Conservation criteria and Red listed marine resources of India

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Marine conservation, also known as marine resources conservation is the protection and preservation of ecosystems in oceans and seas. Marine conservation focuses on limiting human-caused damage to marine ecosystems and on restoring damaged marine ecosystems. Marine conservation also focuses on preserving vulnerable marine species.

Marine species were thought to be abundant and unlikely to become extinct. Exploitation of the marine resources over the years has caused the decline in many marine species   population and recovery found to be much slowly than the previously understood. Studies have shown that many species have restricted distribution which makes it vulnerable to exploitation and extinction. In order to conserve the biodiversity and protect the vulnerable species from extinction an international organization for environment protection was constituted. This is International Union for Conservation of Nature (IUCN) which is the world's oldest and largest global environmental organization. This was formed to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

Biodiversity loss is continuing at an unprecedented rate, with many species declining to critical levels and significant numbers going extinct. The IUCN Red List is the most comprehensive information source on the status of wild species and their links to livelihoods. It is the clarion call for fighting the extinction crisis. The overall aim of the Red List is to convey the urgency and scale of conservation problems to the public and policy makers, and to motivate the global community to work together to reduce species extinctions. Marine species are poorly represented on the IUCN Red List, largely because of the lack of information about them. The status of most of the larger species (marine mammals, seabirds and turtles) has been assessed and many are considered globally threatened. Threatened marine fish are currently being assessed and many are being added to the Red List including swordfish, sawfish, all tuna species except yellowfin and skipjack, sharks (38 in the WIO), groupers, seahorses, manta rays and the coelacanth. Very few marine invertebrates are on the IUCN Red List, with the exception of six species of Giant clam

Information on distributions and abundance of marine species in the Western Indian Ocean (WIO) region is still poor, but there are at least 11,000 macrofaunal species (creatures larger than 1-2 mm) of which 10-20% are endemic (i.e. do not occur anywhere else).

Group	Global	WIO
Whales, dolphins	65	29
Marine otters	7	0
Seals	4	0
Manatees/ dugong	4	1
Seabirds	155	17*
Marine turtles	7	5
Marine fish	375	105
Molluscs	93	7
Coelenterates (corals, sea fans, anemones)	3	0
*Known to be an underestimate		

Species are classified into the following eight categories defined by criteria that cover trends in population size, extent of occurrence and extinction risk.

Extinct (EX) - A taxon is Extinct when there is no reasonable doubt that the last individual has died.

Extinct in the Wild (EW) - A taxon known only to survive in cultivation, in captivity or as a naturalised population (or populations) well outside its past range.

Critically Endangered (CR) - A taxon facing an extremely high risk of extinction in the wild in the immediate future as defined by the criteria. WIO examples are Coelacanth, Southern Bluefin tuna, Hawksbill and Leatherback turtles.

Endangered (EN) - A taxon that is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future as defined by the criteria. WIO examples are Loggerhead, Green and Olive Ridley turtles, several species of saw fish and the Blue whale.

Vulnerable (VU) - A taxon that is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future as defined by the criteria. WIO examples are dugong, Humphead wrasse, Whale shark, Humpback whale, several shark species including Grey Nurse shark and Great White shark.

Lower Risk (LR) - A taxon that has been evaluated but does not satisfy the criteria for any of the above categories. Such taxa are divided into the sub-categories

Near Threatened and Least Concern. WIO examples include many shark and whale species.

Data Deficient (DD) - A taxon for which there is insufficient recent information for assessing threat or a lot of uncertainty about data for widespread but declining species. WIO examples are species of whales, dolphins and fish, including seahorses and sharks.

Not Evaluated (NE) - A taxon that has not yet been assessed against the criteria.

In line with IUCN red list, MINISTRY OF ENVIRONMENT AND FORESTS (MoEF) has brought out the notification of the marine species to be included in scheduled list. Following are the species included in the schedule.
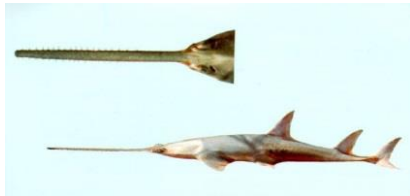
Fishes

Sea Horse
(All Sygnathidians)

