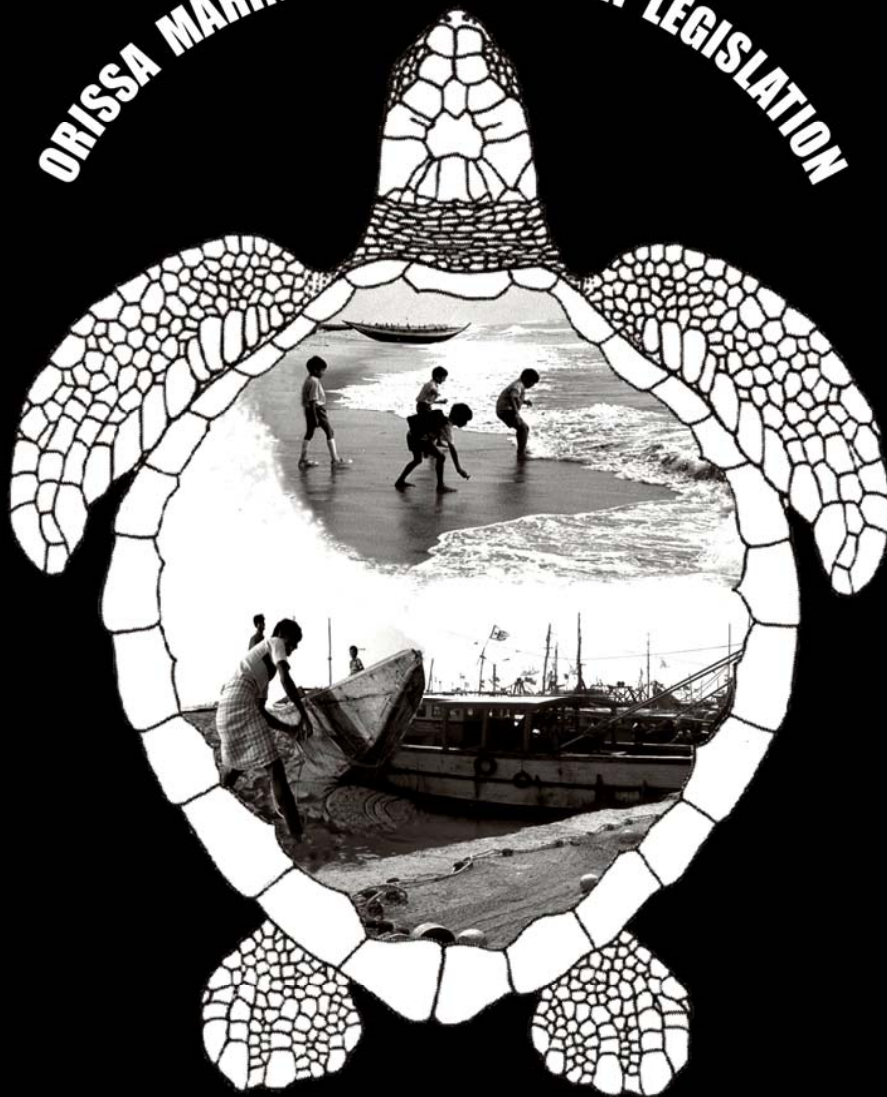


ORISSA MARINE CONSERVATION LEGISLATION



2005

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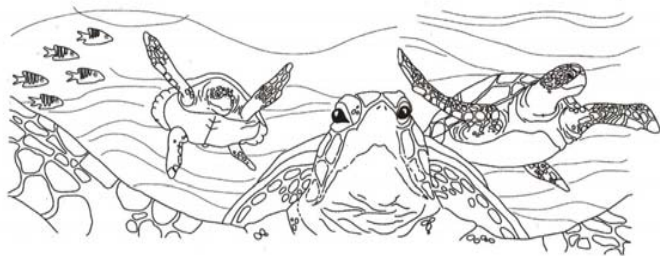
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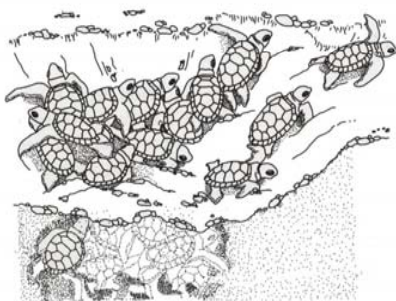
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Fisherfolk are familiar with the sight of olive ridley turtles on the coast of Orissa. These turtles have been coming to Orissa's coastal waters for years and are a part of Orissa's cultural history; they are considered an *avatar* of Lord Vishnu.



