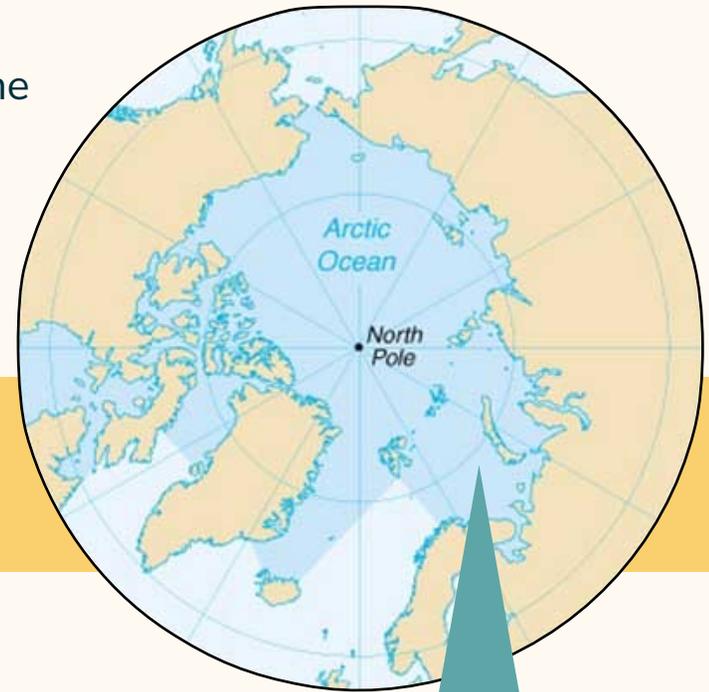


ARCTIC

Size: The Arctic Ocean is the **SMALLEST** of the world's oceans.

*Approx. 5.4 million sq. miles
(14 million sq. kilometers)*



Depth:

The Arctic Ocean is the **SHALLOWEST** of the world's oceans, with an average depth of about 4,000 feet (1,200 meters).

Its deepest point is the **Eurasian Basin**, reaching depths of around 17,881 feet (5,450 meters) beneath the Arctic ice.



4.3% of the World Ocean is the Arctic.

Where is the Arctic Ocean?

The Arctic Ocean surrounds the **North Pole**. It touches Europe, Asia, and North America.

Conditions

The Arctic Ocean is the **COLDEST** of the oceans. The average temperature is around the freezing point of sea water, approximately 1.8 degrees celsius or 28.8 degrees Fahrenheit.

The Arctic is the **LEAST SALTY** of the oceans due to low evaporation rates and significant freshwater input from rivers and ice melt and limited circulation.

Marine Life in the Arctic:

There is a great diversity of marine life in the Arctic Ocean, including marine mammals like **polar bears, whales, walruses, and seals**. Plus, there are many unique **marine invertebrates**, along with fish species like **Arctic char and cod**.



The Largest Jellyfish in the World!

The **Lion's Mane Jellyfish** is the largest known jellyfish and is most abundant in the Arctic Ocean. These jellyfish can have a bell up to 6 feet (2 meters) long and tentacles as long as 100 feet (30 meters)!

SEA ICE: In winter, the Arctic Ocean is nearly entirely covered by ice, and some ice remains throughout the whole year. The Arctic features three main types of ice: **polar ice, fast ice, and pack ice**.

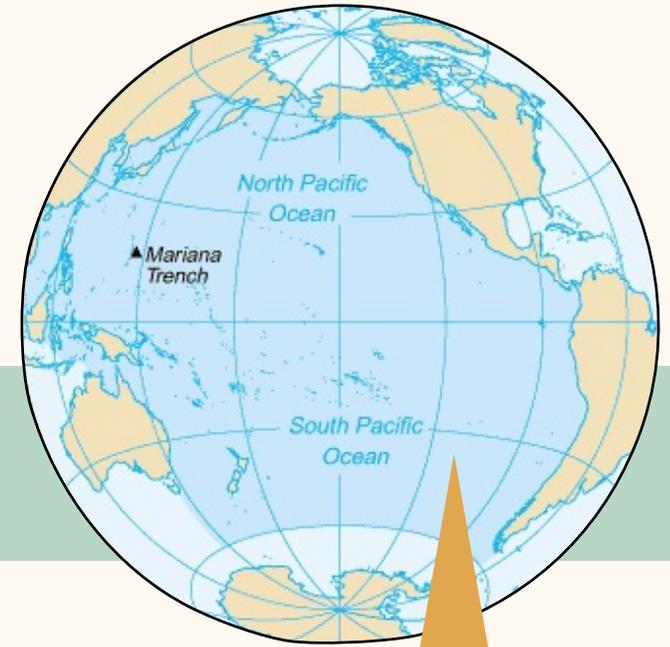
Conservation Issue:

The **loss of sea ice** in the Arctic is a critical conservation issue that is driven by climate change. Sea ice **melting** leads to **habitat loss** for species like polar bears and seals. It also impacts **sea level rise**. We can address this by **lowering carbon emissions** by reducing consumption and using renewable energy.

