ELEMENTS OF THE EARTH

Oceans and Continents



ALT: 384,400 KM

VEL: 1.023 KM/S

LAT: 0° N

LON: 180° E

MISSION TIME:
00:03:15

MISSION TIME:
00:05:15

ORBIT:
LUNAR-EARTH TRANSFER

LAT: 0° N

LON: 180° E

LAT: 0° N

DATA STREAM:
ACTIVE

SAT-LINK:
STABLE

SYSTEM STATUS:
NOMINAL

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THE THREE REALMS OF EARTH

LITHOSPHERE

The solid outer crust and landmasses.

HYDROSPHERE

The domain of water on the surface.

ATMOSPHERE

The realm of air surrounding the planet.



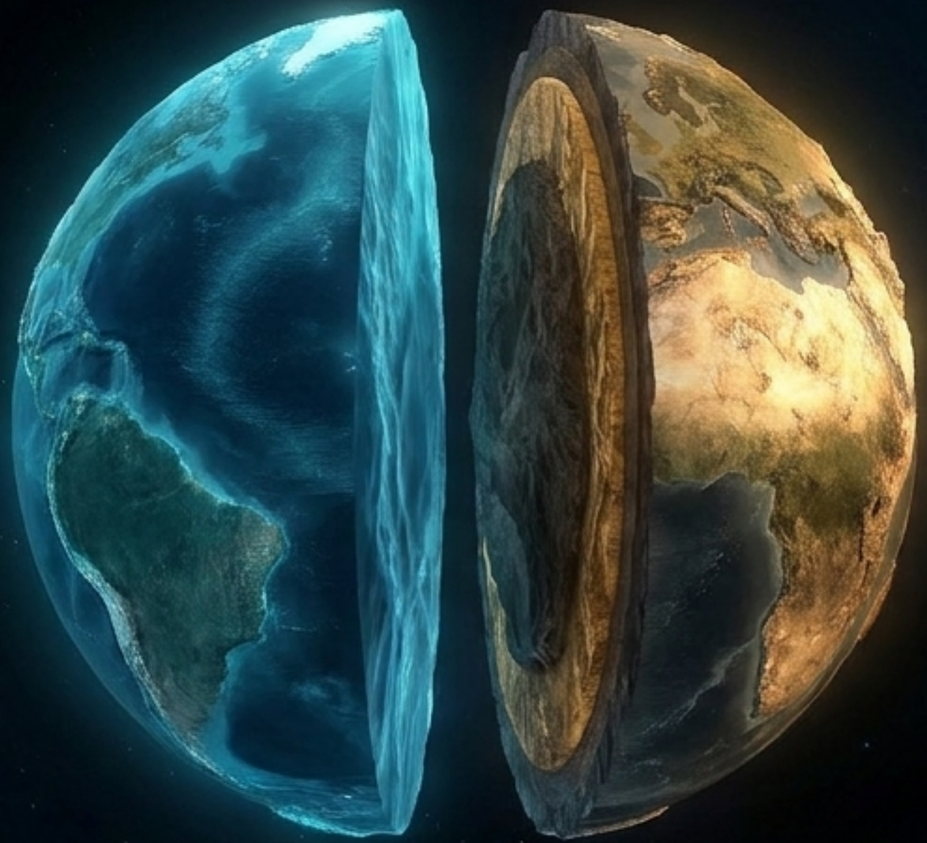
LIFE

BIOSPHERE

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THE GREAT DIVIDE

71%
Oceans & Seas



29%
Continents

⚠ Because all oceans are interconnected, the average surface height remains constant—establishing a single global 'Mean Sea Level'.

