Geographical Aspects of Pacific Ocean

Course on World Geography for CSE Prelims & Mains

Tarun Goyal • Lesson 5 • June 22, 2021

ASIA



by **Tarun Goyal**

NORTH AMERICA



by **Tarun Goyal**


North Pole
Greenland Ice Sheet
Rivers/Watersheds:
1 Yukon
2 Churchill
3 Mississippi
4 Ohio
5 Missouri
6 Colorado
7 Rio Grande
8 Snake/Columbia
Alaska Range
Rocky Mountains
Canadian Shield
Great Lakes
Cascade Mountains
Great Basin Desert
Great Plains
Appalachian Mountains
North America
Sierra Nevadas
Sonoran & Chihuahuan Deserts
Sierra Madres Oriental
Sierra Madres Occidental
Sierra Maestra
Tropic of Cancer
Tour the Continents with Professor Dave • www.kidlearnonline.org
Legend:
Active Volcanic Region
Ice Sheet
River/ Watershed
Appalachian Mountains
American Cordillera Mountain Ranges
Great Plains
Canadian Shield
Desert
Great Lakes

- North America is a continent entirely within the Northern Hemisphere and almost all within the Western Hemisphere. It can also be considered a northern subcontinent of the Americas.
- It is bordered to the north by the Arctic Ocean, to the east by the Atlantic Ocean, to the west and south by the Pacific Ocean, and to the southeast by South America and the Caribbean Sea.
- North America is the third largest continent by area (covers an area of nearly 24 million sq. km), following Asia and Africa, and the fourth by population after Asia, Africa, and Europe.
- From south to north, it extends from 7°N to 85°N latitude and east to west from 20°W to 179° W.
- In other words, its northern boundary is only about 500 km away from the North Pole and its western boundary only 10 km away from the International Date Line.
- There are five time zones in US.
- The Tropic of Cancer and the Arctic Circle passes through the continent and the 100°W longitude cuts through the center of the continent.


Greenland Sea
Denmark Strait
Iceland
Bering Sea
Bering Strait
Cape Prince of Wales
Ellesmere Island
Nares Strait
Thule Air Base
Greenland (Denmark)
Point Barrow
Brooks Range
Beaufort Sea
M'Clure Strait
Queen Elizabeth Islands
Baffin Bay
Davis Strait
Mount Denali (6190 m) (Mount McKinley)
Yukon R.
Banks Island
Murchison Promontory
Baffin Island
Nuuk
ALEUTION ISLANDS
Alaska Range
Victoria Island
Anchorage
Mackenzie Mts.
Mackenzie R.
Great Bear Lake
Labrador Sea
Gulf of Alaska
Hudson Strait
Great Slave Lake
Coast Range
ROCKIES
Slave R.
Hudson Bay
Cape St. Charles
Strait of Belle Isle
L. Athabasca
Labrador Peninsula
La Grande R.
Laurentian Mountains
Cape Spear
Newfoundland
Grand Banks
Gulf of St. Lawrence
Fraser R.
Strait of Georgia
L. Winnipeg
Cobot Strait
Strait of Juan de Fuca
GREAT PLAINS
St. Lawrence River
Colombia R.
Mt. St. Helens
L. Superior
Bay of Fundy
Nova Scotia
Cascade Range
Yellowstone National Park
Mississippi R.
L. Huron
L. Ontario
Hudson R.
L. Michigan
L. Erie
Niagara Falls
Great Salt Lake


Salt Lake
Great Basin Desert
Colorado R.
Grand Canyon
Mojave Desert
Death Valley
Sierra Nevada
ROCKIES
Missouri R.
Ohio R.
Tennessee R.
Appalachians
Arkansas R.
Mississippi R.
Cape Hatteras
Bermuda (UK)
Sargasso Sea
Turks & Caicos Islands (UK)
Puerto Rico (US)
Dominican Republic
The Bahamas
LESSER ANTILLES
Sonoran Desert
Chihuahuan Desert
Sierra Madre Occidental
Sierra Madre Oriental
Rio Grande R.
Gulf of California
Gulf of Mexico
Florida Strait
Cuba
Haiti
Chicxulub crater
Yucatán Channel
Yucatán Peninsula
GREATER ANTILLES
Guantanamo Bay
Leeward Antilles
Caribbean Sea
Isthmus of Panama
Gulf of Panama
Punta Mariato


GREENLAND
(DENMARK)
ALASKA
(U.S.)
CANADA
UNITED STATES
MEXICO
BAHAMAS
CUBA
HAITI
DOMINICA
JAMAICA
BELIZE
GUATEMALA
HONDURAS
EL SALVADOR
NICARAGUA
COSTA RICA
PANAMA
VENEZUELA
COLOMBIA
MAP OF
NORTH AMERICA
WWW.FREEWORLDMAPS.NET

A
Antigua and Barbuda

B
Bahamas
Barbados
Belize

C
Canada
Costa Rica
Cuba

D
Dominica
Dominican Republic

E
El Salvador

G
Grenada
Guatemala

H
Haiti
Honduras

J
Jamaica

M
Mexico

N
Nicaragua

P
Panama

S
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines

T
Trinidad and Tobago

U
United States of America (USA)

List of dependent territories of North America in alphabetical order

A
Anguilla *(UK)*
Aruba *(Netherlands)*

B
Bermuda *(UK)*
Bonaire *(Netherlands)*
British Virgin Islands *(UK)*

C
Cayman Islands *(UK)*
Clipperton Island *(France)*
Curacao *(Netherlands)*

G
Greenland *(Denmark)*
Guadeloupe *(France)*

M
Martinique *(France)*
Montserrat *(UK)*

N
Navassa Island *(USA)*

P
Puerto Rico *(USA)*

S
Saba *(Netherlands)*
Saint Barthelemy *(France)*
Saint Martin *(France)*
Saint Pierre and Miquelon *(France)*
Sint Eustatius *(Netherlands)*
Sint Maarten *(Netherlands)*

T
Turks and Caicos Islands *(UK)*

U
US Virgin Islands *(USA)*

US-Time Zones



- Total sovereign Countries : 23
- This huge landmass includes three large countries – Canada, the United States of America and Mexico, seven small states of Central America, and the islands of the West Indies.
- In the decreasing order of population: Mexico City, New York City, Los Angeles, Toronto & Chicago.
- **Largest Lake** : Lake Superior (world's largest freshwater lake by surface area, and the third largest freshwater lake by volume — after Lake Baikal & Lake Tanganyika)
- **Highest Mountain : Mount Denali** (Old name **Mount McKinley**) (6190 m).
- **Longest Rivers : 1. Missouri** (4087 km), **2. Mississippi** (3765 km) and **3. Yukon** (3186 km).
- The Atlantic, Pacific and Arctic Oceans surround North America in the east, west, and north respectively.
- In the north-west, the Bering Strait separates it from Asia and in the south-east, the Isthmus of Panama joins it to South America.
- North America has a smooth coastline except for the existing in the north-west.


©GraphicMaps.com
Gulf of Mexico
NORTH AMERICA
Mexico
Cayman Islands
Jamaica
Ambergris Cay
Turneffe Islands
Belize
Gulf of Honduras
Bahia Islands
Caribbean Sea
18° N
Guatemala
Honduras
15° N
Providencia Is. (Colombia)
Nicaragua
El Salvador
Gulf of Fonseca
Lake Managua
San Andres Is. (Colombia)
12° N
Maiz Islands (Nicaraqua)
Lake Nicaragua
150 mi
150 km
Pacific Ocean
Bocas del Toro (Panama)
Costa Rica
Panama Canal
Gulf of Nicaya
Mosquito Gulf
9°N
Panama
CENTRAL AMERICA
Gulf of Panama
Gulf of Chiriqui
Coiba Island
SOUTH AMERICA
Colombia
6°N
worldatlas
90° W
87° W
84° W
81° W
78° W


Caribbean Sea
El Porvenir
Bocas del Toro
Cristóbal
Coco Solo
Colón
PANAMÁ
Lago Gatún
Golfo de los Mosquitos
Lago Bayano
COSTA RICA
Balboa
Vacamonte
Panama Canal
Volcán Barú
David
ARCHIPIÉLAGO DE LAS PERLAS
La Palma
Isla del Rey
Yaviza
Santiago
Golfo de Chiriquí
Chitré
Gulf of Panama
Isla de Coiba
Isla de Cébaco
COLOMBIA
0 40 80 km
0 40 80 mi
NORTH PACIFIC OCEAN


Wainwright
Meade
Colville
5018 ft / 1530 m
Black Mt.
BROOKS RANGE
Point Hope
Mt. Igikpak
8275 ft / 2523 m
Kivalina
Ambler
Kobuk
Koyukuk
Kotzebue
Kotzebue Sound
Hughes
Shishmaref
Yukon
Wales
Seward Peninsula
Koyuk
Galena
Mt. Osborn
4713 ft / 1437 m
Nome
Norton Sound
Unalakleet
McGrath
Kotlik
Yukon
Kuskokwim
Red Devil
Aniak
Hooper Bay
Bethel
Baird Inlet
Tikchik Lakes
Nunivak I.
St. Lawrence I.
Bering Sea
St. Matthew I.
RUSSIA
UNITED STATES
Bering Strait
Gambell
Gulf of Anadyr'
Beringovskiy
Anadyr
Lavrentiya
Provideniya
Uelen
Enurmino
Egvekinot
Chukchi Peninsula
Mukhomornoye
Chantalskiy Khrebet Hp
6189 ft / 1887 m
Chukchi Sea
Mys Shmidta
Palyavaam

Dependent/Overseas Territories in North America

Dependent Territories of UK	Dependent Territories of France
✓ Anguilla (Lesser Antilles)	✓ Guadeloupe (Lesser Antilles)
✓ **Bermuda**	✓ Martinique (Lesser Antilles)
✓ **British Virgin Islands (Lesser Antilles)**	✓ Saint Barthélemy (near Anguilla in Lesser Antilles)
✓ **Cayman Islands (Greater Antilles)**	✓ Saint Martin (near Anguilla in Lesser Antilles)
✓ Montserrat (Lesser Antilles)	✓ **Saint Pierre and Miquelon (near Newfoundland)**
✓ **Turks and Caicos Islands (Lucayan Archipelago)**	**Dependent Territories of Netherlands**
Dependent Territories of US	✓ **Caribbean Netherlands (Leeward Antilles)**
✓ **Puerto Rico (Greater Antilles)**	✓ Sint Maarten (near Anguilla in Lesser Antilles)
✓ **United States Virgin Islands (Lesser Antilles)**	**Others: Greenland (Kingdom of Denmark)**

About **Canada**

Has ten provinces and is world's second-largest country by total area. By land area alone, however, Canada ranks fourth, due to having the world's largest proportion of fresh water lakes. It has the world's longest coastline of 243,042 km. Its southern and western border with US, stretching 8,891 km, is the world's longest bi-national land border. Canada is also home to the world's northernmost settlement, Canadian Forces Station Alert, on the northern tip of Ellesmere Island — latitude 82.5°N —which lies 817 km from the North Pole.

Canada has over 2,000,000 lakes — 563 of which are greater than 100 sq. km — containing much of the world's fresh water.

Boreal forests prevail throughout the country, ice is prominent in northern Arctic regions and through the Rocky Mountains, and the relatively flat Canadian Prairies in the S.W. facilitate productive agriculture.

The boreal forest of Canada is considered to be the largest intact forest on Earth, with 42 percent of its land area covered by forests (approx 8% of the world's forested land).

The Great Lakes feed the St. Lawrence River (in the southeast) where the lowlands host much of Canada's economic output.

Has a flourishing paper and lumber industry. This is due to temperate forests, hydroelectricity from rivers and labor. It also has the second largest uranium reserve (after Kazakhstan).

Canada is the world‘s largest producer of potash, and is one of the world‘s top 5 countries for Al, diamonds, gold, cobalt, nickel, platinum group metals & uranium.

Atlantic Canada possesses vast offshore deposits of natural gas, and Alberta also hosts large oil and gas resources. The vastness of the **Athabasca oil sands** and other assets results in Canada having a 13% share of global oil reserves, comprising the world's third-largest share after Venezuela and Saudi Arabia.

It has tundra and taiga type of climate.

Canada's capital is Ottawa, and its three largest metropolitan areas are Toronto, Montreal and Vancouver.

Regional Divisions

1. Western Region

Young mountains rise in the west. The most familiar of these mountains are probably the Rockies, North America's largest chain. They stretch from the province of British Columbia, Canada, to the US state of New Mexico.

2. Great Plains

In the middle of the continent lies the Great Plains. Deep, rich soil blankets are large areas of the plains in Canada and the United States. Grain is grown in this region called the Breadbasket of North America, feeds a large part of the world. The Great Plains are also home to rich deposits of oil and natural gas.

3. Canadian Shield

The Canadian Shield is a raised but relatively flat plateau. It is a peneplain with a number of lakes. This rocky landscape extends over eastern, central and northwestern Canada.

4. Eastern Region

This varied region includes the Appalachian Mountains and the Atlantic coastal plain. North America's older mountain ranges, including the Appalachians, rise near the east coast of the United States and Canada. These areas have been mined for rich deposits of coal and other minerals for hundreds of years.



www.freeworldmaps.net

Major Physical Divisions

- The Western Cordilleras
- The Central Lowlands
- The Eastern Highlands

1. The Western Cordilleras

- The parallel ranges of young fold mountains run from Alaska and extend into South America as the Andes.
- As they resemble **twisted cords** they are known as **Cordilleras**.
- Fold mountains are formed when tectonic plates push the Earth's crust and force it to form ridges and valleys.
- Volcanic rocks form the base of fold mountains.
- The Cordilleras are part of the Pacific Ring of Fire. Mount St. Helena is in the USA.
- The snow-covered Cordilleras act as a barrier to moisture-laden winds and cause relief rainfall.
- Some of the rivers flow westwards and some eastwards with the Cordilleras acting as the water divide between them.
- **Rocky Mountains, Alaska Range, Cascades, Sierra Nevada** and the **Sierra Madre** are the chief ranges of the Western Cordilleras.
- The **Grand Canyon** is a network of deep narrow valley cuts into the dry Colorado Plateau.
- The **Old Faithful** in **Yellowstone National Park** is a natural geyser (a hot waterspout). Once in every 90 minutes, the water from the geyser comes out roaring up to 60 meters high.


Mt McKinley
6194m
Western Cordillera
Hudson
Bay
Labrador
Sea
Gulf of
Alaska
North
Pacific
Ocean
North
Atlantic
Ocean
Gulf of Mexico
Caribbean Sea
South
Pacific
Ocean
Andes
Aconcagua
6962m

2. The Central Lowlands

- These stretch from around the Arctic shores and Hudson Bay to the Gulf of Mexico.
- They are hemmed in by the Cordilleras in the west and the highlands in the east.
- In the west, they are known as high plains because of the greater altitudes.
- In the north, they form the Canadian Shield, which is a peneplain with a number of lakes. They are large enough to be called seas. They are the five Great lakes – Superior, Michigan, Huron, Erie and Ontario.
- Great Bear Lake, Great Slave Lake, Lake Athabaska, Lake Winnipeg, Lake Reindeer and Lake Manitoba are also on the Canadian Shield.
- South of the Canadian Shield, the Central Lowlands are covered with layers of sediment brought by glaciers and rivers. It is a very fertile region.

Importance of Great Lakes Region

- Glacial lakes; **West to East ➔ Superior, Michigan, Huron, Erie & Ontario**
- **In decreasing order of surface area ➔ Superior > Huron > Michigan > Erie > Ontario**
- These lakes are a series of interconnected freshwater lakes which connect to the Atlantic Ocean through the **Saint Lawrence Seaway**. The Great Lakes are formed in a fault zone of highly deformed rocks near the Canada–US border.
- The Great Lakes are the **largest group of freshwater lakes on Earth by total area;** together they hold 1/5th of the earth surface's freshwater; Source of drinking water, irrigation, transport, sulfide and iron mining in the periphery.


Ontario
Lake Superior
St. Marys River
Georgian Bay
Minnesota
Lake Huron
Wisconsin
Michigan
Lake Ontario
New York
Niagara River
St. Clair River
Lake Michigan
Lake St. Clair
Lake Erie
Detroit River
Pennsylvania
Ohio
Illinois
Indiana

- The Lakes of the Canadian Shield are freshwater bodies.
- Lake Superior is the largest freshwater lake in the world by surface area (Lake Baikal is the largest freshwater lake by volume, containing 22–23% of the world's fresh surface water).
- Lake Superior is the second-largest lake in the world by surface area — Caspian Sea is the largest lake by surface area. It is also the deepest among the Great Lakes.
- Lake Michigan is the largest lake that is entirely within one country.
- The **Great Salt Lake** between the Rockies and the Sierra Nevada has a high salt content and is an area of Inland drainage.

Niagara Falls

- It is a group of three waterfalls situated across the border between Canada and US. The largest of the three is **Horseshoe Falls**, also known as Canadian Falls. The smaller **American Falls** and **Bridal Veil Falls** lie within the United States. The falls are located on the **Niagara River**, which drains Lake Erie into Lake Ontario.

Other Major Lakes

- **Great Salt Lake :** It is an endorheic lake in Utah. Its salinity levels are comparable to that of the Dead Sea.
- **Great Bear Lake** : It is the largest lake entirely in Canada.
- **Great Slave Lake** : It is the deepest lake in North America.


