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March Rice Rat, *Oryzomys palustris*

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Status Undetermined

MARSH RICE RAT

Oryzomys palustris

Family Cricetidae

Order Rodentia

OTHER NAMES: Rice rat, swamp rice rat, northern rice rat.

DESCRIPTION: A medium-sized rat that would be most easily confused with smaller individuals of the introduced Norway rat (*Rattus norvegicus*). The fur of the marsh rice rat is not as harsh as that of the Norway rat, its tail is more slender, and it has two rows of cusps on the molar teeth rather than three. The fur of the upper parts of the marsh rice rat is brown with a wash of gray mixed with some black hairs. The belly is much paler than the back being whitish gray or silver gray. The tail is long and slender, scaly, and very sparsely haired; it is brown or blackish brown but is never bicolored. The hind feet are relatively large and are white above. Range of external measurements of adult specimens from New Jersey and Delaware are as follows: total length, 217–260 mm; length of tail, 103–119 mm; length of hind foot, 28–31 mm; length of ear, 7–15 mm. These individuals weighed between 49.4 and 66.9 g.

RANGE: The geographic range of the marsh rice rat is primarily in the Gulf and Atlantic coastal lowlands from southern Texas to New Jersey. The species also occurs in the lowlands of the Mississippi

River Valley and in the areas surrounding its principal tributaries (Hall, 1981).

HABITAT: The marsh rice rat is a semi-aquatic species that is found in greatest abundance in the marshes and swamps and other wetlands of the Gulf and Atlantic coastal lowlands. In New Jersey and Delaware, all specimens were captured in salt marshes surrounding Delaware Bay. The majority of the specimens was taken in salt marshes that were regularly flooded on high tide (Arndt et al., 1978). In the northern part of its range, the meadow vole, *Microtus pennsylvanicus*, is a common associate of the marsh rice rat.

LIFE HISTORY AND ECOLOGY: There is no information on the life history or ecology of this species in Pennsylvania. In Maryland, marsh rice rats were found to be polyestrous with breeding occurring from March to November. The gestation period is 25 days with a postpartum estrus. Litter sizes range from one to six young. Estimates of average home range are from 0.23 ha to 0.37 ha. Population density estimates range from 0.1 individual per hectare in coastal Louisiana to 50 individuals per hectare in the Florida everglades. In New Jersey and Delaware, the apparent rarity of the marsh rice rats may result from secretive habits, difficulty to trap, and rela-

tively inaccessible habitat. Arndt et al. (1978) found the species to be at least locally abundant in the salt marshes around Delaware Bay.

There is broad variation reported for the diet of this species. This is probably influenced at least in part by season and local habitat. Sharp (1967) working in a salt marsh in Georgia reported marsh rice rats to be primarily carnivorous. Many other authors have found the food of this species to be mainly seeds and succulent plant parts.

BASIS OF CLASSIFICATION: There are no confirmed records of the marsh rice rat from Pennsylvania although the species is locally abundant in adjacent areas of New Jersey and Delaware (Arndt et al., 1978). There are, however, several reports which lead us to believe that the species may have once occurred in Pennsylvania. Ulmer (1951) reported an incident where five marsh rats were frightened out of a nest in the Tincum marshes, Delaware Co., in 1916. None of the individuals were captured to confirm the sight identification. Roberts and Early (1952) reported that Dr. Robert K. Enders of Swarthmore College had noted the presence of *Oryzomys* skulls in owl pellets found 8 miles north of the Delaware River. Unfortunately, the source of the marsh rice rats could not be located. Marsh rice rat remains are known from several archeological sites in southwestern Pennsylvania (Gilmore, 1946; Guilday and Mayer-Oakes, 1952; Guilday, 1955, 1961). It was estimated that these were no more than 500 years old.

Formerly there apparently was an area of the preferred habitat of the marsh rice rat in southeastern Pennsylvania along the Delaware River. There is enough evidence to suppose that the species may have once occurred in these salt marsh habitats in the Commonwealth. However, most of these areas adjacent to the river in the vicinity of Philadelphia and Chester have been drained and reclaimed for industrial sites. Because of our total lack of information on the marsh rice rat in Pennsylvania and because of major alterations in its preferred habitat, its status is undetermined.

RECOMMENDATIONS: An intensive survey should be undertaken to locate undisturbed salt marshes and other swamps and marshes in Delaware and Philadelphia counties. Such areas as the Tincum Wildlife Preserve and the Philadelphia International Airport may have appropriate habitats. If appropriate areas are located, a program of trap-

ping and research should be instituted to determine if the marsh rice rat is a member of the mammalian fauna of Pennsylvania and, if it is, to gather data on its life history and population levels and cycles.

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