

# VIDYASAGAR UNIVERSITY



## Field Report on Study of Biodiversity at Digha and Adjacent Coastal Regions

**B.Sc. CBCS Zoology CC**

B.Sc 5<sup>th</sup> SEM EXAMINATION 2023

SRINIVAS  
Nandiga

Roll: 1125149

❖ No.: 200068

Regn.No.: 1490606

❖ Session: 2022-23



## CERTIFICATE OF PARTICIPATION

This is to certify that ..*Amite Rani Shee*.....student of B. Sc. Honours, Sem-V, Sitananda College, Nandigram was participated in the field study at Talsari and adjoining areas, for Costal Biodiversity, during academic year 2022-23, as per guidelines issued by Vidyasagar University under our supervision.

*Department of Zoology*  
SITANANDA COLLEGE  
Nandigram, Furba Medinipur  
*Bera 02.01.2023*  
Signature of Teachers

## Introduction:-

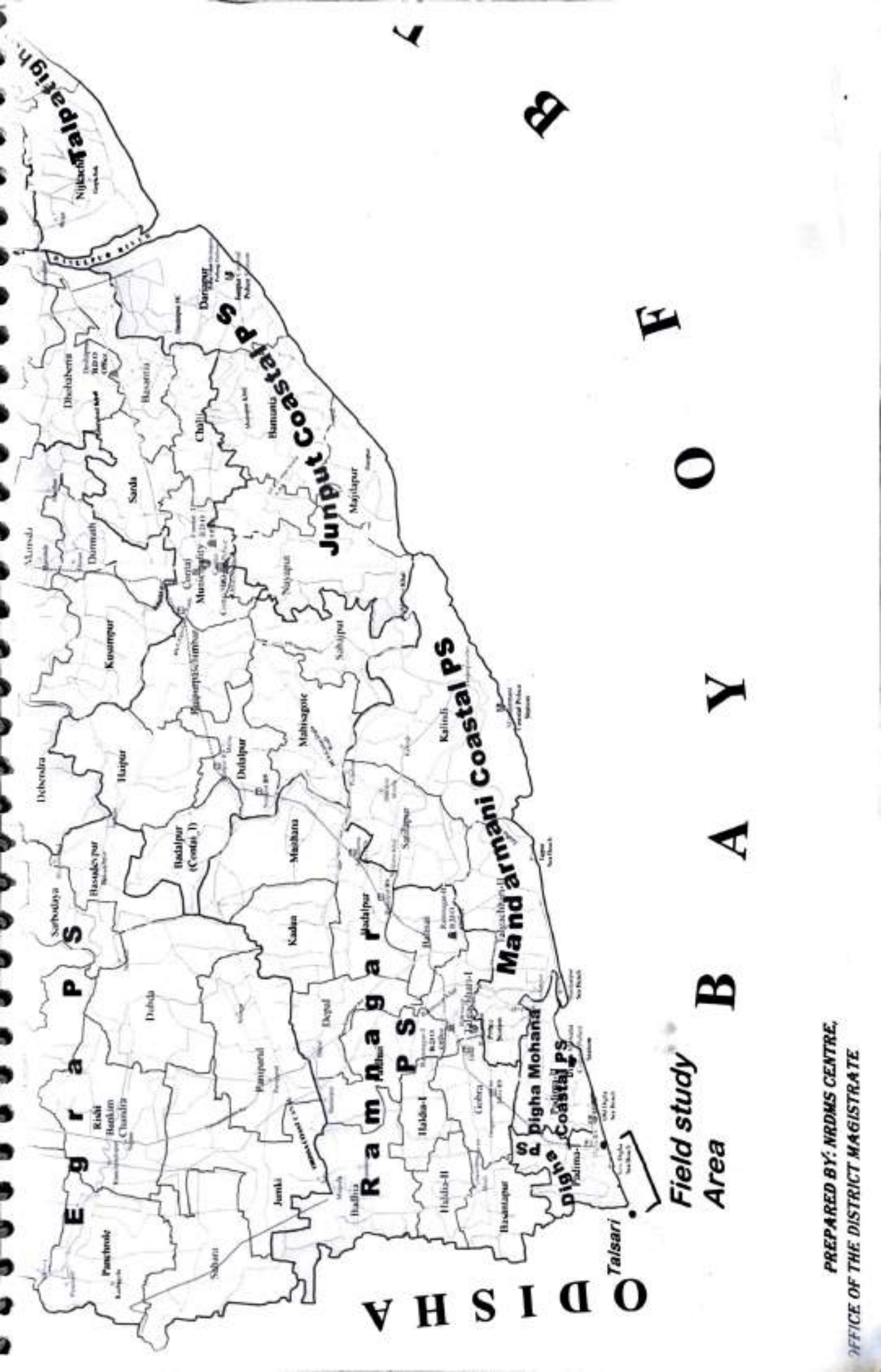
### Study Area:-

Talsari is a less popular tourist of Orissa, situated on the tributaries of Subarnarekha Estuary. Despite of Anthropogenic pressure and various types of fishing activities, this place is rich in marine faunal diversity. As several types of marine habitats are found in this small area (2.5 sq. km only), different types of faunal composition are found here in distinct zonation.

The intertidal fauna of Digha beach is some what different in respect of Talsari beach. because the Digha beach is purely sandy and there are some artificial ~~works~~ on upper and supralittoral zone on the other hand Talsari has all types of coastal ecosystem.

Digha is a sea-side resort city in the state of West Bengal, India it lies in East Midnapore district and at the northern end of the bay of Bengal. It has a low gradient with a shallow sand beach with gentle waves extending up to 14 km in length. Geographical location of from the Orissa border to Talchha-mouja.





**Field study Area**

PREPARED BY: NRDMS CENTRE,  
OFFICE OF THE DISTRICT MAGISTRATE



Our Field-study team at Digha Sea-beach.

Department of Zoology  
SITANANDA COLLEGE  
Nandigram, Purba Medinipur



## Objectives of the Field study :-

The objectives of the field-study may be summarized in the following lines:-

1. To make an rough knowledge of the the physical environment of the study area with the help of faunal characteristics.
2. To study beach profiles, particularly intertidal zone
3. To observation of estuarine fauna
4. The identification of different taxonomic echordates and nonchordates organism in study area.

