A Note on Molluscan Diversity of Nighoj Potholes (Kund) Parner Taluka Ahamadnagar District (M.S.) India.

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Abstract:

The phylum Mollusca is most diverse and dominates bentic fauna of water bodies. The Nighoj Kund is a world famous for naturally made potholes on Rock River bed of Kukadi River. This pothole recorded in Guinness book of world record. The Kund is located at the Nighoj village, Taluka Parner District Ahamadnagar. These potholes are spread on kukadi river bed up to the 3 km long and 10 to 15 Mts., widths and more than 30 Mts., in depth. The current study is carried out to find out the diversity of fresh water Molluscan species from Nighoj Kund or Potholes Maharashtra state, India. The results of present study shows that the Molluscan species diversity found from various sites of potholes or Kund water which is belonging to different families such as *Viviparidae* (03 Species), *Lymnaeidae* (02 Species), *Physidae* (01 Specie), *Bullinidea* (01 Specie), *Thiaridae* (02 Species), *Planorbidae* (01 Specie) all the species are belonging to Class Gastropoda and *Unioidae* (02 Species) which are belong to Class Bivalve. All the above species are found from study area during study period.

Key words: Potholes, Malacology, Kund, Mollusca, Nighoj, Kukadi.

Introduction:

Potholes of Kukadi River are popularly known as ‘Kund’ or Rangankhalage in Marathi. Numbers of people are visited from various countries through the world. Hence it is a world famous tourist spot of Maharashtra and it has also great geographical importance. The biodiversity of mollusca of Kund water is highly diverse, unique and important to livelihoods. The density of phylum Mollusca are dependent on rainfall percentage. As well as the density of Mollusca are dependent on a particular season. The density of Mollusca is affected on the salinity of water, desiccation during the dry season. The Mollusca has an ecological roles as well as economic importance in the region but habitat deterioration along with overexploitation may threaten this natural resource in the tirumala hills. (Y. Prakasa Rao and N. Lakshimi). The species of Mollusca is plays an important as bioindicator in water bodies and also in environment**.**

Stepwise multivariate analysis of the different environmental parameters regarding Molluscan density, it was found that in all 10 parameters govern the density variation of benthic molluscs in Pondicherry mangroves and that the organic matter of sediment and sulphide, DO, and salinity were the highly significant ones. (Palanisamy Satheeshkumar).

The phylum Mollusca has an economical and commercial importance. The soft bodies Molluscan are used as bait for fishing purposes. (Waghmare P.K., Rao K.R. and Shaikh T.A) It is second largest phylum of invertebrate animals in term of number of species after the Phylum Arthropoda. There are around 80000 to 100000 species of Mollusca out of this 50000 are belonging to Class Gastropoda and 15000 which are belong to class Bivalves. Gastropoda, or snails (Class Gastropoda), belongs to phylum Mollusca. It is the second largest phylum after Arthropoda (insects), estimated at 80,000–100,000 described species (Pechenik J. A.).

Bivalve is the enriched source of protein for human besides fishes. It can be found in various parts of the world such as marine, brackish, fresh and terrestrial areas. (Sunil N Khade) Molluscs have been shown to be an appropriate indicator group for local invertebrate biodiversity (Gladstone). The phylum Mollusca are very important factors for ecological studies. The present study was investigating that the diversity of Molluscan species at the Nighoj potholes (Kund) water.

Materials and Methods:

Study Area:

The Nighoj Kund (Potholes) is located on the Basin of Kukadi River in the western part of the Parner taluka of Ahmednagar district (M.S.) India. It extends between 180 56' 03” latitude and 180 59' 33” N latitudes and 740 14' 16” to 740 19' 53” E longitudes.

Location of Study:

