



LIMPOPO River Awareness Kit

Please provide feedback! [Click for details](#)



The River Basin

People and the River

Governance

Resource Management

Português

You are here: [Home](#)>[The River Basin](#)>[Ecology and Biodiversity](#)>**Ecology**

Ecology

The World Wildlife Fund for Nature (WWF) has, over the past 10 years, been leading efforts to identify, describe, classify and map life on Earth, otherwise known as **Ecology**. These efforts have led to the development of assemblages known as **Ecosystems**, [Biomes and Ecoregions](#). Below, these concepts are defined and their distributions across the Limpopo River basin are described.



A Lilac Breasted Roller.
Source: Hatfield 2010
(click to enlarge)

Ecology

The greek word '**oikos**' refers to home or place of habitation, '**logia**' means 'the study of'. Ernst Haeckel was the first to combine the two words in 1873 to create the word 'Okologie'. Translated to English okologie is **Ecology** and means the study of where organisms live and how they interact with our environment.

"In scientific term ecology can be defined as: 'A branch of biology that deals with the distribution, abundance and interactions of living organisms at the level of communities, populations, and ecosystems, as well as at the global scale' (Biology Online 2010).

The spatial distribution and abundance of an organism is largely determined by the abiotic or physiochemical factors of its environment. Abiotic factors are: geological factors such as the chemical nature of the bedrock; climatic factors such as temperature and sunlight; hydrological factors such as streamflow; or the availability of nutrients and levels of pollution in the environment. Through a history of evolution, organisms have adapted to fill a certain niche and to function optimally under a specific set of abiotic conditions. This evolutionary process of adaptation is also true for biotic interactions (Putman and Wratten 1984). Species have evolved to survive optimally in their niche and are adapted to obtain nutrients, reproduce and defend themselves against predators.

Ecosystems

An **ecosystem** is a community of living organisms and their physical and chemical environment, linked by flows of energy and nutrients. Ecosystems function as a discrete ecological unit, and can be defined at a variety of scales. For example, the Limpopo River basin can be considered an ecosystem, as can a small pond, a log, or the entire planet. The boundaries of an aquatic ecosystem are somewhat arbitrary, but generally enclose a region for which inflows and outflows can be estimated. Ecosystem ecologists study how nutrients, energy, and water flow through an ecosystem.

Ecology is a complex study even at small scales and for this reason, the Limpopo River Awareness Kit will focus mainly on one type of ecosystem - the aquatic ecosystem- and the organisms found within this system.

[Next: Aquatic Ecology](#) 