

MOPITT Observations of Pollution Plume from Bushfires Raging in Southeast Australia

Image Acquired

January 15-20, 2003

Satellite & Sensor

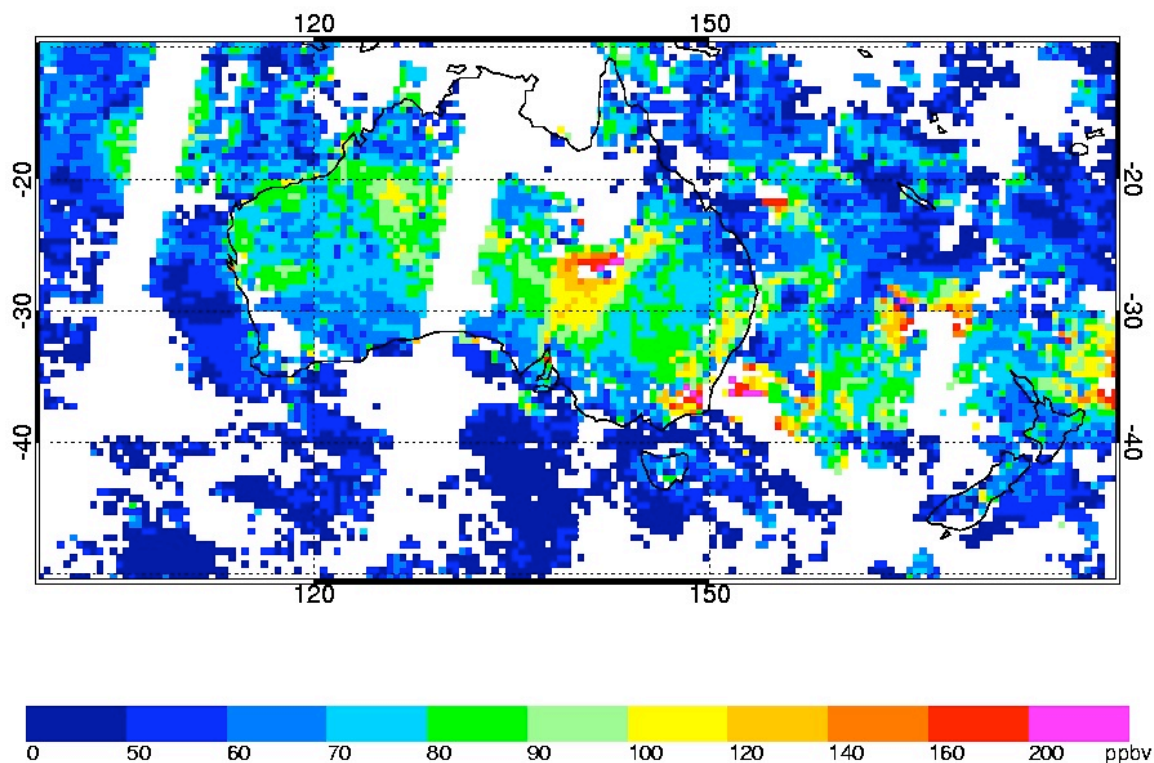
Terra/MOPITT

Bushfires continue to burn in Southeast Australia. This false-color image shows the resulting concentrations of carbon monoxide (CO) at an altitude of roughly 3 km (700 millibars) in the atmosphere over Australia and New Zealand. Data taken by the Measurements Of Pollution In The Troposphere (MOPITT) instrument aboard NASA's Terra satellite have been combined for 6 days from January 15-20, 2003. The colors represent the mixing ratios of carbon monoxide in the air, given in parts per billion by volume. In this scene, values range from as high as 250 ppbv (purple pixels) to as low as 50 ppbv (blue pixels). The white areas show where no data were collected, either due to persistent cloud cover or gaps between satellite viewing swaths.

Carbon monoxide is produced as a result of incomplete combustion during burning processes, and is important due to its impact on chemistry in the lower atmosphere. It is a good indicator of atmospheric pollution, and its presence adversely affects the atmosphere's ability to cleanse itself. Because carbon monoxide is persistent for several weeks, it clearly shows the propagation of pollution plumes from the region of the Australian fires out thousands of kilometers into the usually pristine atmosphere of the southern Pacific Ocean.

