

# **Breeding status of selected open-country species (American Kestrel, Horned Lark, Loggerhead Shrike, and Blue Grosbeak) on the Sacramento Valley floor in Yolo County, California**

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## INTRODUCTION

Historically, the prairies of the Sacramento Valley “were once covered with stands of perennial grasses, mostly of the bunchgrass form growing in tufts or clumps” (Dasmann 1965). Prior to and over the last century, exotic annual grasses largely replaced native bunchgrasses. The valley was further altered by the development of intensive agriculture, such that the Sacramento Valley floor is now one of the most highly altered landscapes in North America, with very little original habitat or native vegetation still present (Dasmann 1965). With respect to the status of native birds, detailed information about the natural history of the valley prior to the 20<sup>th</sup> Century is generally lacking. However, since the early 1900s, after much of the modification of the valley had taken place, records of bird presence have been reasonably well-documented (e.g., see Dawson 1923).

As of 1998, the primary land uses in Yolo County were pasture (33% of all agricultural acres), wheat and other grains (16%), processing tomatoes (13%), alfalfa (9%), and orchards and vineyards (6%) (Yolo County 1999). Safflower, seed crops, corn, rice, and a variety of other uses make up the remainder (23%). Much of the pasture land is located in the Dunnigan Hills, a series of low rolling hills in the north central portion of the valley, and on the western edge of the valley floor. This pasture, especially in the Dunnigan Hills, is rapidly undergoing conversion to vineyards (pers. obs.). The harvested acreage of wine grapes has more than doubled since 1995 (Yolo County 1995, 2001). Orchards and rice paddies are located primarily along the Sacramento River and other waterways, where farmers are able to access water economically.

This paper combines personal observations and reports from the past few years with an extensive roadside survey in the spring of 2002 to review the breeding status of four selected species — American Kestrel (*Falco sparverius*), Horned Lark (*Eremophila alpestris*), Loggerhead Shrike (*Lanius ludovicianus*), and Blue Grosbeak (*Guiraca caerulea*) — on the Sacramento Valley floor in Yolo County. Additional historical data and accounts are reviewed to provide perspective.

These four species were chosen because all are typically found in open country but are apparently less adaptable to habitat changes than other more widespread open country species such as Western Kingbird (*Tyrannus*

*verticalis*). American Kestrel, Horned Lark, and Loggerhead Shrike are more abundant in winter than as breeding species (Beedy 1993). For Blue Grosbeak, a summer visitor only, the Sacramento Valley lies at the northern tip of its range in the West.

## METHODS

On 27 April and 3 May 2002, we conducted 192 miles of survey transects in Yolo County, California. The surveys were conducted by car and were limited to public roads. The survey routes relied on east-west roads between the Berryessa and Capay Hills in the west and the Yolo Bypass of the Sacramento River in the east. In general, the east-west transects were approximately two miles apart. The southernmost transect was just north of Davis (beginning on Road 30 and continuing on Roads 28H and 29), while the northernmost was just south of the Colusa County line (Road 2). On both days, the weather was cool, approximately 55 degrees Fahrenheit during the survey, and partly to mostly cloudy. The surveys began at 0700 in the southernmost part of the transect area and were completed at the north end at 1100. Surveys were conducted at speeds of 15-20 mph. Although all target species visible and identifiable on either side of the road were recorded, nearly every bird enumerated in the surveys was first seen immediately adjacent to the road (on power lines, fences, etc.). If necessary, stops were made to verify species and make notes of habitat features.

We examined data for each species compiled on the Zamora Breeding Bird Survey (hereafter, BBS; route number 141-87; Brian Williams, pers. comm.). The Zamora BBS was conducted from 1972 to 1988 and follows a north-south path through the center of Yolo County and into northeastern Solano County. In Yolo County, it begins at the intersections of Roads 13 and 96 and largely follows Road 95 south.

## RESULTS AND DISCUSSION

**American Kestrel** -- Our roadside survey detected 23 birds, which were thought to represent 21 pairs. Many of these pairs were associated with nest boxes placed on telephone poles in 1993 and 1994 by a University of California, Davis, graduate student, and successful nesting was documented for several years (Andrea Erichsen, pers. comm.). At these locations, large trees were often not present. The remainder of the pairs was typically in the vicinity of large stands of old walnuts or riparian strips of oak. It seemed that nesting cavities, at least on the valley floor where riparian strips are scarce, could be a limiting factor for kestrel nesting in Yolo County. Some kestrel nesting occurs around homesteads and within towns (e. g., in Davis), primarily in fan palms (pers. obs.).

An average of 10.3 birds per survey were reported on Zamora BBSs, with a high of 30 birds in 1974 and a low of one bird in 1988. Between 1973

and 1981, an average of 12.8 birds per survey were reported, but from 1982 to 1988 the average was just 5.8 birds per survey. The statistical significance demonstrating a trend, however, is marginal ( $P=0.11$ ). It is not known if the timing of the survey relative to hatching of juveniles may play a role in the results, or if different surveyors may have been involved.

**Horned Lark** -- Single pairs were observed at two locations on our roadside survey: Road 92B in the Dunnigan Hills and Road 17 north-northeast of Woodland. These locations are very open habitat with no trees or shrubs nearby. Road 92B is a gravel road with no utility wires and very limited fence lines. Rd 17 has large bare dirt shoulders and a single utility wire.

Grinnell and Miller (1944) describe the preferred habitat of the subspecies that nests in Yolo County (*E. a. rubea*) as "barren, short-grass, 'sheep-pasture' . . . , often where the soil is much exposed most of the year and is of a conspicuously reddish hue; in rice-growing country, roadways and dike-tops." The Dunnigan Hills location features the reddish soil mentioned by Grinnell and Miller (1944).