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MAPPING THE LITHOSPHERE



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Continental Diagnostic Matrix

Continent	Area (Million Sq. Km)	Hemisphere Profile	Defining Feature
Asia	44	Mostly Eastern	Mount Everest (8,849m) & Most Populous
Africa	30	Northern & Southern (Equator bisects)	The Sahara Desert
North America	24	Northern & Western	Rocky Mountains
South America	17	Mostly Southern	The Andes & Amazon River
Antarctica	13	Southern	Permanent Ice Cover
Europe	9	Northern	Ural Mountains Border
Australia	8	Entirely Southern	Coral Reefs & 'Island Continent'

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Extremes of the Lithosphere



ASIA
Highest Altitude. Home to the 10 highest mountain peaks in the world.



ANTARCTICA
The White Continent. The windiest, driest, and iciest place on Earth. Human habitation requires scientific base stations (e.g., India's "Dakshin Gangotri" established 1983).

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ONE INTERCONNECTED OCEAN

While we divide the map into five named regions, the Hydrosphere is a single, continuous body of water.

This interconnectedness dictates global climate and maintains a single mean sea level.



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Ocean Diagnostic Matrix

Ocean	Global Rank	Key Boundaries	Operational Profile
Pacific	#1 (Largest)	Americas to Asia/Australia	Covers 1/3 of Earth; Deepest ocean.
Atlantic	#2	Americas to Europe/Africa	Busiest ocean for commerce; Highly indented coastline for harbours.
Indian	#3	Asia (N), Africa (W), Australia (E)	Only ocean named after a country; Historic trade hub.
Southern	#4	Surrounds Antarctica	Comprises the southernmost waters; Extreme cold and winds.
Arctic	#5 (Smallest)	Encircles North Pole	Located entirely within the Arctic Circle; Ice-covered most of the year.

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THE OCEAN ENGINE

CLIMATE REGULATION:
The base of the water cycle; powers monsoon rains.

ECONOMIC BACKBONE:
Carries over 80% of international trade volume.

THE PLANET'S LUNGS:
Marine flora (algae/seaweed) produces more than 50% of the world's oxygen.

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Inhabitants of the Hydrosphere





