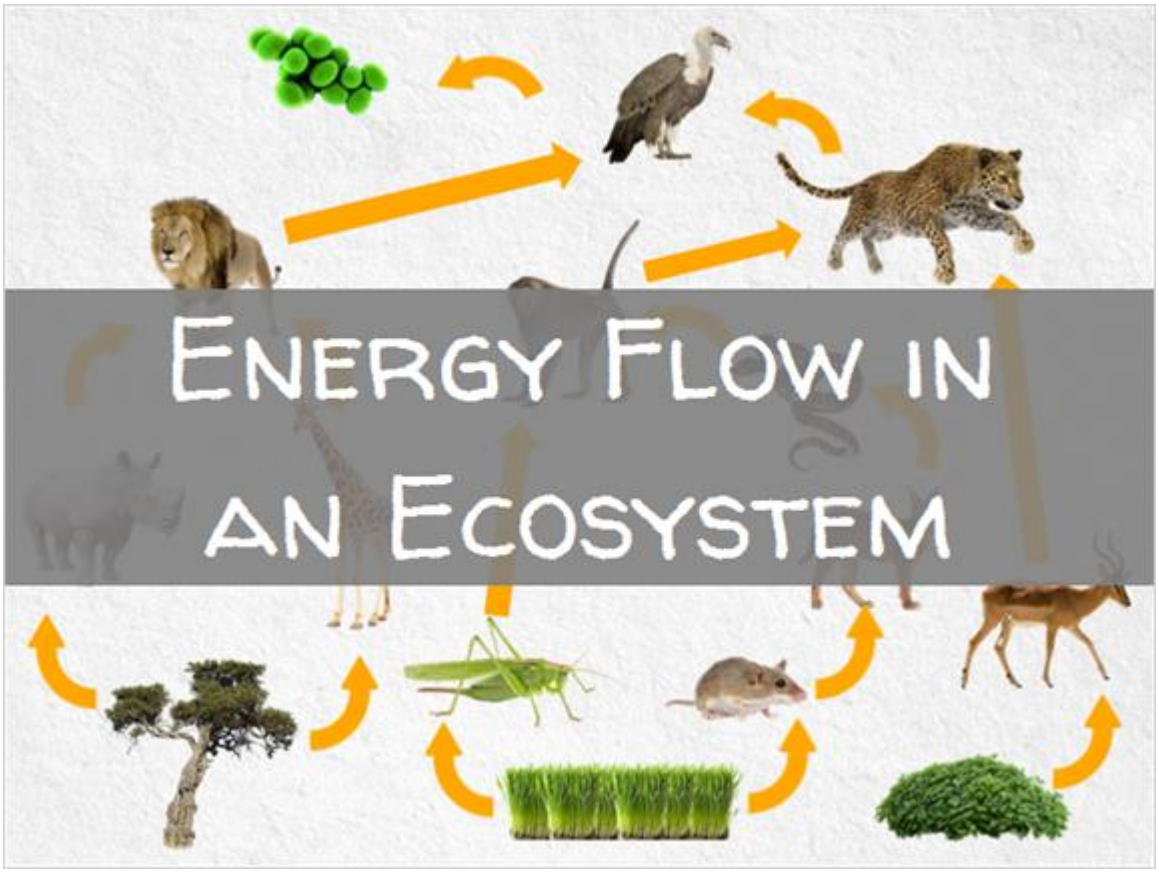
Module 11: Ecology
Topic 3 Content: Energy Flow in an Ecosystem Notes



Energy Flow in an Ecosystem

Click *NEXT* to begin.

