

# Asian Resonance

## Status Survey of Nidani Reserve Forest, Alwar, Rajasthan



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### Abstract

Nidani Reserve Forest (NRF) is situated at 5 Km. South West of Alwar city, Rajasthan. It is situated at 27°34'28" N latitude, 76°35'16" E longitude. It covers about 16 Km<sup>2</sup>. It is included in the Buffer Area of Critical Tiger Habitat (CTH) of Sariska Tiger Reserve (Rajasthan Gazette, Forest Department -2012).

India is one of the 12 'mega diverse' nations of the World. The Indian subcontinent, a part of the vast Oriental biogeographical region, is very rich in biodiversity. According to NBAP (2008), Aravali Range and Alwar District of Rajasthan have been declared as ecologically fragile or eco-sensitive area. Nidani reserve forest offers the best habitat for the wild life fauna that make this place their home. Some of the wildlife found in the Nidani Reserve forest include the leopard, jungle cat, jackal, sambhar, nilgai, wild boar, hare, hanuman langur, Rhesus monkeys, and plenty of bird species and reptiles. Nidani Reserve Forest deserves special mention for its avifauna. Peafowl is the most common bird here and the population density of this species is very high. Flocks of Bulbul, Green Pigeon, Rose Ringed and Blossom Headed Parakeet feeding on berries make themselves conspicuous. Other common Birds include grey partridge, bush quail, sand grouse, tree pie, golden-backed woodpecker, crested serpent eagle and the Great Indian Horned Owl. Present study deals with status survey of Nidani Reserve Forest.

**Keywords:** Biodiversity, Ecologically Fragile, Conservation.

### Introduction

India is one of the 12 'mega diverse' nations of the World. The Indian subcontinent, a part of the vast Oriental biogeographical region, is very rich in biodiversity. According to NBAP (2008), Aravali Range and Alwar District of Rajasthan have been declared as ecologically fragile or eco-sensitive area. The vegetation cover is only around 19% in Alwar district much below the expected level of 33%. The vegetation of Nidani Reserve forest is tropical dry deciduous forests type according to the classification of forests given by Champion and Seth (1968). The climate of the study area is semi-arid and very hot in summer and extremely cold in winter. The monsoon season is of very short duration. Bala Qila reserve forest is rich in faunal diversity. 40 species of Mammals, 99 species of Birds which belongs to 38 families and 78 genera, 19 species of Reptiles and 8 species of Amphibians were recorded in this forest. Some of the wildlife found in the Nidani Reserve forest include the leopard, jungle cat, striped hyena, golden jackal, chital, sambhar, nilgai, chinkara, wild boar, hare, hanuman langur, Rhesus monkeys, and plenty of bird species and reptiles. Birds include peafowl, grey partridge, bush quail, sand grouse, tree pie, golden-backed woodpecker, crested serpent eagle and the Great Indian Horned Owl.

### Review of Literature

In order to have a better prospective and understanding of the topic, it is desirable that all pertinent literature concerning the topic may be gone through. Nidani Reserve Forest is rarely studied. Some of key information sources that were of particular relevance for floristic and vegetation studies included the classic works of Champion and Seth (1968); Brandis (1972). Yadav (2005) worked on the ethno botanical survey of the flora of different regions of Alwar district but this was the first attempt in these selected areas.

India is one of the 12 mega biodiversity countries of the world. Current status of India's biodiversity suggests that amongst vertebrates, endemism is highest in amphibian and reptiles (Daniels, 1996). A total of 5150 amphibian species are found in the world (Chanda, 1998), of which about 225 species are known from India (Biju, 2001) and 12 species from

Rajasthan. A total of 5817 species of reptiles are found across the world, of which 456 occur in India (Murthy and Ravichandran, 1998) and 75 species from Rajasthan. A total of 1224 and 1295 bird species reported from India and Indian Subcontinent respectively (Inskipp et al, 1996), of which 496 species from Rajasthan. A total of 4629 species of mammals are found across the world, of which 390 occur in India (Alfred et al.1998) and 92 species from Rajasthan.

