

WRENS — FAMILY TROGLODYTIDAE

Cactus Wren *Campylorhynchus brunneicapillus*

Few birds are as dependent on a specialized habitat as the San Diego Cactus Wren is on cactus thickets. The birds remain in their stands of cholla or prickly pear year round, maintaining their nests for roosting. San Diego County has two subspecies of the Cactus Wren, *C. b. anthonyi*, widespread and fairly common in and near the Anza–Borrego Desert, and the San Diego Cactus Wren, *C. b. sandiegensis*, localized and seriously threatened in the coastal lowland. The survival of the San Diego Cactus Wren is one of the county’s greatest challenges in bird conservation. Development or fires threaten the wren’s remaining habitat, and that habitat is so reduced and fragmented that its ability to support the birds over the long term may already be impaired.

Breeding distribution: In San Diego County, the San Diego Cactus Wren is concentrated in four regions: southern Camp Pendleton/Fallbrook Naval Weapons Station (about 70 pairs), Lake Hodges/San Pasqual (90 pairs), Lake Jennings (25 pairs), and Sweetwater/Otay (extending from Dictionary Hill on the north to Otay Mesa on the south, from Euclid Avenue on the west to Upper and Lower Otay lakes on the east; 80 pairs). Other San Diego County sites combined contribute probably fewer than

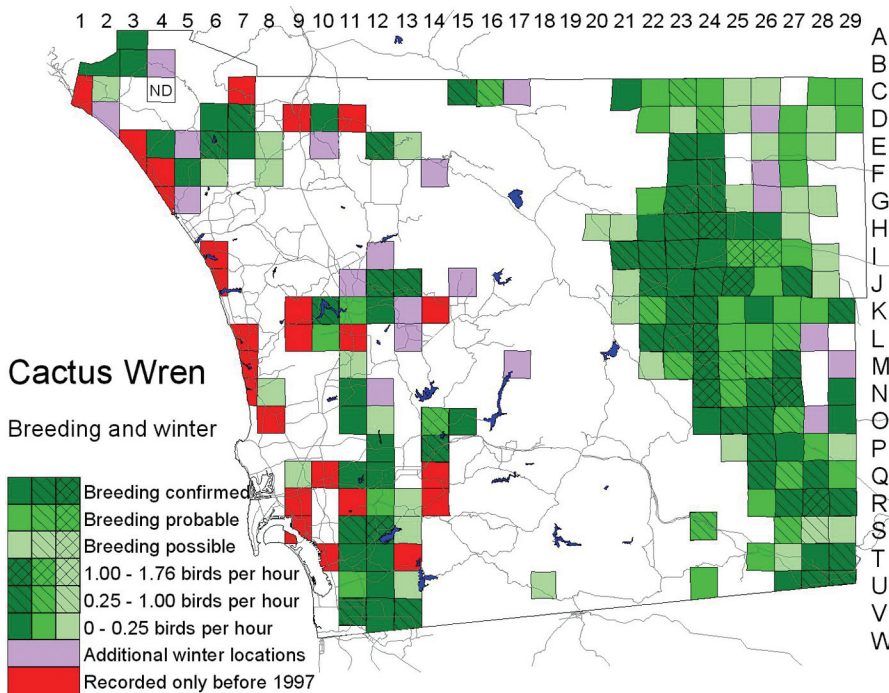


Photo by Anthony Mercieca

50 individuals. Population estimates, from Mock (1993), are based on data extending back to the 1980s and are not comparable with our atlas results, so trends in the short term are unclear. From 1997 to 2001, high counts in one day in one atlas square were of 30 in the Fallbrook Naval Weapons Station (E6) 8 April 2000 (W. E. Haas), 14 at Lake Hodges (K10) 13 August 1997 (R. L. Barber), 12 in the Wild Animal Park (J13) 3 June 1999 (D. and D. Bylin), 12 at Lake Jennings (O14) 19 June 1998 (M. B. Stowe), and 12 at Sweetwater Reservoir (S12) 9 June 1998 (P. Famolaro). Because these figures are not the results of surveys for the Cactus Wren specifically, they are not

comparable with the larger numbers yielded by Weaver’s earlier focused surveys: 20 at Lake Hodges 25 February 1989, 47 in the Wild Animal Park and at San Pasqual Battlefield in March 1990, and 33 at Lake Jennings 9 March 1990. Also, some sites on private property where Cactus Wrens were known before 1997 could not be surveyed for this atlas because of lack of access. This problem rather than habitat loss accounted for our missing the Cactus Wren near Ramona (K13/K14) and on Mother Miguel Mountain (T13), though urban sprawl is extending into the latter area.

