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SHREWS FROM MOIST TEMPERATE FORESTS OF AZAD JAMMU AND KASHMIR

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ABSTRACT

The soricidae family comprises of nearly 23 genera out of which approximately 200 species have been associated with the Eurasian region (IUCN, 1995). A lot of ambiguity surrounds this family, especially where taxonomic classification is concerned; also, not much is known about their geographic location. Five protected parks from Azad Jammu and Kashmir (AJK) were explored for population trend studies of family soricidae. Dhirkot Nature Reserve (DNR) was observed in February, 2008, Banjosa Nature Reserve (BNR) in May-June, 2009, Tolipir National Park (TNP) in April to May, 2008, Pir Chanasi National Park (PCNP) in April to May, 2010 and Pir Lasura National Park (PLNP) from June to July, 2009. Only four species belonging to the soricidae family were found; *Suncus etruscus*, *Suncus murinus*, *Sorex minutus thibetanus* and *Crocidura pullata*. The Asiatic white toothed shrew was only observed in PCNP, DNR and BNR. *Suncus murinus* was only observed in PCNP. *Sorex minutus thibetanus* was only observed in Banjosa Nature Reserve. *Suncus etruscus* was only observed from DNR and BNR.

Keywords: Shrew, mammal, insectivore, temperate forest, national park

INTRODUCTION

The family soricidae belongs to the order insectivora. The IUCN Redlist reports more than 400 species from this family. Approximately 200 species belonging to the soricidae family have been associated with the Eurasian region (IUCN, 1995). This family comprises of nearly 23 genera. Chakraborty et al. (2004) created a checklist of insectivores from the south Asian region. They reported 31 species from this family; seven species from the *Suncus* genus, eleven species from *Crocidura* genus and four species from the *Sorex* genus.

Much of the studies conducted related to this family include phylogenetic studies (Demboski and Cook, 2003; Ruedi, 1996; Brant and Orti, 2003). Jenkins (2013) conducted a study on the subclade soricid of this soricidae from Himalayas and linked regions. They reported only two soricidae

species (*Suncus murinus* and *Crocidura pullata*) from Pakistan. The highest diversity was noted from Nepal (10 species) and Sikkim, India (10). Three species were reported from China.

A lot of ambiguity surrounds this family, especially where taxonomic classification is concerned; also, not much is known about their geographic location. The species from this family are usually only active for short periods of time (IUCN, 1995). This study contributes towards updating the checklist of species belonging to the family soricidae from moist temperate forests of Pakistan.

MATERIALS AND METHODS

Five protected parks from Azad Jammu and Kashmir (AJK) were explored for population trend studies of family soricidae. Dhirkot Nature Reserve (DNR) was observed in February, 2008, Banjosa

Nature Reserve (BNR) in May-June, 2009, Tolipir National Park (TNP) in April to May, 2008, Pir Chanasi National Park (PCNP) in April to May, 2010 and Pir Lasura National Park (PLNP) from June to July, 2009. The study area was physically investigated. The other methods employed

included satellite surveillance (Arc View GIS 3.3, 1992-2002), data gathered through questioning residents, books and previously published scholarly articles were utilized to aid the study. Scats, walking tracks and fur samples were observed for the presence of shrews.

RESULT

Table: List of mammalian species of family Soricidae recorded from AJK.

Species	Food preference	Breeding season/ Litter size	Remarks	Population	Global status *
<i>Crocidura pullata</i> Asiatic white toothed shrew	Various species of arthropods, wood lice and beetles.	Mar-Oct/ 3-7	Associated with moist temperate forest. Or banks of streams in dry and open hillsides, Inquisitive, voracious, aggressive	6 -BNR 2- DNR 9-PCNP	DD
<i>Suncus etruscus</i> Pygmy Shrew	Arthropods, wood lice and beetles.	Aug-Oct Litter size 2	Unobtrusive, commensally life style	33- BNR 27- DNP	LC
<i>Sorex minutus tibetanus</i> Asiatic Pygmy Shrew	Arthropods, wood lice and beetles.	Aug-Oct Litter size 4-6	Unobtrusive, commensally life style	25- BNR	LC
<i>Suncus murinus</i> House Shrew	They are omnivorous; normally eat insects' crickets and cockroaches.	Apr- Jun	It is not gregarious, nocturnal in feeding activity	20-PCNP	LC

* 2008 IUCN Red List Category (<http://www.iucnredlist.org/apps/redlist/details/>)

Abbreviations: * LC = Least Concern, DD = Data Deficient



a



b



c



d

Figure 1. Species of Family Soricidae from AJK (a) *Crocidura pullata* (b) *Suncus etruscus* (c) *Sorex minutus thibetanus* (d) *Suncus murinus*

DISCUSSION

Crocidura pullata (Asiatic white toothed shrew) was not observed in Tolipir National Park and Pir Larsura National Park, with the highest population observed in Pir Chanasi National Park (9 %). Jiang and Hoffmann (2001) cite 164 known species from *Crocidura* genera. The geographic range of this genera is unclear due to the ambiguity in its classification. This presence of this species was reported by Shabbir et al. (2013) in Chitral Gol National Park and Tushi Game Reserve, Pakistan. The presence was confirmed using samples from Grey wolf and Asiatic Jackal scats, indicating them to be predators of the Asiatic white-toothed shrew.

Suncus etruscus (Pygmy Shrew) was not recorded from three of the locations studied Tolipir National Park, Pir Chanasi National Park and Pir Larsura National Park with the highest population observed in Banjosa Nature Reserve (33 %). Altaf et al. (2014) reported a 0.046 relative abundance of this species from riverine forests of Chenab near head Qadirabad, 0.033 near head Khanki and 0.030 near head Marala from May 2009 to April 2010.

Sorex minutus thibetanus (Asiatic Pygmy Shrew) Local sightings of this species were 25% in BNR at AJK. Global status of this species according to IUCN is LC. A study conducted by Faiz and Abbas (2016) found the presence of this species from Tolipir National Park from their study during February to August, 2014.

Suncus murinus (House Shrew) Local sightings of this species were 20% in PCNP at AJK. Global status of this species according to IUCN is LC. Altaf et al. (2014) reported a 0.123 relative abundance of this species from riverine forests of Chenab near head Qadirabad and 0.045 near head Marala from May 2009 to April 2010. Rais et al. (2011) conducted a study at Chotiari Reservoir, Sindh from June 2006 to June

2009 and reported the presence of only this species from the family Soricidae.

CONCLUSION

Only four species belonging to the soricidae family were found; *Suncus etruscus*, *Suncus murinus*, *Sorex minutus thibetanus* and *Crocidura pullata*. The Asiatic white toothed shrew was only observed in PCNP, DNR and BNR. *Suncus murinus* was only observed in PCNP. *Sorex minutus thibetanus* was only observed in Banjosa Nature Reserve. *Suncus etruscus* was only observed from DNR and BNR.

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