

Movements of ocean water:

You all know that the ocean water is never still. There are different types of movements of ocean water under the influence of different physical characteristics like temperature, salinity, density, etc. Movements of ocean water are also affected by external forces like the sun, moon and the winds.

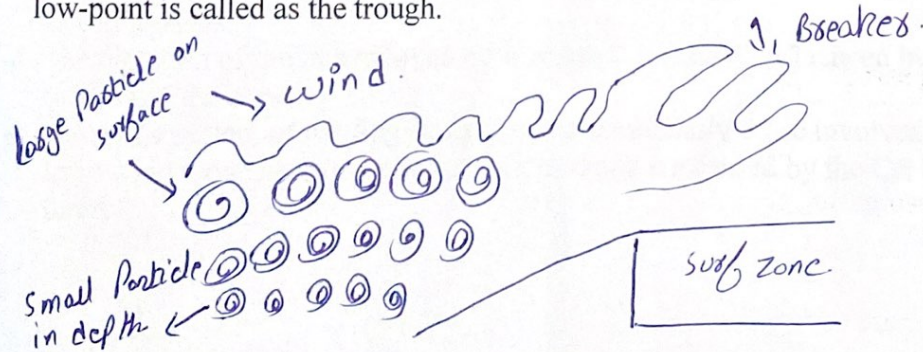
The major movements of the ocean waters can be classified into three. They are:

1. Waves
2. Tides
3. Ocean Currents

Waves and the ocean currents are horizontal movements of ocean waters while the tide is a kind of vertical movement of the ocean water.

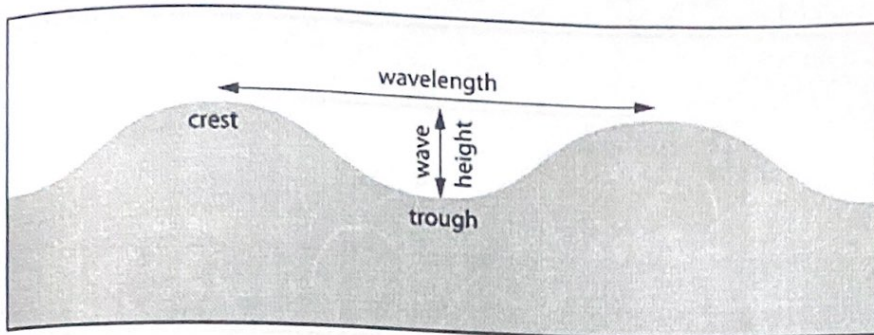
Waves:

- Waves are nothing but the oscillatory movements that result in the rise and fall of water surface.
- Waves are a kind of horizontal movements of the ocean water.
- They are actually the energy, not the water as such, which moves across the ocean surface.
- This energy for the waves is provided by the wind.
- In a wave, the movement of each water particle is in a circular manner.
- A wave has two major parts: the raised part is called as the crest while the low-point is called as the trough.



→ wind not only produce current it creates waves; ^{Page 1}
as wind blow across the smooth water surface the friction b/w air & water can produce.

→ when wave length decreases than wave height decrease.
 → wave length or depth are interrelated to each other.

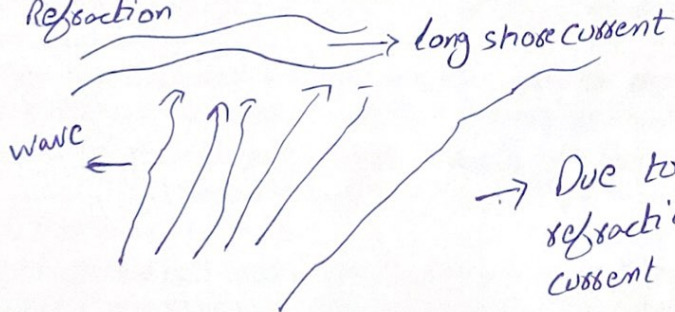


Surf zone

The Region consisting on Breaker's called surf zone.

wave Refraction

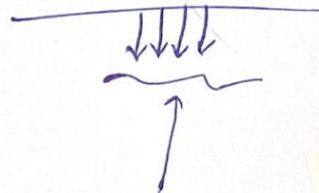
when wave strike to shore line with some angle their Dissection change this is called wave Refraction



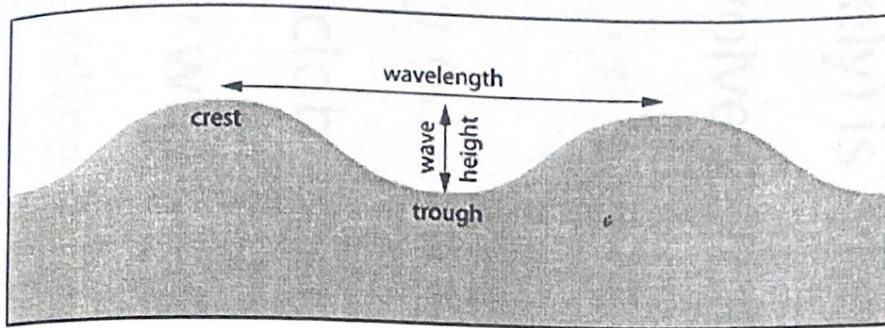
long shore current

The Parallel movement of wave is called long shore current- when the wave or long shore current's reaches to the coast. They hit the coast's & return back in a form of Rip current.

