

Why are oceans so important for weather and climate?

 <http://www.youtube.com/watch?v=B0D7NY6enIk>

Watch and list your ideas...

Oceans and Major Ocean Currents

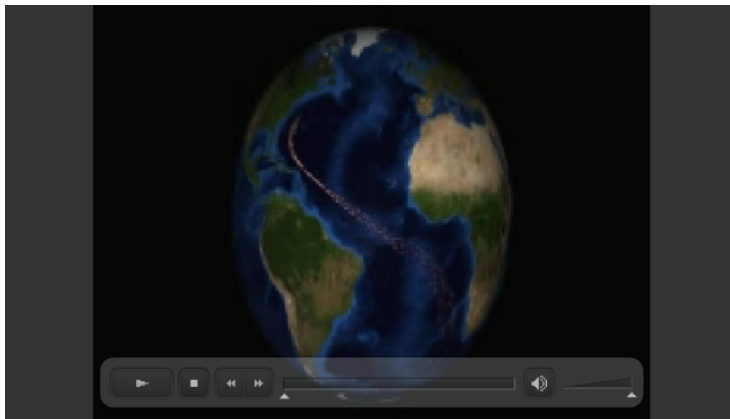
The oceans have an important effect on weather dynamics.

1. The oceans occupy a large portion of the Earth's surface. Water's high heat capacity will affect temperature changes in a given area.

In Newfoundland...

2. Since there is a large amount of water at the equator, where the sun is most direct, ocean currents act as conveyer belts to transport heat energy around the world.

The major ocean currents are shown in figure 1 on page 525 of your text. Note that the direction of the major ocean currents are similar to the directions of the major winds.



Causes of Ocean Currents

1. Solar heating of the oceans near the equator sets up convection currents.
2. This warm water moves away from the equator and towards the poles.
3. The salt content affects ocean currents. As water evaporates, sea water becomes saltier and sink, setting up deep water convection currents.



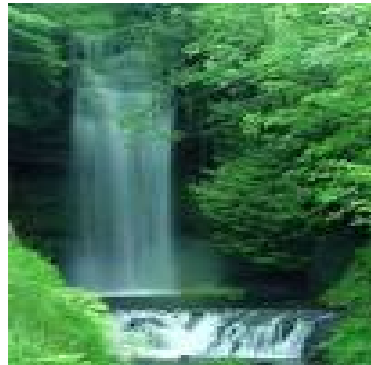
Effects of Ocean Currents

1. Creation of Rain Forests

Warm currents heat the air above them. This warm air carries more moisture. When this warm, moist air blows onshore, large quantities of precipitation often result.

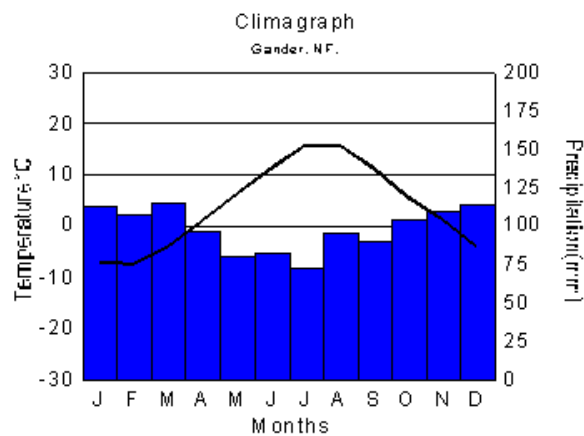
2. Creation of Deserts

Cold currents cool the air above them. Cold air does not carry much moisture. This cool, dry air creates dry conditions when it blows onshore.



3. Moderation of Climate

Coastal areas have cooler summers and milder winters because of the high heat capacity of the ocean. The ocean takes a long time to cool down and so it is warmer than the land in the fall and winter. It also takes a long time to heat up so it is colder than the land in the spring and summer.



http://www.youtube.com/watch?v=-hCZuYzNujI&safety_mode=true&persist_safety_mode=1&safe=active

