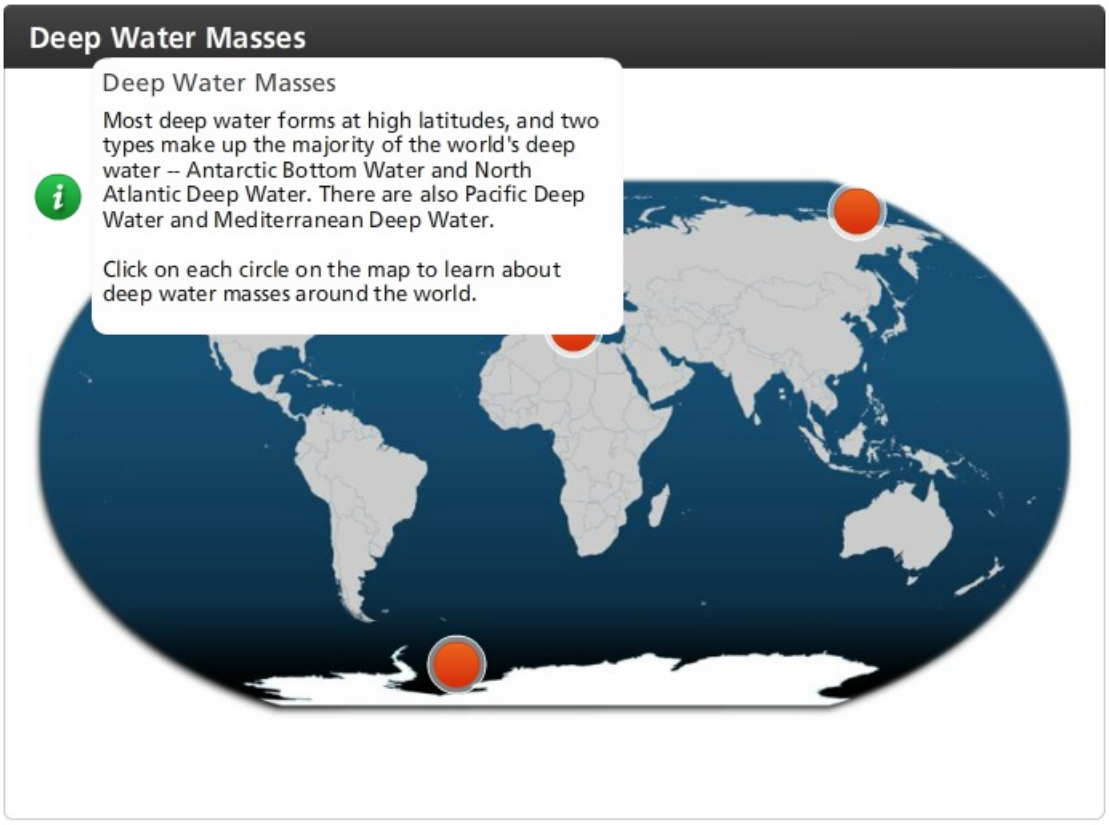
Module 7: Ocean Motion
Topic 2 Content: Deep Water Masses Notes



Most deep water forms at high latitudes, and two types make up the majority of the world's deep water -- Antarctic Bottom Water and North Atlantic Deep Water. There are also Pacific Deep Water and Mediterranean Deep Water.

Click on each circle on the map to learn about deep water masses around the world.

