Occurrence and Abundance of Grey Slender Loris (*Loris lydekkerianus*) in Tiruchirappalli district, Tamil Nadu, India

Abstract

The Grey Slender Loris (*Loris lydekkerianus*) is listed as "Endangered" by the IUCN. Thus, assessing the status and distribution of the slender loris is critical for species conservation. The Tiruchirappalli district had 95 slender loris individuals, with an abundance of 0.51±0.54 per km. The investigation was conducted utilising nocturnal survey and transect procedures. The population of slender loris in the region is growing, which raises concerns about habitat disturbance, such as the conversion of natural habitat into real estate and farmland. The study further gives insights in human-slender loris conflict.

Key words: Slender loris, Tiruchirappalli, human- animal conflict, abundance, nocturnal survey

1. Introduction

Slender Loris isa genus of loris which is native to India and Sri Lanka.They spend most of their life in tress, moving over along the tops of tree branches in slow and precise movements. These are found in swamps, tropical rainforests, semi-deciduous forests and scrub forests (1). Slender loris are listed under the endangered species by IUCN, whereas they are listed under the Scheduled I of the Wildlife Protection Act of India, 1972. The major threat for Slender loris is false or misplaced belief that they possess magical and medicinal powers to cure poor eyesight, joint pain or leprosy. as a result they been heavy poached and also traded as pet to foreign countries(2). The previous studies of Grey Slender Loris at Tiruchirappalli highlights the distribution and threats of Slender loris (2) The importance and ecological role of this species is not made aware as other larger mammals. In this research paper, we explored the Reserved forests, sub-urban and rural habitats of Tiruchirappalli district to record existence, distribution, and abundance of slender loris.

1.1. Study Area

Tiruchirappalli District being the heart of Tamil Nadu with major river Cauvery cuts across the terrain.It is fertile land with deltaic topography from west to east. Pachamalai Hills are the

only prominent hills which belongs to eastern ghats. TheTiruchirappalli features tropical hot monsoon climate with an average annual rainfall of 900 mm. There are four forest ranges at Tiruchirappalli district namely Trichy, Thuvarankuruchi, Manaparai, and Thuraiyur chosen as study locations. The forest type varies from Southern Tropical Dry Mixed Deciduous Forest, Southern Tropical Forest, Tropical Thorn Forest (Scrub Jungle), Tropical Dry Deciduous Forests, and Evergreen Forest(3). To learn more about the occurrence and distribution, the sub-urban and rural parts of the Tiruchirappalli district were also investigated. The farmland and plantations near the villages were also studied.

Fig 1. Picture of Slender Loris taken during Survey at Pallakadu

2. Methods

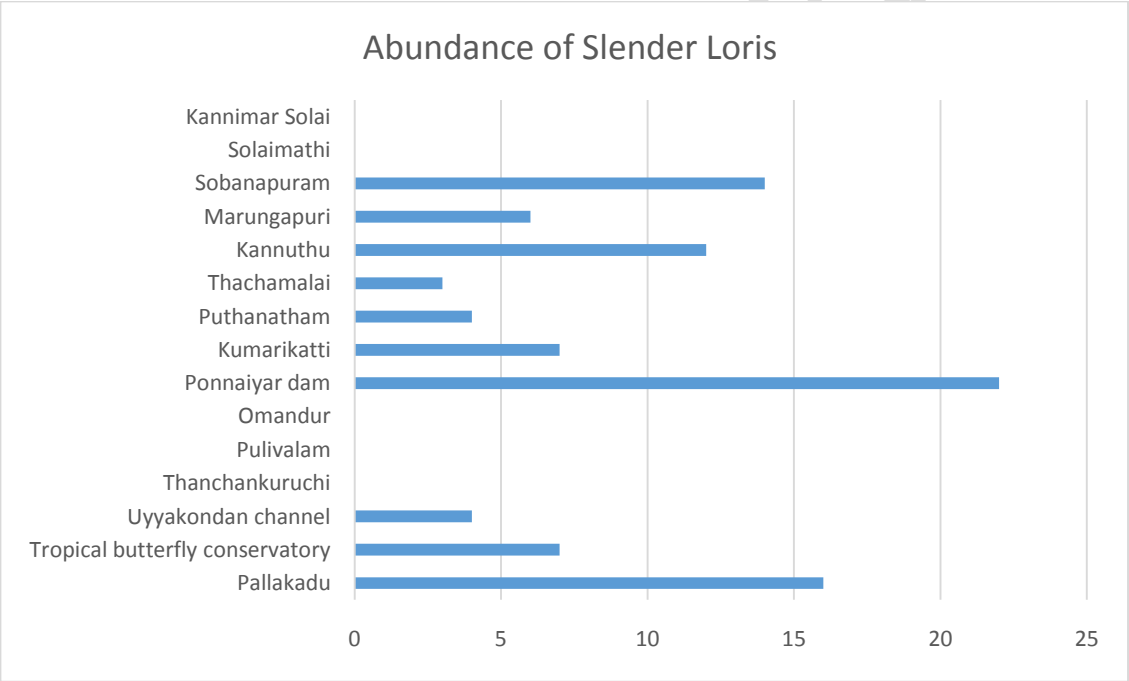
The Grey Slender Loris is a nocturnal mammal that is highly active from 19:00 hr to 6:00 hr; hence, nocturnal surveys were adapted to record the slender loris. The survey was done between 20:00 hrs. and 04:00 hrs. The survey was done for a period of one year, from January 2022 to December 2022. The survey was done in each area once in a month. Existing natural trails were used as transects in the forests for the surveys following the best recommendations (4,5). A survey was carried out using headlamps covered with red filters, as

