High conservation importance estuaries: the pride of the Garden Route

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The Garden Route cluster of SANParks manages areas which includes the Wilderness, Tsitsikamma National Parks and associated contractual areas, the Knysna Estuary, the former DWAF-managed mountain catchments areas, and state forests between George and Tsitsikamma. One of the features of the Garden Route area is the close proximity of the Cape Fold Belt mountain ranges (Tsitsikamma and Outeniqua) to the coastline. This geomorphological characteristic not only contributes in large part to the scenic beauty of the area, where vistas range from fynbos covered mountain slopes through forested mountain foothills to the narrow coastal plateau and coastline, but also has a significant influence on the hydrology of the region.

Along the approx. 110km of coastline incorporated in the SANParks conservation areas there are two estuarine lake systems into which six rivers drain, and 24 rivers, which drain directly into the Indian Ocean. An estuary is defined as a partially enclosed coastal body of water, which is either permanently or periodically open to the sea, and within which there is a mixture of seawater with freshwater derived from land drainage. In 12 of the river systems (occurring predominantly along the Knysna forest and Tsitsikamma coastlines) there is no significant input of seawater. These systems thus cannot be considered to have an estuarine component. In the twelve remaining river systems, estuaries do occur at the interface with the marine environment. One of the remarkable features of the Garden Route estuaries, however, is the range of different types of systems.

There are approximately 250 estuaries along the South African coastline and these can be categorised into five different types based predominantly on the size of the tidal prism (the difference between the volume of water in an estuary at high tide and that at low tide), the processes which result in freshwater and saline water mixing, and the resulting range in salinity. These five types include estuarine bays - 1% of SA total, permanently open systems - 18%, river mouths - 5%, estuarine lakes - 3%, and temporarily closed systems - 73%. A remarkable feature of estuaries in the Garden Route suite of conservation areas is that there are examples of all five-estuary types. Most of the Knysna system is a classic estuarine bay, which has the largest tidal prism (19 million m³) of any estuary in the country. The Salt River Estuary in Tsitsikamma NP is a permanently open system, which at one stage was considered to be one of the most pristine systems in the country. Sewage effluent inputs and freshwater abstraction are, however, changing that status. Six river mouths occur along the Tsitsikamma coastline, namely the Bloukrans, Lottering, Elandsbos, Storms, Elands, and Groot (East) systems. These are dominated by riverine processes and are currently considered to be in excellent condition. The Swartvlei and Wilderness estuarine lake systems occur in Wilderness NP, with the latter also being recognised as a wetland of international importance (i.e. Ramsar site). Finally there are four temporarily closed estuaries, namely the Touw, Swartvlei, Noetsie, and Groot (West) estuaries. The importance of the latter system has also been highlighted in that it is possibly the only river and estuarine system in South Africa where the majority of the catchments could be included in formal conservation areas, from river source to Marine Protected Area in the sea. In 2002 estuarine ecologists ranked all of South Africa's estuaries in terms of conservation importance. Garden Route estuaries in the upper half of the rankings include Knysna Estuary which is ranked as 1st both regionally and nationally; Swartvlei Estuary 2nd regionally and 6th nationally; Touw Estuary 15th regionally and 24th nationally; Groot (West) Estuary 48th regionally and 81st nationally; and the Salt Estuary 50th regionally and 83rd nationally. Given the above it is small wonder that the estuaries of the Garden Route, and especially those managed by SANParks, are not only regarded so highly by wetland ecologists and conservationists but are also the pride of Garden Route communities.