Nova Scotia Air Zone Report

2023

NOVA SCOTIA

Contents

Nova Scotia Air Zone Report 2023
Department of Environment and Climate Change
November 2025

Acronyms

AQHI	Air Quality Health Index
AQMS	Air Quality Management System
AQU	Nova Scotia Environment and Climate Change's Air Quality Unit
CAAQS	Canadian Ambient Air Quality Standards
CCME	Canadian Council of Ministers of the Environment
CEC	Commission for Environmental Cooperation
CWAQD	Canada-Wide Air Quality Database
ECCC	Environment and Climate Change Canada
GLO	Ground Level Ozone
NAPS	National Air Pollution Surveillance Program
NO	Nitric oxide
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides ($NO + NO_2 = NO_x$)
NPRI	National Pollutant Release Inventory
ECC	Nova Scotia Department of Environment and Climate Change
$PM_{2.5}$	Fine particulate matter
ppb	Parts per billion
QA/QC	Quality Assurance/Quality Control
SO_2	Sulphur Dioxide
$\mu g/m^3$	Micrograms per cubic metre
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
WHO	World Health Organization

Introduction

Nova Scotia Department of Environment and Climate Change (ECC) protects, enhances, and promotes the sustainable use of Nova Scotia's ambient air resources by regulating designated activities that emit air pollutants, monitoring ambient air quality, and reporting. This ambient air quality monitoring work is supported through a cooperative agreement between ECC and Environment and Climate Change Canada (ECCC) to collect essential ambient data.[1] The terms of the National Air Pollution Surveillance (NAPS) Program agreement include that ECCC provides equipment, lab analysis and technical support for monitoring ambient air and maintains the Canada-wide Air Quality Database (CWAQD), while ECC's Air Quality Unit (AQU) sets up, operates and maintains the stations and equipment that monitor ambient air quality and provides quality assured and quality controlled (QA/QC) monitoring data to ECCC. ECC currently operates and maintains seven ambient monitoring stations across the province.[2]

The data collected at these stations are used in several ways. First, average concentrations for continuously monitored pollutants are collected each hour and the raw data are directly uploaded to ECC's air quality website.[3] ECCC also uses the hourly measurements of nitrogen dioxide (NO_2), ground-level ozone (GLO) and fine particulate matter ($PM_{2.5}$) to calculate the Air Quality Health Index (AQHI). The AQHI is reported as a number from 1 to 10+, and as a health risk category that ranges from "low" to "very high". Each risk category has an associated health message to assist individuals in making daily decisions about adjusting their activities to limit exposure to air pollution.[4] These raw hourly measurements are also sent to the United States Environmental Protection Agency (USEPA) AirNow program for inclusion in their air quality information website.[5]

Following checks for QA/QC, data are uploaded to the Canada-Wide Air Quality Database annually.[6] Data as far back as 1974 are maintained in the database and are used for compiling trend analyses

[1] https://www.canada.ca/en/environment-climate-change/services/air-pollution/monitoring-networks-data/national-air-pollution-program.html
[2] https://novascotia.ca/nse/air/docs/AirMonitoringNetworkMap.pdf
[3] https://novascotia.ca/nse/airdata/
[4] https://www.canada.ca/en/environment-climate-change/services/air-quality-health-index/understanding-messages.html
[5] https://www.airnow.gov/
[6] http://data.ec.gc.ca/data/air/monitor/national-air-pollution-surveillance-naps-program/

and determining achievement of national air quality standards. A useful summary can be found on the Canadian Council of Ministers of the Environment's (CCME's) State of the Air website at https://www.ccme.ca/en/air-quality-report.

