Breeding Status and Distribution of Lawrence's Goldfinch in Arizona

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Lawrence's Goldfinch (*Carduelis lawrencei*) is typically a bird of the oak belt in cismontane California and northwestern Baja California. This species breeds sporadically in the southern regions of California, where it prefers riparian and open woodlands of arid and semiarid foothills and valleys, usually near water (Small 1994). Even within their normal California range, the breeding status and distribution of these goldfinches is poorly understood. Lawrence's Goldfinch seasonal distribution is erratic; they may appear in an area to breed (sometimes in considerable numbers) for a season or two, and thereafter not return to that location to nest for a number of years (Small 1994).

Adult female Lawrence's Goldfinch at Boyce Thompson Arboretum, Pinal County 10 April 2005

These goldfinches also stage unpredictable fall and winter incursions into the eastern Sonoran Desert regions, particularly in southern Arizona and northern Sonora (Monson and Phillips 1981, Russell and Monson 1998, Patten 2001). From year to year, their numbers will vary, with some years having large influxes reaching localities as far north in Arizona as the upper Verde River and Oak Creek drainages, east to New Mexico, and occasionally western Texas. Local congregations at favorite foraging areas sometimes contain 150 or more individuals, particularly within the Santa Cruz River valley of southeastern Arizona (Tucson Audubon Society 2004). During other years, the species can be quite scarce or absent in

Arizona, although at least a few individuals were reported in the state every year for the past decade. They are reported most years in the southeastern part of the state, less frequently in central and western regions, and there are less than five records north of the Mogollon Rim. Surprisingly, even with so few records, Apache remains the only county above the Mogollon Rim without a record of Lawrence's Goldfinch.

In Arizona, the species normally occurs between October and April, with individuals occasionally arriving as early as late August and lingering into May. Wintering populations of Lawrence's Goldfinches begin migrating out of Arizona by mid- to late February, with the majority of individuals dispersing by mid-March (Corman 2005). Nonbreeding birds are occasionally seen during the summer months in Arizona (Monson and Phillips 1981). One of the most recent of these reports is of an individual at a livestock tank on Hualapai tribal land, Coconino County, on 21 July 1999 (P. Friederici: unpublished *Arizona Breeding Bird Atlas* data). During the summer of 2002, an unprecedented total of 12 individuals were also detected in eight scattered southeastern Arizona localities from 23 June to 26 July (Rosenberg and Stevenson 2002).

Prior to 2005, there were only six reports of Lawrence's Goldfinches nesting in Arizona (table 1) with the first noted in 1952 (Phillips et al.1964). Breeding activity was not reported for this species during the statewide Arizona Breeding Bird Atlas project conducted primarily between 1993-2000 (Corman 2005). However, evidence suggests at least one pair nested after the *Atlas* project period; near Gisela, Gila County, in 2003.

Table 1. Arizona Lawrence's Goldfinch Breeding Records Prior to 2005

Date	Breeding Evidence	Location	County	Observer
15 March 1952	Nest collected after young fledged in mid-April	Near Parker	La Paz	G. Bradt
10 April 1977	Pair w/ fledglings	Verde River near Fountain Hills	Maricopa	S. Terrill A. Gast
7 May 1978	Two pairs w/ nests	Verde River near Fountain Hills	Maricopa	K. Kaufman G. Rosenberg
April-May 1979	Nest w/ young	Bill Williams River delta	La Paz - Mohave	J. Bean A. Laurenzi
Late June or early July 1980	Juveniles	Hassayampa River near Wickenburg	Maricopa	C. Tomoff
12 June 2003	Juvenile at feeder after ad. male was first detected there on 26 May	Gisela, near Tonto Creek	Gila	J. Estis

Sources: Phillips et el. 1964; Linsdale 1968; Monson and Phillips 1981; Rosenberg et al. 1991; Witzeman et al. 1997

After nearly a decade of drought or near-drought conditions in Arizona, the winter and early spring of 2005 was notably wet and cool, with above normal amounts of precipitation. It was not an exceptional year for wintering Lawrence's Goldfinch, however. Arizona saw only scattered individuals and flocks in southern regions of the state. During the spring of 2005, breeding evidence was first noted at the Hassayampa River Preserve, Maricopa County, when on 12 March, Corman discovered two pairs of Lawrence's Goldfinches, with one female actively constructing a nest. The nest was placed in a clump of mistletoe high in a cottonwood. A male would closely follow her to and from the nest site singing exuberantly with each visit to the nest. Pairs and/or individuals were noted at this location through mid-May, but successful nesting was never determined.

Lawrence's Goldfinches were also confirmed nesting for the first time in Pinal County when C. Tomoff discovered a nest with at least three young on 10 April at Boyce Thompson Arboretum. Tomoff first noted a courting pair in this area on 3 March. This nest was built in an Arizona cypress (*Cupressus arizonica*) and individuals were noted in the area through early May. H. Detwiler periodically monitored a pair of Lawrence's Goldfinches at Betty's Kitchen (near Laguna Dam), Yuma County, throughout much of March and April. Detwiler photographed the pair copulating on 29 April; this, combined with their lengthy stay, suggests they at least attempted to nest at this location.

Copulating pair of Lawrence's Goldfinches at Betty's Kitchen, Yuma County 29 April 2005. Photo by Henry Detwiler

Arizona's breeding records of Lawrence's Goldfinches have come primarily from lowland riparian woodlands dominated by Fremont cottonwood (*Populus fremontii*), Goodding willow (*Salix gooddingii*), tamarisk (*Tamarix* spp.), and mesquite (*Prosopis* spp.). Thus, it is not surprising that the few nests discovered were primarily in cottonwood and tamarisk. All sites were directly adjacent to perennial water sources; an important feature of nesting and typical wintering habitat for this species (Linsdale 1968, Davis 1999). In Arizona, breeding evidence has been observed at elevations ranging from approximately 46-880 m (150-2900 ft),

although they have been reported nesting from sea level to above 2700 m (9000 ft) in California (Small 1994).

It is not clearly understood what environmental factors entice Lawrence's Goldfinch to periodically nest in Arizona. Their nesting occurrences do not appear tied to large population influxes since many previous nesting records did not follow a significant winter population incursion. However, our personal observations and other evidence suggest a possible correlation between cool, wet springs and subsequent lush growth of annuals in southern and central Arizona, and the local nesting of Lawrence's Goldfinches in the state. Away from Arizona, this hypothesis is further corroborated by sporadic nesting activity under similar environmental conditions in arid regions of eastern California (Garrett and Dunn 1981, Yee et al. 1994, McCaskie 1996) and northeastern Baja California, Mexico (Erickson and Howell 2001).

Acknowledgments

We greatly appreciate Henry Detwiler and Carl Tomoff for additional details of their nesting activity observations and thank Roy Jones for his helpful review of this document.

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