North America Lakes
Greenland Sea
ARCTIC OCEAN
Beaufort Sea
Baffin Bay
Bering Sea
Nettilling Lake
Great Bear Lake
Labrador Sea
Great Slave Lake
NORTH ATLANTIC OCEAN
Hudson Bay
Lake Athabasca
Reindeer Lake
Lake Winnipeg
NORTH PACIFIC OCEAN
Lake Manitoba
Lake Huron
Lake Superior
Lake Ontario
Lake Michigan
Great Salt Lake
Lake St. Claire
Gulf of Mexico
Caribbean Sea
Lake Nicaragua

3. The Eastern Highlands

- They are old fold mountains that stretch from the valley of River St. Lawrence to Southern USA.
- They are not high or as continuous as the Cordilleras.
- The highlands are also known as the Laurentian highlands in Canada and the Appalachians in the USA and are less than 2,000 m in height.
- Their eastern slopes facing the Atlantic Ocean are very steep causing waterfalls in the streams that flow to the coast.



In North America, the desert extends from Mexico into US and is called by different names at different places, e.g. the Great Basin, Mojave, Chihuahuan and Sonoran.

Gulfs of North America

A gulf is a portion of the ocean that penetrates into land which is very large in size, shape, and depth.

They are generally larger and more deeply indented than bays and often make excellent harbors.

Gulf of Mexico

Biggest Gulf in the world, it has a coastline of 5,000 km. It is an important economic site for three countries and surrounded by the US, Mexico and the island nation of Cuba.

Gulf of Alaska

Situated in N.W., the entire shoreline of the Gulf is a rugged combination of forest, mountain, & a number of tidewater glaciers. Alaska's largest glaciers, the Malaspina Glacier and Bering Glacier spill out onto the coastal plain along the Gulf of Alaska.

Gulf of California

It separates the Baja California Peninsula from the Mexican mainland. It has a coastline of 4,000 km. It is considered to be one of the most diversified seas on the planet and is home to more than 5,000 species of micro invertebrates.

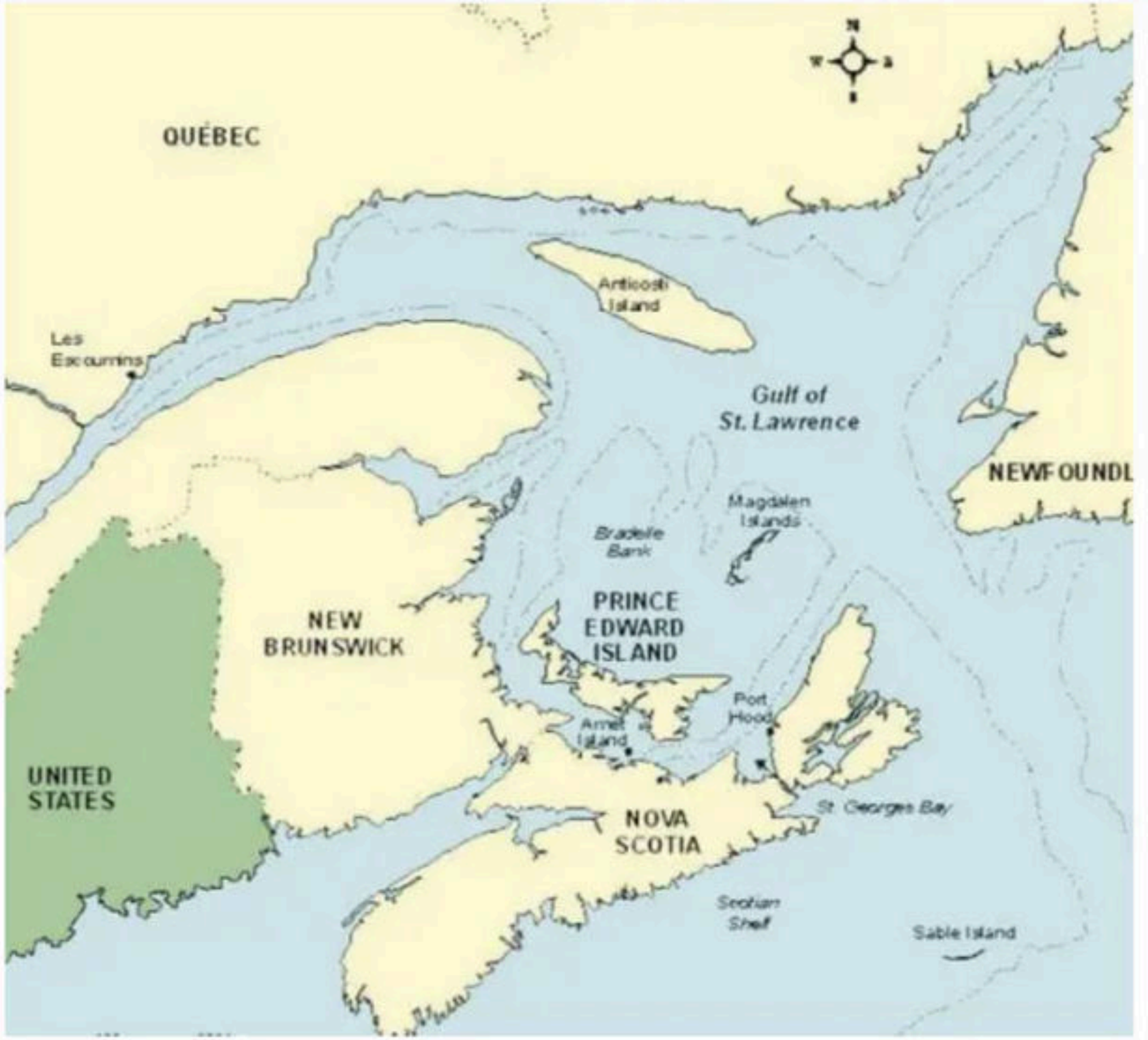
Gulf of St. Lawrence

World's largest estuary, it is a water outlet of the North American Great Lakes via Saint Lawrence river into the Atlantic Ocean.




Beaufort Sea
Chukchi Sea
RUSSIA
Bering Strait
ALASKA (U.S.)
CANADA
Anchorage
Valdez
Cordova
Kenai
Seward
Homer
Juneau
Bering Sea
Bristol Bay
Kodiak
Gulf of Alaska
Sitka
Ketchikan
Prince Rupert
Kodiak Island
Dixon Entrance
Queen Charlotte Islands
Aleutian Islands
Pacific Ocean




QUÉBEC
Anticosti Island
Les Escoumins
Gulf of St. Lawrence
NEWFOUNDL
Magdalen Islands
Bradelle Bank
NEW BRUNSWICK
PRINCE EDWARD ISLAND
Port Hood
Arisaig
St. Georges Bay
UNITED STATES
NOVA SCOTIA
Scotian Shelf
Sable Island

One of the largest-ever "**dead zones**" in the **Gulf of Mexico**

Dead zones are hypoxic (low-oxygen) areas in the world's oceans and large lakes. They can be caused by natural and by anthropogenic factors.

Natural causes include coastal upwelling and changes in wind and water circulation patterns.

Use of chemical fertilizers and runoff from sewage are considered the major human-related cause of dead zones around the world.

This can lead to increase in nutrients (particularly nitrogen and phosphorus) in the water, known as **eutrophication**.

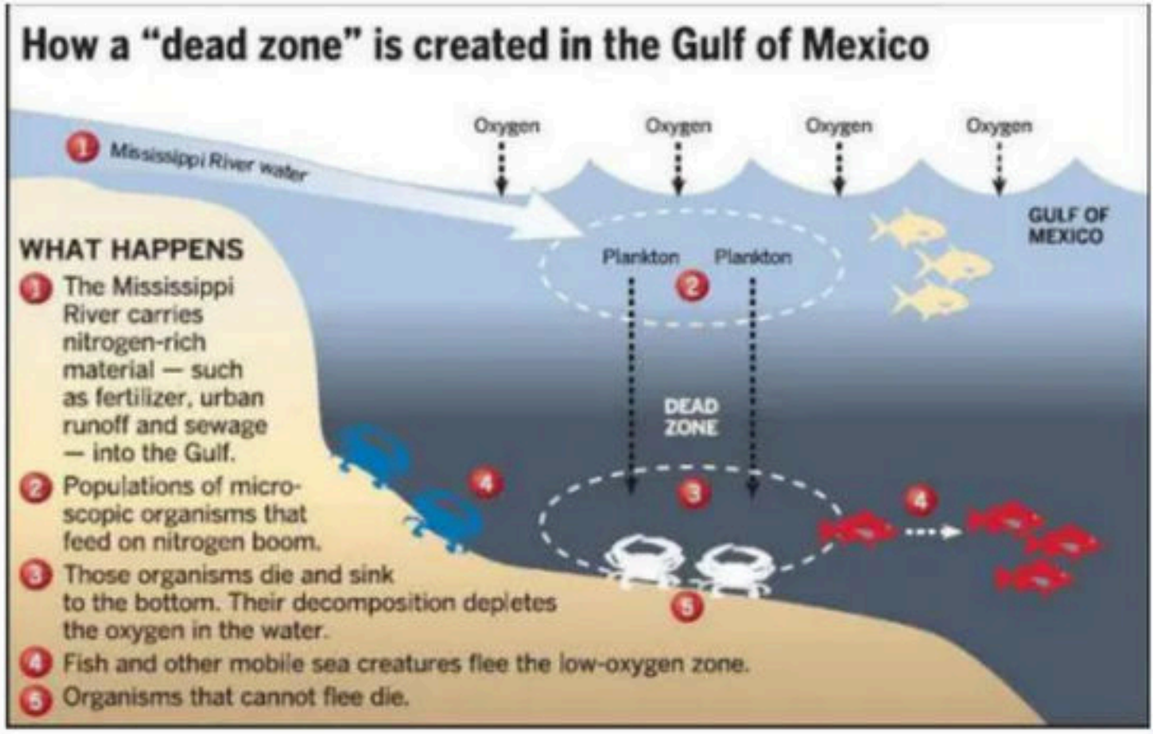
Eutrophication can lead to rapid increases in the density of certain types of phytoplankton, a phenomenon known as an **algal bloom**.

How is hypoxia created?

The major groups of algae are Cyanobacteria, green algae, Dinoflagellates, Coccolithophores and Diatom algae.

Cyanobacteria are not good food for zooplankton and fish and hence accumulate in water, die, and then decompose.

The bacterial degradation of their biomass consumes the oxygen in the water, thereby creating the state of hypoxia.



The dead zone in the Gulf of Mexico is fueled by the **nutrient-laden water spilling from the mouth of the Mississippi River.**

It blooms every summer, when warming waters accelerate the metabolisms of microorganisms, and it is expected to get even worse as the climate continues to change.


Arctic Ocean
Russia
Faroe Islands
Bering Sea
Beaufort Sea
Baffin Bay
Labrador Sea
Gulf of Alaska
Hudson Bay
North America
New York City
Atlantic Ocean
Pacific Ocean
Gulf of Mexico
Gulf of California
Mexico City
Caribbean Sea
South America


World
(Bay & Gulf)
ARCTIC OCEAN
Baffin Bay
Davis Strait
Denmark Strait
Hudson Bay
Gulf of Alaska
Gulf of St. Lawrence
NORTH PACIFIC OCEAN
NORTH ATLANTIC OCEAN
Gulf of Mexico
SOUTH PACIFIC OCEAN
SOUTHERN OCEAN
0
4,000 Miles



ISLANDS

Vancouver Island

It is situated on Canada's Pacific Coast, is known for its mild climate and thriving arts community.

It is separated from British Columbia mainland by the Strait of Georgia and Queen Charlotte Strait and from Washington by the Juan De Fuca Strait.

Greenland

- It is an autonomous territory within the Kingdom of **Denmark** (takes care of defence and foreign policy).
- Three-quarters of Greenland is covered by the only permanent ice sheet outside Antarctica.
- With a population of about 53,000, it is the least densely populated territory in the world.
- **Nuuk** is the capital and largest city of Greenland.
- The majority of its residents are **Inuit** (indigenous peoples inhabiting Greenland, Canada and Alaska).
- **Thule Air Base** in Greenland is the US Air Force's northernmost base.





Prince of Wales Island

It is one of the islands of the Alexander Archipelago in the Alaska Panhandle.

It is the fourth-largest island in the US (after Hawaii, Kodiak Island and Puerto Rico).

Hawaii Island

It is a US state in the Pacific Ocean about 3,200 km from the mainland of US. It is the only state outside mainland North America, the only state composed entirely of islands.

Hawaii is also one of a few US states to have once been an independent nation.

The Hawaiian archipelago has 137 volcanic islands spanning 2,400 km that are physiographically and ethnologically part of the Polynesian sub-region of Oceania.

The **eight main islands**, from northwest to southeast, are Niʻihau, Kauaʻi, Oʻahu, Molokaʻi, Lānaʻi, Kahoʻolawe, Maui, and Hawaiʻi, after which the state is named; it is often called the Big Island or Hawaii Island to avoid confusion with the state or archipelago.

They are the exposed peaks of a great undersea mountain range known as the **Hawaiian–Emperor seamount chain**, formed by volcanic activity over a **hotspot** in the Earth's mantle.

Hawaii island is the biggest and youngest island in the chain, built from five volcanoes.

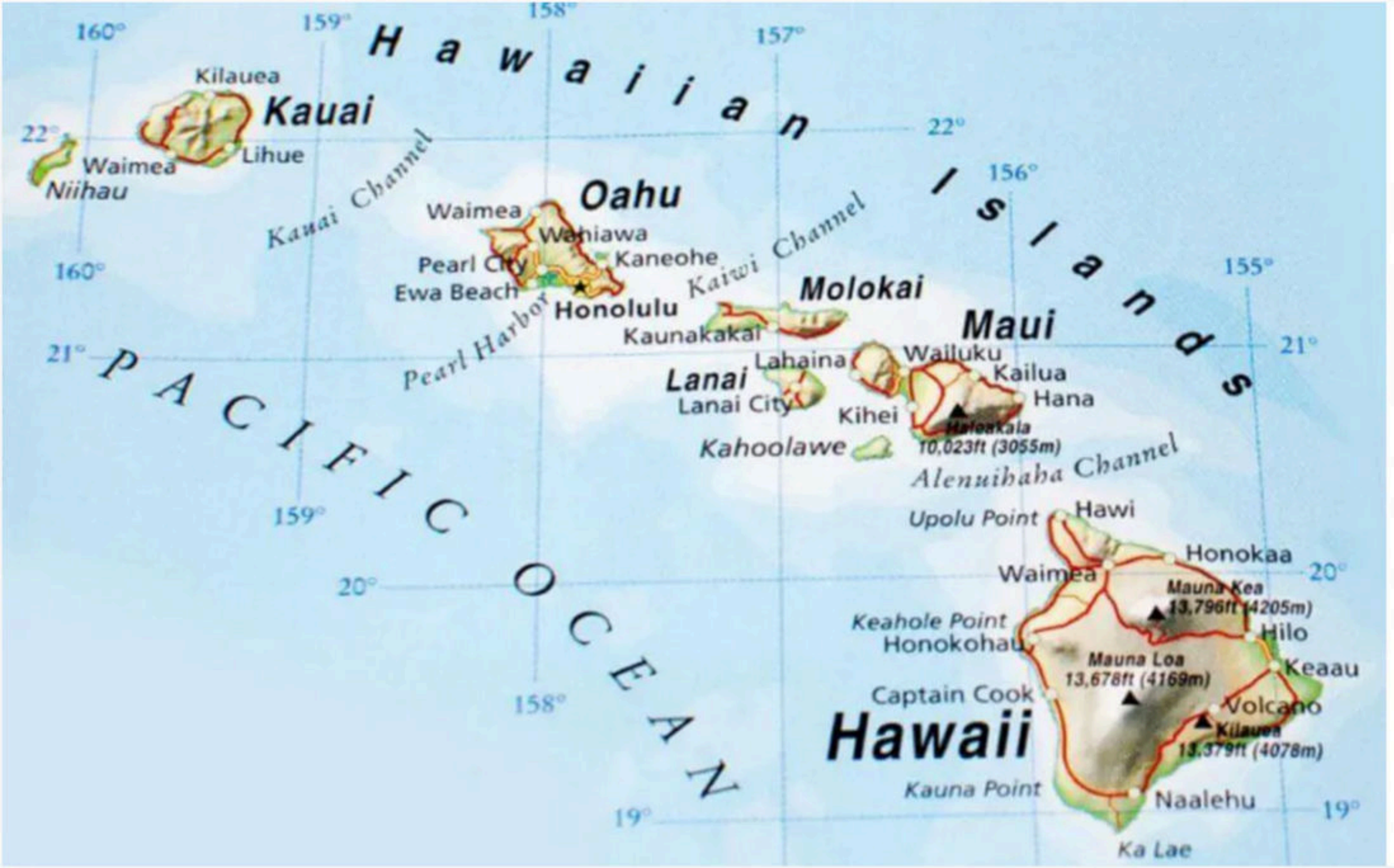
Mauna Loa, taking up over half of the Big Island, is the

The Hawaiian Islands have many earthquakes, generally caused by volcanic activity. The majority of eruptions in Hawaii are Hawaiian-type eruptions (fluid basaltic magma).

Kīlauea is the most active of the five volcanoes that together form the island of Hawaii.

