

# [Water of mud (stuller 28). this is](https://assignbuster.com/water-of-mud-stuller-28-this-is/)

Water TransitionsBrackish water is a fairly salty mixture of freshwater and sea water. It isunique in numerous ways and is a life giving ecosystem. To understand whatbrackish water is, a background should be known about its sources. First of all, there is freshwater.

Out of all the water on the planet, only threepercent of it is fresh, and only one fiftieth of one percent is readily available. Freshwater is not pure in that it contains minerals and other particles. There arenumerous plants and animals that depend on freshwater for their lives. Humans areone of them. Seventy percent of the human body is made up of freshwater (744Headlam). Next, there is saltwater, or seawater. Seawater consists of fifty-five percentchlorine, and thirty-one percent sodium (Groliers).

It makes up approximatelyninety-seven and two tenths percent of the total volume of the world’s water, andcovers more than seventy percent of the earth’s surface (Groliers). Sea waterdoesn’t just contain hydrogen, oxygen, sodium, and chlorine; it also contains everynaturally occurring element. Although seawater has a fairly constant ratio of majorelements, salinity and seawater can fluctuate. Normally, the salinity is thirty-four tothirty-seven parts per thousand (ppt.), but on a particularly rainy morning, the salinitymay decrease to something as low as thirty-two ppt. (Stuller 29).

The mixing of freshwater and sea water forms a third type of water, known asbrackish water. Brackish water can be found in a variety of mixing zones such asriver deltas, freshwater title marshes, estuaries, fjords, and in the middle of theocean(Stuller 30). To begin with, freshwater traveling towards the sea carries suspendedparticles. As the particles make contact with saltwater, an electrochemical reactioncalled flocculation takes place. The clay with a positive charge, and the sodiumchloride with a negative charge, combine and form a heavier particle that descendsto the bottom of the mixing zone and creates a layer of mud (Stuller 28). This is oneof the reasons that a mixing zone is a thriving ecosystem. A salt wedge estuary isone of these transitional zones. The water closest to the surface has a lower salinitycontent than the water nearest to the estuary’s floor because the water is notthoroughly mixed and saltwater has a higher density than freshwater (Stuller 31).

Another zone is a fully mixed zone which is apparent in fjords. Also, there are zonesin the middle of the ocean called either submarine springs, or seeps. These arewhere freshwater from under the ground seeps through the ocean floor. There isalso a parallel situation, in which salt water can seep into a freshwater ecosystem, but this can be fatal to many animals (Stuller 31). Transitional zones are homes forall kinds of marine life, such as manatees in Charlotte Harbor.

The most prevalent mixing zones are estuaries. Estuaries are drownedcostal river valleys where salt and freshwater are present to form brackish water(Groliers). The circulation in estuaries is stratified with river water flowing above seawater with some vertical mixing taking place (Groliers). As indicated earlier, sediments accumulate at the upper reaches of estuaries because of flocculation.

This in turn spikes diatom growth, diatoms are eaten by possum shrimp, andpossum shrimp are eaten by striped bass. Some other common fish, present inbrackish water ecosystems are mullet and silversides (Groliers). Thus, the foodcycle continues. Brackish water has some very interesting qualities. It represents unity of twovery diverse ecosystems. The mixing of seawater and freshwater is extremelybeneficent at the right time in the right place, but in the past it may have beenharmful.

Scientists speculate that an ice age may have been triggered by freshwateroccupying a location where saltwater was supposed to have been. There is a deepocean current of very salty water beneath the gulf stream travelling from the tropicsto the North Atlantic. As it reaches the North, it disturbs surface water, the saltywater rises and discharges heat, and then it cycles back to the tropics. What couldhave triggered an ice age, a surge of freshwater (Stuller 33). Category: English