

If the salinity of ocean waters is analyzed. it is found to vary only slightly from place to place.

Nevertheless. some of these small changes are important.

There are three basic processes that cause a change in oceanic salinity.

One of these is the subtraction of water from the ocean by means of evaporation-conversion of liquid water to water vapor.

In this manner. the salinity is increased. since the salts stay behind.

If this is carried to the extreme. of course. white crystals of salt would be left behind: this. by the way. is how much of the table salt we use is actually obtained.

The opposite of evaporation is precipitation. such as rain. by which water is added to the ocean.

Here the ocean is being diluted so that the salinity is decreased.

This may occur in areas of high rainfall or in coastal regions where rivers flow into the ocean.

Thus salinity may be increased by the subtraction of water by evaporation.

or decreased by the addition of fresh water by precipitation or runoff.

Normally in tropical regions where the Sun is very strong, the ocean salinity is somewhat higher than it is in other parts of the world where there is not as much evaporation.

Similarly, in coastal regions where rivers dilute the sea salinity is somewhat lower than in other oceanic areas.

A third process by which salinity may be altered is associated with the formation and melting of sea ice.

When seawater is frozen, the dissolved materials are left behind.

In this manner, seawater directly beneath freshly formed sea ice has a higher salinity than it did before the ice appeared.

Of course, when this ice melts, it will tend to decrease the salinity of the surrounding water.

In the Weddell Sea, off Antarctica, the densest water in the oceans is formed as a result of this freezing process, which increases the salinity of cold water.

This heavy water sinks and is found in the deeper portions of the oceans of the world.