

The Florida salt marsh vole

By Steve Barlow

The Florida salt marsh vole (*Microtus pennsylvanicus duke-campbelli*) is perhaps the rarest mammal in Florida. This small, fawn-brown, short-tailed rodent was first noticed in 1979 by biologists conducting a study of the Scott's seaside sparrow (*Ammodramus maritimus peninsulae*) in a Waccasassa Bay salt marsh near Cedar Key. The Florida vole is a subspecies of the more-common meadow vole whose home is in the northern half of the United States. Our Florida version is what scientists call a "Pleistocene relict," a left-over animal population from the ice age when glaciers covered most of the continent and pushed many animal species south. As the glaciers receded, small pockets of these animals stayed behind.

The waxing and waning of sea levels during periodic ice ages of the Pleistocene Epoch have resulted in great habitat changes in our state. Sea level and habitat changes probably contributed to extinction of about two dozen large mammal species and the disappearance from Florida of several small mammals during the late Pleistocene, though the exact cause is debatable, due to the concurrent arrival of very efficient human hunters. By this time, the size of Florida was reduced by about half, due to rising seas, while dryer, arid, open habitats were giving way to more-humid wooded environs. These broad changes



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probably reduced larger expanses of suitable vole habitat to small fragments, leaving our Florida salt marsh vole to adapt to the Florida version of a meadow – a salt marsh.

The 2-ounce salt marsh vole is the veritable "needle in a haystack" which, until 2004, had only been observed at the original discovery site in Waccasassa Bay. Because only very few numbers have ever been reported, with only 15 observations recorded prior to 2004, the vole was listed as a federally endangered species on January 14, 1991. The basis for listing was its extremely limited range, encompassing only one known population, and the threat of losing this population to a storm or other event.

In the spring of 2004 the author, along with fellow biologist Mike Mitchell, was determined to search salt

marsh habitats on the Lower Suwannee National Wildlife Refuge in Levy and Dixie counties for the presence of this rare, diminutive mammal. During a detailed habitat survey of the refuge's extensive salt marshes and an exhaustive, meticulous trapping effort, scientists discovered a new population of the Florida salt marsh vole and captured and released four voles. This new discovery sparks hope that other isolated populations may exist in Florida's Big Bend region.

The Florida salt marsh vole seems to prefer salt marsh habitats dominated by seashore salt grass (*Distichlus spicata*), especially when this grass is vigorous and thick. Tall, dense stands of seashore salt grass often form thick mats above the ground surface, perhaps providing cover from aerial predators for the secretive vole. There is virtually no tree cover available in the marsh, and the ecosystem – while productive – is rather low in plant diversity. It is a mystery how the small rodent has managed to survive in such a seemingly inhospitable habitat for so long. Almost the entire salt marsh area completely floods at least twice a month with lunar-influenced high tides, tropical storms routinely lash our coasts and predators abound. **FW**

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