



MANGROVES MONITORED FOR SEA RISE

THE Nahoon Estuary Nature Reserve has been selected as one of the priority study sites for a national sea-level rise monitoring programme.

This project, which is being carried out by scientists at the Nelson Mandela University and the South African Environmental Observation Network (SAEON), will assess whether mangrove habitats along the South African coastline are responding to changes in sea level.

Mangrove habitats are most commonly valued for their biodiversity, but the trees also serve as natural coastal protection. The structure of the roots trap sediment and stabilise the banks of estuaries and this can reduce the effects of storm surges and floods. This will be valuable protection to adjacent inland areas against rising sea levels in the future.

Mangrove habitats can respond to rising sea-level in two ways: 1) the habitat expands landwards into adjacent areas that are at a higher elevation; 2) the elevation of the habitat relative to sea-level increases through sediment trapping – this is called surface elevation change.

As both of these processes occur over long time periods, scientists are attempting to take measurements that could be used to predict future changes in these habitats.

Unfortunately, human activities, such as the building of hard structures or development of urban and agricultural areas, can significantly hamper the ability of mangroves to respond to sea-level rise. In South Africa, dams which are built upstream reduce the amount of sediment that reaches the coast, and this could be influencing the survival of coastal habitats such as mangroves.

This project will set up monitoring stations within priority mangrove sites along the coast to measure changes in surface elevation over time. A total of nine measuring stations are being set up in each estuary. At each station a permanent "benchmark" consisting of stainless steel rods is set up. The rods are driven down into the sediment as deep as possible and the elevation of each station is measured relative to mean sea-level. The elevation of the surface at each station is then measured every 3-6 months.

As the changes in surface elevation change are relatively small (mm/year) it is important that the areas surrounding the stations are not disturbed by people. The surface elevation dataset can then be compared to sea-level measurements that have been recorded at a nearby tide gauge. There has been a global effort to measure the



SAEON members install the rods for a benchmark within the mangroves at Nahoon.

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responses of mangroves to sea-level rise, and this will be the first project to apply these methods in South Africa.

The mangroves at the Nahoon Estuary were selected for this project as it is one of the southernmost localities for this habitat type in the world. Recent research has also shown that the Nahoon mangroves are in a healthy state which allows the ecosystem to function efficiently.

Anyone who is interested in the project is encouraged to contact the research team as they would like to engage with residents and stakeholders of the Nahoon Estuary Nature Reserve. This project has been funded by the Water Research Commission (WRC) and the National Research Foundation (NRF). For more information, please contact the project leader, Dr Jacqueline Raw from the Nelson Mandela University (jackie.raw33@gmail.com).

Text and photos: Dr Jackie Raw

BOARDWALK A THORN IN THE FLESH

THE deteriorating state of the boardwalk continues to be a thorn in the flesh for all who visit the reserve. It is unstable and dangerous in many places and Nahooners have been trying in vain for a lengthy period to have it replaced or fixed. The money is there, but the will to spend it at this stage is not.

It is an embarrassment for the German donors who have agreed to donate hundreds of thousands of rands into the project, but much dilly-dallying is stalling it.

Architects, engineers and BCMM staff are all involved one way or another, but the insistence to preserve (quite rightly) the unique area is holding up work. The assistance and sanction of the Department of Environmental Services is being sought.

We wait in hope for progress on the matter. Geoff Howes has volunteered his services to put pressure on those concerned.

MEMBERSHIP IS GROWING

MEMBERSHIP of Nahooners is on a growth spurt with 60 new members being signed up in 2017 and R9 400 being collected from them. Total membership is currently 449 and that includes 113 life members.

Pensioners pay R500 for life membership and R50 for annual membership. Non-pensioners who enjoy life membership pay a one-off fee of R1 300, or alternatively R130 a year.

The treasurer's report released at the last Management Committee meeting in January painted a pretty picture with the bank balance revealing: Current account, R24 131 (last July it was R17 528); and savings account of R12 258. That gave a grand total of R36 390 in our bank account.

OTHER MATTERS

THE release of tortoises into the reserve has not been a success with several apparently being "lifted" by vagrants to be sold as food. One large tortoise was found in the mud on the Bonnie Doon side of the Nahoon River, but how it got there is a mystery.

Perhaps it swam there or walked along the bottom – both means are considered very unlikely. Perhaps it was seen by someone peering out across the river from the nature reserve and was picked up and taken across the estuary by a well-meaning canoeist or boat operator. Who knows! MAINTENANCE of the Enviro Centre has been completed and it is looking spic and span. The toilets were especially fresh and clean when visited one morning recently, with soap in the basins and a clean towel available. Well done whoever is seeing to this.

THREE examples of alien plants prolific in the reserve will be potted and put on display around the noticeboard so that visitors can become aware of their presence and perhaps help remove them in their wild state. The plants are lantana, inkberry and bugweed. Your assistance will be greatly appreciated. The best time to remove them is after rain when the soil is soft and pliable.



A plastic pipe is used to clear the top 30cms of sediment. The rods are then driven into the sediment until refusal. In the mangroves at Nahoon, most benchmarks were driven down to 3m.



Receiving end of the benchmark which has been cemented in place. Measurements are taken by placing an arm-like instrument over this receiver. The instrument is rotated around the receiver and the height of the surrounding sediment is measured as a series of points. A profile of the sediment can then be generated.

GENERAL MEETING

A GENERAL meeting will be held at the Enviro Centre on Monday, March 26, at 5.30pm, with refreshments served immediately thereafter. John Pillans, a lepidopterist (that's a person who collects and displays butterflies) will be guest speaker. He will also show off many of the rare and common specimens in his collection, some of which are huge compared to what we see in our own gardens and in the countryside around us.

Newsletter editor: Robin Ross-Thompson