

The Indian Giant Squirrel : Stretching For Survival?

By Prachi Mehta and Jayant Kulkarni



Introduction

In 2010 while discussing with a group of farmers about elephant visits in their village in Northern Karnataka, my eyes caught some movement on the next tree. A giant squirrel was inching its way up on an *Anogeissus latifolia* (Dhawda) tree. Its chestnut coat and buff tail were dazzling in the sun light giving it an exotic appearance. It is unusual to see the squirrel so close to the village and so low on a tree, so I rushed to take the photo. The group of farmers followed me and from their excited murmurs, I surmised that they too were admiring the beauty of the squirrel.

After a while when the squirrel disappeared, I turned to talk to my fellow audience. “*Shekru atyant sundar Prani ahe. Tyla loka ni maralya nahi pahije, barabar na?*” (Giant Squirrel is such a beautiful animal. People should not kill it, right?) Promptly I got a response from the crowd “*Kaa, .tuhmi tyla khaat nahi ka?*” (Why, don't you eat it?) It was then I understood why they were so excited on seeing the squirrel!

Hunting of giant squirrel and loss of their habitat is a prime threat endangering their survival in the wild. Of the five sub species of endemic *Ratufa indica* in the country,

the pale colored *Ratufa indica bicolor* from Dang forests of Gujarat became extinct way back in 1970s owing to the above reasons.

Since giant squirrels are the mascots of undisturbed forests, their presence is indicative of the state of the forests. Twenty years ago, Dr. Renee Borges and her team had carried out an intensive assessment of the giant squirrels from the Western Ghats of Maharashtra and Karnataka and highlighted several issues of concerns for its survival in wild. In 2012, using Dr. Borges's survey as a baseline, we initiated a study on the giant squirrel to assess its status and changes in its population in the area surveyed earlier and other potential areas in Western Ghats of Maharashtra

Survey of Giant Squirrel in Western Ghats of Maharashtra (2012 to 2013)

Our study was carried out in forested areas of Ahmednagar, Nashik, Thane, Pune, Raigad, Satara, Sangli, and Kolhapur districts. The entire study area was divided in to one hundred eighty four (184) grids of 20.28 km². In each grid, we carried walked a transect along the natural trail to estimate the abundance of

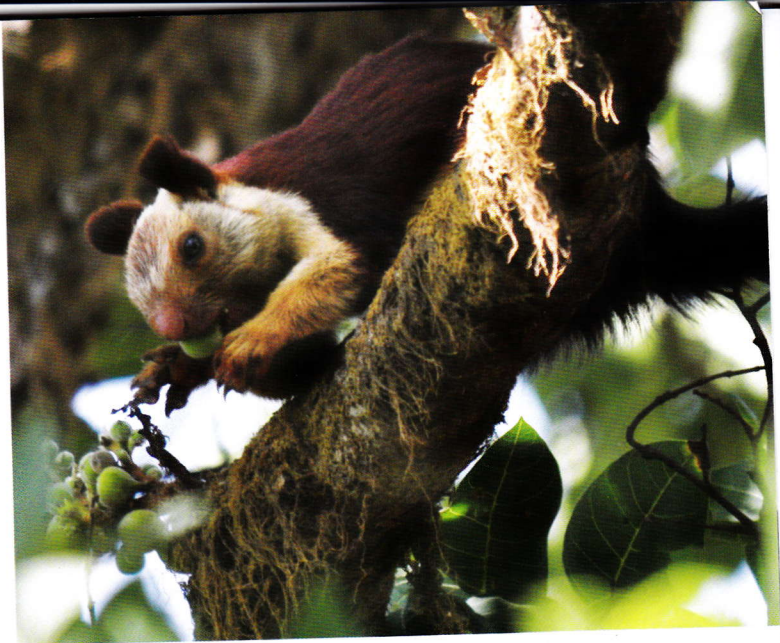
giant squirrels and their nests. Along the same trails, we assessed the signs of disturbance such as tree cutting, lopping, canopy opening, and evidence of poaching. A detailed report on the study can be made available on request from our office.



