



**The River Basin** →

- Introduction
- ▶ Geography
- ▶ Climate and Weather
- ▶ Hydrology
- ▼ **Water Quality**
  - Principles of Water Quality
    - Water Temperature
    - Dissolved Oxygen
    - pH
    - Total Dissolved Solids and Conductivity
    - Suspended Sediment
    - **Salinity**
    - Hardness
    - Nutrients
    - Metals
  - Biological Water Quality Parameters
  - Spiritual Meaning of Water
  - Human Impacts to Water Quality
  - Acidity, Heavy Metals and Radionuclides
  - Groundwater Quality
  - Water Quality Fitness for Use
  - ▶ Ecology and Biodiversity
  - References



**Feedback**

[send a general website comment](#)  
[report a specific problem with this page](#)

Water Quality: Principles of Water Quality: **Salinity**

Salinity refers to the saltiness of water caused by the dissolution of minerals in rocks, soils and decomposing plant material. The level of salinity in a river, for instance, depends on the geological and climatic environments through which the river flows. Salinity increases downstream, as salts are continuously added through natural and anthropogenic processes such as mining, industry and agriculture, but are only minimally removed through technological interventions or diluted by precipitation.

High levels of salinity can lead to the "salinisation of irrigated soils, diminished crop yields, increased scale formation and corrosion in domestic and industrial water pipes, and changes in the biotic communities." 1 000 mg/L is considered moderate salinity and is generally tolerated by humans; however, at levels above 3 000 mg/L (high salinity) fatal intestinal damage and renal damage can occur (DEAT 2009).



**Salt encrusted soil in the Kalahari**  
 Source: Reed 2009  
 ( click to enlarge )

[Next: Water Hardness](#) ▶

**I Interactive**

**Basin Map**

Explore the sub-basins of the Orange-Senqu River

[enter](#) ▶

**Video Tour**

Tour video scenes along the Orange-Senqu River related to the River Basin

[enter](#) ▶

**Geography Maps**

Investigate land cover and terrestrial ecoregions in the basin

[enter](#) ▶

**Water Cycle**

Examine how the hydrologic cycle moves water through and around the earth

[enter](#) ▶

**Food Web**

Explore the interactions of living organisms in aquatic environments

[enter](#) ▶