

## **Cordilleran Flycatcher (*Empidonax occidentalis*)**

NMPIF level: Species Conservation Concern, Level 2 (SC2)

NMPIF assessment score: 15

NM stewardship responsibility: High

National PIF status: No special status

New Mexico BCRs: 16, 34, 35

Primary breeding habitat(s): Spruce-Fir Forest, Mixed Conifer Forest, Ponderosa Pine Forest, Montane Riparian

### **Summary of Concern**

Cordilleran Flycatcher is experiencing widely variable population trends across its breeding range in the United States, and appears to be declining overall. In New Mexico, the species is found primarily in higher elevation coniferous forest near water. It may be vulnerable to the loss, fragmentation, and degradation of coniferous forest and associated riparian breeding habitat. Basic research on this species is lacking.

### **Associated Species**

Spotted Owl (SC1), Red-naped Sapsucker (SC2), Warbling Vireo (SC2), Violet-green Swallow, Hermit Thrush, Orange-crowned Warbler

### **Distribution**

Cordilleran Flycatcher breeds from the Rocky Mountains of central Alberta south through Idaho, western Montana, southeastern Washington, northeastern Oregon, Wyoming, Nevada, Utah, and western Colorado to Arizona and New Mexico. It also breeds on the east side of the Cascade Range in central Oregon south to north-central California, and in southwestern South Dakota, northwestern Nebraska, western Texas, and Mexico (Lowther 2000).

In New Mexico, Cordilleran Flycatcher breeds in the forests of higher mountains statewide, often near water (Parmeter et al. 2002). It is a scarce migrant throughout, but it is more common in the western two-thirds of the state. Often found in riparian or mesic habitats.

## Ecology and Habitat Requirements

Across its range, Cordilleran Flycatcher is associated with cool, shady areas of coniferous forest near water (Lowther 2000). Typical trees in suitable habitat include pine, fir, spruce, and aspen. In New Mexico, the species occupies mixed conifer forest, especially Douglas fir-ponderosa pine-aspen associations, spruce-fir forest, and associated montane riparian areas. It may also be found outside of riparian areas, especially where there is an aspen component.

Rosenstock (1996 – as cited in Latta et al. 1999) in Arizona found significant relationships between several habitat characteristics and the abundance of these birds. They increased with increasing canopy cover, and were most abundant in stands with >50% cover. They were also more abundant in stands with more homogenous canopy. Abundance was also positively correlated with within-stand variability of pine dbh. They increased with snag density, and were most abundant in stands with >3 snags per acre. They were also most abundant in stands with >20% of snags in decay class 2 (Zwartjes et al. 2005). Cordilleran Flycatchers prefer cool, well-structured forests with a dense understory (Zwartjes et al. 2005)

Cordilleran Flycatchers are present in New Mexico from May to September (Parmeter et al. 2002). Breeding activity occurs from late May through July. Nests are placed in a wide variety of natural and man-made cavities, including tree cavities, cliff edges, tree stumps, and buildings (Lowther 2000). Nests are generally close to the ground, with a range of 0.3-4.6 m. Clutch size generally 3 or 4, with a range of 2-5. Second clutches are regular in the closely-related Pacific-slope Flycatcher, but information is lacking for Cordilleran Flycatcher.

## Conservation Status

### Species Assessment

DISTRIBUTION	4
THREATS	3
GLOBAL POPULATION SIZE	3
LOCAL POPULATION TREND	2
IMPORTANCE OF NEW MEXICO TO BREEDING	3
<b>COMBINED SCORE</b>	<b>15</b>

Cordilleran Flycatcher is a Species Conservation Concern, Level 2 species for New Mexico, with a combined vulnerability score of 15. At the continental level, it receives a PIF vulnerability score of 4 for its small non-breeding distribution.

### Population Size

PIF estimates a total species population of 2.6 million, 80% of which occurs in the United States and Canada. The size of the New Mexico population is estimated at 500,000 birds, or 20.6% of the global population. Densities in an Arizona ponderosa pine forest averaged 0.1-0.2 pairs/ha over a 3 year period (Szaro and Balda 1979). Densities in Colorado aspen-ponderosa pine forest were 0.69 birds/ha and 0.12 birds/ha in successive years (Beaver and Baldwin 1975). Density information is lacking for New Mexico.

### Population Trend

BBS data indicate that there may be an overall decrease in the population, but trends are complicated by the fact that Cordilleran Flycatcher and Pacific-slope Flycatcher are not evaluated separately. BBS data trends for states supporting only Cordilleran Flycatcher are widely variable, but appear to be decreasing overall. In New Mexico, the species may be stable. BBS data for 1966-2006 are:

	Annual Trend (%)	P-value	Number of Routes
New Mexico	0.7	0.59	16
FWS Region 2	-0.4	0.52	31
Western BBS	-1.0	0.14	441

### Threats

This species is likely sensitive to the alteration of preferred breeding habitat in higher elevation coniferous forest, including ponderosa pine, fir, and spruce and associated riparian areas. Parasitism by cowbirds is documented (e.g., Chace and Cruz 1996), but the impact on the species is unknown. A lack of knowledge regarding the natural history of Cordilleran Flycatcher complicates the understanding of potential threats.

### Management Issues and Recommendations

This species is of conservation concern in New Mexico because a considerable proportion of the global population breeds in state. Little research has been done on this species in New Mexico or elsewhere, and basic ecological information is lacking. Management for Cordilleran Flycatcher should focus on the preservation of higher elevation coniferous forest and riparian areas.

### **NMPIF Recommendations**

- Maintain healthy conifer forests at high elevations, with diverse structure, especially within riparian areas.
- Maintain healthy montane riparian areas through careful grazing which does not open up understory vegetation.
- Encourage studies that will provide a better understanding of habitat use and preference in New Mexico, including breeding density estimates in different regions and habitat types across the state.

### **Species Conservation Objectives**

#### **NMPIF Objectives**

- Maintain or increase the current breeding population.

### **Sources of Information**

Beaver, D. L., and P. H. Baldwin. 1975. Ecological overlap and the problem of competition and sympatry in the Western and Hammond's Flycatchers. *Condor* 77:1-13.

Chace, J. F., and A. Cruz. 1996. Knowledge of the Colorado host relations of the parasitic Brown-headed Cowbird (*Molothrus ater*). *Colorado Field Ornithol. J.* 30:67-81.

Latta, M. J., C. J. Beardmore, and T. E. Corman. 1999. Arizona Partners in Flight bird conservation plan, version 1.0. Nongame and Endangered Wildlife Program Technical Report 142. Arizona Game and Fish Department, Phoenix, AZ.

Lowther, P. E. 2000. Pacific-slope Flycatcher (*Empidonax difficilis*) and Cordilleran Flycatcher (*Empidonax occidentalis*). *In* The Birds of North America, No. 556 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Parmeter, J., B. Neville, and D. Emkalns. 2002. New Mexico bird finding guide. New Mexico Ornithological Society, Albuquerque, NM.

Rosenstock, S. S. 1996. Habitat relationships of breeding birds in northern Arizona ponderosa pine and pine-oak forests. Tech Rep. No. 23. Arizona Game and Fish Department, Phoenix, AZ.

Szaro, R.C., and R.P. Balda. 1979. Bird community dynamics in a ponderosa pine forest. *Studies in Avian Biology*, Vol.3.

Zwartjes, P. W., J. E. Cartron, P. L. L. Stoleson, W. C. Haussamen, and T. E. Crane. 2005. Assessment of native species and ungulate grazing in the southwest: terrestrial wildlife. Gen. Tech. Rep. RMRS-GTR-142. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO.