

**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Animal Abstract**

**Element Code:** ABPBJ15012

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Sialia sialis fulva*

**COMMON NAME:** Azure Bluebird

**SYNONYMS:**

**FAMILY:** Turdidae

**AUTHOR, PLACE OF PUBLICATION:** Brewster, Auk, 2, no. 1, Jan. 1885, p. 85.

**TYPE LOCALITY:** Santa Rita Mountains, Arizona.

**TYPE SPECIMEN:**

**TAXONOMIC UNIQUENESS:** *Sialia sialis fulva* (the pale mexican subspecies of eastern bluebird) is one of eight subspecies in the species *S. sialis*. *Sialia sialis* was in the family Muscicapidae; the elevation of subfamilies to family rank and the new taxonomic order has been adopted by the 1997 American Ornithologist' Union (AOU) "Check-list Committee" (AOU 1997).

**DESCRIPTION:** A small thrush, with a total length of 16-21 cm (6.30-8.27 in); total mass 29-32 g for females, and 28-31 g for males.

**For the species *Sialia sialis*:** "Male has rich blue upperparts, contrasting with red orange throat, breast, and flanks and white lower belly and undertail-coverts. Chin white or red orange. Outer rectrices have narrow white border. Female has blue gray upperparts, with gray brown wash across back; suggestion of white eye-ring on some individuals; wings and tail washed with dull blue; underparts paler orange than on male; white border of outermost rectrix is broader than on male (Dunn 1981). Both sexes have short, stout black bill, slightly notched at tip. Birds in Basic I plumage are generally duller and more grayish; outermost primary-covert lacks blue, is tapered (not pointed), and has broad buff or whitish border (Pitts 1985). Juvenal plumage browner, with white streaking above and dusky spotting below, and white eye-ring; sexes identifiable - males having blue in wing and tail, wing-coverts, and narrower buff border on outermost rectrix (<0.5 mm; Pinkowski 1974c)" (Gowaty and Plissner 1998).

**For the subspecies *S. s. fulva*:** "Large and relatively pale; underparts light rufous cinnamon and contrasting less than *S. s. sialis* with white of lower body; female most brownish on upperparts as compared with outer parts of her body" (Gowaty and Plissner 1998).

**AIDS TO IDENTIFICATION:** Eastern Bluebird (*S. sialis*) has shortest primary extension; Western (*S. mexicana*), and especially Mountain (*S. currucoides*), bluebirds have longer primary extension on folded wing, primaries of Mountain Bluebird extending nearly to tip of tail at rest. Western Bluebirds darker blue above; throat blue or gray; nape often contrasts with brown of back. Underparts of Eastern Bluebird crisper, usually with distinct contrast between white of lower belly and redder color of breast; Western Bluebirds have grayish lower belly, undertail-coverts, and throat. On female Eastern Bluebirds, throat color usually extends to side of neck, unlike on Western and Mountain bluebirds. In addition to having proportionately longer wings, Mountain Bluebirds also have longer bills and legs; in fresh plumage in fall, have more prominent whitish edgings on wing-feathers, but also more reddish on breast, although still grayer than Easterns. (Gowaty and Plissner 1998).

**ILLUSTRATIONS:** Color drawing of species (Peterson 1990: p. 279)  
Color drawing of species (National Geographic 1999: p. 347)  
Color photo of species (Spendelow *in* <http://www.mbr-pwrc.usgs.gov....> 2001)  
Color photo of species (<http://www.ronausting.com/Bluebird72.jpg> 2001)  
Color photo of species (Jeklin *in* <http://birds.cornell.edu/slow/eabl/eablBig.jpg> 2001)

**TOTAL RANGE:** A year-round resident from south-central Arizona (Santa Rita, Pajaritos, and Huachuca mountains) south along the Sierra Madre Occidental to Guerrero, Mexico (AOU Checklist 1957). During breeding season, it is found in the mountains of southern Arizona south to Jalisco, Oaxaco and Vera Cruz, Mexico.

