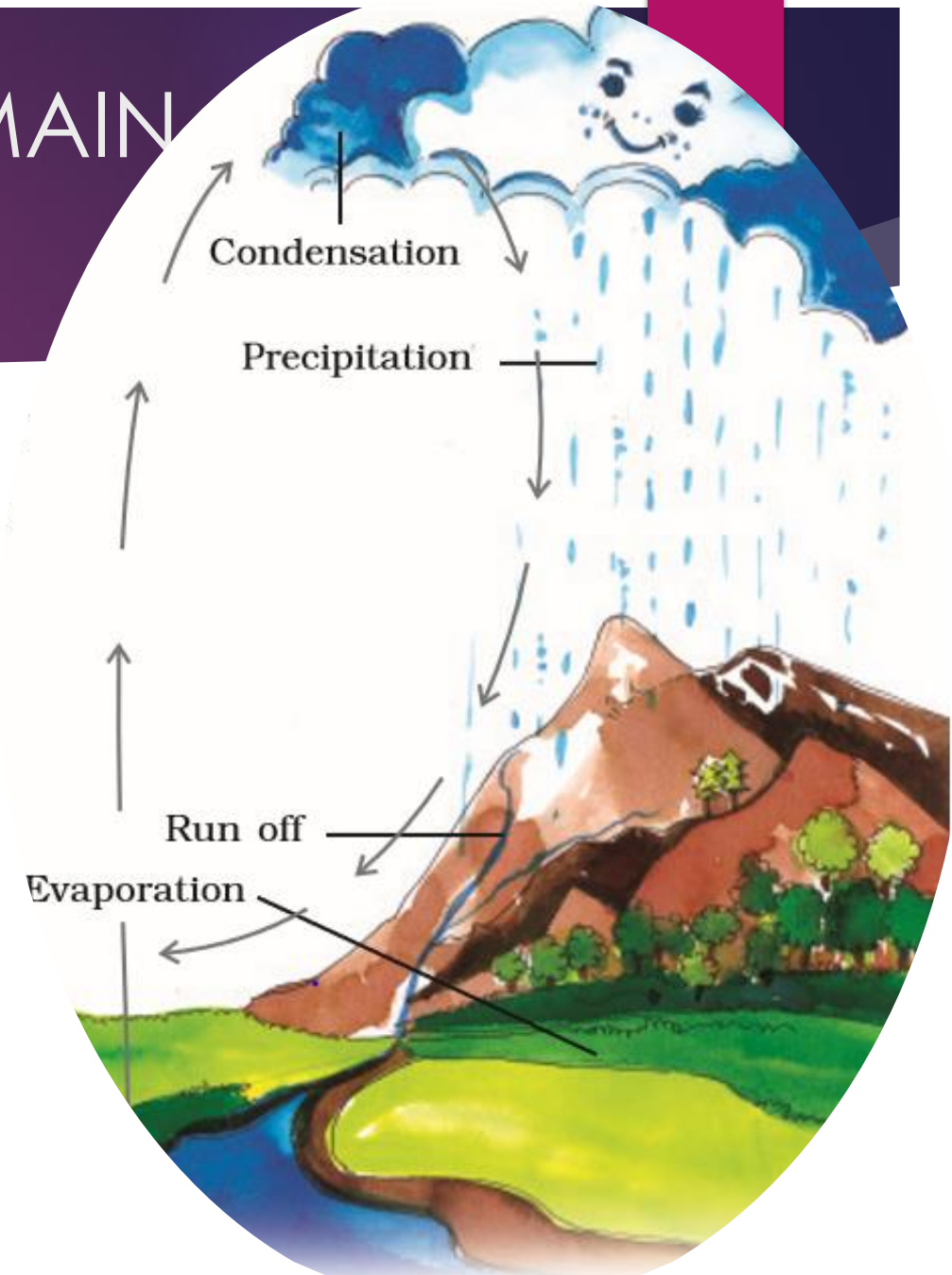


CH. 5 - WATER

HOW DOES THE WATER REMAIN CONSTANT ON EARTH

- ❖ **Our earth is like a terrarium. The same water that existed centuries ago still exists today.**
- ❖ **The process by which water continually changes its form and circulates between oceans, atmosphere and land is known as the water cycle .**
- ❖ **The water used to irrigate a field in Haryana may have flowed down the Amazon River a hundred years ago.**



