

## CALIFORNIA BLACK RAIL

*Laterallus jamaicensis coturniculus*

USFWS: Species of Concern

CDFG: Threatened

### Species Account

**Status and Description.** The California black rail is listed as a California State Threatened Species. Adult rails are approximately 5-6 inches in length (Trulio and Evens 2000). California black rails are black to gray in color with a small black bill, sides and back speckled with white, and a nape of deep chestnut brown (CDFG 1999). This coloration is less distinctive on juvenile rails.



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**Range, Populations and Activity.** The historic distribution of the California black rail ranged from the San Francisco Bay Area and the delta of the Sacramento and San Joaquin rivers south along the coast to northern Baja California, in the San Bernardino-Riverside area, at the Salton Sea, and along the lower Colorado River north of Yuma in California and Arizona (CDFG 1999). Breeding records in the early 1900's showed black rail populations in San Diego, Los Angeles, and Santa Barbara counties, but urbanization since the 1950's led to the extirpation of these populations (Manolis 1978, Garrett and Dunn 1981). Most of the marshland habitat utilized by black rails has been destroyed or modified in the western United States since the mid-1800's (Josselyn 1983).

California black rails are still present within the remaining tidal marshlands of the northern San Francisco Bay estuary, Bodega Bay, Tomales Bay, Bolinas Lagoon, Sacramento-San Joaquin Delta, coastal southern California at Morro Bay and a few other locations, the Salton Sea, and lower Colorado River area. Loss of higher wetland around San Francisco Bay apparently has eliminated breeding in the south bay area (Manolis 1977). Within the remaining distribution of the species, only isolated populations have been documented in southeastern California and western Arizona (Evens *et al.* 1991). Currently, the rail is most likely absent as a breeder in coastal Southern California and in the Riverside area. Significant loss of saltwater and freshwater wetland habitat in recent decades has probably reduced this population (Wilbur 1974). In 1994, a population of the rail was found in the Sierra foothills east of Marysville (Aigner *et al.* 1995). Further surveys of these foothills discovered several, scattered populations extending north of Chico in Butte County south through Nevada County (J. Tecklin in litt.). Black rails are largely absent from the Central Bay (except for Corte Madera Marsh) and only a rare wintering visitor in the South Bay (Trulio and Evens 2000). On the lower Colorado River, Repking and Ohmart (1977) reported densities of 1.1-1.6 black rails per hectare (0.4-0.6 per acre) in the spring, and 0.7 black rails per hectare (0.3 per acre) in the winter.

Breeding season of California black rails begins in February. Rails conceal their nests in dense vegetation, often in stands of pickleweed and tall grasses, near the upper limits of tidal flooding zone (Stephens 1909). Nests consist of a small, deep, loose cup of woven reeds, plants, or grasses, and are built at ground level or several inches above the ground. Nests with eggs have been reported from March to June (Bent 1926, Wilbur 1974, Cogswell and Christman 1977). Rails in California normally lay one single brood with an average clutch size of six eggs (range is from 3-8) (Dawson

1923, Wilbur 1974). Limited data shows that both parents incubate the eggs for about 17-20 days and that they will produce second and replacement clutches (Flores and Eddleman 1993). Rails are also reported to abandon their nests if disturbed before completing their clutch (Huey 1916, Heaton 1937).

California black rails feed by gleaning isopods, arthropods, terrestrial insects, aquatic invertebrates, and perhaps seeds from the surface of mud and vegetation. Although little is known specifically about black rail diets, Huey (1916) claimed that arthropods were chosen as a favorite food source.

Animals that prey on California black rails include great blue herons, great egrets, and northern harriers, among others (Evens and Page 1986).

California black rails are most often seen during high tides when the lower elevation pickleweed marsh is flooded. Their presence is more commonly detected by their calls, which are usually heard during dawn, dusk, and at night.

**Habitat Use.** California black rails have been observed using fresh, brackish, and pickleweed-dominated salt marshes (Cogswell and Christman 1977, Ehrlich *et al.* 1988). California black rails appear to prefer tidal salt marshes with a heavy canopy of pickleweed (*Salicornia*) and an open structure below the canopy for nesting and accessibility (Evens and Page 1983). Manolis (1978) found 95% of black rails in marshes dominated by either *Salicornia virginica* or bulrush (*Scirpus* spp.). In freshwater marshes, black rails are usually found in bulrushes, cattails, and saltgrass. Along the Colorado River, the species prefers dense bulrush stands, shallow water, and gently sloping shorelines (Repking and Ohmart 1977). During the breeding season, rails were mostly associated with mature, higher elevation marshes dominated by *Scirpus* and *Salicornia* (Evens *et al.* 1991). Evens *et al.* (1991) also found black rails to prefer marshlands with unrestricted tidal influence. Black rails require high (damp ground and shallow water) marshes with little annual and/or daily fluctuations in water levels. During extreme high tides, black rails may depend on upper wetland zones and adjoining upland or freshwater wetland vegetation for cover. The absence of breeding rails in the southern San Francisco Bay could be due to its low marsh elevations (Manolis 1977). Diked, historically tidal marshes have not been shown to support breeding activity presumably because of limited food sources.

