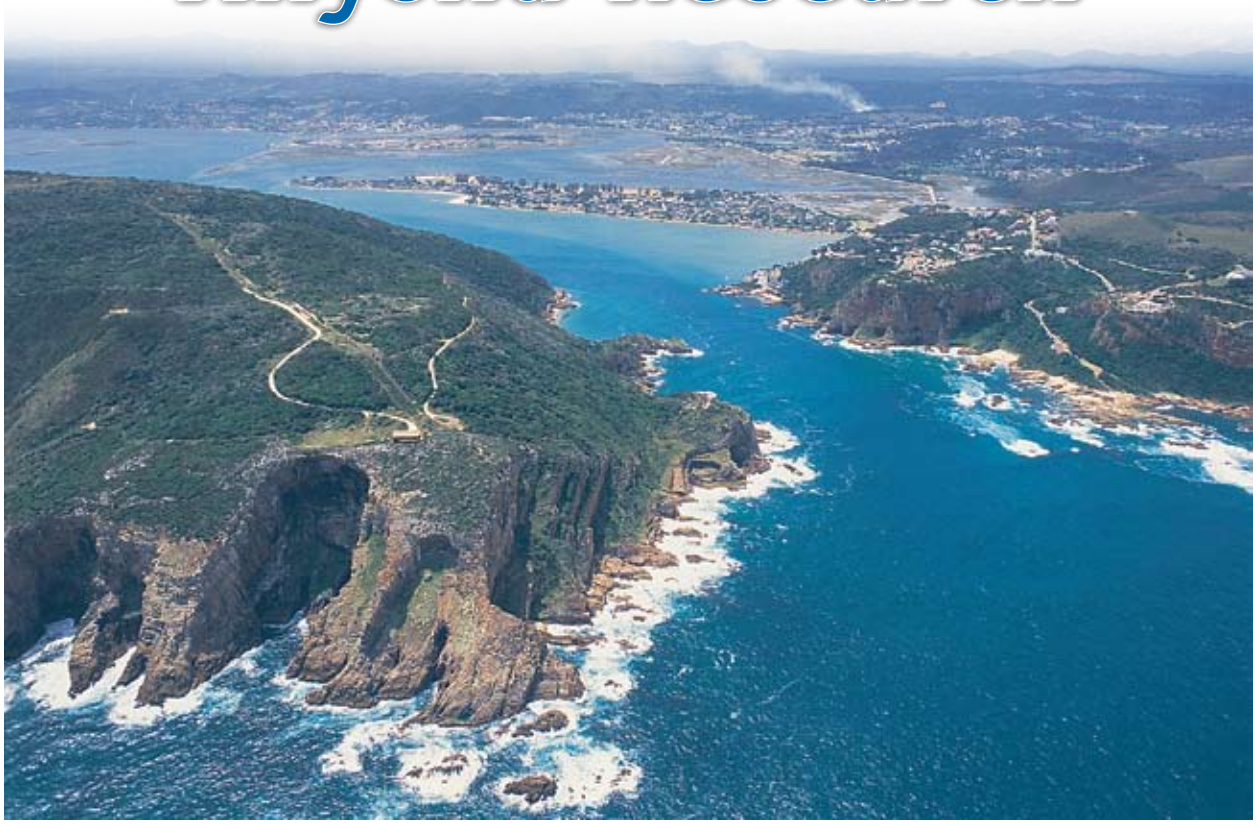
Modern Laboratory Boosts Knysna Research



SA Tourism

The long-term research and monitoring programme in one of South Africa's premier estuaries is settling well into its new field laboratory, providing new impetus to efforts to conserve what is left of the Cape South Coast's estuarine beauty.

The new field laboratory of the Knysna Basin Project, situated in Knysna's industrial area, was officially opened earlier this year by Executive Mayor Eleanore Bouw-Spies. The laboratory, which houses state-of-the-art equipment used in aquatic science, forms a strong base from which the Project can serve its primary objective, which is to improve understanding of the biophysical processes that maintain the Knysna River estuary.

