

# **Birds of the Central Valley: Introducing a Publication Series Documenting the Central Valley's Avian History and Modern Distributions**

*Andrew Engilis, Jr., University of California Davis, Museum of Wildlife and Fish Biology, Department of Wildlife, Fish, and Conservation Biology.  
aengilisjr@ucdavis.edu.*

Have you ever wondered why there is so little published on the historic occurrences of birds in the Central Valley? *Central Valley Birds* (formerly the *Central Valley Bird Club Bulletin*) has made great strides to rectify this, but there are many questions remaining. Were species such as Swainson's Thrush (*Catharus ustulatus*), California Thrasher (*Toxostoma redivivum*), Hutton's Vireo (*Vireo huttoni*), or Yellow-breasted Chat (*Icteria virens*) ever widespread as breeders, as the literature suggests? Was the Swainson's Hawk (*Buteo swainsonii*) widely distributed in the Central Valley historically? These and other questions have been nagging me as I have delved into records of the past.

Many limitations inhibit our ability to understand the historic birdlife in the Central Valley. The region as a whole was understudied by past ornithologists. Breeding ranges were extrapolated to the Central Valley without concrete evidence, in many instances based on proximity and similarity of habitats (Dawson 1923, Grinnell and Miller 1944). Because distribution maps were published from such authorities as Grinnell and Miller (1944), few questioned these range maps and did not realize that some were indeed extrapolations. It was still the best information at the time, and it was better to have these maps as a starting point from which to work.

Modern studies cite these old references as authorities for historic accounts of birds to show changes or declines in special-status species and/or changes in distributions, which in some cases help perpetuate poorly substantiated ranges of Valley birds. For example, have researchers ever looked at authenticated, past records of Swainson's Hawks in the Sacramento Valley when discussing historic occurrences, or did they rely upon the historic literature and extrapolate its range throughout the Central Valley based on scattered records from the foothills and San Joaquin Valley?

## **Central Valley: A Hard Place to Work**

At the turn of the 20<sup>th</sup> Century, Joseph Grinnell thought the Sacramento Valley was already too modified and harsh to warrant comprehensive surveys, and thus the region was not covered by his efforts to survey California (Trochet and Engilis 2014). Since then, only a few early ornithologists saw the

need to work in the region, and along with other early European naturalists, indicated the difficulty owing to expansive wetlands, riparian forests, floods, abundant mosquitoes, and rampant malaria in the late 1800s – early 1900s (Ahrens 2011, Harris 2017; Figure 1). In the 1930s, University of California (UC) Davis zoologist John Emlen recognized the dearth of historic data for the Valley, writing “The Sacramento Valley is a large “blank” area on the ornithological map, yet it is along one of the primary Pacific migration routes” (from Emlen personal notes ca. 1940, available at MFWB). Emlen started to assemble historic records for a treatment, but his tenure at UC Davis was shortened due to World War II, and a new position at University of Wisconsin Madison, resulting in his work remaining unpublished (Lanyon et al. 2000).

