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EFFECT OF NON- HUMAN PRIMATES ON TOURISM OF KALAKAD MUNDANDURAI TIGER RESERVES AND ANAMALAI TIGER RESERVES OF TAMIL NADU, INDIA

Tourism is widely considered as world largest enterprise, involved and benefited ten millions employees and hundred million of customers. International tourism has increased to 665 million in 1999 (Griffin, 2002). Tamil Nadu is more prominent for temple towns and heritage sites, hill stations, waterfalls, national parks, local cuisine and fabulous wildlife. The state bosses the second largest tourism industry in India with an annual growth rate of 16% (The Times of India, 2010). The state has very rich faunal resource, including four biogeographic regions viz., Western Ghats, Decean plains, Eastern Ghats and coastal zone outhern Western Ghats is biogeographically important (Hora, 1953). KMTR is one of the hotspot of peninsular India. The varied climate and topography create a wide array of habitats that support the assemblages of plant and animal species (Venkataraman *et al*., 2013). Primates are naturally distributed on five of the seven countries (except Australia and Antarctica), tropical and subtropical regions (Root, 1967). Mammals play a crucial role in maintaining a healthy ecosystem (Venkataraman *et al*., 2013). The primates perform ecological services to maintain tropical habitats, as seed dispersers, pollinators and also as food for the top predators, especially hawaks, eagles and mammalian carnivores (Isbell, 1990 and Sussman, 1978). Non-human primate bites are thought to be more serious and more likely to become infectious than other animal bites (Goldstein, 1992). Bonnet macaques living around human habitations are often provisioned by local people; such troops occasionally resort to scavenging from garbage dumps (Schlotterhausen, 1999). Most primates are vegetarian and some supplement their vegetarian diet with animal food (Insects, Mollusks, Bird eggs, Birds and Crabs). Temple sites have substantial population of free ranging macaques. The primate species are affected by human activities in exploiting their habitat. Macaques are feed on buts, leaves, stems, lendrils, roots, flowers, fruits, seeds and even leaf galls of different plants (Ali, 1988).

Field visits in tourist areas were undertaken during June 2013 and June 2014. The survey was conducted in street market, hotels and corridor of temples and tourist areas of Papanasam, Agasthiyar Falls, Sorimuthu Ayyanar Koil, Karayar Dam, Manimuthar Dam, Coutrallam main falls, Old Coutrallam, Cortrallam five falls, Thirkirukanudi areas of Kalakad Mundanthurai Tiger Reserves (KMTR) in Tirunelveli District and Maruthamlai temples, Valparai, Aliyar Dam, Solayar Dam, and Siruvani in Anamalai Tiger Reserves (ATR), Coimbatore District.

Out of total 15 primate species, 9 are scheduled species as these are included in the schedule I. Remaining 6 species are non-scheduled species as these are included in part II of schedule II. Recent studies in the Anamalai hill has shown that lion tailed macaque often become extinct (Umapathy and Kumar, 2000). Indian primates exhibits two definite extremes in their distribution ranges few species are highly endemic and at a very low population level serving a narrow distribution range (lion tailed macaque) and wide distribution range (Bonnet macaque) spread over other neighbouring south and southeast Asian countries (Gupta, 2001) and endemic to southern India (Kurub, 1981). Five primate species are found in southern India Bonnet macaque (*Macaca radiata*), Hanuman Langur (*Semnopithecus entellus*), Nilgiri Langur (*Trachipithecus Johnii*), Lion tailed Macaque (*Macaca silenus*) and Slender Loris (*Loris tardigradus*). India bonnet macaque is common extensively distributed of the Western Ghats, temple town and peninsular India (Krishnan, 1972).

Hanuman Langur, is endemic to rainforest of Western Ghats of Tamilnadu and Kerala and to the hills of Loorg in Karnataka. Lion tailed Macaque feeds exclusively on food items which are rich in simple carbohydrates, lipids (Ripe fruits, seeds, nectars, gums and resins) proteins, chiefly invertebrates but also include bird eggs and nestling and giant squirrels. Nilgiri Langur utilized 219 food species from 102 plant species major dietic composition consisting of young leaves (44.06%); mature leaves (4.21%); flowers (8.44%); young fruits (10.51%); ripe fruits (4.56%); seeds (18.61%) and other major food items (9.57%) (Baranga, 1982 and Struhsakar, 1975). Bonnets are spending more time in the forest tree canopy, rarely descending to the ground. More than 30% of daytime spend on the ground (Sugiyama, 1971).

