

# Identifying White-crowned Sparrow Subspecies

## Wintering in the Central Valley

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The White-crowned Sparrow (*Zonotrichia leucophrys*) is one of the most common wintering birds on the West Coast. Birders often quickly scan flocks of White-crowns hoping for the occasional White-throated Sparrow (*Zonotrichia albicollis*) and then move on. The common wintering migratory White-crowned Sparrow subspecies differ between the coast and in the Central Valley, and there is a resident coastal non-migratory subspecies present year-round. This paper details the differences in appearance and distribution of the common wintering subspecies in the Central Valley, *Zonotrichia leucophrys gambelii*, from the other less expected subspecies from along the coast, *Z. l. pugetensis*. With practice, patience, and an understanding of the differences in biology and appearance, most birders will be able to recognize their local subspecies and pick out the occasional extralimital (out of its expected range) bird. A split of the species into two separate species may occur in the future if recent work (Hunn et al. 2014) is confirmed at the Washington State contact zone sites where *Z. l. gambelii* and *Z. l. pugetensis* seem to breed independently (Dunn, per. comm.).

Several years ago, David Yee (per. comm.) informally collected data about the occurrence of *Z. l. pugetensis* in the winter from Central Valley birders. Most observations came from the mid-Valley and Delta region, but extended as far south as Merced County. The impression was that they are an uncommon but expected visitor to the Central Valley floor, most commonly found in the area west of Hwy 99. The incidence east of Hwy 99 drops, as it does further south. *Z. l. pugetensis* tends to favor habitats with more available cover, associating more with Golden-crowned Sparrows (*Zonotrichia atricapilla*) and White-throated Sparrows. Yee found areas where *Z. l. pugetensis* predominated over *Z. l. gambelii*, in small flocks of 10-20 birds. Further study is needed to characterize the incidence of wintering extralimital birds.

Johann Reinhold Forster, of Forster's Tern (*Sterna forsteri*) fame, first described White-crowned Sparrows in 1772 as "an elegant little species". From that same set of specimens sent to him from northwestern Ontario, he described the now-extinct Eskimo Curlew (*Numenius borealis*). Two of the local White-crowned Sparrow subspecies were named after naturalists who worked in the 19<sup>th</sup> century: Thomas Nuttall and William Gambel. Nuttall, an Englishman who came to North America as a young man, was a pivotal figure in Western ornithology. The resident coastal subspecies of White-crowned Sparrow was named after Nuttall in 1849. William Gambel travelled to

California in 1842 and has been credited with collecting the type specimens for Gambel's Quail (*Oreortyx pictus*), Nuttall's Woodpecker (*Picoides nuttallii*), and Mountain Chickadee (*Poecile gambeli*). He died as a young man near the Feather River in 1849. Nuttall named the Central Valley-wintering subspecies for Gambel in 1840 (Rising et al. 1996).

White-crowned Sparrows assemble in large flocks in the winter, often mixed with Golden-crowned Sparrows. Male and female adult White-crowns are indistinguishable in the field, with a black lateral crown stripe, white or cream-colored supercilium, pale median crown-stripe, pale lores, a dark eyestripe, an unstreaked breast, and a striped back. First-winter birds have rufous-and-tan head stripes instead of the adult's black-and-white pattern; they start their molt into adult plumage by February (Sibley 2014). White-crowns forage in open areas near cover, and fly into the lower branches of trees and shrubs when flushed (Chilton et al. 1995).

#### SUBSPECIES IDENTIFICATION

The five subspecies of White-crowned Sparrows have been well-described, but several different naming systems have been used by different authors. Below is a summary of the common subspecies with the various descriptive systems (Grinnell and Miller 1944, Sibley 2010).

##### *Montane Group*

*Z. l. gambelii* is the most common wintering resident of the Central Valley. Sibley (2010) refers to this subspecies as the Western Taiga. Wintering and breeding ranges are described in detail below (also see Figures 1 and 2)

*Z. l. oriantha* breeds in the Sierra Nevada and Rocky Mountains and winters in northwest Mexico and southern Baja California. Sibley (2010) refers to this subspecies as the Interior West subspecies; it is also referred to as dark-lored in some accounts.