**RANGE WITHIN ARIZONA:** Reported from south-central Arizona in the Santa Rita, Pajarito, Atascosa, and Huachuca mountains. In 1981, the following areas were reported for breeding: Huachuca Mountains west to the Pajaritos; the Chiricahua Mountains; Happy Valley east of the Rincon Mountains in Pima and Cochise Counties; and at Bear Canyon in the Santa Catalina Mountains. Recently (1993, '94, '96 and '97), breeding has been confirmed through the Arizona Breeding Bird Atlas Project in both Pima and Cochise Counties. ([http://mirror-pole.com/apif\\_web/pineoak/pineoak6.htm](http://mirror-pole.com/apif_web/pineoak/pineoak6.htm), 2001).

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**BIOLOGY:** Long Song, Soft Song, and *Tu-a-wee* are the most frequently noted vocalizations. National Geographic (1999) reports call note as a “musical, rising *chur-lee*, extended in song to *chur chur-lee chur-lee*.” Many vocalizations are extremely quiet, with soft, whispering quality-characteristics that may have led to probable underestimates of vocal repertoire. Loud Song by males predominates March through July, most frequently during nest-building and egg-laying; usually stops with onset of incubation. Females sing Loud Song in presence of predators when males are off the territory. Soft Song is given on the

territory in other situations besides advertisement. It may function to assure female of male's presence. *Tu-a-wee* is given in all seasons, but predominates in late nesting season and early fall. Threat displays include Facing, Gaping, and wing-Flicking. Appeasement displays include Turning-Away and Fluffed Posture. (Gowaty and Plissner 1998).

Locomotion consists of walking, hopping, and climbing. Fully drenched individuals and nestlings that have fledged prematurely, are known to climb trees. Flight is irregular; generally low in open areas, about 10-12 m off ground. Longer flights are higher. (Gowaty and Plissner 1998). Blue birds rest often communally on high, protected perches. Adults sleep in nesting cavities or on protected limbs of trees, sometimes communally. Life span of banded birds in South Carolina averaged 6-7 years. (Gowaty and Plissner 1998).

The presence of fruit determines eastern bluebird distribution in winter. Southward migration of eastern bluebird flocks is usually leisurely as the birds search for food. The proportion of eastern bluebirds migrating decreases with decreasing latitude. (USDA, Forest Service 2001).

Predators of *Sialia sialis* include Eastern chipmunks (*Tamias striatus*) and flying squirrels (*Glaucomys volans*) on eggs and young; House Sparrows, European Starlings, black rat snakes (*Elaphe obsoleta obsoleta*), black racers (*Coluber* sp.), fire ants (*Solenopsis invicta*), domestic cats (*Felis domesticus*), black bears (*Ursus americanus*), and raccoons (*Procyon lotor*) on adults, nestlings, and fledglings. American Kestrels (*Falco sparverius*) prey on adults and recent fledglings. (Gowaty and Plissner 1998).

**REPRODUCTION:** Pairs form in breeding-season and nonbreeding-season flocks, so many individuals arrive back on breeding grounds already paired. Territory size reported in BISON (2000) averaged 1.1-5 ac (0.4-2.0 ha). Males broker the access of females to their nesting cavities. Males first perform a nest demonstration display for prospecting females. Pairs are bonded once females enter cavities with males for the first time. (Gowaty and Plissner 1998). Copulation is seldom observed. Many copulations occur in the hour after an egg is laid; birds copulate on perches and sometimes within nesting cavities. (Gowaty and Plissner 1998).

