



KwaZulu-Natal's Coastal Management Newsletter

# Mining gathers momentum

Among other remarkable qualities, KZN's coast has buried treasure in the form of globally sought-after minerals, some of which comprise ingredients used and enjoyed by all of us, in everything from foods and medicines to industrial processes that manufacture many commodities.

In KZN, these minerals have been located in many areas of undeveloped coastal habitats and agricultural land of the uThungulu and iLembe Districts, and vast swathes of the adjacent marine environment. Mining rights have already been awarded over most of these areas, and current prospecting applications declare intentions for the remaining pockets. Included is the Tugela Bank, a highly productive offshore ecosystem which not only nurtures the foundations of many of our marine species, but also has links to fisheries that underpin fisherfolk livelihoods across the West Indian Ocean region.

Accessing mineral-rich ore bodies below the surface of the land or sea is by definition destructive. This is especially true of the heavy minerals found in our coastal zone which depend on a huge amount of fresh water in the mining process. Such mining not only removes habitats and biodiversity, but can also disrupt environmental processes that underpin our life support systems. It is optimistic to believe that we can simply re-engineer these intricate processes after mining. Mining of this sort poses environmental challenges and it invariably takes time for natural processes to reshape these areas and recreate the original conditions – if at all. Economic development notwithstanding, we will have to exercise great care and vigilance on where we mine and where we don't, lest we compromise the very life support systems needed to sustain current and future generations.



Coastal dunes will be lost to mining



Dune mining - Richards Bay

~ Bianca McKelvey (WESSA)

# A place you should visit

## Greenpoint lighthouse

Greenpoint lighthouse, situated between Umkomaas and Scottburgh, is an interesting cast iron structure and is over 100 years old. It was first commissioned in 1905. For many years it has been powered by Eskom, with a backup diesel-powered generator available for when there is a power failure. However, its first light used paraffin pressure lamps and many mirrors helped to concentrate the revolving spotlight. Even prior to 1905, an oil flame was lit each night on a raised platform, which was situated much closer to the coast. The lighthouse and its predecessor have done yeoman service in warning ships off the point and the treacherous Aliwal Shoal, situated three kilometres offshore. Despite the light, at least two ships have floundered on the shoal and their remains provide habitats for many species in the protected marine reserve.

Greenpoint, like many other points along the KZN coast, is an outcrop of Stormberg dolerite, a hard basic igneous rock, which often forms prominent points between shallow sandy bays. Above the waves it weathers to form heavy clay soils, but at Greenpoint these are overlain by Berea sands. This combination not only supports an almost unique grassland vegetation of great biodiversity, but it also gives it its name: Greenpoint. It is rich in perennial grass species, and there are many attractive flowering plants and forbs. Salt spray from the surf also helps prune any woody vegetation, keeping it very short and with a smooth dense canopy.



*Greenpoint lighthouse*

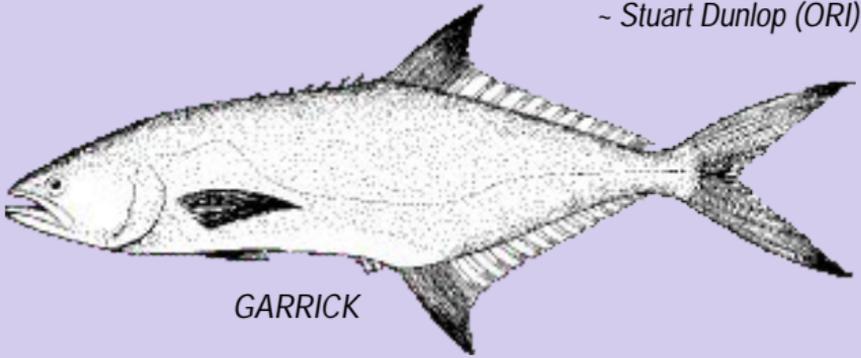
Today Greenpoint is a popular spot for shore anglers and is also one of the better known surfing spots along the KZN South Coast. Being the closest landward point from the Aliwal Shoal it provides a good vantage point to observe the boating activities on the Shoal and the seasonal migrations of marine mammals such as humpback whales. The marine environment off Greenpoint is situated within the Aliwal Shoal Marine Protected Area (MPA), which was proclaimed in June 2004.

*~Quintin Mann*

# Fish Tagging in KZN

Over the years, garrick has become one of our most popular tagging species and comprises about 4% of the total number of fish tagged. Whilst fishing in the Knysna lagoon during September 2008, Bradley Sparg tagged and released a garrick of 530 mm fork length. On 28 August 2011, almost three years later, this same fish was shot by a spear diver off Ifafa River on the KZN South Coast. In its time at liberty this fish had grown 310 mm and weighed 7 kg. This recapture yet again shows the highly migratory behaviour of this species which move into KZN waters during winter to spawn.

~ Stuart Dunlop (ORI)



## The 2011 Sardine Run

The 2011 Sardine Run was relatively good, despite a high incidence of winds, heavy seas and unseasonably high rainfall. The KZN Sharks Board charted several flights over the Wild Coast in early June to gauge the intensity of sardine activity. The absence of concentrations of diving gannets and large schools of common dolphins, suggested there was very little indication that they were on their way.

This all changed on 20 June when the 2011 Run started in earnest. The "pilot" shoals made an appearance along much of the KZN South Coast and the first sardines of the season were netted at Hibberdene. All the shark nets were removed and bathing was prohibited from Umgababa southwards. The sardines moved steadily up the coast and on 27 June the first sardines were netted in Durban. On the same day several large sharks were caught in the shark nets as far north as Salt Rock, indicating that some sardine shoals were already well north of Durban.