Mauna Kea (4,207 m)

- It is a dormant volcano on the island of Hawaii. It is the highest point in the state of Hawaii.
- When measured from its underwater base, Mauna Kea is the tallest mountain in the world (10,200 m).
- With its high elevation, dry environment, and stable airflow, **Mauna Kea's summit is one of the best sites in the world for astronomical observation.**
- 13 telescopes funded by 11 countries have been constructed at the summit.
- Their construction on a landscape considered sacred by Native Hawaiians continues to be controversial (esp. **Thirty Meter Telescope** Project - a joint venture involving US, Japan, China, India and Canada. With its 30 m prime mirror diameter, TMT will be three times as wide, with nine times more area than the largest currently existing visible-light telescope in the world.).


Hawaiian Islands
PACIFIC OCEAN
Kauai
Kilauea
Waimea
Lihue
Niihau
Oahu
Waimea
Wahiawa
Kaneohe
Pearl City
Ewa Beach
Honolulu
Kauai Channel
Kaiwi Channel
Pearl Harbor
Molokai
Kaunakakai
Maui
Lahaina
Wailuku
Kailua
Hana
Haleakala
10,023ft (3055m)
Lanai
Lanai City
Kihei
Kahoolawe
Alenuihaha Channel
Upolu Point
Hawi
Honokaa
Waimea
Mauna Kea
13,796ft (4205m)
Keahole Point
Honokohau
Hilo
Mauna Loa
13,678ft (4169m)
Keaau
Captain Cook
Volcano
Kilauea
13,379ft (4078m)
Hawaii
Kauna Point
Naalehu
Ka Lae
160°
159°
158°
157°
156°
155°
22°
21°
20°
19°

Greater Antilles

It is a grouping of the larger islands in the Caribbean Sea, including Cuba, Hispaniola, Puerto Rico, Jamaica and the Cayman Islands. Six island states share the region of the Greater Antilles, with Haiti and the Dominican Republic sharing the island of Hispaniola.

Together with the Lesser Antilles, they make up the Antilles.

While most of the Greater Antilles consists of independent countries, Puerto Rico is an unincorporated territory of US, while the Cayman Islands are a British Overseas Territory.

The largest island by area and population is **Cuba**. Puerto Rico lies on the eastern end, and the island of Hispaniola is located in the middle. Jamaica lies to the south of Cuba, while the Cayman Islands are located to the west.

The state of Florida is the closest point in the US mainland to the Greater Antilles, while the **Florida Keys**, though not part of the Greater Antilles, is an island group north of Cuba.

Cuba is known as the sugar bowl of the world and its vast source of cobalt, nickel, iron ore, chromium, and copper.

Lesser Antilles

It is a group of islands in the Caribbean Sea. Most of them are part of a long, partially volcanic island arc between the Greater Antilles to the north-west and the continent of South America.

The islands of the Lesser Antilles form the eastern boundary of the Caribbean Sea where it meets the Atlantic Ocean. The Lesser & Greater Antilles, together with Lucayan or Bahama Archipelago, are collectively known as **West Indies**.

Countries (Capital) : Antigua and Barbuda (St. John's), Barbados (Bridgetown), Dominica (Roseau), Grenada (St. George's), Saint Kitts and Nevis (Basseterre and Charlestown), Saint Lucia (Castries), Saint Vincent and the Grenadines (Kingstown) and Trinidad and Tobago (Port of Spain and Scarborough).


©GraphicMaps.com
CARIBBEAN
worldatlas
Gulf of Mexico
Florida (U.S.)
Miami
Key West
Bahamas
Bermuda
70° W
60° W
25°N
TROPIC OF CANCER
Atlantic Ocean
Cuba
Isla Mujeres
Mexico
Cancun
Cozumel
Isle of Youth (Cuba)
Turks & Caicos (U.K.)
Caribbean Sea
Greater Antilles
HISPANIOLA
Haiti
Dominican Rep.
Jamaica
Cayman Islands (U.K.)
Turneffe Islands (Belize)
Islas de la Bahia (Hon.)
Belize
Honduras
Virgin Islands (U.K.)
Puerto Rico (U.S.)
Saba (Neth.)
Anguilla (U.K.)
St. Martin/Sint Maarten
St. Barts (France)
Antigua and Barbuda
Virgin Islands (U.S.)
St. Eustatius (Neth.)
Guadeloupe (France)
St. Kitts and Nevis
Montserrat (U.K.)
Dominica
20°N
15°N
Lesser Antilles
Martinique (France)
St. Lucia
St. Vincent and the Grenadines
Barbados
Grenada
Trinidad and Tobago
10°N
Isla de Providencia (Col.)
300 mi
300 km
CENTRAL AMERICA
Isla de San Andres (Col.)
Nicaragua
Costa Rica
80° W
Netherlands Antilles
Aruba
Bonaire
Curacao
Isla Los Roques (Ven.)
Venezuela
Isla La Tortuga (Ven.)
Isla de Margarita (Ven.)
PANAMA CANAL
Panama
Colombia
Pacific Ocean
Atlantic Ocean
SOUTH AMERICA
©GraphicMaps.com

Canadian Arctic Archipelago

- The Arctic Archipelago is a group of all islands lying to the north of the Canadian continental mainland excluding Greenland (an autonomous territory of Denmark).
- **Baffin Island** is the largest island of Canada and the world's 5th largest island.
- **Victoria Island** is the world's 8th largest island.
- **Ellesmere Island** is the world's 10th largest island.





Bermuda Island

It is the territory of the British Islands in North Atlantic and famous for its pink sand beaches such as Elbow and Horseshoe Bay.


©GraphicMaps.com
Arctic Ocean
(Russia)
ASIA
Beaufort Sea
Baffin Bay
Greenland (Denmark)
Yukon
Mackenzie
Fraser
Hudson Bay
Labrador Sea
Gulf of Alaska
Churchill
Bering Sea
Columbia
Great Lakes
St Lawrence
Missouri
Mississippi
Pacific Ocean
Ohio
Colorado
Atlantic Ocean
U.S.A.
Brazos
Rio Grande
600 mi
600 km
Gulf of Mexico
Mexico

Drainage Pattern & System

There are many rivers in North America. These can be grouped according to the seas they drain into :

1. The rivers draining into the Gulf of Mexico : These are the Mississippi, Missouri and their tributaries drain the whole of the lower Central Lowlands. They start from the Western Cordilleras.

2. Rivers draining into the Atlantic Ocean : River St. Lawrence is the large river of this group.

3. Arctic Ocean drainage : River Mackenzie, which has many shallow lakes on the Canadian Shield. River Nelson flows into the Hudson Bay.

4. Pacific Ocean Drainage : River Yukon in Alaska, Columbia, Fraser and Colorado along the west coast. The Colorado River cuts across the Colorado plateau and forms the world's most famous and attractive deep gorges, known as Grand Canyon having nearly one km depth. Other rivers are the Snake, the Humboldt, the Sacramento, the San Joaquin, etc.

Important Rivers

- **Missouri** (4087 km) : Longest river in North America. Source: Rocky Mountains. Joins Mississippi near St. Louis (in Missouri).
- **Mississippi** (3765 km) : Source: Lake Itasca in northern Minnesota. Mouth: Mississippi River Delta in the Gulf of Mexico.
- **Yukon** (3186 km) : Longest river in Alaska.
- **Rio Grande** (3051 km) : Longest river of Mexico.
- **St. Lawrence :** The Saint Lawrence Seaway is a system of locks, canals, and that permits vessels to travel between the Atlantic Ocean and the Great Lakes. The seaway is named for the Saint Lawrence River, which flows from Lake Ontario to the Atlantic Ocean.

Seas in North America

Caribbean Sea

It is a sub-oceanic basin bordered by coasts of Venezuela, Colombia and Panama; to the west by Costa Rica, Nicaragua, Honduras, Guatemala, Belize, and the Yucatán Peninsula of Mexico; to the north by the Greater Antilles islands of Cuba, Hispaniola, Jamaica, and Puerto Rico; and to the east by the north-south chain of the Lesser Antilles, consisting of the island arc that extends from the Virgin Islands in the northeast to Trinidad.


Arctic Ocean
Russian Federation
ASIA
75° N
Beaufort Sea
Greenland (Denmark)
ARCTIC CIRCLE
60° N
Hudson Bay
Labrador Sea
Gulf of Alaska
Bering Sea
Canada
45° W
Great Lakes
150° W
45° N
Pacific Ocean
United States of America
Atlantic Ocean
600 mi
600 km
Bermuda (U.K.)
30° N
75° W
60° W
Gulf of Mexico
Bahamas
Mexico
TROPIC OF CANCER
CARIBBEAN
NORTH AMERICA
Cuba
Dominican Rep.
Jamaica
Belize
Caribbean Sea
Puerto Rico
15° N
Guatemala
El Salvador
Honduras
Nicaragua
Trinidad
Pacific Ocean
CENTRAL AMERICA
Venezuela
Costa Rica
Panama
Colombia
SOUTH AMERICA
135° W
120° W
105° W
90° W

Beaufort Sea

It is situated in the north of Canada and Alaska is known to be the marginal sea of Arctic Ocean.

Hudson Bay

It is known as the second largest bay in the world.

Labrador Sea

It is bordered by continental shelves and separates Canada from Greenland.

Bering Sea

It is situated on the extreme North of North America separating the continents of Asia and North America.

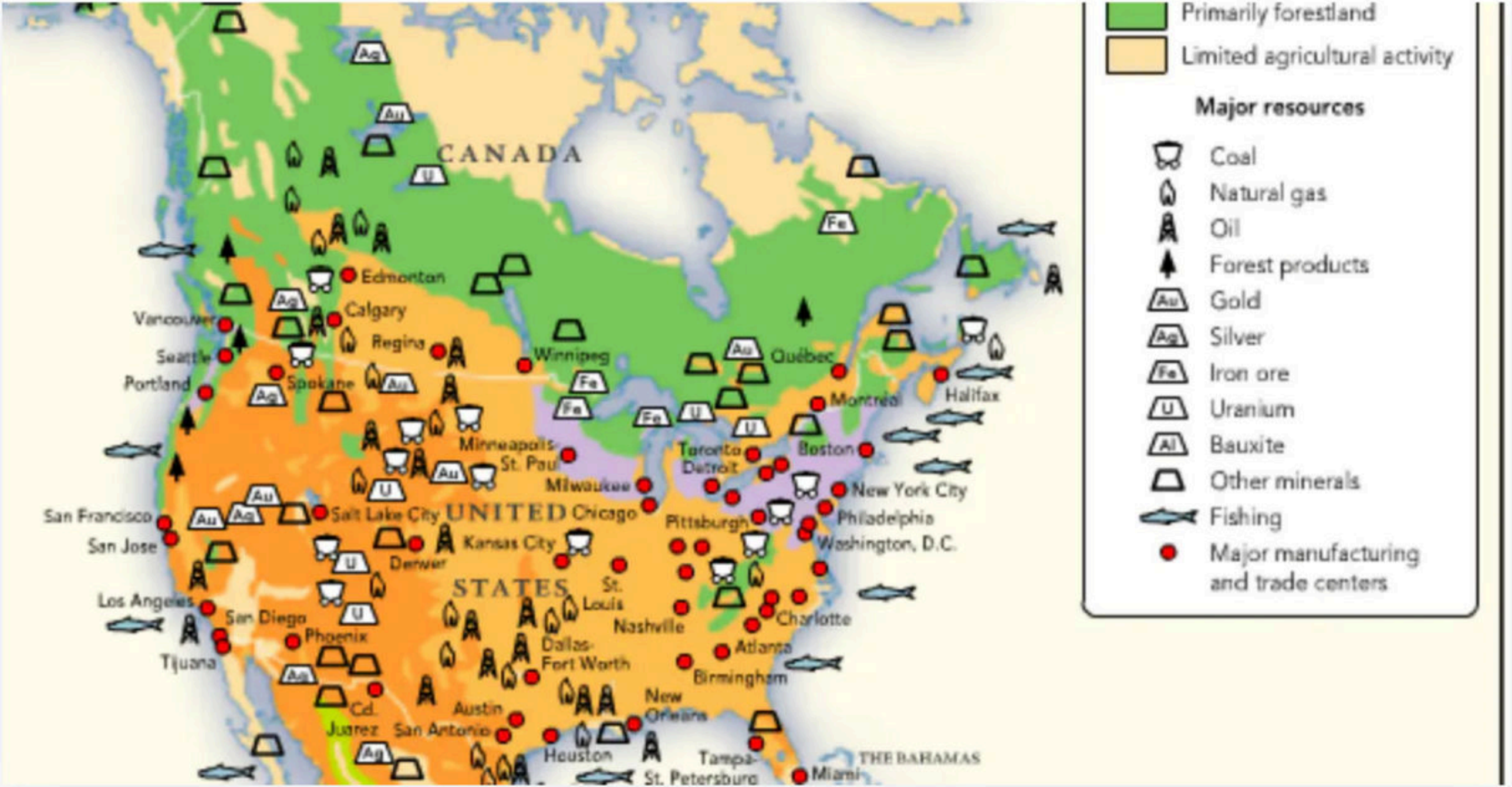
Inland Drainage System

The **Great Basin** area in the Rocky Mountains (Middle) has rivers which do not reach the coast, but terminate in the land. This is the Inland Drainage System.

The rivers are small, seasonal and end up in saline lakes.


GREAT BASIN
Modern international boundaries
Modern state/province boundaries
SHOSHONE
PAIUTE
BANNOCK
SHOSHONE
SHOSHONE
WASHOE
GOSIUTE
UTE
MONO
PAIUTE
PACIFIC OCEAN
UNITED STATES
MEXICO

Resources

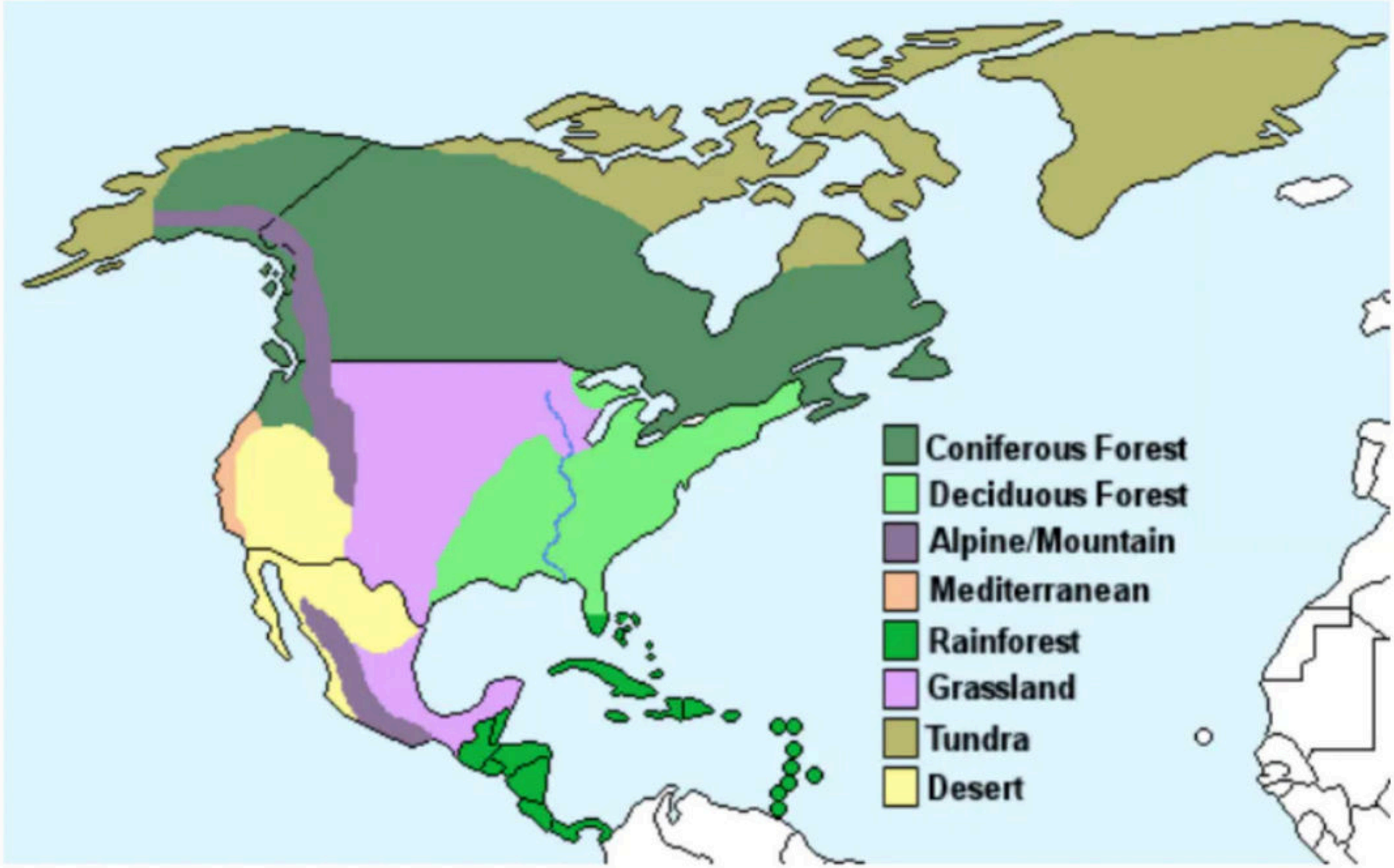

Primarily forestland
Limited agricultural activity
Major resources
Coal
Natural gas
Oil
Forest products
Gold
Silver
Iron ore
Uranium
Bauxite
Other minerals
Fishing
Major manufacturing and trade centers
CANADA
UNITED STATES
THE BAHAMAS
Edmonton
Calgary
Vancouver
Seattle
Portland
Spokane
Regina
Winnipeg
Québec
Montréal
Halifax
Minneapolis
St. Paul
Toronto
Detroit
Boston
Milwaukee
Chicago
New York City
Philadelphia
Washington, D.C.
Pittsburgh
San Francisco
San Jose
Salt Lake City
Denver
Kansas City
St. Louis
Nashville
Charlotte
Atlanta
Birmingham
Los Angeles
San Diego
Phoenix
Tijuana
Dallas-Fort Worth
Austin
San Antonio
Cd. Juarez
New Orleans
Houston
Tampa-St. Petersburg
Miami

Climatic Zones

From the freezing Arctic to the tropical jungles of Central America, **North America enjoys more climatic variation than any other continent**.

