



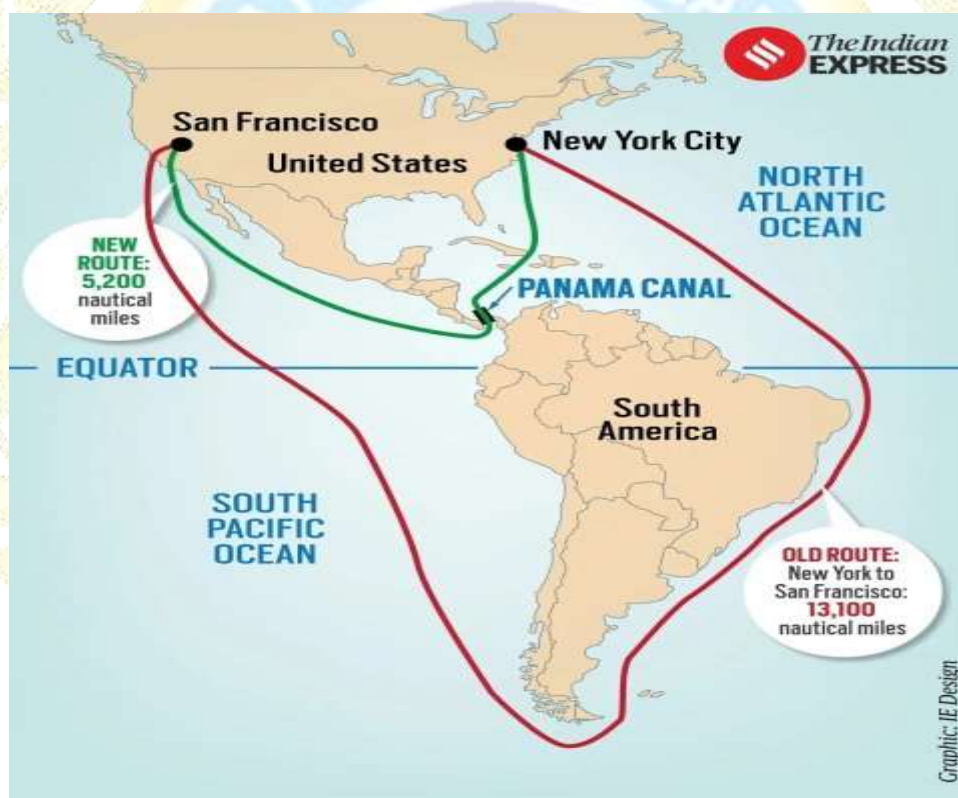
PANAMA CANAL – GEOGRAPHY

NEWS: The administrator of the Panama Canal, firmly rejected President-elect Donald Trump's claims that the United States should take control of the canal.

WHAT'S IN THE NEWS?

Panama Canal Under Panamanian Control

1. **Rejection of U.S. Takeover Claims:** Vásquez emphasized that the canal will remain under Panamanian control and continue operating as a neutral and open waterway for global commerce, warning that any deviation from these principles would lead to “chaos.”
2. **Trump's Statements on Fees and Control:** President-elect Donald Trump referred to the fees for transiting the canal as “ridiculous” and suggested that the U.S. should reclaim control of it. He even implied that military force could be an option to achieve this goal, sparking controversy.



Importance and Operation of the Panama Canal

1. **Strategic Importance:** The Panama Canal, completed in 1914, is one of the world's most strategically important artificial waterways. It connects the Atlantic and Pacific Oceans, drastically reducing the travel distance for ships moving between the U.S. east and west coasts by approximately 8,000 nautical miles. It eliminates the need for the dangerous and lengthy route around Cape Horn at the southern tip of South America.



2. **Engineering Design:** The canal is more than just a waterway—it is a sophisticated system incorporating locks and elevators to raise and lower ships as they traverse the canal. This complex design is necessary because the Pacific Ocean is slightly higher than the Atlantic, and the canal must accommodate this elevation difference.
3. **Freshwater Dependency:** The operation of the locks requires immense quantities of freshwater, primarily supplied by Lake Gatun. This water flows through the locks using gravity, as no pumps are needed to facilitate the process.

Historical Evolution of the Panama Canal

1. **Early Importance of the Port of Panama:** During the 16th and 17th centuries, the Port of Panama was an essential hub for exporting goods like silver, slaves, and textiles. In modern times, the focus has shifted to trading oil, vehicles, and industrial products, with the Panama Canal playing a central role in global connectivity.
2. **Panama Railroad and French Efforts:** The construction of the Panama Railroad in the 1850s by the United States was an early attempt to enhance connectivity across the Isthmus of Panama. In the 1880s, the French tried to build a canal but failed due to engineering challenges and financial mismanagement.
3. **Role of the U.S. in Canal Construction:** U.S. President Theodore Roosevelt made the construction of the canal a top priority in the early 20th century. At the time, Panama was still a part of Colombia, and tensions between the two countries escalated, culminating in Panama's independence with U.S. backing.
4. **Hay-Herrán Treaty and Panama's Independence:** The U.S. initially signed the Hay-Herrán Treaty with Colombia to gain the right to construct the canal, but the Colombian Congress rejected it. Following this, a U.S.-supported separatist movement in Panama declared independence on November 3, 1903, and quickly signed a treaty with the U.S., granting control of a 10-mile-wide canal zone.
5. **Completion and Costs:** The Panama Canal was completed in 1914, marking a monumental engineering achievement. However, the construction came at a high human and financial cost. Thousands of workers lost their lives due to disease and harsh conditions, and the total cost of the project reached \$326 million—double the original estimate of \$144 million.

