

= Rufous @-@ crowned sparrow =

The rufous @-@ crowned sparrow (*Aimophila ruficeps*) is a small American sparrow . This passerine is primarily found across the Southwestern United States and much of the interior of Mexico , south to the transverse mountain range , and to the Pacific coast to the southwest of the transverse range . Its distribution is patchy , with populations often being isolated from each other . Twelve subspecies are generally recognized , though up to eighteen have been suggested . This bird has a brown back with darker streaks and gray underparts . The crown is rufous , and the face and supercilium are gray with a brown or rufous streak extending from each eye and a thick black malar streak .

These sparrows feed primarily on seeds in the winter and insects in the spring and summer . The birds are often territorial , with males guarding their territory through song and displays . Flight is awkward for this species , which prefers to hop along the ground for locomotion . They are monogamous and breed during spring . Two to five eggs are laid in the bird 's nest , which is cup @-@ shaped and well hidden . Adult sparrows are preyed upon by house cats and small raptors , while young may be taken by a range of mammals and reptiles . They have been known to live for up to three years , two months . Although the species has been classified as least concern , or unthreatened with extinction , some subspecies are threatened by habitat destruction and one may be extinct .

= = Taxonomy = =

This bird belongs to the family Emberizidae , which consists of the American sparrows and Eurasian buntings . The American sparrows are seed @-@ eating New World birds with conical bills , brown or gray plumage , and distinctive head patterns . Birds in the genus *Aimophila* tend to be medium @-@ sized at 5 to 8 inches (13 to 20 cm) in length , live in arid scrubland , have long bills and tails in proportion to their body size as well as short , rounded wings , and build cup @-@ shaped nests .

The rufous @-@ crowned sparrow was described in 1852 by American ornithologist John Cassin as *Ammodramus ruficeps* . It has also been described as belonging to the genus *Peucaea* , which contains several sparrows in the genus *Aimophila* that share characteristics , such as a larger bill and a patch of yellow under the bend of the wing , that other members of the genus do not . However , splitting the *Peucaea* sparrows into a separate genus is not generally recognized . A 2008 phylogenetic analysis of the genus *Aimophila* divided it into four genera , with the rufous @-@ crowned sparrow and its two closest relatives , the Oaxaca sparrow and rusty sparrow , being maintained as the genus *Aimophila* . In addition , this study suggested that the rufous @-@ crowned sparrow may be more closely related to the brown towhees of the genus *Pipilo* than the other members of the historical genus *Aimophila* .

The derivation of the current genus name , *Aimophila* , is from the Greek *aimos* / ????? , meaning " thicket " , and *-philos* / -????? , meaning " loving " . The specific epithet is a literal derivation of the common name , derived from the Latin *rufus* , meaning " reddish " or " tawny " , and *-ceps* , from *caput* , meaning " head " . The bird is also occasionally referred to colloquially as the rock sparrow because of its preference for rocky slopes .

= = = Subspecies = = =

Twelve subspecies are generally recognized , although sometimes up to eighteen are named .

A. r. ruficeps , the nominate subspecies , was described by Cassin in 1852 . It is found in the coastal ranges of California and on the western slopes of the Sierra Nevada . This subspecies is darker and noticeably smaller than *A. r. eremoeca* and has distinct rufous @-@ brown streaking on its upperparts .

A. r. canescens was described by American ornithologist W. E. Clyde Todd in 1922 , and it is found in southwestern California and northeast Baja California as far east as the base of the San Pedro

Mártir . While the species itself is listed as of least concern , this subspecies is listed as a " species of special concern " by the California Department of Fish and Wildlife , signifying that this population is threatened with extinction . It appears to be extremely similar to *A. r. ruficeps* but is darker .

A. r. obscura , described by Donald R. Dickey and Adriaan van Rossem in 1923 , is found in the Channel Islands of California on Santa Cruz , Anacapa , and formerly on Santa Catalina . While the Santa Catalina population has not been observed since 1863 , the subspecies seems to have colonized Anacapa Island . No records exist of them before 1940 . This subspecies is similar to *A. r. canescens* but is darker .

A. r. sanctorum was described by van Rossem in 1947 . It was found on the Todos Santos Islands off the coast of northwest Baja California . This subspecies is believed to be extinct . This is the darkest of the coastal subspecies , especially on its underbelly .

A. r. sororia was described by Robert Ridgway in 1898 , and is found in the mountains of southern Baja California , specifically the Sierra de la Laguna . It is the palest of the coastal subspecies .

A. r. scottii , described by George Sennett in 1888 , is found from northern Arizona to New Mexico south to northeastern Sonora and northwestern Coahuila . It appears to be a darker gray than *A. r. eremoeca* and has narrower and darker rufous streaks on its breast .

A. r. rupicola was described by van Rossem in 1946 . It is found in the mountains of southwestern Arizona . It is similar in appearance to *A. r. scottii* but is darker and grayer on its back .

