

# NATIONAL CONFERENCE ON

## *Ecosystem and Biogeochemistry of the North Indian Ocean (EBNIO23)*

(Funded by OHEPEE, Govt. of Odisha)

# SOUVENIR



**5 - 6 October, 2023**

Organised by



**P. G. Department of Marine Sciences,  
Berhampur University, Bhanja Bihar, Berhampur-760007  
Ganjam, Odisha**

*filamentosus*. The total length and weight of all collected lutjanidae specimens ranged from 123-430mm and 62-1220g respectively. Details of the gut contents of different lutjanidae species revealed the presence of bivalves, crabs, fish, prawns, and squilla. Fish were commonly found in the gut of most of the species. The gut contents recovered during the study were mostly digested or partially digested, with a few exceptions. The gut contents of five species *L. argentimaculatus*, *L. lunulatus*, *L. vitta*, *P. pinjalo*, and *P. filamentosus* contained only fish or fish remnants. *L. indicus*, *L. madras*, *L. guilcheri*, *L. quinquelineatus*, and *L. lutjanus* had diets consisting of both fish and prawns. *L. johnii*, *L. rivulatus*, *L. fulviflamma*, and *L. fulvus* were observed feeding on fish, prawns, crabs, squilla, and bivalves. *L. xanthopinnis* had a diet exclusively consisting of prawns.

**Keywords:** Lutjanidae, feeding, Gopalpur

## REVISITING THE CONCEPT OF ZOOPLANKTON DIVERSITY ASSESSMENT: PERSPECTIVES FROM CARCASSES

Debarati Sengupta<sup>1</sup>, Danilo Calliari<sup>2,3</sup>, Sourav Paul<sup>1\*</sup>

<sup>1</sup>Estuarine and Coastal Studies Foundation, Howrah, West Bengal-711101, India.

<sup>2</sup>Centro Universitario Regional Este (CURE), Universidad de la República, Uruguay.

<sup>3</sup>Facultad de Ciencias, Universidad de la República, Uruguay

In case of zooplankton sampling a considerable number of animals are generally captured dead. Biodiversity matrix of zooplankton traditionally considers species richness and abundance; however, alive/dead state of an organism is generally overlooked. Estimation of diversity indices; therefore, reflects both the alive and dead zooplankton. The study aims to revisit that traditional way of assessing biodiversity by incorporating the alive/dead state. The copepods of Indian Sundarbans were used as an example community and their live and dead status during sampling were considered for the evaluation of the aforementioned purpose. Copepods were sampled seasonally in 2022-2023 from the six stations spread across the Indian Sundarbans on an east-west diagonal. Vital neutral red staining process was used to quantify carcasses for the study. The average salinity of Indian Sundarbans in 2022-23 monsoon,

postmonsoon and premonsoon were 11.43, 13.26 and 19.94, respectively. The pH for the respective seasons were 7.37, 7.36 and 7.96 whereas the water-temperature were 30.83°C, 24.64°C and 27.95°C, respectively. The species richness (median) in monsoon, postmonsoon and premonsoon were 8, 16 and 17, respectively when traditional method is deployed. If one counts alive copepods only then such were 6, 16 and 17, respectively. In monsoon, postmonsoon and premonsoon, 37-55%, 76-93% and 81-90% samples respectively were caught alive. As per the traditional method, Shannon diversity in monsoon, postmonsoon and premonsoon were 2.64, 1.86 and 2.40, respectively but such were 1.57, 2.40 and 2.62, respectively if only alive copepods were considered. The results showed if alive/dead status is incorporated in the estimation of the biodiversity indices then some degree of deviation from the traditional method is likely, implications of that in the functional role of the copepod community shall be investigated in details.

**Keywords:** Copepods, Alive/Dead, Diversity indices, Abiotic variability, Indian Sundarbans.

## **VARIABILITY OF NUTRIENTS IN MAHANADI RIVER ESTUARY DURING PRE-MONSOON**

**Barsha Priyadarshini<sup>1</sup>, Subhasmita Naik<sup>1</sup>, Arpit Kumar Sobhasundar<sup>1</sup>, Tamoghna  
Acharyya<sup>1</sup>**

<sup>1</sup>Dept. of Marine Sciences, Berhampur University

The Mahanadi River Estuary is the 3rd largest in peninsular India, located at the mouth of the perennial river Mahanadi. River travels over 851 Km and its main branch opens up to the Bay of Bengal near Pradeep on the east coast of India forming a major estuary. The Mahanadi estuary is enriched with macro nutrients like Nitrate, Nitrite, Ammonium, Phosphate, Silicate. The data collected during the pre-monsoon period from 7th February to 21 February, 2021. The research aimed to investigate the temporal and spatial variations in nutrient concentration in the Mahanadi estuarine system during the pre-monsoon season. High nutrient concentration was observed at specific locations, indicating potential hotspots of various macro nutrients. The amount of nitrite value is high in the river part due to sediment denitrification during the Spring tide, whereas the value of nitrate is high in the coastal part. The amount of ammonium