

ESTUARINE ENDEAVOURS

Knysna Basin Project Newsletter
December 2020

WE ARE UP AND RUNNING

We had intended to hold a farewell function for Dr Louw Claassens so that we could publicly acknowledge the very significant contribution she made to the Knysna Basin Project, to the students she supported and to the public. As this was not possible, members of the Executive Committee gathered to present her with a specially crafted seahorse as a reminder of her time with us.

The coincidence of Louw's resignation and the emergence of Covid has been particularly challenging for us. Early on the Executive Committee of the Knysna Basin Project determined that the effects of the COVID – 19 and the National Lockdown would hamper the Knysna Basin Project to the extent that its operations could not be continued in the normal course of business. The Trustees therefore resolved that the Knysna Basin Project while keeping current projects operating, should cease operations until such a time as they could be recommenced viably.

As COVID restrictions eased we started to make arrangements for the Annual General Meeting. However, with the strong resurgence of infections we have had to postpone it. This resurgence will also affect how quickly we can regain traction in our research and other activities.

Following discussions with Thesen Islands Homeowners Association who funded Dr Claassen's doctoral research on sea horses, we have signed a one-year agreement that may be renewed annually. This will enable us to appoint a graduate researcher who will be based in Knysna. We are currently in discussion with Thesen Islands Homeowners' Association, Rhodes University and South African National Parks to define the research project. We envisage that the appointee will also help support visiting researchers. With support from Rhodes University the laboratory will continue to be available for visiting researchers.

RESEARCH

This has been a productive year despite being constrained by lockdown regulations.

Early in the year Louw and colleagues published an assessment of the ecological status of the Knysna Estuary. Notable impacts included deteriorating water quality, development and resource use pressures. Nuisance macroalgal blooms in response to eutrophication have increased, displacing important seagrass habitats and affecting biota, including an increase in alien species. They concluded that the ecological health of the Knysna Estuary is deteriorating and make a plea for on cross-sectorial management of the estuary and surrounds.

Macrobenthos (bottom-living animals visible to the naked eye) are important components of estuarine ecosystems. Richard Barnes and Louw investigated whether beds of subtidal estuarine seagrass constitute a refuge for macrobenthic biodiversity threatened intertidally. They concluded that at Knysna at least, the subtidal hardly constitutes a reservoir of the seagrass biodiversity present intertidally. This has significant implications for conservation planning.

Louw working with David Harasti from Australia, published further research on the importance of Reno mattresses as a habitat for the Knysna Seahorse illustrating the conservation potential of heavily modified environments for threatened seahorse species.

Nina de Villiers completed her research titled “Ecological Engineering: an assessment of the ecological impact of Reno mattress structures used in erosion control in the Keurbooms Estuary, South Africa” and graduated MSc from Rhodes University. She concluded that complex artificial structures such as Reno mattresses do provide habitat for fish and invertebrates. However, the use of these structures should be in combination with natural vegetation (e.g. as a hybrid habitat) and not one that replaces intertidal and subtidal natural habitat, especially eelgrass.

These publications are available on request.

With support from Rhodes University we were able to keep the Laboratory in Trotter Street and the WetLab open. This allowed us to offer ongoing support to researchers including three from the University of Stellenbosch conducting research on baitworms, commonly referred to as the moonshine worm or pypiewurm. This is a matter that is of particular interest in the Knysna Estuary.

Their research topics are:

Hendré van Rensburg a PhD student is investigating the role of a cryptogenic baitworm as a consumer and a resource in a protected clear water estuary: The case of *Diopatra aciculata* in the Knysna Estuary of South Africa

Stephanie Schoeman a PhD student is researching reproductive and local dispersal patterns of *Diopatra aciculata* (Annelida) in the Knysna Estuary: An entry into population control.

Arturo Alvarez-Aquilar, a post-doctoral student from Mexico, is researching the ecological impact of *Diopatra aciculata* (Annelida:Polychaeta) as an ecosystem engineer in Knysna Estuary, South Africa

These projects are under the guidance of Professors Carol Simon and Conrad Matthee of Stellenbosch University, and Professor Nicole Richoux from Rhodes University

EDUCATION

The Educator Empowerment project funded by the Table Mountain Fund and WWF South Africa, and conducted by Janet Snow of Environment Learning and Teaching, offers a Fundisa for Change Course for Intermediate Phase teachers. It is conducted in association with Rhodes University and the focus is on Marine Biodiversity. Lockdown has required us to develop an innovative Blended Learning approach to distance learning. Blended Learning refers to the practice of using both online and in-person learning experiences when teaching. At the time of writing we are supporting the development and operation of 'Professional Learning Communities' through which educators are enabled to support each other and learn together. Lessons have been learned that could inform future Blended Learning courses. We appreciate the encouragement and understanding of the Table Mountain Fund as we sought new ways of delivering the course.

CONSERVATION

We have not been able to host the field trips that we have in the past. Through the Educator Empowerment Project we have linked educators with a number of documentaries that have relevance to conservation of marine biodiversity.

Together with SANParks (Owen Govender and Meghan Ericksen) we hosted a "Media Group" on a trip organised by the Ford Wildlife Foundation. They were introduced to the Knysna Basin Project and then boarded SANParks boats for an informative trip through the Thesen Islands canals to the Ashmead Channel, past Leisure Isle and back to the SANParks jetty.

COLLABORATION

The Knysna Basin is a complex social, economic and ecological system, embedded in a larger and even more complex Garden Route that is changing with disconcerting speed. We acknowledge that addressing the emerging challenges requires collaboration in research, education and management. We are committed to promoting collaboration and offering such support as we are able to assist others in our collective endeavour.

APPRECIATION

This has been a challenging year and our efforts to restart the Knysna Basin Project have been greatly assisted by Konrad Taueber who has encouraged us and enabled networking. Mike Davies who spent so much time assisting Dr Claassens with her sea horse research, led development of the Agreement with Thesen Islands Homeowners.

The Knysna Basin Project has its foundation in Rhodes University and through this support and the commitment of Professor Peter Clayton, we have been able to keep our laboratory operational and the Rufford Foundation enabled professional development through funding to research projects directed at enhancing conservation

The Table Mountain Fund, particularly Carla Wood, has encouraged us as we sought to re-craft our Educator Empowerment Project with Fundisa for Change (Janet Snow). The challenge was to design a programme that could be successful while not adding to the stresses experienced by participating educators.

We cannot operate without a boat and we are grateful for support from Leisure Isle Boat Club

The Wildlife and Environment Society (WESSA) continues to support our endeavours

The Knysna Basin Project is a beneficiary on the My School Programme

South African National Parks has played, and continues to play, a major facilitating role in our endeavours.

We gratefully acknowledge AQB Financial Services and particularly John Edwards and Letitia Cooper for financial management and advice

The Knysna Basin Project reflects the commitment of many individuals and organisations since its founding by Brian Allanson. The results of your support are not only to be found in new understandings, but also in the capacity we help develop among young and emerging professionals. Thank you for your support. We wish you well over the festive season and may the new year bring us all relief from the COVID pandemic.

GET IN TOUCH

The Knysna Basin Project is a Non-Profit Organization (127-588 NPO) and we rely on support from the public to keep our heads above (and below) water. Please contact us if you would like to support us in any way.

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