Urban Heat: Cities Taking Action

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Making progress possible. Together.
Current situation in Cape Town

**P E O P L E**

- **4 678 900** estimated population in 2021
  - 0-14: 15.64%
  - 23.7%
  - 69.5%
  - 6.9%

- **3 740 025** estimated population in 2011
  - 0-14: 15.64%
  - 24.8%
  - 69.7%
  - 5.5%

**2016 Population**

- Black African: 42.5%
- Coloured: 40%
- White: 17.5%
- Asian: 1.5%

**CITY OF CAPE TOWN**

- 2 445 km² • 1.8% total size of WC
- 66% of WC population
- 1 913 persons per km²
URBAN HEAT ISLANDS + SPATIAL INEQUALITY

Dense neighbourhoods with few green spaces or trees.
HEALTH IMPACTS AND HEAT RELATED MORTALITY

- High demand for public health facilities
- Elderly residents most at risk

A Hotter Planet Puts More People at Risk

The graphs compare temperatures and heat wave events since 2000 with baseline values from the reference period 1986–2005.

HOMES NOT DESIGNED FOR HEAT, AND LACK OF ACCESS TO COOLING

Informal dwellings made from materials with poor thermal performance

Green building interventions in lower income housing may add cost and complexity to projects and must be planned upfront

Older public housing buildings not designed for heat
CHALLENGES AT PUBLIC COOLING FACILITIES

- Crowded beaches and severe traffic congestion
- Demand for swimming pools for cooling rather than swimming
- Safety challenges and drownings
INCREASED RISK OF WILDFIRE AT URBAN INTERFACE

CREDIT: Misha Jordaan

CREDIT: EPA-EFE / Nic Bothma
URBAN HEAT ISLAND MAPPING

• Heat island risk areas have been mapped

• These include:
  – Dense urban areas (CBD and other business districts)
  – Industrial areas (airport and other dense manufacturing zones)
  – Dense informal settlements
  – Linked to densification* around transport corridors

* densification is good for many reasons, but needs to take into account the urban heat island effect
HISTORICAL TEMPERATURE DATA ANALYSIS

• Currently being analysed
• Data is from 9 stations operated by the South African Weather Service in Cape Town – 5 in urban areas and 4 in non-urban areas

• Initial results show between 1 and 4 heatwaves (3 days or more in a row of 32 degrees Celsius or hotter) per year, of between 4 and 7 days duration
• Not uniform spatially

• Accessing data from SAWS can be challenging
  – Cost
  – Information technology systems

Some solutions that the City of Cape Town is using (at various stages of planning and implementation)
Build spray parks as a safer, low water, and lower cost cooling option (instead of pools)
Plant mature water-wise trees for higher survival rates, and water using captured rainwater.
Map locations of existing trees and prioritise tree-poor and heat-island neighbourhoods for planting programmes.
Work with community groups to grow and maintain urban green spaces
Develop and activate a heat wave and high heat day operating procedure for City facilities, with a focus on public health.
Ensure outdoor workers have correct PPE and set outdoor working hours for the cooler parts of the day.
Activate a summer-readiness plan, including ensuring sufficient lifeguards, traffic & crowd control, and law enforcement at beaches and water bodies.
Make use of existing cool/cooled public facilities, like libraries, as “cooling centres” during heat waves, and develop new cooling centres.
Conduct public awareness campaigns about heat waves and heat risks
Train government officials using adaptive management exercises to simulate a heat wave response.
Develop and implement a real-time heat monitoring network for urban heat islands.
Reduce wildfire risk by removing invasive species, maintaining firebreaks and conducting controlled ecological burns.
Thank You

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