

Indian Ocean, Location, Map, Countries, Depth, Features

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The Indian Ocean, covering nearly 70.56 million sq km, is the **world's third-largest ocean** and one of the most strategically significant maritime regions today. Its semi-enclosed nature, monsoon-driven currents, rich biodiversity, and dense network of global trade routes make it crucial not just for India but for Asia, Africa, and world powers.

Indian Ocean

The Indian Ocean holds immense climatic and geopolitical importance due to its central location between Africa, Asia, Australia, and Antarctica. It forms a vital link between the energy-rich Middle East and the manufacturing hubs of East Asia. Over the decades, this ocean has emerged as the epicentre of global trade, strategic competition, and environmental vulnerability.

- Total area: ~70.56 million sq km (20% of world ocean)
- Surrounded by 36 littoral and 14 landlocked countries
- Unique for monsoon reversal of currents

- Crucial for global shipping, food security, and energy supplies

Indian Ocean Location

The Indian Ocean extends from the east coast of Africa to western Australia and merges with the **Southern Ocean** in the south. Unlike the Pacific and Atlantic, it is **landlocked to the north**, giving it a semi-closed character. This geography makes the Indian Ocean sensitive to geopolitical developments, resource competition, and climatic events.

- Lies roughly between 20°E to 147°E longitude.
- Extends from the equator towards 60°S latitude.
- Warmest ocean among major oceans due to enclosed nature.
- Accounts for nearly **20% of Earth's water surface**.

The Indian Ocean spans a vast area of around **70.56 million sq km**, making it slightly smaller than the Atlantic and Pacific but larger than the Arctic and Southern Oceans. It is characterized by deep basins, ridges, and significant monsoon-driven current systems. Its average depth is approximately 3,900 meters, with the **Java Trench (7,258 m)** as its deepest point.

Indian Ocean Boundaries

The Indian Ocean is surrounded by diverse landmasses that shape its climatic systems, ocean currents, and maritime routes. The northern boundary is almost completely enclosed by Asia, while the eastern and western boundaries are open and connected to major straits. The southern boundary merges with the Southern Ocean, forming a continuous circumpolar water mass.

Northern Boundary

- Bounded by Asia, including India, Pakistan, Bangladesh, Sri Lanka, and Indonesia.
- Contains semi-enclosed seas such as the **Arabian Sea** and **Bay of Bengal**.
- Highly influenced by the Indian Monsoon System.

Western Boundary

- Bordered by Africa, including Somalia, Kenya, Tanzania, Mozambique, and South Africa.
- Features key choke points like Bab-el-Mandeb and the Mozambique Channel.

Eastern Boundary

- Includes Australia, Indonesia, and the Timor Sea region.
- Acts as a transition zone between the Pacific and Indian Oceans.
- Major straits such as Malacca, Sunda, and Lombok lie here.

Southern Boundary

- Opens into the Southern Ocean (Antarctic Ocean) around 60°S latitude.
- Characterized by powerful circumpolar currents and cold water masses.

Indian Ocean Map

The Indian Ocean spans the region between **Africa, Asia, Australia, and the Southern Ocean**, covering an area of about **70.56 million sq. km**. It includes major seas such as the **Arabian Sea, Bay of Bengal, Andaman Sea**, and important islands like **Sri Lanka, Maldives, Seychelles, and Mauritius**. The map also highlights **strategic sea lanes, chokepoints like Malacca Strait and Hormuz, and resource-rich zones**, emphasizing the ocean’s geopolitical and economic importance.

Bordering Countries of the Indian Ocean

The Indian Ocean is bordered by **36 countries**, along with numerous island nations, territories, and dependencies. These countries influence the politics, economics, and maritime security of the region. Many of them are part of regional groupings like **IORA, BIMSTEC, and SAARC**, making the region geopolitically active.

List of Bordering Countries of the Indian Ocean	
Region	Countries
South Asia	India, Pakistan, Sri Lanka, Bangladesh, Maldives
West Asia / Middle East	Iran, Oman, Yemen, UAE, Saudi Arabia
East Africa (Horn of Africa)	Somalia, Djibouti, Eritrea
East African Coast	Kenya, Tanzania, Mozambique, South Africa
Island Nations (Western & Central IO)	Madagascar, Mauritius, Seychelles, Comoros
Southeast Asia	Indonesia, Thailand, Malaysia
Australia Region	Australia, Timor-Leste
Additional Littoral States	Myanmar (Indo-Pacific region), Bahrain and Qatar (via Persian Gulf opening), Kuwait (connected waters)

Geographical Features of the Indian Ocean

The Indian Ocean is characterized by deep basins, mid-oceanic ridges, trenches, plateaus, and monsoon-driven current systems that make it unique among the world’s oceans. Its semi-enclosed nature and warm waters create distinct climatic, tectonic, and ecological patterns.