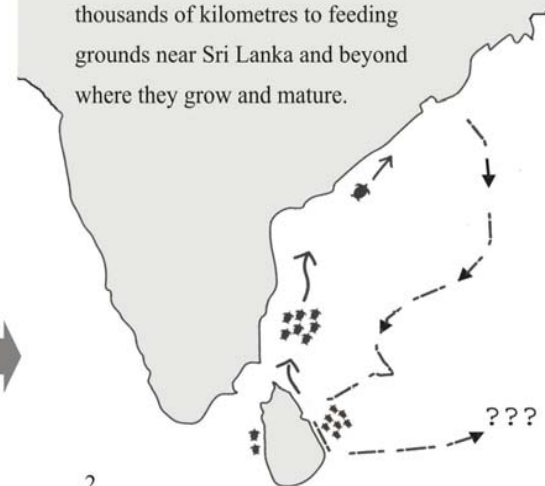
Every year, female turtles visit the beaches of Orissa to nest. After laying their eggs they return to the sea, and 7 to 10 weeks later the eggs hatch. During the night, the small hatchlings emerge from their nest and crawl across the beach toward the sea.



The baby sea turtles must confront many obstacles such as birds, crabs, dogs and other animals before reaching the water safely. They spend a few weeks swimming near their natal beach, during which time they must do their best to avoid predation by large fish.

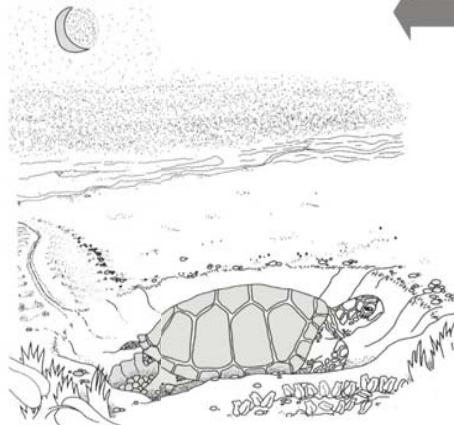


The few turtles that survive will migrate thousands of kilometres to feeding grounds near Sri Lanka and beyond where they grow and mature.



The Life of Olive Ridley Turtles In Orissa

After a few weeks, females come to the shore at night to nest. They dig a hole and deposit 100-120 eggs, cover the hole, and return to sea. They may return to lay more eggs after a couple of weeks. When they have completed nesting, they will travel far, once again, to their feeding grounds thousands of kilometres away.



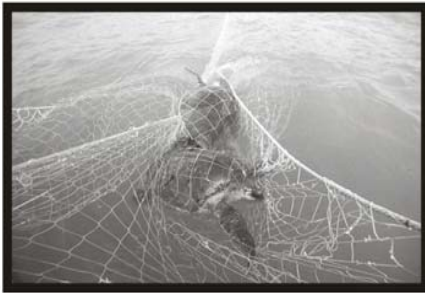
At 10 to 15 years of age, they return to their natal beaches where they mate close to the shoreline in 'reproductive patches'. A turtle 'reproductive patch' is an area approximately 65 square km in size, usually within 6 km of the shoreline, where several pairs of turtles mate simultaneously.



What threatens the marine environment of Orissa?

Fishermen across the Orissa coast recognise that there is an overall decline in fish catch and in the diversity of marine creatures. There are many reasons for this, the main ones being:

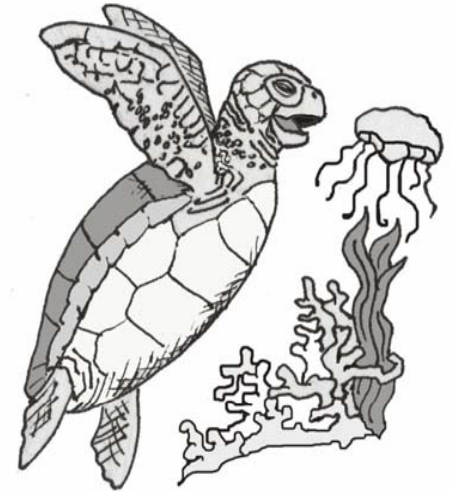
- Unnaturally high mortality of endangered marine species, such as dolphins and sea turtles, in bottom trawl nets and other large mesh, multifilament nets (such as sea bass and ray nets)
- Toxic pesticides and sediments from farmlands draining into coastal water systems
- Illegal prawn seed collection inhibiting recruitment of young individuals
- Destructive bottom trawling in near-shore areas
- Destruction of mangroves for widespread aquaculture
- Effluents and pollutants from large industries



The protection of the marine environment, its resources and treasures such as sea turtles, dolphins, sharks and other marine species must be ensured.

