

= Eliurus petteri =

Eliurus petteri is a rodent in the genus *Eliurus* found in lowland eastern Madagascar . First described in 1994 , it is most closely related to the smaller *Eliurus grandidieri* . Virtually nothing is known of its natural history , except that it occurs in rainforest and is nocturnal and solitary . It is threatened by destruction and fragmentation of its habitat and is listed as " Vulnerable " on the IUCN Red List .

With a head and body length of 130 to 136 mm (5 @. @ 1 to 5 @. @ 4 in) , *Eliurus petteri* is a moderately large species of *Eliurus* . Its upperparts are gray @-@ brown to gray and contrast sharply with the white underparts . The tail tuft , a characteristic feature of *Eliurus* , is weakly developed . The skull is delicate and the incisive foramina (openings in the front part of the palate) are short and narrow . The incisors are weak .

= = Taxonomy = =

Eliurus petteri was first described in 1994 by American zoologist Michael Carleton as part of a revision of the genus *Eliurus* . Carleton had only three specimens of the new species , which had been collected in 1929 , 1956 , and 1963 in close proximity in an area of eastern Madagascar . The specific name honors French biologist François Petter , who has contributed to the scientific study of the nesomyines . In 1998 , Carleton and Steven Goodman described a related species , *Eliurus grandidieri* , from the Northern Highlands of Madagascar . Surprisingly , DNA sequence data suggest that this species is more closely related to *Voalavo gymnocaudus* than to other species of *Eliurus* ; however , *E. petteri* has not been studied genetically . Carleton and Goodman reported additional occurrences of *E. petteri* (though within the same general area) in 2007 , and formally recognized the " *Eliurus petteri* group " (including *E. grandidieri* and *E. petteri*) as one of five species groups within the genus .

The common names " Petter 's Tuft @-@ tailed Rat " and " Petter 's Tufted @-@ tailed Rat " have been used for this species . It is now one of twelve species recognized within *Eliurus* , the most diverse and widespread genus of the native Malagasy rodents (subfamily Nesomyinae) .

= = Description = =

Eliurus petteri is a fairly large , long @-@ tailed species of *Eliurus* that resembles a smaller version of *Eliurus webbi* . It is larger than the closely related *E. grandidieri* . The fur is soft and fine . The upperparts appear gray @-@ brown to gray in overall color ; individual hairs are light gray for most of their length , then pale buff , and dark brown to black at the tip . Dark guard hairs ? longer hairs projecting above the main fur ? are present , but relatively short . The underparts are entirely white , a feature unique for the genus ; even *E. grandidieri* has dark gray underparts . The transition between the coloration of the upper- and underparts is sharp . The mystacial vibrissae (whiskers on the upper lip) are 50 to 60 mm (2 @. @ 0 to 2 @. @ 4 in) long and extend beyond the ears when pressed against the head . In some specimens , the eyes are surrounded by a dark ring . The pinnae (external ears) are dark and appear naked , but are covered by fine brown fur on the outer and by white hairs on the inner surface . The forefeet are entirely white above , but a narrow dark streak is present on the hindfeet . The skin of the tail is dark , sometimes with some white spots on the lower side . Although the tail appears mostly naked , it is covered with inconspicuous hairs . The tail tuft ? characteristic of the genus *Eliurus* ? is weakly developed and consists of light brown to grayish brown hairs along the 25 to 30 % of the tail closest to the tip .

The skull looks delicate . The interorbital region (between the eyes) is narrow and hourglass @-@ shaped , and the braincase is smooth ; both lack conspicuously developed ridges and shelves . The zygomatic arches (cheekbones) are poorly developed . The incisive foramina (openings in the front part of the palate) are short and narrow . The bony palate ends at the level of the back of the third upper molars . The alisphenoid strut (a piece of bone at the back of the skull separating two foramina , or openings) is absent . The strut is present in most *Eliurus* , but absent in some

specimens of *E. grandidieri* . The subsquamosal fenestrae (openings in the squamosal bone) are fairly large . The auditory bullae are small . The incisors are weak and the enamel on the upper incisors is yellow to light orange . The root of the lower incisor does not project into a distinct capsular process at the back of the mandible (lower jaw) , a feature shared only with *E. grandidieri* among species of *Eliurus* .

= = Distribution and ecology = =

Eliurus petteri is known only from a limited area in the foothills of eastern Madagascar (Toamasina Province) , where it occurs from 450 to 1 @, @ 145 m (1 @, @ 476 to 3 @, @ 757 ft) above sea level . It occurs in close proximity with *E. minor* , *E. tanala* , and *E. webbi* , and is probably sympatric with them . Information on the natural history of *E. petteri* is extremely limited . It occurs in lowland rainforest and is probably arboreal or scansorial (climbing in vegetation) . It is nocturnal and solitary and may eat fruits , seeds , and insects . The weak incisors suggest to Carleton that it eats more " indurate " fruits and insects than other *Eliurus* .

= = Conservation status = =

Destruction and fragmentation of its habitat are major threats to *Eliurus petteri* , which is not known to occur in any protected area . Furthermore , it may be vulnerable to plague transmitted by introduced rodents . Accordingly , it is classified as " Vulnerable " on the IUCN Red List .