

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 9, September 2019

Ecological Study of Lilkee Beed of Churu (Rajasthan)

¹Dr. B.L. Mehra' ²Satpal

¹Associate Professor, Department of Zoology, Govt. Lohia P.G. College, Churu (Rajasthan), India

²Research Scholar, Department of Zoology, Govt. Lohia P.G. College, Churu (Rajasthan), India

ABSTRACT: Biodiversity is a term used to describe the diversity of life on Earth, or its biological diversity. A biologically varied Earth is one that includes many distinct types of plants, animals, and microorganisms, as well as a wide variety of environments, including deserts, rainforests, and coral reefs. This is an essential component of all approaches, and appropriate conservation and sustainable development strategies make an effort to acknowledge this. Nearly all cultures have acknowledged, in one way or another, the impact that nature and its biological diversity have had on them and the necessity of preserving it. However, the delicate balance has been impacted by politics, power, and money. The immense variety of all plant, animal, insect, and microorganism species that live on earth and are found in either aquatic or terrestrial settings is known as biodiversity. For their most fundamental necessities of living, such as food, fodder, fuel, fibre, fertilizer, lumber, liquor, rubber, leather, pharmaceuticals, and numerous other raw materials, the human civilization is directly or indirectly dependent upon this biodiversity. This diversity is a requirement for the environment's long-term viability, the continuation of life on Earth, and the preservation of its integrity. It is quite "generic," containing a wide variety of underlying latent seeds that awaken into vibrant arrays of herbs and grasses after the first shower.

KEYWORDS: Ecology, biodiversity, Lilkee beed, faunal diversity

I. INTRODUCTION

There were up to 500 million different kinds of plants, animals, and microorganisms since life first emerged on this planet approximately 3.5 billion years ago. A large number of them vanished from during the usual evolutionary process, some of them left their progeny on the surface of the earth and still-existing remains. The only traces left are the "crocodiles" and "garden lizards" of the Mesozoic era's enormous beasts, the dinosaurs. Even though we only know of 1.5 million nowadays, recent findings of incredible insect diversity in rain forests have compelled scientists should update their projections. Currently, the world is home to roughly 30 million species. However, we are incredibly ignorant in this domain. Some estimates go as high as 100 million. In particular, we are unsure of the degree of variation among soil microorganisms. The species we see today did not arrive there by accident; rather, they are the results of a protracted evolutionary process that allowed them to adapt ecologically to the constantly shifting environmental conditions over time and space.

