Costa's Hummingbird *Calypte costae*

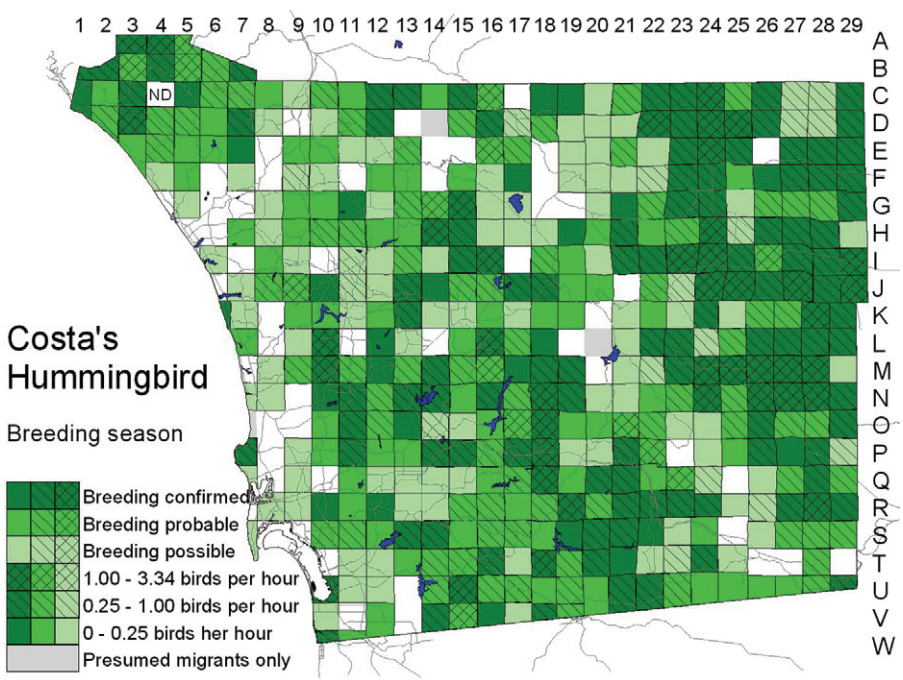
Some birds' lifestyle is to find a territory that can support them reliably and defend that territory as long as they can. Other species—like Costa's Hummingbird—find abundant but ephemeral resources, exploit them while they last, then move on. Where flowers bloom in abundance, Costa's Hummingbirds gather in numbers, then disappear as the flush fades. The birds capitalize on the desert's bloom in late winter and spring, that of sage scrub and chaparral in spring and summer, especially where wildflowers proliferate following a fire.

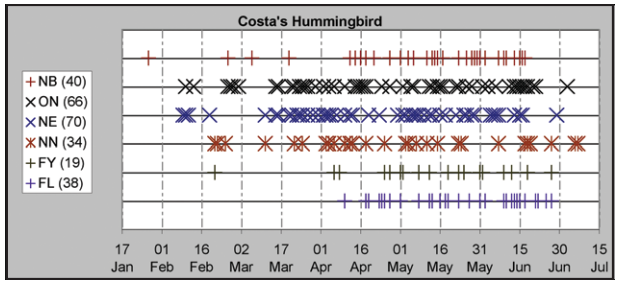
Photo by Anthony Mercieca

Breeding distribution: Costa's Hummingbirds breed over most of San Diego County though not at the same time in all regions. They occur throughout the Anza–Borrego Desert, where they are common in spring (up to 50 near Whitaker Horse Camp, D23, 12 April 1999, P. Unitt). Their abundance varies with rainfall and the abundance of flowers that follows. Our count per hour in eastern San Diego County varied from 0.96 in the wet 1998 to 0.38 in the dry 2000. In the desert, alluvial slopes, with their rich flora, offer the best habitat to Costa's Hummingbird, while valley floors dominated by halophytes offer little. As a food source the chuparosa, with its longer flowering season, is the most important shrub to Costa's Hummingbird in the Anza–Borrego Desert (Stiles 1973). Ocotillo, desert lavender, desert thorn, and desert "willow" are also important, and the birds feed on many other plants as well.