Transfer of Canal Control to Panama

1. **Contention Over Control:** Since the canal's opening, its governance has been a source of contention between Panama and the United States. This tension was highlighted by riots in 1964, during which Panamanians demanded greater sovereignty over the canal zone.
2. **Torrijos-Carter Treaties (1977):** In 1977, Panamanian leader Omar Torrijos and U.S. President Jimmy Carter signed the Torrijos-Carter Treaties. These treaties granted the U.S.



authority to defend the canal militarily but also set a timeline for transferring control of the canal to Panama. The canal zone ceased to exist on October 1, 1979, and full control was handed over to Panama on December 31, 1999.

Suez Canal: A Comparative Perspective

1. **Overview:** The Suez Canal, a 193-km-long artificial waterway, connects the Red Sea to the Mediterranean through the Isthmus of Suez. Opened in 1869, it significantly shortened the maritime route between Asia and Europe by up to 7,000 km, eliminating the need to travel around the southern tip of Africa.
2. **Global Trade Significance:** Today, the Suez Canal is one of the world's busiest waterways, handling approximately 12% of global trade. It serves as a crucial link between the Indian Ocean and the Atlantic Ocean.
3. **Challenges and Vulnerabilities:** Despite periodic expansions to widen and deepen the canal, it remains the world's largest shipping bottleneck, often causing delays. For example, the Ever Given cargo ship became lodged in the canal in March 2021, blocking passage for more than a week and disrupting global supply chains.
4. **Historical Conflicts:** The Suez Canal has also been a focal point of geopolitical tensions, particularly during the Arab-Israeli wars in 1967 and 1973. It was closed from 1967 to 1975 due to the conflicts, further highlighting its strategic importance.
5. **Economic Importance to Egypt:** The canal is a critical source of revenue for Egypt, generating toll income and boosting the local economy through related industries.

What is the Impact of Climate Change on the Panama Canal?

- **Drought and Reduced Passage of Ships:** The Panama Canal is experiencing a prolonged **drought** that began in early 2023.
 - Rainfall in October 2023 was **43% below average**, making it the driest October since the 1950s.
 - Traffic through the canal dropped to as low as **22 ships per day in December 2023**, down from the usual **36 to 38 ships**, due to low water levels in Lake Gatun.
- **Restriction on Size of Ships:** Lower water levels restrict the size of ships that can pass through the canal, as larger, heavier vessels are at higher risk of **running aground** in shallower waters.
 - Large ships also require more lake water to lift them in the locks.
- **Effect on Global Trade:** The Panama Canal accounts for **5% of global shipping**, so disruptions here affect the worldwide supply chain, resulting in delayed shipments, more fuel usage, and **GDP losses**.



- Ships are forced to take the long way around i.e., travelling down to the southern points of South America.

Isthmus of Panama

- An isthmus is a **narrow strip of land** that **connects two larger landmasses** and **separates two bodies of water**.
 - They are natural sites for **ports and canals** linking terrestrial and aquatic trade routes.
- The Isthmus of Panama **links** the continents of **North and South America**, and **separates the Pacific and Atlantic Oceans**.
- It was formed when the **Caribbean tectonic plate** got pushed between the **North and South American Plates**. The resultant tectonic activity **raised** the seafloor.

Note:

- A **strait** is a **narrow waterway between two pieces of land** that connects two large bodies of water e.g., **Strait of Gibraltar** links the **Mediterranean Sea** and the **Atlantic Ocean**.
- **Straits are important transportation routes** since they allow ships to pass from one body of water to another.

What are other Important Canals Around the World?

- **Kiel Canal:** It connects the **Baltic Sea with the North Sea**. Opened in 1895, the 98 km-long Kiel Canal helps vessels bypass the longer route that goes via **Denmark (peninsula of Jutland)**.
- **Corinth Canal:** The Corinth Canal in **Greece** is considered the **world's narrowest canal**. It connects the **Corinthian Gulf** of the Ionian Sea and the **Saronic Gulf** of the Aegean Sea.
- **Kra Isthmus Canal (Thai Canal):** It is a **proposed canal** that would connect the **Andaman Sea to the Gulf of Thailand** across the Kra Isthmus in southern Thailand.
 - The canal would provide a **shortcut** to routes between India and China, **avoiding the Strait of Malacca**.
- **Great Lakes Seaway Navigation System:** In the United States, the five **Great Lakes**, their connecting channels, and the **St. Lawrence River** forms one of the longest navigation systems in the world. The waterway flows from west to east and drains into the **Atlantic Ocean via the St. Lawrence River**.

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