*Z. l. leucophyes*, the nominate eastern subspecies, breeds in the boreal forests of eastern Canada and winters in the US east of the Great Plains; this is also a dark-lored bird.

All of the mountain races have longer-distance migrations and therefore have longer primary projections (i.e., primary length relative to tertial length).

##### *The Pacific Coast group*

*Z. l. pugetensis*, which breeds from coastal British Columbia south to Humboldt County, is a short-distance migrant that is most common along coastal California in the winter. Winter range is described in detail below. It is part of Sibley's (2010) Pacific Group of subspecies.

*Z. l. nuttalli* is the non-migratory resident California coastal species that breeds from Cape Mendocino, Humboldt County, to Point Conception, Santa Barbara County.

Because the coastal races are either non-migratory or short-distance migrants, they have shorter primary wings and tails than migratory forms. Their lores are also light.

The best treatment of this topic is still the *Birding* article *White-Crowned Sparrow Subspecies: Identification and Distribution* by Jon Dunn, Kimball Garrett, and Jonathan Alderfer (Dunn et al. 1995). This article has not yet been digitized by the American Birding Association (ABA), so it is no longer widely available. With permission of the ABA and the authors, the Central Valley Bird Club intends to post this article in PDF form at the club website when site revisions are completed in several months.

The most common wintering subspecies in the Central Valley are described below. Key characteristics are summarized in Table 1.

Table 1. Summary of identifying characteristics of wintering White-crowned Sparrows in the Central Valley of California.

Characteristic	<i>Z. l gambelii</i>	<i>Z. l pugetensis</i>
Bill color	Orange	Yellow with black tip
Overall color	Gray	Brown
Lores	Clear	Clear
Back color	Reddish and gray	Black and tan
Primary projection	Long	Short
Bend of wing	Whitish	Yellow
Malar 1 <sup>st</sup> year	None	Can be present

### ***Z. l. gambelii***

*Z. l. gambelii* is the most common subspecies found on the Central Valley floor in the winter (Figure 1). This boreal specialist breeds across Alaska and northern Canada, as far east as the Hudson Bay (Figure 2). It has the longest migration of the subspecies that winter locally and thus the longest primary projection. It starts to appear locally in early-to mid-September and departs for the breeding grounds by mid-to-late May. Newly hatched birds have molted out of juvenal plumage by August and appear as non-streaked individuals without the characteristic black-and-white striped heads. Instead, they have rufous-and-cream colored stripes until the adult molt occurs around February. These first-year birds (Figure 3a) can be confused with the smaller Chipping Sparrow (*Spizella passerina*) or Rufus-crowned Sparrow (*Aimophila ruficeps*), but with careful viewing can be easily identified (Sibley 2014).



Figure 1. Wintering ranges of three White-crowned Sparrow subspecies that occur in Central California.

*Z. l. gambelii* can be distinguished by several key features: initially by its bill color, which is a bright orange (Figure 3b). The lores are a clear grayish or tan. Over-all, the bird has gray, not brown, tones on the unmarked sides and chest. A key distinguishing mark is the back color; the feathers have reddish-brown centers with pale gray edges. The secondary coverts are also rufous. The primary projection is relatively long, with several secondaries projecting past the longest tertial. The bend of the wing against the body is often described as being whitish, although this feature can be hard to distinguish in the field. First-winter birds continue with a grayish body tone, red and gray back stripes, and deep reddish and tan crown stripes. First-winter *gambelii* birds rarely show thin malar stripes, a feature more common in first-winter *Z. l. pugetensis* birds (Dunn et al. 1995).



Figure 3a.  
*Z.l. gambelii* 1st-year.  
 Over-all gray appearance, orange  
 bill, black-and-tan stripes over the  
 shoulders, longer primary  
 projection. 23 Nov 14.  
 Tracy, CA.

