Mass migrations of a different kind ~ the mystery of Varuna ~

Every winter people on the coast eagerly await the spectacular migration fondly known as the Sardine Run. However, this phenomenon is not unique to fish.

On dark autumn nights when the waxing moon is high, late night visitors to the shore might have observed what, in the invertebrate world, is the equivalent of the annual Sardine Run.

Image: World Biodiversity Database

No less spectacular, millions of small scurrying creatures move from the ocean into the nearest estuary and upstream on the incoming tide, looking for a home to metamorphose. These are the last stage swimming larvae of *Varuna litterata*, known as the swimming or paddle crab.

Varuna's travels remain a mystery to the scientific world. Nothing is known of where eggs hatch or where larvae initially develop, only that that they migrate to estuaries to complete their development. This tiny animal is also a physiological wonder - adults live exclusively in fresh waters near the coast and are presumed to return to the marine environment only for breeding. The conquering of fresh waters is exceptional in such an animal given the physiological complexities of moving directly between salt water and fresh water.

Later this year, travel down to your local estuary and keep a look out for these Lilliputian travellers – you might just witness one of nature's greatest phenomena.

~ Fiona MacKay (ORI)

Photo: www.earth-touch.com

Did U know?

Wondered why some seas appear blue & others green?

The sea's colour has to do with the differential absorption and scattering of light. As the sun's rays enter the water, so the shorter (blue) wavelengths scatter first while the longer (red) light penetrates deeper – hence the blue hue at the surface, especially in clear waters of the tropics. In cooler seas, which are richer in phytoplankton, the higher concentrations of chlorophyll reflect green – hence the greener coloured surface waters. *And the Red Sea?* Although seldom really red, algal and bacterial blooms emit a reddish brown colour which periodically lends its name to this unique stretch of ocean.

Wondered why you sometimes see the sea 'glow' ?

It is a phenomenon that has fascinated people for years - In 1686 it was suggested that the ocean absorbed the sun's light during the day and emitted it at night. The philosopher Robert Boyle suggested it was caused by friction between the sea and the atmosphere as the earth rotated on its axis. Sailors, however, believed it was the result of shining gemstones in the water demon's garden. In reality the explanation is far simpler...The illumination is the result of phosphorescent marine organisms, mainly plankton, which give off a blueish-green 'glow' when water is disturbed – a phenomenon known as bioluminescence. The light flashes are very brief (tenths of a second) but due to the vast numbers of plankton the phosphorescence can be seen for some time.

~ B. Palmer (ORI) & R. van der Elst (ORI)

The light side ...

www.cartoonstock.com

"So, that's where the blue water comes from!"

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ISIFUNDAZWE SAKWAZULU-NATALI

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FIFA Fever !!!

It's 2010 and we are counting down to the FIFA 2010 World Cup™! Many of us are excited about the upcoming event and are feeling the 'FIFA fever!'

With less than four months to kick-off the country is gearing up to host football's greatest showpiece! For four weeks, South Africa will hold centre stage in front of the rest of the world. Coupled with the event, local tourism is estimated to be one of the biggest income generators, which provides us with a great opportunity to showcase our beautiful KZN coastline!

Moses Mabhida Stadium

Photo: www.skyscrapercity.com

In preparation for the World Cup, Durban has built the iconic Moses Mabhida Stadium. The stadium is scheduled to host five group matches, one second round match and one semi-final.

An icon for our coast!

The stadium takes its design inspiration from the South African flag, with its grand arch representing the unity of a sport-loving nation. The two legs of the arch on the southern side of the stadium come together to form a single footing on the northern side, symbolizing the uniting of a once-divided nation.

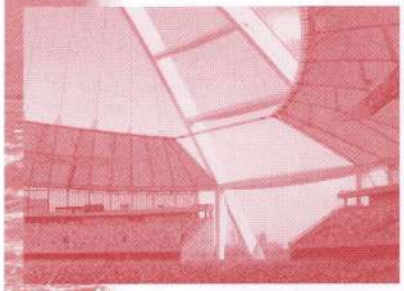
Cont. next page...

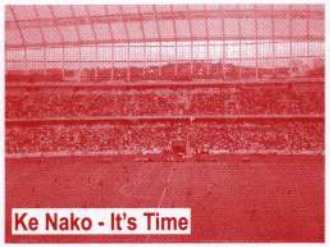
An icon for our coast cont . . .

The stadium has been designed to ensure that emissions, energy and water-use are reduced - with the target of the venue being 'climate neutral'.