The Knysna Basin Project was established after a need was established for a continuing research and monitoring programme to ensure the sustainable management of the estuarine embayment and other contiguous estuarine systems along the Cape South Coast. The primary responsibility of the Project is to contribute, through research and monitoring, to the ecological health of the estuary.

NURSERY OF THE SEA

The Knysna River estuary has the largest volume of seawater entering during neap and spring tides. It has one of the highest biodiversity levels of any estuary in South Africa, and is extremely energy-productive. Because of its permanently open mouth, Knysna is host to a variable marine fish population and is considered one of the top three most important estuaries for the marine environment in southern Africa.

Small bait fish, such as the estuarine round herring and Cape silverside breed in the estuary, while important line fish such as the spotted grunter, white steenbras, dusky kob and Cape stumpnose use it as a nursery.

Following its establishment in the 1990s and up to 2002, the Knysna Basin Project occupied a field laboratory on Thesen Island from which important studies on the hydrodynamics, chemistry and

biology of benthic organisms were carried out by a variety of research teams. "This was a productive period in the life of the Project," explains Project Director Dr Brian Allanson. "Unfortunately, the press of development on Thesen Island led to the closure of the field laboratory. At the end of 2002, there was no suitable alternative site on which to re-establish the laboratory."

A substantial donation to the Project by Barloworld in 2007 led to a renewed search for a suitable site. "The search for new premises was no easy task – suitable lagoon-side sites had been built over and were beyond the financial resources of the Project," Dr Allanson tells *the Water Wheel*.

A NEW START

In the end, suitable accommodation was found in the Knysna industrial area, and the laboratory is, once again, comfortably housed. Dr Allanson reports that the new laboratory is the base from which Phase 2 of the Project has been launched. "This phase involves a strong system approach towards extending the processes involved in maintaining the health of the estuary while satisfying the resource requirements of a burgeoning population within the basin."

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The estuary faces a number of threats, the biggest being the town in its immediate basin. Already about a quarter of the Knysna salt marshes (the second-largest in South Africa after Langebaan) has been destroyed by urban development, such as the building of houses, canalisation, land reclamation, hardening of soils, and road cuttings. Other threats include increased water demand and stormwater and wastewater treatment plant effluents that flow into the system via the Ashmead canal.

Knysna Basin Project

The new field laboratory of the Knysna Basin Project situated at 32 Waenhout Street, Industria.

"Each of these factors has a distinctive biophysical nature. While the earlier estuary studies demonstrated the reality of these factors in the life of the estuary, quantitative systems analysis was not their primary objective," explains Dr Allanson. "The influence of these factors has been underlined by the completion of the Intermediate Estuarine Reserve Study by a team of specialists led by Dr Angus Paterson of the South African Environmental Observation Network. The excellent work of this team has emphasised the increasing severity of the impacts that arise from these environmental factors."

The new laboratory has come to the right place, at the right time. Its facilities are available to any research group wishing to expand South Africa's understanding of microtidal estuaries and, through this fundamental approach, provide the essential information required to sensibly manage this unique biological entity.

CONCERNED INTEREST GROUP

While the Knysna Basin Project is a recognised research programme within the Department of Zoology and Entomology at Rhodes University, it is also an association of interested people that was recently established to attract and sustain the interest and direct involvement of the Knysna community. Its constitution was formally accepted at a special general meeting held on 5 August.

The association is now in a position to apply for Public Benefit Body status through the Department of Social Affairs – an important step towards recognition in the wider spheres of government. The project also boasts a new website, www.estuary.co.za. "We look forward to increasing contact and collaboration with the estuarine research community," says Dr Allanson.

SANParks

Anthropogenic impacts are threatening the Knysna River estuary, one of South Africa's premier estuaries.