

Program Script

Ecological Niches

Surviving with limited resources

The Sahara, a life threatening sea of sand as far as the eye can see is typical of northern Africa.

Even along the edge of the desert, in the Sahel zone, a belt of dry savannah south of the Sahara, there is not much vegetation. The conditions are so extreme that few animals have been able to survive here all year round. Long hot periods alternate with sandstorms that last for days. Even the air is dry.

But once a year around October, the situation changes. In the centre of Africa, heavy rain has caused rivers to rise. The rivers branch out, and some even reach the edge of the desert. In a short time, the landscape changes dramatically.

The rivers overflow onto the flat, even land. Shallow lagoons form, and they provide a new living space for plants and animals, even if it is only for a short period of time. For many months the reed plains were dry, but now they are flooded with water again. Suddenly the place is full of life, a million birds pressed together in a cramped space.

These Whistling Ducks have spent the last few months in the tropical neighbouring countries, but have returned with the water.

After months without food, the water has awoken the python to life.

Pelicans and ibises have returned to the area from the African tropics, but most of the other species have migrated from Europe. To get here, they have endured long and exhausting trips - not many of them were able to cross the Sahara non-stop.

Now they only have one thing on their mind – food. This applies to fish as well as birds. These catfish, as well as many other types of fish, have been swept into the flood plains by the swollen rivers.

But how do so many animals co-exist, without eating each others' food? The answer is simple - every species has a different, specialised survival strategy. Every species occupies its very own ecological niche. By doing this, there is enough food for everyone.

We can see this when we look at the methods of hunting that different species employ.

Pelicans prefer to fish in cloudy, muddy waters – they work as a team. Swimming in a big semi-circle, they herd the catfish into shallow water close to the shore. They flap their wings to stop the catfish escaping. Over and over the birds dive into the water, scooping the fish into their bill. The large bill is designed to catch large fish.

Pelicans also breed at this time of year, which is winter, because the plentiful food means that their young have a better chance of surviving.

This pelican is regurgitating food for its offspring. Because there is so much food the chicks grow quickly and learn to fly in a fairly short period. Reproducing at this time of year fits perfectly into the ecological niche of the pelican.

In the clear green water of the lagoons, the pelicans would not have a chance of finding food.

Here, where the water is often clear right down to the bottom, conditions are more suited to birds that have very good eyesight, like the grey heron, a European bird that has flown south for winter.

It wades carefully through the shallow water, on the lookout for small fish and water frogs. Grey herons can't manage large fish like pelicans do.

Nearby a little egret is walking along in the shallow water. He relies on his dagger like beak and his excellent eyes to catch prey.

Here he has caught a frog.

Hérons and egrets are able to survive in Africa with a lot less food than the pelicans because they breed in Europe at a different time of the year. This also lessens the competition between the fish eaters.

The black heron uses a unique hunting technique. It only has short legs, so it is confined to the shallow waters, a zone where the bigger herons don't usually hunt.

It takes short, sharp steps to scare the fish. Then it spreads its wings out like an umbrella. The fish seek protection in the darker areas under the wings, and then it's 'goodnight sweet fish.'

But fish aren't the only source of food in the flood zones. These ducks are searching for plant seeds. Numerous lamellas in their beak form a filter mechanism, which they use to filter out even the smallest particles.

Warthogs find their food in deeper waters. They dive beneath the surface in search of plant seeds, and even the plants themselves. The warthog uses its strength and its sharp teeth to chew into plants underwater. Over and over again they dive below the surface to bring plants up piece by piece.

Singing birds are attracted to the area not only by the water, but by the insects that live in it.

These yellow wagtails have flown south for the winter from Europe. They jump agilely over the water in search of insects.

Even in the search for insects competition is avoided. While the yellow wagtails only search for food on the water's surface, only a few metres above them, thousands of swallows chase airborne insects. In this way different insect eaters can share the same area, because they have different preferences and skills.

As winter draws to a close, the temperature starts to rise again. The big lagoons are now small waterholes. Animals that need large amounts of food, like herons and pelicans could not survive here anymore - they left the area weeks ago. Now omnivores like the Nile Monitor have moved in.

The monitor forms a semicircle with its body to trap its prey, and then moves towards the shore. In shallow water, it is easier to grab fish with its mouth. This is a very successful method in waterholes like this one.

Monitors are not fussy, they'll eat whatever's available. As well as fish, they also eat eggs, snakes, and warm-blooded animals. Even carrion is on the menu of these huge lizards.

A few weeks later, only the strongest of the catfish are still alive, but their days are numbered. The once large lagoons have shrunk into mud holes. The lizards play an easy game, taking whatever they like.

The warthog has switched to a leaner diet. It's much harder to dig for roots in the dry, rock-hard earth than at the bottom of a lagoon. Not only is their food getting scarcer, but water is becoming scarce as well. So trips to find drinking water are getting longer and longer.

Like lizards, warthogs are omnivores, and retain an open mind about what constitutes food. In their search for water they have come across catfish stuck in a mud hole. They take advantage of the situation and fill their bellies before this last remaining food source disappears.

Winter is over, and the earth where the lagoons once were is starting to crack. This python is on its way back to the riverbed. The riverbed never dries out completely, and the snake will be able to survive until the end of the dry season. More and more the hot desert climate is winning back the upper hand. Changed circumstances now determine the ecological niches of the animals that are left. And only by adapting to these new conditions will they be able to survive.