Almost every type of ecosystem is represented somewhere on the continent, from coral reefs in the Caribbean to the ice sheet in Greenland. These differences contribute to North America's variety of agricultural industries, which are often divided by climate zone:

- tropical zone,
- subtropical zone,
- cool temperate zone,
- dry zone


Coniferous Forest
Deciduous Forest
Alpine/Mountain
Mediterranean
Rainforest
Grassland
Tundra
Desert

Tropical Zone

- Farmers harvest oranges, sugar cane, coffee, cocoa and bananas. These crops grow on coastal plains and humid mountain slopes. Cotton and hemp are cultivated in the warmer and drier intermediate climate zone. These crops are important exports for Central American countries.

Sub-tropical Zone

- Fruits, vegetables, cotton, and tobacco are predominant in the warm, subtropical zones of northern Mexico and the United States.
- Important agricultural areas in this zone include the Rio Grande Valley (citrus fruits) in Texas and Mexico, California's Central Valley (fruits and vegetables), the Gulf Coastal Plain (vegetables), and the sandy valleys of the Appalachians (cotton and tobacco).
- These areas benefit from ample rain and warm air currents.

Cool Temperate Zone

- Important agricultural areas in this climate include the Finger Lakes region of New York in the U.S.; the Niagara Peninsula in the Canadian province of Ontario; the Columbia River basin in the U.S. state of Washington and the Canadian province of British Columbia; and the valleys of the Appalachians.
- These areas benefit from excellent drainage and predictable, established frosts.
- The **Dairy Belt**, **Corn Belt** and **Wheat Belt** are three agricultural areas in the continent's cool temperate zones.
    - Dairy animals, including cows, goats, and sheep, feed on the hay and hardy small grains that thrive in New England and the Great Lakes-St. Lawrence region along the Atlantic coast. This is the Dairy Belt.
    - The Corn Belt, located between the Ohio River and the lower Missouri River, receives ample water and strong summer sun, ideal for corn and soybeans.
    - West of the Corn Belt, the Wheat Belt stretches from Kansas through the Canadian Prairie Provinces of Alberta, Saskatchewan and Manitoba. This vast area of the Great Plains allows wheat to be cultivated in both winter and spring.

Dry Zone

- Dry zones, common in the southwestern U.S. and northern Mexico, are ideally suited for livestock ranching.
- Ranches with thousands of cattle are common in this region. Traditionally, livestock fed on locally grown fodder such as prairie grasses. However, irrigation for fruit and cotton farming has drained water supplies in the region.
- Native grasses cannot nourish the huge herds of livestock kept by ranchers. Cattle, sheep, hogs, and other livestock are less likely to graze than to eat corn-based feed.
- In fact, **most of the corn grown in the Corn Belt is feeder corn used for livestock feed**.

Forestry

Forestry is the management, cultivation, and harvesting of trees and other vegetation in forests. In the Pacific Northwest, for instance, logging companies harvest cedar, fir, and spruce trees.

Lumber from these trees is exported around the world for construction. Some of the continent's largest paper mills are found in these temperate rain forests. In addition to paper, paper mills produce cardboard and fiberboard.

Forestry is a major economic activity for much of North America. In the United States, the **timber industry is strong in the Pacific Northwest**, the **Gulf states**, and **South Atlantic coastal plains**.

In Canada, forestry is a major industry in the provinces of Quebec, Ontario and British Columbia.

Mining

North America is a leading producer of **coal**, used in energy production; **bauxite** used to create aluminum; **iron** and **copper**, both used in construction; and **nickel**, used to create steel, which North American companies export around the world.

Gold and silver mines operate in the western part of the continent. Visitors to **Crater of Diamonds State Park**, a mine in the US state of Arkansas, can search for their own diamonds.

Coal

- Coal remains a primary industry for the US and is often linked with states near the Appalachians.
- Coal can be mined underground or in large, open pits. Around 20% of the world's coal is mined in Pennsylvania, US.

Metallic Minerals

- Large deposits of iron ore are found in the areas around Lake Superior and the Eastern part of the Canadian shield. Iron is also found in the southern Appalachians.
- The USA is one of the largest producers of copper in the world. It is mined extensively around the Great Lakes and the Rocky Mountains.
- Mexico is the world's largest producer of silver. Large deposits of silver are found in the USA and Canada too. It is a byproduct of the Zinc industry as well. **Chihuahua** (in Mexico) is the largest silver mine in the world.
- Canada and the US produce a substantial amount of Gold which is mined in the Rocky Mountains. California and Alaska saw the **Gold rush** in the early 1900s.
- Canada produces about **90%** of the world's **Nickel**.
- Canada is also the largest producer of asbestos, zinc and platinum and the second-largest producer of cobalt, uranium and radium.
- US is one of the world's largest producer of Uranium and Sulphur.

Important Industrial Centers of North America

In US

The industrial units in USA has been broadly divided in six regions :

1. The New England Region : It comprises of six states, viz., Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire and Maine. This is the largest industrial region on earth. The major industries in this region are electrical machinery, textiles, machinery, leather, fabricated metals and other sorts of industries.

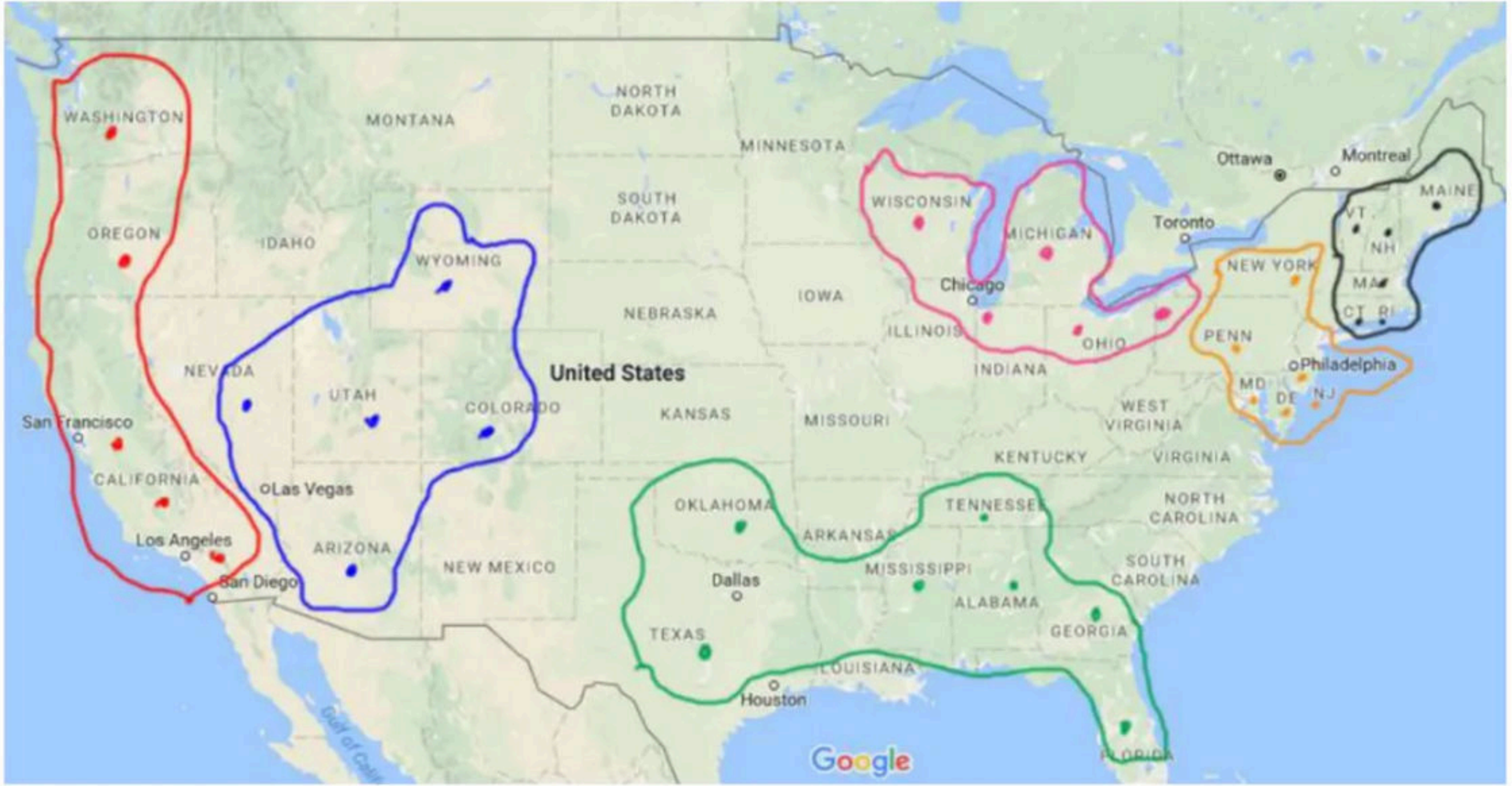
2. The New York and Mid-Atlantic Region : This region extends from New York , Baltimore, and the Middle Atlantic States of New Jersey, Pennsylvania, Maryland, Delaware, Philadelphia and Baltimore. This region is famous for steel production.

3. North-Eastern Region : It consists of places like Pittsburgh, Cleveland, Detroit, Chicago, Ohio, Michigan and Wisconsin.

4. The Southern Industrial Region : Includes places like Mississippi, Tennessee, Georgia, Florida, Alabama, Oklahoma and Texas. The major industrial product includes textiles, food and beverages, tobacco, furniture, petrochemicals, aircraft and heavy chemicals.

5. The Western Region : Comprises Wyoming, Utah, Colorado, Nevada and Arizona.

6. The Pacific Coastal Region : These are the states of Washington, Oregon, California, San Francisco and Los Angeles and to the left of it is the Pacific ocean.


WASHINGTON
OREGON
MONTANA
NORTH DAKOTA
MINNESOTA
SOUTH DAKOTA
IDAHO
WYOMING
NEBRASKA
IOWA
WISCONSIN
MICHIGAN
Chicago
Ottawa
Montreal
Toronto
MAINE
VT
NH
MA
CT
RI
NEW YORK
PENN
Philadelphia
MD
DE
NJ
ILLINOIS
INDIANA
OHIO
WEST VIRGINIA
KENTUCKY
VIRGINIA
NORTH CAROLINA
SOUTH CAROLINA
TENNESSEE
ARKANSAS
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
LOUISIANA
TEXAS
OKLAHOMA
KANSAS
MISSOURI
NEVADA
UTAH
COLORADO
ARIZONA
NEW MEXICO
United States
San Francisco
CALIFORNIA
Las Vegas
Los Angeles
San Diego
Dallas
Houston
Google

Important Industrial Cities in US

West Coast Important Cities

- **Seattle** – World's largest aircraft assembly center. Lumbering, fish canning, aluminum smelting electrical engineering are important industries.
- **San Francisco** – Known as 'The City of Golden Gate'. Famous for oil refining and ship building.
- **Los Angeles** – known for its film industry – Hollywood.

Great Lake Region

- Famous for heavy industries and iron and steel.
- **Important cities** – Chicago, Pittsburg, Cleveland, Toledo, Detroit, etc.
- **Detroit** – greatest automobile region of USA
- **Akron** – world's largest synthetic rubber and tyre making center.
- **Pittsburg** – highest production of Iron and steel

Texas

- **Houston** – Oil refinery, shipbuilding, chemical, and machinery are important industries located here.

In Canada

Canada is rich in mineral resources like iron ore, petroleum and forest resources and also has abundant hydroelectric power. Three major industrial regions of Canada are :

1. Ontario and St. Lawrence Valley : The major products are paper, cheese, flour, agricultural machinery, copper and nickel smelting, iron and steel industry and chemical industry. The major industrial centres are Quebec, Ontario, Ottawa, Toronto, Hamilton, etc.

2. Prairie Region : As far as manufacturing industry is concerned, this region is not very developed. Major centres of production are Manitoba, Winnipeg, Edmonton, Alberta, etc. Besides agro-based industries, other industries are petroleum refinery and chemical industry.

3. Pacific Coastal Region : In this region industry like paper and pulp, furniture, agricultural machinery, etc., have been developed. Major industrial centres are Vancouver and Prince Rupert.

Important Industrial Cities

- **Hamilton** – located at the head of Lake Ontario. It is known as the Birmingham of Canada. Center for iron and steel works and engineering.
- **Sudbury** – Located on the shore of Lake Huron. It is one of the most productive mining areas of Canada which yields nickel, platinum, copper, etc.
- **Arvida** – Situated on Saguenay River. It has the largest aluminum smelter in the world.
- **Sarnia** – Located on the shore of Lake Huron. It has the largest oil refinery in the world.
- **Ottawa** – Paper and pulp and sawmilling.


Canada
ALBERTA
MANITOBA
Prairie Region
SASKATCHEWAN
BRITISH COLUMBIA
e Pacific Coast
Vancouver
Edmonton
Winnipeg
ONTARIO
QUEBEC
Ontario and St. Lawrence Valley
WASHINGTON
MONTANA
NORTH DAKOTA
MINNESOTA
SOUTH DAKOTA
WISCONSIN
MICHIGAN
OREGON
IDAHO
WYOMING
IOWA
Ottawa
Montreal
Toronto
Chicago
NEW YORK
MAINE
VT
NH
MA
NB

South America



by **Tarun Goyal**


SOUTH AMERICA
Physical Map
Cape Verde Fracture
Vema Fracture
Cape Verde Basin
Guyana Basin
Coast Ranges
L. Maracaibo
Orinoca
Angel Falls
Llanos
Meta
Guaviare
Cocos Ridge
Gulf of Panama
Panama Basin
Guyana Highlands
Acaral Mts.
Mouths of the Amazon
Carnegie Ridge
Gulf of Guayaquil
Parinas Point
Cotopaxi 5897
Chimborazo 6267
Negro
Japura
Napo
Ica
Amazon
Basin
Andes
Nevado Huascaran 6310
Purus
Madeira
Tapajos
Xingu
Araguaia
Beni
Guapore
Campos Catinga
Sao Francisco
Parnaiba
C. Sao Roque
Ancohuma 6430
Illimani 6462
L. Titicaca
Nevado Sajama 6542
Bolivian Plateau
Mato Grosso Plateau
Brazilian Highlands
Iguazu Falls
Paraguay
Parana
Pilcomayo
Bermejo
Gran Chaco
Atacama Desert
S.W. Peruc of Nazca Ridge


SOUTH PACIFIC OCEAN
Chile Basin
Chile Rise
Corcovado Gulf
Atacama Desert
Andes
Patagonia
Aconcagua 6960
Gran Chaco
Cordoba Ra.
Pampas
Salado
Colorado
Negro
Chubut
Gulf of San Matias
Blanca Bay
River Plate
Parana
Uruguay
Iguazu Falls
Brazil
Gulf of San Jorge
Deseado
Chico
Strait of Megellan
Cape Horn
SOUTH ATLANTIC OCEAN
Rio Grande Rise
Argentine Basin
Scotia Ridge
Scotia Sea
HEIGHT (in Metres)
4000
2000
1000
500
200
0 (Sea Level)
DEPTH (in Metres)
0
200
3000
5000
6500
Map not to Scale

- South America is the fourth largest continent after Asia, Africa, and North America. It is two-third the size of Africa and six times the size of India.
- South America is a long triangular shaped continent.
- It stretches from 12°N to 55°S latitude. Because of its tapering shape, a major part of the landmass is in the tropics.
- The Equator passes through the northern part of the continent and the Tropic of Capricorn runs roughly through the middle.
- South America lies on the west of the Prime Meridian. So the time at any place on this continent will be some hours less than or behind the Greenwich Mean Time.
- The 60° meridian divides the continent lengthwise into two halves. It is more to the east compared to North America and is, therefore, closer to Europe and Africa.
- **Point Gallinas** in Colombia is the northernmost point of mainland South America. **Cape Horn** (Chile) : Southernmost.
- The coastline of South America is smooth with very few inlets except in the extreme south-west where there are fjords and many small islands.
- The Galapagos Islands near the Equator and the Juan Fernandez Islands near Central Chile are in the Pacific Ocean.

- The Tierra del Fuego is in the Southern Ocean and the Falkland Islands in the South Atlantic Ocean. The island of Trinidad is near Venezuela in the North Atlantic Ocean.
- The Andes is the longest mountain range in the world. South America's three southern countries – Argentina, Chile, and Uruguay – constitute a region sometimes referred to as the **Southern Cone** because of its pointed, ice cream-cone-like shaped.
- **Landlocked Countries** – Paraguay and Bolivia.
- La Paz, the capital of Bolivia, is the highest capital city in the world (3,500 m).
- **Machu Picchu** is a 15th-century Inca citadel, located in the Eastern Cordillera (a branch of Andes) of southern Peru. It is UNESCO World Heritage Site and is one of the New Seven Wonders of the World.