It is estimated that the stadium has reduced its energy footprint by 30% and water consumption by 6,000m^3/ year!
The reduction of energy and water use has been achieved through a number of innovative design features, including:

- Energy efficient lighting
- Centralised chiller air conditioning system
- Natural ventilation: facade and roof design
- No hot water for washrooms
- Gas used for cooking
- Water efficient fittings, such as low flow showerheads
- Low flush toilets and urinals
- 80% endemic vegetation irrigated by means of drip irrigation
- Rain water harvesting





Ke Nako - It's Time

Photos: O. Parak

Fun Facts about the Stadium

- It has the capacity to hold 70,000 spectators.
- Its design allows for seating to be reduced to 54,000 for local matches or up-scaled to 80,000 for larger events.
- The grand centre arch, 106m high, is not just a design feature. A cable car takes visitors up to its highest point, where they can get out and enjoy breathtaking, panoramic views of the city and ocean.
- The 350m long free-span steel arch weighs 2,600 tons - that's the equivalent of 2,600 average cars.
- The roof is made of 46,000m^2 of Teflon-coated glass fibre membranes, which produces a translucent glow when the stadium is lit.
- A roof cover provides shelter to 80% of the stadium in the case of rain.

Ulwandle proudly welcomes our latest coastal asset!

Blue Flag South Africa

Blue Flag News !

The Blue Flag season started on 1 November 2009 with the largest number of full status beaches ever in the South African programme. Sadly, three beaches have since had their status revoked as a result of non-compliance with the imperative Blue Flag criteria - Alkantstrand (Richards Bay), Gonubie (East London) and Big Bay (Cape Town).

Big Bay Beach lost its status as a result of significant impacts of a new development in the back beach area, which has clearly influenced the hydrology and ground water flow leading to a constant flow of fresh water onto the sand. This issue has raised the red flag on developments within the coastal zone!

Margate Beach Photo:www.blueflag.org

The public are increasingly becoming the "eyes and ears" of the programme on the ground. The Blue Flag management has been inundated with complaints and comments. While only 10% of complaints related to the performance of Blue Flag beaches, these proved invaluable in raising the "red flag" for particular beaches. This active watchdog role of the public will be a critically important part of the ongoing success of Blue Flag in South Africa! As many beaches prepare to run additional Blue Flag seasons for the 2010 soccer visitors, there is much work happening on the ground and we encourage you to continue your watchdog role!

~ Alison Kelly (Blue Flag)
alisonk@wessa.co.za

ICM Act UPDATE

The long awaited Integrated Coastal Management Act came into effect on 1 December 2009. The aim of the Act is to ensure the protection and sustainable use of natural coastal resources and provides a new approach to managing people and their activities in the coastal zone. The implementation of this Act has some challenges and will occur over a number of years, whereby spheres of government have been given specific timeframes in which to achieve certain requirements. Furthermore, there are sections of the Act that will only be enforced at a later date. These are:

Section 11: Ownership of coastal public property
Section 65: Award of leases and concessions on coastal public property
Section 66: Terms of coastal leases and coastal concessions
Section 95: Existing leases on, or rights to, coastal public property
Section 96: Unlawful structures on coastal public property
Section 98: Repeal of legislation

A Place U should Visit!

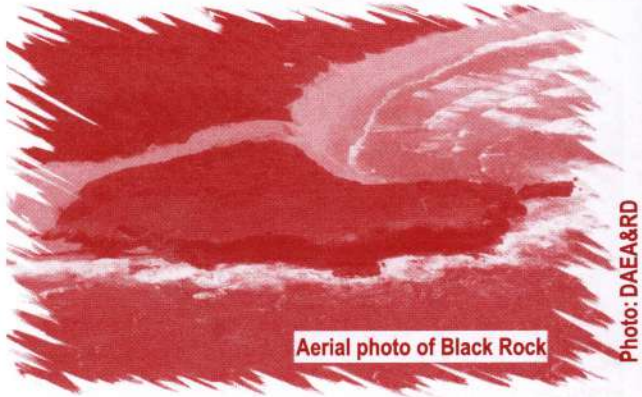
Black Rock – iSimangaliso Wetland Park

A striking feature along the iSimangaliso Wetland Park coastline, north of Sodwana Bay, is the headland of Black Rock. On an otherwise rather flat shoreline, Black Rock projects into the sea, providing a fine vantage for spotting marine life including seabirds, whales, dolphins and whale sharks.

Black Rock derives its name from the black coloured rock, which is comprised of coastal aeolianite, a relic fossil dune formed some 100,000 years ago in which sand grains and shells have been cemented together by calcium carbonate through the action of rainwater. This highly eroded rock has many sharp edges, rather like lava. The sheltered northerly adjoining bay is great for snorkelling and fly fishing, while the tidal platform in front of the Rock provides mussels as food security for subsistence fishers at low spring tide.

The Rock has also long been identified as a unique habitat for plants and animals. Notable is Bouton's snake-eyed skink, a rare and fascinating species found primarily on remote oceanic islands. Remarkably, this skink feeds on small marine life at low tide, even venturing into water when threatened. A visit to this unique site is a worthy and memorable experience. To visit this site please contact the Manzengwenya offices of Ezemvelo KZN Wildlife.

~ R. van der Elst (ORI)
& P. Ramsey (Marine GeoSolutions)



Aerial photo of Black Rock Photo: DAEA&RD