lorises are not disturbed by a red light compared to white light (6-9). Vehicle surveys and foot transects were also adopted and followed depending on the access and topography of the terrain for the surveys (10,11). Vehicle speed was maintained at an average of 20 km/h. A handheld GPS (Garmin Etrex 10) was used to calculate the distance covered during the survey and the geographical location of the sighted animals. The GPS locations were transformed into maps using Arc GIS software version 10.9 (3).

3. Results

The study resulted in an abundance of 95 individuals of Slender Loris in Tiruchirappalli district. The Ponnaniyar dam resulted in the highest number of individuals of 22, followed by Pallakadu with 16 individuals (Fig.2).

Fig.2. Abundance of Slender Loris in Study Area



The relative abundanceof Slender Loris ranged from 1.83 individuals/km in Ponnaniyar dam to 0.33 individuals/km in Puthanatham RF(Table.1).

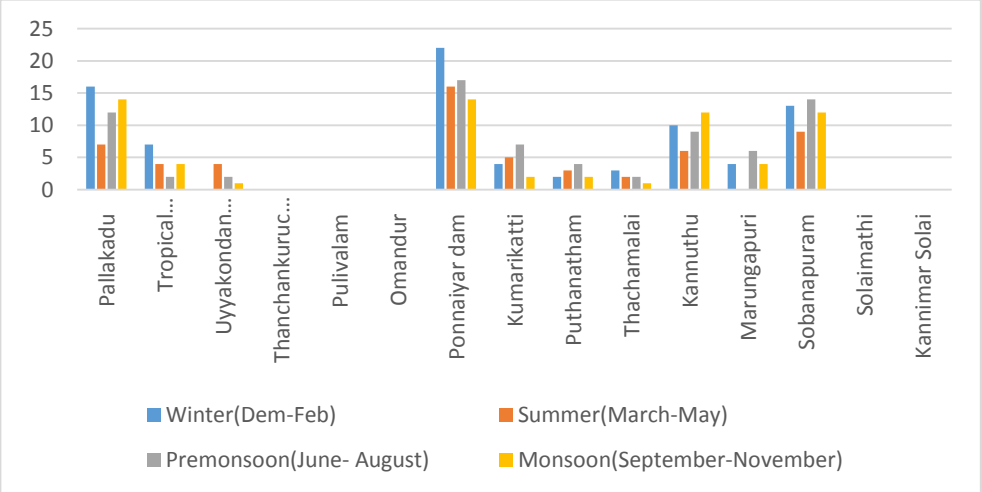
Table 1. Relative Abundance of Slender Loris at Tiruchirappalli district

Location	No.of Loris Sighted	Kilometres Surveyed	No. of Lorises/km
Ponnaiyar dam	22	12	1.45
Pallakadu	16	11	0.58

Sobanapuram	14	16	0.67
Kannuthu	12	17	-
Kumarikatti	7	13	-
Tropical butterfly conservatory	7	12	-
Marungapuri	6	14	1.83
Puthanatham	4	12	0.54
Uyyakondan channel	4	6	0.33
Thachamalai	3	8	0.38
Thanchankuruchi	0	16	0.71
Omandur	0	8	0.43
Solaimathi	0	5	0.88
Kannimar Solai	0	7	-
Pulivalam	0	14	-
Grand Total	**95**	**171**	**0.51±0.54 (Mean±SD)**

The sighting frequency of slender loris was high in winters than compared to other seasons (Fig.3).