Measures for protecting the marine environment

In order to protect Orissa's traditional fishing livelihoods and fish stocks, the State Government introduced the **Orissa Marine Fisheries Regulation Act (OMFRA)** and Rules in 1982. Under the OMF Rules, in Orissa's waters: mechanized fishing is prohibited within 5 km of the shore; mechanized boats under 15 metres are permitted beyond 5 km; all vessels over 15 meters in length and / or 25 gross tons are permitted only beyond 10 km of the shore. It also limits the number of overall fishing licenses to be issued.



The **Department of Fisheries** and the **Department of Forests** of the Government of Orissa have introduced marine protection measures which increase the monitoring of and restrictions on destructive fishing practices, and are working toward better collaboration with the fishing community / industry. This will benefit local communities that rely on these marine resources.

Recently, the Supreme Court of India constituted a committee, called the **Central Empowered Committee (CEC)**, to look into the implementation of environmental legislation across the country. The CEC has taken note of the high mortality of olive ridley turtles on the Orissa coast and has passed several orders to protect Orissa's marine environment. In the year 2004, the CEC passed further protective measures.

In addition, the fish workers' unions, such as the **Orissa Traditional Fish Workers' Union (OTFWU)**, have also declared measures for protection of the marine environment by banning certain kinds of nets (sea bass, ray net and ring seine).

Traditional craft

(non-motorised boat)

Rushikulya/Devi: teppa
Gahirmatha: donga

Area: Orissa coast

Net: 300 - 500 metres

-Mono-filament (plastic & nylon material)
-Small mesh



Small mesh, mono-filament gill net (e.g. sardine net)

This net is not known to be harmful to turtles.

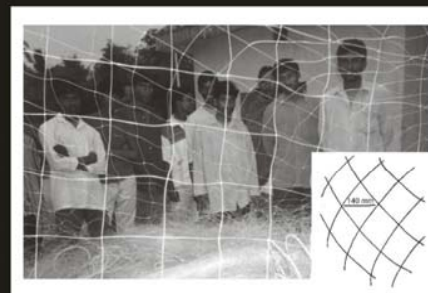
FRP traditional craft

(motorised boat)

Area: South of Paradip

Net: 300 – 1000 metres

-Mono-filament and multi-filament gill nets, multi-filament trammel nets and hook & line nets
-Small and large mesh



Large mesh, mono-filament gill net (e.g. pomfret net)

Turtles are known to get entangled in these nets, especially in very lengthy nets. The Orissa Traditional Fish Workers' Union has banned the pomfret net.

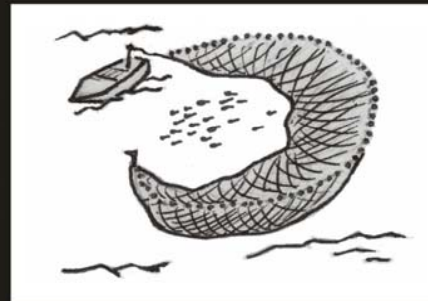
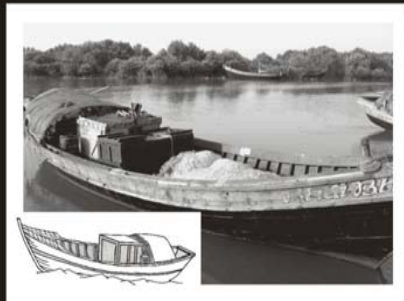
Gill-netter

(mechanised fishing)

Area: North of Paradip

Net: Up to 2000 metres

-Both mono-filament and multi-filament gill nets
-Small and large mesh



Ring seine

This is a new net mostly used in Andhra Pradesh. The Orissa Traditional Fish Workers' Union has banned these nets as they deplete fish stocks and can also trap sea turtles.

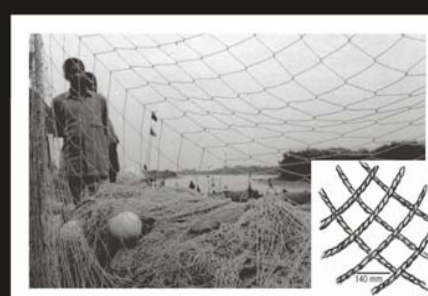
Trawler

(mechanised fishing)

Area: Orissa coast

Net: Up to 150 metres (otter board and cod end sizes vary)

