

**Greater Roadrunner *Geococcyx californianus***

An emblem of the deserts of America's Southwest, the Greater Roadrunner is an uncommon resident of San Diego County's Anza-Borrego Desert. It also occurs in sage scrub and open chaparral on the coastal slope but is retreating in the face of urban sprawl. As a large bird requiring a large territory, with a low capability for dispersal, the roadrunner copes poorly with habitat loss and fragmentation. It is disappearing rapidly from canyons surrounded by developed areas.

**Breeding distribution:** Roadrunners range through most of San Diego County in low density. On the coastal slope, they are most numerous in sage scrub with little development or scattered rural homes and agriculture only. Some higher counts are of four, including three calling males, in Las Pulgas Canyon (E4) 26 May 2001 (P. A. Ginsburg), five, all singing males, southeast of Fallbrook (D9) 19 May 1999 (E. C. Hall), and five in the eastern undeveloped part of the Wild Animal Park (J13) 3 June 1999 (D. and D. Bylin). The roadrunner also occurs in broken chaparral up to about 4000 feet elevation (pair in Scove Canyon, P22, 18 June 1997, P. Unitt).

In the better-vegetated parts of the Anza-Borrego Desert the roadrunner's numbers are similar to those in coastal sage scrub (up to five calling males in the Box Canyon area, L23, 26 April 1999, R. Lantz). In the badlands and sparsely vegetated sandy areas near the Imperial County line the roadrunner is scarce—in 10 atlas squares we noted used nests or tracks in the sand but never saw the birds themselves. In some areas, such as the Santa Rosa Mountains, Borrego Mountain, Ocotillo Badlands, and Split Mountain, our not finding even these traces may reflect the roadrunner's absence.

**Nesting:** The roadrunner's nest is a shallow dish about one foot across, built of coarse sticks. In the Anza-Borrego Desert the nests are built in various trees or shrubs; observers reported ocotillo, mesquite, palo verde, desert apricot, and the skirt of a fan palm as sites. On the coastal slope thickets of prickly pear, where we noted three nests, may be preferred for their ability to deter predators. But we also noted nests in some nonnative plants: tamarisk, Peruvian pepper, and eucalyptus.

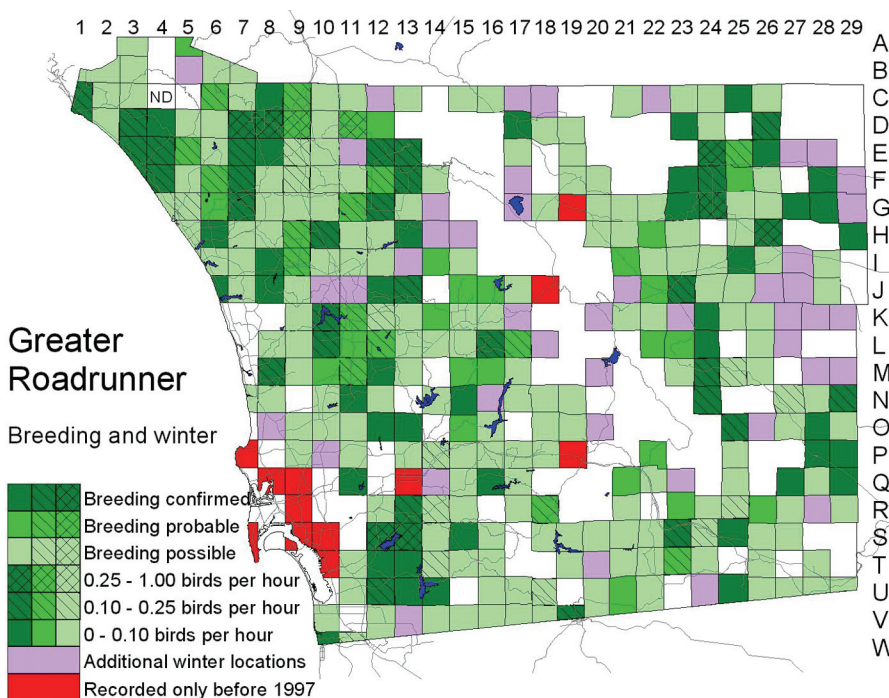
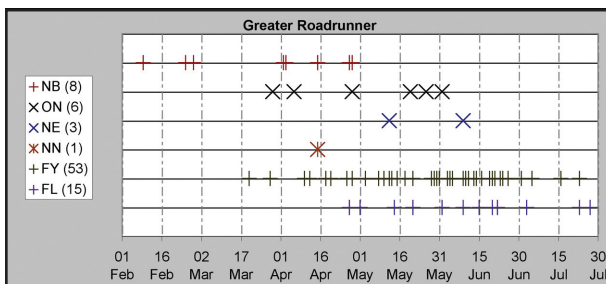
In the wet spring of 1998 we noted nest building by roadrunners as early as 9 February and adults carrying food items as early as 20 March (near the Borrego Air Ranch, H26, M. L. Gabel). Sharp (1907) collected roadrunner eggs at Escondido as early as 14 February, and K.



