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◀ [California Towhee \(/Species-Account/bna/species/caltow/systematics/\)](#)

[Green-tailed Towhee \(/Species-Account/bna/species/gnttow/systematics/\)](#) ▶

# Rufous-crowned Sparrow

*Aimophila ruficeps*

Order: PASSERIFORMES

Family: PASSERELLIDAE

## [Sections](#)

## Systematics

Rufous-crowned Sparrow has been placed in several different genera depending on past nomenclatural and taxonomic conventions and decisions: e.g., *Ammodramus* ([Cassin 1852b \(/Species-Account/bna/species/rucspa/references#REF35163\)](#)), *Zonotrichia* ([Sclater 1867b \(/Species-Account/bna/species/rucspa/references#REF48177\)](#)), *Peucaea* ([Baird 1858a \(/Species-Account/bna/species/rucspa/references#REF50126\)](#)), [Brewster 1879c \(/Species-Account/bna/species/rucspa/references#REF48163\)](#), [Brown 1882b \(/Species-Account/bna/species/rucspa/references#REF19426\)](#), [Scott 1885b \(/Species-Account/bna/species/rucspa/references#REF27006\)](#), [Sennett 1888 \(/Species-Account/bna/species/rucspa/references#REF48178\)](#), [Nelson 1897b \(/Species-Account/bna/species/rucspa/references#REF16772\)](#)), and *Aimophila* ([Ridgway Ridgway 1898a \(/Species-Account/bna/species/rucspa/references#REF19497\)](#), [Ridgway 1899b \(/Species-Account/bna/species/rucspa/references#REF19441\)](#), [Ridgway 1901 \(/Species-Account/bna/species/rucspa/references#REF55464\)](#), [Paynter 1970b \(/Species-Account/bna/species/rucspa/references#REF8919\)](#)), where it is currently assigned ([American Ornithologists' Union 1998a \(/Species-Account/bna/species/rucspa/references#REF63025\)](#)).

## Geographic Variation

The most extensive review of geographic variation is provided by Hubbard ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)), who compared specimens throughout most of the interior North American range from Arizona to Oklahoma and southward to Oaxaca, Mexico; populations in California and Baja California were not studied. Geographic variation of coastal-California populations west of Central Valley and deserts and north of Baja California was examined by Collins ([Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#)). No comprehensive evaluation of morphological and genetic variation exists.

Clinal variation in linear body measurements from coastal mainland California (see [Appendix 1 \(/Species-Account/bna/appendix/rucspa/APP1001818\)](#)). From south to north, bill size increases and tail and wing chord decrease. Of mainland coastal-California populations, birds from San Diego and Imperial Cos. have longest tails and wings but smallest bills; disjunct populations on Santa Cruz and Anacapa Is. (subspecies *obscura*) average largest in body weight and all bill measurements (length, width, and depth), and largest or second largest in wing, tail, and tarsus lengths ([Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#)). Clinal trends in linear measurements outside of California are not as clear-cut; wing and tail lengths exhibit variation that is clinal in nature, while bill size shows more of a mosaic pattern of geographic variation ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)). In general, populations with the longest wings and tails occur from Arizona, New Mexico, and Oklahoma (subspecies *scottii* and *eremoeca*) south into s.-central Mexico (subspecies *boucardi*, *duponti*, and westernmost *pallidisima*), while birds with the shortest wings and tails occur in w.-central Mexico (subspecies *suttoni* and *phillipsi*) and s. Mexico (subspecies *laybournae*, *australis*, and *extima*; [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)). Differences recorded in bill measurements among populations are minor; birds from Oklahoma and Texas (subspecies *eremoeca*) south into ne. Mexico (subspecies *pallidisima*) have the longest bills, and birds from Oklahoma through e. and s. Mexico (subspecies *eremoeca*,

*pallidisima*, *boucardi*, *duponti*, *laybournae*, *extima*, *fusca*, *suttoni*, and *australis*) have the deepest and widest bills ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)).