-Benthic and pelagic multi-filament trawl nets
-Mesh size varies

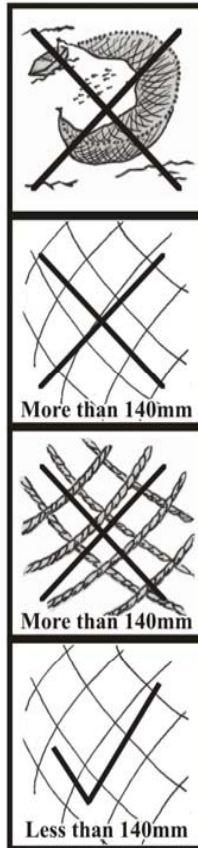


Large mesh, multi-filament net (e.g. ray net)

These nets are used in all parts of Orissa but largely near Dhamra and Paradip. Sea turtles are unable to free themselves from these strong nets. The Orissa Traditional Fish Workers' Union has banned the ray net.

Regulations on fishing nets and boats

- The ray net, ring seine and the pomfret net have been banned by the Orissa Traditional Fish Workers' Union. The CEC and the State Government has welcomed this voluntary and prudent decision of the fisher union.
- The CEC has also stated that all gill nets (both mono-filament and multi-filament) with a mesh size measuring 140 mm or above should be prohibited in Orissa.
- Trawl boats are required to compulsorily use Turtle Excluder Devices (TEDs). If trawlers don't use TEDs or if they stitch closed the escape hatch, their licences can be cancelled, their boat can be impounded and a fine will be levied for such offences.
- The seized vessels and nets are to be kept in a safe and secure place near one of the three nesting sites at Gahirmatha, Devi or Rushikulya.



Documentation

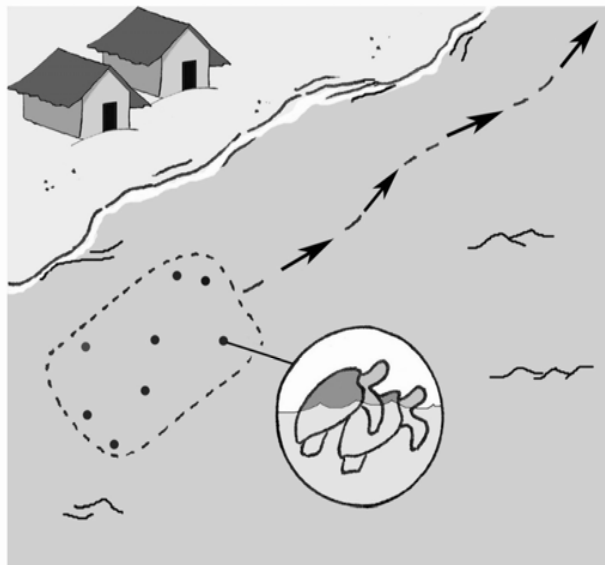
- All boats must have their registration/licence number/name boldly displayed so that it is visible from air and sea to facilitate monitoring by Coast Guard vessels and helicopters. All boats must also carry a laminated, waterproof chart showing the permitted quantity, types and lengths of nets (in case of gill nets) the boat carries or plans to use. This chart must be certified by the captain and signed by the local fisheries officer.
- The monitoring units and staff of the Forest and Fisheries Departments will carry out surprise inspections of boats on land or while at sea, with reference to length and type of net, installation of TED (on trawlers), and license and identification marks on the boats.
- All boats must carry original fishing licenses with them for verification purposes. The excuse that the original is with the owner at the fishing base will not be accepted.



The turtle breeding season in Orissa lasts from November to May and the non-breeding season last from June to October. In Orissa, turtles nest all along the coast, but mass nesting (hundreds or thousands of turtles nesting at the same time in once place) takes place at Gahirmatha (Kendrapara district), the Devi river mouth (Puri district) and Rushikulya river mouth (Ganjam district). Some of the regulations described below pertain to all months, both during the breeding and non-breeding seasons.

What are turtle reproductive areas?

Every year, male and female olive ridley turtles migrate to their breeding ground in Orissa's coastal waters. They mate in these offshore waters, staying together in a group close to the shore, just off the mass nesting beaches. These large aggregations of mating turtles are called **reproductive patches**. Although turtles are found in all of Orissa's coastal waters between the months of November and May, they are mostly found in these reproductive patches.



Reproductive patches are usually located within 3-7 kilometres of the shoreline. Scientists believe that if these reproductive patches are well protected, then overall turtle mortality due to drowning in fishing nets will significantly reduce.



What fishing practices are best suited within turtle reproductive patches?