A. r. simulans was described by van Rossem in 1934 , and it is found in northwestern Mexico from southeastern Sonora and southwestern Chihuahua to Nayarit and northern Jalisco . It has more rufous coloration on its back and is paler on its underbelly than *A. r. scottii* .

A. r. eremoeca was described by N. C. Brown in 1882 . It is found from southeastern Colorado to New Mexico , Texas , northern Chihuahua , and central Coahuila . It has grayish upperparts and a dark breast .

A. r. fusca , described by Edward William Nelson in 1897 , is found in western Mexico from southern Nayarit to southwestern Jalisco , northern Colima , and Michoacan . It is darker and more rufous on its upperparts than *A. r. australis* . It also possesses a darker rufous crown which does not show a gray stripe down the middle .

A. r. boucardi was described by Philip Sclater in 1867 , and it is found in eastern Mexico from southern Coahuila to San Luis Potosí , northern Puebla , and southern Oaxaca . This subspecies is darker than *A. r. eremoeca* and has dull brown , not rufous , streaking on the chest .

A. r. australis , described by Edward William Nelson in 1897 , occurs in southern Mexico from Guerrero to southern Puebla and Oaxaca . *A. r. scottii* is similar in appearance , but this subspecies is smaller and has a shorter bill .

The other six subspecies that are occasionally recognized are *A. r. extima* and *A. r. pallidissima* , which were described by A. R. Phillips in 1966 , *A. r. phillipsi* , which was described by J.P. Hubbard and Crossin in 1974 , and *A. r. duponti* , *A. r. laybournae* , and *A. r. suttoni* , which were described by J.P. Hubbard in 1975 .

= = Description = =

The rufous @-@ crowned sparrow is a smallish sparrow at 5 @.@ 25 inches (13 @.@ 3 cm) in length , with males tending to be larger than females . It ranges from 15 to 23 g (0 @.@ 53 to 0 @.@ 81 oz) in weight and averages about 19 g (0 @.@ 67 oz) . It has a brown back with darker streaks and gray underparts . Its wings are short , rounded , and brown and lack wingbars , or a line of feathers of a contrasting color in the middle of the bird 's wing . The sparrow 's tail is long , brown , and rounded . The face and supercilium (the area above the eye) are gray with a brown or rufous streak extending from each eye and a thick black streak on each cheek . The crown ranges from rufous to chestnut , a feature which gives it its common name , and some subspecies have a gray streak running through the center of the crown . The bill is yellow and cone @-@ shaped . The sparrow 's throat is white with a dark stripe . Its legs and feet are pink @-@ gray . Both sexes are similar in appearance , but the juvenile rufous @-@ crowned sparrow has a brown crown and numerous streaks on its breast and flanks during the spring and autumn .

The song is a short , fast , bubbling series of chip notes that can accelerate near the end , and the calls include a nasal chur and a thin tsi . When threatened or separated from its mate , the sparrow makes a dear @-@ dear @-@ dear call .

= = Distribution and habitat = =

This bird is found in the southwestern United States and Mexico from sea level up to 9 @,@ 800 feet (3 @,@ 000 m) , though it tends to be found between 3 @,@ 000 and 6 @,@ 000 feet (910 and 1 @,@ 830 m) . It lives in California , southern Arizona , southern New Mexico , Texas , and central Oklahoma south along Baja California and in western Mexico to southern Puebla and Oaxaca . In the midwestern United States , the sparrow is found as far east as a small part of western Arkansas , and also in a small region of northeastern Kansas , its most northeastern habitat . The range of this species is discontinuous and is made up of many small , isolated populations . The rufous @-@ crowned sparrow is a non @-@ migratory species , though the mountain subspecies are known to descend to lower elevations during severe winters . Male sparrows maintain and defend their territories throughout the year .

This sparrow is found in open oak woodlands and dry uplands with grassy vegetation and bushes . It is often found near rocky outcroppings . The species is also known from coastal scrublands and chaparral areas . The rufous @-@ crowned sparrow thrives in open areas cleared by burning .

= = Ecology and behavior = =

The average territory size of rufous @-@ crowned sparrows in the chaparral of California ranges from 2 acres (0 @.@ 81 ha) to 4 acres (1 @.@ 6 ha) . The density of territories varies by habitat , including 2 @.@ 5 to 5 @.@ 8 territories per 99 acres (40 ha) of three- to five @-@ year @-@ old burned chaparral to 3 @.@ 9 to 6 @.@ 9 territories for the same amount of coastal scrubland . One pair tends to be supported by a territory , although birds without a mate have been seen sharing a territory with a mated pair .

This sparrow is awkward in flight and primarily uses running and hopping to move . The rufous @-@ crowned sparrow will at times forage in pairs during the breeding season , and in family @-@ sized flocks in late summer and early autumn . During the winter they can occasionally be found in loose mixed @-@ species foraging flocks .