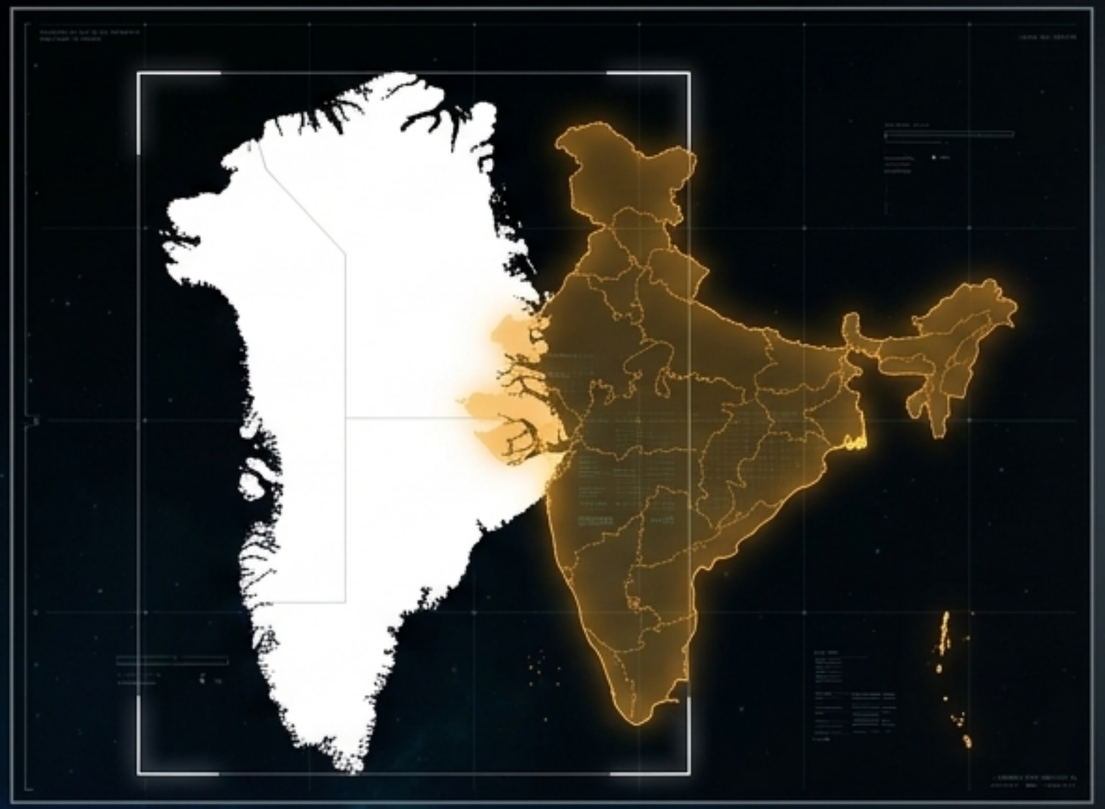




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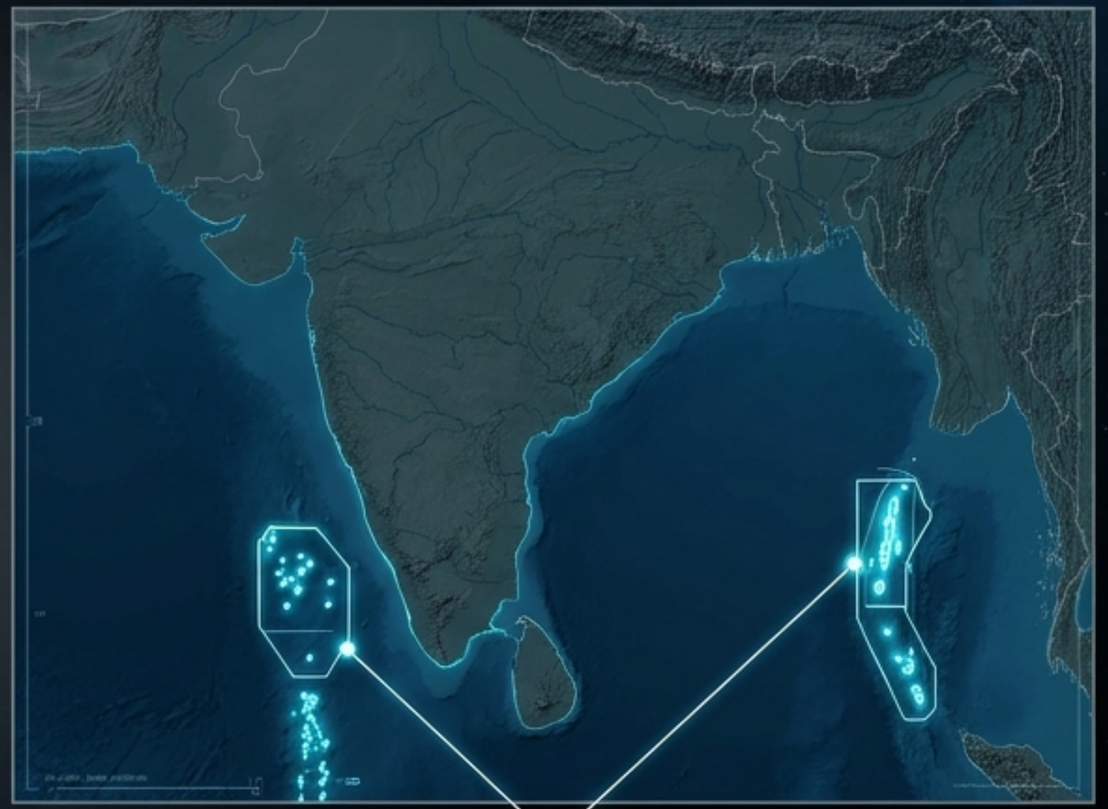
ISLANDS: ANOMALIES IN THE HYDROSPHERE

THE GIANT



Greenland equals the combined area of India's 10 largest states.