- Contains major deep basins such as the **Arabian Basin, Somali Basin, Central Indian Basin, and Wharton Basin**, reaching depths of 4,000-6,000 meters.
- Features a prominent **Mid-Indian Ridge System**, including the Central, Southwest, and Southeast Indian Ridges, forming a T-shaped tectonic structure.
- Home to the **Java/ Sunda Trench**, the deepest point in the Indian Ocean at approximately **7,258 meters**.
- Includes large submarine plateaus like the **Kerguelen Plateau, Ninety East Ridge, and Chagos-Laccadive Ridge**, formed mainly by volcanic hotspots.
- Hosts diverse island groups such as **Madagascar, Maldives, Seychelles, Mauritius, Comoros, and Andaman & Nicobar Islands**.
- Bordered by marginal seas including the **Arabian Sea, Bay of Bengal, Red Sea, and Andaman Sea**, each influencing monsoon and regional climate.
- Characterized by varied continental shelves, broad along India’s west coast and narrow off the East African coastline.
- Displays strong **monsoon-driven current reversals**, especially the Somali **Current**, which reverses direction between SW and NE monsoon seasons.
- Exhibits significant tectonic activity due to divergent and convergent plate boundaries, leading to **earthquakes** and tsunamis, such as the 2004 Indian Ocean tsunami.
- Shows distinct temperature patterns, being the **warmest ocean**, with higher salinity in the Arabian Sea and lower salinity in the **Bay of Bengal** due to high river discharge.

Indian Ocean and UNCLOS

The Indian Ocean is governed by the principles of the United Nations Convention on the Law of the Sea (UNCLOS), which provides the legal framework for maritime rights, navigation, resource utilization, and dispute resolution. **UNCLOS** plays a crucial role in defining the maritime boundaries of Indian Ocean littoral states, including **Exclusive Economic Zones (EEZs)**, continental shelves, and territorial waters.

Indian Ocean and UNCLOS				
Maritime Zone	UNCLOS Definition	Extent (from Baseline)	India’s Rights	Examples/Notes (India)
Internal Waters	Waters landward of the baseline	Landward side of baseline	Full sovereignty, same as land territory	Ports: Mumbai, Kochi, Chennai
Territorial Sea	Belt of coastal waters under full sovereignty	Up to 12 nautical miles	Complete sovereignty; foreign ships have innocent passage	India enforces security & customs laws; used for patrols

Contiguous Zone	Additional zone beyond territorial sea	12-24 nautical miles	Rights to prevent & punish infringements of customs, immigration, sanitation laws	Indian Coast Guard actively monitors this zone
Exclusive Economic Zone (EEZ)	Zone for exclusive resource rights	Up to 200 nautical miles	Exclusive rights to explore/exploit living & non-living resources	India's EEZ = 2.37 million sq. km (one of the largest in world)
Continental Shelf	Seabed/subsoil extending to margin of continental slope	200-350 nautical miles	Exclusive rights over seabed minerals like hydrocarbons	India claims extended shelf in the Arabian Sea & Bay of Bengal
High Seas (Beyond National Jurisdiction)	Open ocean beyond EEZ	Beyond 200 nautical miles	Freedom of navigation, fishing (regulated), overflight	India participates in global fisheries management
Archipelagic Waters	Applies to archipelago states	Not applicable to India	-	India is not an archipelagic state
International Seabed Area (The "Area")	Seabed beyond continental shelves	Beyond national jurisdiction	Common heritage of mankind; regulated by ISA	India has a pioneer investor status for deep-sea mining (Polymetallic nodules in Central Indian Ocean Basin)

Indian Ocean Importance

The Indian Ocean is vital for global trade, energy security, climate regulation, and strategic power competition, making it one of the most significant oceans in the 21st century. Its sea lanes, resources, and geopolitical leverage shape the economic and security interests of India and the world.

- Facilitates nearly **80% of global maritime oil trade** and connects major economies across Asia, Africa, and Europe.
- Hosts critical **Sea Lanes of Communication (SLOCs)** that carry two-thirds of the world's oil shipments and one-third of global bulk cargo.
- Contains vital choke points like the **Strait of Malacca, Strait of Hormuz, and Bab-el-Mandeb**, essential for global energy and trade flows.
- Rich in hydrocarbons, especially in the **Persian Gulf, Arabian Sea, and Bay of Bengal**, supporting global energy supply chains.

- Supports a diverse **blue economy**, including fisheries, tourism, mineral resources, and maritime industries.
- Plays a crucial role in **monsoon formation** and climate regulation, influencing weather patterns across South and Southeast Asia.
- Acts as a key arena for **geopolitical rivalry**, especially between India, China, the US, and regional powers.
- Enhances India's strategic depth, allowing it to project power through the **Andaman & Nicobar Command** and a growing naval presence.
- Serves as a hub for **disaster response and humanitarian operations**, especially in regions affected by cyclones and tsunamis.

