

Johannesburg Urban Forest Alliance
July 31, 2018



The Director General: Department of Environmental Affairs
Attention: Ms. Dineo Ngobeni
Environment House, 473 Steve Biko Street
Arcadia, Pretoria, 0001

By e-mail to: climate@environment.gov.za

COMMENTS ON THE CLIMATE CHANGE BILL, 2018

Dear Sir or Madam,

The Johannesburg Urban Forest Alliance was established in 2017, representing resident, heritage and environmental associations from across the city¹. The purpose of the Alliance is to help preserve and expand the city's urban forest, and to contribute to climate change mitigation.

We understand that the purpose of the Bill is to guarantee effective climate change solutions, and allow for the just transition to a low-carbon and sustainable South Africa. The Bill acknowledges that climate change poses an 'urgent threat to human societies and the environment, and requires an effective, progressive, and coordinated response².

We would like to already advocate the inclusion of carbon sinks – such as trees – as critical instruments in achieving the objectives of the Bill, as spelled out in our last section on proposed amendments.

We understand that the main objectives of the Climate Change Bill are to:

- Provide for the coordinated and integrated response to climate change and its impacts by all spheres of government in accordance with the principles of cooperative governance;
- Provide for the effective management of inevitable climate change impacts by enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to building social, economic, and environmental resilience and an adequate national adaptation response in the context of the global climate change response;

¹ Organisations that are supportive of the Alliance include the Albert's Farm Conservancy; the Atholl Area Residents and Ratepayers Association; the Birdhaven Ratepayers Association; the Craigpark Residents Association; the Endangered Wildlife Trust; Food & Trees for Africa; the Gardens Conservancy; the Greater Kyalami Conservancy; iHlathi, the Melrose-Birdhaven Conservancy; I love Illovo; the Johannesburg Heritage Foundation; the Kensington Heritage Trust; the Lower Houghton Heritage Trust; the Melrose Ratepayers Association; the Modderfontein Heritage Society; the Norwood Orchards Residents Association; the Rosebank Action Group; the Saxonwold and Parkwood Residents Association and the Zoo Lake Users Committee.

² <http://climatereality.co.za/comment-on-the-draft-national-climate-change-bill/>

- Make a fair contribution to the global effort to stabilise greenhouse gas concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe and in a manner that enables economic, employment, social and environmental development to proceed in a sustainable manner.

With the above in mind, the Johannesburg Urban Forest Alliance would like to highlight the following:

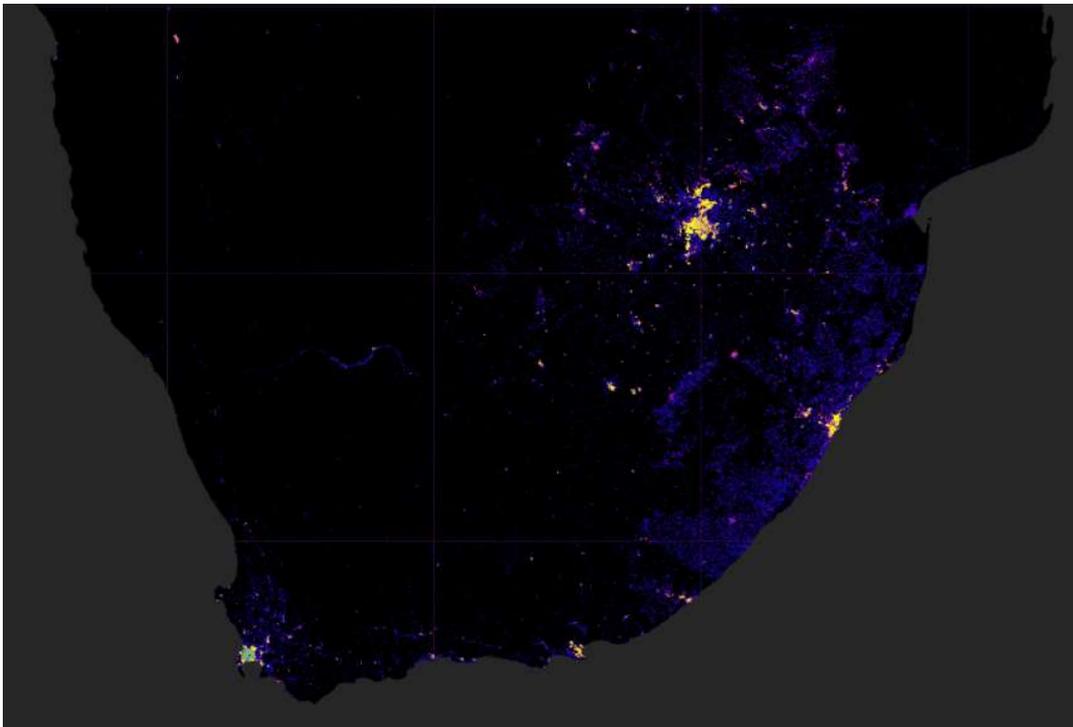
Our cities drive South Africa's carbon footprint