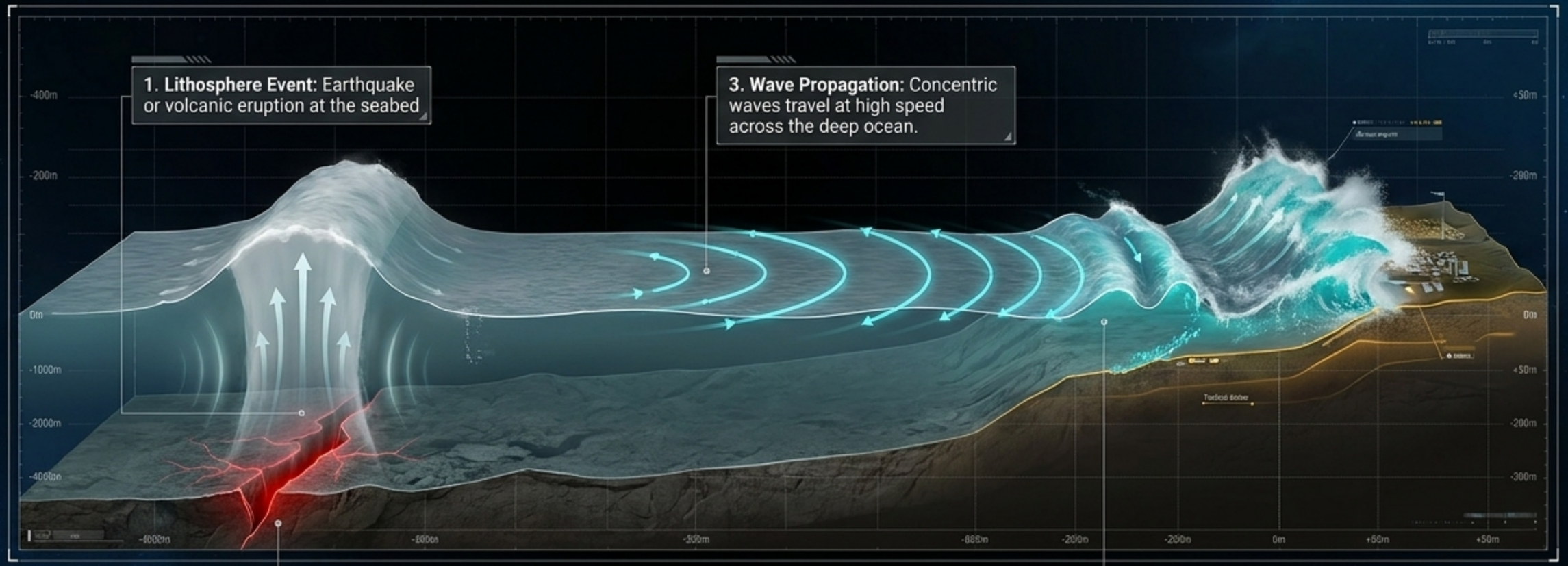
THE ARCHIPELAGOS



India contains >1,300 islands, including the Andaman and Nicobar Islands (Bay of Bengal) and Lakshadweep (Arabian Sea).

