Project Update: December 2010

In Valparai, a tea plantation dominated area surrounded by protected areas, leopards encounter people inside plantations, sometimes leading to negative interactions between the two. Recently, this has been a cause of rising concern among government authorities, and local communities. We study potential factors that influence encounters between people and leopards, and may lead to conflict. Between 2008 and 2010, we examined large carnivore diet (leopard and dholes) in this region, and surveyed different land-uses for prey community composition. We used DNA based methods to identify field-collected scat samples for predator species. Scat identification was used to understand leopard diet. Also, we collected data on past conflict incidents from forest department records and questionnaire surveys during this study to understand temporal as well as spatial pattern in conflict. Our results show large carnivore diet in Valparai region to dominantly comprise of wild prey species such as muntjac, mouse deer and sambar which make up to 82.5 % of prey biomass consumed. Domestic prey species such as cattle, goats, and dogs constitute little to large predator diet with 1.95 % contribution in overall prey biomass consumed. Based on DNA identification of scats, muntjac, mouse seer, sambar, and Indian porcupine constitute 95.1 % of prey biomass consumed by leopards in this region. Also, we find the presence of important wild prey species in the modified landscape. Although, community composition seems to vary with land-use as different prey species seems to be affected differentially by different land-uses. Sambar and mouse deer were found to prefer coffee plantation, forest fragments and protected forests over tea plantations based on indices of indirect sign abundance. Indian porcupine was found to be using tea plantation over other land-uses. Relative abundance of muntjac was found to be higher in coffee plantations compared to other land-uses. Questionnaire surveys carried out in 28 colonies revealed that livestock loss attributed to large predators was 40.5 % of all animals lost and equivalent to 6 % of livestock holdings of the sampled colonies between year 2000 and 2010. On an average 5 animals per year were perceived to be lost to large predators in the affected colonies. This loss was 13.1 % of a household's annual income and financial compensation received from government covered only 8.65 % of the perceived loss.