- Only traditional fishing (using only oars and sails) should be permitted.
- Motorised crafts, mechanised gill-nets and trawlers should keep away from reproductive patches.
- Only small mesh fishing nets should be used (less than 140 mm).
- Fishing nets should be less than 300 metres length.
- Only a limited number of traditional fisherfolk should fish at a time in these areas
- No fishing is permitted in the core area of the Gahirmatha Marine Sanctuary.

Rushikulya

Area: From Chilka river mouth to
Rushikulya river mouth (Ganjam district)

Devi

Area: From Devi river mouth to
Jatadhar river mouth (Puri district)

Fishing rules in

Rushikulya and Devi

Sea turtle breeding season

November - May

Non-breeding season

June - October

Traditional Non-motorised



These boats are permitted in these areas during this period.

Nets must be:

- Small mesh (less than 140mm)
- Mono-filament
- Maximum length of 300 metres

Permitted in all parts of the coast (except in the Gahirmatha Sanctuary core).

Nets must be:

- Small mesh (less than 140mm)
- Mono-filament
- Maximum length 300 metres

Motorised



FRP vessels are not permitted within 5 km of the shoreline in the Rushikulya and Devi areas. They are permitted to fish anywhere outside these areas.

- Ray net, pomfret net, ring seine are not permitted
- Nets with mesh size more than 140 mm are not permitted
- Maximum length of other nets should not exceed 300 metres

Permitted in all parts of the coast (except in the Gahirmatha Sanctuary core).

Nets must be:

- Small mesh (less than 140mm)
- Mono-filament
- Maximum length 300 metres

Mechanized Gill-netter



- Permitted ONLY beyond 20 km of shoreline in Rushikulya and Devi and beyond 5 km of all other shores
- Permitted beyond 5 km of all other shores (Except in Gahirmatha Sanctuary)
- Not permitted in turtle reproductive patches

Permitted in all parts of the coast (except in the Gahirmatha Sanctuary).

- **Permitted ONLY beyond 5 km of Orissa's shores**

Trawler



- Permitted ONLY beyond 20 km of shoreline in Rushikulya and Devi
- Permitted beyond 5 km of all other shores (Except in Gahirmatha Sanctuary)
- Not permitted in turtle reproductive patches
- Vessels more than 15 metres in length and / or 25 gross tons permitted ONLY beyond 10 km of Orissa's shores (OMFRA)

Permitted in all parts of the coast (except in the Gahirmatha Sanctuary).

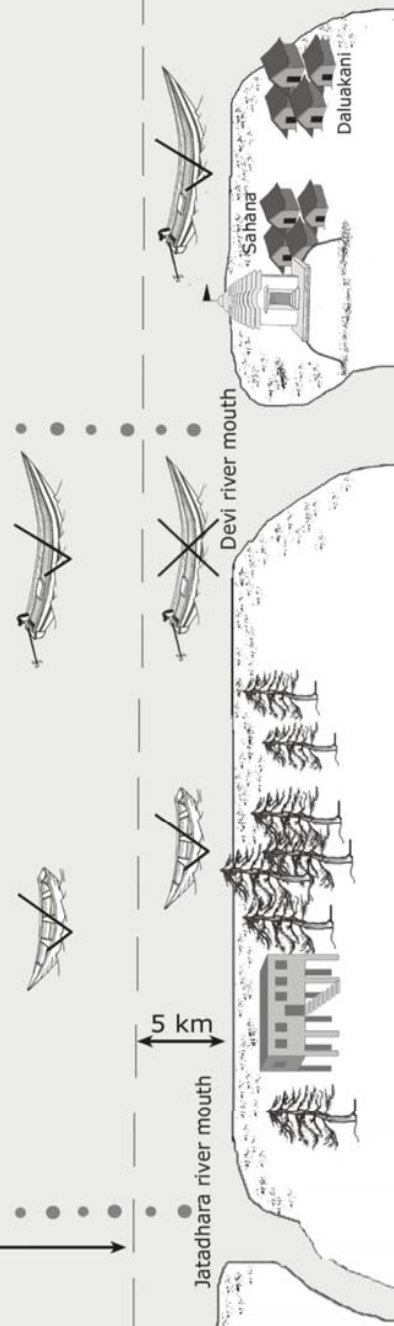
- **Permitted ONLY beyond 5 km of Orissa's shores**
- **Vessels more than 15 metres in length and / or 25 gross tons permitted ONLY beyond 10 km of Orissa's shores (OMFRA)**