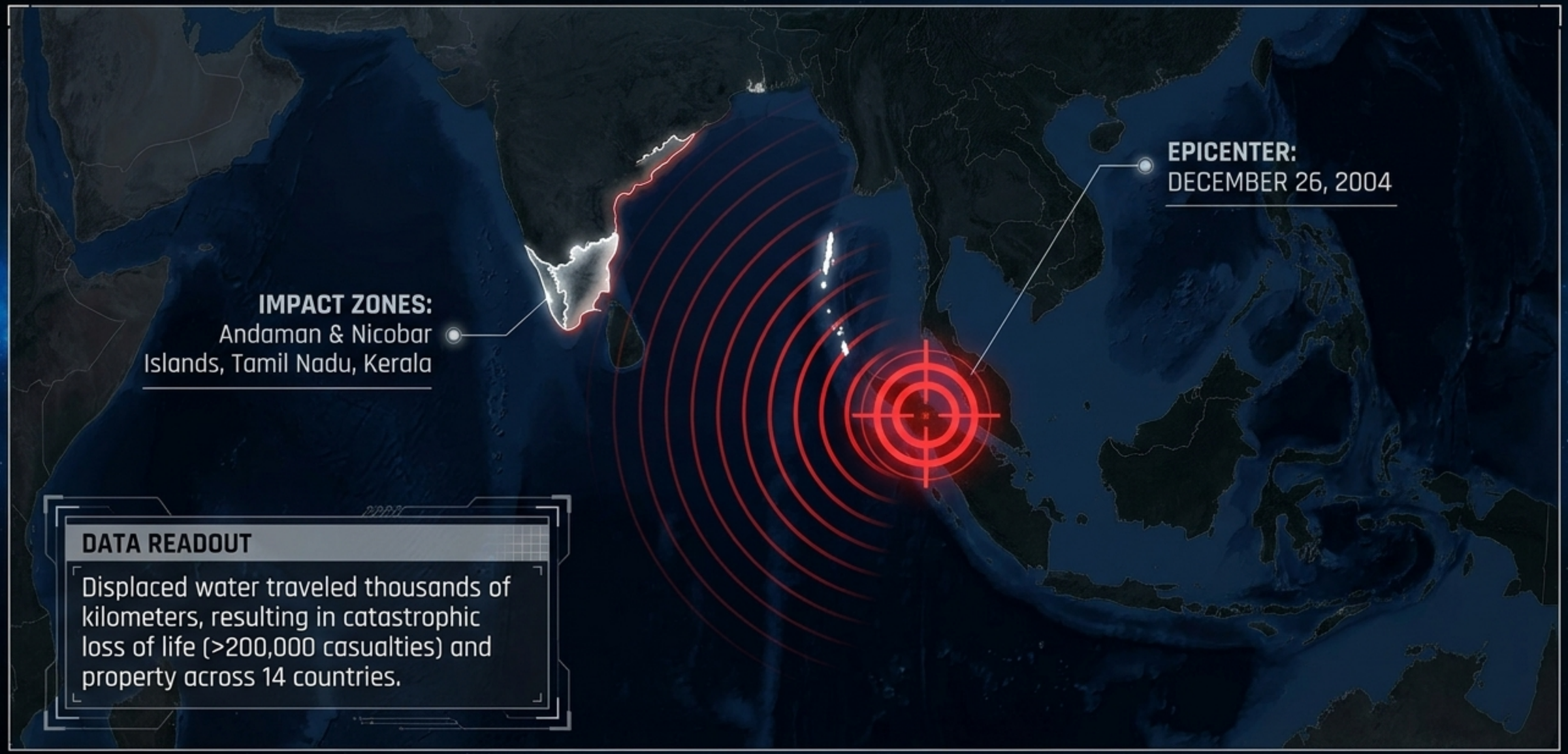
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WHEN WORLDS COLLIDE: ANATOMY OF A TSUNAMI



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CASE STUDY: 2004 INDIAN OCEAN TSUNAMI



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DISASTER MANAGEMENT & TSUNAMI SAFETY