Figure 3b.  
*Z.l. gambelii* adult.  
 Over-all gray appearance, orange bill. The  
 shoulders and primary projection aren't  
 visible in this shot. 23 Nov 14. Tracy, CA.

Photos © Patricia Bacchetti.



### ***Z. l. pugetensis***

Close inspection of white-crown flocks in the Valley will often turn up wintering *Z. l. pugetensis* individuals. These birds breed in a narrow band along the Pacific Coast from Vancouver BC to Cape Mendocino, Humboldt County (Figure 2). Some of these birds winter on their breeding grounds; others make short-distance migrations to the immediate coastal areas from Oregon to Orange County in California (Figure 1). They generally winter on the western side of the Coast Range, with *Z. l. gambelii* occupying the eastern slope and Valley floor. Fall migration generally occurs earlier than for *gambelii*, with birds arriving in early September. Spring migration is also earlier, with birds departing the coast in late March to early April. First-winter birds are unstreaked and have an overall brownish wash to their chests and flanks; the head stripes are rufous and tan. Thin malar stripes are often present until February, when they start to molt into adult plumage.

*Z. l. pugetensis* individuals can be identified based on the following traits: the overall color of the flanks is brown, not gray, and the bill is duller yellow with a black tip (Figure 4a, 4b). The feathers of the back stripes are black with



Figure 2. Breeding ranges of three White-crowned Sparrow subspecies that occur in Central California.

tan edges, and lack the rufous tones of *Z. l. gambelii*. Due to their short winter migration, the primary wing projection is short. Thin black malar stripes in first-winter *pugetensis* birds are a distinguishing characteristic; a careful look at the other distinguishing features will often confirm this coastal bird on the Valley floor.

Dark-lored individuals on the Valley floor in winter pose a thorny identification problem. Some assume that they are the Mountain West *Z. l. oriantha* subspecies, but these birds winter south into Baja California and northwestern Mexico (Figure 1). Dunn and Engilis (per. comm.) believe that these birds could well be the eastern nominate race of *Z. l. leucophrys*. Because it is very difficult to distinguish any difference in appearance in the non-singing dark-lored races, they recommend that no subspecies ID be made if one of these birds is found.



Figure 4a.  
*Z. l. pugetensis* adult.  
Over-all brown appearance, yellow  
bill with a brown tip, black and tan  
stripes over the shoulders, and short  
primary projection. 16 Apr 14, inland  
Mendocino Co., CA.

Figure 4b.  
*Z.l. pugetensis* adult.  
23 Nov 14. Tracy, CA.

Photos © Patricia Bacchetti.



On the immediate coast or bayside, the resident *Z. l. nuttalli* is present year-round. It appears quite similar to its Pacific race cousin, *Z. l. pugetensis*, with an overall brown appearance, pale lore, yellow bill, short primary projection, and black and tan back stripes. The breeding range extends from just south of the Puget Sound Sparrow range at Cape Mendocino, Humboldt County, and extends south along the coast to Point Conception in Santa Barbara County (Figure 2). Its distinctive vocal dialects have been studied extensively (Kroodsma et al. 1985), and its sedentary nature and proximity to many Universities in the heavily populated coastal area of California has made it one of the most-researched song birds in the world.

The songs of each subspecies are also distinct. *Z. l. gambelii*, the Valley subspecies, starts with a single note, followed by an ascending trill, with 2-3 descending notes at the end. The note quality of the song is thin, and is often described as sad. The song of *Z. l. pugetensis* starts with a more mid-level opening note, followed by an ascending trill; the 3-4 end notes are higher and more robust. Since the verbal description of vocalizations can be so difficult and individual, I recommend that readers listen to recorded vocalizations directly at <http://www.xeno-canto.org/species/Zonotrichia-leucophrys?pg=3> Sparrow. Songs and chip notes of all the described subspecies available at this web site, as well as the sonograms.

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