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KwaZulu-Natal's Catchment Keepers

KwaZulu-Natal Wildlife has embarked on a catchment-wide conservation approach to safeguard biodiversity from source to sea. Lani van Vuuren reports.

KwaZulu-Natal's conservation approach starts with its estuaries, many of which are of national and even international importance. By far the greatest amount of estuarine habitat is found along the northern coast of the country, where the largest number of estuary-dependent species in South Africa is to be found. The nursery areas along this part of the coast support inshore marine biodiversity and fisheries, including crustacean fisheries such as those of the Thukela banks.

Just over half of the country's estuarine area is made up by the St Lucia estuary alone (over 38 000 ha). A Ramsar World Heritage Site, St Lucia forms a critical habitat for a great number of species, including the largest, southern-most population of hippos, and at least 1 000 crocodiles.

Specific challenges threatening the health of the province's estuaries include siltation due mainly to inappropriate agricultural practices in the catchments and flow reduction as a result of increased upstream water demand. Urban encroachment, particularly developments around estuary mouths, industrial pollution and uncontrolled exploitation of living resources also threaten the biodiversity of KwaZulu-Natal's estuaries.

According to an assessment of South African estuaries undertaken under the leadership of the South African National Biodiversity Institute estuaries along the intensely developed areas of KwaZulu-Natal's coastline are most threatened. Estuaries fed by larger catchments tend to be in poorer health than the estuaries in adjacent smaller catchments.

As Dr Peter Goodman, Coordinator of Biodiversity Research at KwaZulu-Natal Wildlife, points out, there is probably not a single estuary in the province that has not been affected by upstream activities in some way. Even the well protected St Lucia has experienced a reduction in freshwater inputs compromising its function as a nursery habitat. These challenges confirm that managing the estuaries in isolation is not an option.

LOOKING UPSTREAM

Beneficial to this catchment-wide approach is the fact that due to KwaZulu-Natal's boundaries, almost all of the catchments fall entirely within the provincial boundary. This reduces the need for cross-boundary collaboration, and allows for more specific focus on the biodiversity needs of the province.

Of course, this does not mean that KZN Wildlife works in isolation. As trainee aquatic ecologist Mncedi Nkosi points out: "In this planning process you deal with many stakeholders, from other government institutions such as the department of Water Affairs & Forestry and Agriculture, to municipality and tribal community representatives."

Conserving biodiversity starts with the estuaries. Of the more than 70 estuaries in KwaZulu-Natal, 25 have been identified to date as being of strategic importance. The estuaries are selected mainly on their biodiversity attributes. This includes the number of aquatic species to be found in the estuary, the number of rare species, the actual estuary type as well as goods and services provided by the estuary.

"In the end we aim to conserve a representative sample of all our different types of estuaries," explains Dr Goodman. There is no point in safeguarding all the estuaries along the North Coast, but none at the South Coast, for example. The objective is to protect the biodiversity of these estuaries against potential pollution, streamflow reduction activities, and overutilisation.

Apart from St Lucia, other priority estuaries include Kosi Bay (also a Ramsar site); Mhlatuze (one of South Africa's largest mangrove estuarine habitats); Mgobezeleni (situated at Sodwana Bay it is the only estuary between St Lucia and Kosi Bay); Mtamvuna; and Mzimkulu.

RIVERS, WETLANDS AND LANDSCAPES

The second step in this process looks at rivers and wetlands which are crucial to the functioning of the priority estuaries and need to be preserved. The idea is to identify rivers and wetlands which still have a healthy ecology and to include these in the overall biodiversity conservation plan.

These freshwater systems can either be located in primary catchments or smaller subcatchments that feed the strategic estuaries. Of course, protection does not imply exclusion, and limited human activities which do not affect the ecological state of the river or wetland, such as regulated fishing, and small-scale agriculture will still be allowed.

Investigations into the state of KwaZulu-Natal rivers' ecological health continue. KZN Wildlife contract aquatic ecologist Nick Rivers-Moore reports that the task is made difficult by the lack of historical data. "We do not know what constituted a pristine river a hundred years ago. A river we may regard as being in a natural state might not actually be so." Data on invertebrate biodiversity also remain sketchy.

Dr Goodman and his team are also exploring the concept of preserving the last remaining natural free-flowing rivers in the province as 'heritage rivers'. This is a relatively new concept taking off internationally aimed at protecting rivers that have significant recreation, nature conservation scenic or cultural heritage attributes from future impoundment. "The Mkhuze River, the largest river feeding Lake St Lucia, for example, is one such a potential heritage river. Keeping this river free from future impoundments could go a long way in protecting the estuary." Another potential heritage river is the 160 km-long Mtamvuna River which forms the KwaZulu-Natal/Eastern Cape border.

More than a 1 000 crocodiles call St Lucia home.

Linked to aquatic biodiversity targets are terrestrial or vegetation targets. "Freshwater and land systems cannot be separated, and thus within our already identified primary or sub-catchments we will also identify where we can achieve most of our terrestrial biodiversity targets," notes Dr Goodman.

The fourth component looks at the province's primary water production areas, these are the headwater catchments which deliver the most freshwater during the high rainfall months (November to March). It is crucial that the integrity of these water production areas, such as the Drakensberg escarpment, be conserved, not only for the ecosystems lower in the catchment, but also for other uses (agriculture, industrial, and domestic consumption).

By incorporating all of these elements the strategically important catchments for the protection of biodiversity (both terrestrial and aquatic) can be identified. This provides for a more focused approach to conservation.

THE TIME IS NOW

Dr Goodman notes that there is no better time for the implementation of such a conservation plan than now. "With the extent of degradation of the province's terrestrial and freshwater ecosystems we might already struggle to find enough areas to protect in order to meet our biodiversity targets. Tomorrow might be too late."

The final conservation plan is expected to be completed by March.