

Hydrogeology of Swaziland

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This page has limited information. If you have more information on the hydrogeology of Eswatini, please get in touch!



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The earliest known inhabitants of present-day Eswatini (previously Swaziland) were Khoisan hunter gatherers, before Bantu people migrated into the area, possibly from the 4th century AD. Swazi people migrated in the 18th century, forming the present day kingdom in the mid-19th century. The ruling monarch granted land concessions to many Europeans in the late 19th century. From the late 19th century South Africa and later Britain held power, and the region was influenced by tensions between British and Boers over the area of present-day South Africa. Under King Sobhuza, who was crowned in 1921, British colonial rule and the influence of South Africa gradually weakened, and Swaziland became fully independent in 1968. Following independence, the King continued to rule as an absolute monarch, with no democratic political parties. The country was relatively stable and saw gradual economic development. Civil protests in the 1990s were followed by reforms and the first elections under a new constitution in 2008. There has been further civil pressure for more reform since. The country renamed itself the Kingdom of Eswatini in 2018.

The economy is fairly diverse, with agriculture, forestry, mining, services and manufacturing - particularly textiles - all contributing. The economy is closely linked to that of South Africa. The livelihoods of most of the population depend on subsistence smallholder arable and livestock farming, while large-scale commercial farming of crops such as sugar and citrus fruit generate export income. Remittances from South Africa, especially from the mining sector, are also important to the livelihoods of much of the population. Since the 1980s there has been little economic growth, related to various factors including government spending, reduction in tax receipts, reductions in textile exports to international markets, and the effect of HIV-AIDS - Eswatini has the highest HIV-AIDS infection rate in the world.

Eswatini has relatively abundant water resources, with relatively high rainfall in upland areas, and a number of permanent rivers, with many major dams used for irrigation, hydroelectricity and tourism. There are no major aquifers, but groundwater is widely used for domestic water supplies, especially in drier areas.



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Compilers

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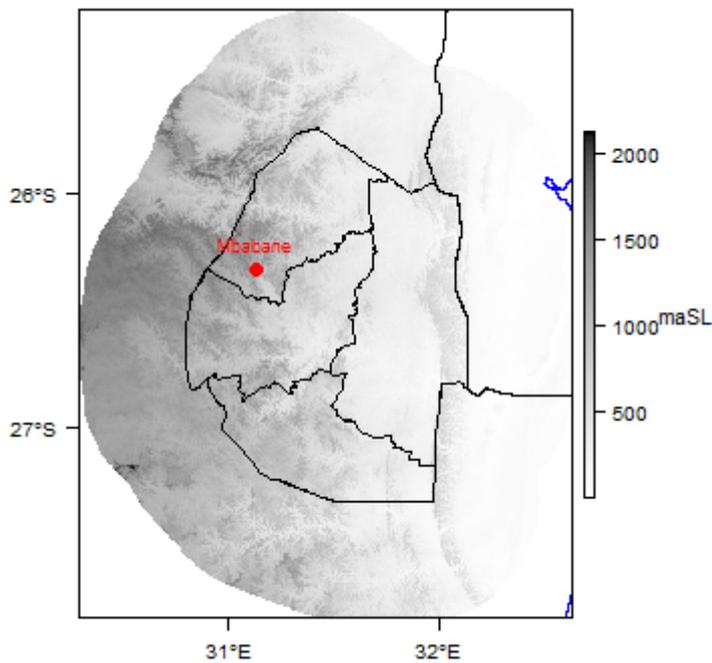
Please cite this page as: Upton, Ó Dochartaigh and Bellwood-Howard, 2018.

