insect abundance (Rosenberg et al. 1982). Development of young is very rapid with a breeding cycle of only 17 days from egg-laying to fledging. Following a relatively short period of post-fledging juvenile dependency, cuckoos migrate out of California from about mid-August to early September. The western yellow-billed cuckoo then migrates to South America during the nonbreeding season; therefore, it is not present in the Plan Area between October and May.

A.5.4.2 Nest Site Selection

Along the Sacramento and Feather rivers, the primary factors influencing nest site selection include the presence of cottonwood/willow riparian forest, patch size, and the density of understory vegetation. Little is known about western yellow-billed cuckoo nesting density and spacing; however, in an area of extensive cottonwood foraging habitat with extremely restricted willow and English walnut nesting habitat along the Sacramento River, nests were placed as close as 200 feet apart; indicating that they are capable of nesting in close proximity to one another (Laymon 1980).

A.5.4.3 Reproduction

The western yellow-billed cuckoo pair usually constructs a nest of twigs anywhere from 5 to 40 feet above the ground in dense canopy cover. Clutch size is usually three to four eggs, and rarely five (Bent 1940). Both males and females incubate the eggs for an incubation period of 10 to 11 days (Hamilton and Hamilton 1965). Both parents also share brooding duties and provide their young with food. Young yellow-billed cuckoos develop very rapidly and fledge six to eight days after hatching. Parental care continues for an additional three to four weeks before the southern migration begins (Halterman 1991). If prey is abundant, western yellow-billed cuckoos will increase their clutch size and lay eggs in nests of other yellow-billed cuckoo pairs and other species (Fleischer et al. 1985, Laymon 1998, Hughes 1999).

A.5.4.4 Foraging Behavior and Diet

Food resources significantly affect western yellow-billed cuckoo reproductive success, and food availability can vary greatly from year to year (Laymon et al. 1997). Cuckoos forage within the riparian canopy primarily on slow-moving insects, including green caterpillars (primarily sphinx moth larvae) (44.9 percent), katydids (21.8 percent), tree frogs (23.8 percent), and grasshoppers (8.7 percent). The yellow-billed cuckoo diet also includes cicadas, dragonflies, butterflies, moths, beetles, and spiders (Laymon et al. 1997). Primary yellow-billed cuckoo food items, such as sphinx moth larvae, are associated with cottonwood trees; hence the high reported use of cottonwood trees as cuckoo foraging habitat (Laymon and Halterman 1985).

A.5.5 Threats

A.5.5.1 Habitat Loss and Fragmentation

Historical western yellow-billed cuckoo declines are attributed primarily to the removal of riparian forests in California for the purposes of agricultural and urban expansion. Currently, habitat loss and degradation continues to be the most significant threat to remaining western yellow-billed cuckoo populations. Bank stabilization and flood control projects, urbanization along edges of watercourses, agricultural activities, and river management that alters flow and sediment regimes contribute to the loss of yellow-billed cuckoo habitat. Nesting cuckoos are also sensitive to habitat fragmentation that reduces patch size to less than 325 by 1,000 feet (Hughes 1999).

A.5.5.2 Pesticides

Agricultural pesticides can pose a long-term threat to the yellow-billed cuckoo, as pesticides may affect yellow-billed cuckoo behavior and cause death or potentially affect prey populations (Hughes 1999).

A.5.5.3 Predation

Predation is a significant source of nest failures, which have been recorded at 80 percent in some areas (Hughes 1999). Fragmentation of occupied habitats could make nest sites more accessible and more vulnerable to predation by red-tailed hawks and Cooper's hawks.

A.5.6 Relevant Conservation Efforts

Few conservation efforts are currently directed toward western yellow-billed cuckoos in California. The most significant conservation and research efforts involve Audubon California's Kern River Preserve and actions associated with the Lower Colorado River Multi-Species Conservation Program. Protection and restoration of riparian systems can potentially preserve or create habitat for yellow-billed cuckoos. Western yellow-billed cuckoo is a covered species or a proposed covered species in several regional conservation plans in the Central Valley region of

California including the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, the Yolo County Natural Heritage Program Plan, and the Bay Delta Conservation Plan.

A.5.7 Species Habitat Suitability Model

A.5.7.1 Nesting Habitat

Nesting habitat includes all patches of cottonwood-willow riparian forest and dredger tailings with riparian land cover types with a patch size of at least 25 acres located along the Sacramento River and the Feather River downstream of State Highway 70.

A.5.7.2 Assumptions

The western yellow-billed cuckoo is a riparian obligate species. Its primary habitat association is willow-cottonwood riparian forest, but other species such as alder (*Alnus glutinosa*) and box elder (*Acer negundo*) may be an important habitat element in some areas, including occupied sites along the Sacramento River (Laymon 1998). Canopy cover is typically dense (averaging 97 percent at the nest) and large patch sizes (generally greater than 50 acres) are typically required (Laymon 1998). Cuckoos may also nest in smaller patches of habitat. A patch size of at least 25 acres was selected based on values used for the Lower Colorado River Multi-Species Conservation Strategy (LCR MSCP 2004). Nesting habitat is considered to be limited to patches of habitat along the Sacramento and Feather Rivers because these locations are within the known historical nesting range of the species. Patches of cottonwood-willow riparian forest of at least 25 acres located along the Feather River upstream of State Highway 70 are adjacent to urban lands and, therefore, are excluded from the model because urban-related disturbances would render these patches unsuitable for nesting.

A.5.8 Recovery Plan Goals

A recovery plan has not been prepared for the western yellow-billed cuckoo, and recovery goals have not been established for the species.

A.5.9 References

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