Some of key information sources that were of particular relevance for faunal studies included the classic works of Gaurav Sharma et.al.(2014), K.P. Dinesh et. al.(2013). Ajay Kumar et. al. (2015) worked on status of Avifauna of Bala Qila Reserve Forest, Alwar (Rajasthan).

### Study Area and Climatic Conditions

Nidani Reserve Forest (NRF) is also known as a Bala Qila Reserve Forest, where a fort is situated at 27°34'28" N latitude, 76°35'16" E longitude and about 1867 feet above msl. Bala Qila Reserve Forest is situated at 5 Km. South West of Alwar city, Rajasthan and covering a total area of 16 Km<sup>2</sup>. It is declared as Buffer Area of Critical Tiger Habitat (CTH) of Sariska Tiger Reserve (Sariska National Park) by Rajasthan government gazette notification dated 9 July 2012.

The "Bala Qila is perched on the most prominent hill of Aravallis range which explains the tales of the rich history of the city. This fort is also known as the Kunwara Kila. It is to be said that the Bala Kila (Nikumbh Mahal) was built by Alghu Rai Nikumbh in 1049 AD. Amazing fortifications surround the Nikumbha Mahal Palace at the top, which has graceful Bengal caned marble columns and delicate latticed balconies. There are the remains of other structures too, like the Jal Mahal, Salim Sagar, Suraj Kund and about 15 temples. The most impressive aspect of the fort is the spectacular view of the city and the lake studded countryside below. The fort is 595 mts. above the city, and extends about 5 Kms from north and south and 1.6 Kms from east and west. The fort has 15 large and 51 small towers, which contains 446 loopholes for the musketry; its eight towers all around are meant for its defence. The most magnificent were 3,599 kanguras, each containing two loopholes for musketry. The fort can be entered through six gates, namely Jai Pol, Suraj Pol, Laxman Pol, Chand Pol, Krishan Pol and Andheri gate. The beautiful Siliserh Lake runs along the edge of the Nidani reserve, with a quaint hunting lodge overlooking it.

For the convenience, we have divided Nidani Reserve Forest (NRF) in to three major sectors, Bala Qila Sector, Pratap Bandh- Manch Sector and Manch-Gangori Sector. Department of forest divided it in to 8 compartment or Blocks. We have selected 12 study sites in Nidani Reserve Forest (NRF). Out of these 12 study sites, 7 in Bala Qila Sector, 3 in Pratap Bandh-Manch Sector and 2 in Manch- Gangori Sector. Settlement of 3 villages, Ravan Devra, Manch and Gangori in NRF. Mainly 8 water bodies and 15 small

to large temples or sacred grooves are present in NRF.

The climate of the study area is semi-arid and very hot in summer and extremely cold in winter. The monsoon season is of very short duration. The cold season starts by the middle of November and continues up to the beginning of March. The summer season follows thereafter and extends up to the end of the June. The south-west monsoon continues from July to mid-September. The period from mid-September to mid-November forms the post monsoon season. The rainfall during the south-west monsoons constitutes about 80 % of the annual rainfall. Annual rainfall during 2014 is 573 mm., in 2015 is 733 mm. and 2016 is 577.3mm.. The topography of study area supports scrub-thorn arid forests, dry deciduous forests, rocks and grasses. The study area being a part of the Aravalli Range, it is rich in mineral resources.

The vegetation cover is only around 19% in Alwar district much below the expected level of 33%. The vegetation of Nidani Reserve forest is tropical dry deciduous forests type according to the classification of forests given by Champion and Seth (1968). The dominant tree in the forest is dhok (*Anogeissus pendula*). Other trees include the salar (*Boswellia serrata*), kadaya (*Sterculia urens*), dhak (*Butea monosperma*), gol (*Lannea coromandelica*), ber (*Ziziphus mauritiana*) and khair (*Acacia catechu*). Bargad (*Ficus bengalensis*), arjun (*Terminalia arjuna*), gugal (*Commiphora wightii*) or bamboo can also be met at some places. Shrubs are numerous, such as kair (*Capparis decidua*), adusta (*Adhatoda vesica*) and jhar ber (*Ziziphus nummularia*).