## Date of Field study :-

### The sandy Beach Habitat :-

The sandy beach is a harsh environment. crashing waves, the daily ebb and flow of the tides, and the action of currents keep coastal ocean waters in constant motion. This water movement also erodes the sand below it, eroding the beach slightly with each wave and noticeably over seasons. Taken altogether, these physical forces create a very dynamic habitat. Beaches are closely linked to near shore surf zones and coastal dunes through the storage, transport and exchange of sand.





Colony of Balanus sp on rock at  
Digba Sea-beach.



Red crabs (Ocypode sp.)  
at Talsathi Sandy beach.

Department of Zoology  
SITANANJA COLLEGE  
Nandigram, Purba Medinipur



## Life at the sandy beach :-

key adaptations of invertebrates on sandy beaches are: mobility, burrowing ability, rhythmic, behaviour, orientation mechanism and flexibility to cope with rapidly changing conditions. The porous sand body harbours small interstitial organisms forming a distinct food web. 15 larger invertebrates of the sandy beach include polychaete worms, clams, and crustaceans, which can be scavengers, predators, filter- or deposit feeders.

The inhabitants of the intertidal zone are adapted to an amphibious existence, partly marine, partly terrestrial. All intertidal organisms are adapted to periodic exposure to air but some species are better equipped than others to withstand that exposure. This fact produces one of the most noticeable intertidal features, zonation of species. Some species inhabit the highest levels of the intertidal zone, are exposed by almost all tides, and remain exposed the longest. The intertidal zone is covered part of the day by water and is part of the day exposed to air. High tides bring nutrients and food with it. When the tide retreats, waste products, eggs and larvae are taken. This cause changes for the organisms that live here. They have adapted to this



## Changing environment.

They must swim or burrow, lest they be swept away. Burrowing also is the primary means of escaping predators. Some beach animals survive by eating minute algae particles.

## Coastal Features :-

1. The shore is the zone between the water's edge at low tide and the landward limit of wave action.
2. The backshore extends above high tide level but is inundated by exceptionally high tides or by large waves during storms.
3. The foreshore is exposed at low tide and submerged at high tide.
4. The shoreline is strictly the water's and migrates to and from with the tide.
5. The nearshore zone lies between the shoreline and the line where waves begin to break.
6. The offshore zone is outside the breaker line and extends an arbitrary limit in deep water.





Leptuca pugilator at Talsassi







Sponge colony on Molluscan shell at  
Digha sea beach.