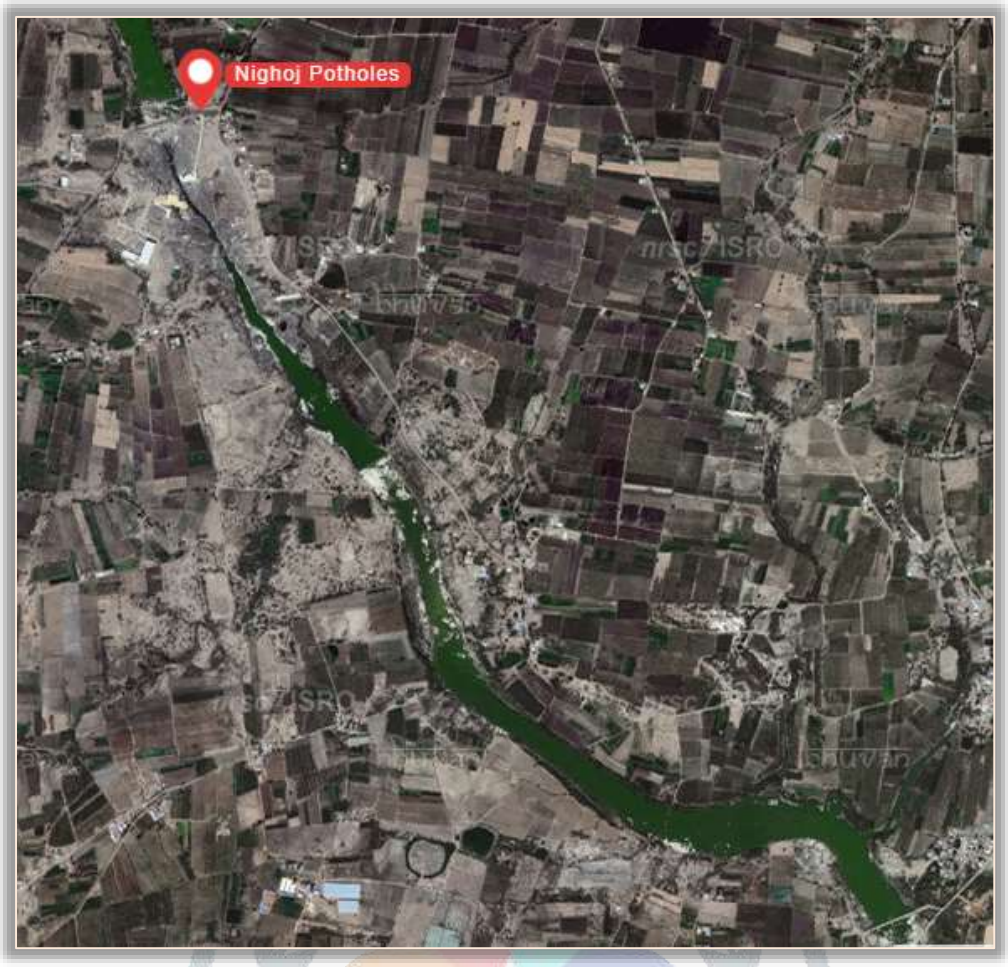


Fig No. 1: Image of Nighoj Potholes.

Sampling sites, Collection, Maintenance and Identification:

The Malacological study was conducted by collecting Mollusca species from randomly selected 10 different sites of Kund water during June- 2018 to May- 2019. The collection of mollusca was conducted by as per the methodology described by Ramakrishna and Dye (2007). The collected specimens stored in specimen bottles and preserved in two form viz. wet preservation by using 70% ethyl alcohol and dry preservation. The specimen bottles were labeled appropriate information of collection site and date. The collected specimens were sorted in the Department of Zoology, Shri Mulikadevi Mahavidylaya, Nighoj, (M.S) India on basis of class of Mollusca and site and date of collection. The collected mollusca identified by using identification key of Ramakrishna and Dye (2007) and by using available literature of ZSI, Pune.

Results and Discussions:

Significantly the seasonal variations were noticed during the collection of Molluscan species from the sampling sites of Potholes (Kund). The study is conducted on 10 different selected sampling sites such as muddy, sandy and rocky area from which the 12 species of Mollusca where identified. The collected species of mollusca are belonging to two classes such as Class Gastropoda and Bivalve. The information of collected mollusca is as given bellows'.

Table no 1: Classification of identified species of Molluscan from Nighoj Potholes.

Sr. No	Phylum	Class	Order	Family	Species
1	Mollusca	Gastropoda	Mesogastropoda	Viviparidae	*Bellamya belgalensis* (Lamarck 1822)
					Bellamya dissimilis (Mueller, 1774)
					Angulyara microchaetophora(Annandale, 1921)
			Basommatophora	Lymnaeidae	*Lymnaea acumlaeata* (Lamarck, 1822)
					Lymnaea luteola (Lamarck, 1822)
				Physidae	*Physa acuta*(Draparnaud, 1805)
				Bullinidea	*Indoplanorbis exustus*(Deshayes,1834)
			Mesogastropoda	Thiaridae	*Tharia scabra* (Mueller, 1774)
					Terebia lineata (Gray, 1828)
			Planorboidea	Planorbidae	*Gyraulus convexiusculus*(Hutton, 1849)
2.		Bivalve	Eulamellbrachiata	Unioidae	*Lamellidens marginalis* (Lamarck, 1819)
					Lamellidens carrianus (Lea, 1834)

Table no 2: Morphological characteristics identified species of Mollusca from Nighoj Potholes.