Bibliographic reference: Upton K, Ó Dochartaigh BÉ and Bellwood-Howard, I. 2018. Africa Groundwater Atlas: Hydrogeology of Eswatini. British Geological Survey. Accessed [date you accessed the information]. http://earthwise.bgs.ac.uk/index.php/Hydrogeology_of_Swaziland

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Geographical Setting



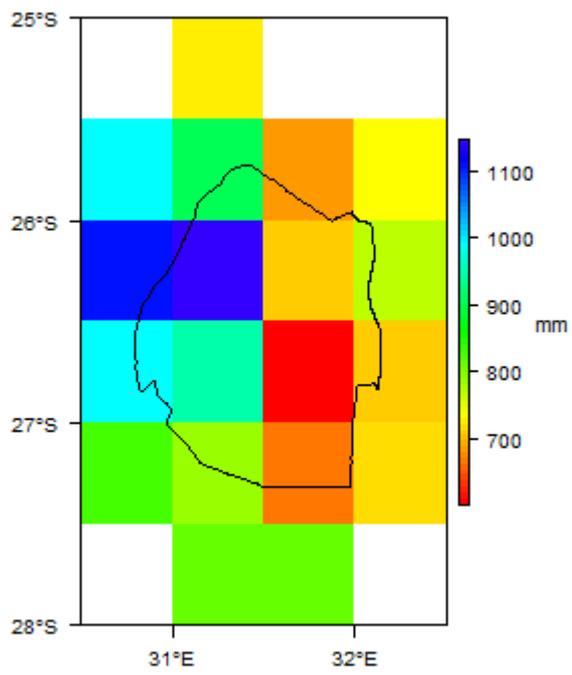
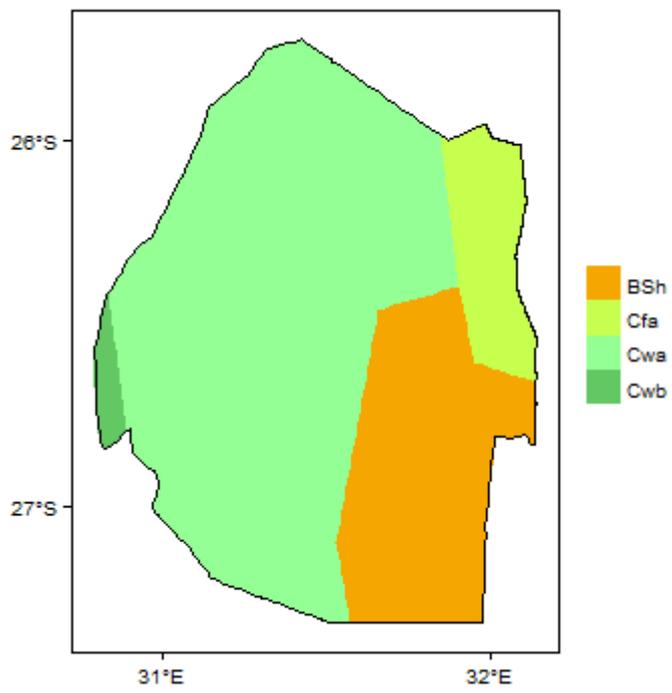
Eswatini. Map developed from USGS GTOPOPO30; GADM global administrative areas; and UN Revision of World Urbanization Prospects. For more information on the map development and datasets see the [geography resource page](#).