Plumage coloration shows several broad ecogeographic patterns. First, isolated populations like those on islands (e.g., *obscura* on Santa Cruz and Anacapa Is. and *sanctorum* on Todos Santos I.) or in islandlike settings, such as mountains in Cape District of s. Baja California (*sororia*), tend to be darker and less reddish in overall color than nearest populations (PWC). Second, geographically restricted mainland races in Mexico, such as birds from se. Sinaloa (*phillipsi*) and Valley of Mexico in the Federal District (*duponti*), are noticeably darker, or redder (*australis* in central Oaxaca) than adjacent races ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)). Finally, clinal trends in plumage characters are evident in mainland populations. In California, overall coloration is lightest in northern populations (*ruficeps*) and darkest in the more southern populations (*canescens*; [Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#)). Birds from Oklahoma, Texas, and Tamaulipas, Mexico (*eremoeca*), have grayer, less reddish or brown backs, and browner crowns than do birds from Arizona, New Mexico, and n. Mexico (*scottii*; [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#), [Rising 1996a \(/Species-Account/bna/species/rucspa/references#REF56634\)](#)). Darkest birds are found in se. Sinaloa (*phillipsi*), Valley of Mexico in the Federal District (*duponti*), and mountains of e. Jalisco south through n. Michoacán (*fusca*); reddest birds occur in central Oaxaca (*australis*; [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)). Extent and color of dorsal streaking on back and crown and ventral coloration show no readily apparent broad geographic patterning ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#), PWC).

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## Subspecies

Seventeen subspecies are currently recognized, on basis of [Paynter 1970b \(/Species-Account/bna/species/rucspa/references#REF8919\)](#), as modified by Hubbard ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)). For review of earliest-named subspecies, see [Ridgway 1901 \(/Species-Account/bna/species/rucspa/references#REF55464\)](#). Five subspecies occur in U.S. (*canescens*, *eremoeca*, *obscura*, *scottii*, and *ruficeps*), 12 in Mexico (*australis*, *boucardi*, *duponti*, *extima*, *fusca*, *laybournae*, *pallidisima*, *phillipsi*, *sanctorum*, *simulans*, *sororia*, *suttoni*). Taxonomic status of these races is in need of comprehensive study of morphological and biochemical characters.

Subspecies in U.S. can be arranged into 2 broad groups: (1) Pacific coastal group (*canescens*, *obscura*, and *ruficeps*), which are small and have reddish upperparts; (2) southwest desert group (*scottii* and *eremoeca*), which are large and have brownish upperparts ([Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#)). See [Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#), [Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#) and [Appendix 1 \(/Species-Account/bna/appendix/rucspa/APP1001818\)](#) for measurements of the Pacific coastal subspecies and [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#) and [Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#) for measurements of the Southwest desert and Mexican subspecies.

### **Pacific Coastal Group**

*A. r. ruficeps*: Resident in central California in Coast and w. Transverse Ranges, Marysville Buttes, and western slopes of Sierra Nevada ([American Ornithologists' Union 1957 \(/Species-Account/bna/species/rucspa/references#REF44080\)](#), [Paynter 1970b \(/Species-Account/bna/species/rucspa/references#REF8919\)](#)). Small overall size, small bill, upperparts chestnut with medium-dark buff streaking and underparts creamy brown ([Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#)). Similar to *obscura* (see below), except smaller (wing chord and bill), overall lighter in color, and upperparts chestnut with medium to dark-buff (not gray) streaking ([Cogswell 1968b](#)

[\(/Species-Account/bna/species/rucspa/references#REF48165\)](#), [Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#), [Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#)).

*A. r. obscura*: Resident on Santa Cruz and Anacapa Is., formerly on Santa Catalina I. ([Grinnell and Miller 1944 \(/Species-Account/bna/species/rucspa/references#REF8829\)](#), [American Ornithologists' Union 1957 \(/Species-Account/bna/species/rucspa/references#REF44080\)](#)). Distinguished from subspecies on adjacent mainland (nominate *ruficeps* and *canescens*) by larger overall size (bill, wing chord, and body weight), darker and less rufescent color overall, darker (buffy-gray), less rusty dorsal streaking, and pale brownish underparts ([Dickey and Van Rossem 1923a \(/Species-Account/bna/species/rucspa/references#REF19429\)](#), [Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#), [Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#)).

