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Picture postcard pollutant.

BREATHING SPACE

This picturesque corner of South Africa has the world's deadliest air pollution

By [Lynsey Chutel](#) October 29, 2018

One of the world's most air-polluted regions is a province of green rolling hills and wild flowers in eastern South Africa. Mpumalanga has the largest single area infected by the deadly air pollutant nitrogen dioxide, according to an analysis of satellite imagery released by Greenpeace on Monday (Oct. 29).

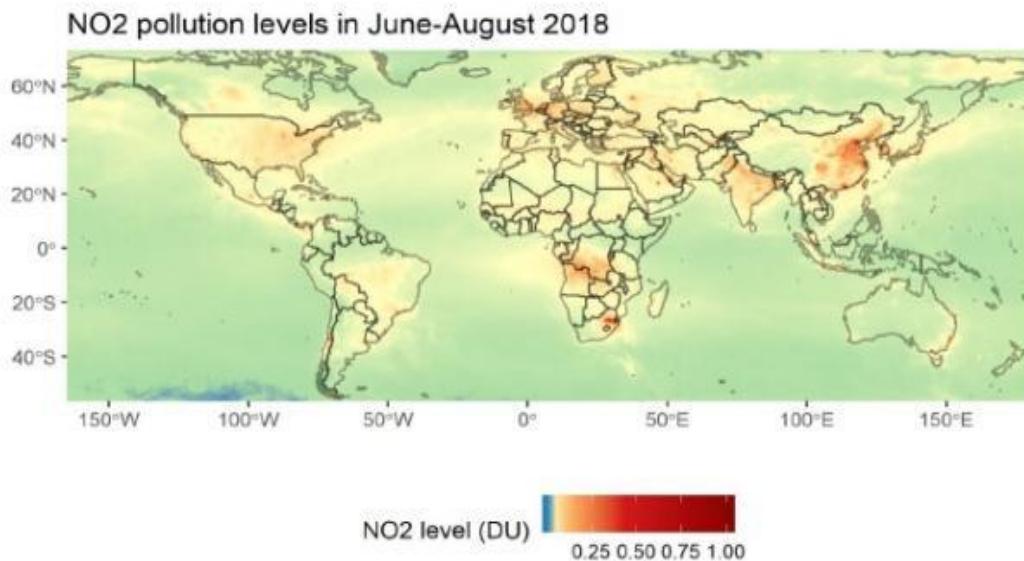
Out of satellite data across six continents, the province in South Africa's east emerged as "the world's largest NO₂ hotspot," said [Greenpeace Africa](#). The area is home to a dozen coal-fired power stations, owned and operated by South Africa's national power supplier Eskom.

Greenpeace analyzed satellite images taken daily by the [Copernicus Sentinel-5P](#) from Jun. 1 to Aug. 31. Researchers measured the amount of trace gas in a vertical column the full height of the earth's atmosphere. The sample period took place during the South African winter which may account for increased electricity generation.

China has the world's highest number of individual hotspots, followed by the Middle East, the European Union, India, the United States and the Democratic Republic of Congo. Industrial areas, vehicle emissions and agricultural burning all led to nitrogen oxides in the air.