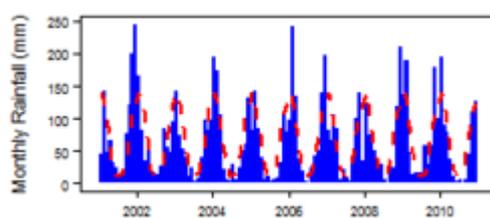
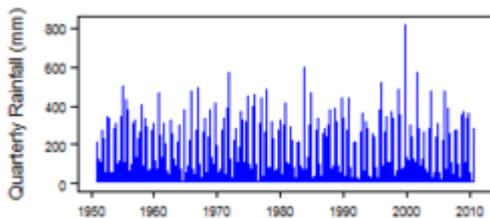
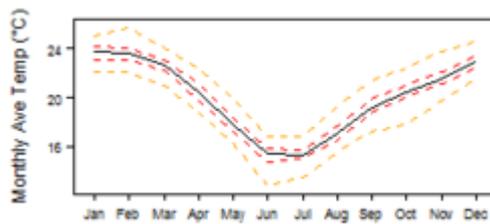
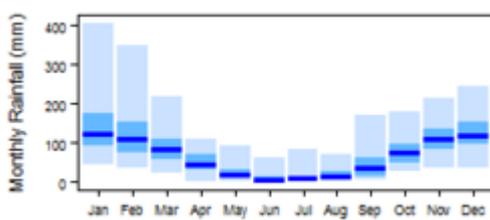
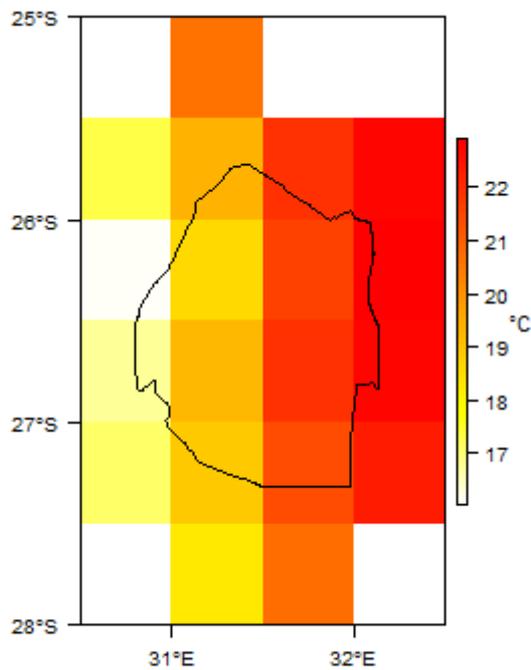
General

| | |
|--|---|
| Capital city | Lomamba (royal / legislative); Mbabane (administrative) |
| Region | Southern Africa |
| Border countries | Mozambique, South Africa |
| Total surface area* | 17,360 km ² (1,736,000 ha) |
| Total population (2015)* | 1,286,900 |
| Rural population (2015)* | 1,013,000 (79%) |
| Urban population (2015)* | 273,900 (21%) |
| UN Human Development Index (HDI) [highest = 1] (2014)* | 0.5306 |

* Source: [FAO Aquastat](#)

Climate

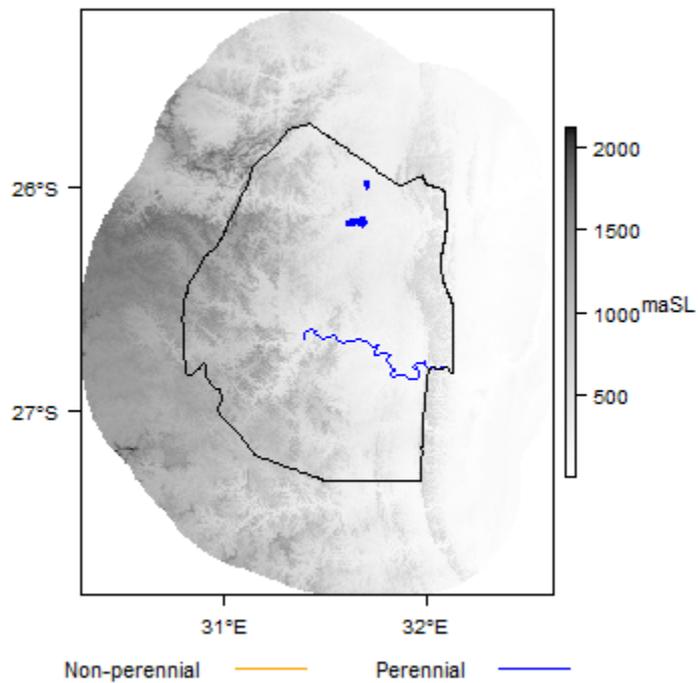




More information on average rainfall and temperature for each of the climate zones in Eswatini can be seen at the [Eswatini climate page](#).