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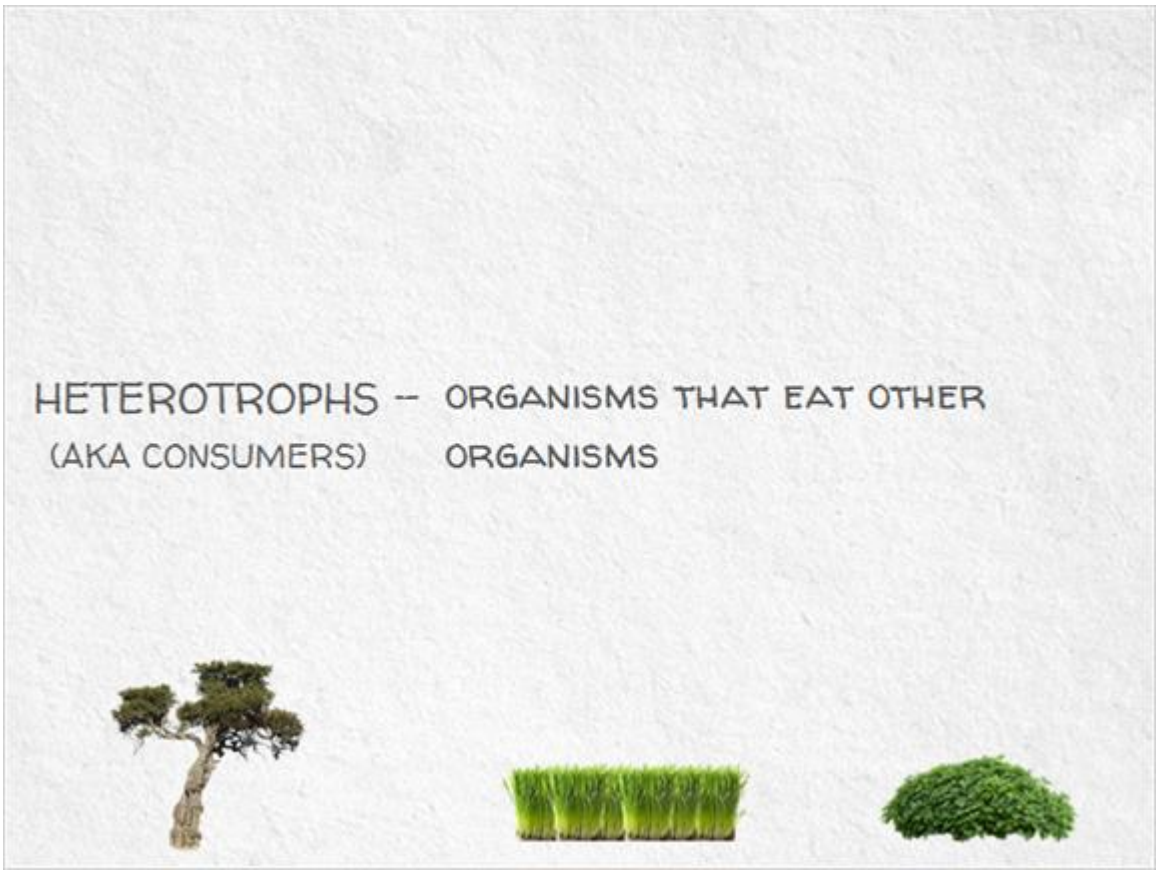
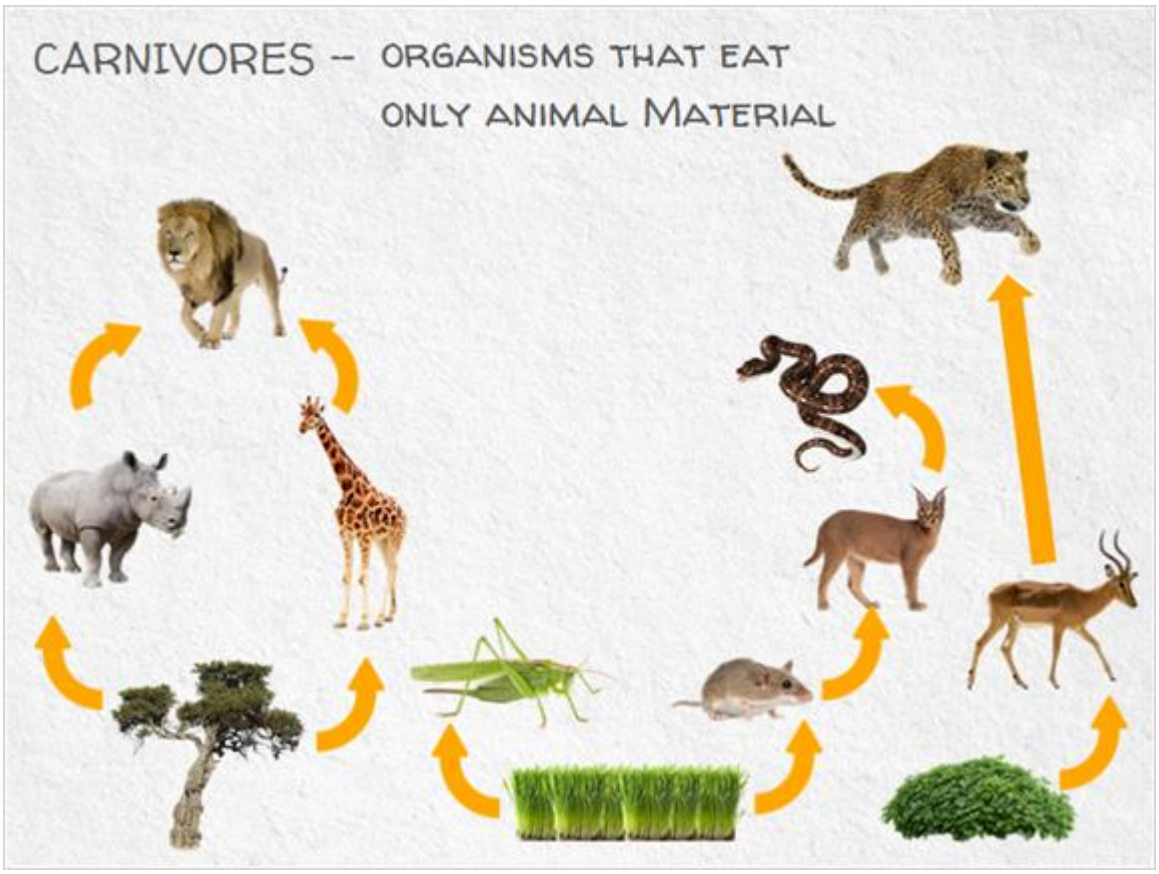
In an ecosystem, the energy flow begins with the autotrophs, which are organisms that can make their own food from either the Sun or another non-living resource. Autotrophs are also called producers. In the African savannah, small trees, grasses and shrubs are producers. They produce their own food through photosynthesis.