*Sialia sialis* are semicolonial nesters. In South Carolina, nest-building for *Sialia sialis* begins late February or early March (Gowaty and Plissner 1998). The female alone builds the nest over several days; constructing cup nests in natural cavities, crevices and cracks in trees and rocks, and wood-pecker excavated holes and nesting boxes. Nests are often entirely of grasses or pine needles; usually lined with fine grasses, occasionally horse-hair or turkey feathers. Eggs are pale blue, and clutch sizes are 3-5, occasionally 6. Incubation (by female) begins on day of last egg laid, and typically lasts 11-19 days, but generally 14 days. Hatchlings are altricial, with dingy gray down. Both adult female and male will feed young, which will continue about 3 weeks after young have fledged. Young are capable of weak, short-distance flights around day 14, however, average age of nest departure ranges from 17-19 days. (Gowaty and Plissner 1998). Fledglings stay near the nest and each other, roosting together at night. Parents feed the fledglings, who begin to find their own food about 2 weeks after fledging and achieve independence 3 to 3.5 weeks after fledging. (USDA, Forest Service 2001).

Widowed females often continue to raise the brood, often with help from unmated females and immatures (often members of earlier broods). Widowed males attempt to raise broods if nestlings are well feathered; they also often have helpers. (USDA, Forest Service 2001). *Sialia sialis* often produce three broods in one season in the central part of their range. They are single-brooded on the northern periphery, and usually double-brooded elsewhere. (USDA, Forest Service 2001).

**FOOD HABITS:** Insects are consumed during the breeding season (some early maturing fruit may be consumed), and small fruits are preferred during the nonbreeding season, when insect availability is low. *Sialia sialis* are ground foragers that use available perches for staging foraging attempts; usually between 0.5 and 15 m above bare ground, grassy areas, in areas of forest with sparse understory. The diet of eastern bluebirds includes grasshoppers, crickets, katydids, beetles, ants, wasps, bees, bugs, moths, caterpillars, spiders, myriapods, towbugs, snails, and angleworms (Scott and Patton 1989 in BISON 2000).

**HABITAT:** The Azure Bluebird frequents areas of open canopy with scattered trees, forest edges, and burned or cut-over woodlands (DeGraaf and Rappole 1995 in <http://mirror-pole.com>..... 2001). The mid-understory is open and ground cover is mainly forbs and grasses with low foliage and stem densities. Snag density is high, as the species is a secondary cavity nester and uses mature to late succession forest patches for both foraging and nesting. During winter, small flocks may wander from breeding areas and can sometimes be found in the Tucson area, but usually remain in the mountains (Monson 1981, Russell and Monson 1998 in <http://mirror-pole.com>.... 2001). Eastern bluebirds are found in a wide range of plant communities with open overstories and in openings within woodlands. They are usually found at low elevations and are frequently observed in oak (*Quercus* spp.) woodlands. In New Mexico, eastern bluebirds inhabit lowland riparian woodlands (BISON 2000).

**ELEVATION:** Based on recent records in the Heritage Data Management System (HDMS), elevations range from 4,000 to 5,170 ft. (1220 - 1577 m) from three mountain ranges (unpublished data, AGFD 2001). Monson and Phillips (in [http://mirror-pole.com/apif\\_web/pineoak/pineoak6.htm](http://mirror-pole.com/apif_web/pineoak/pineoak6.htm) 2001), report Azure Bluebirds as being “found at elevations of 1000-2000 m (3,280-6,560 ft) in the pine-oak forests of southeastern Arizona.”

**PLANT COMMUNITY:** Oaks are the primary tree species utilized, including Emory, Arizona white, silverleaf and Mexican Blue oaks mixed with some Apache and Chihuahuah pine ([http://mirror-pole.com/apif\\_web/pineoak/pineoak6.htm](http://mirror-pole.com/apif_web/pineoak/pineoak6.htm)). Gowaty and Plissner (1998) report the Eastern Bluebird as a “local residents in live oaks (*Quercus agrifolis*) and nearby pines.” While the USDA, Forest Service (2001), reported that “most natural cavities used for nesting are in oaks or American elm (*Ulmus americana*) stubs.”

