

Ocean Water and Ocean Life

Chapter 15



I. Seawater

- ◆ Seawater is a *solution* of water and salts.
- ◆ **Salinity:** a measure of the total amount of dissolved solids in water.
- ◆ Seawater is ~96.5% water and ~3.5% salts.
- ◆ Because of mixing, this concentration is the same across the world.
- ◆ Because the concentration of many salts is very low, they are often measured in parts per thousand (0/00)

Seawater

For example:

If the concentration of salts is 3.5%, 3.5 parts per hundred, then there are 35 parts of salt per 1,000 parts per water.

◆ 85% of all the salt dissolved in seawater is sodium chloride (table salt).

◆ Other salts include:

Magnesium chloride

Sodium sulphate

Calcium chloride

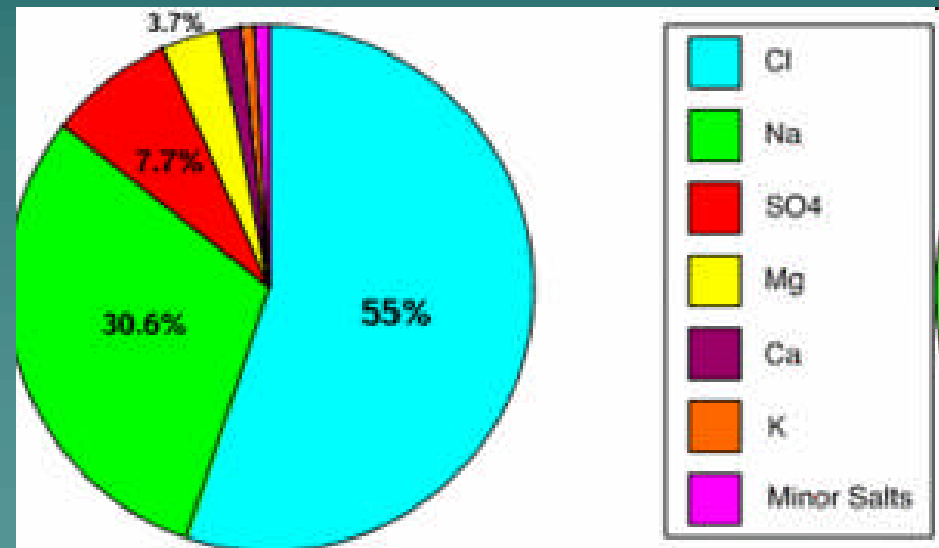
Potassium chloride

Sodium bicarbonate

Potassium bromide

Strontium chloride

Sodium fluoride



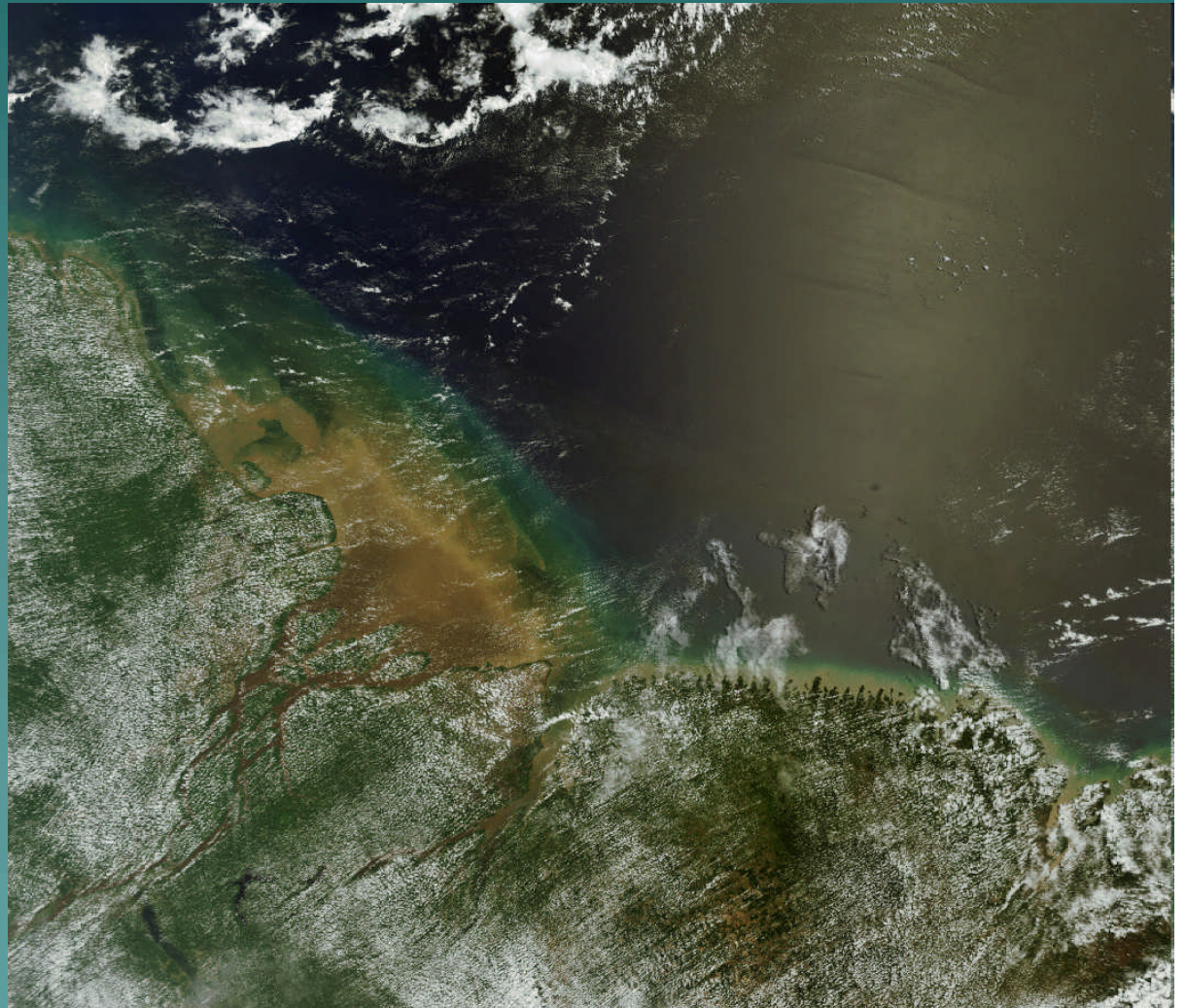
Ders' gold in dem' der' oceans

- ◆ Nearly every element on the periodic table can be found, in tiny amounts, in seawater.
- ◆ **Example:** There are ~ 0.0000008 grams of gold in every meter³ of seawater.
- ◆ Since there are a billion cubic meters of seawater in the oceans, the total amount of gold in the oceans is **11 million tons.**