1. Topography Check: Know your street's height above sea level.

2. Evacuation Routes: Map paths away from high-risk waters.



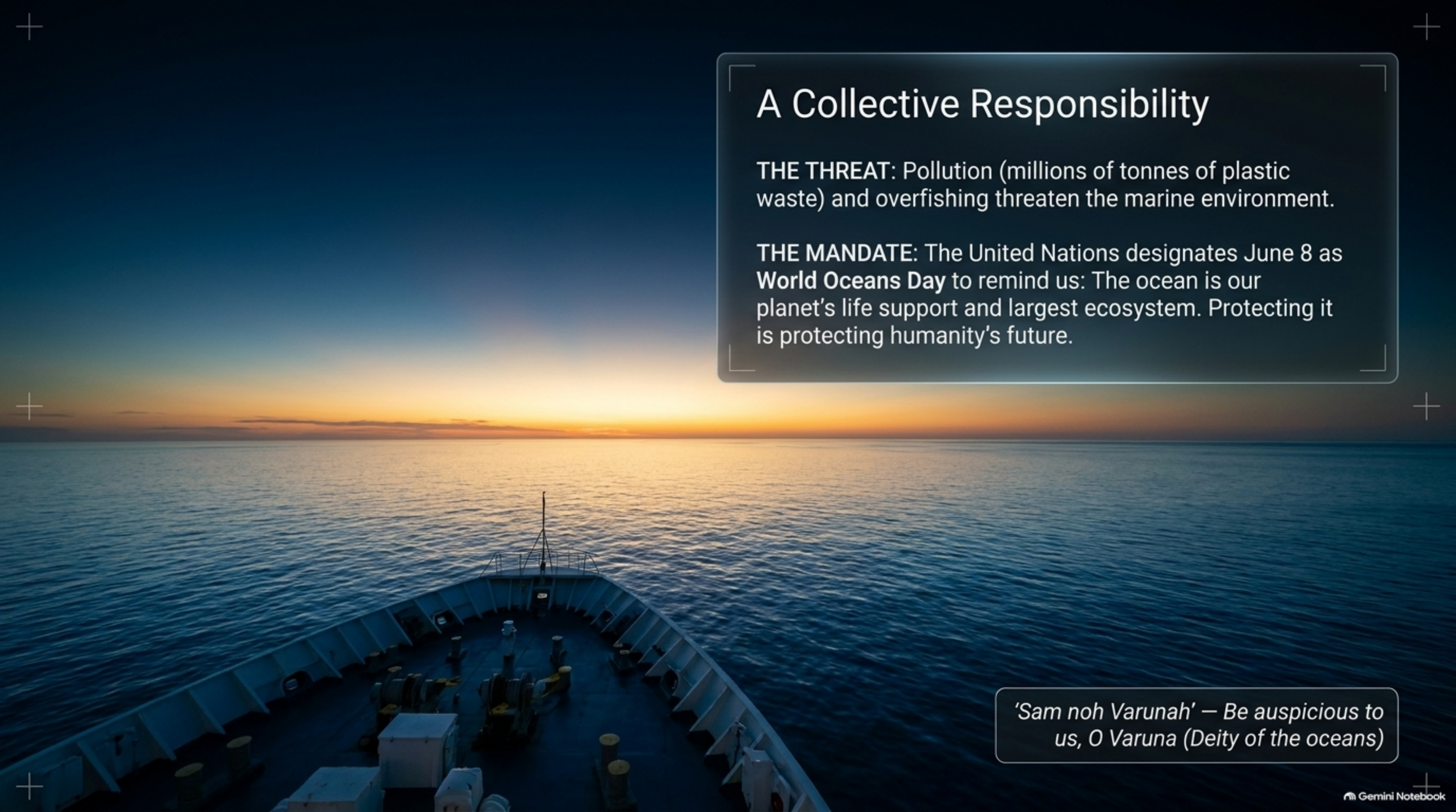
6. Emergency Contact: Dial Helpline 1078.

3. Official Warnings: Monitor Early Warning Systems.

5. Community Action: Form local Disaster Management Committees.

4. Supply Stock: Maintain food and first-aid essentials.

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A Collective Responsibility

THE THREAT: Pollution (millions of tonnes of plastic waste) and overfishing threaten the marine environment.

THE MANDATE: The United Nations designates June 8 as **World Oceans Day** to remind us: The ocean is our planet's life support and largest ecosystem. Protecting it is protecting humanity's future.

'Sam noh Varunah' — Be auspicious to us, O Varuna (Deity of the oceans)

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