A total of 107 successful nettings took place between 20 June and 23 July 2011, resulting in approximately 8425 crates. This is considerably less than last year's 263 successful nettings and 23985 crates. Initially crates were sold for R700, but this dropped considerably to R80-100 per crate by mid-July. Shark nets were reinstated by 5 August.

~ Augustina Ganesan (KZN Sharks Board)

# Bar-built estuaries periodically linked to the sea

Some estuaries by natural shape and because of our modifications to their catchments are subject to reduced marine influence through repeated closure of their mouths. These mainly smaller systems within smaller catchments fall into the category of intermittently open estuaries, which are never permanently open to the sea. This type of estuary is common along the arid and semi-arid coasts of the world such as in Texas, Florida and parts of Australia. Here in South Africa this configuration is called a Temporarily Open/Closed Estuary (TOCE) where seasonal changes in river inflow at the top end, and wave dominated sediment movement influence whether or not a system is open, and for how long. TOCEs become separated from the sea by the formation of a sandbar at the mouth. They stay closed, filling up all the while until they burst open and re-link to the marine environment. In KZN they are plentiful and are 61 (82%) of the estuaries we have.

They are no less important or complex because of their size and periodic separation with the sea. Whether open or closed, salty or fresh, influences which types of animals can live there permanently. The more natural systems open more frequently in the wetter, summer months and are more stable and productive when closed in winter. Animals that make use of these estuaries to feed and grow and use them as passages to the sea or up into the catchment, have synchronised their lifestyles to accommodate this. Because we choose to live in dense centres along the coast, we have transformed much of this harmonisation by using up scarce freshwater resources which are needed to flush and open TOCEs. Poor planning has meant that infrastructure, facilities and even agricultural land are inundated when these systems are closed and full. Our response is to artificially open them, mostly at odds with nature's timing.

~ Fiona MacKay (ORI)



*The unspoilt Mdlotane Estuary*



*Sezela Estuary: a bar-built estuary  
influenced by poor planning*

# Fall of the Phoenix

A titanic sigh of relief echoed along the North Coast when the derelict MT Phoenix departed our shores for its watery grave.

The 135-metre vessel, a bulk tanker being towed to wrecking yards in India, ran aground at Sheffield Beach on 26 July 2011. It was carrying 450 tons of marine diesel, as well as potentially harmful ballast water, raising great concern for the North Coast coastline.



*Crew working to get the fuel pumped off the vessel*

The South African Maritime Safety Authority (SAMSA) set in motion a plan to get the fuel pumped off the vessel and to have its ballast water neutralised. Supported by the National Department of Environmental Affairs (DEA), Ezemvelo KZN Wildlife, DAEARD, ORI and the KwaDukuza Municipality, environmental impacts related to the grounding were closely monitored. Some light diesel was evident on the shore between Sheffield Beach and Umhlali and as a precautionary measure authorities boomed the Umhlali estuary. The public was advised against bathing, surfing or bodyboarding in proximity of the site, whilst the DAEARD ensured that water quality, sediment and mussel samples were taken for analysis. The initial results indicated little concern to public health from bathing, but the collection and consumption of shellfish in the area was [and is] discouraged until the final mussel samples have been processed.

In early August, attempts to float the vessel failed. During this time there was a real risk of her breaking up due to inclement weather. Reacting to the possibility of dealing with an oil spill, Ezemvelo KZN Wildlife and DAEARD prepared an environmental risk mitigation plan for marine and estuarine systems which outlined the preventative and rehabilitation options available to SAMSA and the salvagers.

On 3 September 2011, when good swells rolled in, the MT Phoenix was successfully refloated. Three days later she went to her final berth, more than 915m below and 51km off Durban harbour. DAEARD spokesperson Ncumisa Mafunda said: "From the time that the vessel ran aground in July, we had been in contact with SAMSA to ensure the environment's safety. We were mostly concerned about the possibility of dealing with an oil spill, but mop-up operations were successful."



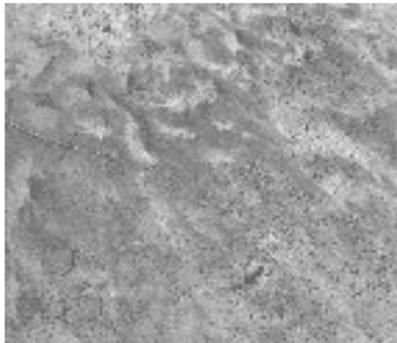
*Last moments of the MT Phoenix*

# Did *U* know?

## Oily beaches?

Ever noticed that black strip of sand on many KZN beaches and thought it was oil? Look again and scrape some together. Notice how heavy it feels?

This is in fact a mixture of heavy metals comprising ilmenite, rutile and zircon, the same as those mined near Richards Bay. These minerals are rich sources of titanium and have been concentrated after millions of years of wind and water erosion of the hinterland - especially Karoo dolerite.



*Mineral deposits on beach sand*



*Minerals separated from sand by a local sand castle crafter on Durban's beach*

Titanium as a metal has very high temperature tolerance and an exceptional strength to weight ratio, hence its use in the aircraft industry. Titanium dioxide can be converted to white pigment as used in paint, food colouring (E171), tippex and even sunscreen. Not only does it whiten the sunscreen but it also has strong UV absorption properties. South Africa produces about 20% of the world's titanium annually.

## Contact Us

If you wish to be added to our mailing list or have any comments about *Ulwandle* - please contact

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COUNTDOWN TO



COP17/CMP7  
UNITED NATIONS  
CLIMATE CHANGE CONFERENCE 2011  
DURBAN, SOUTH AFRICA  
November 28 to December 9



agriculture, environmental affairs  
& rural development

Department:  
Agriculture, Environmental Affairs  
& Rural Development  
PROVINCE OF KWAZULU-NATAL



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