South America includes **12 countries**:

1. Argentina	2. Bolivia	3. Brazil
4. Chile	5. Colombia	6. Ecuador
7. Guyana	8. Paraguay	9. Peru
10. Suriname	11. Uruguay	12. Venezuela

Others

1. Falkland Islands (United Kingdom) i.e. (British Overseas Territories) and
2. French Guiana (France)

Drake Passage

It is the body of water between Cape Horn, Chile & the South Shetland Islands of Antarctica. It is the narrowest passage around Antarctica.

It connects the southwestern part of the Atlantic Ocean (Scotia Sea) with the southeastern part of the Pacific Ocean and extends into the Southern Ocean.

It is considered one of the most treacherous voyages for ships to make. Currents at its latitude meet no resistance from any landmass, and waves top 40 feet, hence its reputation as "the most powerful convergence of seas".

Navigation through this Passage is dangerous because of its violent cold gusts of westerlies and icebergs.

In 2019, a group of men become the first to traverse the infamous Drake Passage without outside assistance.



Puerto Williams, Chile

- It has become the world's southernmost city after its status was upgraded to a city.
- It took over the title from Ushuaia in Argentina, which was world's southernmost city till recently.

Ushuaia is located on northern bank of the Beagle Channel.

Beagle Channel is a strait in Tierra del Fuego Archipelago on the extreme southern tip of South America between Chile and Argentina.





Major Physical Divisions of South America

- The Pacific coastal strip
- Mountain Ranges
- The Central Lowlands
- The Eastern Highlands

1. The Pacific Coastal Strip

- It lies in the west, between the ocean and the Andes. It is the longest coastal plain in the Atlantic world.
- In most places, it is about 80 km wide but in some, it is as narrow as 8 meters. The coastline of South America is smooth and regular. At the river mouths, there are inlets that are used as harbors.
- The S.W. coast of the continent has fjords or deep inlets of the sea.

2. Andes Mountains

- Part of seven countries: Venezuela, Colombia, Ecuador, Bolivia, Peru, Chile, Argentina.
- Forms the second-highest mountain systems in the world and is next to the Himalayas.
- **Mt. Aconcagua** (6,962 m; straddles the Argentina-Chile border; highest mountain of Andes – **highest mountain in the Americas and the highest outside of Asia**) is an extinct volcano lies in Argentina.
- **Mt. Ojos del Salado** (in Argentina on Chile border) is the highest active (strato) volcano (6,893 m) in the world. It is the second highest mountain in both the Western Hemisphere and the Southern Hemisphere.
- The Andes stretches through the entire continent, running in the north-south direction from Isthmus of Panama to Strait of Magellan.
- They are the continuous range of folded mountain systems that cover the entire western coast of South America.
- The Andes is the **longest mountain range** in the world. They form a chain of ranges and knots with enclosed intermontane plateaus namely in Ecuador and Bolivia.
- Being part of the Pacific Ring of Fire, there are many volcanoes and frequent earthquakes in this region. E.g. : **Mount Cotopaxi** and **Mount Chimborazo** (active volcanic peaks).


COLOMBIA
Quito
Cayambe
Pichincha
Reventador
Pasochoa
Cotopaxi
Chimborazo
ECUADOR
PERU
Map Area

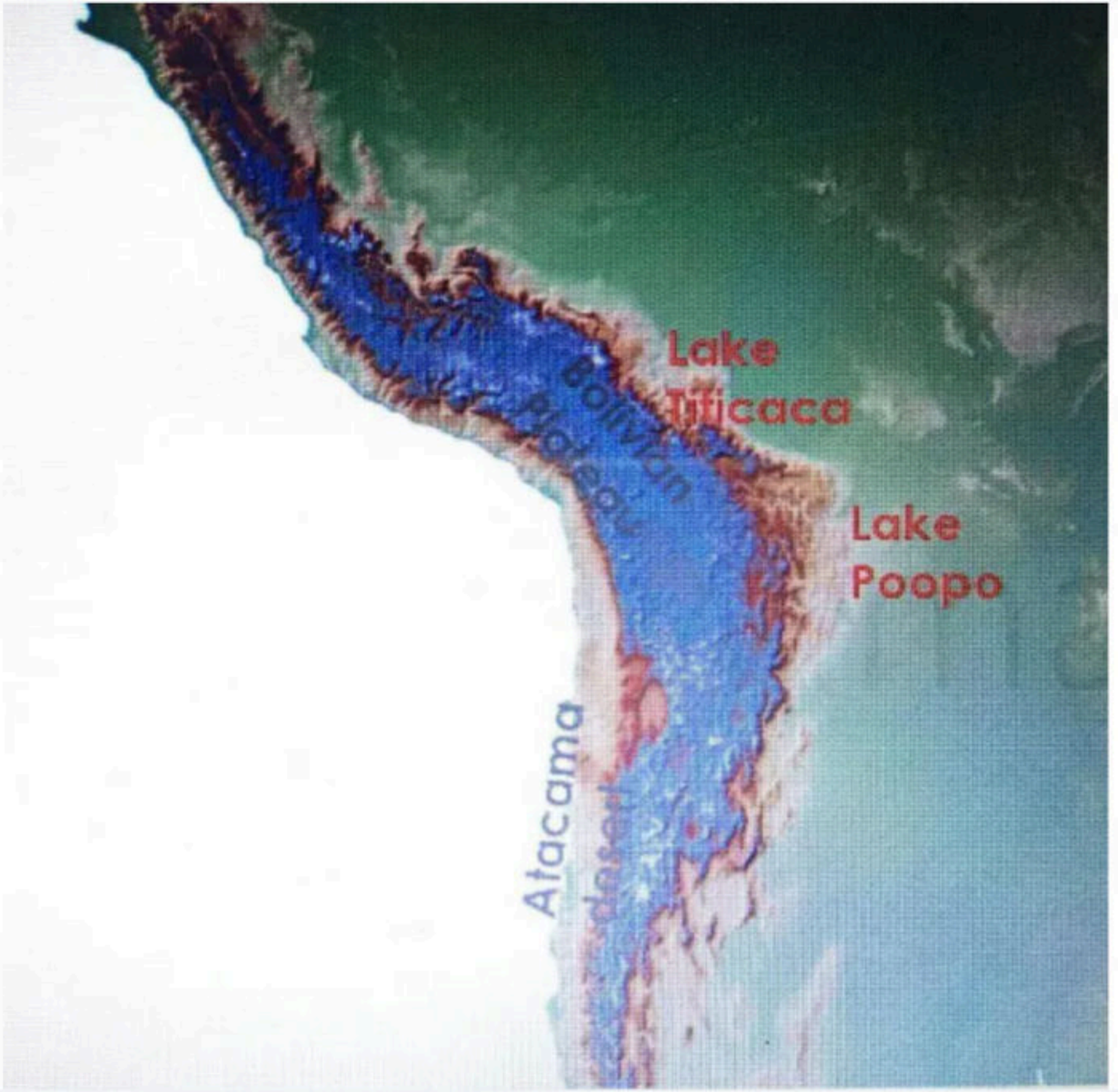
Intermontane plateau : Bolivian plateau

Guiana Highlands: An abundance of rain, tropical rainforest, gold, diamond, and iron ore reserve. **World's highest fall – Angel's fall** on the Caroni River.

Plateau of Mato Grosso: Ancient erosional plateau, savannah, cattle raising, gold, and diamond reserve.

Plateau of Borborema: Semi-arid, deciduous-thorny scrub

Brazilian highlands: Lava plateau, Minas Garais region- iron and gold reserve.



3. The Central Lowlands

- They are formed by two great river systems – the Amazon- the Orinoco and the Parana-Paraguay. The vegetation of the lowlands is given special names.
- The Orinoco Basin has dense tropical forests. The northern part is a plain covered with savanna grass called the **Llanos**.
- The equatorial jungle of the Amazon Basin is called the **selvas**, a typical tropical rain forest.
- The rich temperate grasslands around the mouth of the Parana-Paraguay is the **pampas**.
- At the source of these rivers is a region of scrub forest called the **Gran Chaco**.



4. The Eastern Highlands

- These are plateaus made up of hard old rocks.
- The River Amazon separates them into the Guiana Highland to the north and the Brazilian Highland to the south.
- They have been worn down by wind, rain, and rivers. They have steep cliffs along the east coast and slope gently towards the Central Plains.
- The savanna grasslands of Brazilian Highlands are the **Campos**.
- Towards the Central Lowlands, it is known as the **plateau of Mato Grosso**.
- The Eastern highlands consists of Igneous and Metamorphic rocks.

Highlands are split into three regions:

a. Brazilian Highlands

b. Guiana Highlands

c. Patagonian Plateau

a. Guiana Highlands

- Located north of the Amazon and south of the Orinoco River. Cover the southern half of Venezuela, the northern part of Brazil, and a portion of eastern Colombia. Are geologically similar to the Brazilian Highlands.
- Consists of a vast plateau, one marked by deep gorges, tropical rain forests, numerous rivers & waterfalls. It's famed for **Angel Falls** (979 m high). The highest point is **Mt. Roraima** on the borders of Brazil, Guyana and Venezuela at 2,810 m.

b. Brazilian Highlands

- An eroded plateau region of central and S.E. Brazil. Ancient basaltic lava flows gave birth to much of the region. The region comprises more than half of the country's landmass and settlements. It is the main source of Brazil's abundant mineral wealth. The highlands are also significant for coffee, sugarcane, and other plantation agriculture.

c. Patagonian Plateau

- It is located between Andes and Atlantic Ocean, in Argentina and Chile; Patagonia stretches south from Rio Negro river in southern Argentina to Tierra del Fuego and the Strait of Magellan.
- The region has lakes, fjords, and glaciers in the west and deserts and steppes to the east. In late 19th and early 20th centuries, sheep farming expanded across the Patagonian grasslands making the southern regions of Argentina and Chile one of the world's foremost sheep farming areas.



Deserts of South America

Patagonian Desert

- The largest desert by area in S. America. Located primarily in Argentina and is bounded by the Andes, to its west, and the Atlantic Ocean to its east, in the region of Patagonia, southern Argentina.

Atacama

- In Chile, one of the driest place on Earth.

What makes it so dry?

- Rain shadow effect of the Andes; Off-shore Trade Winds & Westerlies that blow far to the south of Tropic of Capricorn; Cold Humboldt current.

La Guajira Desert

- In northern Colombia and some of N.W. Venezuela in the northernmost tip of S. America. The area holds immense coal reserves which are exploited in a zone known as El Cerrejón. It is also home to the indigenous Wayuu people, who are mostly herders but also master deep-sea divers, known for collecting pearls from the Caribbean Sea.




0 300 600 mi
0 400 800 km
ATLANTIC OCEAN
SOUTH AMERICA
CHILE
ARGENTINA
PACIFIC OCEAN
ATLANTIC OCEAN
PATAGONIAN DESERT


La Guajira Desert

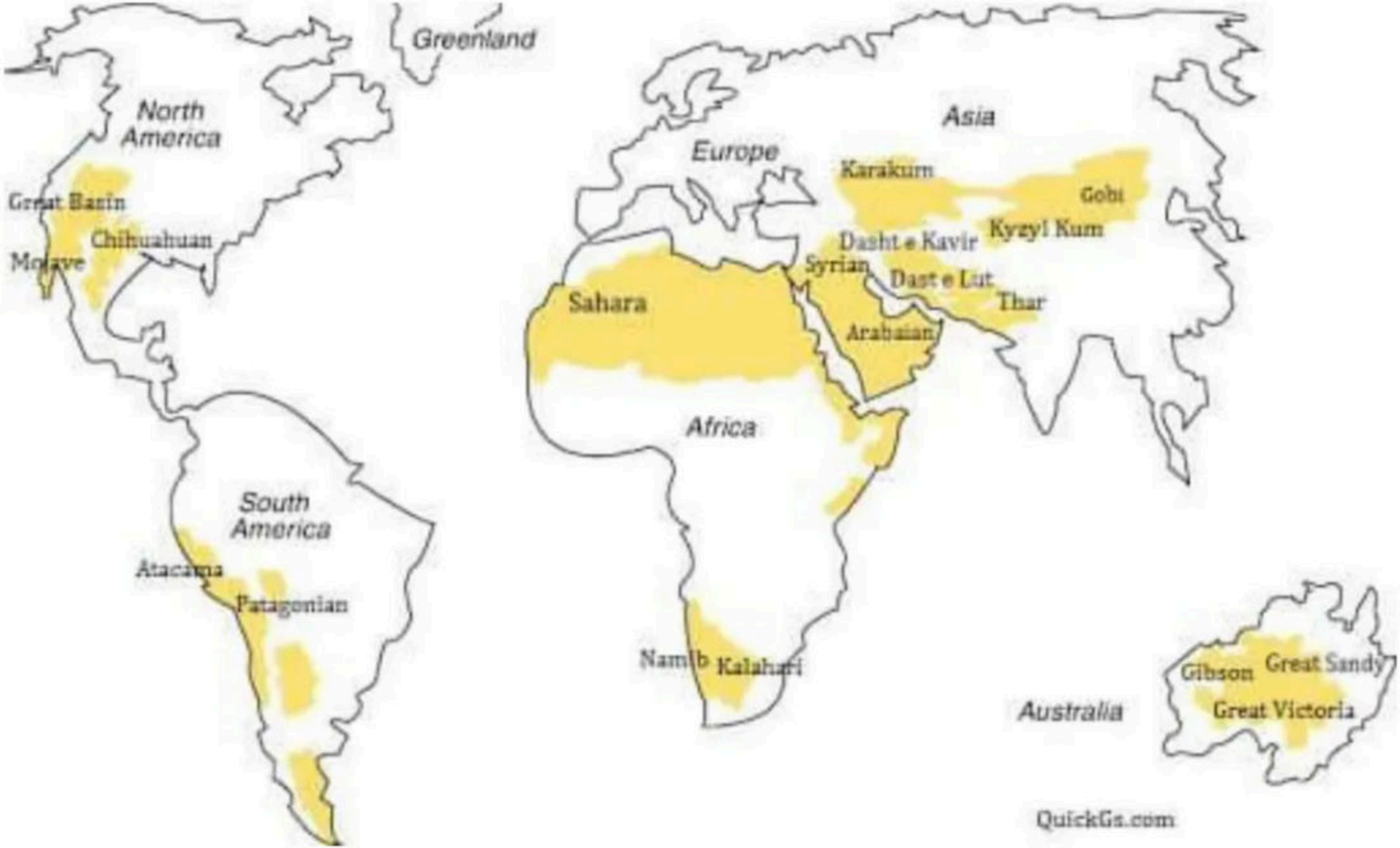


Sechura Desert

- It is a coastal desert in Peru along the Pacific Ocean coast and inland to the foothills of the Andes Mountains. Its extreme aridity is caused by the upwelling of cold coastal waters and subtropical atmospheric subsidence, but it is also subject to occasional flooding during El Niño years.
- The **Bayóvar Depression**, which is the lowest point in Peru and all of the Southern Tropics, is located in this desert.

Monte Desert

- Lying entirely within Argentina, it lies S.E. of Atacama Desert in Chile, north of the larger Patagonian Desert, east of the Andes and west of the Sierra de Córdoba (a mountain range in Central Argentina).
- The delineations between the Monte Desert, the Atacama Desert, and the Patagonian Desert are not exact and the desert seems to be more-or-less continuous with the other two nearby deserts.


Greenland
North America
Great Basin
Chihuahuan
Mojave
South America
Atacama
Patagonian
Asia
Europe
Karakum
Gobi
Kyzyl Kum
Dasht e Kavir
Syrian
Dast e Lut
Thar
Sahara
Arabaian
Africa
Namib
Kalahari
Australia
Gibson
Great Sandy
Great Victoria
QuickGs.com



Drainage System of South America

- The Amazon Basin
- The Rio de Plata Basin
- The Orinoco Basin
- The Sao Francisco Basin

Amazon River & its Basin

- Source: Mantaro River in Peru (in Andes Mountains).
- Mouth: Atlantic Ocean (Belém in Brazil is the major city and port at the mouth).
- Length: 6,575 km (second to that of the Nile river of Africa). But it is the largest river by discharge volume of water in the world.
- Its average discharge is greater than the next seven largest independent rivers combined — the Amazon represents 20% of the global riverine discharge to the ocean.
- Drains nearly 40 per cent of the area of South America.
- Major Tributaries : Japurá (Caquetá in Colombia), Juruá, Madeira, Negro, Purus and Xingu rivers. Madeira exceeds 3,200 km from source to mouth.
- **Amazon Basin :** Drained by Amazon and its tributaries, it is the largest drainage basin in the world; covers Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela. The Amazon enters Brazil with only one-fifth of the flow it finally discharges into the Atlantic Ocean, yet already has a greater flow at this point than the discharge of any other river.
- The Amazon Basin encompasses 7 million sq. km, of which 5.5 million sq. km is covered by the Amazon rainforest; the forest is contained within Brazil (60%), Peru (13%), Colombia (10%), Venezuela, Ecuador, Bolivia, Guyana, Suriname and French Guiana; represents over half of the planet's remaining rainforests.
- More than 50% of the dust fertilizing the Amazon rainforest comes from the depression in Northern Chad in the Sahara Desert. The dust contains phosphorus, which is important for plant growth.
- Amazon rainforest – **deforestation due to cattle ranching and soya beans field**.
- Navigable till Manaus; Petroleum at mouth; Natural Rubber.