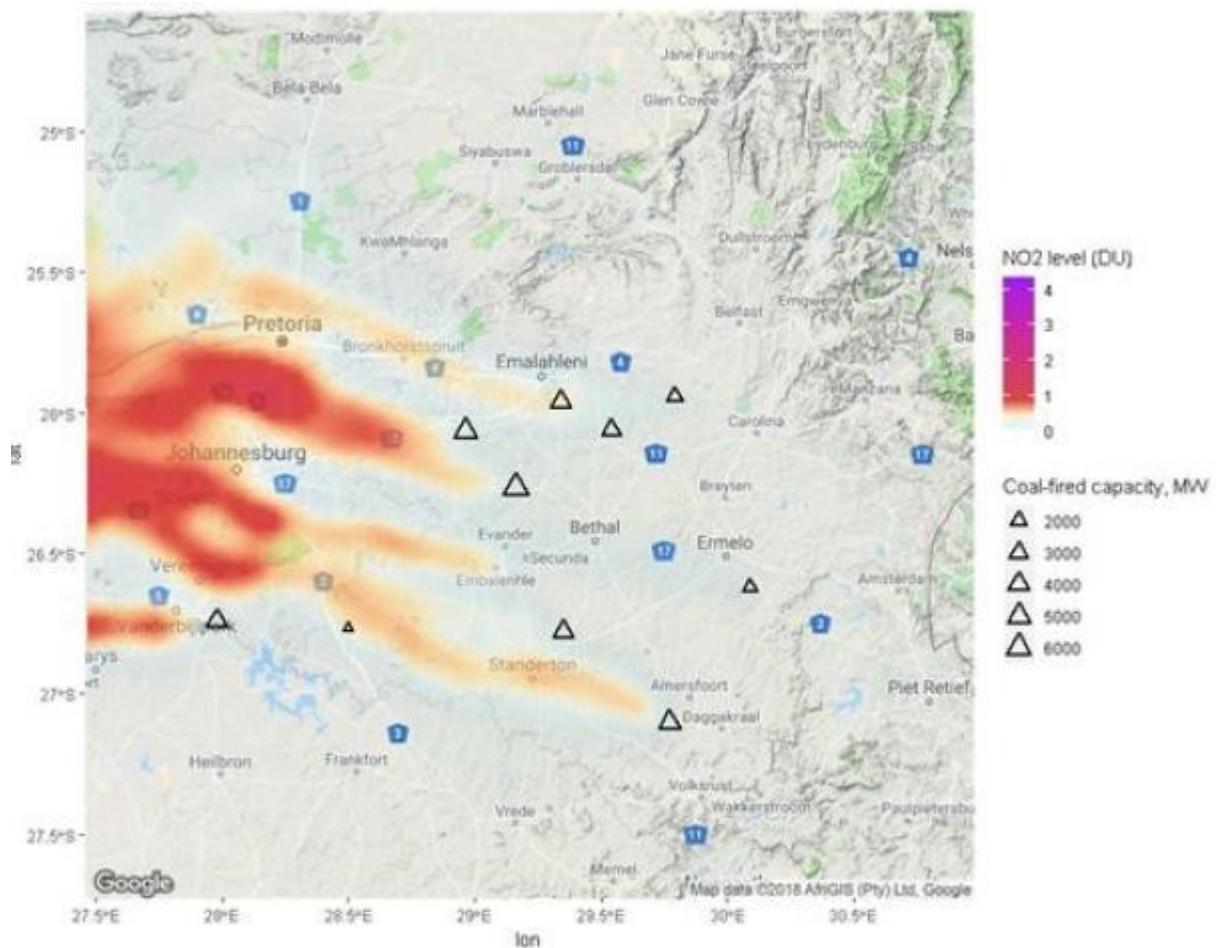
Nitrogen dioxide is formed when fuel is burned at high temperature or if the burned fuel already contains nitrogen. At [low levels](#) it irritates the eyes, nose, throat and lungs, while long exposure leads to respiratory diseases. Nitrogen oxides can also [combine with atmospheric moisture](#) to cause acid rain.

Nitrogen oxide [is also found](#) in tobacco smoke leading World Health Organization head Tedros Adhanom Ghebreyesus to declare air pollution as [“the new tobacco.”](#) killing seven million people each year.



South Africa’s reliance on coal influences its emissions policies, allowing 10 times more nitrogen oxide emissions than China and Japan, according to Greenpeace. Despite the country’s potential for renewable energy, Eskom is only now beginning to [make good](#) on its renewable energy goals.

One of Mpumalanga’s largest towns, eMalahleni (meaning place of coal) is known for having South Africa’s worst air pollution. In 2014, a [study by environmental justice group GroundWork](#) found that coal-fired electricity generation was responsible for more than half of hospital admissions and deaths due to respiratory illness in the region. Now, an analysis of weather patterns shows that wind carries the polluted air west to South Africa’s largest city Johannesburg, and the country’s capital Pretoria.



“Because South Africa’s coal-belts are hidden from view for the majority of South Africans, it can be easy to pretend that they don’t actually exist,” said Melita Steele, Greenpeace Africa’s climate and energy campaign manager. “The reality is that coal extraction and burning has devastating impacts on the people living in the area.”

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