

VAUX'S SWIFT

Chaetura vauxi

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Management Status: Federal: None
California: Species of Special Concern (CDFG, 1998)

General Distribution:

Vaux's Swifts breed in western North America from the Pacific Northwest south through the mountain ranges of central California and, in the Neotropics, from eastern and western Mexico south to Panama and, disjunctly, on the Yucatan Peninsula and in northern Venezuela (Bull and Collins 1993). The northern, nominate subspecies is the one occurring in western North America. Its breeding range extends from extreme southeastern Alaska, western and southern British Columbia, Washington, northern Idaho, and western Montana, to Oregon (except the arid southeast) and California. The California breeding range, detailed by Sterling and Paton (1996) includes the forested coastal regions from Del Norte County to Santa Cruz County, with a small breeding population possibly also occurring on the Big Sur coast of Monterey County (Roberson and Tenney 1993). Breeding populations also occur locally and in low densities through northeastern California and south in the Sierra Nevada to Tulare County (Sterling and Paton 1996).

The winter range of northern, nominate Vaux's Swifts is not well known, because of difficulty in separating birds of this subspecies from birds of resident subspecies of the Neotropics. Most birds probably winter from central and southern Mexico south through Guatemala and Honduras (AOU 1957, Bull and Collins 1993). Vaux's Swifts are scarce and irregular winter visitors in coastal southern California (Garrett and Dunn 1981), although concentrations of 100 or more have been noted.

Migrant Vaux's Swifts occur throughout southern California, primarily from mid-April to late May in spring, and from late August to mid-October in fall. Large concentrations of 10,000+ migrants may gather at traditional roosting sites, such as in downtown Los Angeles, in spring and fall (Garrett 1996). Miller and Stebbins (1964) cite spring dates of 27 April-13 May and fall dates of 4-13 September for Joshua Tree National Park. Along the lower Colorado River Rosenberg et al. (1991) cite a spring peak for early May. Numbers are generally small there, with the largest concentrations noted during series of severe storms; fall numbers are even lower than those of spring.

Distribution in the West Mojave Planning Area:

Vaux's Swifts are likely to be found throughout the WMPA during normal spring and fall migration periods, with spring numbers exceeding those of fall. They do not breed within the WMPA; the nearest breeding localities are in the southern Sierra Nevada in Tulare County. Areas of concentration appear to be around lakes, reservoirs and wetlands,

where abundant flying insect food may sustain migrations during inclement weather. Examples include Piute Ponds on the Edwards Air Force Base, Lake Palmdale, and Harper Lake. During calm, warm weather these swifts probably pass rapidly through the region.

There are no winter records for the WMPA. A record for 7 April 1980 at Pearblossom, Los Angeles Co. (Garrett and Dunn 1981), is the earliest spring transient known from the planning region. Fall records in the planning region extend at least as late as 8 October 1981 at Piute Ponds, Edwards Air Force Base, Los Angeles County.; K. L. Garrett, pers. obs.). Migration peaks in the planning area are presumably the same as those for the entire southern California region: early May in spring and late September in fall.

Natural History:

A small (4 3/4"; 11 cm) aerially-foraging bird, with typical swift proportions (long, narrow wings, short bill with large gape, very short and weak legs); wing span averages 273 mm (M. Marin, unpubl. data). The tail is short and slightly rounded, with spines projecting at the tip of each rectrix. Flight is rapid and "twinkling", consisting of rapid series of shallow wingbeats alternated with short looping glides. Easily distinguished from swallows by narrower wings with wrist joint closer to body, by rapid stiff wingbeats, and overall gray-brown coloration. Distinguished from the only other widespread swift in the Mojave Desert, the White-throated Swift (*Aeronautes saxatalis*) by smaller overall size, much shorter rear body and tail, shorter wings, and relatively uniform plumage (lacking the contrasting white patches of White-throated). Most similar to the Chimney Swift (*Chaetura pelagica*), which appears to be a rare breeding species and transient in southern California (Garrett and Dunn 1981); however, the close similarity of Chimney to Vaux's and other, extralimital *Chaetura* species renders its status in California somewhat speculative. Chimney Swifts are somewhat larger and darker overall, with relatively longer wings and longer body projection behind the wings in flight; Chimney Swifts tend to fly with longer and more frequent glides, although there is considerable overlap in this behavioral character. The two species are best distinguished by vocalizations: loud staccato chipping calls of Chimney Swifts, as opposed to high, insect-like trilling and rapid weak chips of Vaux's Swifts. Identification information presented here was derived from Chantler and Driessens (1995), Dunn (1979), and KLG (pers. obs.).