Caracas
VENEZUELA
Orinoco
Georgetown
GUYANA
Atlantic Ocean
Bogotá
COLOMBIA
Vaupés
Apaporis
Caquetá
Negro
Branco
Boa Vista
Trombetas
Paru
Jari
Macapá
Para
Belém
Quito
ECUADOR
Napo
Japurá
Putumayo
Amazon
Santarém
Manaus
Pastaza
Tigre
Iquitos
Marañón
Javary
Juruá
Purus
Madeira
Tapajós
Iriri
Hualiaga
Ucayali
Pucallpa
Rio Branco
Acre
Porto Velho
Machado
Juruena
Teles Pires
Arinos
Xingu
Tocantins
Araguaia
Tambo
Ene
Madre de Dios
Guaporé
Lima
Mantaro
Apurímac
Cusco
Beni
Mamoré
Grande
Brasília
PERU
La Paz
Cochabamba
Santa Cruz
BRAZIL
Pacific Ocean
BOLIVIA
Rio de Janeiro
São Paulo

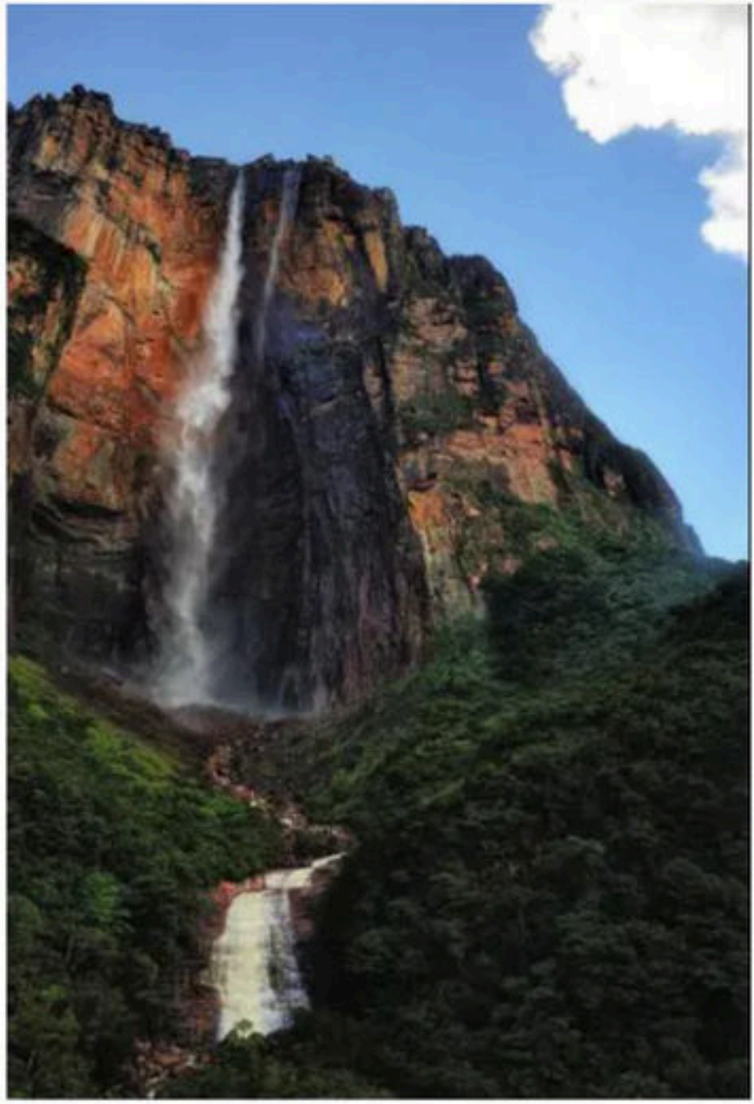
The Rio de la Plata basin

- The main rivers which form the Basin are **Paraná, Paraguay** (Parana's main tributary) and **Uruguay** (it also finally merges with Parana).
- This basin is second in size to that of the Amazon; includes areas of S.E. Bolivia, southern and central Brazil, the entire Paraguay, most of Uruguay, and northern Argentina.
- The La Plata basin is bounded by the Brazilian Highlands to the north, Andes to the west, and Patagonia to the south.
- **Main Tributaries** : **Paraná River's** main tributaries include the Paranaíba, Grande, Tietê, Paranapanema, Iguazu, Paraguay, and Salado, after which it ends in the large Paraná Delta. The **Paraguay River** flows through the Pantanal wetland, after which its main tributaries include Pilcomayo and Bermejo, before it ends in the Paraná. The **Uruguay's** main tributaries include Pelotas, Canoas, Ibicuí, and Río Negro. Another significant tributary to the Río de la Plata is the Salado del Sur River.
- Paraná River, La Plata's largest tributary, is S. America's second longest river (4,879 km) and one of the longest in the world. It forms the natural border between Paraguay and Argentina. From source to its junction with Paraguay – known as Alto Parana; numerous waterfalls in Alto Parana – then navigable; useful for HEP, irrigation; wheat cultivation in Pampas region.
- **Itaipu Dam**, the second largest hydroelectric power plant in the world (following the Three Gorges Dam), is built on Parana.


BOLIVIA
BRAZIL
PARAGUAY
URUGUAY
ARGENTINA
Andes
Cuiabá
Brasília
Goiânia
Santa Cruz
Sucre
Pantanal
Paraguay
Paranaíba
Grand
Uberlândia
Belo Horizonte
Campo Grande
Tieté
Ribeirão Preto
Rio de Janeiro
Paraná
Paranapanema
São Paulo
Pilcomayo
Bermejo
Foz do Iguaçu
Curitiba
Iguazu
Asunción
Salta
Posadas
Canoas
Resistencia
Corrientes
Pelotas
Salado
Paraná
Uruguay
Ibicuí
Porto Alegre
Córdoba
Santa Fé
Negro
Rosario
Buenos Aires
Montevideo
La Plata
Salado
Río de la Plata
Atlantic Ocean

The Orinoco basin

- Third-largest drainage system of South America – 6.3 percent of it in Venezuela and the remainder in Colombia.
- Orinoco rises in the Southern end of Sierra Parima near Mount Delgado Chalboud at a height of 1000 meters.
- It traverses 2,740 km to meet the Atlantic Ocean.
- The word the Orinoco means 'a place to paddle', i.e. a river where navigation is possible. In the North, it passes through a zone called 'Region of Rapids' where there are enormous granite boulders.
- The **world's highest waterfall Angel** (979 m) is situated on river Churun which is a tributary of river Carrao which is further a tributary of river Orinoco.
- The Orinoco flows through the llanos (savanna grasslands) of Venezuela into the North Atlantic Ocean.
- **El Florero iron mine** is located near its delta. The Orinoco River deposits also contain extensive tar sands in the **Orinoco oil belt** (**world's largest deposits of petroleum** – slightly ahead of the similar unconventional oil source in the Athabasca oil sands, and before Saudi Arabia), which may be a source of future oil production.




Caribbean Sea
Aruba (NETH.)
Neth. Antilles (NETH.)
ST. VINCENT AND THE GRENADINES
BARBADOS
GRENADA
Amuay
Maracaibo
Puerto Cabello
CARACAS
Cumaná
TRINIDAD AND TOBAGO
Barquisimeto
Valencia
Maracay
Puerto La Cruz
Andes
Llanos
Ciudad Guayana
San Cristóbal
San Fernando
Angel Falls
Guiana Highlands
GUY.
Puerto Ayacucho
COLOMBIA
BRAZIL
0 100 200 km
0 100 200 mi


ST. LUCIA
ST. VINCENT AND THE GRENADINES
BARBADOS
ARUBA
NETHERLANDS ANTILLES
GRENADA
CARIBBEAN SEA
TRINIDAD
A'
A
East Venezuela Basin Province
SOUTH AMERICA
PACIFIC OCEAN
ATLANTIC OCEAN
VENEZUELA
GUYANA
SURINAME
BRAZIL
COLOMBIA

The Sao Francisco basin

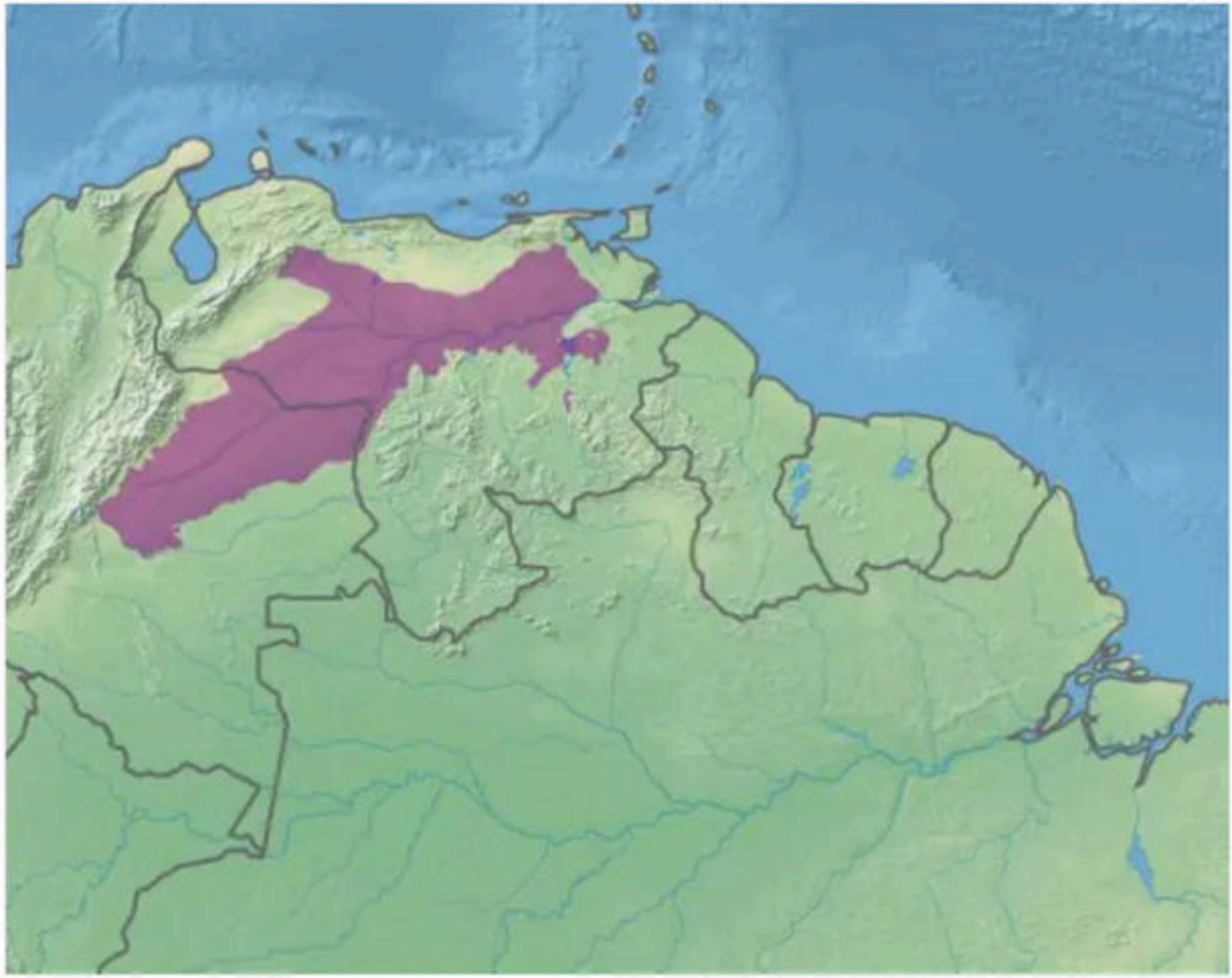
- The fourth-largest river system of South America is the river Sao Francisco, which is about 2,914 km in length; longest river that runs entirely in Brazilian territory.
- It used to be known as the **Opara** by the indigenous people before colonisation, and is today also known as **Velho Chico**.
- Originates in the Canastra mountain range in the central-western part of the state of Minas Gerais.
- It is an important river for Brazil, called "the river of national integration" because it unites diverse climates and regions of the country, in particular the Southeast with the Northeast.



Major Agricultural Regions

Los Llanos or Llanos

- It is a vast **tropical grassland** plain situated to the east of the Andes in Colombia and Venezuela.
- It is an ecoregion of the flooded grasslands and savanna biome.
- The Llanos' main river is the Orinoco, which forms part of the border between Colombia and Venezuela.



Pampas

- The Pampas are fertile lowlands covering parts of Argentina, all of Uruguay and Brazil's southern state.
- The climate is temperate, with precipitation more or less evenly distributed through the year, making the soils appropriate for agriculture.
- Frequent wildfires ensure that only small plants such as grasses flourish, and trees are less common.



Gran Chaco (Chaco plain)

- It is a semiarid lowland located west of the Paraguay River and east of the Andes.
- It is mostly an alluvial sedimentary plain shared among Paraguay, Bolivia and Argentina.
- The Chaco is one of South America's last agricultural frontiers.
- Agricultural expansion has made it one of the most deforested areas on the planet.



Major Islands / Island Groups

- **Falkland Islands (UK)** : An archipelago in the South Atlantic Ocean on the Patagonian Shelf. As a British overseas territory, UK takes responsibility for their defence and foreign affairs. Its sovereignty status is part of an ongoing dispute between Argentina and UK. Major economic activities include fishing, and sheep farming, with an emphasis on high-quality wool exports.
- **South Georgia and the South Sandwich Islands (UK)** : Also a British Overseas Territory. Argentina continues to claim sovereignty over these – contributed to the **1982 Falklands War**. Falkland Islands are about 1,300 km west from its nearest point.
- **Tierra del Fuego** : An archipelago off the southernmost tip of the South American mainland, across the Strait of Magellan. It is divided between Chile and Argentina, with the latter controlling the eastern half of the main island and the former the western half plus the islands south of Beagle Channel. Patagonian sheep farming and petroleum extraction dominates economic activity in the region.
- **Strait of Magellan** : It is a navigable sea route in southern Chile separating mainland South America to the north and Tierra del Fuego to the south. The strait is more sheltered than the **Drake Passage** (stormy open sea route around Cape Horn).
- **Galápagos Islands** : Are a part of Ecuador. They are an archipelago of hotspot volcanic islands distributed on either side of the equator. The mantle plume beneath the eastward moving Nazca Plate has given rise to island chain and seamounts.



Galapagos Islands

Question

from Abarajithan Watson

Darwin's arch



*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content

Major Water Bodies

NAME	LOCATION
Lake Maracaibo (12,950 sq. km)	It is a brackish tidal bay (a tidal estuary) in Venezuela and an inlet of the Caribbean Sea. It is connected to the Gulf of Venezuela by Tablazo Strait. It has a larger surface area than Lake Titicaca, but it is a tidal bay, not a lake. The surrounding Maracaibo Basin contains large reserves of crude oil, making the lake a major profit center for Venezuela. The weather phenomenon known as the **Catatumbo lightning** at Lake Maracaibo regularly produces more lightning than any other place on the planet
Lake Titicaca (12,500 feet above sea level)	Large, deep, freshwater lake in the Andes on the border of Bolivia and Peru. Highest navigable lake (3,812 m) in the world. By volume of water and by surface area, it is the largest lake in South America. Five major river systems feed into Lake Titicaca.
Lake Poopo	Used to lie in the Altiplano (high plateau between the Andes mountain chain) in Bolivia. Although the lake has dried up completely twice in the past, it does not appear that it will recover this time. Suggested causes of the decline are the melting of the Andes glaciers and loss of their waters, because of a drought due to climate change, as well as continued diversion of water for mining and agriculture

Question

from Abarajithan Watson

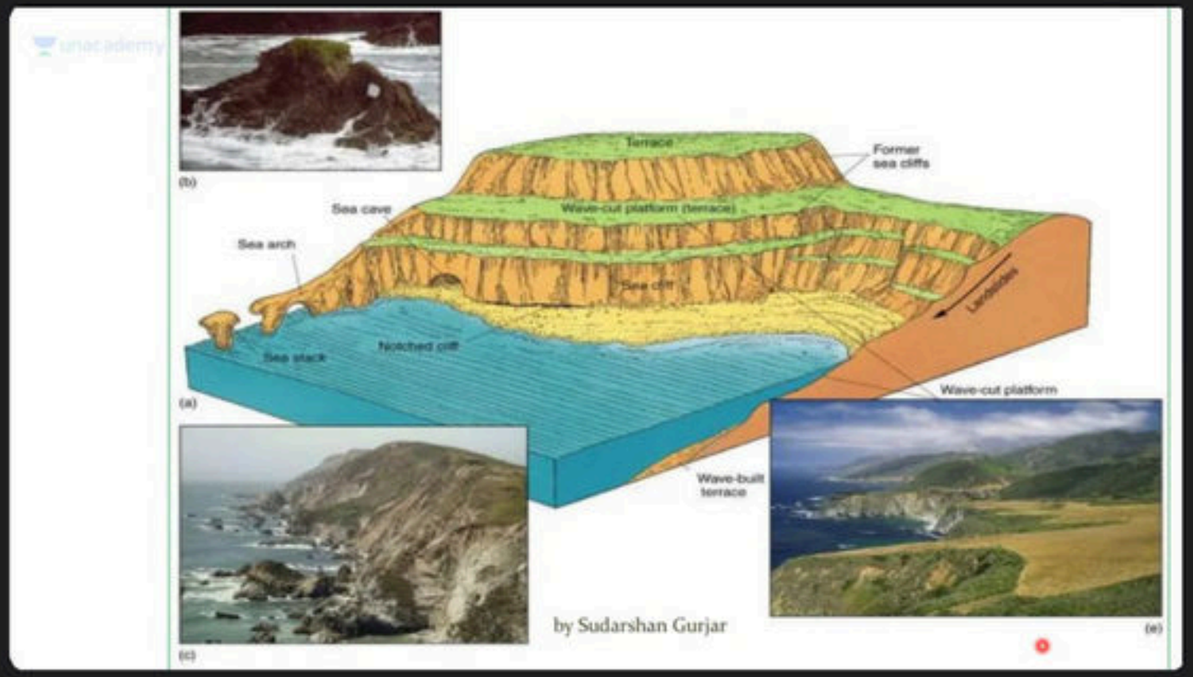
catatumbo lightening



*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content


LAKE MARACAIBO
WorldAtlas.Com
Caribbean Sea
Caribbean Sea
Punto Fijo
Gulf of Venezuela
Riohacha
50 mi
50 km
Colombia
General Rafael Urdaneta Bridge
Maracaibo
Cabimas
Carora
SOUTH AMERICA
Lake Maracaibo
Venezuela
Valera
Catatumbo River
Merida

Question
from Kishan Patil



*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content

Pantanal Wetlands

- It is the world's largest tropical wetlands.
- It sprawls across three South American countries i.e., Bolivia, Brazil and Paraguay, and supports millions of people there, as well as communities in the lower Rio de la Plata Basin.
- The Pantanal derives its name from the Portuguese word for 'swamp'.
- It has the largest concentration of crocodiles in the world. One of the highest density of jaguars anywhere in the world is found here.
- The Pantanal is also home to the biggest parrot on the planet, the hyacinth macaw.
- The Pantanal is bounded by the Chiquitano dry forests to the west and northwest, by the Arid Chaco dry forests to the southwest, and the **Humid Chaco** to the south.
- *Less than 5% of the Pantanal is protected*, with some part falling under Ramsar agreement, and some that are UNESCO World Heritage Sites and Biosphere Reserves.
- Around *95% of the Pantanal is under private ownership*, the majority of which is used for cattle grazing.
- Recently, number of fire incidences has increased in this wetland. The Fires nearly doubled in the first half of 2020, compared to the same period last year.

