

Survey of vertebrate fauna from Malwada Forest from Vikramgad Taluka, District Thane

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Abstract : Malwada forest is well known for its mixed deciduous forest with few patches of evergreen broad leaf forest, which is typically a rich habitat for species diversity. Survey was conducted for a period of six months from Sept 2009 till Feb 2010. The study involved documentation of vertebrate fauna for its abundance and distribution. These included fishes or class Pisces, Amphibians or class Amphibia, the reptiles or class Reptilia, the birds or class Aves and mammals or class Mammalia. The field survey did not produce sighting of any large mammals. During survey significant number of reptiles and birds were observed. Threats to the species are principally due to reduction of their habitats, fragmentation of habitat for various purpose, decline in the habitat quality and illegal hunting.

Key words : Malwada Forest, Vertebrates.

Introduction

Malwada Forest region is situated on the outskirts of Vikramgad Taluka occupying a vast area. River Pinjal, one of the important tributary of Vaiterna river forms a southern border of the Malwada forest, separating Vikramgad taluka from Vada taluka. The survey area falls in Vikramgad taluka, District Thane.

Malwada region shows three types of forest zones as:

1. Forest compartment No. 394: which covers 191.56 hectare area, out of this 59.24 hectare area falls in adjoining Vaki region and 132.32 hectare area falls in Malwada region. This forest area comes under forest department and is protected by the department.

2. Gairan Forest: Preserved for cattle grazing and is rich in grasses. It (Plot no. 174) covers 13.34 hectare area toward North East and (Plot no. 137) covers 18.79 hector area towards North West direction.

3. Forest area under private ownership (Khajgi forest): covers about 82.79 hectare area. This forest area is under maximum stress, as owners are selling this area by converting it in to small plots.

Malwada forest is well known for its mixed deciduous forest that is typically rich habitat for species diversity.

Survey is primarily aimed at studying the diversity of vertebrates found in Malwada forest and identifies the same for creating a baseline data. River Pinjal, one of the important tributary of Vaiterna river forms a southern border of the Malwada forest, separating Vikramgad taluka from Vada taluka also supports a good freshwater fish fauna.

The study provides the first step in identifying biological diversity of the area. It is necessary to undertake a number of surveys over an extended period of time but due to limited resources and time constraints, it is possible only to offer a biological snapshot of the area over that time.

Material and methods

Survey was conducted for a period of six months from Sept 2009 till Feb 2010. The study involved documentation of vertebrate fauna for its abundance and distribution. The study involved 8 field visits and the methodology undertaken to document is detailed below.

The fish from river Pinjal were noted by observing the fish catch from local fisherman.

The Reptiles and Amhibians were studied by direct sighting and indirect signs like moults as well as road kills along the survey area.

The birds in the forest were studied by direct sighting, listening to the calls as well as by locating nest on the trees. The survey was conducted during dawn to midmorning, since most avian species are active during that time. For observation of birds optic binocular (16 × 50) Zenith Hi-Lux was used. All field observations were verified by using field guide by Dr. Salim Ali.

The mammals in the forest were listed by direct sighting and by other indirect signs like calls, pug marks, fecal matter as well as road kills along the survey area.

Observations and discussion

The fauna survey included 5 classes of vertebrate animals.

These included fishes (class Pisces), Amphibians (class Amphibia), the reptiles (class Reptilia), the birds (class Aves) and mammals (class Mammalia). To list Ichthyofauna of river Pinjal, fish captured by local fishermen were taken in to consideration. Most of the fishermen use local indigenous nets which they operate from banks. One objectionable method of capturing fish is use of poison or use of explosives to kill the fish and then collection of the dead fish which float on the surface.

The Ichthyofauna of the river is as follows:

- The Indian major carps: *Labeo rohita*, *Labeo calbasu*, *Cirrhinus mrigala*, *Catla catla*.
- Minor Carps: *Puntius spp.*, *Cirrhinus cirrhosa*
- Catfishes: *Wallao attu*, *Pangasius spp.*, *Heteropnustus fossilis*, *Clarius spp.*
- Feather backs: *Notopterus spp.*
- Mulletts: *Mugil spp.*
- Murrels: *Channa spp.*
- Others: *Gambusia affinis*, *Tilapia spp.*
- Amphibians observed during the survey were mainly anurans like Indian bull frog *Hoplobatrachus tigerinus*, Fungoid frog *Hylarana malabarica* and tree frogs. Caecilians *Ichthyophis spp.*, were also found under rocks which escaped very quickly leaving mucous tracks behind. Large number of toads were also located during survey.
- Reptiles were represented by abundant lizards and snakes. Common reptiles found were Russell's viper *Daboia russelii*, Saw scaled viper *Echis carinatus*, Boa *Eryx conicus*, Cobra *Naja naja*, Common Krait *Bungarus caeruleus*, Blind snake *Typhlops spp.* and Jerdon's Many-tooth Snake or Dumeril's black-headed snake *Sibynophis subpunctatus*, Bronze backed Tree snake, Buff striped keelback, Rat snake etc. Common lizards and geckos found were Monitor lizard *Varanus bengalensis*, Common Garden lizard *Calotes versicolor*, Roux's Forest lizard *Calotes rouxii*, Kollegal Ground Gecko *Geckoella collegalensis*, Fan throated lizard *Sitana ponticeriana*, Indian chameleon *Chamaeleo zeylanicus*, Common skink *Mabuya carinata*.
- Avifauna comprised of local as well as migrant species. Waders include, Asian openbill, Common teal, Little grebe, Western cattle egret, Indian pond heron, Chestnut bittern, Glossy ibis, White breasted water hen, Little ringed plover, Marsh sandpiper, Common sandpiper, Little stint, Little tern, etc.
- Other birds include, Buzzard, Black kite, Shikra, Common quail, Grey jungle fowl, Rock pigeon, Indian emerald dove, Spotted dove, Little brown dove, Rose ringed parakeet, Asian koel, Common hawk cuckoo, Spotted owl, Indian little nightjar, Asian palm swift, Common kingfisher, White throated kingfisher, Little green bee eater, Common hoopoe, Coppersmith barbet, Indian bush lark, Malabar lark, Wire tailed swallow, White browed wagtail, Paddy field pipit, Long billed pipit, Black headed cuckoo, shrike, Asian paradise

