

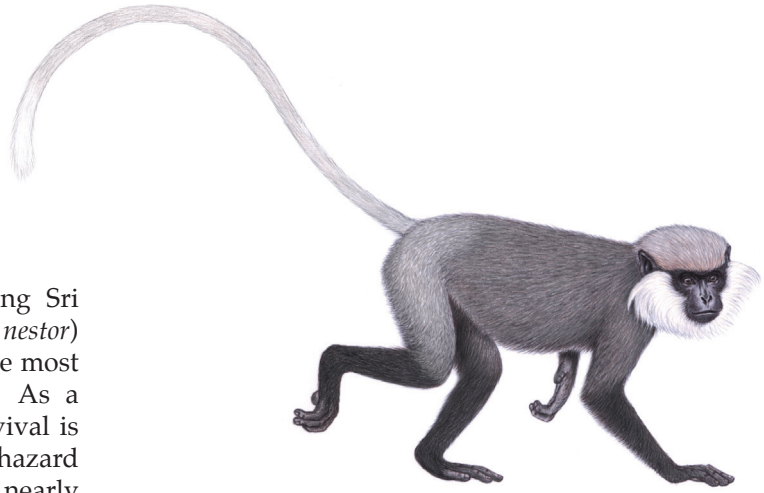
Western Purple-faced Langur

Trachypithecus (Semnopithecus) vetulus nestor Bennett, 1833

Sri Lanka

(2004, 2006, 2008)

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One of the most serious problems facing Sri Lanka's western purple-faced langur (*T. v. nestor*) stems from the fact that it inhabits some of the most densely populated regions of the country. As a result, this endemic monkey's long-term survival is severely threatened by unplanned and haphazard urbanization. A recent survey involving nearly 1,900 km. of travel through one-third of *T. v. nestor*'s historical range (Hill 1934) showed that nearly 81% of the areas surveyed consisted of deforested and human-dominated landscapes. Another analysis indicated that more than 90% of its entire range has been replaced by houses, home gardens, townships, temples, schools, plantations, commercial operations and other areas of human activity. Deforestation has fragmented and drastically depleted the preferred habitat and principal food sources of the highly arboreal and folivorous *T. v. nestor*.

Within the fragmented and human-dominated landscape, *T. v. nestor* subsists mainly on fruits from home gardens (Dela 2007; Rudran 2007). The nutritional consequences of feeding on a low diversity diet mainly of cultivated fruits are unclear, but likely to be detrimental over the long term, because *T. v. nestor* is adapted to obtain its nutrients and energy from leaves with the help of a highly specialized stomach containing symbiotic bacteria (Bauchop and Martucci 1968). Given these specializations, relying on a diet of fruits instead of leaves may undermine the functioning of this monkey's gut fauna and thereby compromise its ability to absorb nutrients. Furthermore, fruits tend to occur seasonally, which means that *T. v. nestor* may not be able to fully satisfy its energy requirements outside the fruiting season. When such detrimental effects have the potential to affect this langur through most of its range, its long-term survival becomes an issue of serious concern.

Besides depleting *T. v. nestor*'s primary food source and preferred habitat, deforestation and fragmentation also cause other problems for this monkey's survival. For instance, when fragmentation forces it to move on the ground, for which it is ill-adapted, people will occasionally capture young

individuals to raise them as house pets. While on the ground *T. v. nestor* also runs the risk of being killed by domestic dogs or speeding vehicles. Death by electrocution is another source of mortality when it climbs onto power lines and electricity cables (Parker *et al.* 2008). In some parts of its range *T. v. nestor* is occasionally shot and killed while feeding in home gardens (Dela 2004). Deforestation and fragmentation indirectly lead, therefore, to a host of human-induced fatalities, which reduce group sizes and undermine social organization.