Pantanal Wetlands




LATIN AMERICA
Atlantic Ocean
Haiti
Dominican Rep.
Tropic of Cancer
Mexico
Cuba
Honduras
Guatemala
Nicaragua
El. Salvador
Costa Rica
Venezuela
Panama
Colombia
French Guiana
Equator
Galapagos (Ecuador)
Ecuador
Brazil
Peru
Bolivia
Paraguay
Tropic of Capricorn
Pacific Ocean
Chile
Argentina
Uruguay
Atlantic Ocean
0 1500Km
0 750Miles


Spanish
Portuguese
English
French
Dutch
Spanish & Guarani
Spanish & native languages

North And Central America

- Belize
- Costa Rica
- El Salvador
- Guatemala
- Honduras
- Mexico
- Nicaragua
- Panama

South America

- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Ecuador
- French Guiana (*département* of France)
- Guyana
- Paraguay
- Peru
- Suriname
- Uruguay
- Venezuela

Caribbean countries

- Cuba
- Dominican Republic
- Haiti

Dependencies and Constituent Entities

- Guadeloupe
- Martinique
- Puerto Rico
- Saint-Barthélemy
- Saint-Martin

Latin America

Latin America is generally understood to consist of the entire continent of South America in addition to Mexico, Central America, and the islands of the Caribbean whose inhabitants speak Spanish, Portuguese and French mostly.


LITHIUM TRIANGLE
SOUTH AMERICA
BOLIVIA
Atacama
SQM, Albermarle
Olaroz
Orocobre, Toyota
Antofagasta
Cauchari
Orocobre, Ganfeng
Lithium Americas
Rincon
Argosy
ARGENTINA
CHILE
Salinas Grandes
Lithium LSC
Hombre Muerto
Livent, Galaxy, POSCO
Hombre Muerto
Galan Lithium
Copiapo

Lithium Triangle

It is an intersection of Chile, Bolivia and Argentina, known for high quality salt flats.

Salar de Uyuni in Bolivia, **Salar de Atacama** in Chile and **Salar de Arizaro** in Argentina contains over **45% of known global lithium reserves**.

- Beneath Salar de Uyuni, the world's largest salt flat, lies the world's greatest lithium deposits.
- Bolivia, one of South America's poorest countries, envisions development by harvesting lithium on an industrial scale from underground saltwater brines.
- It can be mined from rock or processed from brine.
- Lithium dissolved in underground saline aquifers called "brine", pumped to the surface by wells and then allowed to evaporate in vast knee-deep ponds.
- Demand for electric vehicles and smart devices powered by lithium-ion batteries gives an opportunity for development.

The Indian Navy has issued a request for information, seeking details of **Li-ion batteries** as they will be fitted in all the future submarines in the Indian Navy.

In 2019, President of India, Ram Nath Kovind visited two out of the three 'Lithium Triangle' nations focussing on joint manufacturing and facilitating the process of acquiring Lithium as India plans to meet the target of having Electric Vehicles by 2030.

In light of this vision, the Government of India formed **'KABIL' consortium** comprising of three state-owned companies – National Aluminum Company (NALCO), Hindustan Copper (HCL) and Mineral Exploration Corp Ltd., (MECL).

Amid the ongoing standoff between India and China, the Government of India is planning to manufacture the Li-ion batteries and cells in the country. Earlier, India 100% imported Li-ion batteries and cells due to their huge demand.

In light of this, India and Bolivia are in talks about having a joint manufacturing base for the batteries, while Chile and Argentina are in talks about exploration and exports of Lithium.

Note : KABIL' consortium was set up by the Government of India to acquire the most strategic mineral globally. The said mineral is not only required for electric vehicles but is also used in space launchers, solar panels, mobile phones and laptops and hi-tech military platforms.

Please Write Your



- **World's largest and most polulous continent**, about 30% of Earth's total land area and 8.7% of the Earth's total surface area and 4.5 billion people (as of June 2019) constitute roughly 60% of the world's population.
- **49** fully recognized **countries** + Palestine (partially recognized).
- It is a continent of contrast in relief, temperature, vegetation and people also.
- Asia is to the **east of the Suez Canal, the Ural River, and the Ural Mountains, and south of the Caucasus Mountains and the Caspian and Black Seas.**
- It is bounded on the **east by the Pacific Ocean,** on the **south by the Indian Ocean** and on the **north by the Arctic Ocean.**
- The border of Asia with Europe is a historical and cultural construct, as there is no clear physical and geographical separation between them. The division of Eurasia into two continents reflects East–West cultural, linguistic, and ethnic differences, some of which vary on a spectrum rather than with a sharp dividing line.

- The boundary between Asia and Africa is the Red Sea, the Gulf of Suez and the Suez Canal. This makes **Egypt a transcontinental country**, with the Sinai peninsula in Asia and the remainder of the country in Africa.
- The border between Asia and the region of Oceania is usually placed somewhere in the Malay Archipelago. The Maluku Islands in Indonesia are often considered to lie on the border of southeast Asia, with New Guinea, to the east of the islands, being wholly part of Oceania.
- The earth's highest and lowest places are both in Asia: **Mount Everest & Dead Seashore.**
- Longest Rivers : 1. Yangtze River (6,300 km), 2. Yellow River (5,464 km), 3. Mekong (4,909), 4. Lena River (4,294 km)
- Highest Mountain : 1. Mt. Everest (8,848 m) (Nepal-China border), 2. K2 (8,611 m) (India – located in PoK), 3. Kangchenjunga (8,586 m) (India – Nepal border).
- China and India alternated in being the largest economies in the world from 1 to 1800 CE.
- Asia was the birthplace of most of the world's mainstream religions including Christianity, Islam, Hinduism, Sikhism, Buddhism, Jainism, Zoroastrianism, Judaism, Confucianism, Taoism as well as many other religions.


ASIA
EUROPE
AFRICA
AUSTRALIA AND OCEANIA
NORTH AMERICA
RUSSIAN FEDERATION
KAZAKHSTAN
MONGOLIA
CHINA
INDIA
UZBEKISTAN
TURKMENISTAN
KYRGYZSTAN
TAJIKISTAN
AFGHANISTAN
PAKISTAN
IRAN
IRAQ
SYRIA
TURKEY
LEBANON
ISRAEL
JORDAN
GEORGIA
ARMENIA
AZERBAIJAN
KUWAIT
SAUDI ARABIA
BAHRAIN
QATAR
U.A.E.
OMAN
YEMEN
NEPAL
BHUTAN
BANGLADESH
MYANMAR
LAOS
THAILAND
VIETNAM
CAMBODIA
MALAYSIA
SINGAPORE
BRUNEI
INDONESIA
EAST TIMOR
PHILIPPINES
TAIWAN
HONGKONG
NORTH KOREA
SOUTH KOREA
JAPAN
SRI LANKA
MALDIVES
Seychelles
West Siberian Plain
Central Siberian Plateau
Gory Putorana
Ural Mountains
Verkhoyanskiy Khrebet
Yukagirskoye Ploskogor'ye
Kolymskiy Khrebet
Stanovoy Khrebet
Vostochnyy Sayan
Altai Mountains
Gobi Desert
Manchurian Plain
Sikhote-Alin
Tien Shan
Tarim Pendi
Qilian Shan
Altun Shan
Plateau of Tibet
The Himalaya
Zagros Mountains
Elburz
Anatolia
Arabian Peninsula
Thar Desert
Rann of Kachchh
Deccan Plateau
Western Ghats
Eastern Ghats
Gora Elbrus 5642 m
Belukha 4506 m
Gora Munku-Sardyk 3491 m
K2 8611 m
Nanda Devi 7816 m
Dhaulagiri 8172 m
Mount Everest 8848 m
Gongga Shan 7556 m
Klyuchevskaya Sopka 4750 m
Gunung Kinabalu 4095 m
Puncak Jaya 4884 m
ARCTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
Severnaya Zemlya
Poluostrov Taymyr
New Siberian Islands
Ostrov Vrangelya
Laptev Sea
East Siberian Sea
Barents Sea
Kara Sea
Bering Sea
Bering Strait
Sea of Okhotsk
Kamchatka
Sakhalin
Kuril Islands
Hokkaidō
Honshū
Shikoku
Kyūshū
Sea of Japan (East Sea)
Yellow Sea
East China Sea
Ryukyu Is.
South China Sea
Luzon Strait
Hainan
Philippine Sea
Celebes Sea
Makassar Strait
Borneo
Sulawesi
Banda Sea
Java Sea
Java
Sumatra
Andaman & Nicobar Is. (India)
Bay of Bengal
Arabian Sea
Lakshadweep Islands (India)
Socotra (Yemen)
Gulf of Aden
Red Sea
Persian Gulf
Oman
Mediterranean Sea
Black Sea
Caspian Sea
Aral Sea
Lake Balkhash
L. Baikal
Lop Nur
Chagos Archipelago
Palk Strait
Equator
Tropic of Cancer
Arctic Circle
Ob'
Irtysh
Yenisey
Lena
Aldan
Kolyma
Amur
Angara
Indus
Ganga
Yamuna
Brahmaputra
Mekong
Yangtze
Huang He
Xi Jiang
Narmada
Mahanadi
Godavari
Krishna
Irrawaddy
Salween
Euphrates
Tigris
Helmand
LEGEND
Continent Boundary
Country Boundary
Disputed Boundary
River
Waterbody
Mountain Peak
0 500 Miles
0 500 1,000 Kilometers
mapsofworld.com
ld.com



Satellite view of Asia

Major Islands / Island Groups

1. Greater Sunda Islands (Borneo, Sumatra, Java & Sulawesi)
2. Lesser Sunda Islands (Bali, Lombok, Sumbawa, Sumba, Timor, etc.)
3. Maluku Islands of Indonesia (Moluccas)
4. Japan (Honshu, Hokkaido, Kyushu & Shikoku)
5. Philippines (Luzon, Visayas & Mindanao)
6. Kuril Islands (Russia)
7. Ryukyu Islands (Japan)
8. Taiwan
9. Sakhalin (Russia)
10. Cyprus (is a part of Asia and not Europe)

Disputed Islands:

1. Paracel Islands,
2. Spratly Islands &
3. Senkaku (known as the Diaoyus by China and Tiaoyutai by Taiwan) islands (Japan controls the islands; China and Taiwan claim the islands).

The Senkakus Island Chain Dispute

It is a territorial dispute over a group of 8 uninhabited islands that lie in the East China Sea. They have a total area of about 7 sq km and lie northeast of Taiwan.

Importance: Islands are close to strategically important shipping lanes, offer rich fishing grounds and are thought to contain oil deposits.

The Senkakus island chain has been **administered by Japan since 1972**, but its legal status has remained disputed until now.

Both Japan and China claim ownership of these islands.

Japan's Claim

After World War II, Japan renounced claims to a number of territories and islands including Taiwan in the 1951 Treaty of San Francisco.

But under the treaty, the Nansei Shoto islands came under US trusteeship and were then returned to Japan in 1971.

Japan says that Senkaku islands are part of the Nansei Shoto islands and hence they also belong to Japan. Besides, China raised no objections to the San Francisco deal. Only since the 1970s, when the issue of oil resources in the area emerged, that Chinese and Taiwanese authorities began pressing their claims.

China's Claim

These Islands have been part of its territory since ancient times, serving as important fishing grounds administered by the province of Taiwan.

When Taiwan was returned in the Treaty of San Francisco, China said the islands – as part of it – should also have been returned.


SOUTH KOREA
Fukuoka
JAPAN
Shanghai
CHINA
Wenzhou
330km
410km
Naha
Ryukyu Islands
170km
170km
Taipei
Ishigaki
TAIWAN
Senkaku (JPN)
Diaoyu (PRC)
Tiaoyutai (ROC)
Islands

Recent Activities

Recently, a local council in southern Japan has approved a bill to change the name of an area containing Senkaku Islands from Tonoshiro to Tonoshiro Senkaku.

Japan's Stand

Resolving Administrative Confusion: The name change is aimed at resolving administrative confusion between a locale in downtown Ishigaki, which shares the name "Tonoshiro" similar to the island.

Increased Chinese Presence: It is also done in response to the increased Chinese presence in the waters close to the Senkakus. In a move to protect territorial integrity, Japan has decided to change the name.

Support of the USA: The United States has a mutual defense treaty with Japan. If Japanese territory is attacked by a foreign power, the United States is obligated to defend it.



China's Stand:

China's Territorial Sovereignty: The Bill by Japan is a serious provocation to China's territorial sovereignty. The move is illegal.

Four-Principle Consensus: Urged Japan to abide by the spirit of the four-principle consensus, avoid creating new incidents on the Diaoyu Islands issue, and take practical actions to maintain the stability of the East China Sea situation. A four-point principle on improving China-Japan ties was approved in 2014 to develop a mutually beneficial relationship based on common strategic interests.

Risk of a Crisis: Changing the administrative designation would only make the dispute more complicated and bring more risks of a crisis

Taiwan's Stand:

It also protested the move and claimed that the islands are part of its territory, and the sovereignty of Tiaoyutai islands belongs to the country and any move attempting to alter this fact is invalid.

Overall Impact

Asia's next military flashpoint: Japan is not the only territorial and maritime dispute that China has long had with many of its neighbours. It has island and maritime border disputes with Taiwan, Brunei, Indonesia, Malaysia, Philippines and Vietnam in the South China Sea and its extension.

Hence, Japan's move can strengthen the other countries territorial and maritime claims.

Land Disputes in South China Sea

Parcel Islands and Spratly Islands

The **nine-dash line** is a vaguely located demarcation line used by China and Taiwan for their claims of the major part of the South China Sea.

The Spratly Islands and Paracel Islands are two of the most contested areas in the South China Sea.

Both these islands are in the middle of the South China Sea waters, between the territory of Vietnam and the Philippines.

Very recently, Beijing unilaterally renamed 80 islands and other geographical features in the area. This drew criticism from neighbouring countries who have also laid claim to the same territory.

If the dispute were to aggravate, it could likely have serious consequences for diplomatic relations and stability in the region.

What is the Spratly Islands dispute about?

The ongoing territorial dispute is among China, Taiwan, Vietnam, the Philippines, and Malaysia.

Since 1968, these nations have engaged in varying kinds of military occupation of the islands and the surrounding waters. The **only exception is Brunei** that has contained its objections to the use of its maritime waters for commercial fishing.

The Spratly Islands are largely uninhabited. But there is a possibility that they **may have large reserves of untapped natural resources**.

However, due to the ongoing dispute, there have been few initiatives to explore the scale of these reserves. So, the amount of natural resources present there is based on speculation and extrapolation by studying resources available in nearby islands.

In the 1970s, oil was discovered in neighbouring islands, specifically off the coast of Palawan (Philippines). This discovery ramped up territorial claims by these countries.

Over the years, US government agencies have claimed that there is little to no oil and natural gas in these islands. But these reports have done little to reduce the territorial dispute.

What is the Paracel Islands dispute about?

It is slightly more complex. This archipelago is a collection of 130 islands and coral reefs and is located in SCS.

This is almost equidistant from China and Vietnam.

Beijing says that references to the Paracel Islands as a part of China sovereign territory can be found in 14th century writings from the Song Dynasty.

Vietnam on the other hand, says that historical texts from at least the 15th century show that the islands were a part of its territory.

These islands also find mention in records starting from the 16th century by explorers who led expeditions to the East.

These include the Portuguese, British, Dutch, French and Spanish.

They have all written about the Paracel Islands in various texts.