Rea and Weaver (1990) listed 77 sites in San Diego County and mapped the species as extirpated in the 1980s at 26 of these. Subsequent records submitted to

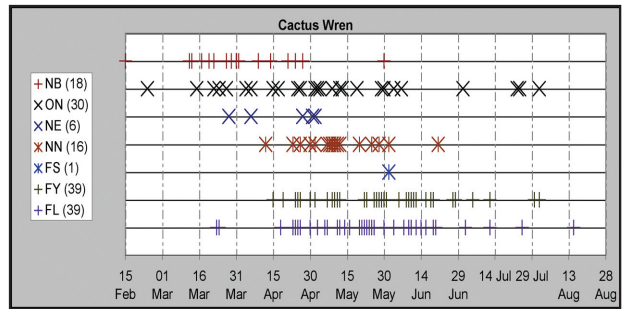


the California Natural Diversity Data Base and San Diego County's Multiple Species Conservation Plan added 16 sites, and field work for this atlas, 1997–2001, added about 18 further sites and relocated the species near six sites where Rea and Weaver (1990) thought it extirpated. The “population” at several of these sites, however, consists of as little as a single individual and therefore may be ephemeral or not viable. Very isolated sites, especially likely to fall into this category, are lower Los Peñasquitos Canyon (N8), very well covered, with only one record, of one singing male 7 June 1998 (P. A. Ginsburg), and Sandrock Canyon, Serra Mesa (Q9), with one singing male 2 May–15 June 2000 (J. A. Martin).

The cactus thickets on which the San Diego Cactus Wren depends are restricted to stands of open sage scrub at elevations below 1500 feet on south- and west-facing slopes, at the bases of hillsides within a quarter mile of river valleys. Along San Mateo Creek and the Otay River, they occur in broad dry washes. The wrens especially favor hillside gullies in which cacti can grow especially tall. The birds' territories range in size from 0.8 to 2 ha, averaging 1.3 ha, thus tending to be smaller than those of Cactus Wrens in Arizona (Rea and Weaver 1990).

In and near the Anza–Borrego Desert, subspecies *anthonyi* is most common on well-drained soil with abundant cacti (counts in the breeding season up to 31 on Mescal Bajada, J25, 12 June 1998, M. and B. McIntosh; 20 near Indian Hill, R28, 6 May 1998, J. O. Zimmer; 20 near Jacumba, U28, 20 March 1998, C. G. Edwards). It is fairly common in the town of Borrego Springs, where houses are scattered and native desert plants are used widely in landscaping (up to 12 on 15 March 1997, P. D. Ache). But it is lacking from valley floors, where cacti cannot grow in the alkaline soil, from badlands almost lacking in vegetation, and from the sandy region around Ocotillo Wells. Cactus Wrens extend well up the mountains' east slope, nearly to the head of San Felipe Valley (H20; two in April and May 2000, A. P. and T. E. Keenan) and Boulevard (T26; one on 31 May 1998 and 31 May 1999, D. S. and A. W. Hester). Their elevational range extends up to about 3900 feet (Rea and Weaver 1990). We discovered two sites a short distance onto the coastal slope in southeastern San Diego County, in semidesert scrub with considerable snake cholla: Miller Valley (S24; up to three on 9 May 2000) and 4 miles east of Cameron Corners (U24; two singing males 10 May 1999, L. J. Hargrove). Cactus Wrens, *anthonyi* on the basis of Weaver's observations and photographs, also occur on the coastal slope in Dameron and Oak Grove valleys (C15/C16/C17), in sage scrub dominated by flattop buckwheat and deerweed with abundant cacti and yuccas (up to seven, including fledglings, in Dameron Valley, C15, 7 June 1997, K. L. Weaver). Here, in a habitat shared with several other typically desert species, the wrens appear to nest exclusively in the cane (or valley) cholla.