In a study published in the South African Journal of Science, it was found that from 1960-2010 the interior of the country had a temperature increase of 2°C. Limpopo had a rise of 1°C and Gauteng nearly 2°C³.

Globally, carbon footprints are highly concentrated into a small number of dense, high-income cities and affluent suburbs. In most countries, the top three urban areas drive more than one-quarter of national emissions.

According to a recent study⁴, the wider Johannesburg area comes 13th in the world in terms of carbon emissions, and represents almost a third of South Africa's carbon footprint – 28.9%. Cape Town, Durban and Port Elizabeth come next.

Carbon emissions in South Africa⁵



³ South African Journal of Science, *Observed and modelled trends in rainfall and temperature for South Africa: 1960–2010*. Vol 110 No 7/8 (2014).

⁴ Environmental Research Letters, *Carbon footprints of 13,000 cities*. Volume 13, Number 6, June 19, 2018. <http://iopscience.iop.org/article/10.1088/1748-9326/aac72a/meta>.

⁵ <http://citycarbonfootprints.info/>

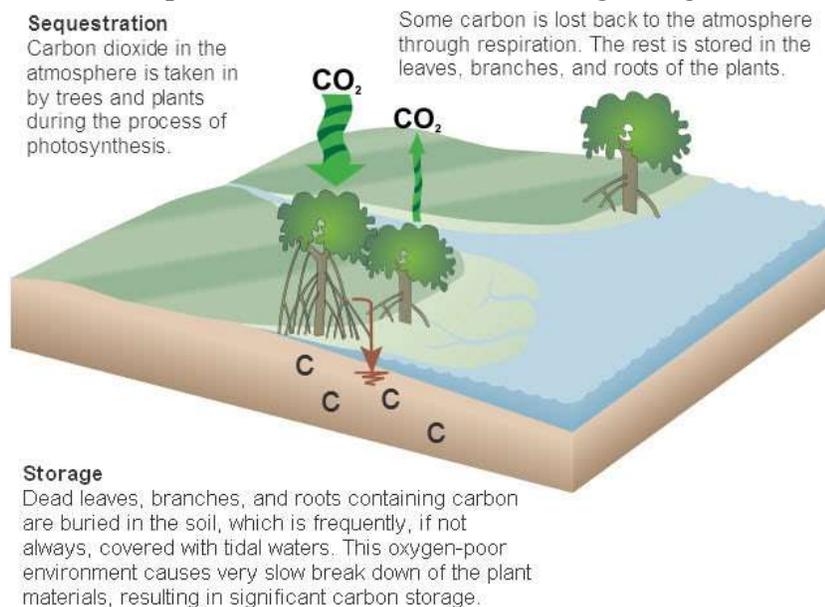
Urban Cluster ⁶	Footprint/cap (t CO ₂)	Population ('000)	Footprint (Mt CO ₂)	Global ranking	Domestic ranking
Johannesburg	9.5±1.8	11,049	105.2±19.9	13	1
Cape Town	7.7±2.5	3,472	26.8±8.8	89	2
Durban	8.4±2.5	2,833	23.7±7.2	102	3
Port Elizabeth	8.0±3.3	830	6.7±2.7	335	4

Urban forests are critical carbon sinks

An urban forest is defined as a collection of trees that grow within a city, town or a suburb, on both public and private land. Protecting and planting urban trees are often considered key strategies for mitigating climate change.

Trees absorb CO₂ during photosynthesis, which is then metabolised and turned into organic matter that makes up nearly half of their overall mass. Urban trees are particularly effective at absorbing CO₂, because they are located so close to sources such as fossil fuel-burning transport and industrial activity.