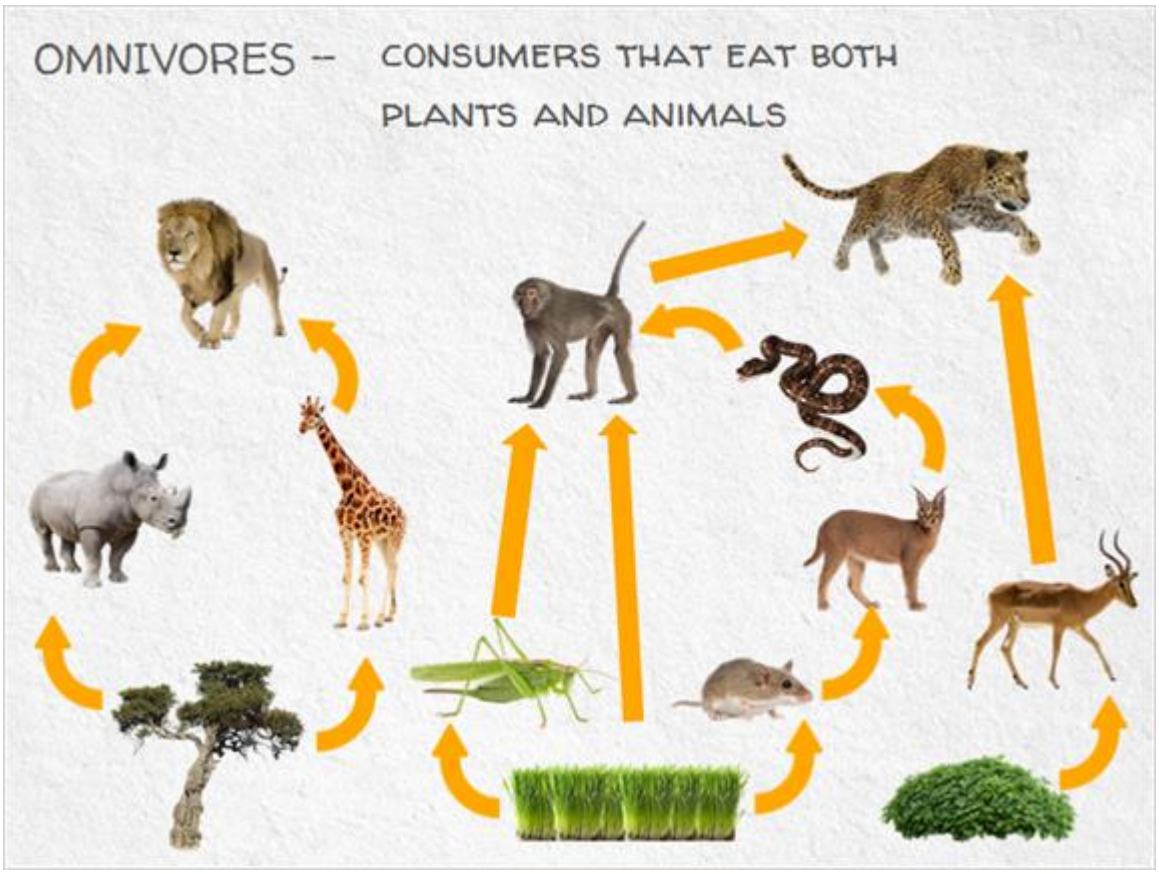


Heterotrophs are organisms that eat other organisms, which are either dead or alive. Heterotrophs are also called consumers. In an ecosystem, consumers can fall into several categories.

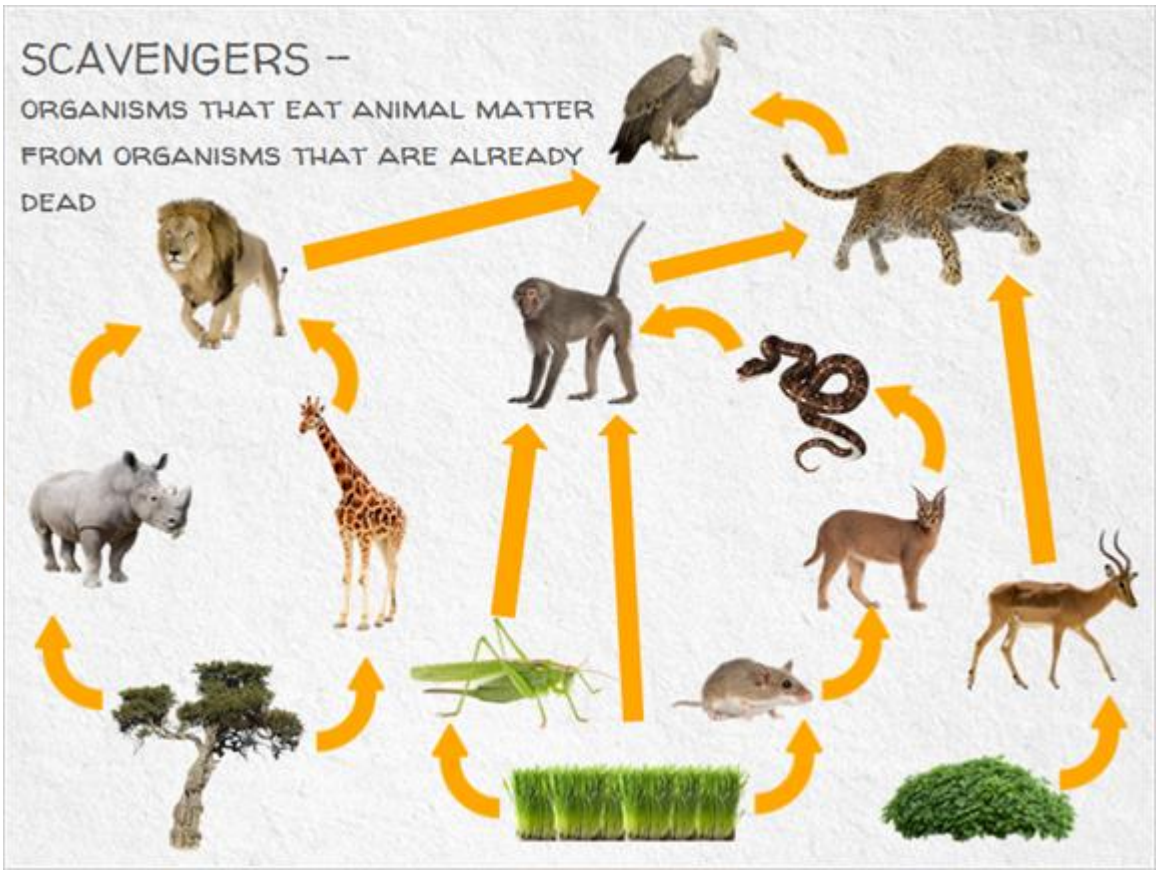
Some consumers are herbivores, which eat only plants. In the African savannah, grasshoppers and mice are herbivores, because they eat the grasses of the savannah. Other herbivores in this type of ecosystem include impalas, which eat shrubs and grasses, and giraffes and rhinos, which eat leaves from trees.



