

Costa's Hummingbird (*Calypte costae*)

NMPIF level: Biodiversity Conservation Concern, Level 2 (BC2)

NMPIF assessment score: 15

National PIF status: Watch List

New Mexico BCRs: 34, 35

Primary breeding habitat(s): Montane Shrub, Chihuahuan Desert Shrub

Other habitats used: Southwest Riparian

Summary of Concern

Costa's Hummingbird is a desert scrub species of the southwestern United States and northern Mexico, with only a limited and irregular presence in southern New Mexico. It is reliant on nectar-producing native vegetation along the interface of desert and foothill/montane shrub habitats.

Associated Species

Common Poorwill, Gray Vireo (SC1), Rufous-crowned Sparrow

Distribution

Costa's Hummingbird is resident in much of southern California and all of Baja California, and portions of southwest Arizona and northwest Sonora. Breeding populations extend farther north and east to southern Nevada and southwest Utah, central Arizona, and southwest New Mexico. The winter range extends south to Sinaloa and Nayarit along the Pacific coast and adjacent inland areas (Baltosser and Scott 1996).

In New Mexico, Costa's Hummingbird is an uncommon and sporadic breeder in the southwest and south-central mountains. It occurs most regularly in Guadalupe Canyon, and in side canyons along the lower Gila River from Cliff south. It may be irregular in other small desert ranges, especially in the San Andres mountains in Dona Ana county (Parmeter et al. 2002).

Ecology and Habitat Requirements

Costa's Hummingbird is primarily a desert scrub species of the Sonoran and Mojave deserts, particularly along washes, canyons and rocky slopes. Where riparian and desert shrub habitats interface, it often remains in the more xeric areas. In Arizona, it occurs in a variety of typical Sonoran Desert vegetative associations, including areas dominated by paloverde, acacia, cholla and columnar cacti. At the eastern limit of its breeding range in New Mexico, it occupies more characteristic Chihuahuan Desert Shrub and foothill/montane shrub habitats. Costa's Hummingbird appears to have limited adaptability to non-native vegetation and hummingbird feeders (Baltosser and Scott 1996).

This species is an early breeder, generally starting in mid-January, peaking in March, and leaving breeding areas by June. Breeding in New Mexico may be restricted to years with a relatively wet spring. Nests are typically placed fairly low, 3-7 ft above the ground in either living or dead material. In Guadalupe Canyon, Costa's Hummingbirds nest on xeric hillsides adjacent to riparian areas. Nests are placed in small trees including oaks, netleaf hackberry and one-seed juniper (Baltosser 1986, 1989). This species is an opportunistic nectar-feeder, and often leaves desert areas from June-October when nectar supplies are low. In southern New Mexico it visits ocotillo, desert honeysuckle, Mojave beardtongue, superb penstemon, coralbean and New Mexico thistle (Baltosser 1986).

Conservation Status

Species Assessment

DISTRIBUTION	5
THREATS	3
GLOBAL POPULATION SIZE	3
LOCAL POPULATION TREND	3
IMPORTANCE OF NEW MEXICO TO BREEDING	1
COMBINED SCORE	15

Costa's Hummingbird is a Biodiversity Conservation Concern, Level 2 species for New Mexico, with a combined vulnerability score of 15. At the continental level, it receives a maximum PIF vulnerability score of 5 for its very small distributional range. Costa's Hummingbird is listed as threatened in the state of New Mexico.

Population Size

PIF estimates a species population of 3.6 million, 50% of which occurs in the United States. Size of the breeding population in New Mexico is unknown but thought to be very small, and variable from year to year.

Population Trend

This species is not well sampled by BBS, and no data exist for New Mexico. Range-wide BBS data (mostly from California) show stability over the 1966-2004 period, but significant declines since 1980 (annual trend = -4.9, $p=0.05$, $n=48$). NMPIF assigns a score of 3, indicating that local population trends are uncertain.

Threats

In California, Costa's Hummingbird shows some adaptability to agricultural and urban habitat, but overall loss or modification of native desert scrub is the main threat to this species. Most serious threat may be clearing of desert scrub and other native vegetation for planting South African buffelgrass for cattle forage, primarily in Sonora (Yetman and Burquez 1994). Also present in Arizona, this drought-resistant grass increases fire frequency and can eliminate native plants that are not fire-adapted (D'Antonio and Vitousek 1992). As a state breeder in New Mexico, Costa's Hummingbird is vulnerable due to its small and variable population size and limited distribution. NMPIF assigns a score of 3, indicating a moderate degree of perceived threat to breeding in New Mexico.

Management Issues and Recommendations

Management for Costa's Hummingbird in New Mexico should focus on maintaining native desert shrub vegetation in known or suspected breeding areas.

NMPIF Recommendations

- Protect and encourage native vegetation, especially tubular flowering forbs.
- Discourage use of fire in known or suspected breeding areas, particularly if high amounts of non-native grasses are present.
- Manage grazing as needed to maintain healthy shrub and riparian habitat in Guadalupe Canyon and slopes above the lower Gila Box.

Species Conservation Objectives

PIF Objectives

The PIF North American Landbird Conservation Plan places Costa's Hummingbird in the conservation action category Long-term Planning and Responsibility and sets a continental population objective of maintaining or increasing the current population over the next 30 years.

NMPIF Objectives

- Maintain a regular breeding population at Guadalupe Canyon and at least one other location in New Mexico.

Sources of Information

Baltosser, W. H. 1986. Nesting success and productivity of hummingbirds in southwestern New Mexico and southeastern Arizona. *Wilson Bull.* 98:353-367.

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D'Antonio, C. M., and P. M. Vitousek. 1992. Biological invasions by exotic grasses, the grass/fire cycle, and global change. *Annual Rev. Ecol. Syst.* 23:63-87.

Parmeter, J., B. Neville, and D. Emkalns. 2002. *New Mexico Bird Finding Guide*. New Mexico Ornithological Society, Albuquerque, NM.

Yetman, D., and A. Burquez. 1994. Buffelgrass-Sonoran Desert nightmare. *Arizona Riparian Council Newsletter* 7(3):1, 8-10.