Yellow-billed Cuckoo (*Coccyzus americanus*)

NMPIF level: Biodiversity Conservation Concern, Level 1 (BC1)

NMPIF Assessment score: 13

NM stewardship responsibility: Low

National PIF status: No special status

New Mexico BCRs: 16, 18, 34, 35

Primary breeding habitat(s): Middle-elevation Riparian, Southwest Riparian

Other habitats used: Agricultural, Urban

Summary of Concern

Yellow-billed Cuckoo is a riparian species that has experienced significant declines in recent decades, particularly in the western United States. In New Mexico, the species is found in riparian zones with dense understory vegetation, most commonly in the south and along major drainages. It is vulnerable to loss, fragmentation, and degradation of riparian habitat, and to broad-scale clearing of exotic vegetation along the Pecos River where nesting in salt cedar is common.

Associated Species

Cooper's Hawk, Red-headed Woodpecker (BC1), Brown-crested Flycatcher, Yellow Warbler, Summer Tanager (SC2), Indigo Bunting, Painted Bunting (BC1), Bullock's Oriole (SC2)

Distribution

Yellow-billed Cuckoo breeds from southern Canada to south Texas and Florida across almost all of the eastern United States, and in scattered locations throughout the west from California to the Rocky Mountain States. Historically, the western distribution of this species was larger and less fragmented. In the 20th century, it became extirpated from British Columbia, Washington, and Oregon, and California populations have dwindled to near zero. The breeding range also extends south to central Mexico along both the Pacific and Atlantic slopes, and to parts of the Yucatan Peninsula and the Greater Antilles. Yellow-billed Cuckoos winter primarily in South America east of the Andes (Hughes 1999).

In New Mexico, Yellow-billed Cuckoos breed along the major river valleys, including the San Juan, Rio Grande, Pecos, Canadian, San Francisco, and Gila Rivers (Howe 1986). The species also occurs in numerous smaller drainages plus isolated wetlands, isolated woodlands, and suburban plantings. It is found statewide but is far more common in the southern half of New Mexico (Williams and Travis 2005).

Ecology and Habitat Requirements

Yellow-billed Cuckoo occupies a wide array of vegetation types across its large geographic range, but generally prefers open woodland with clearings and low, dense, scrubby vegetation. In the southwestern United States, it is most associated with riparian woodlands dominated by Fremont cottonwood or dense mesquite (Hamilton and Hamilton 1965, Howe 1986). Cuckoos prefer mature or late-successional cottonwood/willow associations with a dense understory. In parts of the west, they also breed in orchards adjacent to river bottoms. Habitat in New Mexico may be primarily native, mixed native and exotic, or primarily exotic plant species, the latter including riparian salt cedar, orchards, and ornamental/shade plantings (Williams and Travis 2005).

Nesting activity in New Mexico begins in May, and generally occurs in large groves of broad-leafed deciduous trees. In the Pecos River valley, Yellow-billed Cuckoos commonly nest in areas dominated by salt cedar, and reach highest densities in areas of taller trees (Howe 1986, pers. comm.). Elsewhere, nests are often placed in willow, Fremont cottonwood, or mesquite; also hackberry, soapberry, or other deciduous vegetation. In native riparian habitat along the Gila River, breeding is confined to areas of tallest trees and densest understory vegetation (Stoleson and Finch 1998). Here, nests are placed at a range of heights (2.7-18.8m) in deciduous trees often overgrown with vines and well concealed by surrounding or overhanging foliage (S. Stoleson, pers. comm.). In the Gila River area, habitat patches as small as 3 ha may be used, though more generally the species is considered sensitive to fragmentation and prefers larger patches of 40 ha or more (Stoleson and Finch 1998).

Typical clutch size is 2-3, and a single brood per season is raised. Yellow-billed Cuckoos feed primarily on large insects, particularly caterpillars, and initiation of breeding may be synchronized with cicada or tent caterpillar outbreaks (Hughes 1999). Along the Gila River in New Mexico, opportunistic foraging observations indicated that the diet of Yellow-billed Cuckoos might include a much larger proportion of vertebrates (mostly Urosaurus lizards and tree frogs) than reported elsewhere: about 10% of all (n = 92) prey items identified (S. Stoleson, pers. comm.). Local populations may be highly variable based on food availability (Eaton 1988). Yellow-billed Cuckoos are generally present in New Mexico from early/mid-May through mid-September (Williams and Travis 2005).

