

## Feeding habits of Rhesus Monkey, *Macaca mulatta* (Zimmermann, 1758) in Nahar Wildlife Sanctuary in Rewari district of Haryana (India)

Dr. Jaipal Yadav

Assistant Professor in Department of Zoology in Baba Khetanath Mahila Mahavidhyala Bhitara in district Alwar, Rajasthan (India)

e-mail: [jaipalyadav2285@gmail.com](mailto:jaipalyadav2285@gmail.com)

**Abstract:** During the months of year April, 2019 to June, 2019, the present study was planned in Nahar Wildlife Sanctuary is situated in Rewari district of Haryana. To record the food and feeding habits of rhesus monkey Point count method and Scan sampling method were used followed by Altman, 1974; Blondel *et al.*, 1981; Kumar, 2009; Chopra and Kumar, 2012 and Vikas, 2018. Whenever, individuals or troops of rhesus macaques were encountered feeding, it was photographed by Sony cybershot camera DCR-H-cyber-shot-dsc-w810-201 and Sony handy cam model DCR-HC-42E. Those sites where the individual or troops of rhesus macaques were noticed feeding on specific seeds/flower/leaves of herbs, shrubs and troops species were visually scanned and these plants materials were collected or photographed and later identified in the laboratory. In the present study, rhesus macaques was found to feed on stem, leaved, fruit and flower of numbers of herb, shrub and plant species like *Acacia jacquemontii*, *Acacia leucophloea*, *Acacia nilotica*, *Acacia Senegal*, *Ailanthus altissima*, *Ailanthus excels*, *Albizia lebbek*, *Anogeissus pendula*, *Asparagus racemosus*, *Azadirachta indica*, *Balanites aegyptiaca*, *Butea monosperma*, *Calligonum polygonoides* Linn., *Capparis deciduas* Edgew., *Cassia fistula* Linn., *Commiphora wightii* Arnott, *Cordia dichotoma*, *Dalbergia sissoo*, *Holoptelea integrifolia*, *Leptaedenia pyrotechnica*, *Pongamia pinnata*, *Prosopis chilensis*, *Prosopis cineraria*, *Salvadora oleoides*, *Solanum surattense*, *Tribulus terrestris*, *Urgenia indica*, *Ziziphus mauritiana* and *Ziziphus nummularia* in the study area.

[Yadav, J. **Feeding habits of Rhesus Monkey, *Macaca mulatta* (Zimmermann, 1758) in Nahar Wildlife Sanctuary in Rewari district of Haryana (India)**. *Academ Arena* 2019;11(7):15-18]. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia>. 3. doi:[10.7537/marsaaj110719.03](https://doi.org/10.7537/marsaaj110719.03).

**Keywords-** Food items, Rhesus monkey, Ecology, Reproductive Behavior, Nahar Wild life Sanstuary, Haryana

### Introduction:

Among mammals, primates are the most complex creatures which appeared on the planet Earth around 63 million years ago in Eocene period of Coenozoic Era (Moody, 1962). This group consists of limurs, lorises, monkeys, apes and their relatives including human creatures (Bernstein, 1972). Rhesus Monkey (*Macaca mulatta*) and Bonnet Monkey (*Macaca radiata*) are the old world monkeys. During division or origin of countries, rhesus macaques are referred to Chinese-derived and Indian-derived. Chinese derived rhesus monkeys include subspecies *M. m. vesitita*, *M. m. lasiota*, *M. m. sanctijohannis* and *M. m. brevicauda*. On the other hand, Indian derived Rhesus Macaques are found in India and other Asian countries and includes *M. m. mulatta* and *M. m. villosa* (Smith and Mc Donough, 2005). Workers like Fooden (1964), Hill (1965), Southwick *et al.* (1965), Singh (1969), Valerio *et al.* (1969), Lindburg (1971) and Roonwall and Mohnat (1977) have worked on investigating distribution pattern of free ranging rhesus monkey, *Macaca mulatta* in Asia. In post partition India, two prominent species, *viz.*, Rhesus Monkey, *Macaca mulatta* and Bonnet Monkey, *Macaca radiata* have been studied from different angles by different scientists (Bernstein and Mason,

1963; Southwick *et al.*, 1965; Altman, 1968; Neville, 1968; Lindburg, 1971; Pirta *et al.*, 1978; Singh, 1981; Mukherjee, 1983; Seth and Seth, 1983; Guerra, 1988; Fooden, 2000; Seth *et al.*, 2001; Singh and Sinha, 2004). According to Seth *et al.* (1989), in India, rhesus monkey lives in 8 diverse habitats, namely, temples, urban, villages, village-cum-pond, pond, roadside, canal side and forest having varying degrees of human interactions. In urban areas of India, they are found on roadside, in railway stations, villages, towns and temples (Richard *et al.*, 1989).