PACIFIC

The Pacific Ocean is the **LARGEST** of the world's oceans.

Approx. 64 million sq. miles (165 million sq. kilometers)



Depth:

The Pacific Ocean has an average depth of around 13,000 feet (3,962 meters).

However, it contains the **Mariana Trench**, the deepest known point in any ocean, reaching depths over 36,000 feet (10,972 meters).



46% of the World Ocean is the Pacific.

Where is the Pacific Ocean?

The Pacific Ocean separates North and South America from Asia and Australia.

Conditions

The temperature in the Pacific Ocean **varies** quite significantly but typically it ranges from 60° Fahrenheit to 80° F (16° Celsius to 27° C).

The Pacific Ocean's salinity is **relatively low** compared to other oceans because of a lot of rain and river runoff.

Marine Life in the Pacific:

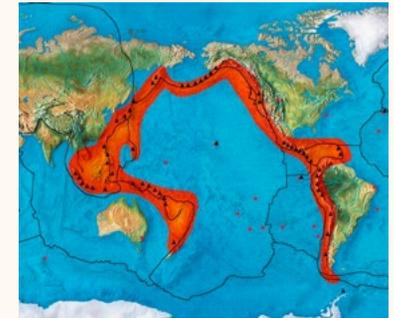
There is a great diversity of marine life in the Pacific Ocean including **whales, dolphins, sharks, tuna, jellyfish, and various species of fish and coral.**



The **Great Barrier Reef**, the world's largest coral reef system, is in the Pacific Ocean off the coast of Australia.



THE RING OF FIRE is a region of hundreds of active **VOLCANOES**. It is located in the Pacific Ocean. In fact, **75%** of the world's active volcanoes are located in the Pacific Ocean.



Mar Pacífico: In 1521, during the Spanish circumnavigation of the world, Portuguese explorer **Ferdinand Magellan** named the Pacific Ocean “Mar Pacífico” which means “peaceful sea” in both Portuguese and Spanish. He named it this because of the favorable winds he found on his journey.

Conservation Issue: The **Great Pacific Garbage Patch** is an area where marine debris, like plastics, accumulate due to ocean currents and wind. This is called an **ocean gyre** and it acts like a whirlpool. They exist in every ocean basin, but the Pacific is the largest. The **collected trash** poses serious threats to marine life through ingestion and entanglement.

INDIAN

The Indian Ocean is the **third largest** of the world's oceans.

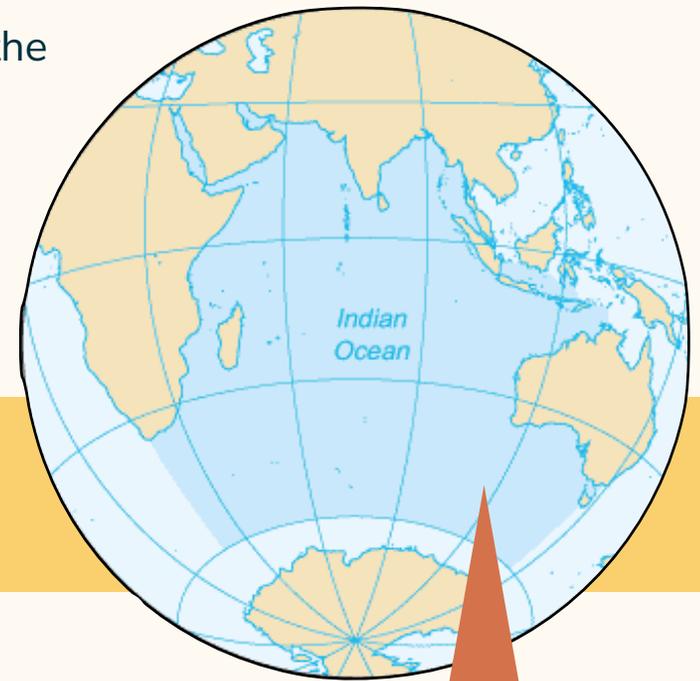
Approx. 27 million sq. miles (71 million sq. kilometers)

Depth: The Indian Ocean has an average depth of about 13,000 feet (4,000 meters).

Its deepest point is the **Java Trench**, with a depth of 24,400 feet or 7,400 meters. It is off the coast of Indonesia.