Major Challenges Faced in Indian Ocean Region

- China's presence in the region continues to expand, with major port investments like the **Kyaukpyu deep-sea port in Myanmar** (over **USD 1.3 billion**), increasing strategic pressure on India.
- In 2024, Sri Lanka imposed a **one-year suspension** on all foreign research vessels after repeated controversies involving Chinese survey ships operating in the Indian Ocean.
- India's Defence Ministry (2025) reaffirmed that **95% of India's trade by volume and 68% by value** passes through the Indian Ocean, highlighting increasing security vulnerabilities.
- Maritime piracy and armed robbery incidents in the Indian Ocean touched **227 cases in 2024**, reflecting a **17% rise** from 2023, especially near the Gulf of Aden and East Africa.
- Hybrid maritime threats, missile attacks, drone strikes, and water-borne improvised explosive devices rose sharply, with **over 270 incidents reported in 2024**, mostly linked to regional conflicts.
- The ongoing Red Sea and West Asian crises triggered spillover: **128 out of 175 maritime violence incidents** in 2024 were associated with retaliatory drone and missile attacks affecting Indian Ocean shipping lines.
- The Indian Navy significantly expanded its operational role: **30+ warships, 5,000 personnel, and 900+ hours of aerial surveillance** were deployed in 2024-25 for anti-piracy and security operations.
- Narcotics trafficking through the Arabian Sea surged, with seizures amounting to **nearly 5,000 kg** of drugs (including heroine and methamphetamine) by Indian naval forces in late 2024.
- **Illegal, unreported, and unregulated (IUU) fishing** remains a key challenge, with **78 distinct IUU incidents recorded in January 2025 alone**, affecting India's **coastal states** and maritime ecology.
- Competition among major powers: India, China, the US, France, and Australia has intensified, with India conducting its **largest-ever combined naval exercises with African littoral states in early 2025**.
- Climate events such as cyclones have become more frequent and intense in the Bay of Bengal and **Arabian Sea; Cyclone Mocha (2023) and Cyclone Tej (2024)** highlighted the vulnerability of coastal populations.
- Rising sea levels and warming ocean temperatures threaten Indian Ocean **coral reefs**, fisheries, and shipping routes, contributing to **ecosystem degradation and livelihood losses** for coastal communities.

Steps Taken to Strengthen Indian Ocean Region

- India has expanded **Mission-Based Deployments** to ensure continuous naval presence across key IOR chokepoints like the Gulf of Aden, Malacca Strait, and Mozambique Channel.

- Over **30 Indian Navy warships** and long-range maritime aircraft (P-8I, MQ-9B drones) are regularly deployed to secure sea lanes and monitor threats.
- The commissioning of **INS Vikrant** and strengthening of the Andaman & Nicobar Command enhanced India's maritime power projection.
- India operates the **Information Fusion Centre-IOR (IFC-IOR)**, sharing real-time maritime data with **50+ partner nations**.
- Coastal radar systems have been provided to Maldives, Mauritius, Seychelles, Sri Lanka, and Myanmar to expand joint maritime surveillance.
- India has signed **white-shipping agreements** to track non-military vessels and detect piracy, trafficking, and illegal fishing.
- Diplomatic initiatives under **SAGAR** strengthen India's role as the primary security provider in the Indian Ocean.
- India actively participates in **IORA, IONS**, and other maritime forums to coordinate disaster relief, security, and economic projects.
- India provides patrol vessels, aircraft, training, and hydrography support to countries like Sri Lanka, Maldives, Mauritius, Mozambique, and Seychelles.
- Regular naval exercises such as **SLINEX, VARUNA, EKUVERIN, AUSINDEX**, and **TRILATERAL exercises with Sri Lanka-Maldives** improve interoperability.

India’s Deep Ocean Mission

Deep Ocean Mission (DOM), aims to explore and utilise **polymetallic nodules, cobalt crusts, and hydrothermal minerals** in the Central Indian Ocean Basin. It strengthens India's **blue economy, maritime resource security, and technological capabilities** in deep-sea exploration.

- India has **75,000 sq. km** allocated in the Central Indian Ocean Basin for polymetallic nodule exploration.
- Estimated resources include **manganese, nickel, copper, cobalt, and rare earth minerals**.
- Development of **MATSYA 6000**, a 6,000 m depth-rated manned submersible, for deep-sea missions.
- Indigenous **Crawler-based mining technology** is being tested for seabed nodule collection.
- Mission contributes to India's **energy transition** and strategic autonomy in **critical minerals** for technology and renewable sectors.

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