

FRESHWATER MOLLUSCS IN BARDA WILDLIFE SANCTUARY, GUJARAT

Ketan Bhalodia, V.J. Bhuvu, S.M. Dave and V.C. Soni

Department of Bioscience, Saurashtra University, Rajkot, Gujarat 360005, India.

Barda was a private forest of the ex-princely states of Porbandar and Jamnagar. The 192.31 km² Barda Wildlife Sanctuary (21°42'-21°54' N and 69°39'-69°49' E) is spread over two administrative districts of Jamnagar and Porbandar in Gujarat State. The northern part of the Sanctuary is known as Jambarda and the southern part is called Ranabarda. The Sanctuary was established in 1979.

The terrain is mostly hilly and undulating with an altitude ranging from about 50m to 627m. The hills run in all direction and have moderate slopes. The Barda forest has two main ephemeral rivers, Kileshwar (Bileshwari) River and Joghri River. These rivers usually dry up during the summer. There are four large dams, Khambhala, Fodalanes, Gulabsagar and Ranasar and many check dams have been constructed across nallahs by the Forest Department.

The climate of the Sanctuary is tropical, arid to semiarid. Rainfall is short during monsoon and rainy days are few. The area is drought-prone and the variation in rainfall from year to year is considerable; the average annual rainfall of the area is 650mm. Winter is cool and dry;

January is the coldest month; temperature falls to 10°C. In summer, hot days generally occur during May-June when temperature rises to 42°C.

Molluscs were searched and collected from variety of habitats in the Sanctuary. The captured animals were narcotized using magnesium sulfate (MgSO₄) and then preserved in 4% formaldehyde. Specimens were brought to the laboratory for identification. Identification was done using standard reference materials, viz. Tonapi (1980), Subba Rao (1989) and some samples were sent to the Zoological Survey of India for identification or verification.

Molluscs of Barda Wildlife Sanctuary are represented by nine species belonging to nine families and four orders (Table 1). Of the total, two species are abundant, three species are common, and four species are uncommon in occurrence in the Sanctuary.

Indoplanorbis exustus was found attached to aquatic plants such as *Hydrilla verticillata* and *Najas minor*. *Zootecus insularis* was found either in river or on banks. During the rainy season, several of these were found in decaying, slushy leaves rich in humus under vegetation, whereas *Succinea girnarica* was found both on land and in water.

Acknowledgement

The authors are grateful to the Director, Gujarat Ecology Education and Research (GEER) Foundation, Gandhinagar for financial support; H.H. Shri Shatrushailya Sinhji for encouragement; Forest Department, Gujarat State for permission; Shri Parbatji Odedara (ACF) and his staff of the Sanctuary for accommodation and other facilities; local people for assistance during the study; Zoological Survey of India for identification of the specimens.

References

- Rao, N.V.S. (1989). *Freshwater Molluscs of India*. Zoological Survey of India. Calcutta
 Tonapi, G.T. (1980). *Freshwater animals of India*. Oxford and IBH Publishing Co.

Table 1. Diversity and distribution of freshwater molluscs in the Barda Wildlife Sanctuary

Species (Family)	Distribution	Status
<i>Bellamyia bengalensis</i> f. <i>typica</i> (Viviparidae)	Gulabsagar dam, Fodalanes dam, Khambhala dam	Common
<i>Thiara (Melanoides) tuberculata</i> (Thiaridae)	Kileshwar river, Ditch near Maharajavali hill, Riverin area near Khatariya and Krishnai nes, Fodalanes dam and Khambhala dam	Abundant
<i>Radia (Pseudosuccinea) acuminata</i> f. <i>rufescens</i> (Lymnaeidae)	Kileshwar river, Kharipat, Nr. Gali nes (in well)	Rare
<i>Indoplanorbis exustus</i> (Planorbidae)	Ditch near Tabariya hill, Vantalavadi (Nr. Satvirda), Stream near Bala nes, Check dam near Satvirda, Stream near Ajamapet nes, Dhoraghuna dam, Check dam near Ranvalo nes	Abundant
<i>Cerastua moussonianus</i> (Cerastuidae)	Kileshwar river, Narzar nes, Dantaro hill, Nr. Pond of Abhapara hill	Rare
<i>Zootecus insularis</i> (Subulinidae)	Plain area near Tabariya hill, Nr. Khambhala dam, Nr. Fodalanes dam, Kileshwar river, Nr. Pond of Abhapara hill	Common
<i>Succinea girnarica</i> (Succinidae)	Nangaru hill, Lambo hill, Dantaro hill	Rare
<i>Macrochlamys pedina</i> (Ariophantidae)	Nr. Duman hill, Dantaro hill, Nr. Pond of Abhapara hill	Rare
<i>Parreysia (Radiatula) caerulea</i> (Unionidae)	Gulabsagar dam, Fodalanes dam, Khambhala dam, Riverain area near Karwal nes	Common

Status based on sighting of species.

Manuscript received 28 March 2001;

Revised manuscript received 12 June 2001;

Accepted for publication 1 July 2001