No	Name of Mollusca Species	Diameter	Height	Aperture height
1.	*Bellamya belgalensis* (Lamarck, 1822)	18 mm	22 mm	11 mm
2.	*Bellamya dissimilis* (Mueller, 1774)	14 mm	18 mm	11 mm
3.	*Angulyara microchaetophora* (Annandale, 1921)	11 mm	12 mm	07 mm
4.	*Lymnaea acumlaeata*(Lamarck, 1822)	09 mm	27 mm	09 mm
5.	*Lymnaea luteola* (Lamarck, 1822)	14 mm	28 mm	17 mm
6.	*Physa acuta*(Draparnaud, 1805)	08 mm	12 mm	10 mm
7.	*Indoplanorbis exustus*(Deshayes,1834)	10 mm	07 mm	06 mm
8.	*Tharia scabra* (Mueller, 1774)	06 mm	17mm	05 mm
9.	*Terebia lineata* (Gray, 1828)	12 mm	27 mm	12 mm
10.	*Gyraulus convexiusculus*(Hutton, 1849)	03 mm	04 mm	-
11.	*Lamellidens marginalis* (Lamarck, 1819)	60 mm	28 mm	-
12.	*Lamellidens carrianus* (Lea, 1834)	78 mm	43 mm	-

Photo Plate No. 01

Bellamya belgalensis (Dorsal view) *Bellamya belgalensis* (Ventral view)

Bellamya dissimilis (Dorsal view) *Bellamya dissimilis* (Ventral view)

Angulyara microchaetophora (Dur.vi) *Angulyara microchaetophora*(Vel.vi

Photo Plate No. 02

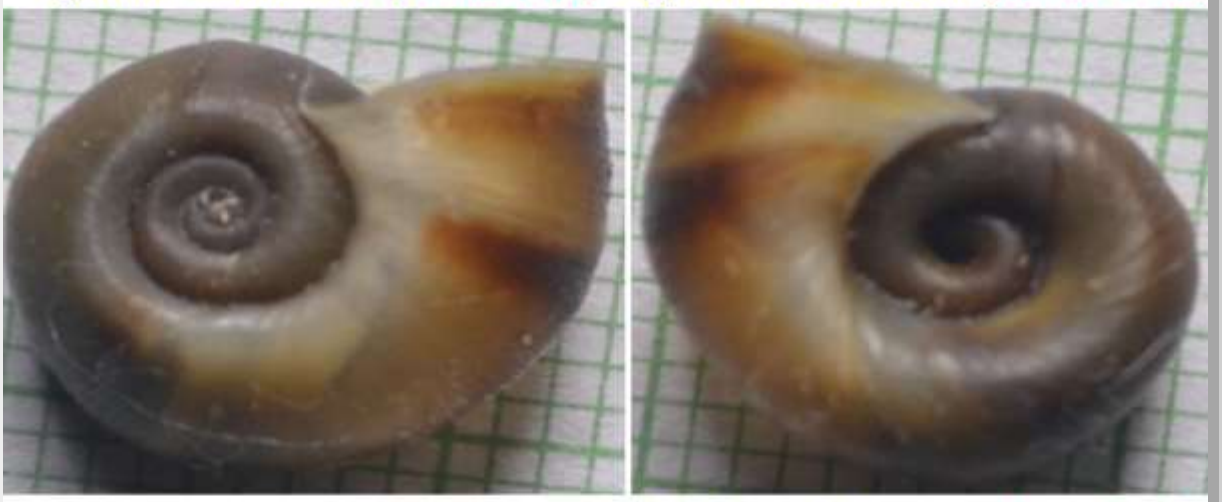
Tarebia lineate (Dorsal view) *Tarebia lineate* (Ventral view)

Lymnaea luteola (Dorsal view) *Lymnaea luteola* (Ventral view)

Physa acuta (Dorsal view) *Physa acuta* (Ventral view)

Photo Plate No. 03

Lymnaea acumlaeata (Dorsal view) *Lymnaea acumlaeata* (Ventral view)



Indoplanorbis exustus (Dorsal view) *Indoplanorbis exustus* (Ventral view)

Tharia scabra (Dorsal view) *Tharia scabra* (Ventral view)

Photo Plate No. 04

Gyraulus convexiusculus (Dorsal view) *Gyraulus convexiusculus* (Ven.view)

Class- Bivalve

Lamellidens marginalis (Dorsal view)

Lamellidens carrianus (Dorsal view)

Discussions:

Molluscs are highly successful invertebrates in terms of ecology and adaptation and are found nearly in all habits ranging from deepest ocean trenches to intertidal zones and freshwater to land

occupying a wide range of habitats. (Vanmali H.S). These are highly successful invertebrates in terms of ecology and adaptation and are found nearly in all habitats ranging from deepest ocean trenches to the intertidal zones, and freshwater to land occupying a wide range of habitats (Patil et. al.).The faunastic survey of molluscs in any ecosystem provides crucialinformation about ecology and food chain of theecosystem. (Magare, S.R.).

Conclusion:

The present study shows the diversity of mollusca species from various sites of nighoj Kund (Potholes) water bodies. In the present study 12 species of molluscs were recorded from the muddy, sandy and rocky area. Predominant occurrence of *Lymnaea acumlaeata, Bellamya belgalensis, Angulyara microchaetophora, Lymnaea luteola*andGyraulus convexiusculus are found in muddy area. The *Lamellidens marginalis, Lamellidens carrianus, Terebia lineata, Tharia scabra, Indoplanorbis exustus and Physa acuta*are found in sandy and rocky area. In conclusion, this is the first initial study on the diversity, occurrence and their distribution shows seasonal variations.

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