Fishing rules in Devi



Coastal waters of Orissa

20 km

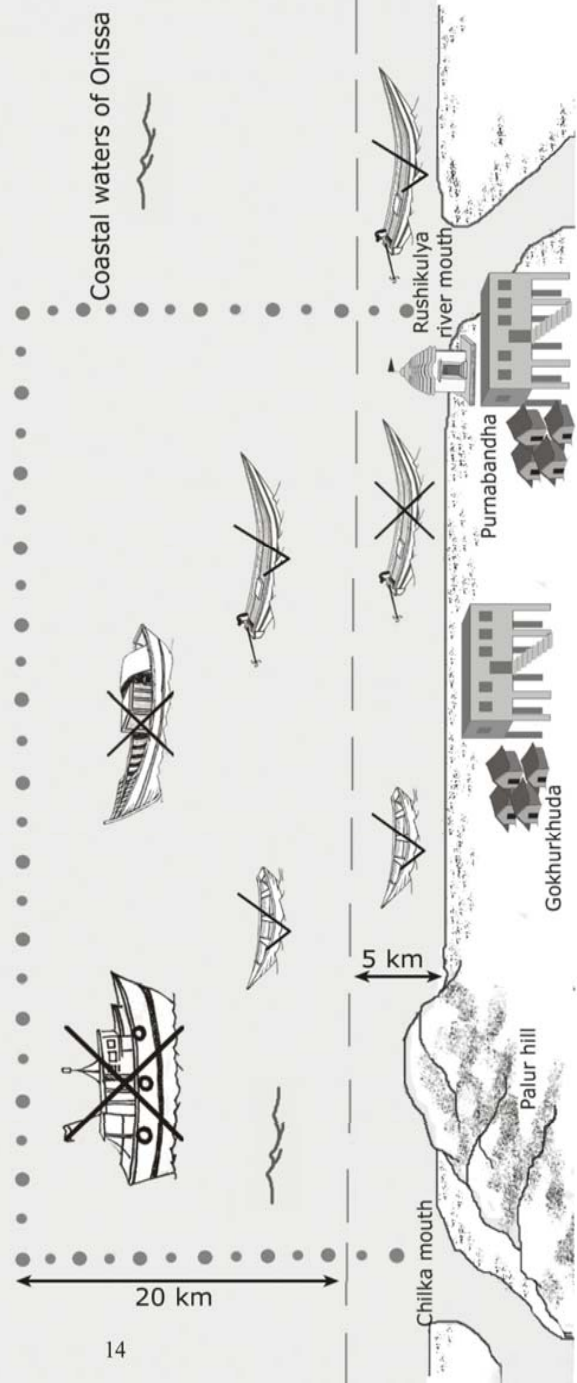


Fishing rules in Rushikulya



Coastal waters of Orissa

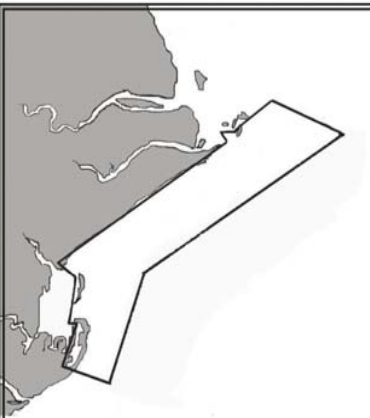
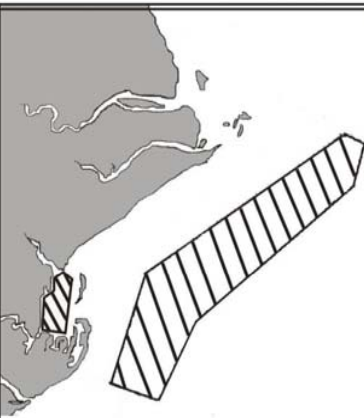
20 km