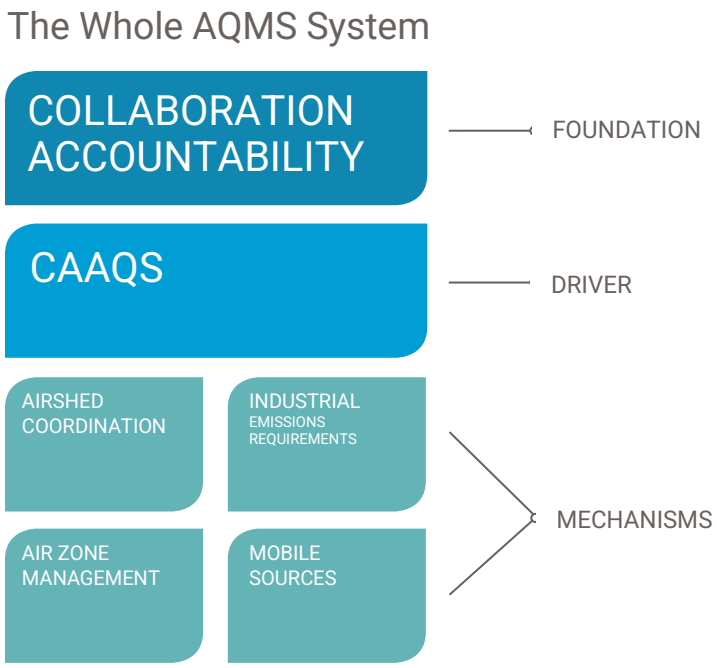


Figure 1. The Air Quality Management System Framework

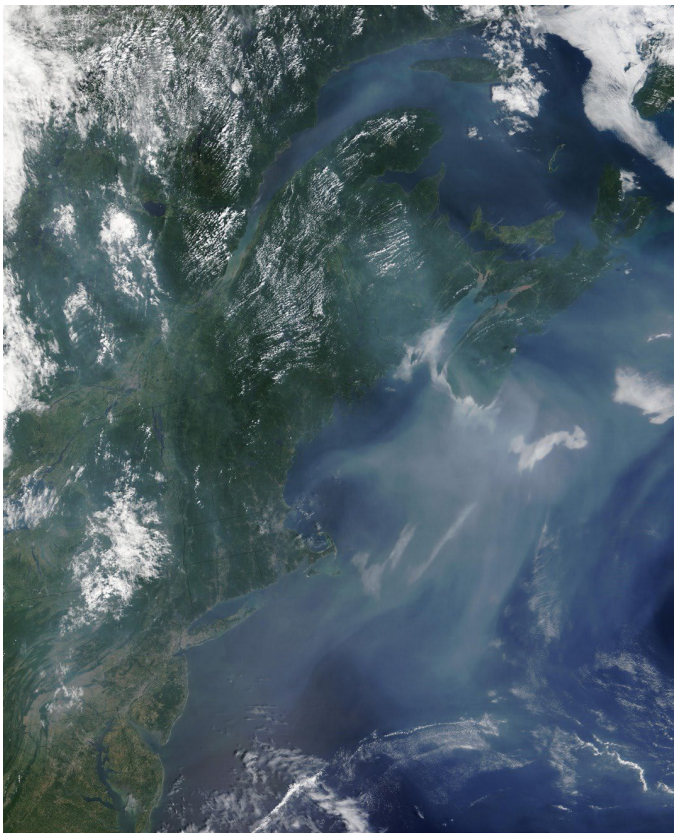
The CCME is an important forum for collaboration on air quality. For example, the Air Quality Management System (AQMS) was put in place across Canada by the CCME [7] as a comprehensive approach, with four 'mechanisms' that work together to achieve Canadian Ambient Air Quality Standards (CAAQS) that are designed to protect and improve ambient air quality. The four mechanisms are Base Level Industrial Emissions Requirements (BLIERS), mobile source emissions, airsheds, and air zones (Figure 1). Provinces and territories use air zones as geographic regions for monitoring, managing, and reporting on ambient concentrations of common air pollutants. This report is part of a commitment by provinces and territories to "report regularly to their publics on air quality, on the achievement of the ambient air quality standards, and on the actions undertaken in air zones within their boundaries." [8] An electronic copy of this report and previous reports can be accessed at https://novascotia.ca/nse/air/air-zone-reports.asp.

[7] https://www.ccme.ca/en/air-quality-report#slide-2
[8] https://ccme.ca/en/res/aqms_roles_and_resp_e.pdf

Airsheds and Air Zones

Airsheds

Airsheds are large areas that can include many jurisdictions. Emissions from vehicles, residential wood burning, industry, and other activities can remain in the atmosphere for extended periods of time and be carried across borders where they add to local, regional, and global air pollution far from where the emissions occurred. How far the pollution is carried depends on seasonal weather patterns and how long the pollutant is stable in the atmosphere. Air quality management in an airshed requires many jurisdictions to work together to minimise emissions that cause transboundary air pollution.



