

## FIVE-YEAR STATUS REPORT

- I. COMMON NAME: Western Yellow-billed Cuckoo  
SCIENTIFIC NAME: Coccyzus americanus occidentalis  
CURRENT CLASSIFICATION: Threatened
- II. RECOMMENDED ACTION:
- Change Threatened classification to Endangered
- III. SUMMARY OF REASONS FOR RECOMMENDED ACTION:

The Threatened classification of the Western Yellow-billed Cuckoo (WYBC) was based on the state of knowledge of the status of the bird when it was originally listed in 1971. The results of a major study in 1977 did not give the Department of Fish and Game (DFG) sufficient cause to recommend a change in the classification. However, information which has been obtained since 1977 demonstrates that the WYBC now is in danger of extinction in California. Thus, we recommend that the classification be changed to Endangered.

IV. NATURE AND DEGREE OF THREAT:

The major threat to the continued existence of the WYBC in California continues to be the loss or degradation of its habitat. The WYBC is a breeder in mature, floodplain riparian forests. This vegetative community type has suffered since the late 1800's by being cut or cleared for fuel or agriculture. "Reclamation, flood control, and irrigation projects accelerated this loss...." (Gaines and Laymon 1984).

The WYBC had been in a precarious position along the lower Colorado River prior to the flooding which began in 1983, due to destruction of riparian forests as part of "reclamation" activities. The high water flows of 1983-1986 have inundated many of the remaining stands of cottonwoods (Populus sp.) and willows (Salix sp.), causing growth retardation or death of mature riparian stands.

In addition to the decline in the lower Colorado River region the WYBC declined in all other regions of the state as suitable habitat was lost. The Sacramento Valley, San Joaquin Valley, and south coast regions all were once strongholds of the WYBC, as was the lower Colorado River. The Sacramento, San Joaquin, and Santa Ana rivers, as well as their major tributaries, have become managed rivers with little riparian vegetation remaining.

The current situation in California and throughout the western states has prompted the U.S. Fish and Wildlife Service (FWS) to consider listing the Western Yellow-billed Cuckoo as Endangered.

The effects of pesticides (particularly insecticides) on the food supply of the cuckoo has not been documented, but is suspected of contributing to the decline of the WYBC. Heavy use of chlorinated hydrocarbon insecticides was popular in the 1940's and 1950's, when aerial spraying became common in fields, orchards, and riverbottoms (Gaines and Laymon 1984, citing others).

Pesticides also may be a factor in eggshell thinning in the WYBC. On the south fork of the Kern River, the average eggshell collected from seven WYBC nests in 1985 and 1986 was 21% thinner than the average pre-1940 (pre-DDT use) eggshell (Laymon et al. 1987). This significant difference is a cause for concern. "While it does not appear to [affect] hatchability of the eggs that are laid, it is possible that thinner eggshells could break during the laying process, thus leading to higher female mortality or lower egg production. It is also possible that energy stress brought on by the egg laying process could lead to metabolization of persistent pesticides and lethal or sublethal poisoning in female cuckoos" (Laymon et al. 1987).

#### V. HISTORIC AND CURRENT DISTRIBUTION:

The WYBC was known as a breeder in all regions of the state except the central and northern Sierra Nevada, the Great Basin, and the Colorado Desert. These regions include north coast, central coast, south coast, Klamath-Modoc, Sacramento Valley, San Joaquin Valley, southern Sierra Nevada (south fork of the Kern River), Mojave Desert, and lower Colorado River.

In 1977 a survey conducted for the DFG found the WYBC in the following six areas: Sacramento Valley, Kern River, Owens Valley, Amargosa River, Santa Ana River, and lower Colorado River (Gaines and Laymon 1984).

In 1986 a survey conducted for the DFG in southern California (from the Kern River south) found the WYBC breeding only in the following four areas: Kern River, Amargosa River, Santa Ana River, and lower Colorado River (Laymon and Halterman 1987). A survey in 1987 in northern California (from the Kern River north) completed the determination of the status of the WYBC in the state and found the WYBC breeding only along the south fork of the Kern River, along the Sacramento River in Butte, Glenn, and Colusa counties, and along the Feather River in Sutter County (Laymon and Halterman 1987).

The dramatic decline of WYBC habitat and associated population decline along the lower Colorado River may be affecting migration patterns and limiting the number of potential colonists which might reoccupy habitat from which the WYBC has been extirpated or which might supplement reproduction in outlying areas (S. Laymon pers. commun.).

Outside of California the WYBC historically was a breeder from southwestern British Columbia and western Washington to southern Idaho,

western Texas, northern Mexico, and northern Baja California. It migrates through Mexico and Central America to a probable winter home in South America.