DISTRIBUTION OF WATER ON EARTH

The following table gives the distribution of water in percentage

WATER EXISTING IN....	AMOUNT PRESENT IN PERCENTAGE
Oceans	97.3
Ice-caps	02.0
Ground water	0.68
Fresh water lakes	0.009
Inland seas and salt lakes	0.009
Atmosphere	0.0019
Rivers	0.0001

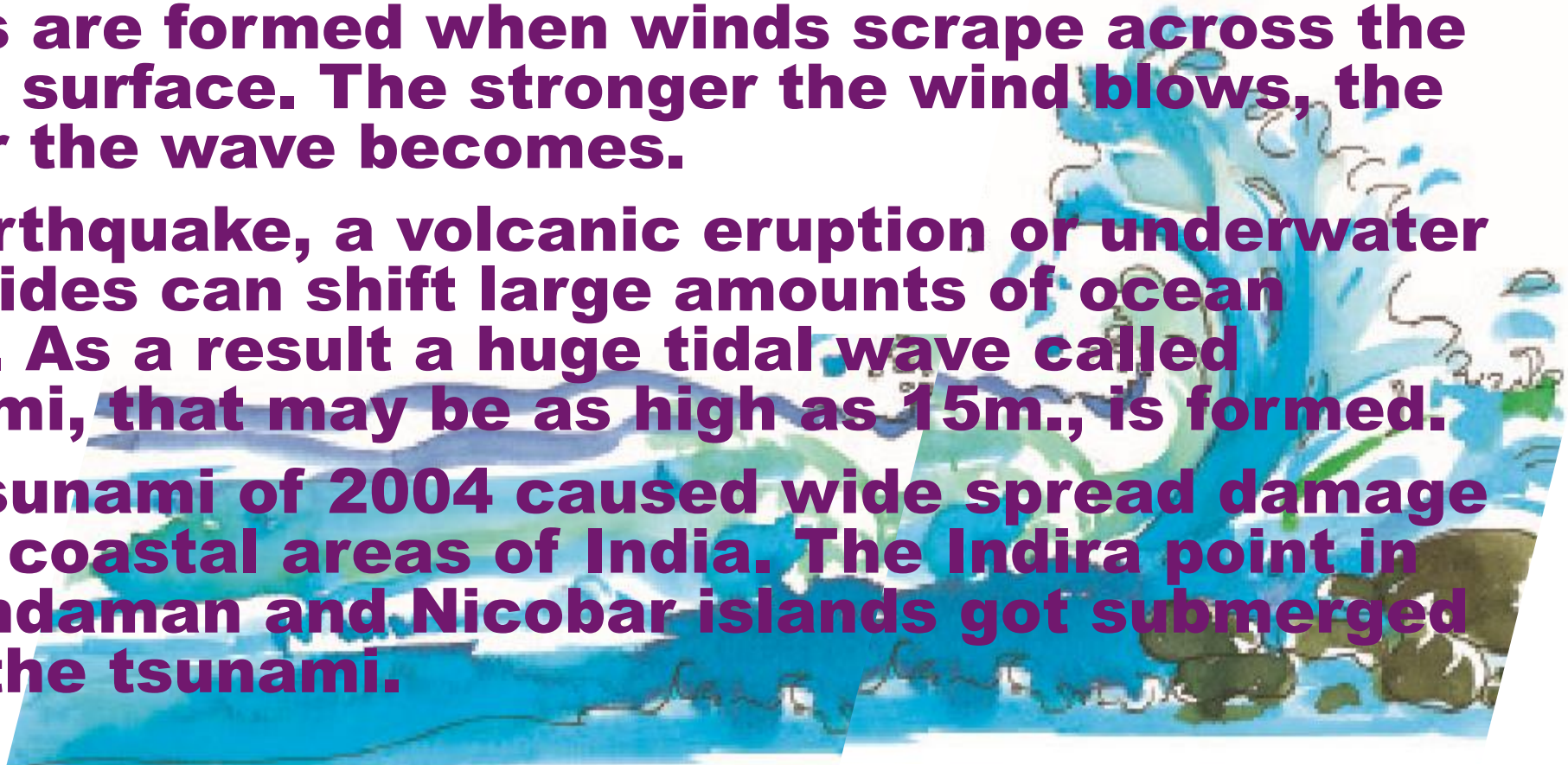
OCEAN MOVEMENTS

The movements that occur in oceans can be broadly categorised as:

- ❖ **waves,**
- ❖ **tides and**
- ❖ **currents.**

WAVES

- ❖ **Waves are formed when winds scrape across the ocean surface. The stronger the wind blows, the bigger the wave becomes.**
- ❖ **An earthquake, a volcanic eruption or underwater landslides can shift large amounts of ocean water. As a result a huge tidal wave called tsunami, that may be as high as 15m., is formed.**
- ❖ **The tsunami of 2004 caused wide spread damage in the coastal areas of India. The Indira point in the Andaman and Nicobar islands got submerged after the tsunami.**

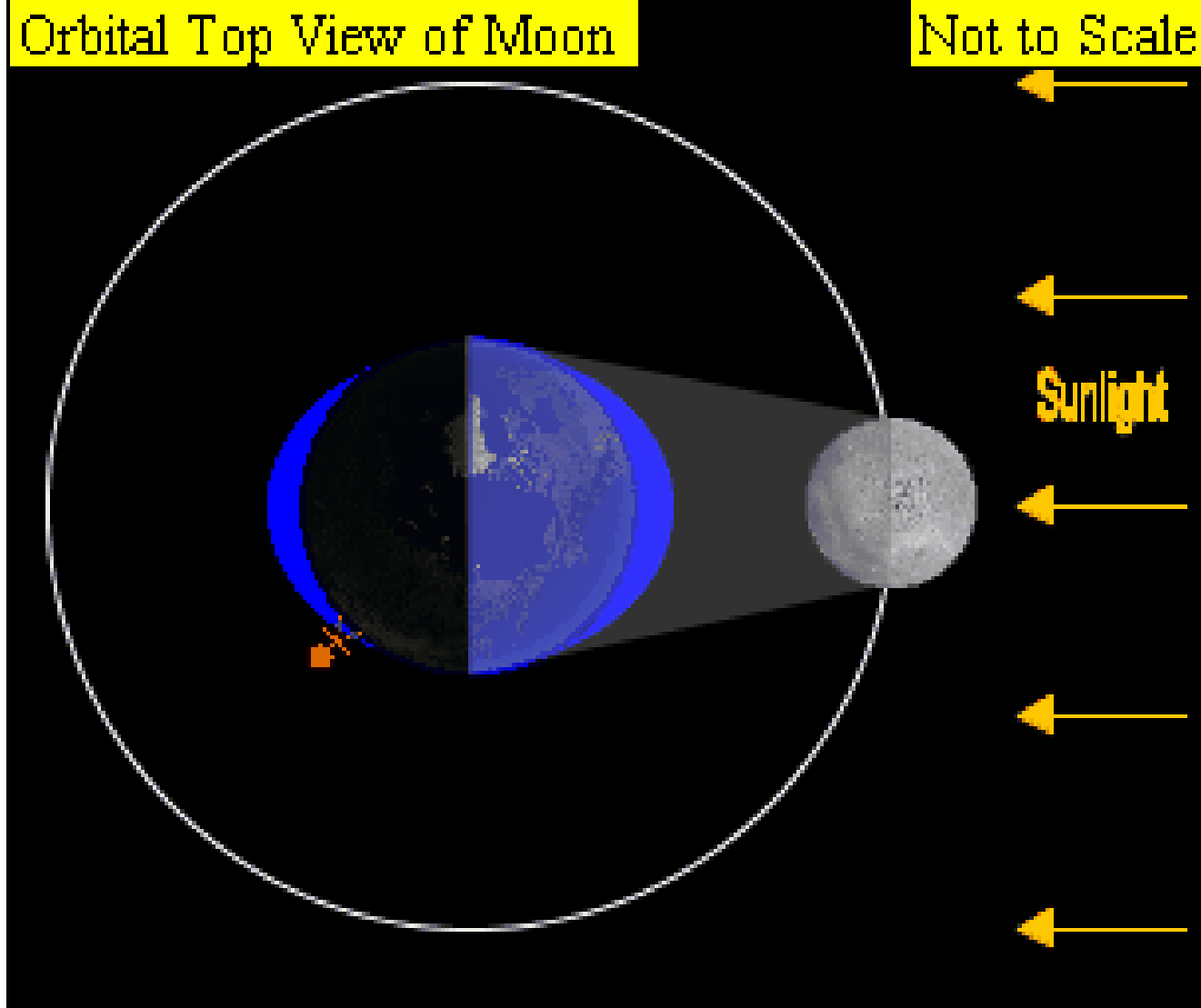


TIDES

- ▶ **The rhythmic rise and fall of ocean water twice in a day is called a tide.**
- ▶ **It is high tide when water covers much of the shore by rising to its highest level.**
- ▶ **It is low tide when water falls to its lowest level and recedes from the shore.**

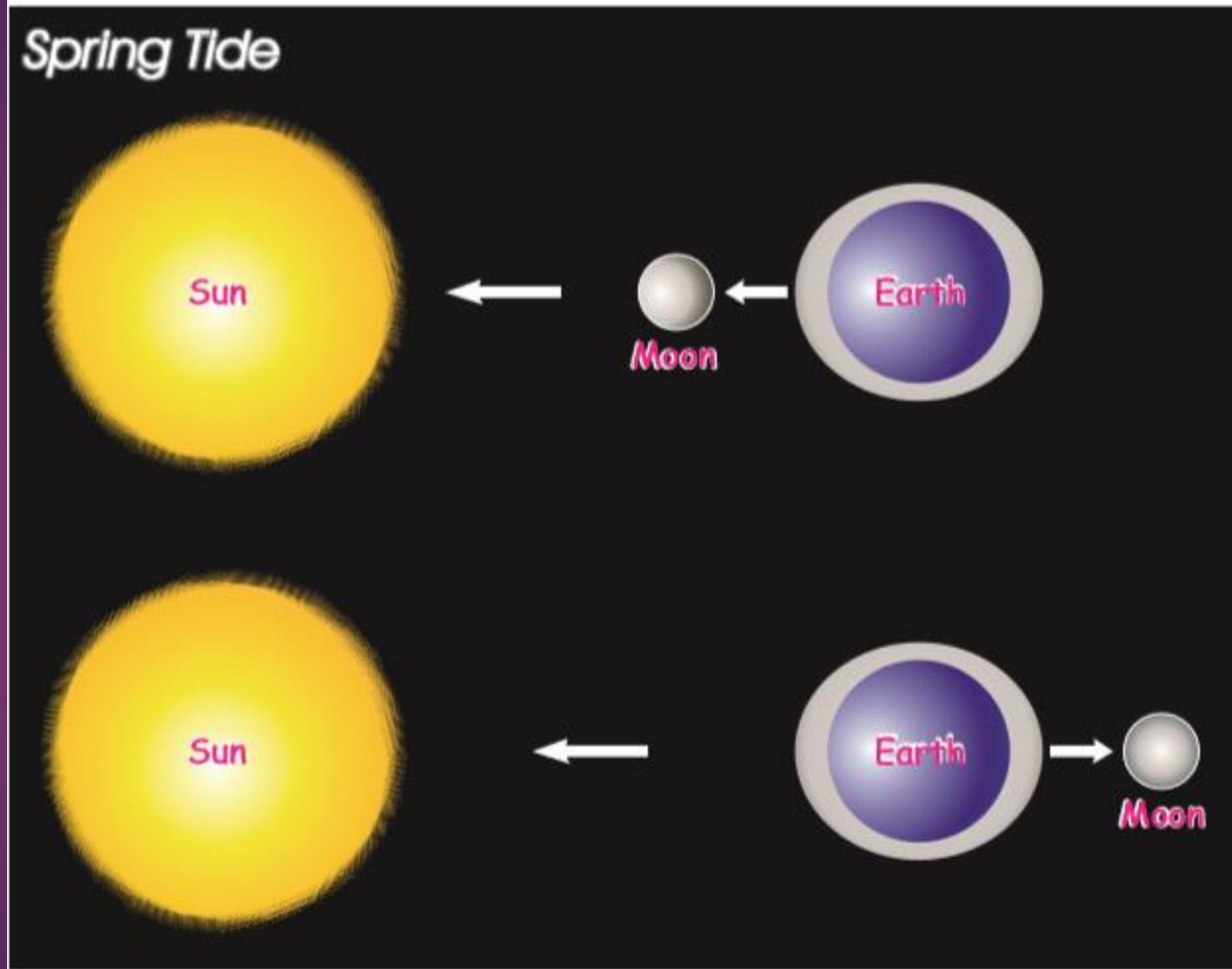
OCCURANCE OF TIDES

- ▶ **The strong gravitational pull exerted by the sun and the moon on the earth's surface causes the tides.**