There are large cities, dense networks of roadways, and numerous industries upwind of Nova Scotia, in the Ohio River Valley, along the Eastern seaboard of the United States, and the Québec/Ontario corridor. Emissions from these areas contribute to the formation of GLO, $PM_{2.5}$ and other pollutants that can affect Nova Scotia's air quality (Figure 2). Canada and the United States have agreed[9] to reduce emissions in the airshed, and this has led to significant improvements, but transboundary pollution still occurs.

Figure 2. The grey coloured haze in this satellite image[10] is particulate air pollution over the Maritimes that originated in the Eastern United States.

[9] https://www.canada.ca/en/environment-climate-change/services/air-pollution/issues/transboundary/canada-united-states-air-quality-agreement-overview.html
[10] https://visibleearth.nasa.gov/view.php?id=61010

Air Zones

Air zones are geographically smaller than airsheds and are used to manage air quality inside provincial and territorial areas that have common terrain, meteorology, and other factors that interact with air pollutant emissions to influence ambient air quality in the air zone. Nova Scotia is divided into four air zones (Figure 3). The AQU collects data from ambient air monitoring stations in each air zone that are used to measure and calculate air quality compared to the CAAQS and help determine what management actions may be best suited to each air zone.

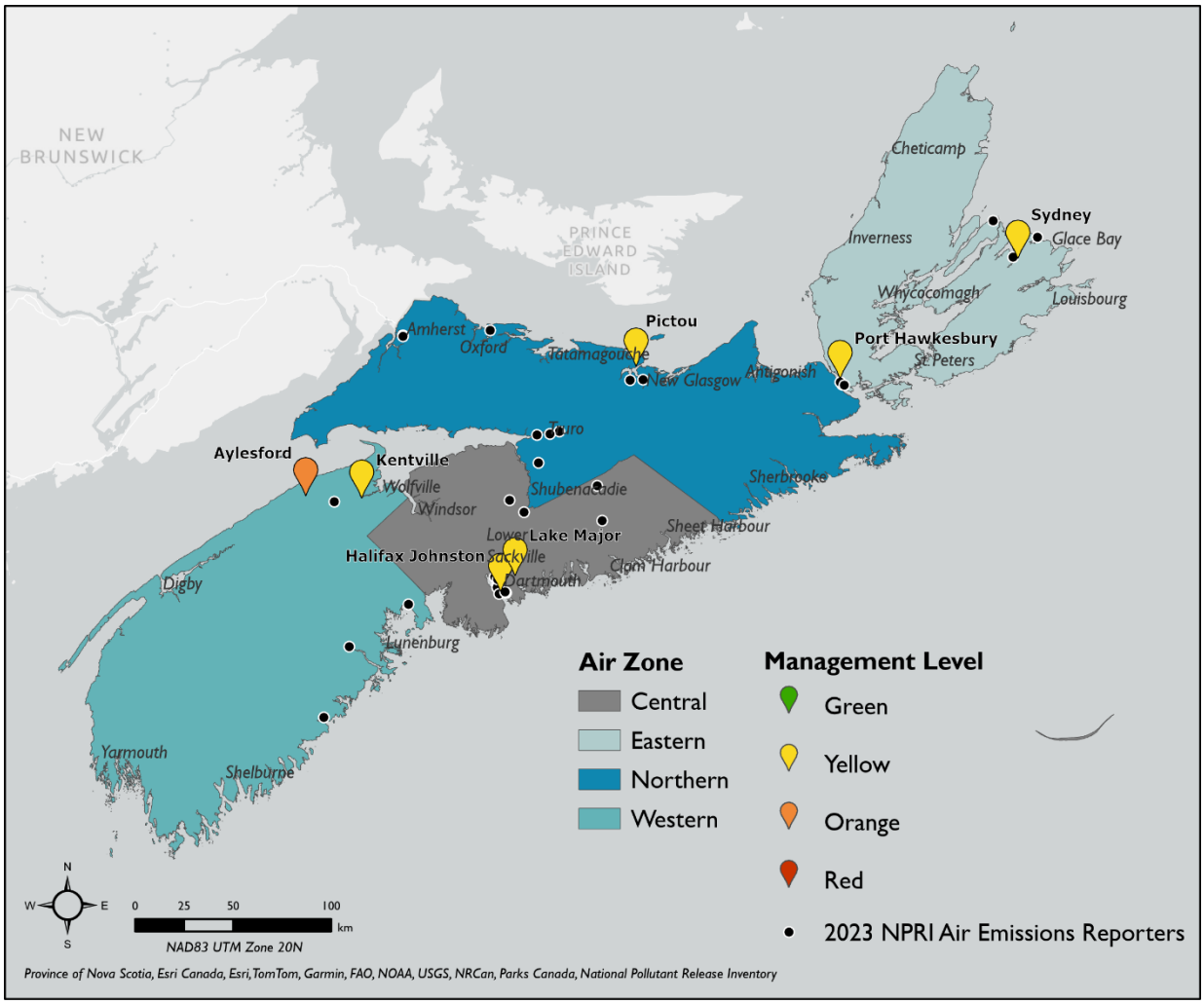


Figure 3. Nova Scotia's four air zones and the locations of ambient air monitoring stations. The station colour corresponds to the management level achieved at that station in 2023.

Canadian Ambient Air Quality Standards (CAAQS)

CAAQS are designed to protect human health and the environment and are the drivers for air quality improvement in air zones across Canada. The CAAQS for GLO and $PM_{2.5}$ have been in place since 2015. CAAQS for sulphur dioxide (SO_2) and nitrogen dioxide (NO_2) were implemented in 2020.

Pollutant	Averaging time	Standards (numerical values)				Metric
		2015	2020	2025	2030	
$PM_{2.5}$	24-hour (calendar day)	28 µg/m³	27 µg/m³	-	23 µg/m³	The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations.
	Annual (calendar year)	10.0 µg/m³	8.8 µg/m³	-	8.0 µg/m³	The 3-year average of the annual average concentrations.
Ground-level Ozone	8-hour	63 ppb	62 ppb	60 ppb	-	The 3-year average of the annual 4th-highest daily maximum 8-hour average concentrations.
Sulphur Dioxide	1-hour	N/A	70 ppb	65 ppb	-	The 3-year average of the annual 99th percentile of the SO_2 daily-maximum 1-hour average concentrations.