Fun fact! The Indian Ocean is the **youngest** major ocean. Here there is **active spreading** occurring, meaning new seafloor is being formed. *Scientists estimate it gets about 20 cm wider each year!*

19.5% of the World Ocean is the Indian Ocean.



Where is the Indian Ocean?
The Indian Ocean touches Africa, Asia, and Australia.

Conditions

The Indian Ocean is the **WARMEST** of the oceans. With temperatures generally ranging from 75°F to 82°F (24°C to 28°C).

The Indian has the high **SALINITY** — **meaning it's quite salty!** — due to high evaporation, limited freshwater input, and the dry, subtropical regions.

Marine Life in the Indian:

There is a great diversity of marine life in the Indian Ocean with coral reefs, whales, dolphins, sharks, tuna, and various species of fish. Some special animals are dugongs, giant clams, butterfly fish, and manta rays.

The Suez Canal: The Indian Ocean is connected to the Mediterranean Sea by the Suez Canal, a **man-made waterway** in Egypt. It was built between 1859 and 1869 and took **ten years** to complete. It's the longest canal of its kind in the world. It creates a **shortcut** that lets ships move between Asia and Europe much faster than going all the way around Africa. Marine species can move through it too, which can sometimes cause problems for local ecosystems.



MARITIME TRADE: The Indian Ocean has an extensive history of maritime trade. **Cultural and commercial exchange** around the Indian Ocean dates back at least *seven thousand years*.

Conservation Issue:

Illegal, unreported, and unregulated fishing, known as I.U.U. fishing, is a big problem in the Indian Ocean. This leads to overfishing, loss of biodiversity, habitat loss, and trouble with management. Addressing this requires international cooperation, effective rules and regulations, and sustainable fishing practices.

ATLANTIC

Depth:

The average depth in the Atlantic is around 12,000 feet (3,660 meters).

Its deepest point is the **Puerto Rico Trench**, specifically an area called the **Milwaukee Deep** (depth about 27,500 feet or 8,380 meters).

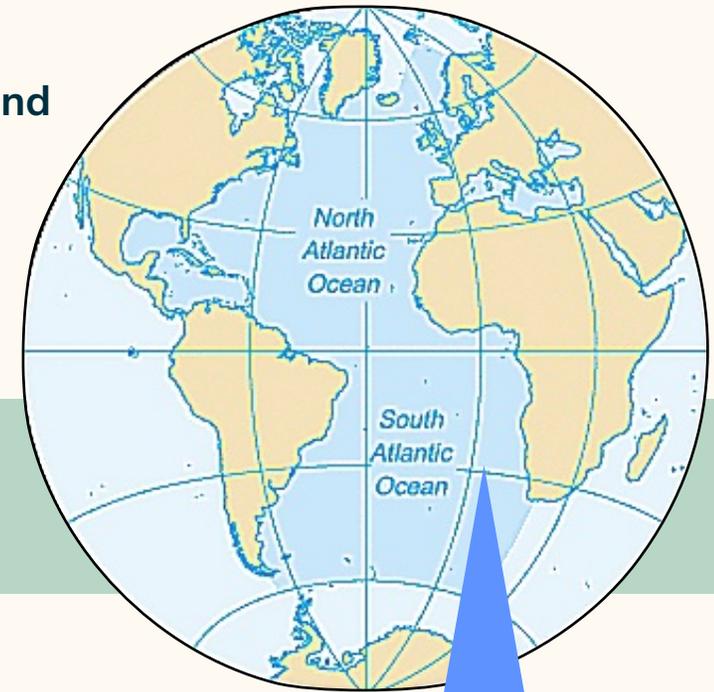
Approx. 41.1 million square miles
(106.46 million square kilometers).

23.5% of the World Ocean is the Atlantic.



Size:

The **second largest** of the world's oceans.



Where is the Atlantic Ocean?

The Atlantic Ocean separates North and South America from Europe and Asia.

Conditions

Temperature in the Atlantic ranges from chilly near the poles to warm near the equator, typically between 50°F to 80°F (10°C to 27°C).

The Atlantic is the **SALTIEST** of the major oceans with an average salinity around 35-37 ppt. This is due to high evaporation and strong circulation.

Atlantic Marine Life:

This ocean is home to a diverse array of marine life including whales, such as the North Atlantic right whale which is critically endangered, dolphins, sharks, tuna, jellyfish, and various species of fish and coral.



World's Biggest Tides!

The largest tidal range in the world occurs in the Atlantic Ocean. This happens in the **Bay of Fundy** in Canada. Here, the difference between high and low tide exceeds **40 feet or 12 meters!**



AIRPLANE: The Atlantic was the first ocean to be crossed by an airplane. In 1919, two British pilots made the a **nonstop flight** from Newfoundland, Canada, to Ireland. This daring journey showed that airplanes could travel long distances over water.

