

# Orange-Senqu River Awareness Kit

[THE RIVER  
BASIN](#)[PEOPLE AND  
THE RIVER](#)[GOVERNANCE](#)[RESOURCE MANAGEMENT](#)

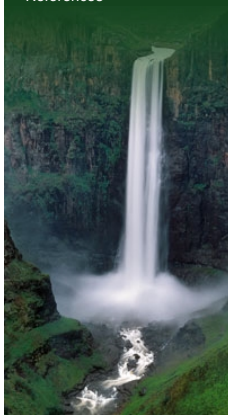
## The River Basin

[→ Climate and Weather:](#)

### Principles of Climate and Meteorology



- Introduction
- ▶ Geography
- ▶ **Climate and Weather**
- ▶ Principles of Climate and Meteorology
- Hydrologic Cycle
- Climate Variability
- Climate Classification
- Water Scarcity
- Drought
- Climate of the Orange-Senqu River Basin
- Climate Change
- ▶ Hydrology
- ▶ Water Quality
- ▶ Ecology and Biodiversity
- References



*Weather* and *climate* describe meteorological conditions such as temperature, humidity, atmospheric pressure, wind or rainfall at a specific location or in a particular region. The concepts of weather, climate and meteorology are explored in the following sections:

- [Hydrological Cycle](#)
- [Climate Variability](#)
- [Climate Classification](#)
- [Water Scarcity](#)
- [Drought](#)

*Weather* is a term that is frequently used to describe the state of the atmosphere and is often described in terms of scale: **Micro-meteorology** is the science of the minute processes that take place at small scales, including those that occur within plant canopies; **Meso-scale** includes normal weather system size, such as thunder storms (approximately 10 km across); **Synoptic-scale** includes much larger systems, such as tropical storms and depressions; and finally **Planetary-scale** deals with the vast atmospheric waves and systems that control global climate (Barry and Chorley 1992).

*Climate* is the overall pattern of weather conditions in a place or region, including predictable seasonal changes in each year, and extreme weather conditions and events over a longer span of time. Climate descriptions and classifications for an area are therefore based on long-term events and statistics (mean values, variances, probabilities of extreme values, etc.). A region's climate and weather are a function of elevation, topography and landforms, and the amount and movement of heat and moisture in the atmosphere.

*Meteorology* is the interdisciplinary scientific study of the atmosphere that focuses on the processes and forecasting of observable weather events and patterns. These events are impacted by numerous variables including temperature, air pressure, and water vapour, and how these interactions vary in time and space. Meteorological processes affect the formation and occurrence of rainfall, the formation of clouds, and evapotranspiration, all of which play significant roles in the hydrologic cycle.



Sunset in the Kalahari.

Source: [iStockphoto/Sproetniek 2009](#)  
(click to enlarge)

[Next: Hydrologic Cycle](#) ▶

## 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](#) ▶

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