	1-year (annual)	N/A	5.0 ppb	4.0 ppb	-	The arithmetic average over a single calendar year of all SO_2 1-hour average concentrations in the year.
Nitrogen Dioxide	1-hour	N/A	60 ppb	42 ppb	-	The 3-year average of the annual 98th percentile of the NO_2 daily-maximum 1-hour average concentrations.
	1-year (annual)	N/A	17.0 ppb	12.0 ppb	-	The arithmetic average over a single calendar year of all NO_2 1-hour average concentrations in the year.

Table 1. The Canadian Ambient Air Quality Standards (CAAQS).

Air Zone Management Framework

The CAAQS were achieved in all of Nova Scotia's air zones in 2023. However, the intention of the air zone management framework is to work towards continuous improvement, even when the CAAQS are achieved. This is important as we know that the health of some portion of the population continues to be affected, even when ambient concentrations of the reported pollutants are low. [11, 12] For example, based on latest data (2019 update) from the World Health Organization (WHO), Canada has some of the best air quality in the world.[13] However, based on the latest report in 2022, Health Canada estimates the number of annual mortalities in Canada that can be attributed to air pollution from human sources in North America to be 15,300 and the economic cost associated with these health impacts to be $120 billion per year (based on 2016 currency). [14]

The air zone management framework has four management levels, represented by four colours, and provides guidance on management actions for each level (Table 2). Numerical values of GLO, $PM_{2.5}$, SO_2 and NO_2 in the form of the CAAQS are calculated from the data measured at each monitoring station. The values are compared to management level threshold values, and the highest CAAQS value in an air zone sets the air zone's overall management level. Management levels have continuous improvement as a priority and require more stringent management actions as the numerical form of the air pollutant measurements approach the CAAQS limits.

[11] For example, see: Bell, M. L., Peng, R. D., and Dominici, F. (2006). The Exposure-Response Curve for Ozone and Risk of Mortality and the Adequacy of Current Ozone Regulations. *Environmental Health Perspectives*. http://dx.doi.org/10.1289/ehp.8816.

[12] Government of Canada (2022). *Canadian Health Science Assessment for Fine Particulate Matter ($PM_{2.5}$)*. Health Canada. Retrieved from https://publications.gc.ca/collections/collection_2022/sc-hc/H144-100-2022-eng.pdf, Page 1.

