6.1: The Physical Landscape of Sub-Saharan Africa

Learning Objectives

- Identify the key geographic features of Sub-Saharan Africa
- Describe the pre-colonial history of Sub-Saharan Africa
- Explain the process of colonization in Sub-Saharan Africa and its effects on the modern geographic landscape
- Analyze how colonization has impacted political stability and economic opportunity across Sub-Saharan Africa

Africa is the cradle of human civilization. Our early ancestors, *homo erectus*, meaning “upright man,” first walked in East Africa between one and two million years ago. Early humans in Africa were the first to create tools, develop language, and control fire. The physical landscape of Africa and its long history of habitation have contributed to a variety of cultures and human experiences.

Africa is the second-largest continent after Asia and is the only continent that is crossed by both the Tropic of Cancer, located 23 degrees north of the Equator, and the Tropic of Capricorn, located 23 degrees south of the Equator (see Figure \(\PageIndex{1}\)). These tropics are areas of high atmospheric pressure creating dry conditions. The Sahara lies along the Tropic of Cancer in the north and the Namib Desert is situated on the Tropic of Capricorn in the south. The Sahara stretches across much of northern Africa creating a formidable barrier and dividing Africa between a Muslim, Arab North and traditional African cultural groups in the south. Since North Africa is so similar to Southwest Asia in terms of culture and political history, the two are discussed together in a separate chapter.
The story of Africa’s physical geography begins 300 million years ago with the landmass known as Pangaea, the last supercontinent (Figure \(\PageIndex{2}\)). Around 175 million years ago, Pangaea began to break apart, drifting and colliding and forming the continents as we know them today. Africa was situated at the heart of this supercontinent.

Today, many of the physical landforms found in Africa were formed from this tectonic plate movement. Africa’s Great Rift
Valley, for example, is slowly splitting away from the rest of the African Plate at a rate of around 6 to 7 mm (around 0.25 in) each year (Figure \(\PageIndex{3}\)). That might not sound like a lot, but after 100 years, the rift would have expanded by two feet! Some of the deepest lakes in the world are found along this rift valley, where huge cracks in the earth’s surface have filled with water over time. Lake Tanganyika, for example, is the second-largest and second-deepest freshwater lake in the world, dipping down to 1,470 m (4,820 ft). East of the rift valley is the **Horn of Africa**, a protruding peninsula that contains the countries of Djibouti, Eritrea, Ethiopia, and Somalia.

Figure \(\PageIndex{3}\): Map of Africa’s Great Rift Valley (United States Geological Survey, Public Domain)

In addition to the rift valley, Sub-Saharan Africa contains a number of highland and plateau regions as well as large, tropical basins, the largest of which is the Congo Basin. This basin begins in the highlands of the rift valley and is the drainage area for the Congo River, Africa’s largest river by discharge and the deepest river in the world. This watershed is considered a biodiversity hotspot and its forests support around 40 million people. However, there is serious concern in the region regarding deforestation.

Africa’s other major river, the Nile, flows from Lake Victoria in the rift valley north through 11 different countries. It is regarded by most as the longest river in the world. The Nile has, historically and in modern times, been a key way to transport people and goods throughout the region and its floodplain enables farming in an otherwise arid environment.

Perhaps the largest ecoregion of Sub-Saharan Africa is the **Sahel**, located just south of the Sahara (Figure \(\PageIndex{4}\)). The Sahel is a transitional region connecting the dry Sahara to the tropical regions of the south. It is mostly grassland and has traditionally supported semi-nomadic livestock herders.
The Sahel is at the front line of one of the most pressing environmental concerns in Africa: desertification (Figure 4). Desertification refers to the process of previously fertile land becoming desert and occurs for a variety of reasons including climate change and human activities. Overgrazing, for example, can rid land of vegetation causing the erosion of fertile topsoil. Warming temperatures due to global changes in climate can change precipitation patterns and increase the speed of evaporation. Desertification in the Sahel has caused the Sahara to expand and has led to conflict as northern farmers have migrated to the south in search of fertile soil.

In addition to an array of landforms from rift valleys to mountains to deserts, Sub-Saharan Africa contains a wide variety of climate zones and precipitation patterns. In general, the continent is relatively hot with temperate climates in the higher elevations. Some areas of Sub-Saharan Africa, particularly the tropical rainforests of West Africa, receive upwards of 3,000 mm (118 inches) of rain each year, while other areas such as the Namib Desert receive less than 10 mm (0.39 inches) of rain annually.
Horn of Africa:

a protruding peninsula in East Africa that contains the countries of Djibouti, Eritrea, Ethiopia, and Somalia

Sahel:

a transitional region in northern Africa connecting the dry Sahara Desert to the tropical regions of the south

Desertification:

the process of previously fertile land becoming desert