Figure 1 Location of Giant Squirrel Surveyed Areas in Western Ghats of Maharashtra

Status of Giant Squirrels in the Surveyed Area

The research team walked 723.16 km on foot in the study area looking for the squirrels and their nests. The results of the survey revealed interesting findings. All the Protected Areas have good abundance of giant squirrels and will remain so if the protection levels are maintained. However, the abundance of giant squirrels in the Reserved Forests is a matter of serious concern.



- In Nashik district, the Sawarda and Vaitarna valley in Tansa Sanctuary may have had squirrels three decades ago but now there are no records of the species from the area because of loss of habitat and hunting.
- In Ahmednagar district, very few evidences of squirrel presence were obtained from northern areas in Harishchandragad Wildlife WLS. Areas such as Alang, Kulang, Ratanwadi, Ghatghar located in Bhandardhara Range has tall trees but no squirrels. Villagers from Ratanwadi, Thakurwadi admitted to indulge in opportunistic hunting of squirrels and other wildlife. Tolar Khind, Jamran, Tale Vihir, Mahvasa, Virachi Rai, Kothale, Harishchandragad, and Tarabaigad in Rajur Range had better signs of giant squirrel presence. Declining abundance of giant squirrel from HKS is a serious issue as it represents the northernmost population in the Western Ghats.
- In Thane district, squirrels were not encountered from Badlapur, Mandvi, Murbad and Kalyan Ranges. Forests on the hills of Tokwade, Nagihurim Dareghat, Ramdeoli and Madrai areas have presence of giant squirrels. Nane Ghat, Ambe Rai, Malshej Ghats are in relatively undisturbed conditions and support giant squirrels. Historically, SGNP and Tungareashwar have never been inhabited by giant squirrel possibly because of isolation from the main forests and its urban surroundings.
- In Pune district, Wadgaon forests are largely undistributed but there were reports of hunting of squirrels in this area by stoning of nests and killing with catapults. Capture and trade of squirrels from Lonavala, Mulshi, Tamhini is going on. Junnar and

- Khed Ranges had more signs of squirrel presence than Otur Range. In Phlagun-Gavan and Bikerode, many new nests were seen but unfortunately large scale tree cutting was observed here.
- Giant squirrels were not encountered in Bhor division. Villagers in the Raireshwar temple area reported having sighted giant squirrels 10 years ago when the forests were tall and contiguous but now it does not support any squirrels.
- Bhimashankar WLS remains the stronghold of Indian giant squirrel in Maharashtra. Although signs of tree-cutting and herbivore poaching was recorded from Bhimashankar, giant squirrels are seen in good numbers in Bhimashankar and from their behavior it appears that they are not afraid of human presence indicating that people do not hunt squirrels in Bhimashankar.
- In Raigad district, although areas in the region support dense and tall forests, especially around Sudhagarh-Pali, Karjat and Pen, but giant squirrels were missing from the forests. The area has had a history of hunting of giant squirrels by slicing the nests and hunting with catapult, sickle and gun.
- Matheran and Prabalgad are tourist areas and included in the eco-sensitive zone. The presence of field staff in the area has helped in protecting the forests and giant squirrels.
- In Roha division, giant squirrels were recorded only from Roha and Murud ranges Kanthejalli is a small settlement of Katkari tribes. They regularly hunt squirrels for meat with catapults. In Srivardhan, there are patches of primary forests but they are isolated and not connected to each other. Deforestation and firewood collection is prominent in Murud range. The locals indulge in hunting of giant squirrels for food.
- Phansad WLS has good number of giant squirrels. With its evergreen vegetation and low disturbance, Phansad is a potential area for giant squirrels.
- In Satara district, squirrel presence was recorded from most areas but there were signs of tree felling, lopping and forest fires almost everywhere. In Patan, Roatghi area has primary tall forests but these forests did not have any signs of squirrels. In Nechal, lopping and tree felling by locals were observed in many places.
- Mahabaleshwar being a hill station, the tall forests are preserved in public gardens, government rest houses, and near estates of the original residents and squirrels are found only in these patches. In all other areas, forests are facing a lot of pressure from lopping, fire-wood collection and conversion of forests to strawberry farms and flower nurseries. Koyna Sanctuary has good abundance of giant squirrels.
- In Sangli district, Chandoli National Park has giant squirrels in good abundance.
- Though there are primary forests in Kolhapur District, giant squirrel presence was not as expected. The entire landscape is a matrix of Private Forests interspersed with Primary Forests, cultivation and plantations. Radhanagri Sanctuary has good intact forests cover and thus supports good population of giant squirrels.

