# Salt Water

## Also Known As Saline water

All over Florida

is a general term for water that contains a significant concentration of dissolved salts(Na Cl). The concentration is usually expressed in parts per million (ppm) of salt.

Water that is saline contains significant amounts (referred to as "concentrations") of dissolved salts. In this case, the concentration is the amount (by weight) of salt in water, as expressed in "parts per million" (ppm). If water has a concentration of 10,000 ppm of dissolved salts, then one percent (10,000 divided by 1,000,000) of the weight of the water comes from dissolved salts. The salinity concentration level used by United States Geological Survey classifies saline water in three categories. Slightly saline water contains around 1,000 to 3,000 ppm. Moderately saline water contains roughly 3,000 to 10,000 ppm. Highly saline water has around 10,000 to 35,000 ppm of salt. Seawater has a salinity of roughly 35,000 ppm, equivalent to 35 g/L. Some industries make use of saline water, such as mining and thermoelectric-power.

# **Properties**

The thermal conductivity of seawater is 0.6 W/mK at 25 deg C and a salinity of 35 g/kg.. The thermal conductivity decreases with increasing salinity and increases with increasing temperature; these graphs and online calculations plot thermal conductivity for varying salinity and temperature: The salt content can be determined with a salinometer.

### Brackish water

Is water that has more salinity than fresh water, but not as much as sea water. It may result from mixing of seawater with fresh water, as in estuaries, or it may occur in brackish fossil aquifers. The word comes from the Middle Dutch root "brak," meaning "salty". Certain human activities can produce brackish water, in particular certain civil engineering projects such as dikes and the flooding of coastal marshland to produce brackish water pools for freshwater prawn farming. Brackish water is also the primary waste product of the salinity gradient power process. Because brackish water is hostile to the growth of most terrestrial plant species, without appropriate management it is damaging to the environment (see article on shrimp farms).

Technically, brackish water contains between 0.5 and 30 grams of salt per litre—more often expressed as 0.5 to 30 parts per thousand (ppt or ‰). Thus, *brackish* covers a range of salinity regimes and is not considered a precisely defined condition. It is characteristic of many brackish surface waters that their salinity can vary considerably over space and/or time.

### **Estuaries**

Brackish water condition commonly occurs when fresh water meets sea water. In fact, the most extensive brackish water habitats worldwide are estuaries, where a river meets the sea. The River Thames flowing through London is a classic river estuary. The town of Teddington a few miles west of London marks the boundary between the tidal and non-tidal parts of the Thames, although it is still considered a freshwater river about as far east as Batter sea insofar

as the average salinity is very low and the fish fauna consists predominantly of freshwater species such as roach, dace, carp, perch, and pike. The Thames Estuary becomes brackish between Batter sea and Gravesend, and the diversity of freshwater fish species present is smaller, primarily roach and dace, euryhaline marine species such as flounder, European seabass, Florida mullet, and smelt become much more common. Further east, the salinity increases and the freshwater fish species are completely replaced by euryhaline marine ones, until the river reaches Gravesend, at which point conditions become fully marine and the fish fauna resembles that of the adjacent North Sea and includes both euryhaline and stenohaline marine species. A similar pattern of replacement can be observed with the aquatic plants and invertebrates living in the river.

This type of ecological succession from a freshwater to marine ecosystem is typical of river estuaries. River estuaries form important staging points during the migration of anadromous and catadromus fish species, such as salmon and eels, giving them time to form social groups and to adjust to the changes in salinity. Salmon are anadromous, meaning they live in the sea but ascend rivers to spawn; eels are catadromous, living in rivers and streams, but returning to the sea to breed. Besides the species that migrate through estuaries, there are many other fish that use them as "nursery grounds" for spawning or as places young fish can feed and grow before moving elsewhere. Herring and plaice are two commercially important species that use the Thames Estuary for this purpose.

Estuaries are also commonly used as fishing grounds, and as places for fish farming or ranching. For example, Atlantic salmon farms are often located in estuaries, although this has caused controversy, because in doing so, fish farmers expose migrating wild fish to large numbers of external parasites such as sea lice that escape from the pens the farmed fish are kept in.

# Florida Mangroves

Another important brackish water habitat is the mangrove swamp or **mangal**. Many, though not all, mangrove swamps fringe estuaries and lagoons where the salinity changes with each tide. Among the most specialised residents of mangrove forests are mud skippers, fish that forage for food on land, and archer fish, perch-like fish that "spit" at insects and other small animals living in the trees, knocking them into the water where they can be eaten. Like estuaries, mangrove swamps are extremely important breeding grounds for many fish, with species such as snappers, halfbeaks, and tarpon spawning or maturing among them. Besides fish, numerous other animals use mangroves, including such specialists as the saltwater, American crocodile, proboscis monkey, diamondback terrapin, and the crab-eating frog, *Fejervarya cancrivora* (formerly *Rana cancrivora*).

