

A survey of the leopard (*Panthera pardus kotiya*) population and their distribution within and in the periphery of the Horton Plains National Park

Introduction

The most commonly explored area in wildlife studies is identifying animal species, their distribution, and behaviour. More recently, attempts are made to gain an understanding of the population dynamics: Monitoring species distributions and abundance also provides important data to evaluate whether favourable conservation status has been achieved and supports the legal obligation towards species protection and conservation.

However, in Sri Lanka, such available ecological data on terrestrial mammalian fauna for conservation decision making is distinctly deficient. One major reason for this is the fact that surveying mammals is laborious and technically demanding. Numerous survey methodologies are currently practiced, each with specific advantages and disadvantages. Studying animals in tropical rainforests is challenging for scientists and wildlife managers for two main reasons; rainforest species generally are secretive by nature, and difficult to observe in the wild. Secondly, there is low visibility in the forest; the terrain and climatic conditions are often harsh; areas of interest are usually remote. However, the development of modern technologies is helping to overcome some of these challenges and is allowing more precise and accurate monitoring strategies. Camera-trapping is a relatively new method that uses specialized cameras to detect and 'trap' photographs of passing animals. Camera-trapping is a useful and widely used tool to study wildlife. It is generally regarded as non-invasive, it can gather information on a range of species simultaneously and continuously, over large survey areas and for several months at a time. Camera traps enable researchers and conservationists to accurately establish population size, identify resident animals or track specific individuals over extended periods of time within the camera-trapped area.

Study site and research problem

Horton Plains National Park was designated its status on 16 March 1988. The national park occupies an area of 3,160 ha and is contiguous with Peak Wilderness Sanctuary to the west. HP National Park is rich in faunal and floral diversity. The vegetation comprises Upper Montane Rain Forest and Wet Patana Grasslands, with a narrow ecotone belt of shrubs and herbs between the two where Forest and patana form a mosaic, with a tendency for Cloud Forest to be confined to the hilltops, upper slopes, and for the grasslands and dwarf bamboo to be on the lower slopes and in the valleys. The National Park is noted for its large sambar population, and the large predator, the leopard (*Panthera pardus kotiya*) which is a key stone species for this habitat.

Several short studies have been conducted over the years to assess and quantify the leopard population of the Horton Plains National Park. The Leopard Project of the Wilderness & Wildlife Conservation Trust (WWCT) carried out a study in January 2012 to assess the population demographics diet, prey availability and preferential habitat selection of the Horton plains area. Over the period, leopard sightings in Horton Plains have increased according to the park officials. So has the threat posed through increasing and intensifying land use in the peripheral areas of the park which includes monoculture plantations, cattle farming, vegetable cultivation and expanding human habitats. There is a dire need of a descriptive ecological study on the leopards of Horton Plains in order to assess the population size and their movements within and in the peripheral areas of the park.

The study is conducted with multiple objectives; documenting the detailed presence of leopards within the park, and their activity patterns through recording certain aspects of species' behavior. Further we will record the spatial patterns of species' occurrence and species detection probability within, and the peripheral areas of the park with the aim of estimating population abundance and density in a statistically sound manner. We will compile first hand material about wildlife to address the general public and raise their awareness on conservation with the ultimate goal of to contribute to conservation decision making through providing scientific evidence.

Reference

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