Photo by Anthony Mercieca

L. Weaver found a nest with three eggs near Lake Hodges as early as 13 February in 1982. But both egg collections and our observations from 1997 to 2001 point to March through early June being the season for the roadrunner's egg laying in dry to average years.

**Winter:** Mated pairs of adult roadrunners maintain their territories year round, and the degree to which the young disperse is unknown (Hughes 1996). The winter distribution we observed did not differ appreciably from the breeding distribution, though we noted roadrunners twice in winter at elevations higher than we found them in the breeding season, with one about 4000 feet near Julian (K20) 1 December 1997 (E. C. Hall) and one at 4700 feet at Stonewall Mine (M20) 4 January 2000 (S. Jorgensen). Our highest winter count in a single atlas square was of nine in south Borrego Springs (G24) 19 December 1999 (P. D. Ache et al.).



**Conservation:** The roadrunner adapts to low-intensity rural development that leaves much open ground. It appears to be more numerous in the town of Borrego Springs than in the surrounding undisturbed desert. But the style of urban development characteristic of coastal southern California, where the ground surface is covered completely with buildings, landscaping, and pavement, eliminates the roadrunner. The roadrunner's very name harks back to the days of the horse and buggy, when the birds could be seen commonly along San Diego's unpaved streets (Belding 1890, Stephens 1919a). Today, speeding traffic kills roadrunners regularly. The species' decline in metropolitan San Diego is evident from results of San Diego

Christmas bird counts: from 1963 to 1972 the count's average was 8.2 roadrunners; from 1997 to 2001 it was only 1.8. At San Elijo Lagoon (L7) the roadrunner was in decline from 1973 to 1983 (King et al. 1987) and extirpated by 1997.

Soulé et al. (1988) and Crooks et al. (2001) identified the roadrunner as the most sensitive to habitat fragmentation among the eight scrub species they addressed. On the basis of surveys in 1997, Crooks et al. (2001) reported the roadrunner from only one (Sandmark Canyon, Q9) of 34 canyons isolated by urbanization in metropolitan San Diego. They projected that the roadrunner has a 95%

possibility of persisting for 100 years only in fragments of 157 hectares or larger. Even this, however, likely underestimates the roadrunner's sensitivity. Atlas observers did not report the species from any long-isolated canyon, only from recently isolated ones like Rice Canyon, Chula Vista (U11; most recent report, juvenile 24 July 2000, T. W. Dorman). The long-isolated native scrub of Point Loma (S7) and Tecolote Canyon (Q8/Q9) has been covered exhaustively, so the roadrunner's extirpation from those sites is certain—and suggests that isolated habitat of even 400 hectares is insufficient to sustain the birds indefinitely.