[13] World Heath Organization (2019). Urban outdoor air pollution database. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/concentrations-of-fine-particulate-matter-(pm2-5)

[14] Health Canada, 2021. Health impacts of air pollution in Canada: Estimates of premature deaths and nonfatal outcomes. ISBN 978-0-660-37331-7. Retrieved from hia-report-eng.pdf (canada.ca), Page 4

Management Level	Management Actions	Air Management Threshold Values (2020-2024)						
		Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour ($\mu g/m^3$)	$PM_{2.5}$ Annual ($\mu g/m^3$)	SO2 1-hour (ppb)	SO2 Annual (ppb)	NO2 1-hour (ppb)	NO2 Annual (ppb)
Red	Actions for **Achieving** Air Zone CAAQS	>62	>27	>8.8	>70	>5.0	>60	>17.0
Orange	Actions for **Preventing** CAAQS **Exceedance**	57 - 62	20 - 27	6.5 - 8.8	51 - 70	3.1 - 5.0	32 - 60	7.1 - 17.0
Yellow*	Actions for **Preventing** air quality **Deterioration**	51 - 56	11 - 19	4.1 - 6.4	31 - 50	2.1 - 3.0	21 - 31	2.1 - 7.0
Green	Actions for **Keeping Clean Areas Clean**	≤50	≤10	≤4.0	≤30	≤2.0	≤20	≤2.0

Table 2. The Air Quality Management Framework and associated threshold values.

* The CAAQS thresholds between the green and yellow management levels are based on estimated baseline concentrations in ambient air.[15]

[15] CCME (2012). *Guidance document on air zone management*, pages 10-12. https://ccme.ca/en/res/guidancedocumentonairzonemanagement_secured.pdf.

Air Zone Results, 2023

In 2023, the CAAQS were achieved in all four of Nova Scotia's air zones. The overall management level in the central, eastern, and northern air zones is 'yellow' and the overall management level for the western air zone is 'orange' (Table 3).

Air Zone	Management Level	Management Actions	2023 CAAQS Results						
			Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour ($\mu g/m^3$)	$PM_{2.5}$ Annual ($\mu g/m^3$)	SO2 1-hour (ppb)	SO2 Annual (ppb)	NO2 1-hour (ppb)	NO2 Annual (ppb)
Central	**Yellow**	Actions for Preventing AQ Deterioration	**54**	**12**	**5.3**	**14**	**0.3**	**31**	**5.1**
Eastern	**Yellow**	Actions for Preventing AQ Deterioration	**51**	**12**	**5.5**	**34**	**0.7**	**31**	**2.2**
Western	**Orange**	Actions for Preventing CAAQS Exceedance	**59**	**14**	**5.4**	**n/a**	**n/a**	**10**	**0.8**
Northern	**Yellow**	Actions for Preventing AQ Deterioration	**52**	**11**	**5.0**	**22**	**0.3**	**11**	**0.7**

Table 3. CAAQS achievement and management level results for air zone monitoring in Nova Scotia for the 2023 reporting year.

	Air Zone Management Levels			
	Central	Eastern	Western	Northern
2018	Yellow	Yellow	Orange	Yellow
2019	Yellow	Yellow	Orange	Yellow
2020	Yellow	Orange	Yellow	Yellow
2021	Yellow	Orange	Yellow	Yellow
2022	Yellow	Orange	Yellow	Yellow
2023	Yellow	Yellow	Orange	Yellow

Table 4. Year-to-year comparison of the air zones' management levels.

Central Air Zone

Central air zone monitoring stations and emission sources

There are two ambient air monitoring stations in the central air zone. One is in Downtown Halifax (Johnston Building) and the other at Lake Major, which is downwind[16] from Downtown Halifax, in an area with less population, traffic, and commercial density (Figure 4).