#### VI. HISTORIC AND CURRENT ABUNDANCE:

Before 1977 there was no estimate of WYBC numbers in California. "An educated guess, based on an estimated reduction of California riparian habitat from 775,000 acres in the 19th century to 12,000 acres, places the figure at a minimum of 15,000 pairs in California" (FWS 1985). In 1977 the estimate for the state was 205-214 pairs, according to Gaines (1977) and Gaines and Laymon (1984). Laymon and Halterman (1987) have recalculated the 1977 estimate as 122-163 pairs.

Based on the statewide survey of the WYBC in 1986 and 1987, it is estimated that the California breeding population is 31-42 pairs, a decline of 66-81% from the 122-163 pairs in 1977 (Laymon and Halterman 1987).

#### VII. SPECIES DESCRIPTION AND BIOLOGY:

The WYBC is a member of the avian Family Cuculidae, which includes cuckoos, roadrunners, and anis. The WYBC is one of two subspecies of the Yellow-billed Cuckoo, which also breeds from North Dakota, Minnesota, and the southern part of eastern Canada south to eastern Colorado, Louisiana, Florida, various islands in the Caribbean Sea, and eastern Mexico. The Yellow-billed Cuckoo is a bird of "[o]pen woodland, especially where undergrowth is thick, parks and riparian woodland (breeding); forest, woodland and scrub (nonbreeding)" (Amer. Ornithol. Union 1983).

The WYBC is a slender brown bird with white underparts. In flight its wings show rufous or cinnamon color, and its tail shows black with white spots.

The nest of the WYBC typically is on the horizontal branch of a tree willow, in a location hidden from view from the ground or from surrounding trees. Nests have two to four eggs. Food items brought to the nest include katydids, green caterpillars, tree frogs, and grasshoppers (Laymon *et al.* 1987).

#### VIII. HABITAT REQUIREMENTS:

Although the WYBC has nested in walnut orchards in the Sacramento Valley (Laymon 1980), its natural nesting habitat is in deciduous riparian forest and woodland of a cottonwood-tree willow composition. The population of the WYBC on the south fork of the Kern River, which may be the only population in California which has not declined since 1977, nests in a forest and woodland with the following three dominant tree species: Red Willow (*Salix laevigata*), Yellow Willow (*S. gooddingii*), and Fremont Cottonwood (*Populus fremontii*) (Laymon *et al.* 1987). The WYBC may prefer to nest in the willows but forage in the cottonwoods.

"Height and dispersion of trees [in WYBC habitat] seem less important than foliage density. [The birds] occupy scattered groves and thickets as well as unbroken expanses of forest. Saplings 3-10 m in height and old-growth trees 10-27 m in height are both used. Dense foliage, especially within 10 m of the ground, is common to all areas. Forests with taller trees have well-developed leafy understories. Dense low-level foliage is an important factor in the selection of nesting territories" (Gaines and Laymon 1984).

Willows and cottonwoods depend on ground water near streams. At least subsurface water must be available during a year's dry period, in order for trees to maintain their productivity. The willows and cottonwoods of WYBC habitat live on the floodplains of rivers which regularly are changing their courses and overflowing their banks, eliminating some trees but creating habitat for others. Rivers which lose this character may support trees, but not the willow-cottonwood mix preferred by the WYBC. Thus, periodic flooding, accompanied by erosion and deposition of soil, probably is a characteristic of WYBC habitat.

A healthy willow-cottonwood forest offers habitat not only for the WYBC but for its food, the caterpillars, katydids, other large insects, and tree frogs. Pesticides sprayed over or on agricultural lands adjacent to forests can be transferred to the forests by wind or water and severely limit WYBC food sources.

Other features of WYBC habitat which must be considered are humidity and habitat breadth. In California, as in the rest of the arid west, the WYBC nests in riverbottoms, swampy areas, and damp thickets in which humidity is high. The maintenance of surface water, such as in oxbows, sloughs, and marshes, is critical. "Channelization and flood control have stopped rivers from changing their courses, thus arresting the process by which riparian oxbows and marshes are formed" (Gaines and Laymon 1984).

Habitat breadth may be another important feature of WYBC habitat. In California, very few WYBC are found in habitats less than 100 m wide and 10 ha in area.

#### IX. CURRENT AND RECOMMENDED MANAGEMENT:

The protection of riparian habitat known to support the WYBC is the most important management task in the conservation of the bird. This would involve acquisition, protective easement, and restoration at tens of sites along the Sacramento River alone, but would be equally necessary on the San Joaquin, Santa Ana, and lower Colorado rivers. The DFG, U.S. Army Corps of Engineers (COE) and the U.S. Bureau of Reclamation (USBR) must cooperate in these efforts. Along the lower Colorado River there is a great need for a cooperative program among the DFG, Arizona Department of Game and Fish, and the USBR to take immediate steps to protect what little riparian habitat is remaining and to restore large acreages. The USBR must recognize that it bears a major responsibility for the maintenance in perpetuity of WYBC and other wildlife populations along the river by regulating flows to protect habitat and by financing restoration projects.