**Population Levels and Occurrence in Plan Area.** In the Plan Area, California black rails are associated with Coastal Marsh vegetation located within the Coastal Marsh Natural Community. Recent observations of black rails in isolated freshwater marshes within the Sacramento Valley indicates the potential presence of this species in Freshwater Marsh vegetation within the Riparian, Stream and Freshwater Marsh natural community as well.

The species inhabits the mostly pristine remnants of historical tidal marshlands along the large tributaries and shoreline of northern San Pablo Bay, along the Carquinez Strait, and throughout parts of Suisun Bay (Evens *et al.* 1991). There are currently reports of 26 records for the black rail in Solano County. In Suisun Marsh, black rails have been identified at moderate to high abundance at South Joice Island, East Peyton Slough, Cutoff Island, Southampton Bay, and the Napa Marshes. A small population might also occur in the vicinity of Little Honker Bay and on the north shore of Nurse Slough. California black rails have been found in moderate abundance in the northern reaches of Suisun Bay in undiked marshes along the northern bank of Cutoff Slough from Beldonis Landing

west to Suisun Slough. The tidal marshes of San Pablo and Suisun bays are important because they provide some of the last large refuge areas for stable, viable populations of black rails.

**Dispersal.** California black rails, especially juveniles migrate from August through October (Trulio and Evens 2000). The migration pattern of black rails in California is unclear (Ehrlich *et al.* 1992). Based on the known distribution of black rails, Trulio and Evens (2000) postulate that wintering black rails found in the South Bay most likely migrated from their breeding sites in the North Bay. The reason why wintering birds in the Central and South Bays migrate in the spring is unknown (Trulio and Evens 2000). The lower elevation of marshlands, less peripheral high marsh or transitional habitat, and increased predation rates might be reasons why black rails disperse from these non-breeding areas (Manolis 1978, Evens *et al.* 1991). The discovery of black rail populations in the Sierra Foothills in 1994 suggests that the species is able to colonize isolated habitat patches (Aigner *et al.* 1995, Trulio and Evens 2000). Black rails are also occasionally found away from wetlands in late summer and autumn (Wilbur 1974, Ripley 1977).

**Threats to the Species.** Only about 15% of the tidal marshlands in the San Francisco Bay Area remain from historic times (Dedrick 1989). Habitat loss and alteration due to urbanization, water and flood-control projects, agricultural practices, salt production, and livestock grazing were and continue to be significant factors in the species' decline. Habitat loss alone has led to the complete extirpation of southern California populations (Garrett and Dunn 1981). The continued diversion of freshwater inflows into north San Francisco Bay and the quickening rise in sea level is another threat to black rails (Evens *et al.* 1991). In marshes that lack the transitional vegetation between the high marsh and upland cover that provides a high tide refugia for black rails, heavy predation by native predators can occur and be detrimental to populations of black rails (Evens and Page 1986). Grazing and diking has largely diminished most of the remaining marshes that had this transitional zone (Evens and Page 1986). Contamination in the estuarine system by oil refineries, chemical plants, nuclear weapons depots, and a variety of manufacturing companies could also threaten the species. Isolated populations of black rails are also highly susceptible to metapopulation dynamics and stochastic variables (Evens *et al.* 1991, Nur *et al.* 1997). Black rails are also occasionally found dead from domestic cats and collisions with power-lines, smokestacks, transmission-towers, and automobiles (Harvey 1983).

**Conservation Issues.** Black rails are able to colonize disparate and isolated marshland sites, including newly created ones (Evens *et al.* 1991, Aigner *et al.* 1995, Nur *et al.* 1997), which supports the importance of protecting all suitable marsh habitats for black rails (Trulio and Evens 2000).

Trulio and Evens (2000) emphasize the importance in protecting existing and restoring new high quality habitat for California black rails. Recommended characteristics of habitat that should be protected or restored include: at or adjacent to undiked (fully-tidal) salt marshes with dense stands of pickleweed and other halophytes; upland refugium (with elevations at or above the mean high water mark) for cover and escape from high tides; and control of non-native predators.

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