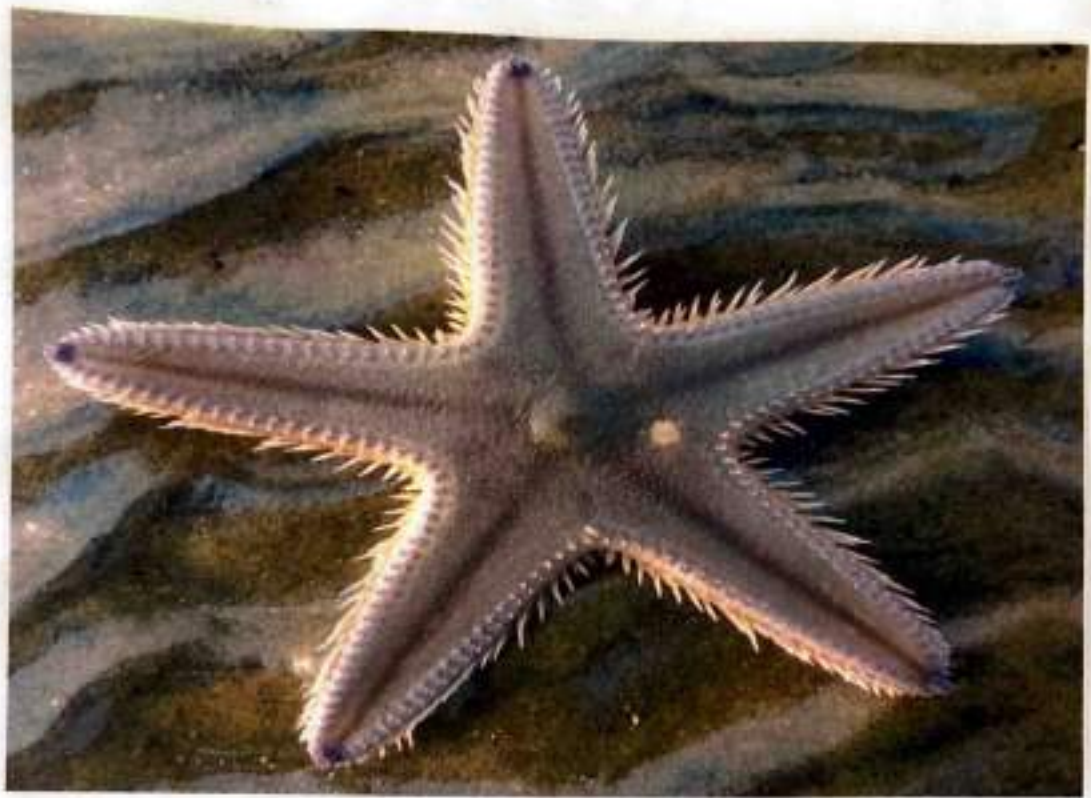
Limulus polyphemus at  
Talsari sea beach.

Department of Zoology  
SITANANDA COLLEGE  
Nandigram, Purba Medinipur









Asteropecten sp. at Talsari sea beach.

Department of Zoology  
SITANANJALI COLLEGE  
Nandigram, Purba Medinipur



Metridium sp. (sea Anemone) at  
Talsari sea beach.



1. PHYLUM  
Chitonia

Aurelia SP.  
Metridium SP.  
Caveolinaria SP.

2. PHYLUM  
Annelida

Neries SP.

3. PHYLUM  
Arthropoda

Balanus SP.  
Cerypoda SP. (red crab)

(coastal horse-shoe crab)  
Uca rosea  
Uca triangularis  
Tachyporus gigas  
(mangrove horse-shoe crab)  
Callinectes sapidus  
Portunus

4. PHYLUM  
Mollusca

Umbonium SP.  
Nerita SP.  
Telescopium SP.  
Murex SP.  
Donax SP.  
Perna viridis  
Tonna dolium

5. PHYLUM  
Echinodermata

Acidina mactanoides  
Asterias indica

Depa. of Biology  
SIAM JDA COLLEGE  
Kendriya Education Society

Page: 02.01.2023



## Acknowledgment :-

We are very thankful to have the opportunity to study the faunal distribution of their natural habitat, under the guidance of our departmental lecturers. We are very much grateful to our principal Dr. Samu Mahali and senior lecturer Mr. Pallas Kr. Bera for their guidance and valuable suggestions, kind help and constant encouragement for this field study.

Bera  
02.01.2023.