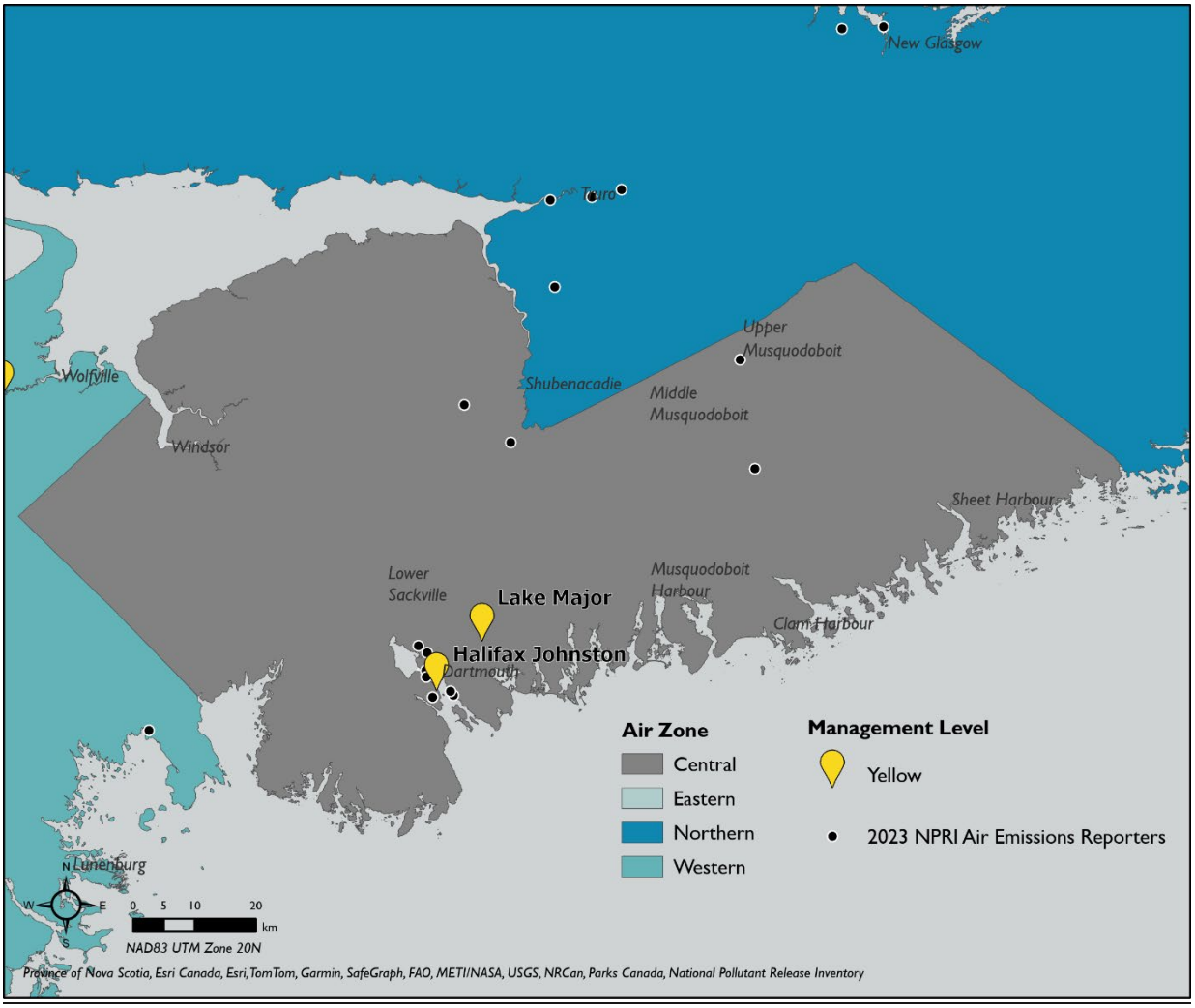


Figure 4. The location of ambient air monitoring stations in the central air zone.

[16] Based on the most frequent annual wind direction.

Central air zone CAAQS achievement and management levels

GLO and $PM_{2.5}$ measurements in the central air zone in 2023 fall in the 'yellow' management level. SO_2 and NO_2 fall in the 'green' and 'yellow' management levels, respectively (Tables 5 and 6). This results in an overall management level of 'yellow' for the central air zone.

	CAAQS						
	Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour ($\mu g/m^3$)	$PM_{2.5}$ Annual ($\mu g/m^3$)	SO2 1-hour (ppb)	SO2 Annual (ppb)	NO2 1-hour (ppb)	NO2 Annual (ppb)
Reporting Year	**Downtown Halifax**	**Downtown Halifax**	**Downtown Halifax**	**Downtown Halifax**	**Downtown Halifax**	**Downtown Halifax**	**Downtown Halifax**
2018	46	12	5.6	n/a	n/a	n/a	n/a
2019	47	12	5.6	n/a	n/a	n/a	n/a
2020	48	11	5.4	8	0.3	28	4.6
2021	49	11	5.3	9	0.4	26	4.9
2022	51	12	5.4	13	0.4	28	5.0
2023	54	12¥	5.3¥	14	0.3	31	5.1

Table 5. Year-to-year comparison of Downtown Halifax's management levels and CAAQS measurements.