Fig.3. Sighting Frequency of Slender Loris in different seasons



The map (Fig.4) shows the Occupancy of slender loris in Tiruchirappalli district. The map (Fig. 5) shows the human- slender loris Conflict prone areas.

Fig 4. The map showing the Occupancy of Slender Loris at Tirchirappalli District

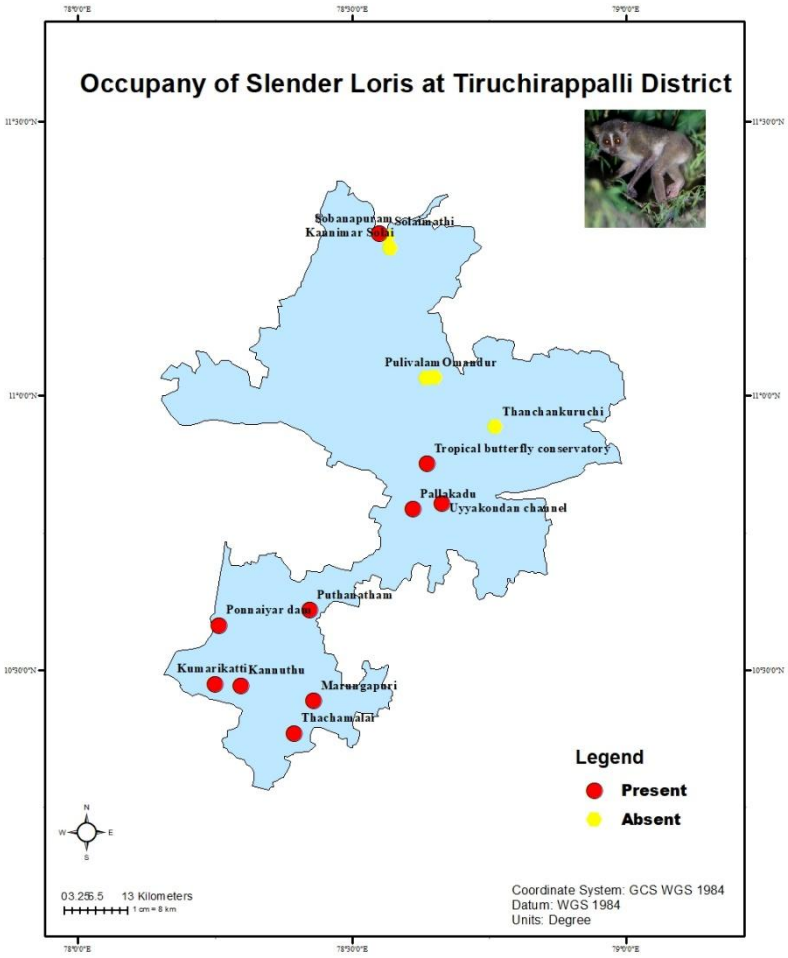
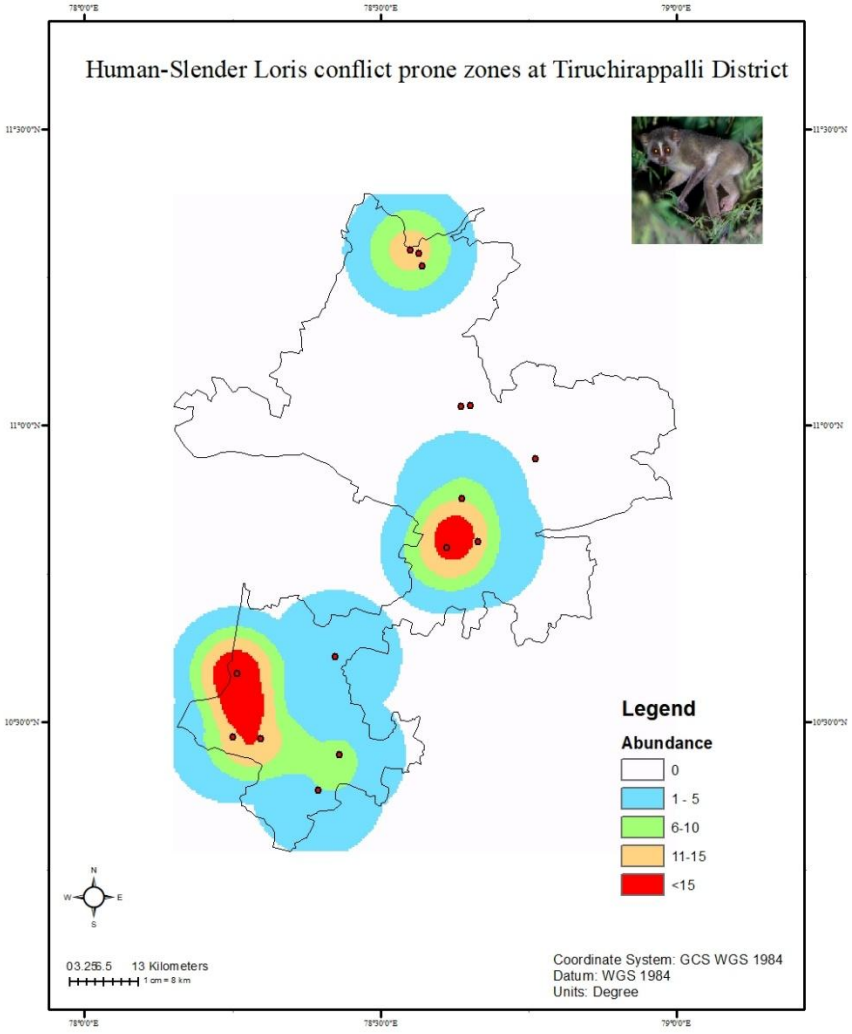