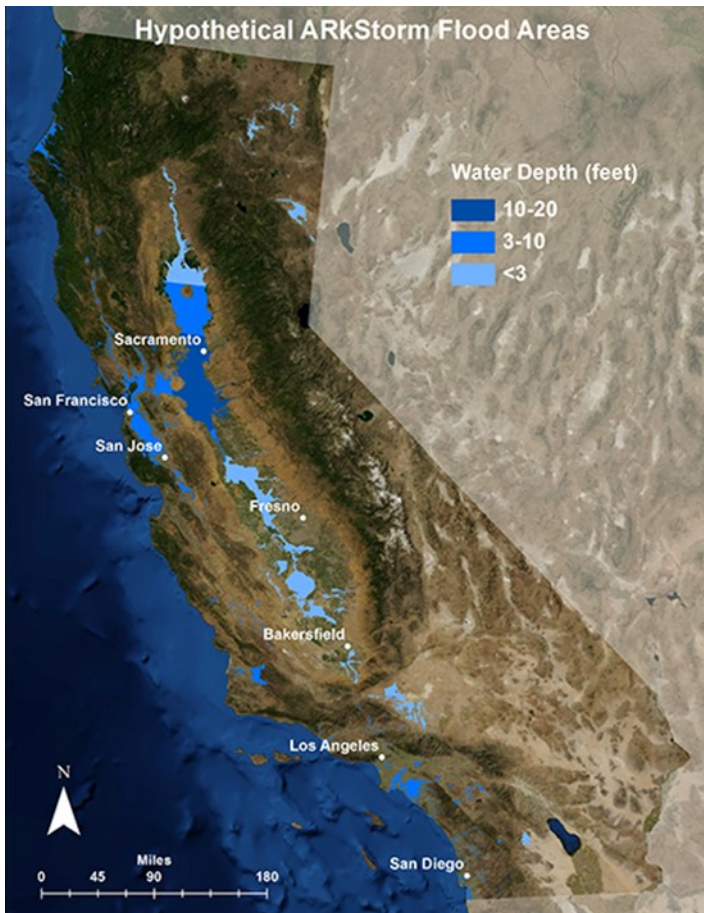


Figure 1. Areas flooded during the December 1861-January 1862 California mega-storm, depicting the types of conditions that affected early exploration in the region. Source: USGS, <http://geography.wr.usgs.gov/science/mhdp/arkstorm.html>.

These same issues pertain to the San Joaquin Valley, but a bit more systematic work was completed in the south valley as part of the UC Museum of Vertebrate Zoology's (MVZ's) Yosemite surveys (Grinnell and Storer 1924). In addition, there was never a focused specimen-based inventory in the Central Valley, so the specimen record is incomplete for the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, and many of those specimens collected were never synthesized. I did not want to leave the 21<sup>st</sup> Century devoid of a specimen record, and so in 2017 I committed the resources of the MWFB to launch a specimen-based inventory in the Sacramento Valley. As part of that effort, I saw the need to uncover and publish historic bird records from the Sacramento Valley. When completed, we will leave a legacy and more complete perspective of our birdlife for future researchers.

The importance of historic specimens as a basis for documenting changes in avian populations and communities cannot be understated. They are now being used in many ways that were undreamed of by those who collected them in the past. Likewise, the specimens obtained in this era will have more relevance for researchers 50-100 years from now who will be trying to assess distributional, environmental, evolutionary, and ecological patterns. There is increasing evidence that passing samples of biota forward to future researchers is one of the most effective ways to contribute to the accomplishments of future science and conservation biology (Winker 2005, Engilis et al. 2021). However, there is more to documenting our birdlife than specimens.

A few landscape-level studies have helped shape our modern understanding of birds in the Central Valley. One recent study was based on old surveys conducted through the MVZ and replicated with modern counts (MacLean et al. 2018). Another used automated recorders across the entire valley to characterize avian occupancy based on habitats (Rich et al. 2019). Together, these studies document that the region still supports a rich avifaunal assemblage with distinct seasonal patterns of diversity and heterogeneity. The region is globally noted for the millions of wintering migratory waterfowl, but it is also critically important for migratory Boreal Forest nesting songbirds (Dybala et al. 2018). Recently, a few papers have summarized historic and modern patterns of distribution for some species of birds in the Valley (Edson 2001, Pandolfino et al. 2009, Shuford et al. 2009, Meese 2015, Trochet et al. 2018, Dunford et al. 2019, Airola 2020). These studies have served as models for the approach suggested below.

### **Birds of the Central Valley**

We lack a documented, fundamental understanding of the historic, and to some degree modern, distribution of breeding birds in the Central Valley, and there are limited or no historical references to serve as a basis for

comparing changes in species occurrences. How then can we address this deficiency as a group of interested field ornithologists? And how can the journal *Central Valley Birds* play a significant role in helping to establish a benchmark for this century with regard to our birds? Simply, we can develop a publication series in *Central Valley Birds* that is centered on summarizing unpublished historic records and developing species-specific accounts detailing current status and distribution of our region's birdlife.

The publication series, *Birds of the Central Valley* will have two main themes: historic summaries and species profile articles. Through some detective work, I have uncovered many unpublished datasets in archives both institutional and personal that can improve our historical perspective. For example, the MWFB archives contain unpublished records from early ornithologists such as John Emlen (1930s) and Tracy Storer (1920s–40s). There are even obscure records such as from a banding station run by Elk Grove High School biology teacher Florence A. Henderson from 1930–1936. This may be just the tip of the iceberg for what is still undiscovered. There are likely many birders in our region who have historical data and perspectives on bird distribution, and I urge anyone with long-term records to contact the MWFB to help us improve our archive of Central Valley birdlife. Examples of more recent records in our archives include Betty's Kimball's records from the Sacramento Region 1960–1986 (Engilis 2002, 2013) and recently obtained records from Howard Cogswell (1940–1990s).