A strong agreement should be developed with the COE aimed at reducing the number of bank protection projects along the Sacramento River and enhance riparian habitat values. Mitigation for those projects which are built in riparian habitat should include acquisition of habitat of equal or similar value to the WYBC and other wildlife at the ratio of at least 2:1. In addition, the DFG and FWS should work with the COE to change operational policy to allow riparian vegetation to grow on already rip-rapped banks; the COE should construct in-stream structures to prevent the undercutting of banks, thus precluding the need to rip-rap.

On the Sacramento River, the DFG should support efforts to preserve and enhance the remaining acreage of riparian forests.

The restoration of riparian habitat should include the planting of willows and cottonwoods. At the Kern River Preserve of The Nature Conservancy (TNC) on the south fork of the Kern River, a cooperative program of the DFG and TNC to restore habitat began in 1986. This program is continuing in 1987, with the DFG contributing state endangered species tax check-off funds for the second consecutive year. TNC is actively soliciting funding to continue the program in subsequent years.

Other management needs within the habitat of the WYBC are control of salt-cedar (Tamarix sp.), especially along the lower Colorado River; control of Giant Reed (Arundo donax), especially on the Santa Ana River; elimination of grazing by cattle, and strict control of the application of pesticides within or immediately adjacent to riparian areas.

Research should be continued on the nesting biology of the WYBC, as well as on site tenacity, individual longevity, reproductive success, home range, territory size, territory overlap, habitat preferences, food sources, and foraging substrates. This information is needed for successful preserve design and habitat management. These factors have begun to be investigated on the south fork of the Kern River (Laymon and Halterman 1985, 1986).

The determination of the statewide status of the WYBC should be done at least every three years, to ascertain population trends.

The DFG has encouraged the FWS to develop a listing package for the WYBC. It is our judgment, based upon knowledge of its status in California, as well as in the Pacific Northwest and Arizona, that the WYBC deserves a federal classification as Endangered. The advantage of such a classification is that federal agencies which permit, finance, or undertake projects would be required to avoid or compensate for impacts to the WYBC and its habitat. In addition, the habitat on non-federal lands would have a measure of protection under the federal Endangered Species Act, if an action to destroy or alter WYBC habitat on these lands required federal approval, funding or a permit. No such habitat protection is available under the California Endangered Species Act.

The DFG has learned from the FWS (David Harlow, pers. commun.) that it has prepared a listing package, in response to a petition for listing submitted to the FWS in May 1986. The petitioners were the Western Field Ornithologists, Animal Protection Institute, Defenders of Wildlife (California/Nevada office), Sacramento River Preservation Trust, Friends of the River, The Planning and Conservation League, Davis Audubon Society, Sacramento Audubon Society, and the Sierra Club (National Wildlife and Endangered Species Committee). The substance of the listing package is that the Yellow-billed Cuckoo, regardless of its sub-specific designation, should be classified as Endangered west of the Continental Divide.

A recovery plan which would incorporate elements of the management needs discussed herein should be prepared.

In summary, the management needs of the WYBC in priority are as follows:

1. Protection of riparian forests and woodlands through acquisition, easement, and mitigation.
2. Cooperation of the COE and USBR in minimizing impacts to existing habitat and in developing programs to restore habitat.
3. Restoration of habitat through planting, control of exotic vegetation, elimination of grazing, and elimination of the application of pesticides within or adjacent to riparian areas.
4. Classification of the WYBC as Endangered by the federal government.
5. Continued research on the breeding biology and other life history requirements of the WYBC.
6. Preparation of a recovery plan which would incorporate the elements of protection and restoration of habitat, cooperative programs, and surveys and studies.
7. Periodic surveys (at least every three years) to determine the statewide status of the WYBC, in terms of distribution and numbers.

#### X. SOURCES OF INFORMATION:

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XI. REPORT PREPARED BY:

Nongame Bird and Mammal Section  
Wildlife Management Division  
California Department of Fish and Game

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XII. CONTACT FOR FURTHER INFORMATION:

John R. Gustafson  
Nongame Bird and Mammal Section  
916-322-1260

XIII. DRAFT REPORT REVIEWED BY:

David L. Harlow  
Endangered Species Office  
U.S. Fish and Wildlife Service  
Sacramento, CA

Stephen A. Laymon  
Department of Forestry and Resource Management  
University of California  
Berkeley, CA