On the coastal slope Costa's Hummingbird is also widespread, more abundant in the inland valleys and foothills than in the higher mountains or along the coast (up to 60 near Tule Springs, N18, 2 July 2001, J. R. Barth, E. C. Hall, A. P. and T. E. Keenan). In mature sage scrub and chaparral Costa's Hummingbird is fairly common, especially where white sage and Cleveland sage are common. Cox (1981) suggested that Cleveland sage is specialized for pollination by Costa's Hummingbird.

A study comparing recently burned and mature chaparral near Pine Valley revealed that Costa's Hummingbirds move into recovering burned chaparral in large numbers when the habitat is still dominated by herbs and subshrubs, especially woolly bluecurls, vinegar weed, showy





penstemon, sticky nama, and the slope semaphore or wide-throated yellow monkeyflower. Following heavy rain in the winter of 1992–93, these plants bloomed so profusely on recently burned slopes that the hillsides they covered looked purple from distances over a half a mile. Costa's Hummingbird was the most abundant bird in these areas, yet in the following years, as chaparral shrubs recovered, the fire-following plants dwindled and the number of Costa's Hummingbirds fell in tandem. In spite of the brevity of this irruption, the influx sufficed to make Costa's Hummingbird the sixth most common bird in the recently burned areas according to point counts from 1993 to 1997 (Cleveland National Forest data).

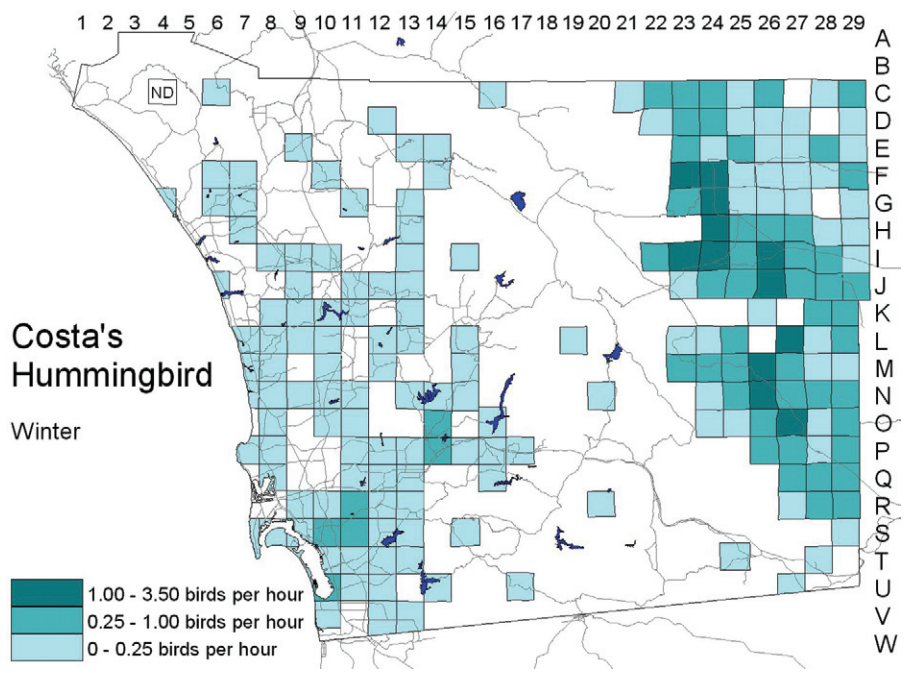
Nesting: Female Costa's Hummingbirds build a typical tiny hummingbird nest, well decorated with flaky material, making no effort to conceal it. Even on the floor of the Anza–Borrego Desert nests are often placed in full sun. The diversity of nest sites atlas observers described is too great to list, but in chaparral the birds often use the dead flowering stalks of the chaparral yucca. After they have burst open and dried, the yucca's fruits make an ideal tripod for supporting the nest. We also found, however, numerous nests in trees, including coast live and Engelmann oaks, cottonwood, and sycamore, habitats where the Black-chinned and Anna's Hummingbirds occur alongside Costa's.