The long-term effect of extensive deforestation resulting in local extinctions was also evident during the recent survey. The western purple-faced langur was seen or recorded as present only in 43% of the sites surveyed in the eastern half of its historical range (N = 23), and 78% of the survey sites in the western half (N = 27). The sites where it was seen or recorded as present were interspersed between areas where it was absent or rare, suggesting the occurrence of local extinctions.

Although facing a perilous future, certain facts revealed during the recent survey indicate that it is still possible to save this monkey from disappearing forever. The largest forests it now inhabits (about 21 km² in all) are found around two reservoirs (Kalatuwawa and Labugama) that supply water to 1.2 million inhabitants of Sri Lanka's capital, Colombo. Because of their importance to people and their size, these forests are the last and most secure strongholds for maintaining viable populations over the long term. The Forest Department responsible for these forests has indicated interest in replanting the pine plantations in them with native species that are exploited by *T. v.*

nestor. Such an initiative would certainly increase the extent of *T. v. nestor*'s preferred habitat, but it would first require a study of this langur's dietary preferences in the wild, which have yet to be studied.

Another important fact that surfaced during the survey was that the Forest Department has plans to promote forest conservation among communities living around its forests, through environmental education and nature tourism programs. Such programs can help conserve *T. v. nestor*, but to be effective they must be translated into action almost immediately.

Most people living within this langur's range were found to be Buddhists, who have a strong aversion to killing animals. The Buddhist taboo against killing may explain why this monkey has survived for as long as it has in such a densely populated area despite its reputation as an agricultural pest and a nuisance causing damage to roofs of houses and other properties. Sporadic killing does occur, however, as conflict between humans and monkeys intensifies (Nahallage *et al.* 2008), and poverty plagues the lives of the local people. Despite this situation, our survey revealed at least two forested sites around Buddhist monasteries where the incumbents strictly enforced the principles of their faith and protected *T. v. nestor* and other wildlife. Hence soliciting the support of the Buddhist clergy and using cultural traditions to protect wildlife is a real possibility in Sri Lanka.

The above mentioned facts indicate that opportunities still exist for conserving *T. v. nestor*, despite the survival problems of this endangered endemic. The survey led to the development of a comprehensive plan for conserving *T. v. nestor* that includes three initiatives; public education, personnel training, and research. Because of the urgent need for conservation action, some elements of these initiatives were launched immediately after the survey despite the paucity of funds.

The public education initiative was launched at two sites that were identified as important for the long-term conservation of *T. v. nestor*, and targeted rural communities, particularly school children and their parents, living close to them. One site was around the Labugama-Kalatuwawa reservoirs where a viable population of *T. v. nestor* could be maintained over the long term, and the other was an area where human-monkey conflict was particularly intense. The educational activities at both sites were conducted with the support and participation of local Buddhist temples and clergy, and culminated in a public exhibition of conservation-oriented children's paintings and essays, at which the country's Minister for Environment and his top bureaucrat awarded prizes to the most talented youngsters. These events were publicized via newspaper articles and radio talk-

shows to inform a much larger audience throughout the island that efforts to help conserve *T. v. nestor* were supported by the government and influential officials of the country.

The training initiative was launched with a series of activities designed to help a group of six trainees learn about the biology and identification of Sri Lanka's primates, birds and butterflies. Similar workshops dealing with plants, land snails, reptiles, amphibians and invasive species have been scheduled for the future. The primary objective is to train local youth, particularly those living around the Kalatuwawa-Labugama reservoirs, to become well-informed naturalists, who could work independently as nature guides or with us to help conserve *T. v. nestor*.

The research initiative remains dormant for the moment due to a lack of funds, but proposals have been submitted to address this shortcoming. When funds become available, research on *T. v. nestor*'s ecology and behavior, particularly its dietary preferences in the wild, will begin, and the work on the public education and training initiatives will be expanded. The battle to win the hearts and minds of people and to help ensure the survival of *T. v. nestor* has only just begun. Much remains to be done, and success can be achieved if this battle is sustained until current trends of deforestation are reversed, and people become more aware of the value of their wildlife.

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