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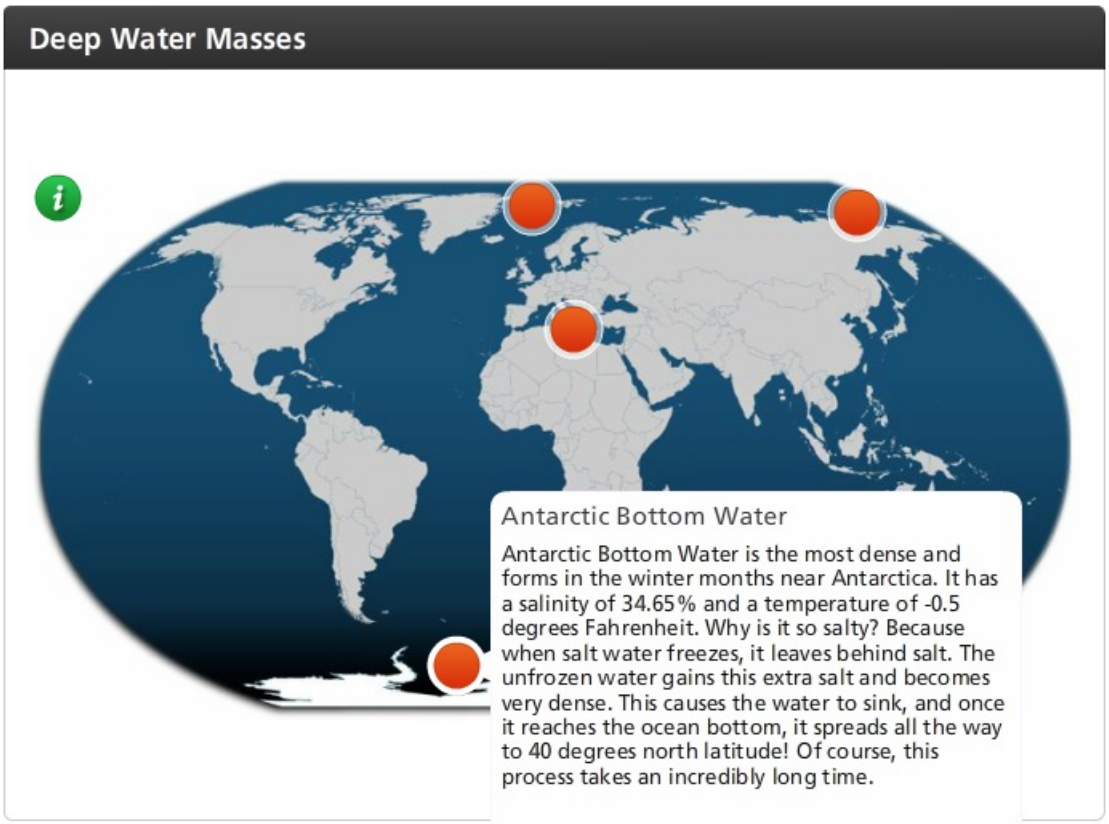

Antarctic Bottom Water is the most dense and forms in the winter months near Antarctica. It has a salinity of 34.65% and a temperature of -0.5 degrees Fahrenheit. Why is it so salty? Because when salt water freezes, it leaves behind salt. The unfrozen water gains this extra salt and becomes very dense. This causes the water to sink, and once it reaches the ocean bottom, it spreads all the way to 40 degrees north latitude! Of course, this process takes an incredibly long time.

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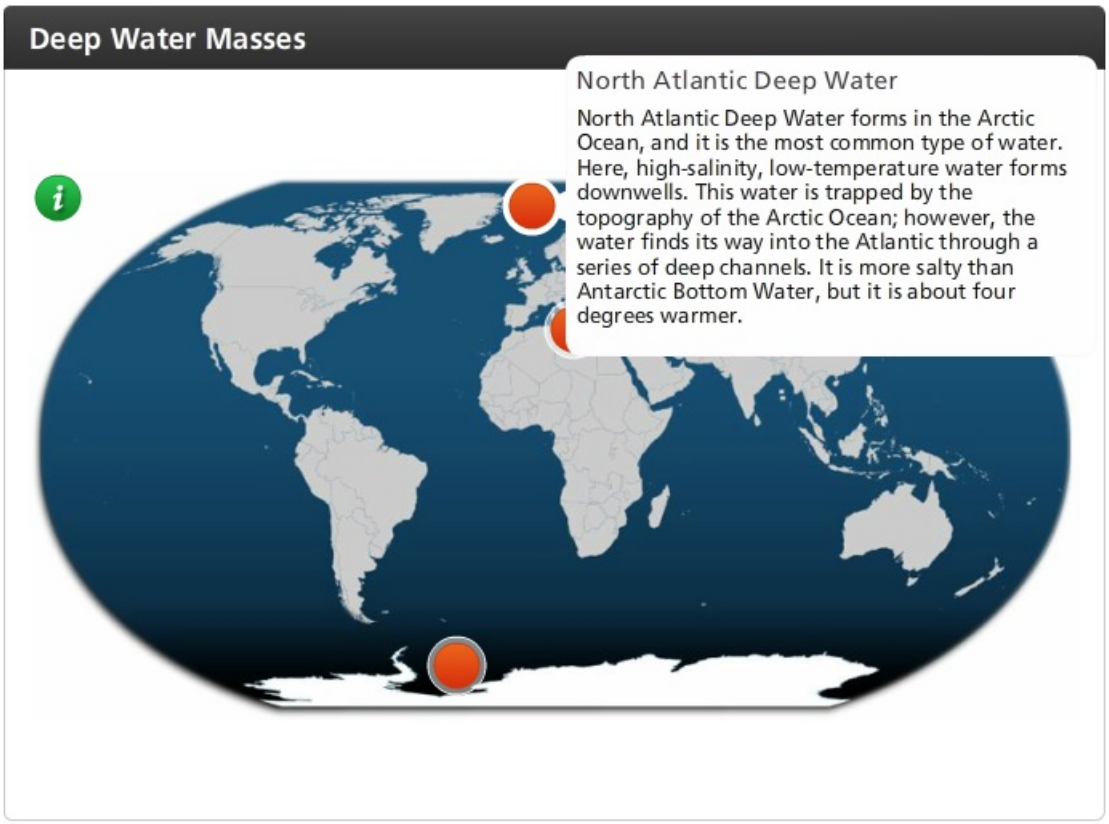

