

# Bush Telegraph

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2008

## THE NAMIBIAN COAST



I  
am  
a  
Coastodian,  
are  
YOU?

### COASTAL ENVIRONMENT FACTS

Length: 1570km

Northern border: Kunene River

Southern border: Orange River

Average annual rainfall: 15-20mm

Average annual fog: 125 days

Width of fog belt: 20-50km inland

Average water temperature: 12-15°C

Average water temperature further out at sea: 18-20°C

Coastline beach habitat: 60% sandy, 28% sandy & rocky, 10% rocky

## OUR NAMIBIAN COAST



Have you ever been to Namibia's coast? Do you perhaps live there? What is the first thing that comes to mind when you imagine the coast? Is it the beach and the waves or the high Namib sand dunes and the fog? Do you think of the large gravel plains covered in lichens? Or do you think of flamingos and other birds nesting and feeding along the shore? All of these images and many more make up our unique coastal environment.

### DEFINING THE COAST

What is the "coast"? In simple terms, the coast is where the land meets the ocean. At the coast, the land and the ocean environments constantly interact and depend on each other. Therefore, let us explore the whole Namibian coastal environment and define it from the low water mark to the end of the fog belt.

The Namibian coastal environment is created by the Benguela current upwelling system, South Atlantic high pressure system, south and south-west winds and the Namib Desert. These factors together create a coast that is unique. The harsh conditions prevent most of the coast from being used for human habitation, agriculture and development. But, for many animals and plants these conditions are just right!



### PEOPLE, INDUSTRIES AND THE ENVIRONMENT

Only about 5% of Namibians live in the coastal towns of Henties Bay, Swakopmund, Walvis Bay, Lüderitz and the coastal diamond-mining town of Oranjemund. The coast however supports three of Namibia's main industries: mining, fishing and tourism. They all have a significant impact on the environment including:



- ◆ High consumption of fresh water and energy
- ◆ High population density in a fragile, desert ecosystem
- ◆ Dependency on limited resources (i.e. uranium, diamonds & fish).

Let's investigate some of the unique living things on our coast and how they are affected by people, industry and natural changes in the environment.



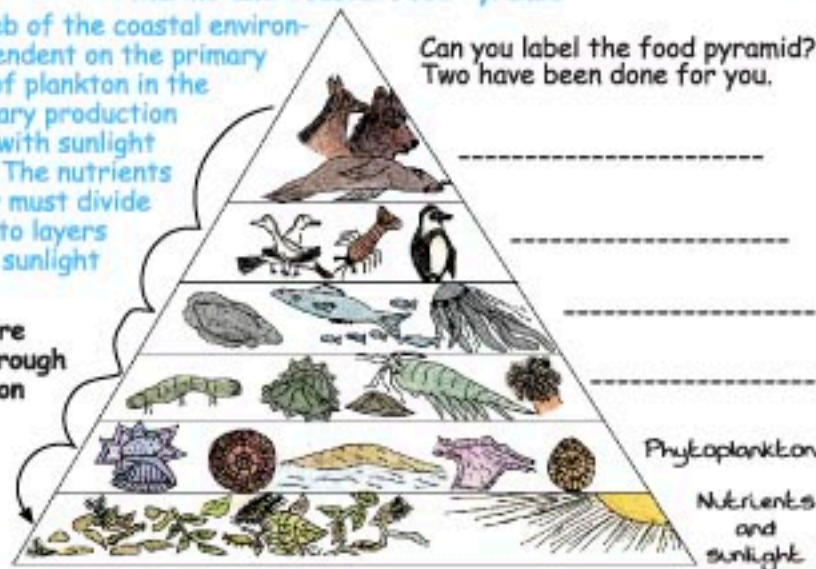
## LINKING OUR OCEAN TO THE LAND

The Benguela current upwelling system is the main cause of our unique marine and coastal environment. It is created by the cold waters of the Benguela current, the strong south and south-westerly winds and the rotation of the Earth. The result is that warm surface water is moved away from the coast and replaced with deep, cold ocean water. In this ocean water are high concentrations of nutrients. Look at the map on pg. 1 to find the three main upwelling cells along our coast.

### A Marine and Coastal Food Pyramid

The food web of the coastal environment is dependent on the primary production of plankton in the ocean. Primary production takes place with sunlight and oxygen. The nutrients in the water must divide (stratify) into layers to allow the sunlight to pass.

Nutrients are recycled through decomposition and waste products, like guano.



