

Study of human activities impacts and interaction with small Indian mongoose in Dhirkot, district Bagh, Azad Jammu and Kashmir

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ABSTRACT

Introduction: The *Herpestes javanicus* has been observed in dense forest, woodland, Riverine, scrub, open habitats and close to human habitations. This species is omnivorous. Diurnal activity is noted in India and Pakistan. In Pakistan, this species is distributed in Dadu, Thatta and Tharparkar, Gujranwala, Gujrat, Sialkot, Jhelum, Khushab, Chakwal, Sargodha, Attock, Mekran, Turbet and Kotli districts. The main objectives of the study were to know the human activities impacts and interaction with small Indian mongoose.

Materials and Methods: The data were collected August 2017 to July 2018. Linear count survey (LCS) was used; which consists of eight transect lines (i.e. urban, rural, agriculture and forest), while each transect line consists of 1 km long selected. The data were observed through direct (i.e. physical counts and sounds) and indirect methods (burrows, carcasses, hairs, and questionnaires).

Results: The small Indian mongoose were recorded from study area as forest (n=12), rural (n=34), agriculture (n=9) and absent in urban ecosystem. It is hunted for hair and skin. Hairs are used in brushes and skin is used in small leather products. Small Indian mongoose is used for medicinal purposes i.e. meat, bone and oil are used to treat backbone pain and joint pain.

Conclusion: It is concluded that high urbanization creates negative impact on the distribution of the small Indian mongoose. This species is also hunted for the need of hair, skin and oil.

Key words: Ethno-medicine, Urbanization, Distribution

INTRODUCTION

Herpestidae consists of mongooses, these are spread all over the sub-tropics and tropics of the old world (Africa, Europe and Asia) and being most excellent symbolized in Africa where 17 different species occur. 8 species arise in the Indo-Malayan region, Families related to the genus *Herpestes* (Corbet and Hill, 1992). *Herpestes* are more borrowing and terrestrial than the civets and are well modified for digging, with elongated non retractile claws. The male has a tiny baculum (Wozencraft, 1989).

The Small Indian Mongoose (*Herpestes javanicus* Hodgson, 1836) has been observed in dense forest, woodland, Riverine, scrub, open habitats and also recorded close to human habitations. This species is omnivorous. Diurnal activity is documented in India and Pakistan (Roberts, 1997).

The *H. javanicus* is found in Saudi Arabia, Pakistan, Oman, Nepal, Myanmar, Jordan, Hong Kong, Iraq, Iran, India, Bhutan, Bangladesh and Afghanistan (Gilchrist, 2009; LAU *et al.*, 2010) (Gilchrist *et al.* 2009; Lau *et al.* 2010). It has been introduced to Vieques, Trinidad, Tortola, Surinam, Puerto Rico, Oahu, Nevis, Molokai, Mauritius, Maui, Martinique, Marie Galante, Mafia, Lavango, La Desirade, Jost Van Dyke, Japan, Jamaica, Hispaniola, Hawaii, Guyana, Guadeloupe, Grenada, Goat Island, French Guiana, Fiji, Cuba, Croatia, Carriacou, Barbados and Antigua (Gilchrist, 2009).

In Pakistan, this species is distributed in Dadu, Thatta and Tharparkar (province of Sindh) (Roberts, 1997), Gujranwala, Gujrat, Sialkot (Altaf *et al.*, 2014; Altaf, 2016), Jhelum, Khushab, Chakwal, Sargodha, Attock (province of Punjab), Mekran, Turbet (province of Blochistan) (Roberts, 1997) and Kotli districts (Azad Jammu and Kashmir) (Manzoor *et al.*, 2013).

Different plant (Khan *et al.*, 2017a; Khan *et al.*, 2017b; Umair *et al.*, 2017; Khan *et al.*, 2018) and animal species (Muhammad *et al.*, 2018) are used to treat various diseases in human, similarly this species is also used to treat various diseases viz. sexual power, impotence by males (Chakravorty *et al.*, 2011; Altaf *et al.*, 2017; Altaf *et al.*, 2018).

The main objectives of the study were to know the human activities impacts and interaction with small Indian mongoose in Dhirkot, district Bagh.

MATERIALS AND METHODS

Study area: Bagh is mountainous area with coniferous forests (DRU, 2007); elevation is started from 1500 to 2500 meters. Large numbers of rivulets flow in the district (Bibi *et al.*, 2013).