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 9, September 2019

II. FAUNAL DIVERSITY OF THAR DESERT

The Great Indian Desert is a sandy and partially rocky region of the north-west part of India, extending in Rajasthan, Gujarat, Haryana and Punjab states of India. It's an eastern extremity of great Palaearctic desert. The arid Rajasthan is known as "Marusthali" or "Thar desert". The Thar Desert extends in many districts of Rajasthan. The Shekhawati region includes Churu; Sikar and Jhunjhunu districts while Jodhpur Marwar region includes Jodhpur, Barmer and Nagaur districts (Dhabriya 1984). Contrary to popular assumption, the Indian Desert has a surprisingly diverse animal population, albeit most of them, with the exception of birds and a few nocturnal mammals (such as antelopes, gazelles, etc.), are difficult for the casual viewer to see. They may reside in designated s, such as burrows, lengthy tunnels, beneath stones, on the leaves and roots of plants, in ponds, puddles, larger reservoirs and lakes, etc. From the small, microscopic Protozoa to Mammals, nearly all of the main phyla of both vertebrates and invertebrates can be found here. The majority of them are nocturnal since they spend the daytime in their burrows. In his initial attempt to compile all the data on the known fauna of the Indian desert, Roonwal (1983) recorded approximately 1,100 species from Rajasthan's arid region. There are 2,043 species listed in the multi authored compilation "Faunal Diversity in the Thar Desert: Gaps in Research," compiled by Ghosh, Baqri, and Prakash in 1996. Mahajan has investigated the freshwater protozoa of Rajasthan, especially the arid region (1969, 1971, 1977). Mastigophora, Sarcodina, and Ciliata species total 82 in his list. Soota and Saxena researched freshwater sponges (1983). Seven of the 31 species of the family Spongilidae—which comprise 11 genera—found in the Thar Desert belong to five different genera. These species range from single-celled animals called Protozoa to mammals. Some of these species are vertebrates, with the remaining species being invertebrates. Even though the Thar covers around 9% of the nation, this faunal diversity accounts for about 2.12% of all of India's fauna. Fishes were studied by Mathur (1952), Dutta and Majumdar (1964), Krishna and Menon (1958), Mathur (1952, 1977), Sharma and Durve (1985), Yazdani (1992). The illustrated key to field identification of Amphibians of Indian Desert was provided by Bohra et al (1983). Kapoor (1985) published a list of birds seen in Desert. The detailed taxonomy of testudines, lizards and snakes has been reviewed by Sharma (1996). Some desert fauna are Desert Monitor (*Varanus griseus*), Great Indian Bustard (*Ardeotis nigriceps*), Asiatic Lion (*Panthera leo persica*), Spiny tailed lizard (*Uromastix hardwickii*), Houbara Bustard (*Chlamydotis undulata*), Indian Wild Ass (*Equus onager*), Central Asian Cobra (*Naja naja oxiana*), Demoiselle Crane (*Grus virgo*), Caracal (*Caracal caracal*), Imperial/Black-bellied Sandgrouse (*Pterocles orientalis*), Desert Cat (*Felis silvestris*), White-browed Bushchat (*Saxicola macrorhynchus*), Desert Fox (*Vulpes vulpes pusilla*), Cream-coloured Courser (*Cursorius cursor*), Chinkara (*Gazella bennettii*), Scaly Anteater (*Manis crassicaudata*), Wolf (*Canis lupus*).

Aim of the study:

Looking at the biodiversity of the above mention Thar Desert, we conclude that there was not much study about Lilkee beed area which is located in Thar Desert. Therefore, this study will be important for more information about this area's ecology and faunal diversity of this area. This study provides us much information to estimate the Lilkee beed's ecological value. Additionally, this knowledge can assist us in managing our natural resources, enhancing the environment and safeguarding faunal diversity.

Study area:

In Thar Desert of Rajasthan Lilkee beed of Churu is a conserved which is safe for wildlife. It's around 30 km north-west to Rajgarh tehsil and 67 km toward north side from district headquarter. Lilkee beed is situated

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 9, September 2019

28°77' N, 75°19' E also called beed Rajgarh. Lilkee, Bhambhada, kasoombi, Jodhawas, Jothada, Ghasla, Rojhani and Mithdi patta are some village nearby Lilkee beed of Churu. Villagers are depended on agricultural product and crops for their livelihood. Lilkee beed is spread over 1100 hectares or 4500 Bighas. 18 artificial ponds and 20 kund (tanka) are for water source to wildlife. There is a wall of bricks 5-7 feet high and 18 kilometer long all around Lilkee beed. Lilkee beed has a high mound (Hathi Tilla) from which it can be seen up to 15km. Farmers says that there is no natural predator and abundance of food is responsible for huge population of large mammals in Lilkee beed of Churu.



Map of Lilkee beed of Churu (Rajasthan)

Status of Lilkee beed fauna:

This Beed is under control of Churu DFO. It is the natural habitat of wild life within this but there is some difficulties faced by this are as follows:

1. Deforestation by cutting of trees.
2. Uncontrolled grazing.
3. Transport way such as Roads.
4. Hunting by locals
5. Mismanagement
6. Avoiding of locals to protect

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 9, September 2019

7. Lack of awareness

Climatic conditions:

Lilkee beed has a desert-like microclimate characterized by sporadic, irregular, and insufficient precipitation as well as a notable degree of aridity. The elements that make up the climate vary greatly in both time and space while generally following the monsoon's seasonal cycle. Famines and droughts are fairly prevalent, but the region is not a genuine desert climatically. However, because of its marginal nature, it is more challenging to adapt than if it were a constant and fully-driven force. The climate in this is very hot because of the desert environment. The highest recorded temperature is 48.5° C in the summer, and the lowest recorded temperature in the winter is -1.1° C. The temperature can vary more during the day and night in the summer. The rapid radiation of solar energy from the surface makes summer nights very cold. This receives 363 mm of rainfall annually on average. Rainy days only last for a very brief period, from July to the first half of September. The Arabian Monsoon determines the maximum rainfall. The mean annual rainfall varies significantly.