Costa's Hummingbird's breeding seasons in the desert and chaparral differ yet overlap. In the Anza–Borrego Desert the species lays primarily from February through April. Even earlier nesting is possible, perhaps when the birds are stimulated by early rains, as attested by a nest with eggs at Truckhaven Rocks (F28) 9 November 1986 (P. D. Jorgensen) and a nest with nestlings in the Borrego Valley 3 February 1962 (Bakus 1962). Our latest desert nest, in Borrego Springs (G24), had eggs on 18 May 1999 (P. D. Ache).

On the coastal slope, Costa's Hummingbirds lay mainly from mid April to mid June. The activity we observed in this area from 1997 to 2001 agrees closely with the interval of 13 April–13 June attested by 26 egg sets collected from 1895 to 1952, except for two exceptionally early records: an occupied nest in Spring Valley (R12) 1 December 1999 (M. and D. Hastings; not shown on chart) and a nest at the Chula Vista Nature Center (U10) in which the eggs hatched 22–23 February 2001 (B. C. Moore).

Migration: The movements of Costa's Hummingbird are complex and unconventional, as outlined by Baltosser (1989). In the Anza–Borrego Desert the species arrives in numbers by December, remains common through May, and departs largely in June. On the coastal slope the bulk of the population arrives in April and remains into July. The species is seen rarely at oases in the Anza–Borrego Desert through the fall. Its status in native habitats on the coastal slope at that season is still unclear, but the birds are seen in urban gardens in fall, perhaps more often than at other times of the year.

Winter: Because most Costa's Hummingbirds return to the Anza–Borrego Desert before 1 December, the distribution we recorded there during winter was similar to that in spring. The main exception was at the higher elevations of the Santa Rosa and Vallecito mountains, where the species was lacking before March. The Anza–Borrego Christmas bird count commonly yields the highest return of Costa's Hummingbird of any such count in the United States, up to 157 on 19 December 1999. During the atlas period the species' numbers in desert in winter varied with rainfall in the same way as in the breeding season; the birds responded immediately by arriving in larger numbers in the wet winter of 1997–98.



On the coastal slope, wintering Costa's Hummingbirds are uncommon and local, rarely occurring above an elevation of 1500 feet. Many of the birds wintering in the coastal lowland are in flowering ornamental vegetation, but some frequent sites of native semidesert scrub. Most records from sites at higher

elevations, such as Dameron Valley (C16; one on 12 December 1998, K. L. Weaver) and Pamo Valley (I15; up to three on 30 December 2000, M. Dudley), are from such habitat, shared with occasional visitors of other species more typical of desert like Scott's Oriole and Brewer's Sparrow. Following the call of two Costa's Hummingbirds at the south base of Spangler Peak (L15) 17 December 1998 led me to a patch of chuparosa, scarce on the coastal slope. The garden in the San Diego Wild Animal Park featuring the plants of Baja California is the most consistent site for Costa's Hummingbird on the Escondido Christmas bird count.

Conservation: Any long-term trends in Costa's Hummingbird numbers are difficult to discern because of the species' inherent irregularity. Like other hummingbirds, Costa's readily exploits feeders and ornamental plants. The tree tobacco, an exotic plant that proliferates in disturbed open areas, has become an important food source for Costa's and other hummingbirds and has even allowed Costa's to extend its range (Baltosser 1989). All the early writers found Costa's Hummingbird on San Diego County's coastal slope only in spring and summer. On the San Diego Christmas bird count, it was first noted in 1956; since 1980 the count has yielded an average of 20. Urban areas may be a refuge for the species in fall, allowing some to dispense with the need to migrate south or east to regions of summer rain. Nevertheless, urbanization is not an unmitigated boon to Costa's Hummingbird. Anna's Hummingbird appears far better adapted to the relatively static environment of urban gardens. Anna's has increased greatly, and that larger species dominates and displaces Costa's at food sources (Stiles 1973). On the basis of surveys from 11 April to 1 June 1993, Bolger et al. (1997) reported Costa's Hummingbird to be sensitive to habitat fragmentation around metropolitan San Diego. This finding may be due at least in part, however, to a natural preference for sunnier climate; atlas results show the species tends to avoid the coastal strip, commonly blanketed with low clouds in late spring and early summer. The points in fragmented habitat surveyed by Bolger et al. tended to be closer to the coast than those in unfragmented habitat.