

Eroding Beaches in West Bengal

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Digha Beach

ONE of the most popular sea resorts of West Bengal, Digha, is fast becoming a victim of soil erosion. Massive coastal erosion, to the extent of 15 to 20 metres a year, has led to loss of land and property. Digha, which has nearly 400 hotels to accommodate the great rush of tourists round the year (over 16 lakh tourists every year), has almost reached a saturation point.

According to Ananda Deb Mukhopadhyay, the chairman of the Digha-Shankarpur Development Authority (DSDA), erosion along a 20-km stretch of the coastline of the Bay of Bengal has been severe over the past few decades and waves have been taking away 15 to 20 metres each year at the more vulnerable spots. Besides other factors like reduction of sand supply from the Subarnarekha river following the construction of at least six dams on its bed, the main factors for this erosion include wave convergence, rise in sea level and the phenomenon of oblique wave approach, where the development of a shore-parallel current carries the sand away. Hence, an integrated coastal management scheme is extremely essential and several projects have already been undertaken towards this end.

The other affected shore areas and tourist attractions are Mandarmani, Shankarpur, Junput, Chandaneswar, Talasari, Udaypur, Chanbali and also



Bhitarkanika

Bhitarkanika to some extent. Mandarmani is a beautiful seaside resort about 20 km from Digha, famous for its Virgin Beach of a stretch of about 6 km. Approximately 14 km east of Digha is the Shankarpur Fishing Harbour Project, also being developed as a beach resort still attracting tourists for its wide and unspoiled, uncrowded beach and the caesarian groves by the side of a gentle sea and a good climate round the year. It will soon be developed as a sea resort with hotels, tourist lodges and other facilities.

Only 8 kms from Digha is another tourist spot Chandaneswar, the site of an old Shiva temple. Junput is another unspoiled beach 40 km from Digha. The State Government Fisheries Department is undertaking brackish water fish cultivation and research over here. About 8 km from Digha, 88 km from Balasore and 3 km away from the famed shrine of Lord Chandaneswar is Talasari in Orissa, beckoning tourists with its sparkling waters and white-grained sands. Udaipur is still another unspoiled beach on the borderline of Orissa and West Bengal, very near to Digha, which is drawing tourists.

The Bhitarkanika Wildlife Sanctuary is located in the state of Orissa and is about 77 kilometres from Bhadrak and 190 kilometres from Bhubaneswar. It is one of the few sanctuaries in India. Spread over an area of 650 sq km, this wildlife sanctuary is a protected zone and famous for Olive Ridley Sea Turtles, estuarine crocodiles, a number of birds, chitals, rhesus monkeys, king cobra, Indian python, water monitor lizard, etc. Every year a large number of Olive Ridley Sea Turtles flock to the Gahirmatha coast to lay their eggs, attracting a number of wildlife enthusiasts. The flora is rich in mangrove vegetation and includes trees like sundari, casuarinas, thespia and grasses like the indigo bush. This sanctuary is about 35 kilometres from Chandabali.



Ipomea biloba
(top)
Olive Ridley Sea
turtle (above)
Casuarina
(left)

Keeping in view the present-day importance of eco-tourism, the protection of beaches is to be given immense priority at present as well. Since the erosion of sea beaches is still a concern, the propagation of naturally occurring soil binding species like *Ipomea biloba* and *Spinifex squamosus* can be forerunners in this process and must be encouraged on experimental basis to avert soil erosion at sea beaches.

A team of research workers (Asim Mandal, Tamal Chakraborty, Natasha Das, Pijush Kanti Das, Debashis Bhunia, Panchanan Ghouri, and Babulal Sasmal) under the supervision of the authors has been working on soil erosion problems along the coastal belt of parts of West Bengal and Orissa. The team has conducted several field surveys at Dhigha, Mandarmani, Sankarpur, Udaypur, Talsari, Chandbali, Bhitarkanika, etc.

Their study has revealed some interesting features of strand flora, which play an active role in soil binding, and thus is of immense ecological importance in averting the major problems of soil erosion along these sea beaches. They have reported the existence of two important soil binding species viz. *Ipomea pescaprae* (= *I. biloba*) and *Spinifex squamosus*. Besides these two species, few other plants like *Pandanus utilis*, *Pandanus odoratissimus*, *Casuarina equisetifolia*, *Prosopis juliflora*, etc. have secondary role in checking soil erosion in the sea areas. The two former species have almost totally disappeared from the vicinity of Digha and Talasari, as well as Bhitarkanika and Chandbali.

The team feels that this condition is largely due to rapid urbanization and the development of hotels and resorts in the sea areas as well as lack of awareness about these species. About 50 years back, the Digha authority had tried to plant *Ipomoea biloba* for primary soil binding, but due to lack of awareness and infrastructure for maintenance of these plant species they could not be maintained.

One of the main reasons is that they were all planted in sand instead of soil. It is suggested that since these plants can propagate at a very rapid rate and require soil with some additional nutrients at the initial stages of germination and development, they should be planted at a certain

distance away from the sand belt along the shores from where they can propagate towards the sandy belts very rapidly. This plant is not totally a mangrove plant but is actually a mangrove-associated species and survives in soil or sand having high salt concentration. But it has no halophytic characters in its internal anatomy or physiology. Hence, this plant has a special importance in the initial stages of soil binding along these coastal areas.

Casuarina equisetifolia, *Prosopis juliflora*, *Acacia nilotica*, *Acacia auriculiformis*, *Acacia mangium*, *Pandanus odoratissimus* etc., which are planted for this purpose can perform the secondary role. Another important reason for the destruction of these species is the temptation of the tourists to drive along these beaches, which has also had an adverse affect on the local ecology. Mandarmani in particular has no proper motorable road after Dadanpatrabar. After reaching Dadanpatrabar the tourists have to drive through the sea beach.

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Further research on these species is also essential to have an inner view into the physiological specificities in these species. If proper initiative is not taken immediately, these two species will soon be totally lost along the coastal belt of West Bengal and Orissa. While cores of rupees are being invested in checking soil erosion, these naturally growing species can do wonders if properly maintained and taken care of.

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