

Status and distribution of the small Travancore flying squirrel (*Petinomys fuscocapillus fuscocapillus*) and the large brown flying squirrel (*Petaurista philippensis*) in the Western Ghats.



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Salim Ali Centre for Ornithology and Natural History (SACON)

THE STATUS AND DISTRIBUTION OF THE SMALL TRAVANCORE FLYING SQUIRREL
(*PETINOMYS FUSCOCAPILLUS FUSCOCAPILLUS*) AND THE LARGE BROWN FLYING
SQUIRREL (*PETAURISTA PHILIPPENSIS*) IN THE WESTERN GHATS.

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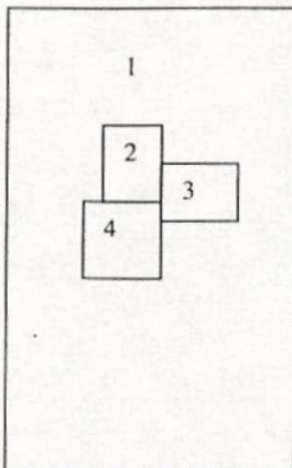


Photo descriptions :

1. Aralam Wildlife Sanctuary.
2. *P. philippensis* in Tadoba Wildlife Sanctaury.
3. Small Travancore flying squirrel, Thattekad Zoo.
4. Small Travancore flying squirrel, Thattekad Zoo.

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1. Robin Vijayan
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- 3 & 4. Nandini Rajamani.



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ABSTRACT

A survey of the two species of flying squirrels *P. f. fuscocapillus* and *P. philippensis* was conducted in the Western Ghats of Tamil Nadu and Kerala for a period of four months, between February 2000 and May 2000. *P. f. fuscocapillus* was encountered on 11 occasions and *P. philippensis* was encountered on 199 occasions.

P. f. fuscocapillus was encountered only in Evergreen and Moist deciduous forests up to an elevation of 900m, and was encountered more in Evergreen forest (Encounter rate : 0.12 squirrels/ km \pm 0.069 S.E., n= 25 walks) than in Moist Deciduous forest (Encounter rate: 0.03 squirrels / km \pm 0.028, n=19 walks). *P. philippensis* was encountered over a broader range of habitat types and altitude, and was encountered most in Moist Deciduous forest (Encounter rate: 1.60 squirrels/ km \pm 0.655 S.E., n=19 walks), followed by Plantations (Encounter rate: 1.36 squirrels/ km \pm 0.486 S.E., n=8) and Evergreen forests (Encounter rate: 1.6 squirrels/ km \pm 0.286 S.E., n=25). Neither species was encountered in Dry Forests. The encounter rate of *P. f. fuscocapillus* was significantly lower than the encounter rate of *P. philippensis* in both Evergreen forest (Mann Whitney U test, $n_1=n_2=25$, $z=-4.893$, $p\leq 0.001$) and Moist Deciduous forests (Mann Whitney U Test, $n_1=n_2=19$, $z=-4.016$, $p\leq 0.0001$). The encounter rate of *P. philippensis* (1.33 squirrels/ km \pm 0.726 S.E., n=18 walks) was significantly greater than the encounter rate of *P. f. fuscocapillus* (0.69 squirrels/ km \pm 0.033 S.E., n=18 walks) in the elevation range 0-500 m (Mann Whitney U test, $n_1=n_2=18$, $z=1.605$, $p<0.05$).

Habitat characteristics were measured at sites where flying squirrels were and were not sighted, and analysis of the variables revealed that stands where flying squirrels were found contained taller and larger trees than stands where they were not found. The height of trees in stands where *P. philippensis* was sighted was significantly higher than the height of trees in stands where it was not sighted (Mann Whitney U test, $n_1= 474$, $n_2= 207$, $z=-3.50$, $p<0.001$). The height of the tree utilised by both species of flying squirrels was also greater than the surrounding trees (*P. f. fuscocapillus*: Mann Whitney U Test, $n_1= 56$, $n_2= 14$, $z = -3.25$, $p<0.001$; *P. philippensis*: Mann Whitney U test, $n_1= 264$, $n_2= 93$, $z = -9.16$, $p< 0.001$). The height occupied by the two flying squirrels differed significantly (Mann Whitney U test, $n_1= 18$, $n_2= 126$, $z=2.152$, $p=0.036$) and *P. philippensis* was encountered higher (18.86 m \pm 0.516 S.E, n=126) on the tree than *P. f. fuscocapillus* (18.27 m \pm 1.096 S.E, n=18).

The girths of trees in stands where no flying squirrels were sighted (1.07 m \pm 0.06 S.E., n=225 trees) were significantly lower than the girths of trees where they were sighted (*P. philippensis*: Mann Whitney U test, $n_1=475$, $n_2=225$, $z=-5.54$, $p<0.001$; *P. f. fuscocapillus*: Mann Whitney U test, $n_1=70$, $n_2=225$, $z=-2.14$, $p<0.05$). The girths of trees utilised by both species of flying squirrels were significantly greater than the girths of other trees in the plot (*P. f. fuscocapillus*: Mann Whitney U Test, $n_1=56$, $n_2=14$, $z= -3.39$, $p<0.01$, *P. philippensis*: Mann Whitney U test, $n_1=406$, $n_2=10$, $z =-9.40$, $p<0.01$). The distance from the tree the squirrels were sighted on to the nearest neighbour was used as a measure of relative density of the stand. The distance to the nearest neighbour in plots centred around sightings of *P. philippensis* was significantly greater than in the random plots (Mann Whitney U test, $n_1= 45$, $n_2=97$, $z = -1.96$, $p<0.05$).

The results of this survey suggest that the choice of habitat by the two species of flying squirrels might be influenced by characteristics of the habitat, like the size and density of trees. In the stand. The reasons for choice of larger trees might be a) larger trees are better food sources, b) larger trees provide more nest hollows, c) larger trees might enable longer and therefore more economical glides. While *P. philippensis* was seen to prefer less dense stands, the smaller species *P. f. fuscocapillus* was seen to prefer more dense stands. This might be influenced by the gliding capabilities of the animals.