

Western Bluebird (*Sialia mexicana*)

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

NMPIF assessment score: 16

NM stewardship responsibility: High

National PIF status: No special status

New Mexico BCRs: 16, 34, 35, (18) (Most in 16)

Primary breeding habitat(s): Pinyon-Juniper Woodland, Madrean Pine-Oak Woodland

Other habitats used: Montane Riparian, Ponderosa Pine Forest

Summary of Concern

Western Bluebird is a cavity-nesting species of woodlands and open forest habitats in the western United States. It has shown sharp declines in New Mexico since 1980, which may be due to habitat changes and/or loss of adequate nest sites.

Associated Species

Ladder-backed Woodpecker, Gray Flycatcher, Ash-throated Flycatcher, Plumbeous Vireo (SC2), Pinyon Jay (SC1), Violet-green Swallow, Mountain Chickadee, Juniper Titmouse (SC1), White-breasted Nuthatch, Black-throated Gray Warbler (SC2), Black-headed Grosbeak

Distribution

Western Bluebird breeds across much of western North America, from southern British Columbia and southwest Alberta south through the Pacific states to Baja California, and from southeast Utah and northern Colorado south to the Central Volcanic Belt of Mexico. It is largely absent from the Great Basin and northern Rocky Mountain regions. The species winters for the most part within or immediately south of its breeding range, except in northern areas (Guinan et al. 2000).

In New Mexico, Western Bluebird is resident in foothill and low mountain areas throughout the state, but most common west of the eastern plains (Parmeter et al. 2002).

Ecology and Habitat Requirements

Western Bluebirds are associated with open coniferous and deciduous woodlands at middle elevations. In Colorado, the largest breeding populations occur in ponderosa pine forests, but the species is also found in pinyon-juniper woodland (Kingery 1998). The reverse may be true in New Mexico, with more breeding occurring in pinyon-juniper and pine-oak habitats, extending in lower numbers into coniferous forest. In all habitats, an open forest structure with extensive area is important. Such structure is often found in burned areas, or areas where moderate logging has occurred. This species requires the presence of some larger trees and snags to provide nest sites and perches. Unlike Eastern and Mountain Bluebirds it avoids large, open meadows (Guinan et al. 2000). In northern Arizona, breeding densities were greatest in moderately thinned ponderosa pine forest with 181 trees/ha and mean tree height of 35-40 feet (Szaro 1976). In mixed pine-fir forest in Arizona, the species was present in treated areas with under 200 trees/ha, but absent in denser forest with over 600 trees/ha (Franzreb 1977). In ponderosa pine and pine-oak forests, abundance was inversely related to canopy cover, and highest where canopy cover was <20% (Rosenstock 1996).

Western Bluebirds nest in cavities in trees or snags, or in cavity-like niches between trunk and bark. In Arizona, densities in logged areas of forest increased sharply with the introduction of nest boxes, suggesting that availability of nest cavities may be a limiting factor for breeding populations (Brawn 1987). A variety of tree species are used for nesting including pines, oaks, aspen, willows, cottonwood, and sycamore. In northern Arizona, snags were preferred over live trees except in areas of very low snag density; tall snags with larger stem diameters were the most favored (Cunningham et al. 1980). Other Arizona studies found preferences for aspen (Li and Martin 1991) and for ponderosa pine snags with mostly intact bark (Horton and Mannan 1988). Nest height is highly variable, depending on habitat type and cavity availability. Breeding begins in April, and a second clutch may be initiated in June-July. Western Bluebirds often move into lowland areas such as riparian woodland during the winter. This species forages for insects during the breeding season, and subsists on small fruit and seeds during the winter (Guinan et al. 2000).

Conservation Status

Species Assessment

DISTRIBUTION	3
THREATS	3
GLOBAL POPULATION SIZE	3
LOCAL POPULATION TREND	4
IMPORTANCE OF NEW MEXICO TO BREEDING	3

COMBINED SCORE**16**

Western Bluebird is a Species Conservation Concern, Level 2 species for New Mexico, with a total assessment score of 16. It receives a high vulnerability score of 4 from NMPIF for a negative local population trend; nationally this species also scores 4 for population trend from PIF.

Population Size

PIF estimates a species population of 1.4 million, and that New Mexico holds about 21% of the species population, or about 300,000 birds. A number of breeding density estimates are available from studies conducted in Arizona: 20 pairs/40 ha in ponderosa pine with 250 trees/ha in the Chiricahua Mountains (Balda 1967); 15 pairs/40 ha in strip cut forest with 181 trees/ha (Szaro 1976); 15-22 pairs/40 ha in burn areas near Flagstaff with low tree densities (Brawn and Balda 1988); 6-11 birds (not pairs)/40ha (Horton and Mannan 1988); and 15 birds/40ha in pine and Gambel oak (Rosenstock 1996).

Population Trend

BBS data for this species show moderate declines range-wide, with increases and decreases in different regions. Trends for New Mexico and for the pinyon-juniper physiographic type have been negative, and New Mexico shows a sharp downward trend occurring since 1980 (annual trend = -4.2, $p = 0.00$, $n = 28$). BBS data for 1966-2004 are:

	Annual Trend (%)	P-value	Number of Routes
New Mexico	-1.3	0.45	28
FWS Region 2	-5.7	0.14	55
Western BBS	-0.8	0.25	286

Threats

Reasons for recent declines in New Mexico are not well understood. Clearing of pinyon-juniper woodland, together with increased tree density in ponderosa pine forest due to fire suppression, have been detrimental to this species. Western Bluebird populations may be adversely impacted by clear-cutting, snag removal, or catastrophic fire, all of which may reduce or eliminate the availability of nest sites, and by fire suppression, which may result in the formation of dense forest unsuitable as breeding habitat. Competition with European Starlings for nest cavities may also be a problem in some areas.

Management Issues and Recommendations

Management for Western Bluebird in New Mexico should focus on maintaining open woodland and forest habitat, with snags and live trees suitable for nesting.

NMPIF Recommendations

- Use controlled and natural burning to prevent dense forest growth, and overgrowth of open areas.
- Avoid clearing of mature pinyon-juniper woodland.
- Avoid snag removal in forest habitat, and preserve older, large, and partially dead trees.
- Retain smaller saplings and scattered shrubs for cover and foraging perches.
- Where warranted, introduce nest boxes to help reverse local population declines due to nest-site limitation.

Species Conservation Objectives

NMPIF Objectives

- Survey and monitor to better understand species status and trends in New Mexico.
- Stabilize and reverse negative population trends.

Sources of Information

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