flycatcher, Fantail flycatcher, Red vented bulbul, Red whiskered bulbul, Common iora, Bay backed shrike, Common blackbird, rock thrush, Indian blue robin, Oriental magpie robin, Common stone chat, Pied bush chat, Jungle babbler, Common tailorbird, Nilgiri flowerpecker, Crimson sunbird, Purple sunbird, Small sunbird, Scaly breasted munia, White rumped munia, House sparrow, Baya weaver bird, Common myna, Indian golden oriole, Black drongo, Racket tailed drongo, Rufous treepie, House crow, Indian jungle crow, Crow pheasant and gray hornbill, etc.

- Mammals recorded during the study were Wild boar, Jungle rat, Fruit Bat, Porcupine, Small Indian mongoose, Bandicoot, Indian Hare, Five striped palm squirrel and monkeys like rhesus monkey and Hanuman langur.

The field survey did not produce sightings of any large mammals. During survey significant number of reptiles and birds were observed. Anecdotal evidence from villagers is that species like porcupines, jackals and hyenas were present during the past in the survey area. Hunting and depredation of wildlife population is a serious problem throughout the forest. Due to increased interference of human beings in the forest area fauna is facing a danger of extinction. New road construction through the forest is killing many forest animals like snakes. Frequent visitors throw lot of garbage like plastic bottles and bags creating lot of problems to animals. In a field visit, a cobra was found trapped inside a big plastic water bottle. Many damaged bodies of snakes like vipers were found lying on roads, adivasis (tribals) were found killing amphibians like *Ichthyophis spp.* considering them as poisonous snakes. All these incidences show significant danger to forest animals. Threats to the species are principally due to reduction of their habitats, fragmentation of habitat for various purpose, decline in the habitat quality and illegal hunting. Fragmentation leads to extinction risk because isolated subpopulation goes extinct one by one without being repopulated. Proper awareness is needed to save this prestigious property of our nation.

Conclusion

- It was concluded that vertebrate fauna of the project area presents a fairly regular representation of a typical forest species composition.
- Malawada forest habitat is facing increased development.
- Deforestation for the construction of houses, roads and other infrastructure is disturbing wild life by reducing the availability of food and shelter to many wild animals.

- Many animals die in the road accidents especially during night as vehicular flow has increased tremendously in the last few years.
- Loss of vegetation having a great potential value is leading to loss of critical or sensitive habitat.
- City people are purchasing these virgin forest areas in the interest of making second home. The developers of the property should pay attention to conserve this natural environment in its original splendor.
- The habitat can also serve as wild life and bird watching area for nature lovers.

Acknowledgement

Authors are sincerely thankful to University of Mumbai for funding Minor Research Project. Authors are also thankful to Vidya Prasarak Mandal for providing infrastructural and computing facilities free of cost for the research work. Sincere thanks to our Principal, Dr. (Mrs.)

M. K. Pejaver who constantly encourages to undertake research projects.

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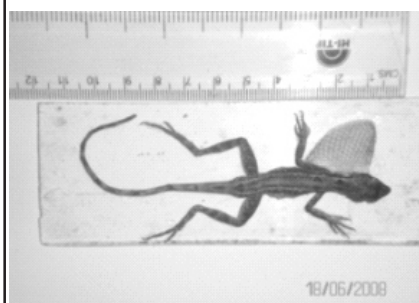
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Common Indian tree frog
(*Polypedatus maculatus*)



Caecilian (*Ichthyophis spp.*)



Fan throated lizard
(*Sitana ponticeriana*)



Kollegal Ground Gecko
(*Geckoella kollegalensis*)



Cobra (*Naja naja*)



Boa (*Eryx conicus*)

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|---|---|---|
|  |  |  |
| <p>Russelsviper (<i>Daboia russelii</i>)</p> | <p>Chameleon Zeylanicus</p> | <p>Saw Scaled Viper (<i>Echis carinatus</i>)</p> |
|  |  |  |
| <p>Pug marks of wild boar</p> | <p>Moult of snake skin</p> | <p>Smashed body of krait</p> |
|  |  |  |
| <p>Monitor lizard (<i>Varanus bengalensis</i>)</p> | <p>Blind Snake (Typhlops spp.)</p> | <p>Indian Grey mongoose (<i>Herpestes edwardsii</i>)</p> |