*A. r. canescens*: Resident in sw. California on coastal slopes of Transverse and Peninsular Ranges from nw. Los Angeles Co. south into nw. Baja California Norte and on San Martín I. ([Grinnell 1928b \(/Species-Account/bna/species/rucspa/references#REF40970\)](#), [American Ornithologists' Union 1957 \(/Species-Account/bna/species/rucspa/references#REF44080\)](#), [Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#)). Similar to nominate *ruficeps*, except wing and tail longer, bill smaller, underparts brown with grayish wash, and upperparts rufous-brown with grayish-buff streaking ([Todd 1922 \(/Species-Account/bna/species/rucspa/references#REF19444\)](#), [Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#), [Collins 1999b \(/Species-Account/bna/species/rucspa/references#REF48166\)](#)).

### **Southwest Desert Group**

Subspecies in this group are larger and have brownish upperparts ([Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#)). *A. r. scottii*: Resident in isolated desert mountain ranges of e. California, east through s. Nevada, sw. Utah, n. and e. Arizona, and sw. New Mexico, south to s.-central Arizona and ne. Sonora and nw. Chihuahua, Mexico ([American Ornithologists' Union 1957 \(/Species-](#)

[Account/bna/species/rucspa/references#REF44080](#)), [Phillips 1968f \(/Species-Account/bna/species/rucspa/references#REF48172\)](#), [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#), [Small 1994 \(/Species-Account/bna/species/rucspa/references#REF7103\)](#)). Relatively large, with medium-sized bill; upperparts gray, with more extensive reddish-brown wash; and underparts pale brown, with gray tinge ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#), [Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#)). Intergrades with *eremoeca* (see below) in se. New Mexico and w. Texas (once considered a separate subspecies: *tenuirostra*; [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)). Whereas Pyle ([Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#)) refers specimens in se. Colorado and w. Oklahoma to *scottii*, others ([Paynter 1970b \(/Species-Account/bna/species/rucspa/references#REF8919\)](#), [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)) ascribe these populations to *eremoeca* (see below).

*A. r. eremoeca*: Inhabits s. Great Plains from se. Colorado (Otero, Bent, Las Animas and Baca Cos.) and central Oklahoma (Arnett, Arbuckle Mtns. in Murray Co.) south through e. New Mexico and w. and central Texas to n. Chihuahua and central Coahuila, Mexico ([American Ornithologists' Union 1957 \(/Species-Account/bna/species/rucspa/references#REF44080\)](#), [Phillips 1968e \(/Species-Account/bna/species/rucspa/references#REF57350\)](#), [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#), [Jones 1998h \(/Species-Account/bna/species/rucspa/references#REF48170\)](#)). Populations in sw. and central Kansas ([Thompson and Ely 1992 \(/Species-Account/bna/species/rucspa/references#REF18400\)](#)) and w.-central Arkansas south of Arkansas River ([James and Neal 1986 \(/Species-Account/bna/species/rucspa/references#REF16786\)](#)) are probably this race. Previous records of migrants assigned to this race from e. Mexico (Hidalgo, Puebla, Tamaulipas, and n. Veracruz; [Miller et al. 1957 \(/Species-Account/bna/species/rucspa/references#REF13685\)](#)) are apparently in error ([Hubbard](#)

[1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#)). Although superficially similar to *scottii* in overall size (culmen and wing are larger, tail and tarsus shorter), *eremoeca* differs in having upperparts that are more olive (or brownish-gray), with sparse, brown (less reddish) streaking; underparts pale brown or gray; and rufous crown paler and edged with gray ([Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#), [Rising 1996a \(/Species-Account/bna/species/rucspa/references#REF56634\)](#), [Pyle 1997c \(/Species-Account/bna/species/rucspa/references#REF55364\)](#)).

### **Mexican Subspecies**

A brief range statement is given below for the remaining subspecies, found only in Mexico (based on [Paynter 1970b \(/Species-Account/bna/species/rucspa/references#REF8919\)](#), [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#), and other sources as cited). For a detailed description of morphological characteristics that distinguish these races, see [Hubbard 1975 \(/Species-Account/bna/species/rucspa/references#REF57347\)](#).

*A. r. sanctorum*: Todos Santos Is. off nw. Baja California ([Van Rossem 1947b \(/Species-Account/bna/species/rucspa/references#REF57747\)](#)).

*A. r. sororia*: Sierra de la Laguna Mtns. in Cape District of Baja California Sur ([Ridgway 1898a \(/Species-Account/bna/species/rucspa/references#REF19497\)](#)).