Fig 5. The map showing Human- Slender Loris Conflict prone zone at Tiruchirappalli District



4. Discussion

TheGreySlenderLoris abundance in Ponnaniyar dam was high as it was adjacent to the newly announced slender loris sanctuary, Kadavur, in Tamil Nadu. The Ponnaniyar Dam Reserved Forest lies on the on the eastern slope of the Slender Loris Sanctuary, which doesn't come under the status of a sanctuary. The relative abundance of the slender loris varies across its range in southern India. In Kerala, the Malabar slender loris has a low relative abundance, with less than 0.2 individuals per kilometer in most forest divisions (12). In Karnataka, the relative abundance of the two subspecies, Loris lydekkerianuslydekkerianus and L. l. malabaricus, is 0.41 and 0.21 individuals per kilometer, respectively (13). In Tamil Nadu, the grey slender loris has a wider distribution, with relative abundance ranging from 0.01 to 2.21

individuals per kilometer, and the highest densities found in the south-central districts (1). Where Tiruchirappalli district had highest of 2.21 individuals per kilometer, followed byPudukkottai and Karur district of 1.95 and 1.23 individuals per kilometre (1). The previous study of Kumara el.at., 2016 showed higher relative abundance of Tiruchirappalli district compared to the present study of 0.55 individuals per kilometre because the total area surveyed or covered is 18 kms was lesser than the present study which covered the total 171 kms.

The Grey Slender Loris frequency of sighting was higher in winter season of December to February as there was adequate amount of food and water present in the study area, while in summer the water availability was limited or dried up. Hence the best time to study or observe slender loris was during the winters.

A total of 15 sites were surveyed but only in 10 locations the slender loris were present. Study area had different habitat ranging from tropical scrub forest, tropical evergreen forest, semi-arid scrub forest, mixed dry deciduous and Farmland and River channels. Among the different habitats the farmlands, river channels and tropical scrub forest had a maximum number of slender loris, also causing these areas to be highly conflict prone zones due to rapid urbanization and habitat alterations. (Fig. 5) The conflict zones should be monitored, and the involvement of locals with the aid of the forest department is essential in creating awareness in those areas.

5. Conclusion and Suggestion

The Grey slender loris population have been increased when compared to previousstudy(2) in 2019. The increasing population has major threats of habitat alteration such converting the land into real estates and farm land. The alarming urbanization and habitat destruction should be strictly monitored for survival of species. behavioural and evolutionary studies will throw more insights to the conservational strategies of the grey slender loris.

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