Although often plagued with mosquitoes and other insects that make them unpleasant for humans, mangrove swamps are very important buffer zones between land and sea, and are a natural defense against hurricane and tsunami damage in particular.

The Sundarbans and Pichavaram are two of the large mangrove forests in the world, both on the coast of the Bay of Bengal.

### Brackish seas and lakes

Some seas and lakes are brackish. The Baltic Sea is a brackish sea adjoining the North Sea. Originally the confluence of two major river systems prior to the Pleistocene, since that it has been flooded by the North Sea but still receives so much freshwater from the adjacent lands that the water is brackish. Because the salt water coming in from the sea is denser than freshwater, the water in the Baltic is stratified, with salt water at the bottom and freshwater at the top. Limited mixing occurs because of the lack of tides and storms, with the result that the fish fauna at the surface is freshwater in composition while that lower down is more marine. Cod are an example of a species only found in deep water in the Baltic, while pike are confined to the less saline surface waters.

The Caspian Sea is the world's largest lake and contains brackish water with a salinity about one-third that of normal seawater. The Caspian is famous for its peculiar animal fauna, including one of the few non-marine seals (the Caspian seal) and the great sturgeons, a major source of caviar.

In the Black Sea the surface water is brackish with an average salinity of about 17-18 parts per thousand compared to 30 to 40 for the oceans. The deep, anoxic water of the Black Sea originates from warm, salty water of the Mediterranean.

#### **Brackish marshes**

Develop by salt marshes where a significant freshwater influx dilute the seawater to brackish levels of salinity. This commonly happens upstream salt marshes by estuaries of coastal rivers or near the mouths of Floridas coastal rivers with heavy freshwater discharges in the conditions of low tidal ranges.

### A tidal marsh

Is a type of marsh that is found along coasts and estuaries of which the flooding characteristics are determined by the tidal movement of the adjacent estuary, sea or ocean . According to the salinity of the flooding water, freshwater, brackish and saline tidal marshes are distinguished. Respectively, they may be classified into **coastal marshes** and **estuarine marshes**.

They are also commonly zoned into lower marshes (also called intertidal marshes) and upper or high marshes, based on their elevation with respect to the sea level.

In addition they may also be classified into **back-barrier marshes**, **estuarine brackish marshes** and **tidal freshwater marshes**, according to the degree of the influence of the sea level.

#### Brackish Lakes

#### The Caspian Sea

(Azerbaijani: *Xəzər dənizi*, Persian: دریای خزر, Russian: Каспийское море, Kazakh: Каспий теңізі, Turkmen: Hazar deňzi) is the largest enclosed body of water on Earth by area, variously classed as the world's largest lake or a full-fledged sea. The sea has a surface area of 371,000 km2 (143,200 sq mi) (not including Garabogazköl Aylagy) and a volume of 78,200 km3 (18,800 cu mi). It is in an endorheic basin (it has no outflows) and is bounded to the northwest by Russia, to the west by Azerbaijan, to the south by Iran, to the southeast by Turkmenistan, and to the

northeast by Kazakhstan.

The ancient inhabitants of its littoral perceived the Caspian Sea as an ocean, probably because of its saltiness and seeming boundlessness. It has a salinity of approximately 1.2%, about a third the salinity of most seawater. The Caspian Sea has been called Gilan (دريای گیلان) on ancient maps. In Iran, it is referred to as *Daryâ-ye Mazandaran* (دريای مازندران), meaning "the Sea of Mazandaran" in Persian, and sometimes also as Daryâ-ye Khazar.[5]

My list of Florida fish related term

Amberjack, Ballyhoo, Banded Rudderfish, Bluefish, Bonefish, Bonita, Chumming, Cobia, Florida, Flounder, Flying Fish, Gag Grouper, Greater Amberjack, How to Make pilchard rings, Ladyfish, Lesser Amberjack, Mahi Mahi, Mangrove Snapper, Menhaden, Mud Minnow, Mullet, Permit, Pinfish, Red Snapper, Redfish, Sailfish, Salt Water, Shrimp, Snook, Spanish Mackerel, Spotted Seatrout, Squid, Tarpon, Tides, Tilefish, Triggerfish, Triple Tail, Vermillion Snapper, Wahoo, West Palm Beach Florida,

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