Clapper Rail *Rallus longirostris*

Recognized as endangered since the inception of the formal lists in 1970, the Light-footed Clapper Rail numbers only about 100 pairs in San Diego County. Once common in southern California's coastal salt marshes, especially where cordgrass dominates, the rail was decimated as these marshes were filled and degraded. The Tijuana River estuary is an especially critical site; only Newport Bay in Orange County supports more Light-footed Clapper Rails. In spite of its precariously low numbers and continuing habitat degradation, the Clapper Rail retains some flexibility: it recovered from a population crash in the 1980s, and a few individuals have colonized some new brackish or freshwater sites.

Breeding distribution: Richard Zembal has led spring censuses of the Light-footed Clapper Rail throughout its U.S. range annually since 1980, mapping calling birds to maximize precision (Zembal and Massey 1981). His effort has yielded an almost exhaustive inventory of the subspecies' population and history of its fluctuations (Figure 12). In San Diego County, the sites where Zembal has found the rail, from north to south, are as follows. Data are from his surveys (Zembal and Hoffman 2002b) except as noted.

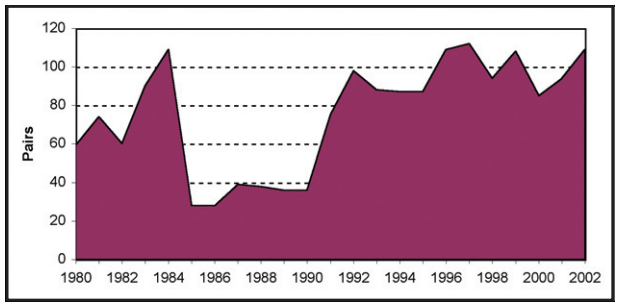

Figure 12. San Diego County Clapper Rail census, 1980–2002.

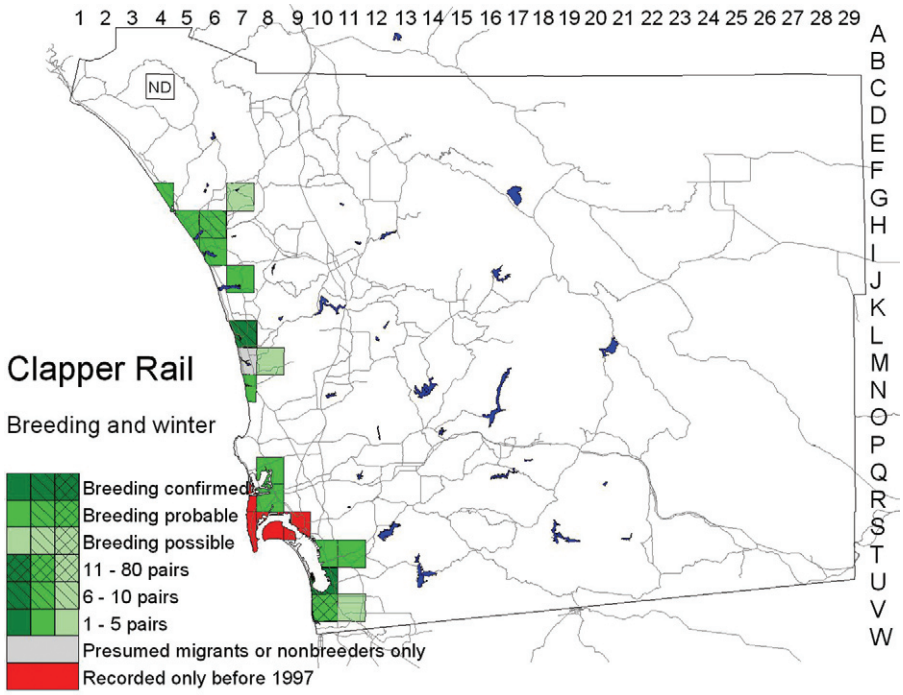

Photo by Anthony Mercieca

Cockleburr Canyon mouth (G4): one pair in 1982, none since.

Santa Margarita River estuary (G4): one or two pairs 1982–88, unpaired individuals in 1993 and 1997, two individuals on 16 April 1999 (P. A. Ginsburg), one pair in 2002.

San Luis Rey River mouth (H5): unpaired individual in 1990, one pair in 1992, none since.

Guajome Lake (G7): one pair in 1983, two in 1984, one individual on 25 June 2001 (K. L. Weaver).

Buena Vista Lagoon (H5/H6): One individual in 1990, two pairs in 1991, and present continuously since, with up to seven pairs in 1997.

Agua Hedionda Lagoon (I6): Up to seven pairs 1980–85, then absent until 1997; up to two pairs 1997–2002.

Batiquitos Lagoon (J7): Unmated individuals 1990–91, then present continuously 1993–2002, with up to three pairs in 1999, 2001, and 2002.

San Elijo Lagoon (L7): Sporadic before 1981 (King et al. 1987), then present almost continuously since, with up to eight pairs in 1997 but only one pair in 2000 and 2001.

San Dieguito River estuary (M7): Unmated individuals in 2000 and 2001.

Los Peñasquitos Lagoon (N7): One pair in 1988, sporadic unmated individuals 1989–93, one or two pairs 1994–2002.

Kendall–Frost Marsh, Mission Bay (Q8): Regular site, maximum 24 pairs in 1984, as few as one pair in 1996—trend is decreasing.

San Diego River flood-control channel (R8): Absent in only two years 1981–2002, maximum six pairs in 2002.

Famosa Slough (R8): Two pairs in 1995 only.

Paradise Creek marsh, National City (T10): Up to three pairs 1980–84, one in 1992, one in 1995, two in 1996, but only sporadic visitors since (one on 19 August 2000, T. A. Godshalk).