### PROTECTING OUR COASTAL FOOD WEB

It sounds like we have a large quantity of fish, bird, reptile and mammal life at the coast and in the ocean. So what do we need to be worried about?



As a leatherback turtle, I have been around for a long time. Although nature has given us lots of resources, we haven't always taken care of them.

For many years, people from around the world have over-fished in our ocean. Even though we now have stricter regulations, the marine life is still in danger due to overfishing and accidental by-catch of non-target species.

We must stop polluting our coast and ocean with oil, chemicals and rubbish. For example plastic bags are often mistaken as food by many marine animals, like me, and cause unnecessary death.

## IT'S HOLIDAY TIME... but not for all

During the summer time people and birds alike flock to the coast.



Hi, my name is Freddie. My family and I are relaxing at the coast after a long year of school and work!

Hi, I am a Damara Tern, just call me DT. Some birds live at the coast year round, but many only come here in the summer to feed. I come here to feed and breed.



My dad and I always get up early and go fishing all day long near Caution Reef. We even help out the animals by giving them the bones from our chicken at lunch time. My brother and his friends



like to go quad biking in the dunes. They just go wherever they want. My mom is hoping to get dad to buy one of the new holiday houses being built between Walvis Bay and Swakopmund. That would be so cool to live right next to the water.



It sounds like Freddie is having a great holiday, but for me it is a nightmare! When Freddie left bones on the beach, lots of jackals came and also ate our eggs. Then his brother and friends on their quad bikes drove too fast and squashed some juvenile bird! On the dunes, they went up and down the slipface where they drove over the larvae and eggs of the Tok Tokkie beetles and other small animals.



And, the new houses that are being built are right in the middle of an Important Bird Area! Besides with climate change, the sea level will increase and many of the houses will end up under water.



### SAFEGUARD "IMPORTANT BIRD AREAS"



Did you know that the beaches of central Namibia hold the highest densities of shorebirds in southern Africa?

The 30 km coastline between Walvis Bay and Swakopmund holds up to 770 birds/km. Just north and south of this area there are only 10-30 birds/km. Why? There is a rich food source on this 30 km coastal area because of the delayed blooming of phytoplankton from the Lüderitz upwelling. This area has been declared an Important Bird Area. Take care to protect this home for many animals, especially birds. How can you help?

- ◆ Follow fishing laws
- ◆ Do not litter
- ◆ Respect fenced off areas
- ◆ Read and follow informational signs
- ◆ Only quad bike in permitted areas with a guide
- ◆ Prevent further development along the coast by speaking to local town councils

**NO OFF-ROAD DRIVING**  
Damara Tern Breeding Area



## WETLANDS: Feeding, breeding and resting

Where can I find a wetland in Namibia? All surface waters including the coastal inter-tidal zone, river mouths, rivers, pans, pools, dams and lakes are wetlands. Along the Namibian coast the wetlands include all river mouths, the Walvis Bay Lagoon, and the whole inter-tidal zone. Our coastal wetlands are unique because of the large amount of food available due to the upwellings. This makes habitats, like the Walvis Bay Wetland, home to up to 250,000 birds and many other animals and plants. The Walvis Bay Wetland is the most important coastal wetland in southern Africa. It gives animals, especially birds, a place to feed, breed and rest.

### MEET SOME OF THE RESIDENTS OF THE WALVIS BAY WETLAND...



#### FEEDING

Many birds depend on the shallow waters along the coast and in the Walvis Bay Lagoon for food. **Lesser Flamingos** live in groups called flocks. They wade in shallow water and filter cyanobacteria from surface and small diatoms from bottom layers.



#### BREEDING



Many birds come to our coast to breed, but the **Caspian Tern** lives in the Walvis Bay wetland year round. The Caspian Tern lays 1-3 eggs in a shallow scrape in the ground between December and March. The young chicks start to fly at 1 month but stay with the parents until 8 months. The Caspian Tern is on the Vulnerable Red Data species list.

#### RESTING

During the cold winter months in the Northern Hemisphere, thousands of birds come to the Southern Hemisphere to enjoy the summer. The **Curlew Sandpiper** is a palaeartic migrant. It breeds in the Arctic Circle and spends its winter- our summer on the Namibian coast.



### COASTAL WETLANDS THREATENED!



Under the Convention on Wetlands of International Importance there are three internationally protected coastal wetlands in Namibia: Walvis Bay wetlands, Sandwich Harbour and the Orange River mouth. They are called Ramsar Sites.

Coastal wetlands are still threatened for many reasons including:

- 1) Uncontrolled development along the coast
- 2) Pollution from harbour activities
- 3) Decrease in groundwater due to development and industry

Contact A. Scott, 064-404866 for the "Namibia Coastal/Marine Bird News".