Epinephelus lanceolatus
Giant Grouper
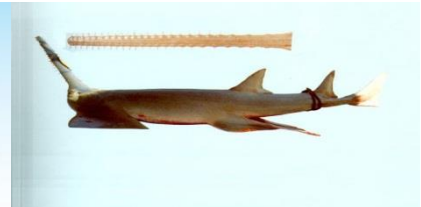
Carcharhinus hemiodon
Pondicherry shark

Anoxypristis cuspidata
Pointed sawfish

Pristis microdon
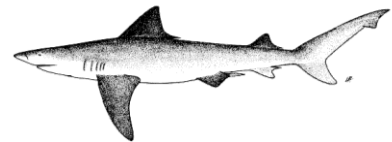Largetooth sawfish

Pristis zijsron
Longcomb sawfish

Urogymnus asperrimus
Porcupine ray

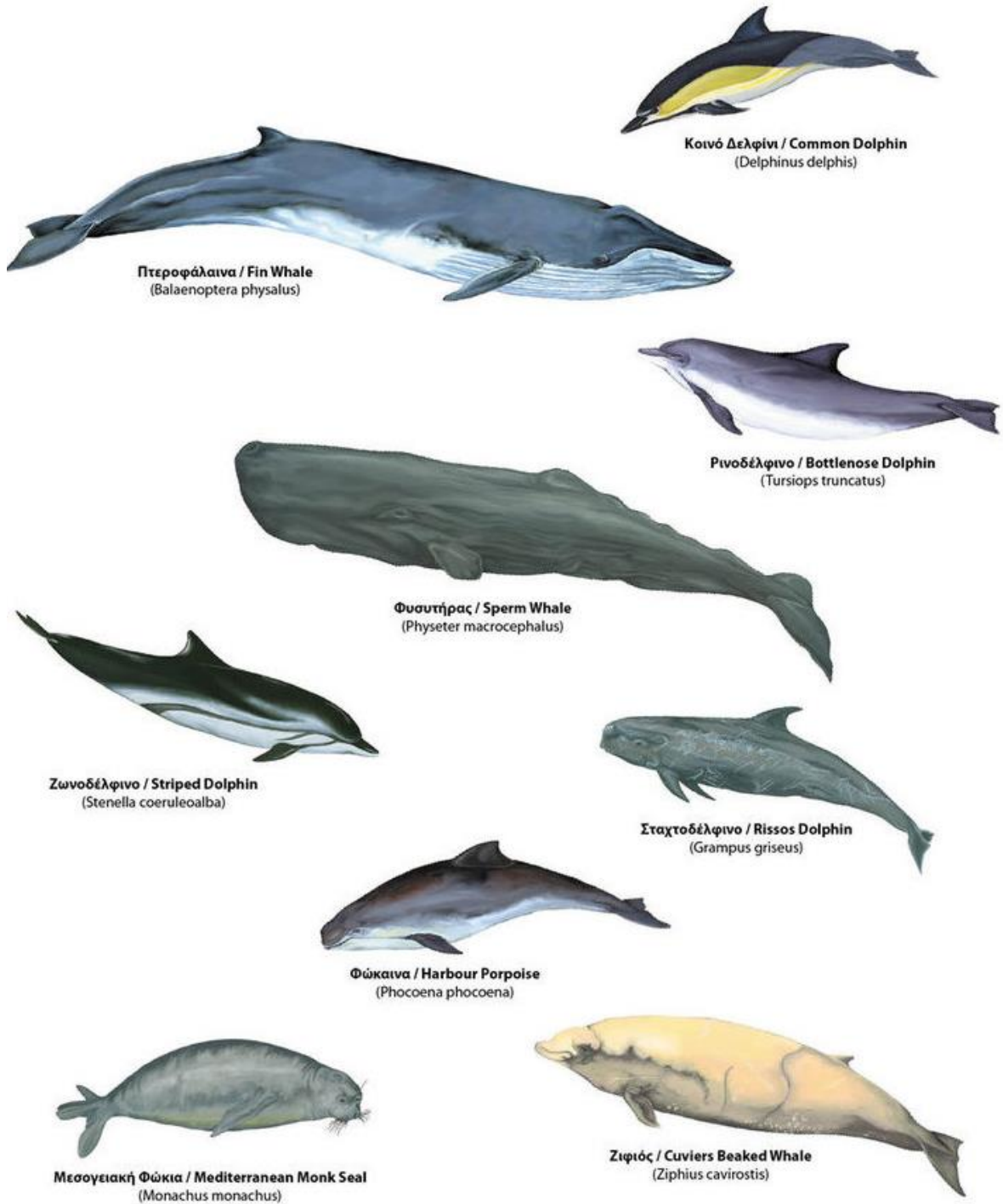*Rhynchobatus djiddensis*
Giant guitarfish