¥ Value is calculated from two-years of data, not three.

	CAAQS						
	Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour ($\mu g/m^3$)	$PM_{2.5}$ Annual ($\mu g/m^3$)	SO2 1-hour (ppb)	SO2 Annual (ppb)	NO2 1-hour (ppb)	NO2 Annual (ppb)
Reporting Year	Lake Major	Lake Major	Lake Major	Lake Major	Lake Major	Lake Major	Lake Major
2018	51	10¥	4.9¥	n/a	n/a	n/a	n/a
2019	52	9	4.8	n/a	n/a	n/a	n/a
2020	50	9	4.7	6	0.3	21	3.3
2021	52	10	4.6	5	0.3	21	1.1
2022	54	10	4.6	5	0.2	18	1.0
2023	54	11	4.7	5	0.2	12	1.1

Table 6. Year-to-year comparison of Lake Major's management levels and CAAQS measurements.

¥ Value is calculated from two-years of data, not three.

Eastern Air Zone

Eastern air zone monitoring stations and emission sources

There are two monitoring stations in the Eastern air zone, Port Hawkesbury and Sydney, located in the areas with the highest concentrations of population and industry in Cape Breton (Figure 5). There are three coal-fired power plants, a biomass-fired power plant, a thermal mechanical pulping paper mill, and several commercial facilities and other smaller activities that report CAAQS-relevant air emissions to the National Pollutant Release Inventory (NPRI).

