



Sea erosion at La Lucia, Durban, March 2007.

## HOW CLIMATE CHANGE COULD AFFECT DURBAN

SEVERAL scientists from South Africa and other parts of the world have been trying to predict how global climate changes will affect the Durban area. These are some of their projections:

- Temperatures will rise by about 3-5°C by 2100.
- Heat waves (three or more consecutive days with maximum temperatures above 30°C) could increase by about 30%, while extreme heat waves (three or more days above 35°C) are expected to double in the immediate future.
- Durban will get wetter, but rainfall patterns will become more variable. Even though heavier rain is expected, warmer temperatures mean that more water will be evaporated or sucked up by plants. More intense rain could also increase the risk of floods, landslides and mudslides and damage to houses, water and sewage pipelines.
- Durban's coastline will be vulnerable to sea level rise. An increase of 0.5m would severely erode beaches. Impact on tourism and affect Durban harbour and some low-lying industries south of the city.
- The risk of malaria, cholera and other water-borne diseases will increase because of warmer temperatures and more frequent flooding.
- Many of Durban's more than 2 000 plant species, already under pressure from development, may become more vulnerable from climate change impacts.

## GETTING READY TO DEAL WITH CLIMATE CHANGE

THE eThekweni Municipality started work on understanding and then adapting to climate change about ten years ago when it joined the International Cities for Climate Change campaign.

In 2004 the city asked scientists to look more closely at how the eThekweni municipal area could be affected by climate change. Two years later the "Climate Future for Durban" report suggested how climate change could affect the daily lives of Durban's nearly 3.6 million residents during this century. The eThekweni Environmental Planning and Climate Protection Department produced detailed adaptation plans for three sectors of the municipality particularly vulnerable to climate change.

The city has also studied how much carbon can be captured and stored in trees and plants in the nature reserves and parks which are part of the Durban Metropolitan Open Space System (DMOSS). In 2009 Durban hosted its first Climate Change Summit and has also set up an Energy Office to focus on the efficient use of energy.

# PLANET IN PERIL

## Adapting to climate change in Durban

OVER the past 250 years of the industrial revolution, humanity has produced very large volumes of greenhouse gases which have started to alter the climate of the world.

Yet even if all human-generated greenhouse emissions were to stop tomorrow, the accumulated load of extra gases from the past two centuries will continue to heat up the world and alter the Earth's climate for many hundreds, and possibly thousands, of years to come. This means that while over 190 governments are meeting in Durban later this year to find a way to stop any further increase in these gas levels, the process of climate change has already started and cannot be stopped immediately.

It also means that humanity will have to adapt and learn to live with these changes.

Although climate change scientists say it is difficult to predict the exact changes, many countries and cities have accepted that they have to start planning and preparing immediately to adapt to a wide variety of changes. These are predicted to include rising sea levels, hotter temperatures, more frequent droughts with water shortages in dry areas and more ferocious storms.



## BUFFELSDRAAI REFORESTATION PROJECT

THIS project began as a way to keep the 2010 Soccer World Cup "climate-neutral". The idea was to store the extra carbon emissions from travelling soccer fans by planting thousands of trees near the Buffelsdraai landfill site near Verulam. More than 500 community members have been involved in the project by growing and planting more than 200 000 indigenous tree seedlings.

Apart from capturing carbon in the new trees, eThekweni officials also believe the project will help the city to adapt to climate change by restoring healthy natural environments which improve the quality and volume of water supplies. The project also helps to provide jobs and benefits for people in the area, by allowing them to swap the seedlings they grow for food, building materials, school fees, bicycles and other benefits.

Durban's Green Roof pilot project.



## WHAT IS DURBAN DOING TO ADAPT?

**SEA LEVEL RISE:** The eThekweni Coastal Policy unit has worked with the Tyndall Centre for Climate Change Research to find out how sea level rise might affect Durban's 97km coastline until the end of this century. The city has chosen three possible scenarios — 30cm, 60cm or 1m increase in sea level — to model how this would affect current and future developments such as roads, buildings, houses, harbours, industry, sewage works, electricity and water pipelines next to the coast. The Housing department will have to monitor informal housing settlements next to river valleys on a more regular basis, to ensure that people are not at risk from future sea level rise or flooding.

A preliminary study south of the city suggests that it may be necessary to move some developments to reduce the risk of damage under current sea levels and also to position major new developments further away from the beach.

**FOOD SECURITY:** A pilot study showed that home-grown foods provide up to 50% of the diet of people in rural areas of the municipality. Maize was the most popular crop, along with pumpkins and beans. Trials have also been done in the Khasungweni and Kuzuma areas to test different crops which may grow better in a warmer climate. People have also been encouraged to test different food recipes such as fufu, cassava bread, sorghum bread, pumpkin soup and madumbe soup. Alternative crop-planting tests were also done near Empangeni and the Makratini Flats as these two areas on the North Coast have a warmer climate similar to what is expected in Durban in the future.

**GREEN ROOFS:** The city is generally hotter than the countryside, because there are more concrete buildings and tarmac roads which absorb more heat from the sun. This is known as the "urban heat island effect". The large number of buildings and roads can also worsen flooding problems when there is heavy rain and storms because there are fewer areas of soft grass and vegetation in cities to absorb the sudden extra volume of water.

The eThekweni Green Roof pilot project aims to test the ability of green roofs to lower the temperature of buildings and to absorb and slow down storm water by planting indigenous plants and food crops on the roof of a municipal building. Results so far show that green roofs can reduce the surface temperature of buildings by as much as 30°C on a hot summer day. Apart from growing extra food for people, these roofs also help to attract more insects, birds and small animals back to our "concrete jungle". For further details contact Megan Sprys on (031) 311-7920 or e-mail [Lewisw@durban.gov.za](mailto:Lewisw@durban.gov.za)

# THE MERCURY

Main photo: Associated Press

## USEFUL LINKS:

EThekweni Environmental Planning and Climate Protection Department  
[www.durban.gov.za/urban-services/development/planning-and-management/epcpd/](http://www.durban.gov.za/urban-services/development/planning-and-management/epcpd/)  
 Durban Cop 17: [www.cop17.com/durban.com](http://www.cop17.com/durban.com)



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# Durban