Colonial powers of the French-Indochina further accelerated the tensions with regard to the Islands due to their colonial policies in the 20th century.

By 1954, tensions had dramatically increased between China and Vietnam over the archipelago.

In Jan 1974, China and Vietnam fought over their territorial disputes after which China took over control of the islands.

In retaliation, in 1982, Vietnam said it had extended its administrative powers over these islands.

In 1999, Taiwan jumped into the fray laying its claim over the entire archipelago.

Since 2012, China, Taiwan and Vietnam have attempted to reinforce their claims on the territory.

They have engaged in construction of government administrative buildings, tourism, land-reclamation initiatives etc.

Countries have also established and expanded military presence on the archipelago.



What is the U.S.'s role?

The US has no territorial claims in SCS.

But it is known to send its naval force into the waters each time there are provocative developments in the waters, particularly angering China.

Following China's renaming of the islands, the US sent in an assault ship and a guided missile cruiser into the waters near Spratly and Paracel Islands, off the coast of Malaysia.

Soon after, Chinese and Australian warships also entered the fray.

The arrival of American warships, indicate that the US's presence may only serve to heighten tensions.

South China Sea (SCS)

Location: SCS is an arm of western Pacific Ocean in Southeast Asia. It is south of China, east & south of Vietnam, west of the Philippines and north of the island of Borneo.

It is connected by Taiwan Strait with the East China Sea and by Luzon Strait with the Philippine Sea.

Bordering states & territories (clockwise from north): People's Republic of China, the Republic of China (Taiwan), the Philippines, Malaysia, Brunei, Indonesia, Singapore and Vietnam.

Strategic Importance: This sea holds tremendous strategic importance for its location as it is the connecting link between the Indian Ocean and the Pacific Ocean (Strait of Malacca).

According to the United Nations Conference on Trade And Development (UNCTAD), **one-third of the global shipping passes through it**, carrying trillions of trade which makes it a significant geopolitical water body.

Reasons For Dispute in the SCS

Contesting Claims Over Islands:

Paracel Islands : claimed by China, Taiwan and Vietnam.
Spratly Islands : By China, Taiwan, Vietnam, Malaysia & Philippines.
Scarborough Shoal : claimed by Philippines, China and Taiwan.



China's Assertion

Since 2010, China has been converting uninhabited islets into artificial islets to bring it under UNCLOS (examples would include **Haven Reef, Johnson South Reef** and **Fiery Cross Reef**).

China has been changing the size and structure of the reefs by modifying their physical land features. It has also established airstrips on Parcel and Spratly.

Chinese fishing fleets are engaged in paramilitary work on behalf of the state rather than the commercial enterprise of fishing.

The US is very critical of this building of artificial islands and terms these actions of China as building a 'great wall of sand'.

India's Stand

India has maintained that it is not a party to the SCS dispute and its presence in the SCS is not to contain China but to secure its own economic interests, especially that of its energy security needs. However, China's increasing ability to decide & expand its role in the SCS has compelled India to reevaluate its approach on the issue.

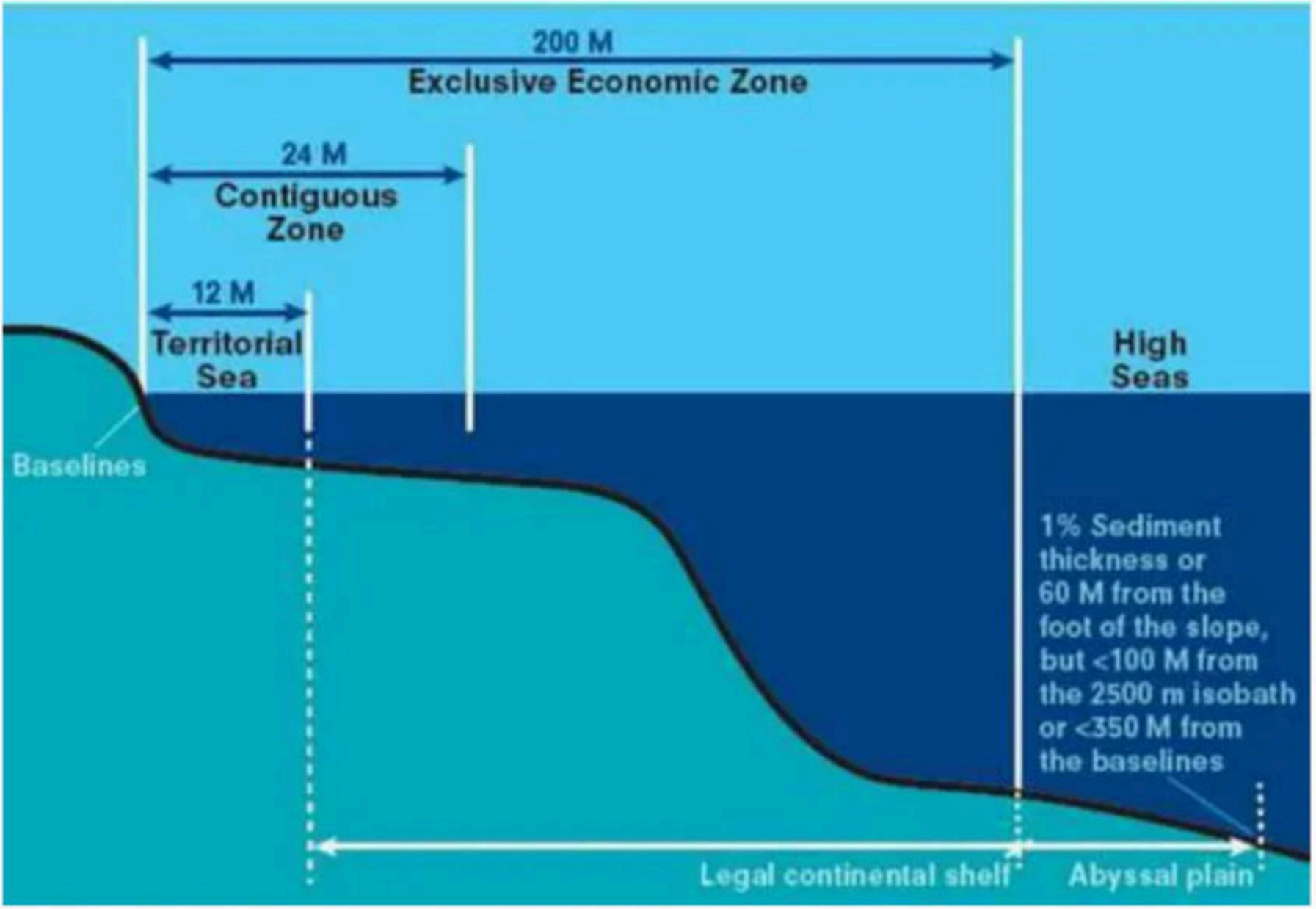
As a key element of the **Act East Policy**, India has started internationalizing disputes in the Indo-Pacific region to oppose China's threatening tactics in SCS.

Further, India is using its Buddhist legacy to make a strong bond with the Southeast Asian region.

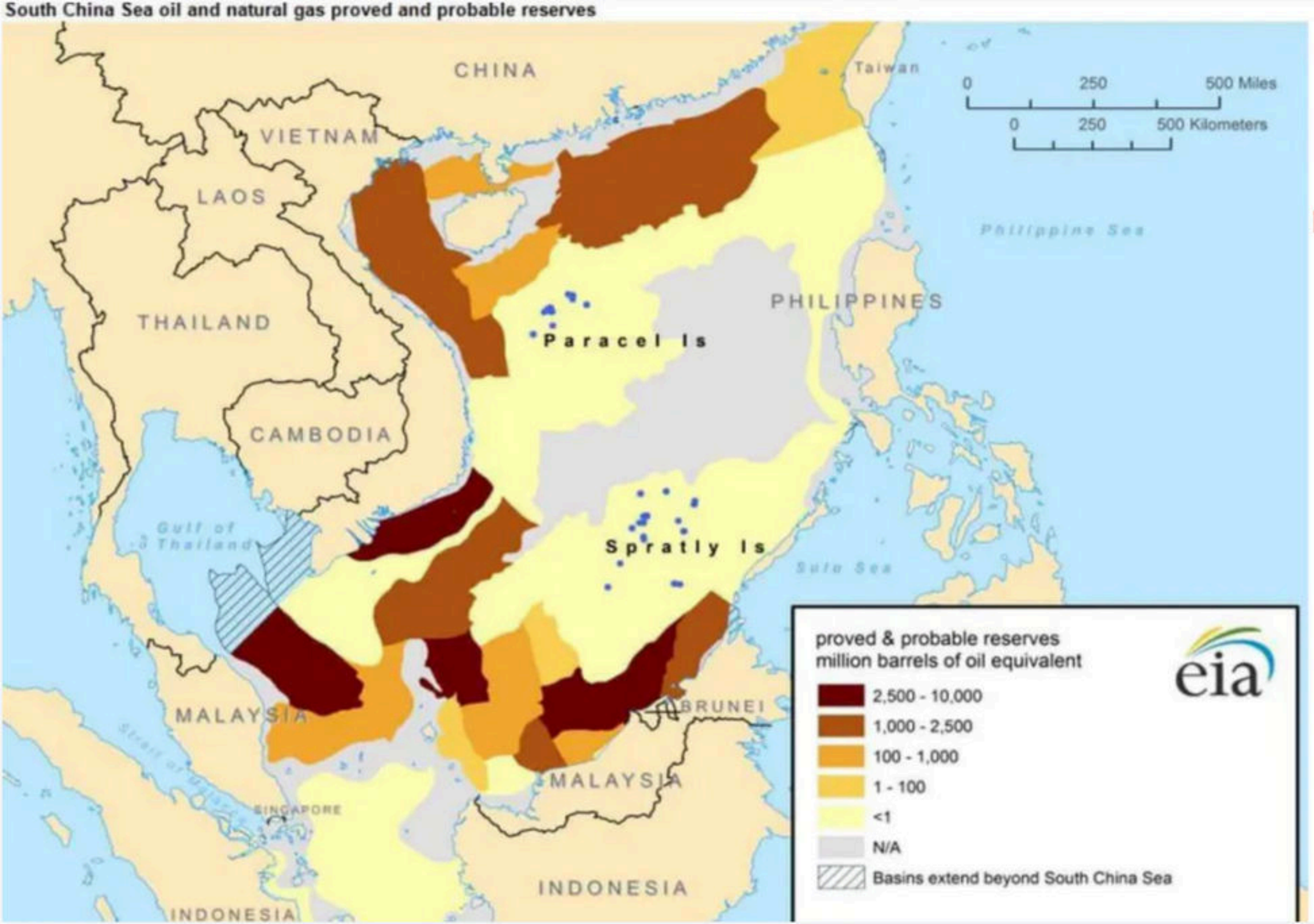
India has also deployed its navy with Vietnam in SCS for protection of sea lanes of communication (SLOC), denying China any space for assertion.

Also, India is part of **Quad initiative** (India, US, Japan, Australia) and lynchpin of Indo-Pacific narrative. These initiatives are viewed as a containment strategy by China.


Yellow River (Huang He)
Ordos Desert
ess Plateau
Yellow River
Yellow Sea
Sea of Japan
Tsugaru Strait
HONSHU
Jeju Strait
Korea Strait
Tsushima Strait
SHIKOKU
KYUSHU
Izu Is.
Bungo Channel
East China Sea
Yangtze (Cháng Jiāng)
Xi (Si-Kiang)
Senkaku Is. (Diaoyudao Is.)
Ryukyu Islands
Ogasawara Is. (Bonin Is.)
Taiwan Strait
TAIWAN
Bashi Channel
Luzon Strait
HAINAN
Paracel Is.
Philippine Sea
Mariana Arc
Mekong
South China Sea
Spratly Is.
LUZON
Mindoro Strait
VISAYAS
GAUM (U.S.)
Sulu Sea
MINDANAO
PALAU
Balabac Strait
Celebes Sea
BORNEO
Johor Strait
Singapore Strait
Gulf of Tomini
SULAWESI (CELEBES)
Molukka Sea
MALUKU ISLANDS
Halmahera Sea
Dampier Strait
Bird's Head Peninsula
Ceram Sea
NEW



UNCLOS Coastal Zones



Oil and Gas reserves around Spratly Islands and Parcel Islands

Natuna Islands

China in Apr 2020 angered Indonesia by sending Chinese coast guard escort to the Natuna Islands, which are within Indonesia's EEZ but are also claimed by China. The Natuna Regency is an archipelago of 272 islands located in the south part of the South China Sea in the Natuna Sea. Administratively, the islands constitute a regency within the Riau Islands Province of Indonesia.



Kra Canal (Thai Canal)

The Kra Isthmus Canal refers to proposals for a canal that would connect the Gulf of Thailand with the Andaman Sea across the Kra Isthmus in southern Thailand.

It is envisaged that such a canal (120 km) would improve transportation similar to the Panama Canal and Suez Canal.

China is pitching itself against India, USA and Australia to build this strategically important Canal.

If China constructs the canal, PLA Navy will have direct access to the Andaman Sea bypassing Malacca Strait.

CURRENT STATUS : Scrapped by Thailand in Sept 2020.



Golden Crescent & Golden Triangle

The Golden Crescent and Golden Triangle are regions in Asia know for illicit opium production.

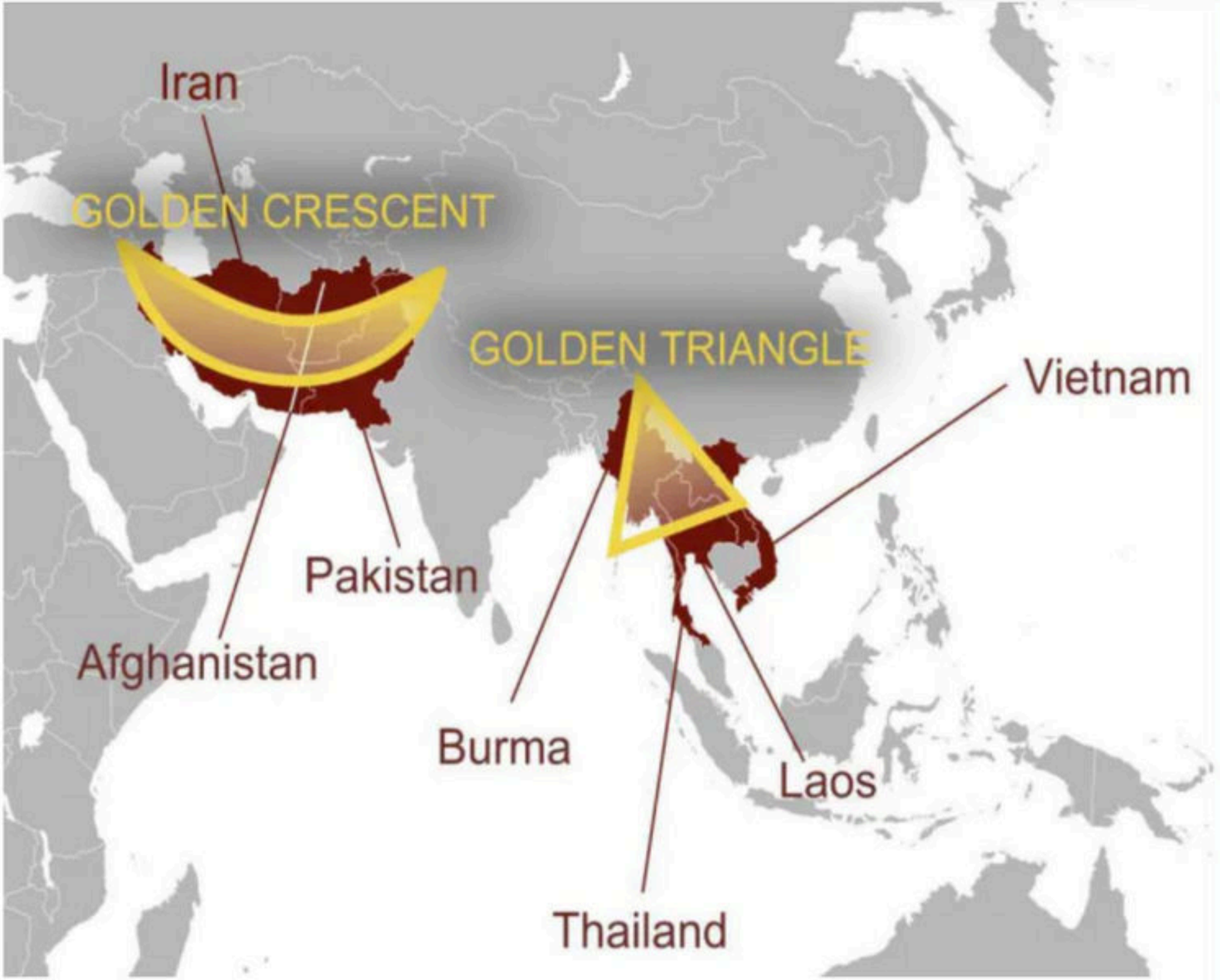
Opium produced her is used to make heroin.

The **Golden Crescent overlaps three nations, Afghanistan, Iran, and Pakistan**.

The mountainous, secluded geography provides safe haven for illicit opium production. The revenue generated from opium and heroine is a major source of terror funding in the region.

Afghanistan is the world's leading opium producer (II - Myanmar).

The **Golden Triangle** coincides with the mountainous trijunction region of **Thailand, Laos** and **Myanmar**. It is S.E. Asia's main opium-producing region and one of the oldest narcotics supply routes to Europe and North America.



Please Write Your

