

= White @-@ eared titi =

The white @-@ eared titi ( *Callicebus donacophilus* ), also known as the Bolivian titi or Bolivian gray titi , is a species of titi , a type of New World monkey , from eastern Bolivia and an area of western Brazil . The species has a range that extends east from the Manique River in Beni Department , Bolivia to southern Rondônia in Brazil . The southern end of its range includes forests around the city of Santa Cruz de la Sierra .

It is a medium @-@ sized monkey with a grey back , orange underside and distinctive white ear tufts . It has an omnivorous diet , eating fruits , other plant materials and invertebrates . It is predated upon primarily by raptors , though felids and other monkey species have been known to attack the species . It is a monogamous species and lives in small groups of two to seven members consisting of the pair and their offspring . The family group has a home range of 0 @. @ 005 to 0 @. @ 14 square kilometres ( 0 @. @ 0019 to 0 @. @ 0541 sq mi ) and the adults have a complex vocal repertoire to maintain their territory . It is also known for its characteristic twining of tails when groups are sitting together . White @-@ eared titis can live for more than 25 years in captivity .

The white @-@ eared titi population has a declining trend . The decline is believed to be mainly caused by human @-@ induced habitat loss and degradation . Despite this , the International Union for Conservation of Nature ( IUCN ) classified the species as being of least concern in 2008 as it has shown adaptability to habitat disturbance and is found over a wide range .

= = Taxonomy = =

The white @-@ eared titi belongs to the New World monkey family Pitheciidae , which contains the titis ( *Callicebus* ) , saki monkeys ( *Pithecia* ) , bearded sakis ( *Chiropotes* ) , and uakaris ( *Cacajao* ) . It is a member of the subfamily Callicebinae , of which the only extant genus is *Callicebus* , containing all of the titi monkeys .

Although the exact position of species within the *Callicebus* genus is debated , the white @-@ eared titi has been placed within the subgenus *Callicebus* in the *C. donacophilus* group with the Rio Beni titi ( *C. modestus* ) , Rio Mayo titi ( *C. oenanthe* ) , Ollala brothers ' titi ( *C. olallae* ) , and white @-@ coated titi ( *C. pallescens* ) . The white @-@ coated titi has sometimes been considered a subspecies of the white @-@ eared titi , but they are treated as separate species in the latest edition of Mammal Species of the World .

= = Physical description = =

The white @-@ eared titi is a medium @-@ sized primate with grey to orange pelage . The species does not exhibit sexual dimorphism ; the male 's head and body length averages 311 millimetres ( 12 @. @ 2 in ) while females average 340 millimetres ( 13 in ) . The white @-@ eared titi 's fluffy tail is longer than the length of its head and body together . It typically has thick fur , with a dorsal side and limbs that vary in colour from grey agouti to orange agouti , with an orange underside and white ear tufts .

Body weight ranges from around 800 to 1 @, @ 200 grams ( 1 @. @ 8 to 2 @. @ 6 lb ) , with the female generally a little lighter . It has the dental formula 2 : 1 : 3 : 32 : 1 : 3 : 3 × 2 = 36 , meaning that on each side of the jaw it has two incisors , one canine tooth , three premolars , and three molar teeth . The canine teeth are relatively short when compared with other New World monkeys . In captivity , the white @-@ eared titi has been known to live for over 25 years .

= = Behaviour = =

The white @-@ eared titi is cryptic , diurnal and known to live in small family groups . It is a monogamous species that is thought to mate for life and lives in groups that usually consist of two to seven members ; an adult pair and up to five young . Multi @-@ male groups have also been recorded . Offspring are carried by the male , and are always with them , except when feeding .

Between the ages of two to four years , offspring will disperse from the natal group , with females leaving earlier than the males .

There is a strong bond between the adult mating pair , they stay close and carry out activities together . Either member of the pair may follow the other and leadership changes through the day . Evidence of the strength of the pair bond is shown by grooming , huddling together with their tails twined , nuzzling , and gentle grasping . Titi monkeys are highly territorial and when confronted with another family group , both will respond with threatening behaviour , males showing increased agitation towards intruding males . When not close together , the pair show a significant amount of distress and agitation .

Titi monkeys are well known for their vocal communication , and have a complex repertoire of calls . The calls can be divided into two categories : high @-@ pitched quiet calls and low @-@ pitched loud calls . Vocalisations are often combined and repeated to form sequences that are used to indicate distress , conflict , play , bonding , disturbance , and to strengthen territory . The high @-@ pitched quiet calls are mostly used when the monkeys are disturbed , but may also be used before or after group calling , while foraging , or to find other members of the group . The loud low @-@ pitched calls are mostly used in long distance group calling . Their function is to ensure adequate spacing between the home ranges of different family groups . These vocalisations are known as duets , and generally involve the male and female . If a neighbouring group is within earshot of these calls they will respond with their own duetting .