Due to religious beliefs, hand feeding is popular in KMTR and ATR tiger reserves of Tamilnadu. The bonnet macaques collect food from hands of devotees and some time bites in hand leads to risk of virus infection especially rabbis. In some case of bonnet take advantage to pick up the flowers, banana, puja materials and some time to take purse, cellphone also.

Tose species that are primarily forest dwellers and may not adapt readily to human environment face the greatest threat. These threats are common to wild life throughout the world.

Table 1: Conservation satus of Indian primates

Common Name	Scientific name	General status	WI (P) A	CITES	IUCN
Bonnet Macaque	*Macaca radiata*	Common Southern India	Sch II (1)	II	LR 3 (ic)
Hanuman Langur	*Semnopithecus entellus*	Common but declining	Sch II (1)	I	LR 1c/N
Nilgiri Langur	*Trachypithecus johnii*	Limited to Southern India	Sch 1 (1)	II	VU A1 (d)
Lion Tailed Macaque	*Macaca silenus*	Rare and Endangered	Sch II(1)	II	VU A1(c) (d)
Slender Loris	*Loris tardigradus*	Rare and Endangered	Sch I (1)	II	Lmt/N

Table 2: Threat status assessment of Indian primates

Scientific Name	Status description
Macaca radiate	Lower Risk Least Concern: Taxa which do not qualify for near threatened Semnopithecus entellusLower Risk Least Concern: Taxa which do not qualify for near threatened
Trachypithecus johnii	A taxon is Vulnerable when it is nor Critically Endangered but it facing a very high risk of extinction in the wild in the near feature, as defined- tern feature, as defined by any of the criteria.
Macaca silenus	A taxon is Endangered when it is nor Critically Endangered but it facing a very high risk of extinction in the wild in the near feature, as defined-tern feature, as defined by any of the criteria.
Loris tardigradus	Lower Risk Near Threatened: Taxa with do not qualify for any of the threat categories but are close to being threatened.

Photo 1 and 2: Bonnet macaque and Hanuman Langur feed provisioned food on Temples

Photo 3 and 4: Bonnet macaque drink the contaminated water and take a match box chemical as food

Photo 5 and 6: Devotees furnish the food to Bonnet macaque and Lion tailed Macaque wait on milestone for provisioners.

Tiger reserves of Tamil Nadu have 5 species of primates belonging to 2 family (Lorisidae and Cercopithecidae) 3 sub-families (Lorinae, Cercopithecinae and Colobinae). (Table 1 and 2) The general status of primates *Macaca radiata* is common in Southern India; *Semnopithecus entellus* is common but declining; *Trachypithecus johnii* is limited to southern India and *Macaca silenus* and *Loris tardigradus* are rare and endangered. Of these 5 species of primates, *Semnopithecus entellus* and *Loris tardigradus* are scheduled I (1) and *Macaca radiate*, *Semnopithecus entellus* and *Macaca silenus* are Sch II (I) of the Wildlife Protection Act, 4 are kept in Appendix II of the CITES (Bonnet macaque, Nilgiri Langur, Lain tailed macaque and Slender loris). Hand-feeding of wildlife is totally condemned by wildlife tourist operators and conservators (Gill, 2002). Irregular feeding of mammals is changing the macaques aggressive in their behaviour towards humans (Koford 1963). Mortality on roads in national parks has recognized as an important negative human-wildlife interaction (Conover *et al.*, 1995).

Indian primate exhibit two definite ranges in their distribution, few are highly endemic Nilgiri langur and Lion tailed macaque and other species are widely spread in neighbouring south to Southeast Asian countries (Hanuman langur and Bonnet Macaque). Successful management of primate species in needed not only the protected areas, tourist places, but also in rural, urban areas where the rapidly growing human population are met serious conflict with the macaques with very little or almost no hope for the survival of monkeys. This has been naturally led to serious conflict between the monkeys and the people. This scenario if continues in future, it will become endangered species. The presenceof macaquebring more problems to human especially near reserve forest residents and tourists. Effective management and conservation of species is needed.

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