Sweetwater River estuary, including E and F Street marshes (U10): Regular site, maximum 17 pairs in 1984, minimum 2 in 1990.

J Street marsh (U10): One pair in 1981 and 2000 only.

Otay River mouth (along edge of salt works; U10): Up to five pairs 1980–86; up to three pairs 1995–2002, but only one pair 1999–2002.

South Bay Marine Biology Study Area (U10): Up to five pairs 1980–93; subsequently only one pair in 1997 and 1998.

Tijuana River estuary (V10): Up to 41 pairs 1980–84, crash to zero in 1985, gradual recovery beginning in 1986, reaching a maximum of 80 pairs in 1999.

Dairy Mart ponds, Tijuana River valley (V11): One pair 1988 and 1993, unmated individuals 1989–92, one bird 28 May 2001 (G. McCaskie).

Three additional freshwater sites not covered by Zembal have also come to light. The most significant is that in the Sweetwater River at Interstate 805 (T11), where the birds have been present at least since 1997, with up to six individuals 27 March 1998 (P. Famolaro). In San Dieguito Valley, along San Dieguito Road at the northeast corner of the Fairbanks Ranch Country Club (M8), the Clapper Rail has been found regularly since 1998; records from the breeding season are of one on 16 May 1999 (P. Unitt) and one on 1 April 2001 (M. and B. McIntosh). Finally, one was calling along the Otay River between Beyer Boulevard and Beyer Way (V11) 25 April 1999 (P. Unitt).

Nesting: Described in detail by Massey et al. (1984). Clapper Rails prefer to nest in tidal marshes where cordgrass dominates, building their nests largely of the hollow cordgrass stems and weaving the nest around upright cordgrass stems. Thus the nest can float with the changing tides while remaining attached in place. The nest is typically equipped with a ramp leading to the ground and a canopy of live cordgrass woven over the nest, screening it. If insufficient cordgrass is available, the birds will build under pickleweed or a tumbleweed blown into the marsh. Nests in freshwater marshes lack a canopy. Birds obliged to nest outside of low marshes, away from cordgrass, suffer more predation.

April and May represent the peak of the Light-footed Clapper Rail's nesting season, but eggs have been collected as early as 6 March (WFVZ), and active nests with eggs have been seen as late as 15 July, meaning laying no earlier than late June (P. D. Jorgensen).

Migration: The Light-footed Clapper Rail is nonmigratory, and the site tenacity of adults is high. But young birds disperse from their natal marshes, as attested by rare sightings in unsuitable habitat, recolonization of some sites following extirpation, and the rail banded in September 1982 at Newport Bay observed the following September at Seal Beach, Orange County, 13.5 miles away (Zembal et al. 1985).

Winter: There is no evidence for the Clapper Rail's range or numbers in San Diego County being any different in winter than in summer. We found the species occasionally at some of the same freshwater localities in winter as in summer: San Dieguito Valley (up to two on 28 February 2000, R. T. Patton), Sweetwater River near Interstate 805 (up to two on 19 December 1998, L. J. Hargrove), and the Dairy Mart ponds (one on 15 December 2001, G. McCaskie).

Conservation: The elimination of 90–95% of southern California's coastal wetlands was the primary factor reducing the Clapper Rail to an endangered species. Currently, deliberate destruction has been halted, but serious habitat degradation continues. Siltation of lagoons and estuaries accelerated greatly with the development of their watersheds, leading to conversion of low marsh with cordgrass ideal for the rails into high marsh of marginal use to them. The fills supporting the railroad and freeway crossing the lagoons of northern San Diego County constrict tidal flushing, compounding the problem of siltation. Restoration of tidal flow at San Elijo and Batiquitos lagoons has enhanced these sites from the rail's perspective. But at Los Peñasquitos Lagoon, home to over 100 Clapper Rails in 1968, much former marsh is now upland. In the Tijuana estuary, debris as well as massive quantities of silt washes in from the Mexican side of the border. Closure of the estuary's mouth led to the marsh's flooding and the population crash of 1985; recovery after reopening of the estuary took six years.

The limited extent of marsh dominated by cordgrass appears to be the primary current factor preventing the population's recovery. Although the numbers in the Tijuana estuary have increased, those at Kendall–Frost and the Sweetwater estuary have decreased, leading to greater dependence on the Tijuana estuary. In spite of this estuary's protection as a national wildlife refuge, problems there persist, including high levels of predation (Northern Harriers specializing on Clapper Rails) and human disturbance (from both illegal immigrants and the Border Patrol) as well as siltation and pollution.

The species' colonization of new sites is a hopeful sign, but its biology suggests that freshwater sites are inferior to those in cordgrass-dominated salt marshes (Massey et al. 1984). Further study enabling comparison of the contributions of the freshwater and traditional saltmarsh sites is desirable.

Public acquisition of south San Diego Bay as the San Diego National Wildlife Refuge opens the possibility for restoration of some former salt marsh, a possibility that must be balanced against the needs of the many birds that take advantage of the salt works that replaced the marsh.

Yet another concern with the Clapper Rail is low genetic diversity and a low rate of genetic interchange among isolated populations. This concern is being addressed in part through captive breeding and transplanting young raised in captivity to sites away from the origin of their parents. The Chula Vista Nature Center and Sea World hatched and raised the Clapper Rail in captivity for the first time in 2001.

Taxonomy: The Light-footed Clapper Rail, *R. l. levipes* Bangs, 1899, is the subspecies resident from Santa Barbara

County south probably at least to Estero de Punta Banda, Baja California. It differs from Clapper Rails farther north, north of Point Conception, mainly by its brighter orangish breast; it differs from those farther south, in central and southern Baja California, by its paler back.