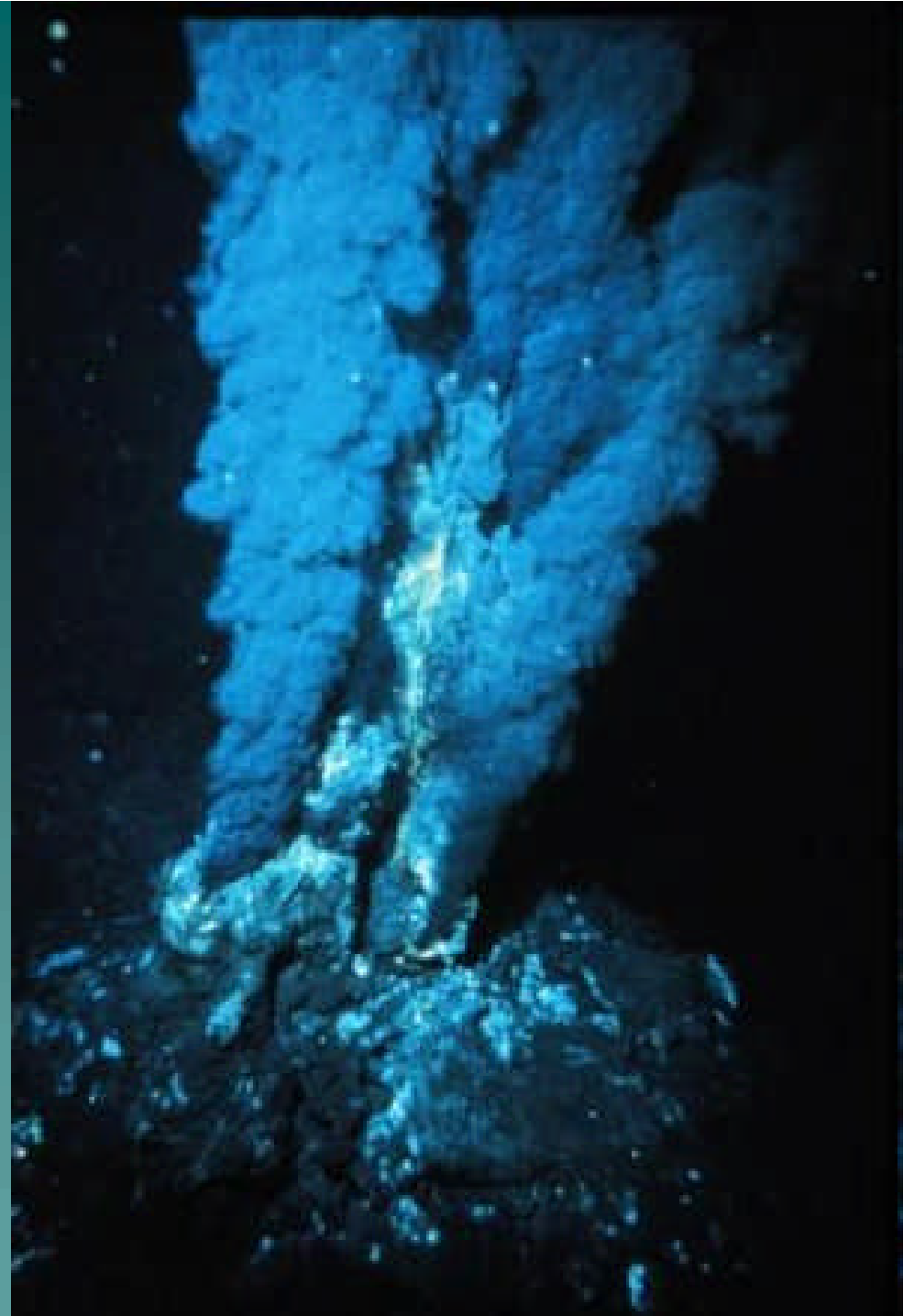
Where does the salt come from?

Source 1:

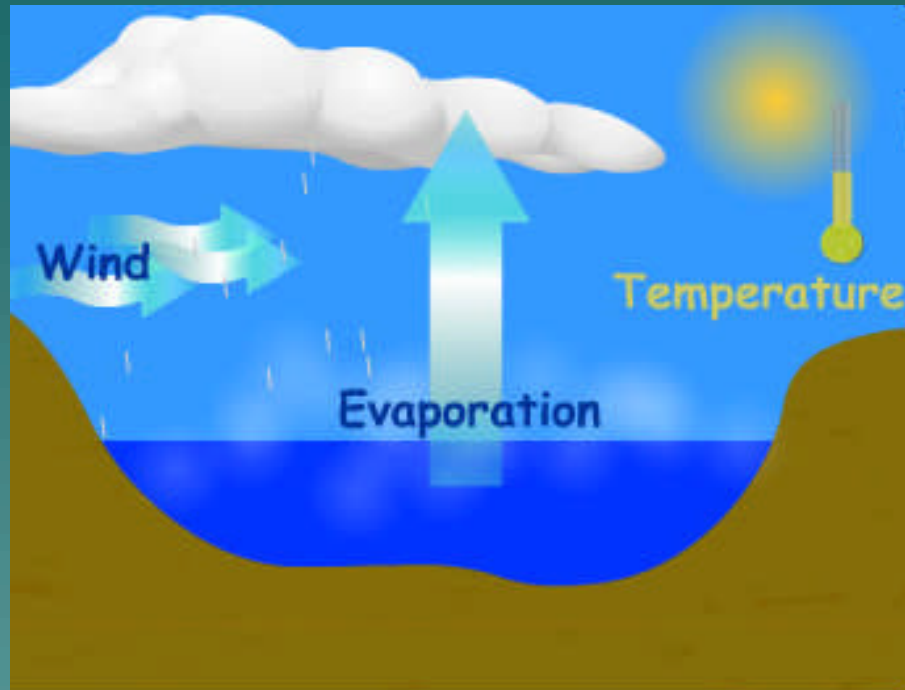
Runoff from rivers



Source 2:
Underwater
volcanoes and
hydrothermal
vents



Processes Affecting Salinity



1. Evaporation

Increases salinity.