Beedy (1993) lists the nesting status of Horned Lark in Yolo County as "uncertain." Since 1993, at least two nests have been found and there have been many observations of Horned Larks with recently fledged juveniles. The first nest was found near Woodland in the early 1990s (Joan Humphrey, pers. comm.) while the second, containing one egg, was found on 26 June 1998 at the Yolo Bypass Wildlife Area (pers. obs.). In recent years, several pairs of Horned Larks have regularly been seen feeding juveniles at both the Davis Wetlands and the Yolo Bypass Wildlife Area. At the latter site, SH has observed larks feeding juvenile Brown-headed Cowbirds (*Molothrus ater*). There are also several summer observations of birds along Road 86 near Dunnigan and Road 13 near Zamora (Brian Williams, pers. comm.). All of these sites feature very open habitats, with no trees or shrubs, and gravel roads.

**Loggerhead Shrike** -- Our survey documented 55 Loggerhead Shrikes. Because some pairs of birds appeared in close proximity to each other (less than 300 m) and often flushed toward each other, we believe the 55 birds were associated with 41 distinct territories. Every territory was associated with the following habitat characteristics: some of the land use in the area was either pasture, fallow, alfalfa, or wheat; a homestead or small clump of trees was present; and there were perches in the form of fence lines or utility wires. Shrikes were not present in areas dominated by tomatoes, rice, vineyards, or orchards. The rapid conversion of pasture lands to vineyards in the Dunnigan Hills will likely result in a loss of shrike habitat. While not quantified, we noted that if a homestead contained a substantial number of trees such that Western Scrub-Jays (*Aphelocoma californica*) were present, shrikes were not present. Few pairs were noted in hilly areas. While shrikes were observed throughout the survey route in suitable habitat, this habitat,

and thus the birds, were particularly regular on the western side of the valley floor (i.e., west of Interstate 505).

An average of 5.5 birds per survey were reported on the Zamora BBS, with a high of 15 birds in 1974 (the same year as the kestrel high count) and a low of two birds in 1977, 1978, and 1983. No statistically significant trend is present ( $P=0.23$ ). Again, it is not known if the timing of the survey relative to hatching of juveniles or changes in surveyors may play a role in the results. Additionally, changes in crop rotation may account for annual variability along the survey route.

Grinnell and Miller (1944) describe the California Loggerhead Shrike (*L. gambeli*) as common to abundant throughout much of the state, including the Sacramento Valley, with the largest populations in the San Joaquin Valley and coastal southern California. They describe preferred habitat as (in part): "open terrain with well spaced lookout posts, at least two feet high . . . [with] . . . bare'ground or sparse grass. West of the Sierra Nevada, farm lands in the valleys and on rolling hills offer the requirements for existence in especially favorable combination."

**Blue Grosbeak** -- Our roadside survey, which primarily covered territory well west of the Yolo Bypass and Sacramento River, found Blue Grosbeaks at only four locations: Road 104A just east of Davis, Road 28H between the Davis Oxidation Ponds and the Davis Wetlands, Road 17 next to the Knight's Landing Ridge Cut, and near the intersection of Roads 29A and 92E (approximately midway between and slightly to the north of Davis and Winters). Only the latter bird was more than ten miles from the Sacramento River.

In Yolo County, Blue Grosbeak is a regular and common nesting species but is largely limited to the lowest elevations along the Sacramento River and in and near the Yolo Bypass. We regularly observe Blue Grosbeaks singing on territories at the Yolo Bypass Wildlife Area, the east end of Road 30, the Davis Wetlands, the Cache Creek Settling Basin, the Knight's Landing Ridge Cut, the Fremont Weir, the Wood Duck Ponds in West Sacramento, all but the western edge of the city of Davis, and other locations adjacent to the Yolo Bypass. They are also found along Cache Creek between Woodland and Esparto. They are not found along Cache Creek into Capay Valley (SH, pers. obs.). They quickly become scarce as one moves west greater than ten miles from the river. They do not regularly occur along the edges of the western foothills of the county (e.g., in the Winters or Esparto areas). Blue Grosbeaks were reported on the Zamora BBS only once, two birds in 1983. Note that most of the BBS route is approximately 10 to 12 miles west of the Sacramento River.

Grinnell and Miller (1944) describe the California Blue Grosbeak (*G. c. salicarius*) as a fairly to locally common nester in the Sacramento Valley. Their range map suggests far more birds east of the Sacramento and San Joaquin Rivers than on the west side of the Central Valley. For nesting, they

report that this species prefers "low thick vegetation in the vicinity of water," such as "ditches, lower stream courses, and sloughs, though foraging may occur "in fairly open grain fields."

## SUMMARY

Despite extensive and on-going changes to the Sacramento Valley landscape, many bird species of the open country still find ways to survive in certain niches. The American Kestrel is found in a wide variety of habitats but may be limited by available nest cavities. Nevertheless, it has adapted to use nest boxes on telephone poles and palms in towns, as well as tree cavities along riparian strips. The Horned Lark appears much reduced in numbers relative to the description in Grinnell and Miller (1944). They occur only when very specific habitat features are present, and these features are rare. Similarly, the Loggerhead Shrike occurs only when certain habitat features appear. However, these features are regularly found where certain forms of agriculture are practiced, and thus the shrike is relatively common. Likewise, the Blue Grosbeak is also very common in certain contexts relating to water, including both natural streams and agricultural water conveyance channels, but much less common elsewhere, especially on the western side of the valley.

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