Some of the wildlife found in the Nidani Reserve forest include the leopard, jungle cat, striped hyena, golden jackal, chital, sambhar, nilgai, chinkara, wild boar, hare, hanuman langur, Rhesus monkeys, and plenty of bird species and reptiles. Birds include peafowl, grey partridge, bush quail, sand grouse, tree pie, golden-backed woodpecker, crested serpent eagle and the Great Indian Horned Owl.

Nidani reserve forest offers the best habitat for the wild life fauna that make this place their home

### Methodology

Regular surveys were done by systematically walking on fixed routes through the study area. For the purpose of the present study, the line transects method, as suggested by Anderson *et al* (1979) was followed for evaluation of the population density of animals inside the study areas. A survey was conducted in two phases, road or line transect and through interview a questionnaire survey.

Observations were made during January 2015 to December 2016. The fauna were observed during the peak hours of their activity from 06 AM–10 AM and from 16 PM –18 PM with the aid of 10x50 Nikon binoculars and GPS. We have select 12 study site in Nidani Reserve Forest (NRF). Faunal data's were recorded from these study sites. However, opportunistic records were also collected during other time periods of the day. Identification of birds was done using field guides (Ali & Ripley 1987; Grimmett

et al. 1998, 1999 and R. Manakadan, J.C. Daniel & N. Bhopale 2011). Identification of reptiles and amphibian was done using field guides (The book of Indian Reptiles and Amphibians by J.C. Daniel 2002).

### Observation and Result

Nidani reserve forest offers the best habitat for the wild life fauna that make this place their home. Some of the wildlife found in the Nidani Reserve forest include the leopard, jungle cat, jackal, sambhar, nilgai, wild boar, hare, hanuman langur, Rhesus monkeys, and plenty of bird species and reptiles. Nidani Reserve Forest deserves special mention for its avifauna. Peafowl is the most common bird here and the population density of this species is very high. Flocks of Bulbul, Green Pigeon, Rose Ringed and Blossom Headed Parakeet feeding on berries make themselves conspicuous. Other common Birds include grey partridge, bush quail, sand grouse, tree pie, golden-backed woodpecker, crested serpent eagle and the Great Indian Horned Owl. Present study deals with the status survey of Nidani Reserve Forest.

Bala Qila reserve forest is rich in faunal diversity. 40 species of Mammals, 99 species of Birds which belongs to 38 families and 78 genera, 19 species of Reptiles and 8 species of Amphibians species are Indian green frog, common toad, Indian hyla, cricket frog were recorded in this forest.

### Mammals

Due to variable habitats and climate, Rajasthan have rich mammalian fauna. The increasing biotic interference has reduced mammalian fauna but even a change in distribution ranges has been noticed. Faunistic survey made by earlier workers in Rajasthan were consulted (Prakash, 1994; Rana, 1991, Shankar, 1992. Nidani reserve forest offers the best habitat for the mammalian fauna that make this place their home. This forest is rich in mammalian faunal diversity. 40 species of Mammals were recorded in this forest. Commonly found mammals species in Nidani Reserve Forest (NRF) are Shambhar, Mongoose, striped squirrel, Bats, Hare, Rhesus monkey, Hanuman Languor, Wild boar, Porcupine, Blue Bull and Leopards. Rusty Spotted cats and Palm civet have also been reported but their sightings are yet to be verified.