Floral diversity:

This region's natural vegetation has been identified as Northern Tropical Thorn Forest (6B) and sub classified as Desert Thorn Forest (6B/C1) (Champion and Seth, 1968). The entire area is made up of normal grassland with scattered trees and plants. In the Beed, there are bushes that are *Capparis decidua* (Keer) and *Haloxylon salicornicum* (Lana). *Prosopis juliflora*, also known as Angreji bavanlio, *P. cineraria* (Khejri), *Acacia nilotica* (Desi babul), *Ziziphus nummularia* (Ber), *Salvadora persica* (Mithijal), *Azardirachta indica* (Neem) and others are among the trees. The grasses include *Suaeda fruticose* (Lunaki), *Boerhavia diffusa* (Chinawari), *Portulaca quadrifida* (Ram-jata), *P. oleracea* (Luni), and *Cyperus rotundus* (Mothiya).

Faunal diversity:

A wide range of faunal groups, including numerous distinctive faunal components, are supported by the like beed. Cows, along with chinkara (*Gazella bennettii*), blue bulls (*Boselaphus tragocamelus*), Indian fox (*Vulpes bengalensis*), and desert fox, make up the majority of the mammalian species (*Vulpes v. pusilla*). There are also sporadic sightings of the jackal (*Canis aureus*), Asiatic steppe wildcat, and desert cat (*Felis silvestris ornata*). Spiny-tailed lizards (*Uromastyx hardwickii*), common monitor lizards (*Varanus bengalensis*), and desert monitor lizards are the main species of herpetofauna (*Varanus griseus*). Many migratory species, including Kashmiri owls, travel through the Beed on their route north to south.

House sparrows, green bee eaters, black ibises, demoiselle cranes, skylarks, crested larks, blue jays, partridges, king vultures, cinereous vultures, and white-backed vultures are among the other birds that can be found in this area. The Beed is home to a variety of wild creatures, including black deer, chinkara, fox, jackal, neelgai, jungle cat, and hare. In addition to these creatures, many other species move to warmer climates throughout the winter.

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 9, September 2019

Rearing habits and migration of animals:

The local movement of wild animals within the Lilkee Beed and to surrounding places is a well-known phenomenon. Animals migrate primarily for water, but occasionally they do so for food as well. In the summer, wildlife migrates and congregates close to water sources. At night, the carnivores move away from the refuge. A small number of migratory birds came here, stay here and return their own places. Exotic animal migration is a common occurrence in the Lilkee Beed.

The quantity and height of grasses are relatively low in certain isolated places. As browsers, large mammals consume tiny grasses and bushes like Ker, Bui, and kheenp. They feed throughout the day, but during the sweltering summer months, it feeds in the morning and evening. They have severe water shortages in the summer.

III. CONCLUSION

The current study's objective was to evaluate the Lilkee Beed of Churu is a vulnerable ecology. This study offers an ecological perspective of the Beed. Better management by the state forest agency could be an effort to maintain the faunal diversity because the region is small. There is no natural check on the growing population of herbivorous in the absence of major predators. The biological equilibrium of this region may be threatened by this circumstance. This species is overpopulated, resulting in severe summer food shortages (requiring outside supplies of fodder), frequent raids on surrounding agricultural fields during times of food scarcity, and recent mass extinctions of the species as a result of meteorological shocks. Both the outside supply of fodder and agricultural field raiding cause issues for the local population and the forest authority. Therefore, if the government pays attention, such actions would be welcomed and beneficial for preserving the ecological balance of this area.