## LICHENS: Algae and fungi living in harmony

What are lichens? Lichens are not singular organisms. They are actually **fungi** and **algae** living closely together. Through photosynthesis, the **algae** produce sugars as food. The **fungi** use these sugars to live and protect the **algae** from harsh weather conditions. The **fungi** and **algae** depend on each other to survive. This is called a symbiotic relationship.

### Lichens on the Namibian coast

Many people think that lichens are dead plants. This is not true. When there is no moisture the lichens are resting. For about one third of the year, fog from the sea comes over the land. During these times the lichens become moist and the algae parts undergo photosynthesis.



Did you know that the gravel plains of the Namib Desert are covered with lichens?

Really? I thought they were just some rocks.



Yes, there are rocks, but the lichens are the basis of the ecosystem. They form a crust that protects the soil from wind and water erosion. The lichen soil-crust is a habitat for plants, insects, spiders, reptiles and even small mammals. In places where "nothing can grow", the lichen can survive, giving higher plant species a chance to grow. There are some beetles that only eat certain types of lichens. And, have you heard that lichens worldwide help against climate change?



No, how do they do that?

As producers, they absorb carbon dioxide and store it.



### THE HARMONY DESTROYED

So what is the problem? Very few people are aware of lichens and how important they are to an ecosystem. Lichens are easily destroyed by vehicles. They are very slow growing, do not reproduce easily and have difficulty re-attaching once removed. Some lichens may never recover while others may take 10-500 years! With increased mining activities and uncontrolled off-road driving, the Namib's gravel plains are threatened.

Can you calculate how much habitat was destroyed by the off road driver?

- 1) Measure the length of track. 1cm = 1 km
- 2) Multiply the length of the track by 200 cm. This is the width of the tyres.



- 3) Fill in your answer here: \_\_\_\_\_ km<sup>2</sup>  
What will you do to stop the destruction of lichens?



## PERSONALITIES IN CONSERVATION

**IN MEMORY OF KEITH WEARNE**  
3 June 1926 - 25 July 2008

Chairperson of Coastal Environmental Trust of Namibia (CETN).

"It is thanks to him that Walvis Bay is recognised as one of Africa's premiere sites for coastal shorebirds, particularly Lesser Flamingos." Rob Simmons, Ornithologist

Keith Wearne was born in Portugal to English parents. He immigrated to southern Africa in 1947 and lived in Walvis Bay since the mid 1970s. Keith was an amateur ecologist who dedicated many years of his life to coastal conservation.



The protection of the Walvis Bay Wetland and the Namibian coast was Keith Wearne's goal. We spoke with members of the CETN committee to find out what they believe Keith would have said about the following issues:

**What are the main threats to Namibia's coast? Why?**

The main threat is development close to the beach and the consequent disturbance and destruction of nesting, feeding and roosting birds. For example, the rocky coast at Langstrand is under threat from new developments that are not properly environmentally assessed. Other threats are pollution and quad bike destruction of nests, eggs and plants.

**How can we protect the coast?**

We need to educate adults, especially planners and developers. We also need to educate children as they are the future planners and developers. If education does not protect the coast quickly enough, then we must enact and enforce laws.



### THE COASTAL ENVIRONMENTAL TRUST OF NAMIBIA

The Coastal Environmental Trust of Namibia (CETN) is a non-governmental organisation founded in 2000. It was originally an Environmental Action Group, formed in 1996, aimed to save the Walvis Bay Lagoon. Since then the

CETN expanded its aim to include the whole Namibian coastal environment. CETN aims to:

- ~ promote sustainable development
- ~ conserve the fragile coastal wetlands and desert environment
- ~ promote environmental education, awareness and understanding



CETN main activities are to:

- ~ Lobby municipalities and government
- ~ Provide environmental education for schoolchildren
- ~ Conduct a bi-annual Bird Count to monitor bird populations
- ~ Provide information to the general public through print media

To learn more about CETN go to: [www.nnf.org.na/CETN](http://www.nnf.org.na/CETN)

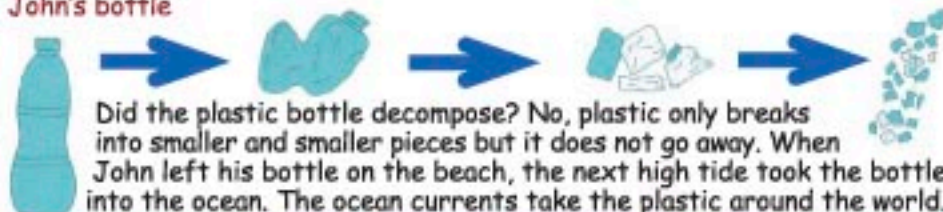
## FOR THE BEGINNER READER: RUBBISH IN OUR OCEANS

What do you do with your rubbish? Do you throw it in a waste bin or recycle it? Or do you leave it on the ground? Have you ever seen litter on the beach? Many people do not care and they think that Namibia does not have a litter problem. What do you think? Read about Piet and John below.