### Aves

Nidani Reserve Forest (NRF) due to its varied terrain and abundance of water bodies, has an excellent population of birds, resident and migrant. Ninety nine bird species were recorded from study area in the surveyed period. Total 38 families, 78 genera and 99 species were recorded in this forest. The most represented families are Corvidae, Passeridae, Muscicapidae, Sylviidae, Accipitridae, Sturnidae, Phasianidae, Ardeidae and Columbidae with 9, 8, 7, 7, 6, 5, 4, 4 and 4 species respectively (Ajay Kumar et al, 2015). Some of the best locations to watch birds at, and from are Karni Mata temple valley, Jai Tal, Suraj Kund, Matia Kund, Kishan Kund, Pratap Bandh and Andheri. Among the commonly sighted birds in the study area are Peafowl, Tree Pies, Sparrow, Parakeets, Sunbird, Bulbul, Fowl,

Kingfishers, Golden Backed Woodpeckers, Owls, Quails, Partridges and Crested Serpent Eagles, Pin tail, Black Drongo, Fan tail, Prinia, Great Tit, Brahmini Myna, Tailor bird etc.

The Indian Pea fowl (*Pavo cristatus*) is the largest of the pheasants. It was declared as the national Bird of India in 1963 due to its flagship value founded on its glorious position in mythology and its widespread distribution in India. Nidani reserve forest is very rich in Peafowl population. We have done intensive field survey to estimate distribution status and population size of the species. In the present survey the estimate population of Peafowl is 850. Its population is abundant in Bala Qila Sector and very rare in Manch – Gangori Sector.

### Reptiles and Amphibians

Nidani reserve forest offers the best habitat for the reptile and amphibian fauna that make this place their home. 19 species of Reptiles and 8 species of Amphibians were recorded in this forest. Commonly found reptiles species in Nidani Reserve Forest (NRF) are Desert Monitor Lizards, Tortoise, Banded Kraits, Cobras, Common Kraits, Rat Snakes, Russel's Vipers, Saw-scaled Vipers, the Indian Chamaeleon etc. and amphibian species are India green frog, common toad, Indian hyla, cricket frog etc.

Major threats to habitat loss are overgrazing, fuel wood collection, poaching and tourism in BQRF. This area is located near Alwar city. They put enormous pressure on the reserve forest for fuel wood collection. Illegal grazing is also a constant problem. BQRF is easily accessible so, there is also tremendous tourist pressure.

### Conclusion

Nidani Reserve Forest (NRF) is situated at 5 Km. South West of Alwar city, Rajasthan. It is situated at 27°34'28" N latitude, 76°35'16" E longitude. It covers about 16 Km<sup>2</sup>. India is one of the 12 'mega diverse' nations of the World. The Indian subcontinent, a part of the vast Oriental biogeographical region, is very rich in biodiversity. The vegetation of Nidani Reserve forest is tropical dry deciduous forests type according to the classification of forests given by Champion and Seth (1968). Nidani reserve forest offers the best habitat for the wild life fauna that make this place their home. Some of the wildlife found in the Nidani Reserve forest include the leopard, jungle cat, jackal, sambhar, nilgai, wild boar, hare, hanuman langur, Rhesus monkeys, and plenty of bird species and reptiles. Nidani Reserve Forest deserves special mention for its avifauna. Peafowl is the most common bird here and the population density of this species is very high. Flocks of Bulbul, Green Pigeon, Rose Ringed and Blossom Headed Parakeet feeding on berries make themselves conspicuous. Other common Birds include grey partridge, bush quail, sand grouse, tree pie, golden-backed woodpecker, crested serpent eagle and the Great Indian Horned Owl. Bala Qila reserve forest is rich in faunal diversity. 40 species of Mammals, 99 species of Birds which belongs to 38 families and 78 genera, 19 species of Reptiles and 8 species of Amphibians were recorded in this forest.

## Suggestions

It is being suggested that the wild life fauna are important for the ecosystem, as they play various roles as scavengers, pollinators and predators of insect pest. Major threats to wildlife fauna in Nidani Reserve Forest is habitat loss and climate Change. Anthropogenic activities like fire wood collection, livestock grazing and improper management are also the major threats to the habitat loss. It is an alarming sign for the conservation of the wild life. Regular status surveys related to wild life fauna and awareness of the local people should be conducted for the conservation of wild life. So, proper conservation of habitat of study area is essential.

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