

POLLUTANT	STANDARD
Particulate Matter (PM <sub>2.5</sub> )	10 µg*/m <sup>3</sup> annual mean 25 µg/m <sup>3</sup> 24-hour mean
Particulate Matter (PM <sub>10</sub> )	20 µg/m <sup>3</sup> annual mean 50 µg/m <sup>3</sup> 24-hour mean
Ozone (O <sub>3</sub> )	100 µg/m <sup>3</sup> 8-hour mean
Nitrogen Dioxide (NO <sub>2</sub> )	40 µg/m <sup>3</sup> annual mean 200 µg/m <sup>3</sup> 1-hour mean
Sulphur Dioxide (SO <sub>2</sub> )	20 µg/m <sup>3</sup> 24 hour mean 500 µg/m <sup>3</sup> 10-minute mean
Carbon Monoxide (CO)	100 µg/m <sup>3</sup> 15-minute mean 60 µg/m <sup>3</sup> 30-minute mean 30 µg/m <sup>3</sup> 1-hour mean 10 µg/m <sup>3</sup> 8-hour mean
Lead (Pb)	0.5 µg/m <sup>3</sup> annual mean

\*µg - micrograms (One millionth of a gram)

## WHAT CAN I DO TO IMPROVE AMBIENT AIR QUALITY?

The following actions can be carried out to help maintain good air quality in Barbados:

- Do not burn waste.
- Maintain your vehicle in good working order.
- Always obtain permission from the EPD before building, making alterations or changing the use of any structure for industrial or commercial activities like spray-painting.
- Conduct pesticide/fertilizer application as indicated by manufacturers.
- Only buy air-conditioning systems that use environmentally friendly refrigerants.





**ENVIRONMENTAL PROTECTION DEPARTMENT**

**MINISTRY OF ENVIRONMENT & DRAINAGE**

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AMBIENT AIR QUALITY



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# Ambient Air Quality

## WHAT IS AMBIENT AIR QUALITY?

The term **ambient air quality** refers to the quality of the outdoor air. All animal and plant life depend on clean air for survival, so air quality is a serious concern for us all.

## WHAT ARE THE EFFECTS OF AMBIENT AIR QUALITY?

Poor air quality is the result of both natural (e.g. volcanoes) and man-made (e.g. quarries) sources releasing pollutants to the atmosphere. This may result in negative impacts on human health and the environment.

Air pollutants consist of:

- gases such as carbon monoxide found in vehicle exhaust and volatile organic compounds found in household cleaners; and
- particulate matter which consists of tiny particles of solids and or liquid droplets of various substances.

## The Effects of Poor Air Quality on Humans

Poor air quality can cause both short and long term health effects. These include:

- **Short-term effects** – irritation of the eyes, nose, throat as well as upper respiratory tract infections, bronchitis and pneumonia.
- **Long-term effects** – chronic respiratory disease, lung cancer and heart disease, with extreme cases resulting in damage to the brain, nerves, liver or kidneys.

It is important to remember that some individuals, such as young children, the elderly and persons with respiratory diseases are very easily affected by air pollution.

## The Effects of Poor Air Quality on the Environment

Global climate change is caused by an accumulation of greenhouse gases such as methane in the atmosphere.

These greenhouse gases cause the 'Greenhouse Effect' which has been linked to effects such as increased atmospheric temperatures, ocean acidification and sea level rise.

Higher atmospheric temperatures may reduce average rainfall and increase rainfall intensities and drought conditions.

Ozone depletion is caused by ozone depleting substances such as chlorofluorocarbons (CFCs). These deplete the ozone layer, which protects the earth from the harmful ultraviolet rays of the sun.

In addition, combustion gases from vehicles and industrial processes may damage buildings, vegetation and marine life.



## WHAT IS THE ROLE OF THE ENVIRONMENTAL PROTECTION DEPARTMENT?

The Environmental Protection Department (EPD) conducts various tasks related to ambient air quality such as:

- Monitoring and regulating ambient air quality;
- Investigating complaints related to ambient air pollution;
- Researching ambient air quality issues; and
- Developing and implementing policies and programmes to control ambient air quality.

## WHAT ARE THE LEGISLATION/ STANDARDS USED TO MANAGE AMBIENT AIR QUALITY?

Ambient air quality in Barbados is regulated using the Health Services (Nuisances) Regulations, 1969 and the Marine Pollution Control Act CAP. 392A, (MPCA). Under the Health Services (Nuisances) Regulations, 1969, a nuisance is defined as:

*'any place, matter, thing, deposit or accumulation of liquid or solid matter that is full, in such a state, or so placed, made or left, as to be insanitary, injurious or dangerous to health or likely to become so'.*

Failure to comply with the provisions of the Regulations can result in a fine upon summary conviction not exceeding \$5,000 or up to twelve (12) months imprisonment, or both and in the case of a continuing offence, to a further fine not exceeding \$200 for each day or part thereof during which the offence continues after a conviction is first obtained.

Section 4 of the MPCA outlines airborne sources as a potential cause of marine pollution and states that the extent of pollution from these sources should be characterised and described.

The EPD references international standards such as the World Health Organization guideline values and the United States Environmental Protection Agency National Ambient Air Quality Standards for the air pollutants: particulate matter, sulphur dioxide, nitrogen dioxide, ozone, carbon monoxide and lead.