Rip current



→ when wave length decreases than wave height decrease.
 → wave length or depth are interrelated to each other.

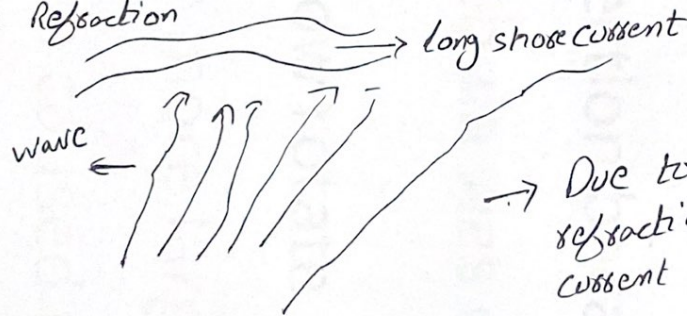


surf zone

The Region consisting of Breaker's called surf zone.

wave Refraction

when wave strike to shore line with some angle their Direction change this is called wave Refraction

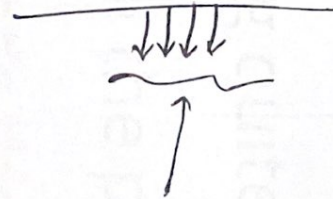


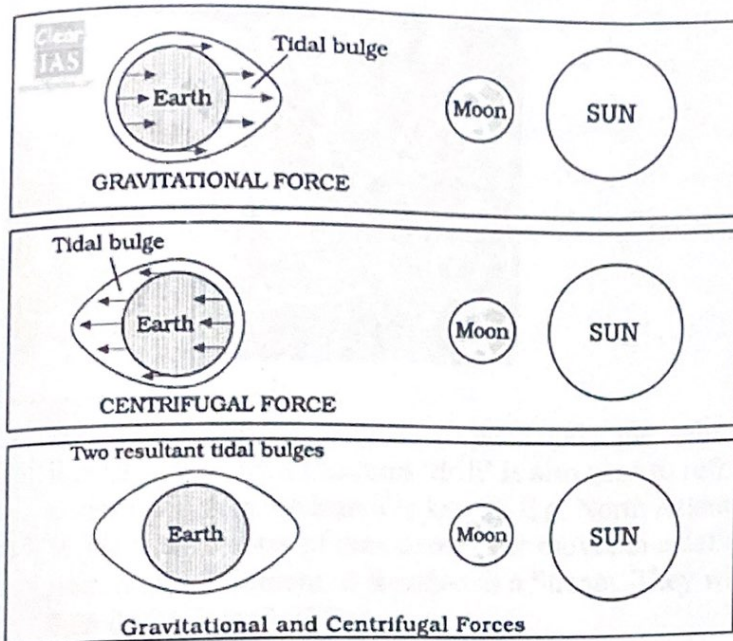
→ Due to wave refraction long shore current produced.

long shore current

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Rip current



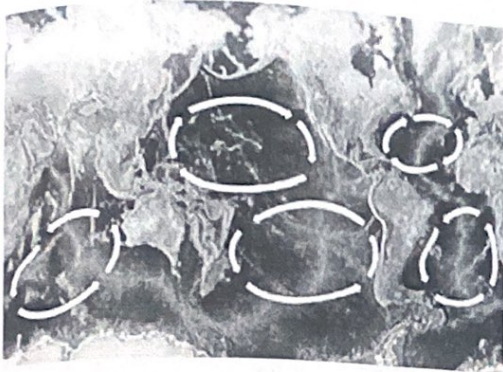


- The highest tides in the world occur in the Bay of Fundi in Canada.
- When the tide is channeled between islands or into bays and estuaries, they are termed as Tidal Currents.
- The regular interval between two high or two low tides is 12 hours 25 minutes.

Ocean Currents:

The ocean currents are the horizontal flow of a mass of water in a fairly defined direction over great distances.

- They are just like a river flowing in an ocean.
- Ocean currents can be formed by the winds, density differences in ocean waters due to differences in temperature and salinity, gravity and events such as earthquakes.
- The direction of movement of an ocean current is mainly influenced by the rotation of the earth
- Any large system of rotating ocean current, particularly those involved with large wind movements is called as a Gyre. They are caused by the Coriolis force.



- When the ocean water moves forward under the influence of prevailing wind, it is called as Drift (The term 'drift' is also used to refer the speed of an ocean current which is measured in knots). E.g. North Atlantic Drift.
- When a large mass of the ocean water moves in a definite path just like a large river on the continent, it is called as a Stream. They will have greater speed than drifts. E.g. Gulf Stream.