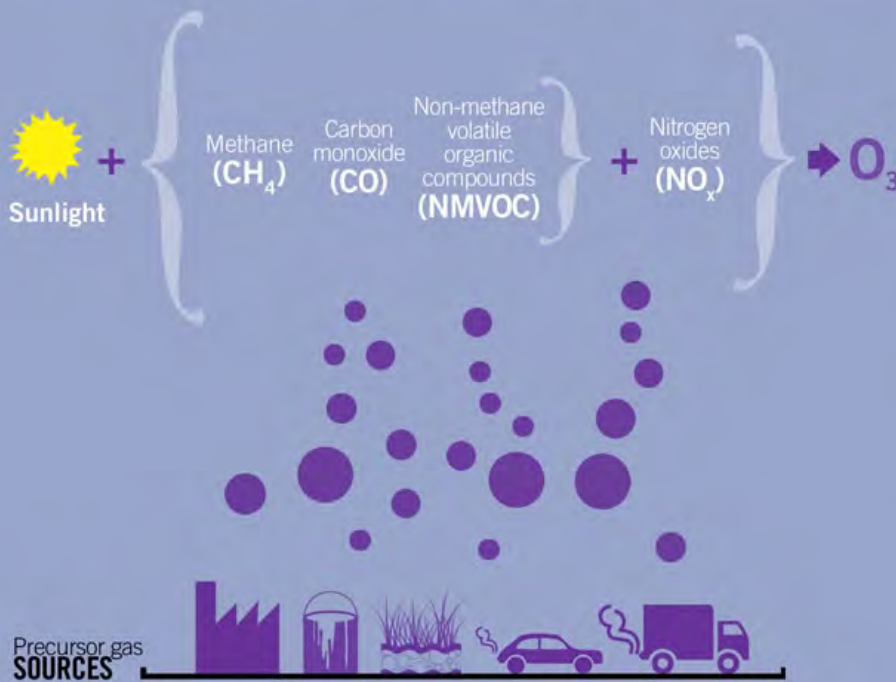


LIFETIME IN
ATMOSPHERE

Weeks

Tropospheric Ozone (O₃)

Tropospheric Ozone (O₃) is a major air and climate pollutant. It causes warming and is a highly reactive oxidant, harmful to crop production and human health. O₃ is known as a 'secondary' pollutant because it is **not emitted directly**, but instead forms when precursor gases react in the presence of sunlight.



Stratosphere 50 km
Troposphere 10 km

IMPACTS

O₃ precursors can be carried round the globe, making it a **transboundary pollution problem**

Tropospheric O₃ **warms the atmosphere**

O₃ damages plants and affects **agricultural production**:

- Reducing photosynthesis
- Reducing the plants ability to sequester carbon
- Reducing health and productivity of crops



O₃ air pollution causes over **150 thousand premature deaths** every year, and **millions more chronic diseases**, particularly in children and the elderly



CCAC

Tropospheric Ozone

Ozone is a reactive gas which exists in two atmospheric layers; the stratosphere (upper layer) and the troposphere (up to 10-20 km above the ground). In the troposphere, ozone is a significant greenhouse gas, where it also affects the yield of many crops and adversely impacts the diversity and growth of plant communities. In addition, tropospheric ozone affects human health due to its action as a powerful oxidizing gas, which for instance, can cause

Unlike the other short-lived climate pollutants, ozone is not directly emitted. It is a secondary pollutant that is formed in the troposphere by sunlight-driven chemical reactions involving carbon monoxide, non-methane volatile organic compounds, methane and nitrogen oxides. These precursors arise from both natural sources and a wide range of anthropogenic activities. Reductions in methane and carbon monoxide emissions have the potential to significantly reduce ozone levels and associated global warming.