 <p>The year is 1908. Meet Piet. He and his family live near what is today Walvis Bay. At this time there are few people on the coast except for the Topnaars. Piet and his family eat primarily fish, birds and the !Nara melon.</p>	 <p>The year is 2008. Meet John. He and his family live in Kuisebmond. There are many more people living along the coast than in Piet's time. In Walvis Bay alone there are 45 000 people. John bought a bag of chips and a cold drink for a snack on the beach.</p>
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After eating, did Piet have any rubbish? Yes, the hard shell from the !Nara and the fishbones. All of these will decompose and return nutrients back into the food chain. What about John? He also has rubbish, but it is made from plastic. What happens to John's plastic packaging, if he leaves it on the beach?

John's bottle



### THE GREAT PACIFIC GARBAGE PATCH

In the middle of the Pacific Ocean, there is a place called the Great Pacific Garbage Patch. Here, the ocean currents are not strong and rubbish collects from the whole world - especially plastic. There is six times more plastic here than plankton!



**Did you know?**

- 90% of all rubbish in the ocean is plastic.
- 10% of all plastic produced ends up in the ocean.
- 80% of all ocean rubbish comes from land.

The albatross is a large sea bird that spend more than 75% of its time flying over open ocean water in search of food. Unfortunately all of the plastic confuses the albatross. The albatross eats the plastic pieces or feeds it to its chicks. This causes them to die!



## FOR THE ADVANCED READER: URANIUM MINING ON THE INCREASE

Mining is one of the main contributors to Namibia's economy. In the coastal environment diamonds and uranium are primarily mined. Although these minerals have been extracted for a long time, there is increased exploration due to the renewed demand for uranium to power nuclear electricity stations worldwide.



### WHAT DO PEOPLE THINK?

We recently held a contest in the Erongo Region to find out how youth perceive mining. Almost all felt that mining is a good thing. Read what they had to say:

*I think mining is a good thing because it creates lots of jobs for people, who before the mines came, were not able to get jobs.* - Ivan, Walvis Bay  
*Mines play a great role socially by supporting community and educational programmes.* - Gail, Swakopmund

In their essays, these learners did acknowledge that there are also negative impacts. Here is a reason given as to why so few people are concerned:

*I live in a community of people that would not be bothered or amazed about the impacts of mining. Why? Well, my answer is that very few people are actually taught about mining.* - Taiya, Swakopmund

### SHOULD WE BE CONCERNED?

Yes. Mining operations must complete an environmental impact assessment and management plan, but this does not calculate the effects of all mines together called cumulative impacts. Some of the predicted cumulative impacts are:

#### **Water and electricity demands**

Mining requires more fresh water and electricity than we currently have available. Although desalination plants can make fresh water, they also need a lot of energy to work. Fossil fuel energy will lead to increased global warming.

**Dust pollution and airborne radiation**  
 Dust produced from mines will blow over local towns with the strong winds. It may even contain radioactive particles.

**Fragmentation of the Namib Desert**  
 Each mine needs roads, water pipelines and power lines. These will cut and divide the open desert landscape. This is already happening in the Namib-Naukluft National Park. The vast Namib landscapes are one of our main tourist attractions.

### WORKING TOGETHER TO PREVENT DISASTER

The Chamber of Mines has initiated a strategic environmental assessment.

This will identify, assess and address the cumulative impacts of the mining and prospecting operations in the central Namib uranium industry. It is important for all stakeholders to be informed and participate in this process to protect the Namib and the coast.

To learn more contact NEWS for the Roan News: Special Edition on Uranium Mining and Mining in Parks at 061-306450.



## COASTAL ACTIVITY PAGE

### COASTODIAN CONTEST

Test your knowledge and stand a chance to win a prize! Take the following quiz and see how much you know about our coast. Check out how to enter the contest below. Prizes for both learners and adults! Hint: All answers for coastal questions are in this Bush Telegraph.

