

Field Transect: ER 001, Geomorphological evolution of Sundarban delta complex and impact of anthropogenic activities

Geological Significance:

- The Sundarban Delta or Bengal Delta, the world's largest tide dominated delta is formed at the confluence of Ganga, Brahmaputra and Meghna rivers. Debouching into the Bay of Bengal, the delta is transected by hundreds of creeks and tributaries.
- Total 54 out of 102 islands in Sundarban are inhabited land. In recent past many islands are subjected to geomorphic changes like bank erosion, channel shifting, closure of channels, etc by virtue of effects of erosion-accretion coupled with neo-tectonism.
- The severe erosion-accretion system of islands indicates changes in shoreline which causes aggradations / growth of islands towards the northern side. The rate of erosion is greater than that of accretion, causing reduction in landmass, which in general, causes a threat to inhabitants.
- The collapse of mangrove forests resulted in the widening and development of shallow channels and creeks, rendering hindrance toward the sustainability of the entire Sundarban delta.

International Attraction:

- ✓ Sundarban delta is part of Bengal basin covering Bangladesh and India. It is the largest fluvio-deltaic sedimentary basin on the Earth. It acts as a shelter belt to protect the inland areas from storms, cyclones, tidal surges, sea water seepage and intrusion.
- ✓ Sundarban is the largest mangrove forest in the world and is the only tiger inhabited mangrove forest.
- ✓ About 300 species of trees, herbs and about 425 species of wildlife including the Royal Bengal Tiger survive in this ecosystem.
- ✓ The hydrosphere in and around the Sundarban ecosystem is mostly dominated by diverse mangroves species, its diversity is based on salinity, tide and geomorphology of the different river banks, creeks, etc.
- ✓ Archaeological sites containing in situ relicts of large brick structures, pottery, hearths, terracotta plaques, cast copper coins, stone figurines etc., are found in and around the Sundarbans, which dates from 200 B.C.
- ✓ The Sundarban is declared as a World Heritage Site by UNESCO and Ramsar Site of ecological importance (1992).

Duration: 4 Days

Date of Excursion: Pre Congress

Max. Participants:40

GEOTOURISTS SITES:



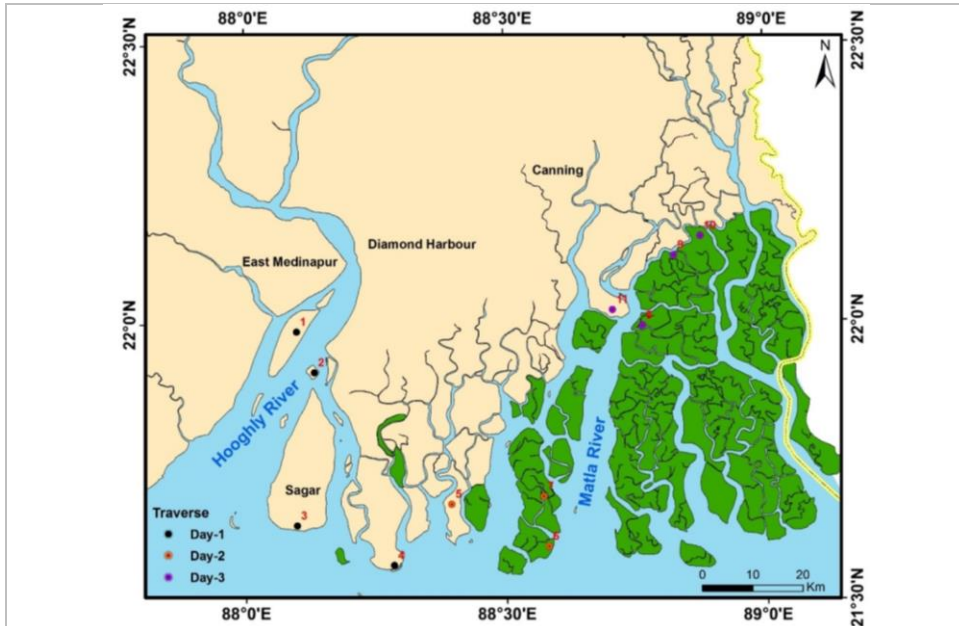
Kapil Muni Ashram, Gangasagar



Royal Bengal Tiger of Sundarbans in the Tiger Rehabilitation Centre, Jharkhali



Exposed mangrove roots showing severe erosion – a threat to the landmass and a common feature of Sundarbans.



Proposed IGC 2020 Field Traverse in western Sundarbans [1- Nayachar, 2- Ghoramara Island, 3- Sagar Island, 4- Bakhali - Hentry Island, 5- G Plot, 6- Kalash Beach, 7- Bonnie Camp, 8- Dobankee, 9- Sajnekhali, 10- Satjelia, 11- Jharkhali]

Geological Field Photographs



Development of point bar in Hatania-Doania river



Development of creek on matured mudflat



Severe erosion showing exposed mudflats. Bakkhali sea beach



Collapse of concrete jetty due to bank failure in Vidya river

GEOTOURISTS SITES:



The Mangrove Sundori with strong breathing roots - the name Sundarban derived from this mangrove



Beach erosion after Cyclone Aila in Bakhali

OTHER ATTRACTIONS:

- ✓ Sculpture and potteries excavated from Govardhanpur village, G-Plot (600-1000 AD)
- ✓ Wildlife in Sundarbans Tiger Reserve
- ✓ Canopy walk near Dobankee Watch Tower
- ✓ Netidhopani Watch Tower
- ✓ Hiron Point B.D.
- ✓ New Moor