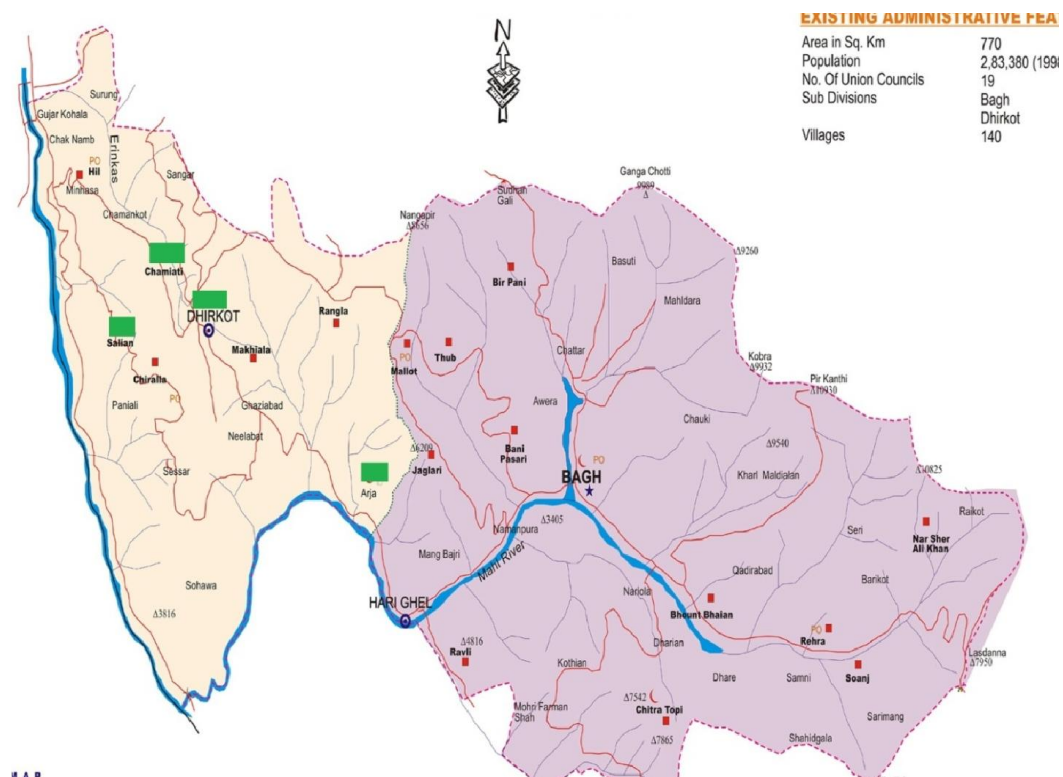


Figure 3.1: Study area of district Bagh.

Methodology: The data were collected August 2017 to July 2018. Linear count survey (LCS) was used; which consists of eight transect lines (i.e. urban, rural, agriculture and forest), while each transect line consists of 1 km long selected (figure 1). The data were observed through

direct (i.e. physical counts and sounds) and indirect methods (burrows, carcasses, hairs, and questionnaires). Questionnaires (n=100) were consist of following questions as;

- Have you seen this species?
- Has any product use of this species?
- Has any medicinal use of this species?

RESULTS AND DISCUSSION

Data collected from the male (46%) and female (54%) respondent; all are Muslims, they having different occupation i.e. government employee (18%), labor (20%), student (26%), teacher (17%), housewife (14%) and army (5%) from the study area, while the respondents belong to different casts viz. Abbasi (37), Raja (27), Awan (12), Syed (5), Magry (10), Rajpoot (1), Mughal (6) and Rathor (2). The data were collected from the different young (25 years old) to old (75 years old). Maximum respondents were aged (from 60 to 75 years old). Data were collected from the educated (84%) and uneducated people (16%) (Figure 2).

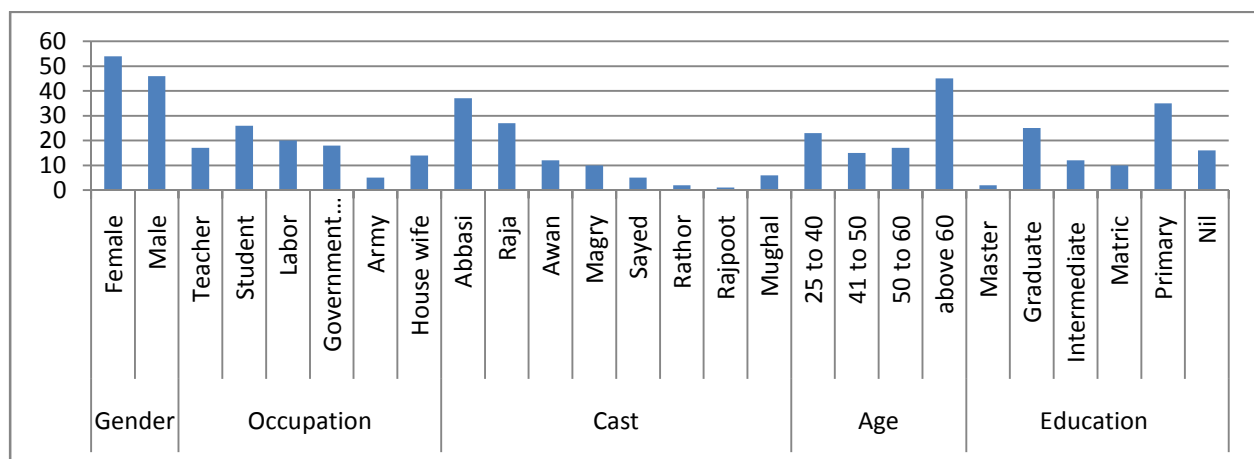


Figure 2: Profile of the respondents of the study area.

The small Indian mongoose were recorded from study area as forest (n=12), rural (n=34), agriculture (n=9) and absent in urban ecosystem (Table 1). It is hunted for hair and skin. Hairs are used in brushes and skin is used in small leather products. Small Indian mongoose is used for

medicinal purposes i.e. meat, bone and oil are used to treat backbone pain and joint pain (Table 2). Altaf *et al.* (2018) also reported that this species is used to treat sexual problems and backbone pain.

Table 1: Distribution of Small Indian mongoose from study areas.

Sub areas	Diversity
Forest	12
Agriculture	9
Rural	34
Urban	0

Table 2: Ethnozoological uses of mongoose from study areas.

Cultural uses	Description
Product use	It is hunted for hair and skin. Hairs are used in brushes and skin is used in small leather products.
Ethnomedicinal	This species is used for medicinal i.e. meat, bone and oil are used to treat backbone pain and joint pain.

Conclusion: It is concluded that high urbanization creates negative impact on the distribution of the small Indian mongoose. This species is also hunted for the need of hair, skin and oil.

Availability of data: We have included all relevant data in the manuscript that were collected during the field survey.

Authors' contributions: Data were collected by Altaf and Musarat. Nazer helped in data write up; Manzoor, Bushra Safeer and Sozina Yasrub critically analysis article and approved as final manuscript.

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