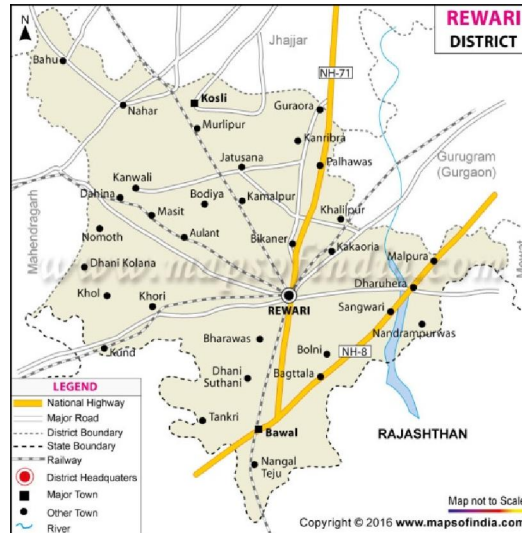
### Material and Methods

#### Study area:

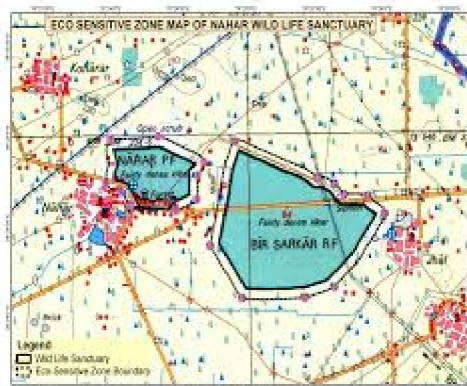
During the months of year April, 2019 to June, 2019, the present study was planned in Nahar Wildlife Sanctuary is situated in Rewari district of Haryana (Fig 1). The Sanctuary spreads over an area of 522 Acre. This area is an old pasture land of Nawab of Dujana. This small area is divided into three parts. The Kosli-Kanina road divides the area of 424 acre into two parts of 331 acre and 93 acre. Another stretch of 98 acre lies north of this area. The area was managed as Reserve Forest before its declaration as Sanctuary in 1987. In the state of Haryana where natural resources are fast depleting day by day. Nahar

Wildlife Sanctuary is among the last few surviving natural habitat for the Black Buck in particular and for other wild life species in general. Haryana state has limited areas to promote education and nature awareness. This Sanctuary offers good opportunity in this regard. In the year 2012-13 a protection centre

was constructed in Wildlife Sanctuary Nahar. An area of around 25 acre was fenced with 2.4mt. high GI Wire Netting. This wire netting was fixed over one foot high Brick wall. A pair of Black Buck has been released in the Centre. More no. of rescued animal will be released in the centre in the near future.



(a)



(b)



(c)

**Fig. 1: (a) District map of Rewari and (b) Nahar wild life sanctuary, Haryana (India).**

To record the food and feeding habits of rhesus monkey Point count method and Scan sampling method were used followed by Altman, 1974; Blondel *et al.*, 1981; Kumar, 2009; Chopra and Kumar, 2012 and Vikas, 2018. Whenever, individuals or troops of rhesus macaques were encountered feeding, it was photographed by Sony cybershot camera DCR-H-cyber-shot-dsc-w810-201 and Sony handy cam model DCR-HC-42E. Those sites where the individual or troops of rhesus macaques were noticed feeding on specific seeds/flower/leaves of herbs, shrubs and troops species were visually scanned and these plants materials were collected or photographed and later

identified in the laboratory. Food preference (s) by rhesus monkeys were recorded on the basis of the number of instances during which the individuals or troops were found feeding on the particular food item.