The importance of trees for climate change mitigation⁷



A new study by University College London⁸ has found that areas such as Hampstead Heath store up to 178 tonnes of carbon per hectare, in comparison to a median value for tropical rainforests of 190 tonnes per hectare – bearing in mind that London has a lower forest coverage than Johannesburg for example (12.9% versus 23.9%).

⁶ In this model, the EU Global Human Settlement Layer, GHS-SMOD, was used, which defines 'cities' as contiguous population clusters. This does not correspond directly to the precise legal jurisdiction for many cities. Additionally, the population within these clusters may include exurbs and other areas and may not correspond to the city's official population. Source: <http://citycarbonfootprints.info/>

⁷ African Climate Reality Project, *Carbon sink management in Africa*. <http://climatereality.co.za/carbon-sinks-management/>

⁸ UCL (University College London), *UK urban forest can store as much carbon as tropical rainforests*. June 26, 2018. <http://www.ucl.ac.uk/news/news-articles/0618/260618-urban-trees-carbon>. The new study, published in *Carbon Balance and Management*, used publicly-available airborne LiDAR data collected by the UK Environment Agency, combined with ground-based LiDAR measurements, to generate a map of carbon stored in an estimated 85,000 trees across the London Borough of Camden.

South African cities have some of the world's largest urban forests

Some of our cities have some of the world's largest urban forests. According to a survey by Treepedia⁹, an initiative supported by the Massachusetts Institute of Technology (MIT), and the World Economic Forum (WEF), Durban and Johannesburg rank fifth and sixth, respectively, in the world in terms of tree coverage.

Tree coverage in the world's ten greenest cities

n/a	Cape Town, South Africa — 13.4%
10.	Amsterdam, Netherlands — 20.6%
9.	Geneva, Switzerland — 21.4%
8.	Frankfurt, Germany — 21.5%
7.	Sacramento, California — 23.6%
6.	Johannesburg, South Africa — 23.6%
5.	Durban, South Africa — 23.7%
4.	Cambridge, Massachusetts — 25.3%
3.	Vancouver, Canada — 25.9%
2.	Sydney, Australia — 25.9%
1.	Singapore — 29.3%

Johannesburg's Spatial Development Framework, for example, says the following¹⁰: '*A key defining characteristic of the City of Johannesburg, for example, is its remarkable urban forest, underpinned by an extensive wetland system. There are six million trees in Johannesburg - 1.2 million within the parks and on the pavements, and 4.8 million in private gardens throughout the suburbs. This system provides valuable ecosystem services, including air quality and storm water regulation, and should be protected.*'

Johannesburg: mature tree coverage¹¹



Figure 16: Mature tree coverage (GTI 2.5m Urban Land Cover, 2012) with Johannesburg City Parks tree point data (JCP, 2012)

⁹ <https://www.weforum.org/agenda/2017/07/these-global-cities-have-the-most-trees>

¹⁰ City of Johannesburg, *Spatial Development Framework*, June 2016. Section 5.5.5

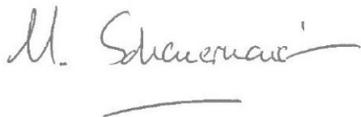
¹¹ Gauteng-City Region Observatory, *State of Green Infrastructure in the Gauteng City-Region*, July 2013.

Our proposed amendments to the Climate Change Bill

The Johannesburg Urban Forest Alliance therefore proposes the following changes:

1. That the Bill acknowledge upfront the importance of carbon sinks in achieving its objectives. We propose that carbon sinks be defined by the internationally accepted wording of '*a forest (including urban trees), ocean, or other natural environment viewed in terms of its ability to absorb carbon dioxide from the atmosphere*'.
2. That the Bill mandate the various levels of Government (national, provincial and municipal) to develop greenhouse gas emission policies that provide for a census of existing carbon sinks (from a carbon mitigation perspective), and design policies to protect, and enhance, such carbon sinks.
3. That the Bill highlight the important role to be played by municipalities in significantly reducing greenhouse carbon emissions; and that the protection, and enhancement, of carbon sinks be incorporated into relevant regulatory instruments, such as municipal planning by-laws, land use schemes, and air pollution by-laws.

Sincerely,



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