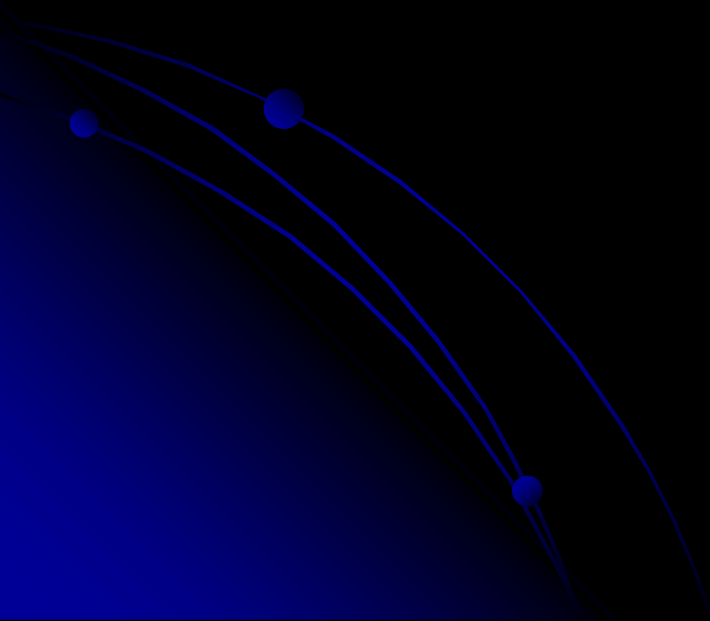


Salinity in the Red Sea



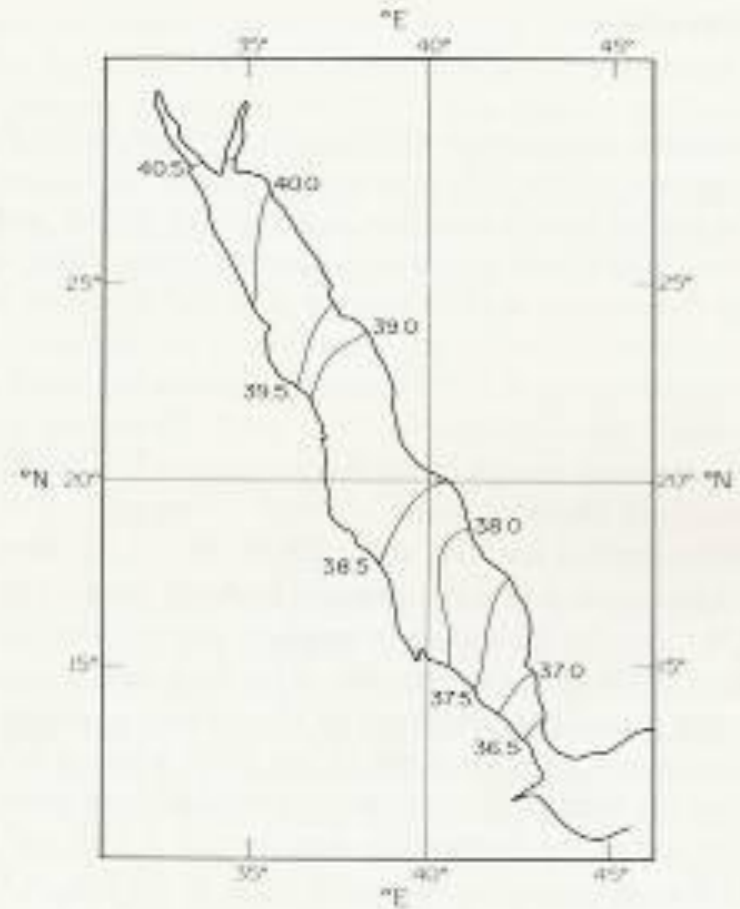
Distribution pattern

- Higher salinity in seawater occurs when evaporation exceeds precipitation.
- The average salinity of the surface waters in the open oceans ~ 35.



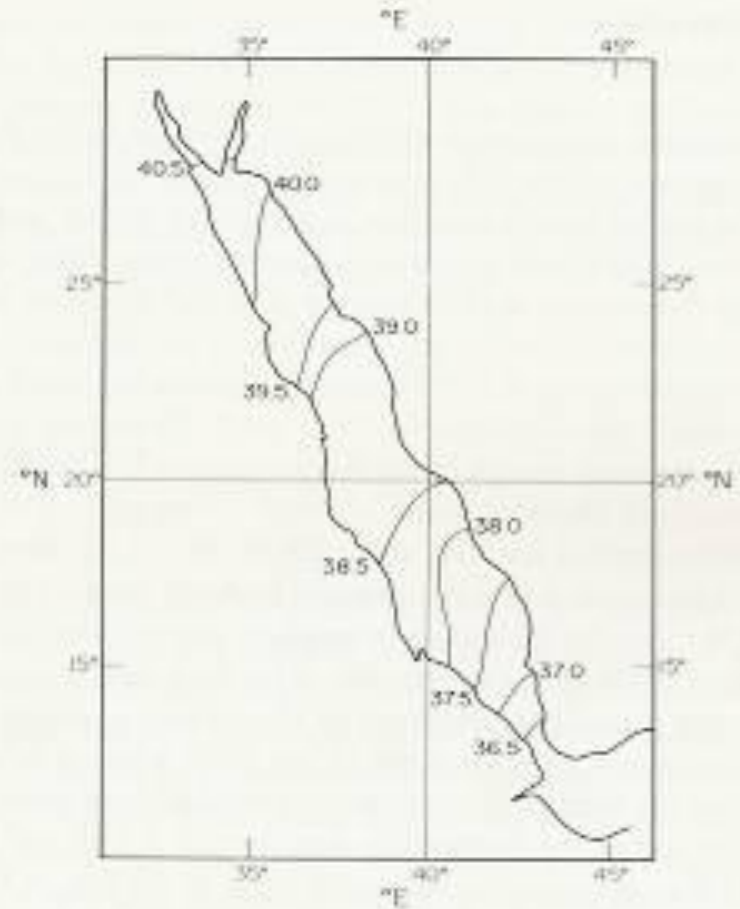
Distribution pattern

- The salinity in the Red Sea increases from south to north.
- Salinity increases along its axes steadily, reaching 38 by about 17 °N, 39 by 22 °N and by 40 by 26 °N.



Distribution pattern

- Salinity of 40.5 is recorded at the entrance of northern Gulfs.
- In general salinity is higher on the western side than in the east (isohaline are aligned generally from NNE to SSW).



Distribution pattern

- The differences between the eastern and western sides in the same latitude ~ 1.
- Little is known about seasonal changes.
- Evidence that evaporation is higher in the winter than in the summer.

Why?????

Due to higher wind speed in winter

Distribution pattern

- Evaporation minimum in the wind convergence zone at around 18 °N during the months Oct to May.
- In the southern half a small increase seems to occur in summer.

Why?????

Due to great extent of the North-westerly winds at this time which increase the transport of more saline surface water from the north

Sub-surface salinity

- The salinity of water mass in the Red Sea basin below 300m is constant 40.5-40.6 (Similar to the surface salinity of the Gulf of Suez i.e. its source is from the Gulf).
- Since the surface salinity increases northward, the vertical gradient is largest in the south, becomes very small by about 23 °N and is non-existent at the northern end.