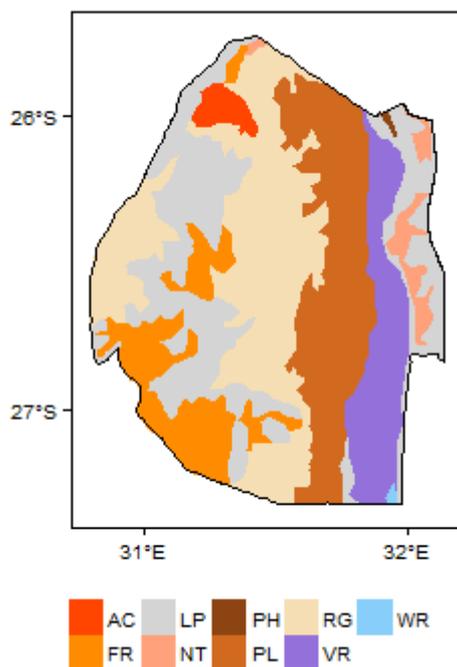
These maps and graphs were developed from the CRU TS 3.21 dataset produced by the Climatic Research Unit at the University of East Anglia, UK. For more information see the [climate resource page](#).

Surface water



major surface water features of Eswatini. Map developed from World Wildlife Fund HydroSHEDS; Digital Chart of the World drainage; and FAO Inland Water Bodies. For more information on the map development and datasets see the [surface water resource page](#).

Soil



Soil Map of Eswatini, from the European Commission Joint Research Centre: European Soil Portal. For more information on the map see the [soil resource page](#).

Land cover

| | | | | | | | |
|--|------------|------------|------------|------------|------------|------------|------------|
| Industrial water withdrawal (all water sources) (Million cubic metres/year) | | | | | | | 20.7 |
| Municipal water withdrawal (all water sources) (Million cubic metres/year) | | | | | | | 41.3 |
| Agricultural water withdrawal (all water sources) (Million cubic metres/year) | | | | | | 1,006 | |
| Irrigation water withdrawal (all water sources) ¹ (Million cubic metres/year) | | | | | | 993 | |
| Irrigation water requirement (all water sources) ¹ (Million cubic metres/year) | | | | | | | 313 |
| Area of permanent crops (ha) | | | | | | | 15,000 |
| Cultivated land (arable and permanent crops) (ha) | | | | | | | 190,000 |
| Total area of country cultivated (%) | | | | | | | 10.94 |
| Area equipped for irrigation by groundwater (ha) | | | | | | 1,000 | |
| Area equipped for irrigation by mixed surface water and groundwater (ha) | No data |