Conservation Issue:

The **Gulf Stream** is like an ocean highway that carries warm water and impacts weather all around the world. Due to climate change, these **ocean currents are weakening** which is a pressing concern for weather patterns, ecosystems, and even agriculture.

SOUTHERN

The second smallest in size.



Depth:

The Southern Ocean has an average depth of 13,100 feet (3,993 meters).

Its deepest point is the **South Sandwich Trench**, reaching depths of about 23,737 feet (7,235 meters).

The Southern Ocean is also known as the **Austral Ocean** or the **Antarctic Ocean**.

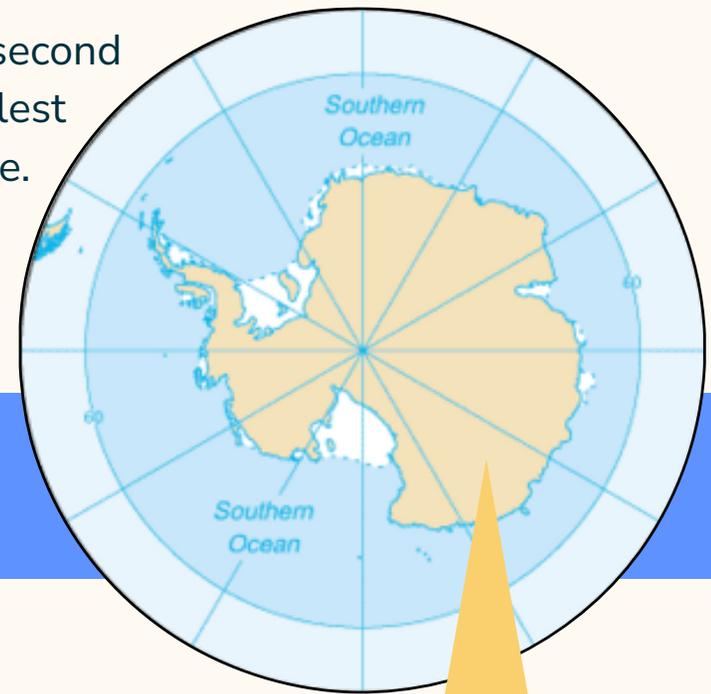
Size: Approx. 7.8 million square miles (20.3 million square kilometers).

6.1% of the World Ocean is the Southern.



Conditions

The temperature in the Southern Ocean is **quite cold** with averages ranging from -2°C to 10°C (28°F to 50°F).



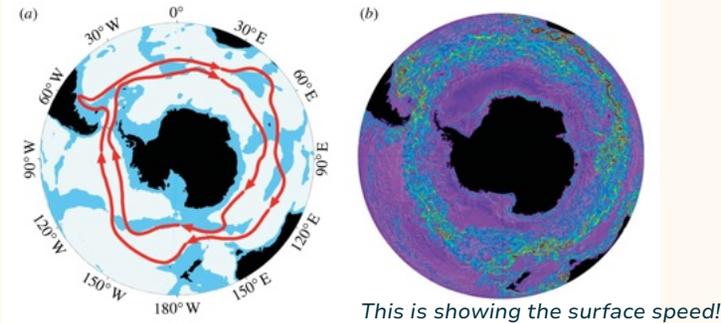
Where is the Southern Ocean?

The Southern Ocean surrounds the continent of **Antarctica**.

The Southern Ocean has a **lower average salinity** of about 34–35 ppt. This is due to melting Antarctic ice and heavy precipitation.

Southern Ocean Marine Life:

This ocean supports a rich and unique ecosystem. **Krill** are a key species, forming the primary food source for many larger animals, including **whales, seals, and penguins**. The region also hosts a diverse array of **seabirds**, such as **albatrosses, petrels, and various penguin species**, which rely on the abundant marine life.



World's Strongest Current!

The **Antarctic Circumpolar Current** is a giant, powerful ocean current that flows clockwise around Antarctica. It keeps cold water separate from the warmer oceans to the north. Because of this unique current and its distinct ecosystem, scientists officially recognize the Southern Ocean as a separate, **fifth ocean**.

Science & Research: The Southern Ocean is a key area for scientific research because of its role in **global climate, ocean currents, and ecosystems**. Research in this remote region helps predict how environmental changes will affect oceans and wildlife worldwide.

Conservation Issue:

One issue in the Southern Ocean is the **over harvesting** of krill. Krill is a **keystone species** in the Antarctic food web but it is being harvested heavily for use in fish meal, supplements, and other products.