Predators of adult sparrows include house cats and small raptors like Cooper 's and sharp @-@ shinned hawks , American kestrels , and white @-@ tailed kites . The nests may be raided by a range of species including mammals and reptiles such as snakes , though nest predation has not yet been directly observed , and nesting sparrows have been observed using three kinds of displays to distract potential predators ; the rodent run , the broken wing , and the tumbling off the bush . Birds adopt a rodent run display to distract predators . The head , neck and tail are lowered , wings held out , and feathers fluffed as the bird runs rapidly and voices a continuous alarm call . In the broken wing display , the sparrow imitates having a broken wing by dropping one to the ground and hopping away from the nest with one wing dragging , leading the predator away until the bird ceases the act and escapes the predator . The adult rufous @-@ crowned sparrow distracts a nest predator by falling from the top of a bush to attract the predator to itself in the tumbling off the bush display .

The longest lifespan recorded for a rufous @-@ crowned sparrow is three years , two months . Two species of tick , *Amblyomma americanum* and *Ixodes pacificus* , are known to parasitize the sparrow .

= = Diet = =

This sparrow feeds primarily on small grass and forb seeds , fresh grass stems , and tender plant shoots during autumn and winter . During these seasons , insects such as ants , grasshoppers , ground beetles , and scale insects as well as spiders make up a small part of its diet . In the spring and summer , the bird 's diet includes a greater quantity and variety of insects .

The rufous @-@ crowned sparrow forages slowly on or near the ground by walking or hopping under shrubs or dense grasses . Though it occasionally forages in weedy areas , it is almost never observed foraging in the open . It has occasionally been observed feeding in branches and low shrubs . During the breeding season , it gleans its food from grasses and low shrubs . However , normally the species obtains its food by either pecking or less frequently scratching at leaf litter . This bird tends to forage in a small family group and in a limited area .

It is unknown whether this species obtains all of the water it needs from its food or if it must also drink ; however , it has been observed both drinking and bathing in pools of water after rain storms .

= = = Reproduction = = =

The rufous @-@ crowned sparrow breeds in sparsely vegetated scrubland . Males attract a mate by singing from regular positions at the edge of their territories throughout the breeding season . These birds are monogamous , taking only one mate at a time , and pairs often remain together for several years . If singing males come within contact of each other , they may initially raise their crowns and face the ground to display this feature ; if that fails to make the other bird leave , they stiffen their body , droop their wings , raise their tails , and stick their head straight out . Males guard their territories year @-@ round .

While it is not known when precisely the breeding season starts , the earliest that a sparrow has been observed carrying nesting material was on March 2 in southern California . The female bird builds a bulky , thick @-@ walled open @-@ cup nest typically on the ground , though occasionally in a low bush up to 18 in (46 cm) above it , from dried grasses and rootlets , sometimes with strips of bark , small twigs , and weed stems . Nests are well hidden , as they are built near bushes or tall grasses or overhanging rock with concealing vegetation . Once a sparrow chooses a nesting site , it tends to return to the site for many years . It lays between two and five eggs at a time and typically only raises one brood a year , though some birds in California have been observed raising two or even three broods a year . In case of a nesting failure , replacement clutches may be laid . The eggs are an unmarked , pale bluish @-@ white . Broods of the rufous @-@ crowned sparrow have very occasionally been observed to be parasitized by the brown @-@ headed cowbird .

Incubation of the eggs lasts 11 to 13 days and is performed solely by the female . The hatchlings are naked and quills do not begin to show until the third day . Only females brood the nestlings , though both parents may bring whole insects to their young . When a young rufous @-@ crowned sparrow leaves the nest after eight or nine days , it is still incapable of flight , though it can run through the underbrush ; during this time it is still fed by the parents . Juveniles tend to leave their parent 's territory and move into adjacent habitat in autumn or early winter . Reproductive success varies strongly with annual rainfall and is highest in wet El Niño years , since cool rainy weather reduces the activity of snakes , the main predator of the sparrow 's nests .

= = Conservation = =

The rufous @-@ crowned sparrow is treated as a species of least concern , or not threatened with extinction , by BirdLife International due to its large geographical range of about 463 @,@ 323 sq mi (1 @,@ 200 @,@ 000 km2) , estimated population of 2 @.@ 4 million individuals , and lack of a 30 % population decline over the last ten years . In years without sufficient rains , many birds fail to breed and those that do produce fewer offspring . Some of the local populations of this bird are threatened and declining in number . The island subspecies and populations have declined in some cases : A. r. sanctorum of the Todos Santos Islands is believed to be extinct , and the populations on Santa Catalina Island and Baja California 's Islas de San Martin have not been observed since the early 1900s . Populations of the species in southern California are also becoming more restricted in range because of urbanization and agricultural development in the region . Additionally , the sparrow is known to have been poisoned by the rodenticide warfarin , though more research is needed to determine the effects of pesticides on the rufous @-@ crowned sparrow .