North Atlantic Deep Water forms in the Arctic Ocean, and it is the most common type of water. Here, high-salinity, low-temperature water forms downwells. This water is trapped by the topography of the Arctic Ocean; however, the water finds its way into the Atlantic through a series of deep channels. It is more salty than Antarctic Bottom Water, but it is about four degrees warmer.

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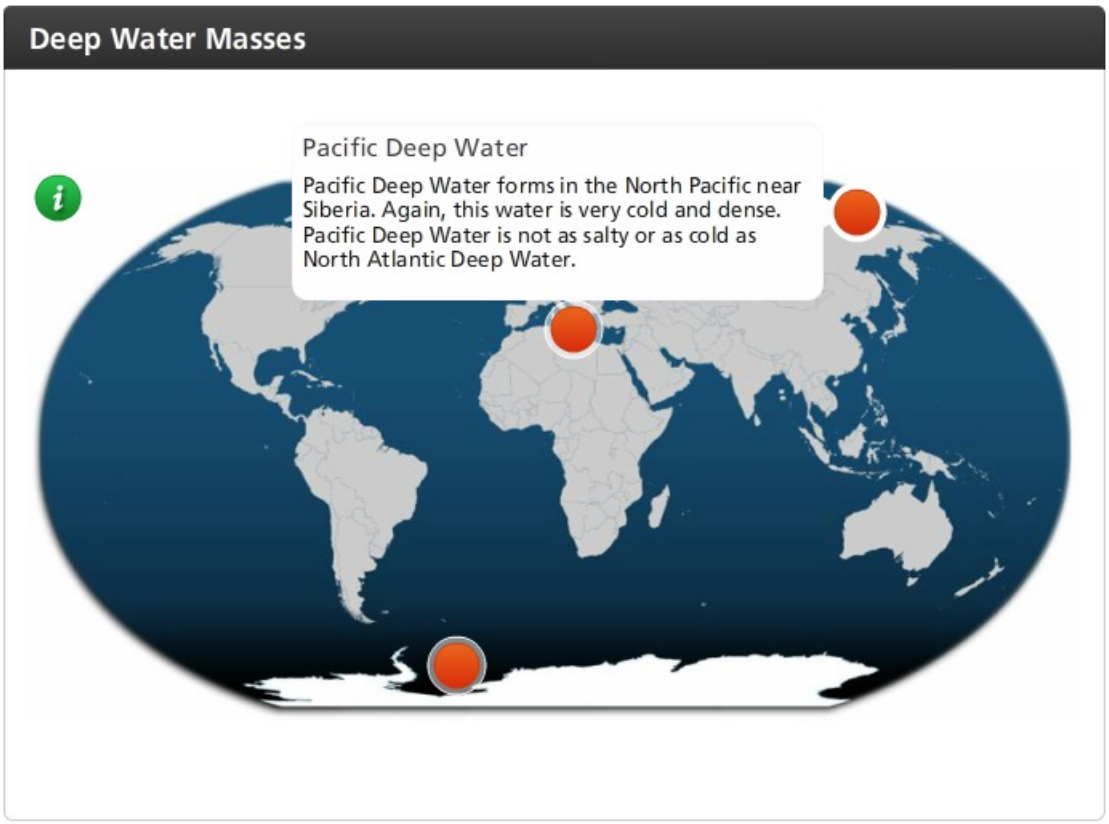

Pacific Deep Water forms in the North Pacific near Siberia. Again, this water is very cold and dense. Pacific Deep Water is not as salty or as cold as North Atlantic Deep Water.

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Mediterranean Deep Water is really an intermediate water by nature. It has a salinity of 38%, which is saltier than Antarctic Bottom Water. Its temperature, however, is much higher, so it is less dense. Mediterranean Deep Water forms as a result of the high evaporation in the Mediterranean Sea.