Foraging is exclusively aerial and diurnal. Food consists almost exclusively of aerial insects and aerially-drifting spiders; in one study, 88% of food items in boluses brought to nestlings consisted of Homoptera, Diptera, and Ephemeroptera (Bull and Beckwith 1993). Adequate studies of adult diets (as opposed to nestling diets determined from boluses) are lacking (M. Marin, pers. comm.). Optimal foraging heights, tracking the greatest densities of aeroplankton, probably vary in a complex manner with wind, temperature, topography, time of day, and season.

Nest sites are in hollow live trees, residual snags, and, to a lesser extent, chimneys and other man-made structures (Bull and Collins 1993, Sterling and Paton 1996). The single annual clutch consists of 5-7 eggs, with six being the most common clutch size (Bull and Collins 1993; M. Marin, pers. comm.).

The Vaux's Swift is a diurnal migrant, usually flying high (Bull and Collins 1993); they may fly as low as 1-2 m (3-6 feet) when encountering strong headwinds.

Habitat Requirements:

In coastal northern and central California, where the state's highest breeding densities occur, preferred nesting habitat is old-growth redwood (*Sequoia sempervirens*) forests. Breeding distribution seems closely linked to nest site availability (Sterling and Paton 1996). There is thought to be a close relationship between breeding distributions of this swift and the Pileated Woodpecker (*Dryocopus pileatus*; Sterling and Paton 1996); the latter species excavates large nest cavities in conifers rotted by fungus, and such cavities are known to be utilized by swifts. Breeding habitat in the Sierra Nevada is montane coniferous forest; one nest in the Yosemite region was in a red fir (*Abies magnifica*; Gaines 1988).

In the spring large numbers concentrate over lakes and marshes during northerly storms and associated westerly or northerly winds, often mixed with flocks of migrant swallows. During calm, warm weather such concentrations are less common, as birds appear to pass through southern California rapidly on their way north. Migration over the deserts of southern California appears to be on a broad front.

For roosting, migrant Vaux's Swifts require some kind of shelter. If available they will utilize hollow structures such as decayed or burned trees, chimneys, barns, outbuildings, or building shafts (Bull and Collins 1993). If such protection is not available they may cling to tree trunks on cold nights (Stager 1965), huddling together to reduce thermal stress. There is no specific information on roost sites used by migrant Vaux's Swifts in the Mojave Desert.

Population Status:

Breeding Bird Survey data show sharp declines over much of the breeding range of this species (Bull and Collins 1993). These declines, and the restriction of most of the California breeding population to old-growth forests, led to the placement of this species on the California Bird Species of Special Concern list.

No estimates of the total population of nominate *vauxi* exist.

Threats Analysis:

The chief cause of population decline is thought to be the felling of old growth forests and replacement with young, even-age stands; this deprives swifts of available nest and roost sites (Bull and Collins 1993). Man-made structures such as chimneys are used for nest sites in parts of the breeding range; changes in chimney design and blocking of chimney entrances by screens and spark arresters may eliminate potential nest sites (Bull and Collins 1993).

A potential threat to migrants is the loss of important, traditional roost sites for migrants. For example, a large concentration of migrant Vaux's Swifts occurs annually in the downtown Los Angeles area, perhaps taking advantage of foraging opportunities provided by updrafts along slopes adjacent to the Los Angeles River (K. L. Garrett pers. obs.); as many as 10,000 of these birds utilize a single man-made roost site, a building

shaft in central Los Angeles. Loss of availability of this roost site, or severe disturbance to roosting birds within the site, has the potential for harming a significant number of swifts.

Over most of the WMPA there appear to be few or no threats to the Vaux's Swift, since this species does not breed in the region and there are no known regularly-used roost sites involving large numbers of migrants. These swifts may fly as low as 1-2m (3-6 feet) when migrating into strong headwinds (Bull and Collins 1993). Birds encountering severe storms (particularly in spring) may be vulnerable to collisions with vehicles or stationary objects such as buildings, towers, or guy wires. At least one individual was killed by severe burns when flying through a solar-energy generating complex near Daggett (R. L. McKernan, pers. comm.; specimen at Los Angeles County Museum). Collins (1971) cites one case of a spine from an *Opuntia* cactus imbedded in a live Vaux's Swift banded at Big Morongo Canyon, suggesting that collisions with cacti might sometimes occur during low flights.

Biological Standards:

As Vaux's Swifts are strictly transients through the WMPA, there are few management options likely to benefit the species. This species is entirely aerial during its passage through the WMPA except for the occupation of night time roosts in chimneys or other hollow building shafts, in hollow trees, or (when the preceding are unavailable) on tree trunks. Management guidelines should stress the protection of any known, regularly used night time roost sites and the reduction in mortality through collisions with buildings, towers, and wires. Aeroplankton generated by wetlands, including desert marshes and freshwater lakes and reservoirs, provide important foraging opportunities for transient Vaux's Swifts in the WMPA, and may be critical to energy-stressed birds which encounter cold fronts during spring migration over the deserts; such wetlands should be protected.

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