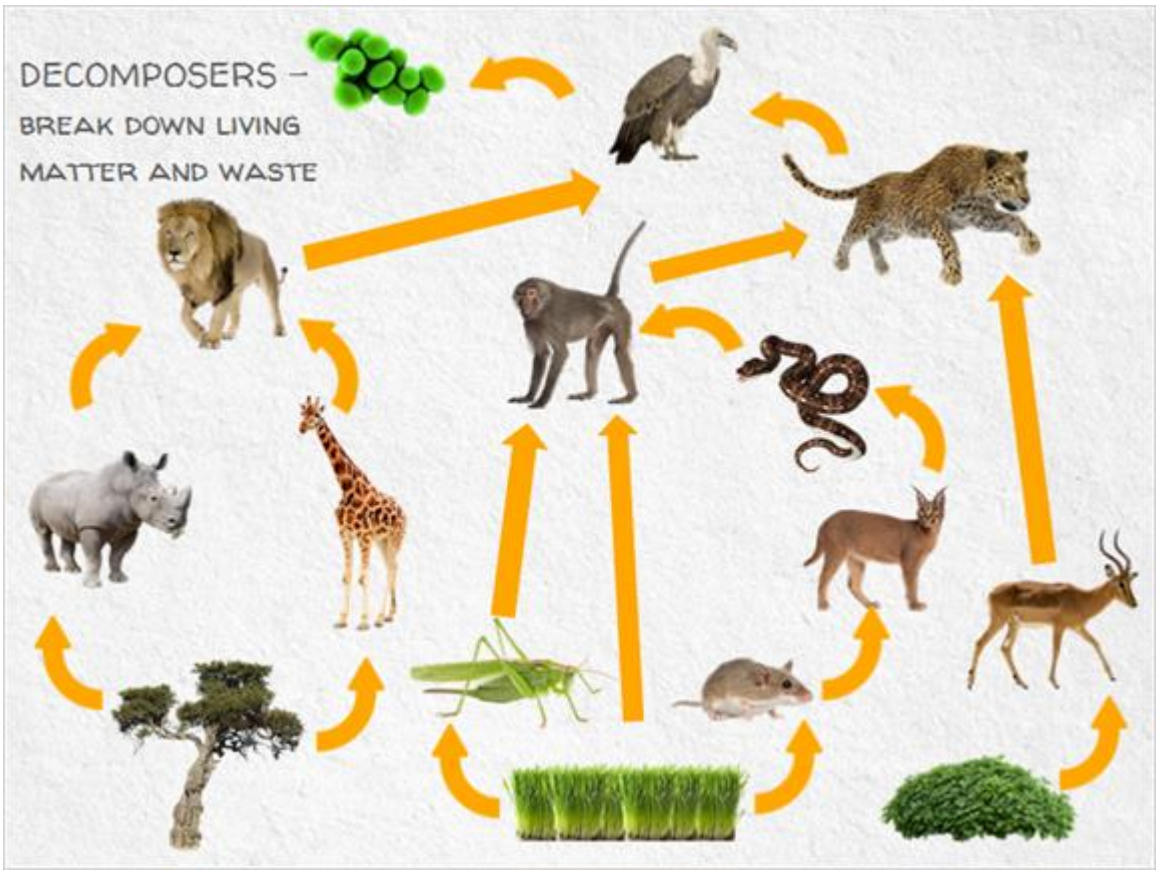
Some consumers are carnivores, which are organisms that eat only animal material. Major carnivores in the African savannah include lions, caracals, snakes, and leopards.