Understanding the past, even a bit better, will help us place modern patterns of diversity and abundance into context. Our goal would be to publish accounts of early ornithologists and pre-1940 data sets akin to some recent papers in *Central Valley Birds* (Harris 2018, Trochet and Engilis 2014). Both were important summaries of observations made by early ornithologists that gave us a snapshot of what parts of the Valley were once like. New summaries, along with established literature, will provide a foundation from which to build modern species accounts.

### **Why Pre-1940?**

Pre-1940 records predate the construction of the many major dams in the Sierra Nevada and Coast Range, which forever altered the hydrology of the Central Valley. A few river systems were impacted prior to 1940 including the Mokelumne River (dams as early as 1929), Tuolumne River (Hetch Hetchy in 1923), Lake Almanor (1927), but the period after 1940 was the heyday for California water and hydroelectric projects. This is not to suggest that the Central Valley was in good shape prior to the 1940s. Indeed, the region had become severely impacted by humans beginning in the mid-1800s from wetland reclamation, conversion of natural habitats to agriculture, mining, and initial urbanization.

Unfortunately, we will never know exactly what the Valley was like before major alterations, there are a few accounts or anecdotal passages that give us a picture of the extensive marshes and riparian forests. For example, John Bidwell wrote regarding his traveling from San Francisco to Sutter's Fort, Sacramento in 1841, "*No one then knew the way to Sutter's Fort, there being no road. Using our own judgment, we struck off in a northeasterly direction which, could I have continued, would have brought me to my desired destination, Sutter's Fort at Sacramento; but a seemingly impassable stream intervened, and I was obliged to follow it down into the tule marsh, where night overtook us, and the water grew deeper and deeper, rendering it impossible to proceed. Obligated to retrace my footsteps, I endeavored to cross the stream in many places, and at last succeeded not only in getting into the stream during the night, but in getting out on the other side. I stayed on the plains about seven or eight miles north of the stream, without fire, without timber, without anything. As I followed down that stream the night previous the number of grizzly bears that sprang out and ran into the timber was very large. All the paths seemed to be the paths of grizzly bears, judging from the tracks, but they invariably ran from us. I mention the fact of crossing the stream (which is known as Putah Creek) because of the impossibility of crossing it even in the dry season, both banks being so steep and the sands so soft. I never afterward in the daytime found a crossing*" (excerpt from Ransley 2002).

### **The Species Accounts**

A second component of this publication series will be to craft species profile articles summarizing the historic and current breeding distribution of selected birds in the Central Valley. Accounts will be published on a regular basis in *Central Valley Birds*. Emphasis will be placed on species where historical occurrences have not been properly vetted or are of regional interest. These accounts are not meant to examine the complete life history of Central Valley birds but instead will examine historic and modern breeding distribution records, in many cases to help correct the record on misinterpretations and to corroborate historic information, but also to highlight recent changes in distribution and abundance.

Each species profile would be structured with a standardized format with set topics and sections. Authors will be sought who are willing to work on each species profile. The authors would then research established topics and enter available information to complete each account. The approach and structure are analogous to that used by the *Birds of North America Accounts* (now *Birds of the World*), where each species account has the same structure so it is easy to find information and maintains continuity throughout the series. I envision using listserves and other media to solicit local experts for their historic knowledge, breeding information, etc. eBird reports could be used to assess modern distributions and create current range maps.

## A Joint Effort

The *Birds of California's Central Valley* as conceived will be a joint effort of the Central Valley Bird Club and the UC Davis Museum of Wildlife and Fish Biology. With our mutual focus on the Valley, we have overlapping goals for the scientific understanding, conservation, and enjoyment of our birds. The team will help coordinate and marshal authors for the accounts and historical summaries. The program will provide *Central Valley Birds* with a steady stream of papers, thereby strengthening the journal, and encourage development of new authors, including undergraduate and graduate students. It will also serve to further ally the Bird Club and *Central Valley Birds* to a research institution, and UC Davis to citizen science efforts. We could imagine the species accounts being made available not only in the journal, but also on websites and other media.