Glyphis gangeticus
Ganges shark

Marine Mammals

All marine mammals are included in the schedule by MoEF

Κοινό Δελφίνι / **Common Dolphin**
(Delphinus delphis)

Πτεροφάλαινα / **Fin Whale**
(Balaenoptera physalus)

Ρινοδέλφινο / **Bottlenose Dolphin**
(Tursiops truncatus)

Φυσυτήρας / **Sperm Whale**
(Physeter macrocephalus)

Ζωνοδέλφινο / **Striped Dolphin**
(Stenella coeruleoalba)

Σταχτοδέλφινο / **Rissos Dolphin**
(Grampus griseus)

Φώκαινα / **Harbour Porpoise**
(Phocoena phocoena)

Μεσογειακή Φώκια / **Mediterranean Monk Seal**
(Monachus monachus)

Ζιφιός / **Cuviers Beaked Whale**
(Ziphius cavirostis)

Molluscs

Banned Sea Shells under Wildlife Protection Act, 1972 - SCHEDULE-IV

Cypraea lamacina

Lambis truncata

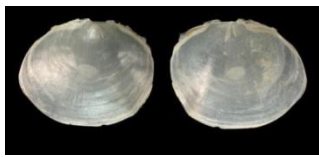*Fasciolaria trapazium*
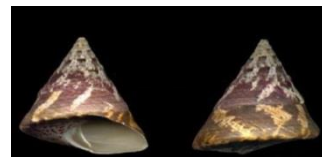
Cypraea mappa
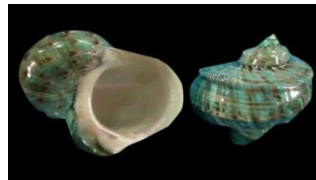
Turbo marmoratus

Cypraea talpa

Strombus plicatus sibbaldi

Harpulina arausiaca

Placenta placenta

Trochus niloticus

Banned Sea Shells under Wildlife Protection Act, 1972 - SCHEDULE-IV

Lambis scorpius

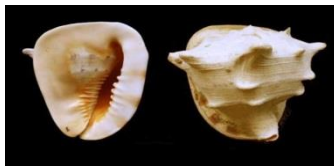*Lambis crocea*

Lambis millepeda

Lambis chiragra arthritica
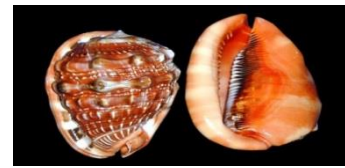
Lambis chiragra

Banned Sea Shells under Wildlife Protection Act, 1972 - SCHEDULE-I PART-IV B

Hippopus hippopus

Cassis cornuta
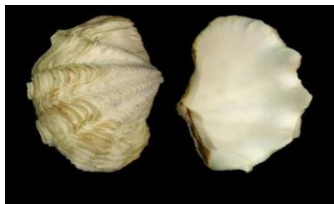

Cypracasis rufa

Tridacna squamosa

Nautilus pompilius

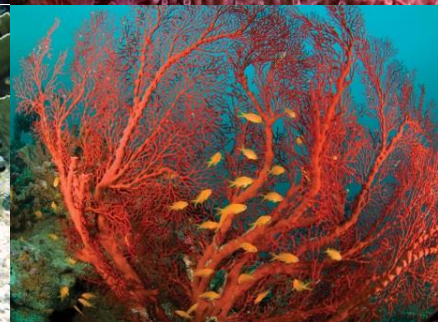*Charonia tritonis*

Tudicla spiralis

Tridacna maxima

Conus malneedwardsi

Coelenterates

(i)   Reef Building Coral (All Scleractinians)
(ii) Black Coral (All Antipatharians)
(iii) Organ Pipe Coral (*Tubipora musica*)
(iv) Fire Coral (all *Millipora* Species)
(v)   Sea Fan (All Gorgonians)

Echinodermata

Sea Cucumber (All Holothurians): There are some marine species which are facing threat, but due to lack of sufficient data on the species those species are not considered. In future there are chances of including more species in the list to protect them from extinction and to conserve the biodiversity of the country.