#### Coastal questions:

- 1) How many kilometers long is the Namibian coastline?
- 2) What are the three main industries at the coast?
- 3) What role does plankton play in the coastal food chain?
- 4) Name two environmental threats to the Namibian coast.
- 5) Name two birds that live on the Namibian coast.
- 6) What two organisms make up lichens?
- 7) Do plastic bottles decompose?
- 8) What are two major environmental impacts of mining?



#### Personal questions:

- a) Do you live at the coast? If yes, where? If no, have you ever been to the coast?
- b) What do you do when you come to the coast?
- c) What do you like most about the coast?

### PRIZES

#### LEARNERS

- 1st PLACE - Coastodian T-shirt
- 2nd PLACE - Coastodian Cap
- 3rd PLACE - Coastal Poster

#### ADULTS

- 1st PLACE - Marine Environment Book
- 2nd PLACE - Coastodian T-shirt
- 3rd PLACE - Coastodian cap



#### Contest details:

Write all answers on a piece of paper together with your name, age, school (if applicable), postal address, contact number and t-shirt size. Send entries to: NaDEET, P. O. Box 31017, Pioniers Park, Windhoek. **All entries must be received by the 1 November 2008.** All Bush Telegraph readers are eligible to enter.



The Coastodian logo aims to unite all Namibians to protect our coast. The word coastodian comes from custodian and the coast. The holding hands show our collective obligation towards safeguarding the coast. The yellow and orange of the dunes symbolize energy and the longevity of the Namib Desert. The blue sea represents the Atlantic Ocean's life-giving Benguela current. The circle encompasses the harmony between mankind and nature, while the green represents biodiversity, renewability and growth.





## Chinga, Nzovu & DT's Corner



Dear friends,



We have a special guest with us this time, visiting from the coast. It's DT, the Damara Tern. DT has answered Hilma's question below, about plankton. Nzovu was excited to answer Chicco's question about elephants. If you have any questions for Chinga, Nzovu and DT, please write to:  
Chinga & Nzovu, NaDEET, P.O. Box 31017, Pioniers Park, Windhoek

Dear Chinga and Nzovu,  
As plankton is the most important food for fish, what other kinds of food do fish eat if there is no more plankton?  
Hilma in Grootfontein

Dear Hilma,  
DT here! There are two kinds of plankton in the ocean - phytoplankton (produces its own food) and zooplankton (eats phytoplankton). Together with algae (i.e. seaweed), phyto- and zooplankton are the basis of the whole marine food chain. (Go to page 3 for the coastal food pyramid). Not all fish eat just phytoplankton. Many fish eat zooplankton or even other fish. However, without plankton in our ocean, the marine food chain would collapse. It is important to keep our oceans clean of oil, chemicals and rubbish, especially plastic, to allow phytoplankton to use nutrients and sunlight to produce their own food. This will keep the food chain alive.

Cheers  
DT

Dear Chinga and Nzovu,  
I want to know how an elephant breathes with its trunk while it is sucking up water to pour into its mouth?  
Chicco in Karibib

Dear Chicco,  
To answer your question, I want you to try out the following:

1) Hold your nose closed for a few seconds.  
What happened? Did you continue breathing? How? Hopefully you started breathing through your mouth. Now try this:



2) Hold your nose and mouth closed for a short time.  
What happened? How long can you hold your breath? seconds? A minute?



When the elephant takes up water to drink, it uses both of these techniques. It may hold its breath or it can breathe through its mouth. Did you know that an elephant can drink about 160 litres of water per day?

Cheers  
Nzovu

## UPDATES FROM LAST ISSUE



Answers below from Climate Change:  
Living a Low-Carbon Lifestyle

1. Patrick takes his cycle while Peter drives a car.
2. Patrick uses a solar cooker instead of fire wood.
3. Patrick recycles. Peter litters around his house.
4. Patrick uses solar-heated water, Peter electric-heated.
5. Patrick turns off his appliances when away.
6. Patrick has a low-energy light bulb and uses the sun.
7. Patrick only heats the water he needs in the kettle.
8. Patrick uses reusable cloth shopping bags.

What have  
you done to  
reduce your  
carbon  
emissions?

### THANK YOU TO OUR SPONSORS:

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and  
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The Bush Telegraph is a mini-magazine for Namibian youth. It aims to increase knowledge of and improve attitudes towards our environment through reading. It is distributed twice a year for free. Just fill in this form and send it to this address: Namib Desert Environmental Education Trust (NaDEET), P.O. Box 31017, Pioniers Park, Windhoek



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yes, please send me ..... additional copies.