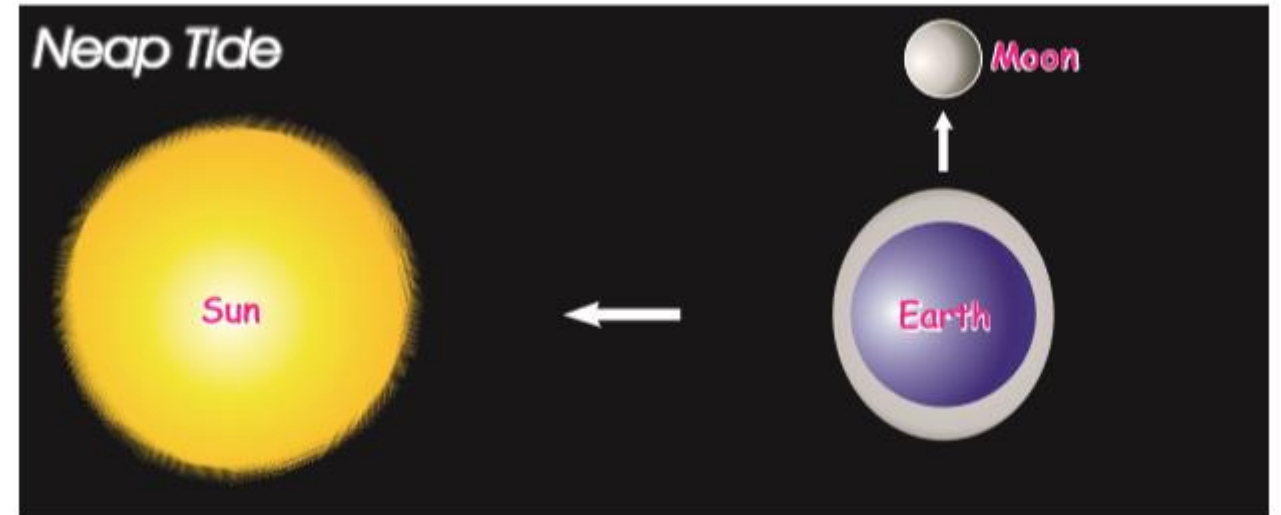


The water of the earth closer to the moon gets pulled under the influence of the moon's gravitational force and causes high tide.

During the full moon and new moon days, the sun, the moon and the earth are in the same line and the tides are highest. These tides are called spring tides.



But when the moon is in its first and last quarter, the ocean waters get drawn in diagonally opposite directions by the gravitational pull of sun and earth resulting in low tides. These tides are called neap tides