The white @-@ eared titi is arboreal , spending most of its time in the lower strata of the forest . It may enter the main canopy when travelling longer distances and may also cross small areas of open ground , though the latter is rare . During normal movement through its environment it is quadrupedal and mostly walks , clambers and leaps , but it can also bound and climb . It leaps small distances , no more than a few body lengths , between trees where vegetation is not thick enough to support its primary forms of locomotion . When travelling on the ground it is said to use a " bounding movement " whereby it leaps more than 1 metre ( 3 @.@ 3 ft ) off the ground . The titi monkey prefers branches which are less than 5 centimetres ( 2 @.@ 0 in ) in diameter and its tail never touches the support it is on .

= = Ecology = =

There is relatively little known about the ecology of the white @-@ eared titi or even titi monkeys in general , and few studies have focused on the white @-@ eared titi . It is diurnal , commencing activity around sunrise and continuing until sunset . Food availability may influence activity times ; if there is an abundance of food in the warmer months when plants are fruiting titi monkeys may start earlier , or if there is a lack of food , titi monkeys may remain at the feeding tree into the evening . The titi monkey usually rests during the middle of the day and has two main feeding periods , in the morning and in the afternoon . It has an increased period of feeding towards the end of the day . In total , the titi monkey is active for an average of 11 @.@ 5 hours , 2 @.@ 7 hours of which is spent feeding . Titi monkeys sleep on branches at least 15 metres ( 49 ft ) above the ground . In the same manner as resting during the day , titi monkeys huddle together and twine tails to sleep .

Though there is little published research on the diet of the white @-@ eared titi , titi monkeys in general are omnivores that eat fruit , leaves , insects , and seeds . They mostly eat leaves , especially protein @-@ rich young leaves and leaf buds , so a significant period of the day is spent resting to digest the cellulose . They consume more than 100 different species of plants and fruit . Titi monkeys will also eat small insects ( ants , moths , butterflies , and their cocoons ) , spiders , and can catch flying prey if it comes close to them . During the dry season there is an increased feeding time on leaves , and during lactation it is thought insect consumption increases to augment the protein content of the diet .

The titi monkey may travel between 425 and 1 @, @ 152 m ( 1 @, @ 394 and 3 @, @ 780 ft ) during the day , and can maintain a home range of 0 @.@ 005 to 0 @.@ 14 km<sup>2</sup> ( 0 @.@ 0019 to 0 @.@ 0541 sq mi ) . During the dry season there is less fruit available and therefore less need to travel large distances , so the day range may only be a third of the usual distance . Its home range is often

shared with other primate species including marmosets , squirrel monkeys , capuchins , owl monkeys , howler monkeys , and spider monkeys . It is sometimes chased from feeding sites by larger species , and will generally try to avoid other primates .

#### == Habitat and distribution ==

The white @-@ eared titi is found in tropical humid forests , preferring drier regions to more humid ones . It is found in riparian zones and gallery forests and is clearly associated with open habitats like grasslands and swampy grasslands . It is found in areas with dense vegetation , often choosing to inhabit the thickest parts of the forest . The species seems to be quite tolerant of habitat disturbance . In Bolivia , the white @-@ eared titi is found in the upper parts of the Mamoré , Grande , and San Miguel river basins , east of the Manique River in Beni and in the forests surrounding the city of Santa Cruz de la Sierra . Its range extends north to southern Rondônia in Brazil .

#### == Conservation status ==

The white @-@ eared titi is considered to be of least concern on the International Union for Conservation of Nature ( IUCN ) Red List . The species is not considered threatened due to its adaptability and abundance over a relatively wide range , and despite having a decreasing population trend the decline is not rapid enough to be placed in a threatened category . The species is also listed on CITES Appendix II .

The white @-@ eared titi 's main threat is deforestation and habitat loss due to agriculture . The area of greatest habitat loss is around the city of Santa Cruz de la Sierra , but it still survives within the city limits and on the edges of many rural establishments . It has few natural predators and is proven to be adaptable to habitat disturbance . Farmland may surround and isolate areas of titi habitat which occasionally has positive benefits to the monkey . Farmers may prevent hunters on the land , thereby inadvertently protecting the species . It also appears that the titi monkey can cross open ground between forest fragments , and some groups can thrive in disturbed habitats near human activities . However , the fragmented habitats may prevent the establishment of new territories and decrease reproductive opportunities . Forest corridors to connect fragmented forests have been proposed as an effective means to help ensure the survival of the titi monkey . The white @-@ eared titi is found in the Beni Biological Station Biosphere Reserve and the Amboro National Park in Bolivia and benefits from the protection these reserves provide .