REFERENCES

1. Champion, H. G. and Seth, S. K. (1968). A Revised Survey of Forest Types of India, Govt. of India Press, New Delhi, p. 404.
2. Datta, A. K. and Majumdar, N. 1964. Fauna of Rajasthan, India, Part 7, Pishes. Rec. zool. Surv. India, 62(1 & 2) : 36-100, (Pub. 1970).
3. Dhabriya. S.S. (1984). Ecosystems of Rajasthan: Issues and Perspective. Programme on Environment, HCM-RIPA. Udaipur Campus, Udaipur.
4. Ghosh, A.K., Baqri, Q.H. and Prakash, I. (Eds.). 1996. Faunal Diversity in the Thar Desert: Gaps in Research. Scientific Publishers, Jodhpur, India. 410pp.
5. Kapoor, J. P. 1985. Wildlife management in Desert National Park. Proc. Nat. Sympos. Evalu. Environ. (Spl. Vol. Geobios.) Eds. S. D. Misra, D. N. Sen and I. Ahmad: 273-278 (1981)
6. Kapoor, J. P. 1985. Wildlife management in Desert National Park. Proc. Nat. Sympos. Evalu. Environ. (Spl. Vol. Geobios.) Eds. S. D. Misra, D. N. Sen and I. Ahmad: 273-278 (1981).
7. Krishna, D. and Menon, C. B. 1958. A note on the fishes of Jodhpur (Rajasthan) (in Hindi) Vijnana Parishad Anusandhan Patrika 1(4) : 207-209.
8. Mahajan, K. K. 1969. Fauna of Rajasthan, India. Part 2-Protozoa (No.1). Rec. zool. Surv. India, 61(3 & 4) [1963] : 291-376.

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 9, September 2019

9. Mahajan, K. K. 1971. Fauna of Rajasthan, India. Part 1 O-Protozoa (No.2). Rec. zool. Surv. India, 63(1-4) [1965] : 45-76".
10. Mahajan, K. K. 1977. Fauna of Rajasthan, India. Part 10-Protozoa (No.3). Rec. zool. Surv. India, 71 [1973] : 143-148.
11. Mahajan, K. K. and Mukherjee, R. 1977. On some rectal Protozoa from frogs and toads of Rajasthan. Newsletter zool. Surv. of India., 3(6) : 365-367.
12. Mathur, B. B. L. 1952. Notes on fishes from Rajasthan, India. Rec. Indian Mus., 50(1) : 105-110.
13. Mathur, D. S. 1977. On a collection of fishes from Jodhpur district (Rajasthan). Newslett. zool. Surv. India, 3(4) : 158-159.
14. Prakash, I., Saxena, S. K., Ghosh, P. K. and Bohra, H. C. 1992. Vegetation and Wildlife in the Thar. In perspectives of the Thar and Karakum. Eds. Kar, A., Abhichandani., Anantharaman, K. and Joshi, D. C. Department of Sci. & Tech. Govt. of India, New Delhi: 98-109.
15. Roonwal, M.L. 1983. Fauna of the Great Indian Desert (Past and Present composition). In: Singh, A. (Editor). Desert Resources and Technology-I. Scientific Publishers and Geo-Tech. Academy, Jodhpur, India. 1-86.
16. Sharma, M. S. and Durve, V. S. 1985. Tropic status and fishery potential of Rajasthan waters. Proc. Nat. sympos. Evolu. Environ. (Spl. Vol. Geobios) Ed. S. D. Misra; D. N. Sen and I. Ahmad (1981), pp. 80- 86.
17. Sharma, R. C. 1996. Herpetology of the Thar Desert. In : Faunal Diversity in Thar Desert: Gaps in Research. Ed. by A. K. Ghosh, Q. H. Baqri, and I. Prakash, 297-306. Scientific publisher, Jodhpur.
18. Soota, T. D. and Saxena, M. M. 1983. Sponge fauna of some waters of Rajasthan and its ecology. Trans. Isdt. Ucds., 8(2) : 131 ... 133.
19. Yazdani, G. M. 1996. Fish diversity in the Thar Desert In: Faunal Diversity in Thar Desert: Gaps in Research Ed. by A. K. Ghosh., Q. H. Baqri and I. Prakash, 285-295, Scientific Publisher, Jodhpur.