Wind



Temperature



Humidity



2. Melting Ice

Decreases
salinity.



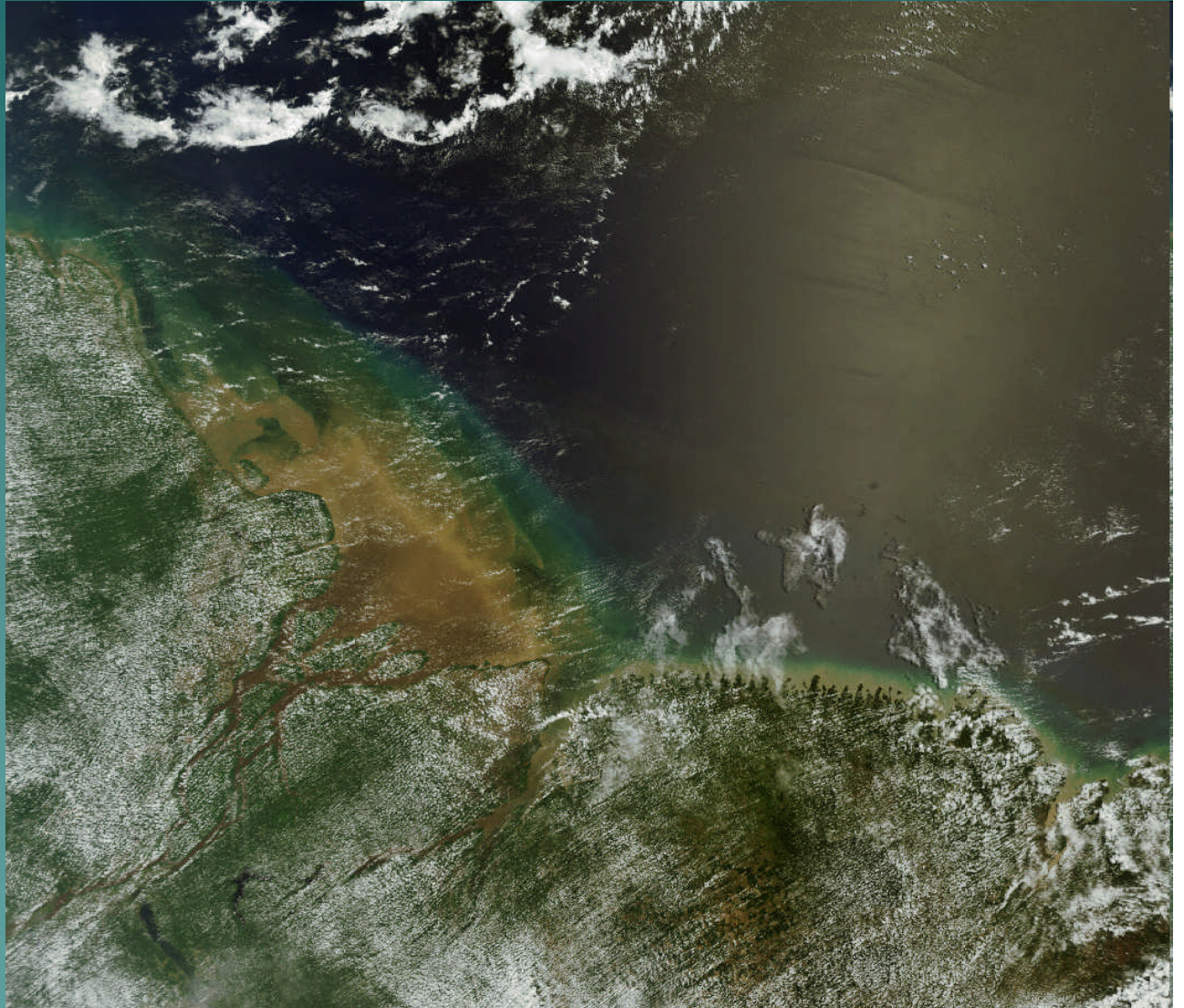
3. Ice formation

Increases salinity.



4. Runoff

Increases salinity.



5. Coral Reefs and Clams

Decreases calcium and carbon dioxide (CO₂)