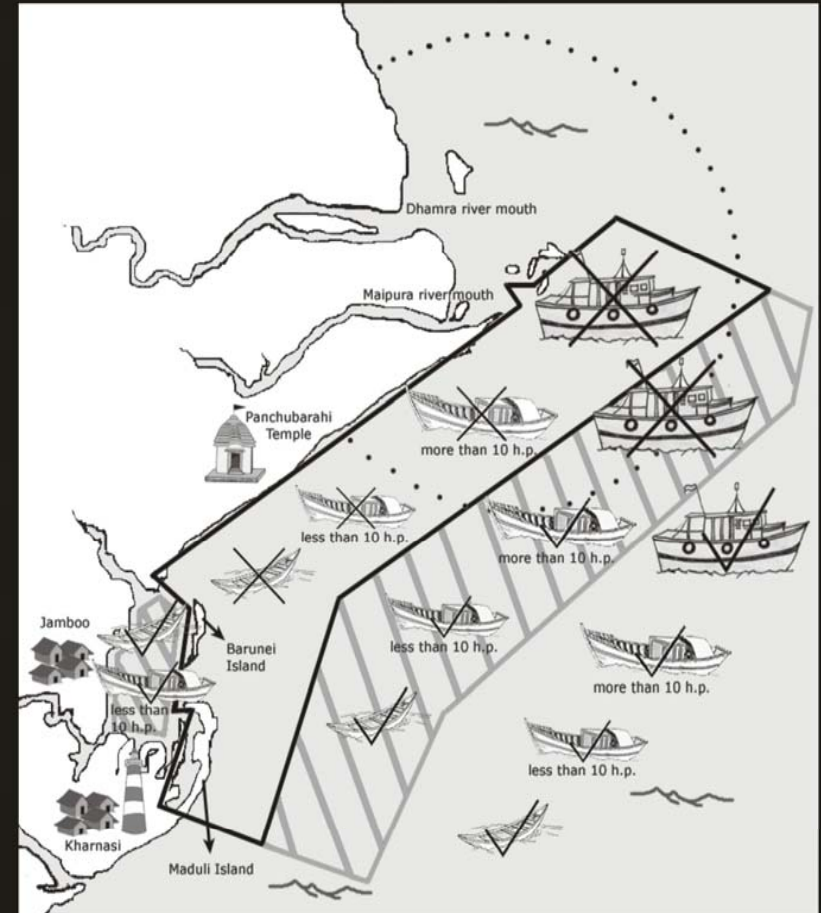
Fishing rules in the Gahirmatha Marine Sanctuary

Since 1994, the Government of Orissa has been issuing biennial orders under the OMFRA prohibiting all fishing in the coastal waters of the Gahirmatha nesting beach. The Gahirmatha Marine Sanctuary (GMS) was declared in 1997. The Forest Department has laid out special rules for fishing in the GMS. The Fisheries Department also prohibits fishing near the nesting islands of Gahirmatha. The CEC has emphasised these rules, stating that the sanctuary is a key breeding and feeding ground for fish, crabs, prawns, dolphins etc.

Fishing rules in Gahirmatha Sanctuary throughout the year

Core area	Buffer
	
<p><u>No fishing by any type of boat is permitted in the core area</u></p>	<p><u>Fishing is allowed only for traditional crafts that:</u></p>
<p>The Forest Department is supposed to issue permits to traditional fishing boats (up to 10 h.p.) for passage through the core area for the purpose of fishing in the buffer area</p>	<ul style="list-style-type: none"> • Have an engine capacity less than 10 hp • Mono-filament nets • Small mesh nets (less than 140mm) • Net length less than 300 metres

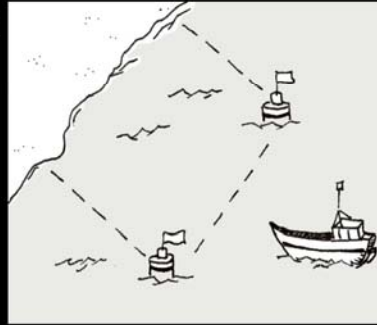
Gahirmatha Marine Sanctuary



The CEC has also passed orders to regulate other activities along the coast that have negative impacts on the marine environment and its resources.

➔ **Marking restricted fishing areas and reproductive patches with buoys**

The CEC has requested the Coast Guard to place buoys in the turtle reproductive patches and along the 5 kilometre lines in the coastal waters near the 3 mass nesting sites. The Coast Guard should also patrol these areas (by boat and aircraft) to check for illegal trawling.



➔ **Coastal illumination**



Lights on the beach can disorient baby turtles, which find the sea by a light cue, making them move towards the land instead. Lighting can also inhibit female turtles from nesting.

The CEC has recommended that industrial, municipal and residential units should be advised on installing "turtle-friendly lighting."

➔ **Casuarina plantations**

Casuarina plantations that are very close to the shoreline at the mass nesting sites can deprive turtles of ample nesting space on the beach and serve as difficult obstacles to manoeuvre around.



Aquaculture

Wild prawn seedling collection is depleting overall fish stocks by disposing of large amounts of incidental larval bycatch. This indiscriminate fishing method depletes important commercial fish resources. The Government has banned prawn seedling collection from the wild.

The CEC has suggested that the Fisheries Department should set up checkpoints to check the transportation (checking vehicles on all roads) and collection (near rivers and on the sea) of these prawn seedling stocks.

The CEC has suggested that intensive aquaculture be strictly regulated along coastal areas.