Nesting: The Cactus Wren's nest, a hollow football-shaped structure with the entrance hole at one end, is unique. Subspecies *sandiegensis* builds in chollas or prickly pears almost exclusively; of 584 nests observed by Rea



and Weaver (1990), only two, in yellow bush penstemons, were not in cacti. But the birds evidently do not discriminate among the coast cholla and either species of prickly pear (*Opuntia littoralis* or *O. oricola*). Rea and Weaver (1990) found the median height of 98 cacti in which the wrens were nesting to be 138 cm, range 74–226 cm. Cacti lower than this range do not offer suitable habitat, presumably because the nest is too accessible to predators.

Though also usually selecting cacti, subspecies *anthonyi* is slightly more flexible in choice of nest site. We noted four nests in Mojave yucca, one in a palo verde, one in a deformed ocotillo, and one apparently hidden in the skirt of a California fan palm, besides many in four species of cholla.

Because Cactus Wrens maintain nests for roosting year round, observations of nest building and occupied nests are not valid clues to the species' breeding schedule. Likewise, old nests do not confirm breeding. Nevertheless, because the species is almost completely sedentary, the difference between the distribution of nests and the distribution of breeding wrens is minor. The most conspicuous possible exception was at Barrett Junction (U18), where I found a nest but no Cactus Wrens 13 February 2000. Repeated checks of the site through the following spring never revealed any birds, only a gradually deteriorating nest.

Our observations from 1997 to 2001 suggest that mid March to early June is the main season for Cactus Wrens to lay in San Diego County. Forty-three collected egg sets from San Diego County (all but three of the San Diego Cactus Wren) range in date from 7 March to 10 July. Bent (1948) reported a California date as early as 2 March. Our only observations outside this window were in the wet spring of 1998, when fledglings in Culp Valley (G23/H23) 23 and 24 March implied laying as early as mid February (M. L. Gabel).

Migration: Dispersal of Cactus Wrens away from their breeding sites is minimal, but the rare instances of such dispersal may be vital to the species' viability. Guy McCaskie's two coastal records of vagrants well away from breeding habitat, from Point Loma 14 October 1967 and Mission Bay 14 February 1970, have not been replicated since. A juvenile found at the south base of Cowles Mountain (Q11) 23 June 2001 (SDNHM 50564) shows that juveniles may leave their natal territories soon after independence from their parents. The known nesting pairs nearest this site are about 1.9 miles to the southwest below Lake Murray and an equal distance to

the northeast near Cowles Mountain's northeast base in southern Santee.

Winter: Winter numbers differ little from those in the breeding season. High winter counts of *sandiegensis* were of 23 in the Wild Animal Park (J13) 29 December 2001 (K. L. Weaver) and 21 at Lake Jennings (O14) 7 February 1998 (M. B. Stowe). High winter counts of *anthonyi* were of 22 in north Borrego Springs (F24) 19 December 1999 (P. K. Nelson et al.) and 20 in Box Canyon (L23) 10 January 1998 (S. D. Cameron). The only winter record more than 3 miles away from a known colony was from about 2800 feet elevation in Rancho Cuca (F14; one on 26 and 27 December 1999, S. and J. Berg). Seemingly isolated occurrences in Pamo Valley (J15; two on 2 January 2000, W. E. Haas), along Highland Valley Road about 5.5 west of Ramona (L13; one on 2 January 1999, J. McColm), and in the canyon of the San Diego River above El Capitan Reservoir between Boulder and Isham creeks (M17; one on 24 January 1998, R. C. Sanger) reflect sites possibly occupied only intermittently or sites previously known but missed during the breeding season because of access problems.

In the Anza–Borrego Desert we noted Cactus Wrens in winter in seven squares where we did not see them in the breeding season, suggesting occasional winter dispersal into marginal habitat. In two squares we saw nests but never the birds themselves at any season.

