

DIVERSITY AND ABUNDANCE OF RODENTS IN THE SEMI-ARID LANDSCAPE OF SARISKA TIGER RESERVE, WESTERN INDIA

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The diversity and abundance of rodents were estimated in Sariska Tiger Reserve, Rajasthan, from November 2007 to June 2009. A total of 41 Sherman traps were deployed at twelve sites under different vegetation types for 10 days during winter and summer, which amounted to a total effort of 4,920 trap nights and recorded eleven species of small rodents. The diversity of rodents was found to be highest in open scrub in winter, and in summer it was highest in *Ziziphus* mixed forest. Overall (combining both summer and winter), *Mus platythrix* was found to be most abundant (6.26 individuals/ha), followed by *Golunda ellioti* (3.41 individuals/ha). The overall rodent density was 22.92 ± 4.65 (SE) animals/ha in winter, and 7.81 ± 2.25 (SE) animals/ha in summer.

Key words: Rodents, density, semi-arid landscape, Sariska Tiger Reserve, Web trapping design

INTRODUCTION

The rodents of the Indian subcontinent are represented by 46 genera and 128 species (Ellerman 1961; Roonwal 1987). They are generally viewed as pests due to the economic losses caused to agriculture and the prospect of their being carriers of disease (Mukherjee *et al.* 2004). However, the importance of rodents in the diet of many large and small carnivores has been documented by various studies (Comman and Brunner 1972; Gupta 2006, 2011; Jones and Smith 1979; Kitchener 1991; Ludlow and Sunquist 1987; Moehlman 1986; Mondal *et al.* 2011; Mukherjee 1998; Palmer and Fairall 1988; Pearson 1964; Sankar and Johnsingh 2002; Sankar *et al.* 2009; Sillero-Zubiri and Gottelli 1995). In the recent past, many workers have contributed to an understanding of the distribution pattern of rodents in India. Chakraborty (1983) studied the rodent distribution in Jammu & Kashmir region. Mahajan and Mukherjee (1972, 1974) prepared a checklist of rodents in Himachal Pradesh. Sood and Dilber (1977) documented the rodent species of Punjab. Sheiker *et al.* (1983) and Jain (1975) studied the rodents of Uttar Pradesh. The rodents of the Thar Desert in Rajasthan was studied in detail by Agarwal (1976), Biswas and Ghose (1968), Ghose (1976), and Prakash (1959, 1963, 1972, 1974, and 1981). Hill (1958), Jain (1985), and Khajuria and Ghosal (1981) documented the rodent fauna of Madhya Pradesh. Pradhan (1975) provided an account of the rodents of Maharashtra. Agarwal (1973) gave a detailed account of the rodent species of the Goa region. Agarwal and Bhattacharyya (1987) supplemented our knowledge of rodent distribution in West Bengal. Agarwal and Bhattacharyya

(1977) and Roonwal (1949, 1950) made remarkable contributions to the rodent distribution of North-east India. A sum total of these efforts came out as compilations and Ellerman and Morrison Scott (1966) published a checklist of Indian rodents. But these were taxonomic studies and have not assessed the ecological aspects of species assemblage, co-existence, and diversity in the natural habitat.

Although numerous studies have investigated the distribution, behaviour, ecology, and management of rodents in agricultural fields (Advani and Mathur 1982; Alibhai 1985; Chopra and Gupta 1987; Chopra *et al.* 1996; Davis 1953; Prakash and Prakash 1985; Prakash and Mathur 1987; Rana 1992; Santra and Manna 2008; Spillett 1968; WHO 1974), only a few studies had investigated population of rodents in forested landscape in Rajasthan deserts (Prakash 1981, 1995). In this paper, we discuss the diversity and abundance of rodents in different vegetation types in the semi-arid landscape of Sariska Tiger Reserve, Rajasthan, assessed by the web trapping design method.

STUDY AREA

Sariska Tiger Reserve (STR), (25° 5'–27° 33' N; 74° 17'–76° 34' E) is situated in the Aravalli Hills range and lies in the semi-arid region of Rajasthan (Fig. 1). The Reserve is spread over 881 sq. km, of which 274 sq. km is notified as a national park. There are 30 villages in the Reserve and 10 in the National Park. The vegetation is tropical dry deciduous forest and tropical thorn forest (Champion and Seth 1968). The climate is subtropical, characterised by a distinct winter