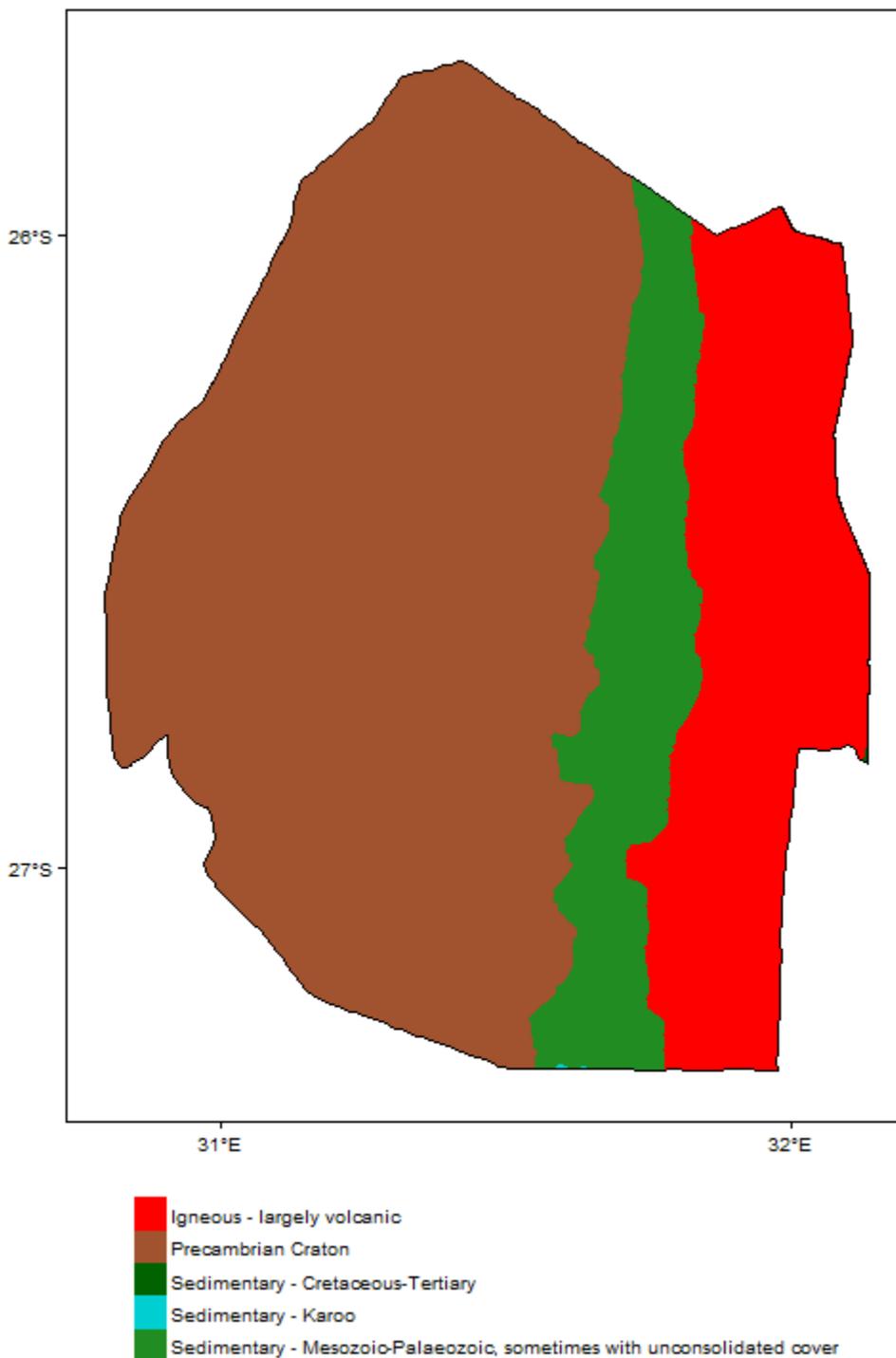
These statistics are sourced from [FAO Aquastat](#). They are the most recent available information in the Aquastat database. More information on the derivation and interpretation of these statistics can be seen on the FAO Aquastat website.

Further water and related statistics can be accessed at the [Aquastat Main Database](#).

¹ More information on [irrigation water use and requirement statistics](#)

Geology

The geology map shows a simplified overview of the geology at a national scale (see the [Geology resource page](#) for more details). More information is available in the report [UN \(1989\)](#) (see References section, below).