Consumers that eat both plants and animals are omnivores. In the African savannah, baboons eat a diet of grasses, small insects, and snakes.



Some organisms eat animal matter from organisms that are already dead. These organisms are known as scavengers. In the African savannah, vultures eat decomposing rhinos and leopards that have already been killed by other predators or have died from other causes.



Throughout an African savannah ecosystem you will find bacteria, fungi, and insects, like termites which act as decomposers. Decomposers break down living matter and waste into nutrients and other energy resources and cycle them back into the ecosystem.

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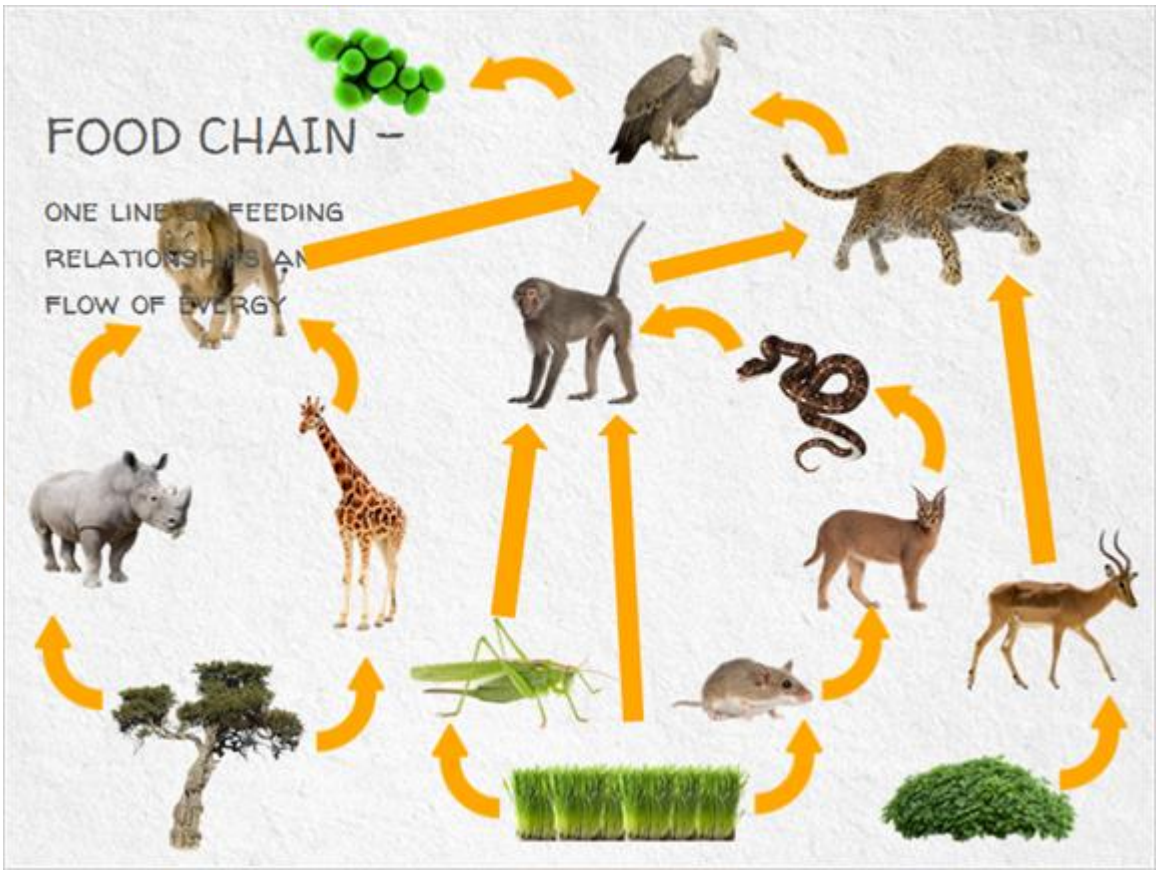
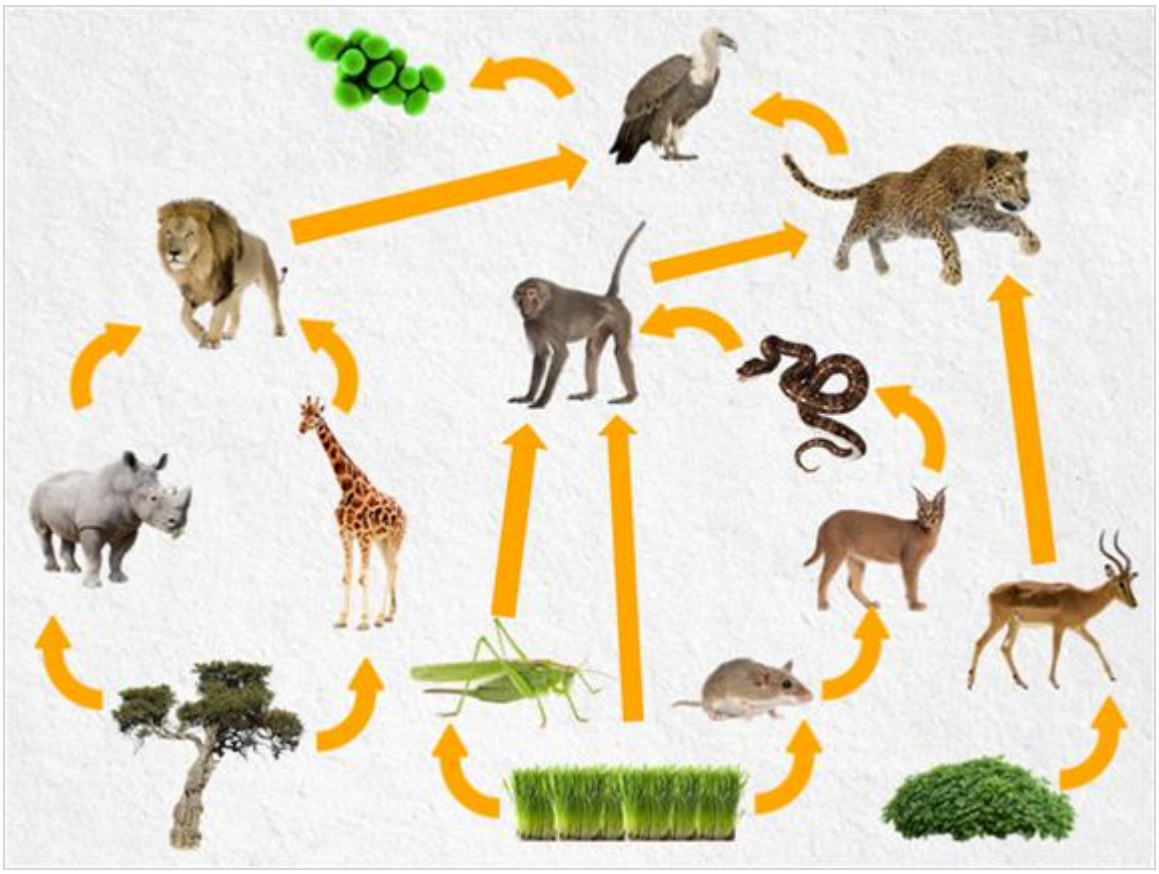


Feeding relationships and the flow of energy can be broken down into individual food chains. For example the singular movement of energy from grass to grasshopper to baboon to leopard to vulture is one food chain.



However, you can see how the feeding relationships in the African savannah form a complex food web, which is a series of individual food chains woven together. Through this food web, you can see how interconnected all of the species in an ecosystem truly are. Food webs help scientists understand how energy flows through the system, but also what happens when one or more species is harmed.

For example, if the mouse species experienced a decline, the caracal population would have limited food resources. That disturbance would have far reaching effects, impacting many other species in the food web.