



*Photo source: B. Moose Peterson.*

The salt marsh harvest mouse is an *endangered species*. Endangered species are plants and animals that are in immediate danger of becoming extinct.

*Threatened species* are plants, and animals whose population numbers are so low that they may become endangered in the future.

The U.S. Environmental Protection Agency's (EPA) Endangered Species Protection Program (ESPP) will help ensure that pesticide use does not jeopardize the survival of listed species.

*Reithrodontomys raviventris*

## Salt Marsh Harvest Mouse *Reithrodontomys raviventris*

### Description and Ecology

**Status** Endangered, listed October 13, 1970.

**Critical Habitat** Not Designated.

**Appearance** The salt marsh harvest mouse is thought to have evolved from the more common western harvest mouse, which it resembles. Its small, 2.75–3 inch-long body is buff to brown, darker than that of the western harvest mouse, as are its ears. It may also have a dark stripe down its back. Of the two subspecies, the northern *Reithrodontomys raviventris halicoetes* has a white belly. The southern *R. r. raviventris* has a cinnamon-colored belly, which is the origin of a common name for the species, "red-bellied harvest mouse."

**Range** Once the salt marsh harvest mouse ranged along the central coast of California. It was concentrated, as it still is, in the salt marshes of the San Francisco Bay area. However, today the mouse's populations are smaller and isolated from each other, largely due to human activities. The northern subspecies inhabits marshes around San Pablo Bay and up the Petaluma River to the Petaluma Marsh, marshes around Suisun Bay east to the Delta of the San Joaquin and Sacramento River, and still other marshes, including some south on the Marin Peninsula. This area includes lands in the San Pablo Bay National Wildlife Refuge (NWR) and lands protected and managed under the Suisun Marsh Preservation Agreement. Suisun Marsh is the largest contiguous brackish water marsh remaining on the West Coast. The southern subspecies is found in the marshes around the southern and southeastern shore of San Francisco Bay. This includes land in the San Francisco Bay NWR.

**Habitat** Salt marshes are the optimal habitat for this species, in particular those that support dense stands of pickleweed and are adjacent to upland, salt-tolerant vegetation, for escape during high tides. The ability to tolerate high salinity in both food (grasses, forbs, seeds, and insects) and water, and the ability to swim and climb enable this mouse to take advantage of its unique habitat. However, the once extensive marshes of San Francisco, San Pablo and

Suisun Bays are now extremely fragmented. Of the 193,800 acres of tidal marsh existing in the 1850s, only about 30,100 remain. Some of the marshes have been pared to remnants that are totally flooded by high tides, leaving no high-ground retreat in which the salt marsh harvest mouse might take refuge. Any rise in sea level combined with a reduction of sediment deposition resulting from upstream dams and water diversions would contribute to the loss of more salt marsh habitat.

**Reproduction and Life Cycle** The life span of the salt marsh harvest mouse is about 8 to 12 months. This requires that the population renew itself every year in order to survive. While sexually active from March to November, females often bear only one of the three possible litters, and litters of only four offspring are typical. If there is a nest, it is only a loose ball of grasses on the surface of the ground. The salt marsh harvest mouse does not burrow. It is vulnerable to snakes, owls, hawks, and cats.

Young salt marsh harvest mice can disperse a considerable distance, but not from fragmented habitat across bare or converted environs.

**Recovery Plan** The U.S. Fish and Wildlife Service (FWS) developed a recovery plan for the salt marsh harvest mouse in 1984. Recovery plans outline reasonable actions that the FWS believes are required to recover or protect listed species. FWS prepares recovery plans, sometimes with the assistance of recovery teams, contractors, state agencies, and others. Recovery plans do not necessarily represent the views nor the official positions or approvals of any individuals or agencies, other than the FWS involved in the plan formulation. Approved recovery plans are subject to modification as dictated by new findings, changes in species' status and the completion of recovery tasks.

# Salt Marsh Harvest Mouse

## Salt Marsh Harvest Mouse Information Sources

**Primary Reference** Beacham, Walton, Castronova, Frank F., and Sessine, Suzanne (eds.) *Beacham's Guide to the Endangered Species of North America*, Gale Group, New York. Vol. II, pp.1348-1350.

**Listing Notice** U.S. Fish and Wildlife Service, 1970. Federal Register 35, No. 199, pp. 16047-16048. [http://ecos.fws.gov/docs/federal\\_register/fr27.pdf](http://ecos.fws.gov/docs/federal_register/fr27.pdf)

**Recovery Plan** U.S. Fish and Wildlife Service, 1984. Salt Marsh Harvest Mouse and California Clapper Rail Recovery Plan. U.S. Fish and Wildlife Service, Pacific Region, Portland, Oregon. 141 pp. [http://ecos.fws.gov/docs/recovery\\_plan/841116.pdf](http://ecos.fws.gov/docs/recovery_plan/841116.pdf)

**Species Account** U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2008. [http://www.fws.gov/sacramento/es/animal\\_spp\\_acct/salt\\_marsh\\_harvest\\_mouse.pdf](http://www.fws.gov/sacramento/es/animal_spp_acct/salt_marsh_harvest_mouse.pdf)



*San Francisco Bay wetlands, Don Edwards NWR.  
John and Karen Hollingsworth/USEWS Digital Library*



*Pickleweed courtesy of Steve Matson*



*Salt marsh harvest mouse release/California Department of Water Resources*