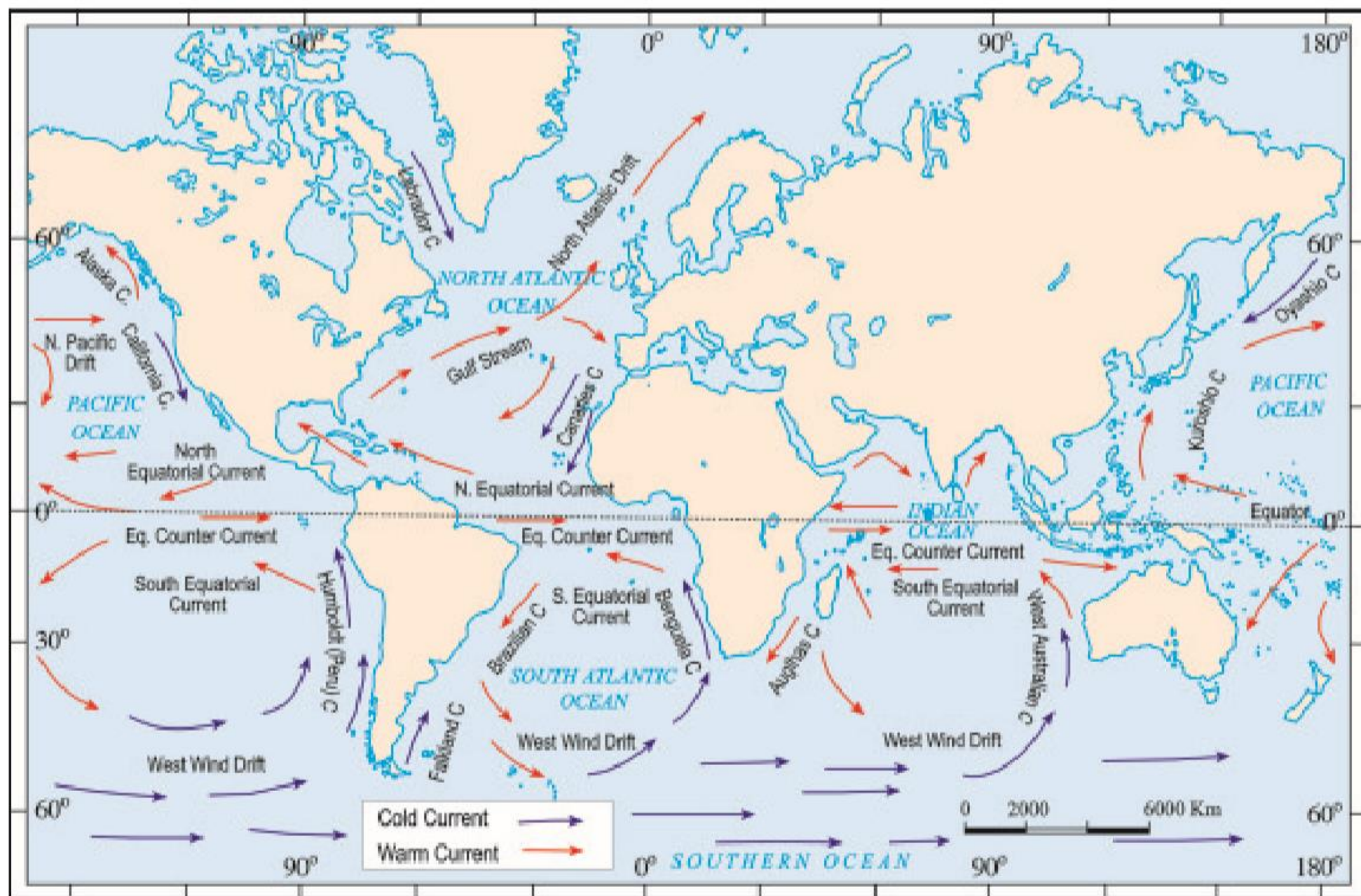


IMPORTANCE OF TIDES FOR HUMAN ACTIVITIES

- ▶ **High tides help in navigation. They raise the water level close to the shores. This helps the ships to arrive at the harbour more easily.**
- ▶ **The high tides also help in fishing. Many more fish come closer to the shore during the high tide. This enables fishermen to get a plentiful catch.**
- ▶ **The rise and fall of water due to tides is being used to generate electricity in some places.**

OCEAN CURRENTS

- ▶ **Ocean currents are streams of water flowing constantly on the ocean surface in definite directions. The ocean currents may be warm or cold.**
- ▶ **Generally, the warm ocean currents originate near the equator and move towards the poles. The cold currents carry water from polar or higher latitudes to tropical or lower latitudes**
- ▶ **The Labrador Ocean current is cold current while the Gulf Stream is a warm current.**



EFFECT OF OCEAN CURRENTS

- ▶ **The ocean current influence the temperature conditions of the area.**
- ▶ **Warm currents bring about warm temperature over land surface.**
- ▶ **The areas where the warm and cold currents meet provide the best fishing grounds of the world.**
- ▶ **Seas around Japan and the eastern coast of North America are such examples.**
- ▶ **The areas where a warm and cold current meet also experience foggy weather making it difficult for navigation.**