Conservation Status

Species Assessment

DISTRIBUTION	2
THREATS	4
GLOBAL POPULATION SIZE	2
LOCAL POPULATION TREND	4
IMPORTANCE OF NEW MEXICO TO BREEDING	1
COMBINED SCORE	**13**

Yellow-billed Cuckoo is a Biodiversity Conservation Concern, Level 1 species for New Mexico. From NMPIF, it receives high vulnerability scores of 4 for threats to breeding in the state and local population trend. For western populations, Yellow-billed Cuckoo is a U.S. Fish and Wildlife Service (2002) Bird of Conservation Concern.

Population Size

Size of the New Mexico population is unknown. PIF estimates a species population of 9.2 million, and that New Mexico holds far less than 1% of the species population. Hughes (1999) cites an estimate of 100-200 pairs remaining in New Mexico. Population estimates derived from systematic surveys in the early 1980s suggested a minimum of at least 1,000 pairs statewide, with largest populations in the lower Pecos, Middle Rio Grande, and Gila valleys. Surveys since 2002 suggest that numbers in the Rio Grande study area have since declined (Williams and Travis 2005).

Density estimates for three plots in Arizona were 8.2, 19.8, and 26.5 pairs/40 ha (Carothers et al. 1974). In New Mexico, density estimates (pairs/40 ha) in 1982-1984 were: 5-7 in the Pecos Valley; 8-15 in the Rio Grande valley from Espanola to Bernalillo; 1-9 in the Rio Grande valley from Bernalillo to Bosque del Apache; and 3.5-9.5 in the Rio Grande valley from Bosque del Apache to La Jolla (Howe 1986). Density estimate along the Gila River was 8-25 pairs/40 ha, depending on patch and year (S. Stoleson, pers. comm.).

Population Trend

Although the overall population size of this species remains large, local populations in many areas have decreased dramatically. Major declines among western populations in twentieth century are attributed to habitat loss and fragmentation (Laymon and Halterman 1989). Although once considered a common nester in Arizona river bottoms, fewer than 50 pairs were estimated present in the state in the early 1990s (Ehrlich et al. 1992). The greatest declines have been in California, from an estimated 15,000 pairs in late nineteenth century to a few dozen pairs by the mid-1980s (Howe 1986, Hughes 1999).

New Mexico populations likely peaked in the 1960s and have declined since. This species is not well-surveyed by BBS in New Mexico, or in general, but existing regional BBS data illustrate downward trends and sparse distribution in the west and southwest. Survey-wide, there has been a strong and significant negative trend, particularly since 1980 (annual trend = -2.2, p = 0.00, n = 1699). BBS data for 1966-2004 are:

	Annual Trend (%)	P-value	Number of Routes
New Mexico	-9.6	0.08	9
FWS Region 2	-1.9	0.00	227
Western BBS	-3.2	0.14	20

Threats

Historical declines in New Mexico have been associated with loss or degradation of riparian habitat. Losses have been due to inundation from water management projects, lowering of the water table, urbanization, agricultural conversion, and excessive cattle grazing. Such intrusions caused the loss of habitat for up to 1,000 pairs along the Pecos River from the 1960s to the 1980s (Howe 1986). Recently, salt cedar eradication has further reduced the breeding cuckoo population along the Pecos. Williams and Travis (2005) suggest that salt cedar removal in the Pecos and other drainages represents the greatest threat to the species in New Mexico.

Management Issues and Recommendations

Management for Yellow-billed Cuckoo in New Mexico should focus on preservation of riparian woodland habitat, including areas dominated by exotic vegetation where extensive cuckoo breeding may occur.

NMPIF Recommendations

- Protect known cuckoo nesting areas from disturbance and habitat alteration.
- Maintain a high tree canopy with a well-developed low- and mid-story in riparian woodland habitat.
- Survey prior to salt cedar removal, and avoid eradication projects in areas where significant numbers of cuckoos are nesting in exotic vegetation.

- Maintain or enhance cottonwood/willow associations where appropriate along the lower Pecos River (Fort Sumner south) and Middle Rio Grande Valley (Espanola to La Joya excluding urbanized areas).
- Regenerate potential cuckoo habitat near existing habitat, using cottonwood and willow pole plantings.
- Graze riparian areas that meet habitat requirements lightly or in ways which do not destroy the density of the understory.
- Encourage revegetation efforts below Caballo Dam on the Rio Grande.

Species Conservation Objectives

NMPIF Objectives

- Maintain a breeding density of 3 pairs/40 ha in non-urbanized areas of the Middle Rio Grande valley and along the Lower Pecos River (Howe 1986).
- Maintain a breeding density of 1 pair/40 ha along the San Juan River and in urbanized stretches in the Middle Rio Grande valley (Howe 1986)

Sources of Information

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