Conservation: Because of its restriction to stands of chollas and prickly pears, the San Diego Cactus Wren has always had a rather patchy range (Bancroft 1923). Nevertheless, it was formerly widespread at elevations below 1000 feet in coastal San Diego County, especially in the area now covered by the inner city of San Diego (Rea and Weaver 1990, specimens in San Diego Natural History Museum). Habitat destruction in the form of urban sprawl threatens the San Diego Cactus Wren gravely. W. L. Dawson recognized this as early as 1923, and since then the threat has only intensified. Cactus Wrens occurred formerly on the south-facing slopes just north of northern San Diego County's coastal lagoons but were eliminated from them during the 1980s. The pressure from urbanization is especially strong in the range of the Sweetwater/Otay population. The environmental impact statement for Highway 125 specifies elimination of 11 Cactus Wren territories (V. Marquez pers. comm.). Recent public acquisitions of significant tracts of coastal sage scrub for San Diego County's multiple-species conservation plan include few if any Cactus Wren sites, lying largely too far inland. With the population so reduced and fragmented, the long-term viability of what remains is an open question (Mock 1993).

Rea and Weaver (1990) also identified fire as a threat to the San Diego Cactus Wren, citing Benson (1969) in calling fire "the chief limiting factor in the distribution of cacti in southern California." The long time required for a burned cactus thicket to regrow to a height sufficient for nesting Cactus Wrens can result in the species' dying out in burned habitat. One year after the Laguna Canyon fire

in the San Joaquin Hills, Orange County, the population of Cactus Wrens was down 72% (Bontrager et al. 1995). The threat was dramatized in February 2002 when the Gavilan fire burned much of the Cactus Wren habitat in the Fallbrook Naval Weapons Station.

Habitat fragmentation may compound the negative effect of habitat destruction. Rea and Weaver (1990) noted that during the 1980s all 26 sites where they documented the bird's disappearance had supported fewer than five pairs and that at 18 of these sites the extent of the habitat still appeared sufficient to support at least one pair. If the habitat is adequate, however, rather isolated populations may persist. At Malcolm X Library in southeast San Diego (S11), in partly degraded sage scrub isolated for decades from the rest of the Sweetwater/Otay population, I found that about six pairs persisted from 1997 through 2001. At this site and on Dictionary Hill (R12/S12) Cactus Wrens make some use of spiny garden plants around houses adjacent to colonies in native cactus thickets, so the birds' ability to colonize appropriate landscaping should be explored further, as a means of extending—not replacing—populations in natural habitat.

Other recommendations listed by Rea and Weaver (1990) for conservation of the San Diego Cactus Wren apply now more than ever. The protection of all remaining sites is critical, even if they fall outside multiple-species conservation plans and in the path of proposed highways. Degraded and burned areas need restoration, through planting of cacti. The subspecies' precise numbers are not clear because of difficult access to many sites; some sites on private property could not be surveyed by atlas observers. A thorough census and continued regular monitoring of the population is essential.

The San Diego Cactus Wren has benefited to some extent from the formal listing of the California Gnatcatcher as threatened, since almost all of the wren's sites also support the gnatcatcher, but because of the wren's specializations listing remains important. The petition to list the San Diego Cactus Wren was denied only on the basis of unpublished letters disputing the subspecies' validity and the statement "no apparent morphological or other morphometric differences have been detected to date that distinguish coastal birds from other cactus wrens" (Beattie 1994), in disregard of the evidence of Rea and Weaver (1990).

Taxonomy: Rea and Weaver (1990) analyzed the subspecies of Cactus Wren in southern California thoroughly, detailing the seven characters in which *C. b. sandiegensis* Rea, 1986, differs from both *C. b. anthonyi* (Mearns, 1902), and *C. b. bryanti* (Anthony, 1894) of northern Baja California. *C. b. sandiegensis* differs from *anthonyi* primarily in its more extensively barred tail (especially on rectrices 4 and 5), larger spots on the belly, paler ochre background color on the belly, and less concentration of the breast spots into a dense patch. All known specimens of *sandiegensis* are distinguishable from *anthonyi* by at least one character, 87% by three or more characters. A genetic study (Eggert 1997) found evidence of population isolation at a level even finer than the subspecies evident

on the basis of external characters. Rea and Weaver (1990) described a difference between the subspecies in song—slower, lower, and raspier in *sandiegensis*—that has yet to be studied in detail. On the basis of freshly col-

lected fresh-plumaged topotypes, Rea (1983) supported the distinction of *anthonyi* of the Sonoran Desert from *C. b. couesi* Sharpe, 1881, of the Chihuahuan Desert.