### Results and Discussion

Rhesus macaques are omnivores and feed on a wide array of plants and invertebrate products. By raiding crops, they have access to a huge variety of cultivated fruits and vegetables, and in highly urban areas, they forage by picking through garbage (Goldstein and Richard 1989; Richard *et al.*, 1989). Some of the most common food is given to the rhesus

macaques in temples include bread, bananas, peanuts, seeds, fruits, vegetables, assorted miscellaneous foods like ice creams and fried bread (Wolfe, 1992). Hauser (1999), also observed different types of food and feeding habits in the rhesus monkeys and observed the rhesus monkey more active in morning time for searching the food.

In less human influenced areas, they focus on fruits, flowers, leaves, seeds, gums, buds, clover, roots, bark and they supplement their food diet with termites, grasshopper, ants, beetles and mushrooms. Rhesus monkeys also eat birds eggs, shellfish and fish (Fooden, 2000). Throughout their range and especially in India, they inhabit in temples and are fed as a form of worship by local people (Wolfe, 2002). Rhesus monkey is omnivorous animal and more active in morning and evening time (Menon, 2003). Mendiratta *et al.* (2007) observed the food and feeding habits of different troops of rhesus monkey in western Arunachal Pradesh in winter season and the food is offered taken by rhesus monkey is roots, herbs, fruits, crops and small animals.

The food preference of the Rhesus Macaque varies according to the habitat and seasonal availability of food. A preferred food species is defined as one that is utilized proportionally more frequently compared to its availability and high intensity of feeding on the species. Knowledge about the diet composition and food preference is essential for rational planning for habitat management. Urban Rhesus populations have been studied by several authors (Neville, 1968; Lindburg, 1971; Makwana, 1978, 1979; Goldstein & Richard, 1989; Seth, *et al.*, 1992; Mandal, 1995). The present study addresses the food preferences of Rhesus Macaques in Pakhui Wildlife Sanctuary during the premonsoon and monsoon seasons. Large part of the summer remains wet.

Rhesus monkey were found to feed on leaves/inflorescences/pods/fruits/bark/gum/seeds/sucking juices of young stems of 13 species of trees (*Acacia nilotica*, *Albizia lebbek*, *Butea monosperma*, *Delbergia sissoo*, *Eucalyptus sp.*, *Ficus religiosa*, *Morus alba*, *Prosopus juliflora*, *Cordea dichotoma*, *Ficus religiosa*, *Syzigium cuminis*, *Ziziphus mauritiana*, *Terminalia arjuna*), 2 species of shrubs (*Ziziphus nummularia*, *Capparis sepiaria*) and 7 species of herbs (*Brassica compestris*, *Oryza sativa*, *Triticum aestivum*, *Saccharum officinarum*, *Trifolium alexanderium*, *Chenopodium album*, *Cynodon dactylon*) in Saraswati Plantation Wildlife Sanctuary (SPWS), Haryana (India) (Kumar, 2008).

Similarly in the present study, rhesus macaques was found to feed on stem, leved, fruit anf flower of numbers of herb, shrub and plant species like *Acacia jacquemontii*, *Acacia leucophloea*, *Acacia nilotica*,

*Acacia Senegal*, *Ailanthus altissima*, *Ailanthus excels*, *Albizia lebbek*, *Anogeissus pendula*, *Asparagus racemosus*, *Azadirachta indica*, *Balanites aegyptiaca*, *Butea monosperma*, *Calligonum polygonoides* Linn., *Capparis deciduas* Edgew., *Cassia fistula* Linn., *Commiphora wightii* Arnott, *Cordia dichotoma*, *Dalbergia sissoo*, *Holoptelea integrifolia*, *Leptaedia pyrotechnica*, *Pongamia pinnata*, *Prosopis chilensis*, *Prosopis cineraria*, *Salvadora oleoides*, *Solanum surattense*, *Tribulus terrestris*, *Urgenia indica*, *Ziziphus mauritiana* and *Ziziphus nummularia* in the study area.

#### Correspondence to:

Dr. Jaipal Yadav

Assistant Professor in Department of Zoology

Baba Khetanath Mahila Mahavidhalya Bhitara

Alwar, Rajasthan (India)

e-mail [-jaipalyadav2285@gmail.com](mailto:-jaipalyadav2285@gmail.com)

Phone no. +91-9996206558

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7/20/2019