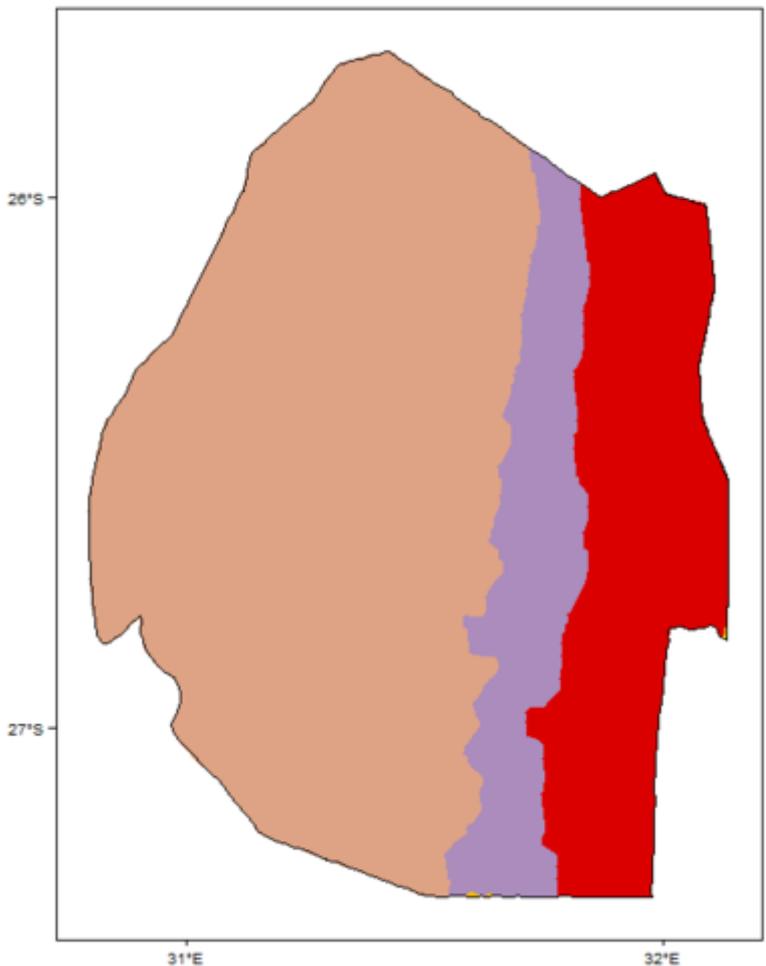
Geology of Eswatini at 1:5 million scale. Based on map described by Persits et al. 2002/Furon and Lombard 1964. For more information on the map development and datasets see the [geology resource page](#).

Hydrogeology

The hydrogeology map below shows a simplified overview of the type and productivity of the main aquifers at a national scale (see the [Hydrogeology map resource page](#) for more details).

More information on the hydrogeology of Eswatini is available in the report [United Nations \(1989\)](#) (see References section, below).

Eswatini is also covered by the SADC hydrogeological map and atlas (2010), available through the



Hydrogeology of Eswatini at 1:5 million scale. For more information on how the map was developed see the [hydrogeology map](#) resource page

| Aquifer/Flow Type | Aquifer Productivity | | | | | |
|---|----------------------|---------------|---------------|-------------------|---------------|----------|
| | Very High | High | Moderate | Low-Moderate | Low | Very Low |
| Unconsolidated | Dark Blue | Blue | Light Blue | Very Light Blue | Lightest Blue | White |
| Consolidated Sedimentary (Fracture) | Orange | Light Orange | Yellow-Orange | Yellow | Light Yellow | White |
| Consolidated Sedimentary (Intergranular) | Green | Light Green | Yellow-Green | Yellow | Light Yellow | White |
| Consolidated Sedimentary (Intergranular/Fracture) | Dark Purple | Medium Purple | Light Purple | Very Light Purple | White | White |
| Precambrian Basement | Brown | Light Brown | Yellow-Brown | Yellow | Light Yellow | White |
| Igneous (largely volcanic) | Red | Light Red | Orange-Red | Orange | Light Orange | White |

Transboundary aquifers

For further information about transboundary aquifers, please see the [Transboundary aquifers resources page](#).

References

References with more information on the geology and hydrogeology of Swaziland can be accessed through the [Africa Groundwater Literature Archive](#).

Online resources

[SADC Groundwater Information Portal](#)

[General information on surface water and groundwater resources in SADC](#)

Project [Adapting Water Resource Management In Eswatini To Manage Expected Climate Change](#). Department of Water Affairs, Swaziland; United Nations Development Programme (UNDP); Global Environment Facility (GEF).

[Water Resources: Government Information: Library Guide: Swaziland](#). University of Cape Town.

Documents

Mlilo P, Mhlanga BFN and Senzanje A. 2008. [Emerging Issues in Water Resources Management in Swaziland](#). Presentation at Governing Shared Resources: Connecting Local Experience to Global Challenges, 12th Biennial Conference of the International Association for the Study of the Commons, Cheltenham, UK, July 2008.

United Nations. 1989. [Groundwater in Eastern, Central and Southern Africa: Swaziland](#). United Nations Department of Technical Cooperation for Development.

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