The Forest and Revenue Departments should demolish existing aqua farms in these areas and the natural drainage of water in these areas will be restored.



Industrial growth and marine resource exploitation

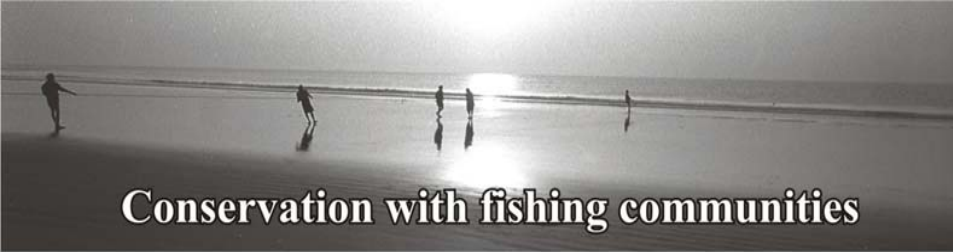
An alternative site for the Dhamra Port should be located since the present site is too close to the Gahirmatha Sanctuary.

The Reliance Gas Handling Facility and the BPCL crude oil terminal proposed near Rushikulya should be located somewhere other than this sensitive coastal area. No new licences for polluting industries should be granted henceforth.



Fisheries management

No new licenses should be granted to trawlers, including foreign trawlers, along the coast from Gahirmatha to Rushikulya.



Conservation with fishing communities

Collaborative Actions with Fishing Communities

The CEC has recognised the importance of involving local fishing communities in the protection of their marine and coastal areas. In this regard, the CEC has ordered the Forest and Fisheries Department to take the following relevant actions:

- The Forest Department must immediately involve the traditional fishermen and their cooperatives in the monitoring of turtle nesting and their reproductive patches. These activities can also be designed to provide them additional employment opportunities.
- The State Government should set up a Consultative Monitoring Committee consisting of the Fisheries Department, Forest Department, the Orissa Traditional Fish Workers' Union, the Coast Guard and representatives of Operation Kachhapa and other NGOs.
- The Wildlife Department must prepare a "Turtle Nesting Monitoring and Protection Plan" for the turtle season. It must also have a monitoring unit on each nesting beach and must employ local villagers and traditional fisherfolk on their payroll. This plan should comprise the following:
 - Removing debris and plastic on the beach before the nesting season
 - Regulating illumination, vehicular movement, sand dredging, beach plantations, and other harmful activities
 - Marking, measuring and sexing of the dead turtles washed ashore
 - Reporting violations to the Forest Department for further action
 - The Forest Department should not bury or allow anyone to bury dead turtles
 - The traditional fishing community must be encouraged to report any turtle mortality

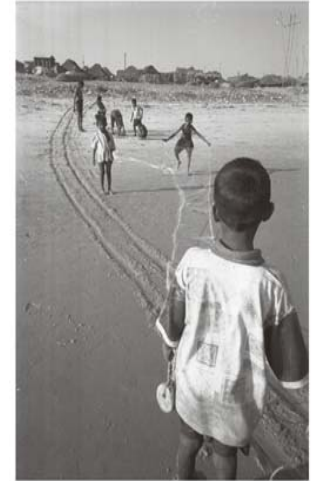


Awareness efforts among fishing communities

The CEC has suggested that the Forest and Fisheries Department spread awareness through the following activities:

The Forest and Fisheries Department should hold public meetings once a month from November to May every year at Devi and Rushikulya. They should explain the various protection measures to the fishing communities and the proceedings and details of participants at these meetings should be recorded.

Hoardings in local regional languages indicating "Dos" and "Don'ts" should be posted in fishing bases for education and raising awareness amongst the traditional fishermen and trawler owners/operators. Local conservation groups should be involved in this activity.



Conservation aimed at enhancing livelihoods

The CEC has recommended that certain measures be taken which will result in enhanced livelihoods of the local people. In this regard, the CEC has ordered the Forest and Fisheries Department to take the following relevant actions:

In consultation with the Forest Department and the artisanal fishing community, cooperative, low-impact eco-tourism should be explored, provided that benefits go to the local fishing community.

In recognition of the voluntary conservation efforts of the traditional fishing community, additional employment opportunities should be explored for them. The Orissa Forest Department should work with the Orissa Traditional Fish Workers Union (OTFWU) to arrive at a list of facilities/schemes/programmes to be provided by the Orissa Government and the Government of India that will benefit the traditional fishing community.

In the Gahirmatha Sanctuary area, tourists should travel in traditional boats and not motorized boats. This could enhance employment opportunities and income for the local population.