## What Species to Highlight?

Recent research by the Museum in the Sacramento Valley, coupled with recent listserv discussions of the status of breeding birds such as Hutton's Vireo, California Thrasher, and Wrentit (*Chamaea fasciata*) have underscored the interest and opportunity to create these accounts. Table 1 provides a list of potential priority species for treatment. This is only an initial suggestion of species, and the final list could be shorter or longer. Many species readily lend themselves to development of accounts, but others may not have adequate historic data and so might be unsuitable. Other distributional patterns such as northward expansion of many other species including Vermilion Flycatcher (*Pyrocephalus obscurus*), Common Ground-Dove (*Columbina passerine*), Costa's Hummingbird (*Calypte costae*), and Cassin's Kingbird (*Tyrannus vociferans*), may warrant additional species profiles.

## What Can You Do?

This is an exciting and new endeavor for us, and there are many ways to contribute. First and foremost, if you are aware of any historical data sets summarizing birds of a particular area of the Central Valley and would like to archive these data with the MWFB, please contact me. The MWFB has been accepting historic records to build its archive for future researchers (Engilis 2002). Also, if you are interested in authoring or co-authoring a historical or species account, please contact us as we begin to assemble interested folks who can work on the project. The primary contacts are:

- Dan Airola, Editor, *Central Valley Birds*; d.airola@sbcglobal.net
- Andy Engilis, Jr. Curator, MWFB; aengilisjr@ucdavis.edu

From a personal perspective, I did not want earlier, failed attempts to characterize the birds of the Valley to continue. As I enter the latter stages of

my career, it has become increasingly important that we follow through with this challenge. I am reminded of a discussion I had in 1983 with noted biogeographer and ornithologist, Dr. Miklos Udvardy (then a professor at California State University, Sacramento). Prior to my deciding to leave California for Hawaii to begin work in Papua New Guinea, he urged me, “Why leave for these exotic places when there is so much work **we** need to do to understand the birdlife of the Sacramento Valley”. I did not heed my early mentor’s words and was instead drawn by an opportunity for a more global experience. My travels have taken me to many reaches of the World, but his words stuck with me along my journey. My path has come full-circle to home, having been born and raised in Sacramento. Perhaps my experiences were needed to refocus my goals towards my ever shrinking “backyard” and finally to help fulfill Dr. Udvardy’s sage advice.

Table 1. Potential focal species for Central Valley bird species profile articles

**Native species with Incomplete or Inaccurate Historical Occurrence Descriptions and/or Substantial Recent Changes in Distribution and Abundance.**

Fulvous Whistling Duck	Blue-winged Teal	Cinnamon Teal
Redhead	Yellow-billed Cuckoo	Greater Roadrunner
Lesser Nighthawk	White-throated Swift	Spotted Sandpiper
Wilson’s Phalarope	California Gull	Caspian Tern
Black Tern	Least Bittern	White-faced Ibis
Osprey	White-tailed Kite	Bald Eagle
Swainson’s Hawk	Burrowing Owl	Peregrine Falcon
Black Phoebe	Western Wood Pewee	Pacific-slope Flycatcher
Cassin’s Kingbird	Loggerhead Shrike	Bell’s Vireo
Warbling Vireo	Hutton’s Vireo	Common Raven
Horned Lark	Cliff Swallow	Wrentit
Western Bluebird	Swainson’s Thrush	California Thrasher
Phainopepla	Savannah Sparrow	Yellow-breasted Chat
Hooded Oriole	Yellow-headed Blackbird	Yellow Warbler
Western Tanager	Blue Grosbeak	

**Naturalized or Introduced Species with Major Increases in Distribution and Abundance**

Mute Swan	Canada Goose (breeding	Brown-headed Cowbird
Cattle Egret	<i>moffitti</i> subspecies)	Wild Turkey
House Sparrow	Northern Mockingbird	European Starling

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Greater White-fronted Goose (*Anser albifrons*). 27 October 2021. Colusa NWR, Colusa Co., California.

*Photo by Andrew Engilis, Jr.*