We were informed that since last 5 years, giant squirrel have started entering plantation orchards in towns nears Sawantwadi Range. The research team made a quick visit to a few villages in Sawantwadi and confirmed that the giant squirrels have been feeding on coconut, banana and cashew plantations. The farmers shoot the squirrel with guns to prevent them from feeding on the crops. This is a serious issue as a lot of the area is being converted in commercial plantations in Sindhudurg.

Table 1. Relative Encounter Rates of *R. indica* in the Study Area

Protected Area	Sighting	New Nests
HKS	0.08 (0.04)	2.3 (0.38)
Bhimashankar	0.7 (0.16)	12.3(1.43)
SGNP, Tungreshwar	0	0
Tansa	0	0
Phansad	0.03	7.57 (2.99)
Koyna	0	5.5 (1.7)
Chandoli	0	2.1(0.8)
Radhanagri	0.3(0.3)	5.4(2.3)
Reserved Forests	Sighting	New Nests
Nashik	0	0
Malshej Ghat	0.09(0.08)	4.4(1.7)
Thane Division	0.02 (0.02)	0.8(0.4)
Junnar Division	0.3(0.15)	4.8 (2.0)
Pune Division	0.3(0.16)	7.0 (1.3)
Roha Division	0.1(0.11)	5.6(2.4)
Raigad Division	0.04 (0.04)	0.4(0.2)
Satara Division	0.2(0.09)	6.3(1.3)
Kolhapur Division	0.05(0.03)	2.7 (0.5)

Encounter rate = no of animals seen / total km walked Figures in parentheses represent standard error

Safeguarding the Life of Forests

In 2014, Maharashtra Forest Department initiated awareness and training of field staff about importance of protecting giant squirrels and followed it up with a state-wide census in 2015. Such efforts should be continued on annual basis in Protected Areas and most importantly in the Reserved Forests.

In Maharashtra Western Ghats, giant squirrels are widely distributed but they occur at low density outside the Protected Areas. Presence of giant squirrel in the Reserved Forests is not considered to be significant by authorities seeking clearance for roads, mining, and dams as the species is considered to be of "Least Concern" by the IUCN. It is argued that giant squirrels are commonly encountered across the landscape and the population is present in high densities therefore they will not be adversely affected by loss of habitat.

The "Least Concern" category is suitable for species that are generalist and able to occupy a wide range of habitats. Though widely distributed, giant squirrels occupy only the moist and semi-evergreen forests with canopy connectivity. In that sense they are habitat specialists and cannot survive in dry, degraded forests or monocultures.

Areas facing the pressures of habitat degradation and fragmentation have a hope to regenerate in future if corrective measures are taken to restore the vegetation but in presence of intense hunting the species has no hope for survival. It is difficult to control hunting but a serious attempt should be made by intensive enforcement and stepping up protection in the Reserved Forests coupled with awareness programs among local people.

Giant Squirrels are the life of the forests. They wake up before the sun rises. Their frenzied call alerts the entire forest about any impending danger. They can travel through the forest canopy effortlessly. They hang precariously on their tails to reach out to their favourite food. They work hard to make globular leafy nests on the top level and invest a lot of energy in renovating and cleaning the nests for their pups. They provide the most important ecological service by dropping the seeds to the forest floor for natural regeneration. They keep the forests lively and colourful.

And all of a sudden, all this comes to an end when projects are planned, trees are felled, their nests are sliced, their pups are captured and an entire population is wiped out. The isolated fragments are inferior habitats as the squirrels cannot travel through the trees so they have to stretch to reach across or come to the ground to cross the breaks. Either way, it is an unnatural choice for them. Giant Squirrels perish in such struggles

Without the giant squirrels, the forests are lifeless and silent. It is time to lend a hand to the giant squirrels so they don't need to stretch for their survival.

Acknowledgements

The authors are grateful to WWF New Delhi and Ruffords Grants Program for supporting such an important study on the giant squirrels in Maharashtra. We thank Ranjit Sahoo, Evangeline Arulmalar and Tushar Pawar for their help during field survey and report writing.