**POPULATION TRENDS:** For the species *Sialia sialis*, trends for the entire period 1966 to 1987 are a mosaic of nonsignificant increases and decreases: the southern United States had nonsignificant increases in populations; more northerly regions had significant declines; and seven states showed significant increases (USDA, Forest Service 2001). Factors influencing

eastern bluebird populations include nest site availability, predators, diseases, parasites, pesticides, and land use patterns (USDA, Forest Service 2001). Low nesting success (including nest losses) has been attributed to competition with European starlings (*Sturnus vulgaris*), house wrens, and house sparrows, particularly where natural cavities are scarce (USDA, Forest Service 2001).

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None  
**STATE STATUS:** None  
**OTHER STATUS:** None

**MANAGEMENT FACTORS:** Savannas and open stands are natural bluebird habitat that usually require recurrent fire for maintenance. Prescribed fire is usually beneficial to eastern bluebirds, especially if it controls shrubs and understory hardwoods. It is very probable that few eastern bluebirds die in fires. Adults easily escape fire, and nests and nestlings are only vulnerable to severe fire that destroys nest sites (Prescribed Fire and Fire Effects Research Work Unit 1996 *in* BISON 2000). **For the species *Sialia sialis***, it is recommended to severely limit the removal of lightning- and insect-killed trees in order to provide more snags for wildlife use (USDA, Forest Service 2001). Other recommendations include retention of snags in clearcuts, leaving large snags instead of small ones, and protection of drainage systems by leaving strips of unmanaged forest along creeks to provide cavity trees (USDA, Forest Service 2001). **For the subspecies *S. s. fulva***, management should include low intensity fires which will: 1) “fire prune” oaks, thus making them less susceptible to larger wildfires; 2) result in a mosaic of vegetation; 3) be of such an intensity to maintain openness of habitat, allowing more growth of forbs and grasses; and 4) decrease shrub layer (<http://mirror-pole.com....> 2001).

**Threats:** fuelwood harvesting and degradation and loss of riparian habitat through overgrazing and off-highway vehicle travel. **Management needs include:** control and limit fuelwood harvesting near campgrounds and on public land; reduce riparian grazing to maintain and enhance walnut, sycamore, and cottonwood regeneration; control and minimize off-highway driving in riparian habitats.

Eastern (Azure) Bluebird management issues are listed in italics. Below each issue are the Arizona Partners in Flight Conservation Recommendations. (<http://mirror-pole.com....> 2001).

### *Habitat Loss*

1. Reduce large scale fuelwood cutting, limit certain size take.
2. Implement a nest box program.

### *Grazing*

1. Encourage only light, seasonal grazing.

### *Fire*

1. Increase prescribed (low intensity) burning to maintain mature, cavity-producing trees.

#### **PROTECTIVE MEASURES TAKEN:**

**SUGGESTED PROJECTS:** Research needs include determination of tree size needed for nesting, cavity size and availability, including identification of competitors (starlings?), and cavity height requirements. Nest box programs have been very successful in the eastern United States for bluebirds, but their use in the West is not common. Research is needed on nest box usage to determine if a nest box program should be implemented in certain areas. Since this bird has disappeared from some areas of southeastern Arizona, research on abundance and reproductive success could be useful in determining population centers. (<http://mirrow-pole.com....> 2001).

**LAND MANAGEMENT/OWNERSHIP:** U.S. Forest Service, Coronado National Forest; Department of Defense, Fort Huachuca Military Reservation.

#### **SOURCES OF FURTHER INFORMATION**

#### **REFERENCES:**

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#### MAJOR KNOWLEDGEABLE INDIVIDUALS:

#### ADDITIONAL INFORMATION:

Other species that may use similar habitat components or respond positively to management for the Eastern (Azure) Bluebird are: Northern Goshawk (Apache), Acorn Woodpecker, Stickland's Woodpecker, Northern Flicker, Bridled Titmouse, White-breasted Nuthatch, Montezuma Quail, Black-throated Gray Warbler, Hutton's Vireo, Ash-throated Flycatcher and Scott's Oriole ([http://mirror-pole.com/apif\\_web/pineoak/pineoak6.htm](http://mirror-pole.com/apif_web/pineoak/pineoak6.htm), 2001).

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