*A. r. simulans*: Nw. Mexico from e.-central Sonora and sw. Chihuahua south through ne. Sinaloa, w. Durango, sw. Zacatecas, and w. Guanajuato to ne. Jalisco.

*A. r. pallidisima*: S. Coahuila south to n. San Luis Potosí and east through Sierra Madre Oriental to Nuevo León and Tamaulipas ([Phillips 1966a \(/Species-Account/bna/species/rucspa/references#REF8651\)](#)).

*A. r. phillipsi*: Barranca country of se. Sinaloa and western slopes of Sierra Madre Occidental.

*A. r. suttoni*: E. Nayarit south into n. and w. Jalisco and s. Colima ([Schaldach 1963 \(/Species-Account/bna/species/rucspa/references#REF59013\)](#)).

*A. r. boucardi*: Mexican plateau from s. San Luis Potosí, southwest through Guanajuato, and Querétaro to s. Michoacán, and southeast through Hidalgo, Tlaxcala, nw.-central Veracruz, and n. Puebla ([Miller et al. 1957 \(/Species-Account/bna/species/rucspa/references#REF13685\)](#)).

*A. r. fusca*: Southwestern border of Mexican plateau and bordering mountains from e. Jalisco south through n. Colima and n. Michoacán.

*A. r. duponti*: Valley of Mexico in the Federal District and adjacent México.

*A. r. laybournae*: W.-central Veracruz west through se. Puebla into n.-central Oaxaca.

*A. r. extima*: Guerrero and adjacent Puebla south through s. Oaxaca.

*A. r. australis*: Mountains of central Oaxaca (up to 2,134 m) that surround Oaxaca Valley ([Binford 1989a \(/Species-Account/bna/species/rucspa/references#REF55326\)](#)).

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## Related Species

Although the genus *Aimophila* is a heterogeneous assemblage of grassland, thorn-scrub, and pine-oak (*Pinus-Quercus*) woodland sparrows that has been considered an unnatural group ([Wolf 1977 \(/Species-Account/bna/species/rucspa/references#REF24831\)](#)), recent phylogenetic analysis using morphological, behavioral, and biochemical characters suggests that it is monophyletic ([Patten and Fugate 1998 \(/Species-Account/bna/species/rucspa/references#REF58862\)](#)). Relationships among *Aimophila* species remain poorly understood. Nevertheless, 3 species-groups (clades) within *Aimophila* were defined by Wolf ([Wolf 1977 \(/Species-Account/bna/species/rucspa/references#REF24831\)](#)) and adopted by Am. Ornithol. Union ([American Ornithologists' Union 1998a \(/Species-](#)

[Account/bna/species/rucspa/references#REF63025](#))), with Rufous-crowned, Rusty, and Oaxaca sparrows forming one complex on basis of similarities in primary songs, similar chatter calls (probably not derived from a primary song), and similar plumage patterns with rusty head-stripes. Rufous-crowned Sparrow probably evolved and radiated on Mexican plateau, expanding its range both north and south during interglacial times ([Wolf 1977 \(/Species-Account/bna/species/rucspa/references#REF24831\)](#)).

◀ **[Appearance \(/Species-Account/bna/species/rucspa/appearance\)](#)**

**[Distribution, Migration and Habitat \(/Species-Account/bna/species/rucspa/distribution\)](#)** ▶

**[Introduction \(/Species-Account/bna/species/rucspa/introduction\)](#)**

**[Appearance \(/Species-Account/bna/species/rucspa/appearance\)](#)**

**[Systematics \(/Species-Account/bna/species/rucspa/systematics\)](#)**

[Geographic Variation \(/Species-Account/bna/species/rucspa/systematics#geovar\)](#)

[Subspecies \(/Species-Account/bna/species/rucspa/systematics#subsp\)](#)

[Related Species \(/Species-Account/bna/species/rucspa/systematics#relsp\)](#)

**[Distribution, Migration and Habitat \(/Species-Account/bna/species/rucspa/distribution\)](#)**

**[Diet and Foraging \(/Species-Account/bna/species/rucspa/foodhabits\)](#)**

**[Sounds and Vocal Behavior \(/Species-Account/bna/species/rucspa/sounds\)](#)**

**[Behavior \(/Species-Account/bna/species/rucspa/behavior\)](#)**

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