

The Black Sea IIIa: Variation with depth

The Black Sea is a strongly stratified body of water because its deep water is much more saline than its surface water. This difference results from inflow of freshwater from rivers to give the dilute surface waters, and from deep inflow of seawater through the Bosphorus to supply the salinity of the Black Sea's deep waters. However, even the deep water of the

Black Sea is much less saline than typical oceanic seawater, as shown below.

Vertical variation in temperature in the Black Sea is also very different from that of the global ocean. Deep water in the Black Sea, former shallow water of the Aegean, is relatively warm, but a cold intermediate layer separates that deep water from the warm

surface water.

The strong pycnocline or density gradient forced by the halocline means there is little vertical mixing in the Black Sea. As a result, little atmospheric O₂ reaches the deep water, which is consequently markedly anoxic. Part IIIb explores the resulting chemically unique nature of the Black Sea's deep water.

