

= *Oryzomys nelsoni* =

Oryzomys nelsoni is an extinct rodent of María Madre Island , Nayarit , Mexico . Within the genus *Oryzomys* of the family Cricetidae , it may have been most closely related to the mainland species *O. albiventer* . Since its first description in 1898 , most authors have regarded it as a distinct species , but it has also been classified as a mere subspecies of the marsh rice rat (*O. palustris*) .

After its discovery in 1897 , it has never been recorded again and it is now considered extinct ; the presence of introduced black rats on María Madre may have contributed to its extinction . *Oryzomys nelsoni* was a large species , distinguished in particular by its long tail , robust skull , and large incisors . It was reddish to yellowish above and mostly white below . Its diet may have included plant material and small animals .

= = Taxonomy = =

Oryzomys nelsoni was collected by Edward William Nelson and Edward Goldman in May 1897 and never found again . Their visit for the Biological Survey of the United States Department of Agriculture was one of the first scientific explorations of the islands . Clinton Hart Merriam identified the mammals they obtained , including four specimens of *Oryzomys nelsoni* , which were deposited in the United States National Museum and remain there . He named it as a species of the genus *Oryzomys* , *Oryzomys nelsoni* ; the specific name honors Nelson . Investigators have generally retained it as a species distinct from other *Oryzomys* , but in 1971 Hershkovitz listed it as one of many subspecies of *Oryzomys palustris* , which he envisaged as a wide @-@ ranging species encompassing what is now the marsh rice rat (*O. palustris*) of the southern and eastern United States , *O. couesi* of Central America , and several other species with more limited distributions .

In his 1918 revision of North American *Oryzomys* , Goldman considered *O. nelsoni* to be most closely related to the nearest mainland subspecies of *O. couesi* , *O. couesi mexicanus* . In 2009 , Michael Carleton and Joaquin Arroyo @-@ Cabrales revised the *Oryzomys* of western Mexico and confirmed that *O. nelsoni* is a very distinct species . Their morphometrical analysis found some resemblance between the species and *Oryzomys albiventer* of interior mainland Mexico , and they suggested that although *O. nelsoni* likely represents an old , distinctive lineage , it may have derived from a common ancestor with *O. albiventer* .

Oryzomys nelsoni is one of about eight species in the genus *Oryzomys* , which occurs from the eastern United States (*O. palustris*) into northwestern South America (*O. gorgasi*) . *O. nelsoni* is further part of the *O. couesi* section , which is centered on the widespread Central American *O. couesi* and also includes various other species with more limited and peripheral distributions . Many aspects of the systematics of the *O. couesi* section remain unclear and it is likely that the current classification underestimates the true diversity of the group . *Oryzomys* previously included many other species , which were progressively removed in various studies culminating in a contribution by Marcelo Weksler and coworkers in 2006 that removed more than forty species from the genus . All are classified in the tribe Oryzomyini (" rice rats ") , a diverse assemblage of American rodents of over a hundred species , and on higher taxonomic levels in the subfamily Sigmodontinae of family Cricetidae , along with hundreds of other species of mainly small rodents .

Common names proposed for this species include Nelson rice rat , Nelson 's rice rat , Nelson 's oryzomys , and Tres Marias Island rice rat .

= = Description = =

Oryzomys nelsoni was a large and long @-@ tailed *Oryzomys* ; its tail was longer than that of any other western Mexican *Oryzomys* . The upperparts were ochraceous to buff , most richly so on the rump , and paler further to the front and low on the flanks . On the head and the back , blackish hairs somewhat darkened the overall color . The underparts were white , with lead @-@ colored underfur that was visible in some places . The ears were covered on both sides with scanty grayish hairs . The large hindfeet were sparsely covered with pale hairs . The tail was largely dark , but the

underside of the basal one third to one half was light yellow .

Oryzomys nelsoni was distinctive in its large skull with broad , well @-@ developed incisors and a strong front part (rostrum) that is strongly curved downwards . In *O. albiventer* , the rostrum and incisors were not as massive , but the molars are larger . The interparietal bone , part of the roof of the braincase , was broad and the incisive foramina , which perforated the palate between the incisors and the molars , were relatively short .

Total length in the four known specimens is 282 to 344 mm (11 @.@ 1 to 13 @.@ 5 in) , averaging 322 mm (12 @.@ 7 in) ; head and body length is 122 to 153 mm (4 @.@ 8 to 6 @.@ 0 in) , averaging 140 @.@ 5 mm (5 @.@ 53 in) ; tail length is 160 to 191 mm (6 @.@ 3 to 7 @.@ 5 in) , averaging 181 @.@ 5 mm (7 @.@ 15 in) ; and hindfoot length is 35 to 39 mm (1 @.@ 4 to 1 @.@ 5 in) , averaging 37 @.@ 3 mm (1 @.@ 47 in) .

= = Ecology and extinction = =

Nelson and Goldman found the species only in a damp , herbaceous site now known as the " Sacatal " near a spring high on María Madre Island , the largest of the Islas Marías off the coast of Nayarit , western Mexico , and Nelson wrote that it was rare . He gave the elevation of this place as 1800 ft , which Álvarez @-@ Castañeda and Méndez converted to 550 m , but in his 1918 paper , Goldman gave 800 ft instead , which Carleton and Arroyo @-@ Cabrales in 2009 converted to 245 m . The next survey of small mammals on the island took place in March 1976 by a team led by Don E. Wilson . They failed to collect *O. nelsoni* and instead found only the introduced black rat (*Rattus rattus*) at the locality where Nelson and Goldman had collected *O. nelsoni* ; this species may have contributed to the decline of the indigenous rodent .

The species is now considered extinct , although as late as 2002 the Mexican government listed it as " threatened " . Another Islas Marías endemic , the deer mouse *Peromyscus madrensis* , still occurred on María Madre in 1976 . *Oryzomys nelsoni* is thought to have fed on plant material such as weeds , fruit , and seeds , and more rarely on animals such as fish and invertebrates .