

Biodiversity of the Arabian Sea

The Arabian Sea, the western waterfront of the Indian sub-continent, has an exclusive economic zone of 850,000 km² and a shelf area (i.e., up to 200 m depth) of 280,000 km². With its high evaporation and limited precipitation and freshwater influx, the Arabian sea is a biological paradise.

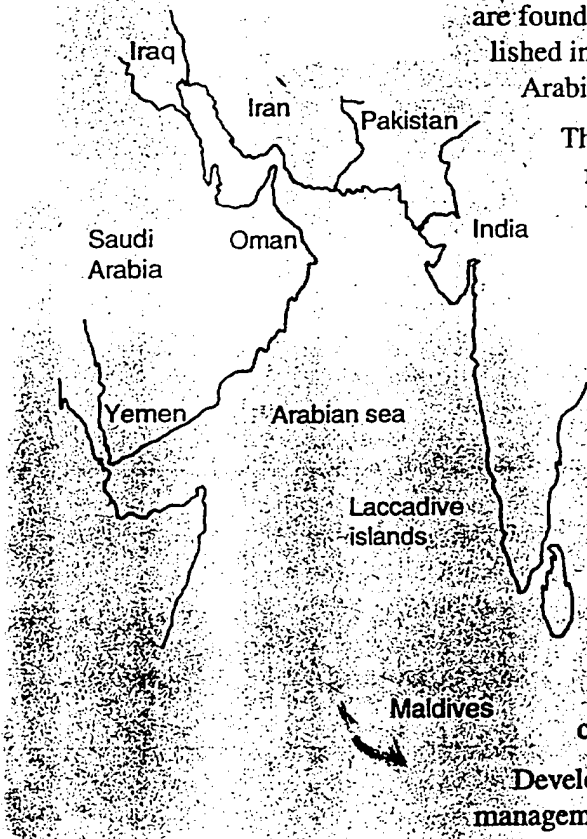
Some 624 species of plants and 12,000 species of marine fauna are found in these waters. Despite a substantial amount of published information on these species, the biodiversity of the Arabian Sea is still not well known.

The Arabian Sea has diverse ecosystems and biota. We find estuaries, backwaters, mudflats, mangroves, sandy shores, rocky foreshores, corals, submerged banks, islands, an extensive continental shelf and the abyssal deep.

Industrial development and rising human populations have an increasing variety and severity of impacts on the ecosystems and biota of the Arabian Sea. Marine ecosystems have evolved the ability to assimilate and minimize environmental stresses. However, in recent times the scale and magnitude of human influences on the marine environment has increased so much that self-cleansing and assimilative capacity is being suppressed. It has also created "hot spots" (areas where the environment is under severe stress) in coastal areas near large cities.

Development should be based on environmentally sound management and should avoid destroying the resource base on which biodiversity and sustainable development depends. Development can be monitored by identifying:

- Present and future demands on resources and space.
- Ecologically sensitive areas that should be conserved.
- Pollution sources and causative agents and ways to treat and dispose of these safely.



Marine fisheries

Indian marine fisheries support 1,500 fishing villages with 1.8 million fisherfolk, 30,000 mechanized boats and 115,000 boats without engines. The industry's annual turnover is Rs 63,000 million, and in the year 1991-92 exports of marine products were Rs 13,400 million.

The Arabian Sea accounts for almost 60% of the annual yield of 2.2 million tonnes from the seas around India. In 1985-1990, the marine fishery yield grew by 3.1% a year, as against a worldwide rate of 1.5%. Internal consumption accounts for more than one million tonnes. Around 92,000 tonnes of marine food products are exported annually, with shrimps accounting for 80%. The foreign exchange earnings in 1992-93 were Rs 23,000 million.

Besides edible varieties, nearly 30,000 tonnes of other species (seaweeds, shells, ornamental fish, bait fish and trash fish, etc.) are harvested from the Arabian Sea each year. In the last ten years, coastal aquaculture production, especially of shrimps, has been on the rise. The annual yield is about 50,000 tonnes.

The present level of economic harvesting from the Arabian Sea is only 50% of the potential, although in certain areas, harvesting of certain aquatic resources exceed this.

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Marine expanse of India (km²)

	Shelf (< 200 m depth)	EEZ (< 200 m or 380 km from shore)
West coast (Arabian Sea and Lakshadweep archipelago)	282,120	859,992
East coast (Bay of Bengal)	132,375	561,388
Andaman Sea (Andaman and Nicobar Islands)	35,000	566,554
Total	449,495	2,057,934

Pollutants in the coastal zone

Pollutant	Quantity (per year)	Effects
Land runoff	1600 million t	Increase in sediment load and turbidity; reduced penetration of sunlight; siltation
Sewage (mostly untreated)	410 million m ³	Organic enrichment; oxygen depletion; sulphide formation; mortality of biota
Industrial effluents	50 million m ³	Deterioration of biota and ecology; sub-lethal and fatal.
Domestic waste	34 million m ³	Water quality; physical blanketing and choking of marine life
Fertilizer residue	5 million t	Eutrophication; red tides; mass mortality
Synthetic detergent residue	125,000 t	Eutrophication; food chain disturbances
Pesticides and insecticides	65,000 t 65,000 t	Non-biodegradable input; toxicity and mortality
Petroleum, hydrocarbon residue	3,500 t	Tainting; physical blanketing; esthetic degradation
Mining rejects: dredging, sand extraction	2 million t	Turbidity, loss of habitat

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