Image courtesy the NCAR MOPITT Team

MOPITT CO 700hPa: 20030115-20030120



Related Material

http://earthobservatory.nasa.gov/NaturalHazards/natural_hazards_v2.php3?img_id=5349

Image Acquired

January 12, 2003

Satellite & Sensor

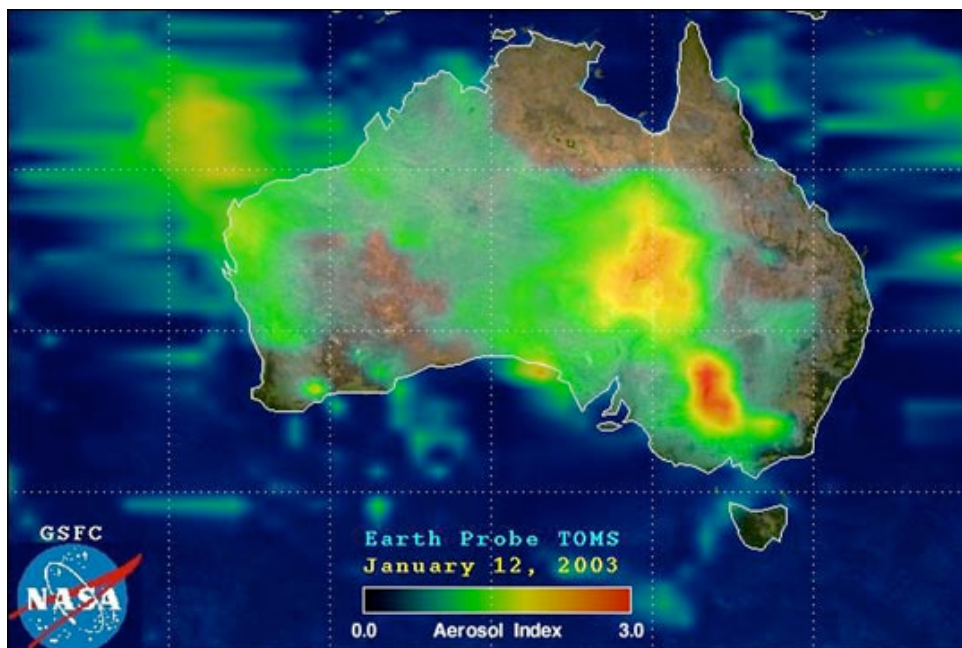
TOMS

Bushfires Raging in Southeast Australia

Large fires burning out of control in the Great Dividing Range Mountains in southeast Australia are producing a thick cloud of aerosols over the area. This false-color map of Australia shows an aerosol index produced from data collected by the Total ozone Mapping Spectrometer (TOMS) on January 12, 2003. The index shows how much light was absorbed by aerosols in a column of air between the instrument and the ground. A value of 1 indicates aerosols were reducing the light reaching the ground by about one-third, while a value of 3 indicates aerosol so dense that the light was reduced by about 95 percent.

The large cluster of fires in southern New South Wales is easily identified by the large area of red. The aerosol plume clearly affects a larger area than it seems to in [true-color imagery](#). This is because the TOMS aerosol index uses observations collected in the ultraviolet (UV) part of the spectrum. Aerosols that appear transparent in true-color imagery can be revealed by UV analysis. The principle is similar to certain "invisible" magic markers that produce writing that can only be seen under special UV ("black") lights.

Image courtesy Dr. Jay Herman and the TOMS Ocean/UV Research Group, NASA-GSFC



http://earthobservatory.nasa.gov/NaturalHazards/natural_hazards_v2.php3?img_id=5355
http://earthobservatory.nasa.gov/NaturalHazards/natural_hazards_v2.php3?img_id=5358

Image Acquired

January 21, 2003

Satellite & Sensor

Aqua- MODIS

The Australian bushfires are threatening farmland, livestock, and homes in Victoria and New South Wales. More than 500 homes have been destroyed, and several towns have fires within one or two kilometers of the city limits. Erratic winds push the fires, some of which have been burning for weeks, one way and then another, frustrating and exhausting the hundreds of firefighters battling the blazes. This image of the fires (red dots) was captured by the **Moderate Resolution Imaging Spectroradiometer** (MODIS) on the **Aqua** satellite on January 21, 2003, around 3:00 p.m. local time.

Image courtesy Jacques Desclotres, **MODIS Rapid Response Team** at NASA GSFC