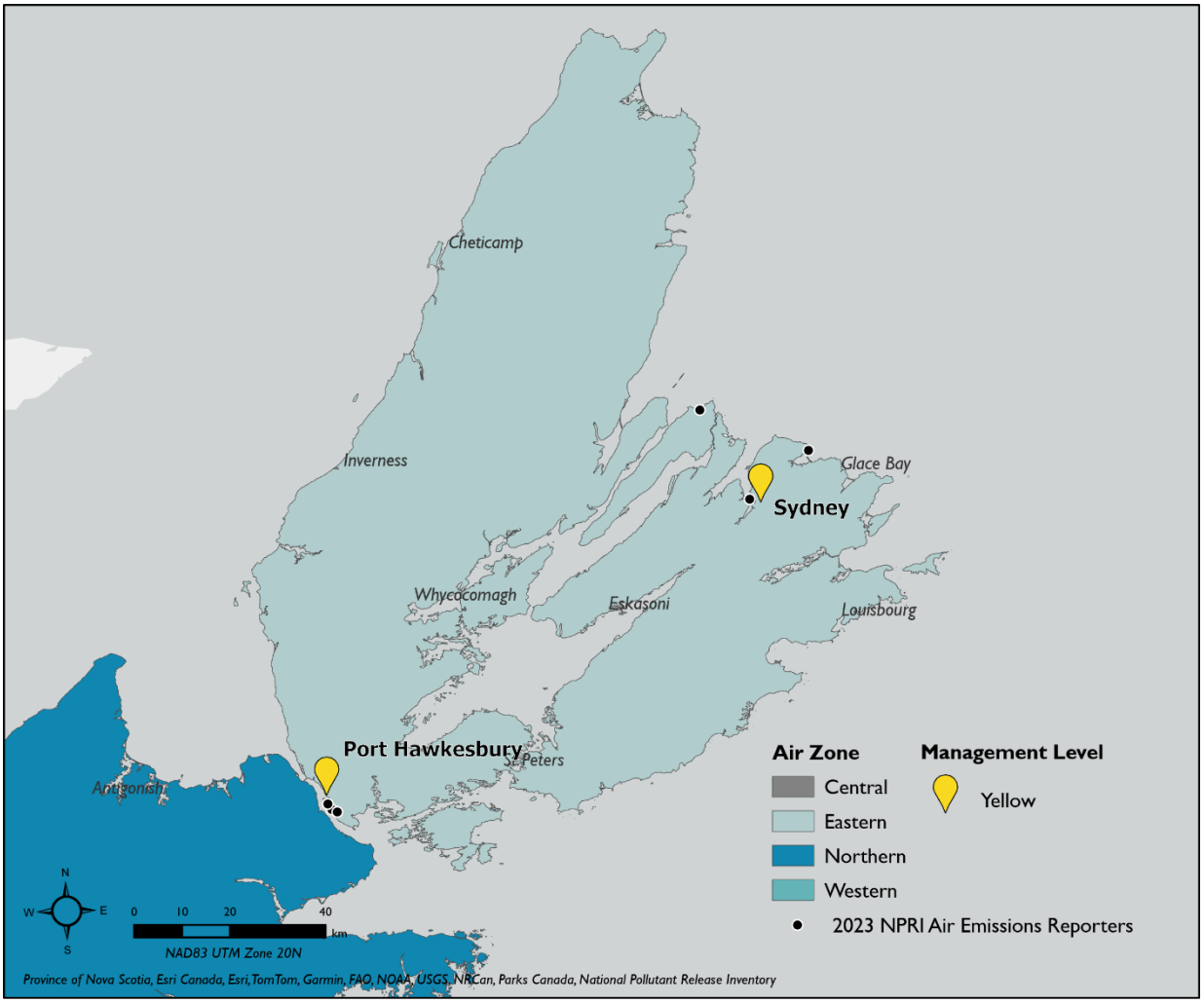


Figure 5. The location of ambient air monitoring stations in the eastern air zone.

Eastern air zone CAAQS achievement and management levels

Measurements of GLO at monitoring stations in the eastern air zone in 2023 fall within the 'yellow' and 'green' management levels, respectively. Measurements of the $PM_{2.5}$ 24-hour metric are within the 'yellow' and 'green' management level, respectively, and the $PM_{2.5}$ annual metric are both within the 'yellow' management level. SO_2 1-hour and annual metrics fall in the 'yellow' and 'green' management levels, respectively. NO_2 1-hour and annual metrics fall in the 'yellow' management level (Tables 7 and 8). This results in an overall management level of 'yellow' for the eastern air zone. This is an improvement over last year, due to a slight improvement in the 1-hour NO_2 metric in Port Hawkesbury, moving it from the 'orange' management level to the 'yellow'. There are many potential sources of NO_2 near the Port Hawkesbury station, most of which are very localized (i.e., vehicle, train, and ship traffic/idling).

	CAAQS						
	Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour (µg/m³)	$PM_{2.5}$ Annual (µg/m³)	SO2 1-hour (ppb)	SO2 Annual (ppb)	NO2 1-hour (ppb)	NO2 Annual (ppb)
Reporting Year	Port Hawkesbury	Port Hawkesbury	Port Hawkesbury	Port Hawkesbury	Port Hawkesbury	Port Hawkesbury	Port Hawkesbury
2018	48	11	5.3	n/a	n/a	n/a	n/a
2019	48	11	5.4	n/a	n/a	n/a	n/a
2020	48	11	5.2	44	0.6	36	2.5
2021	49	11	5.3	35	0.8	33	2.2
2022	49	11	5.4	35	0.8	33	2.3
2023	51	12	5.5	34	0.7	31	2.1

Table 7. Year-to-year comparison of Port Hawkesbury's management levels and CAAQS measurements.

Reporting Year	CAAQS						
	Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour ($\mu g/m^3$)	$PM_{2.5}$ Annual ($\mu g/m^3$)	SO2 1-hour (ppb)	SO2 Annual (ppb)	NO2 1-hour (ppb)	NO2 Annual (ppb)
	Sydney	Sydney	Sydney	Sydney	Sydney	Sydney	Sydney
2018	48	10	5.4	n/a	n/a	n/a	n/a
2019	48	10	5.1	n/a	n/a	n/a	n/a
2020	49	9	4.7	42	0.3	26	2.7
2021	50	10	4.9	29	0.4	27	2.2
2022	50	9	4.8	32	0.4	25	2.2
2023	50	10	4.9	34	0.5	22	2.2

Table 8. Year-to-year comparison of Sydney's management levels and CAAQS measurements.

Western Air Zone

Western air zone monitoring stations and emission sources

There are two monitoring stations in the western air zone used for calculating CAAQS. One is located in Aylesford on North Mountain, and the second in the town of Kentville (Figure 6). Key geographic features include the North and South Mountains that border the Annapolis Valley. The Valley contains a high concentration of agricultural activity and some industrial air emissions sources that report to the NPRI, including an airport, food processing facilities, manufacturing plants, and other institutions.

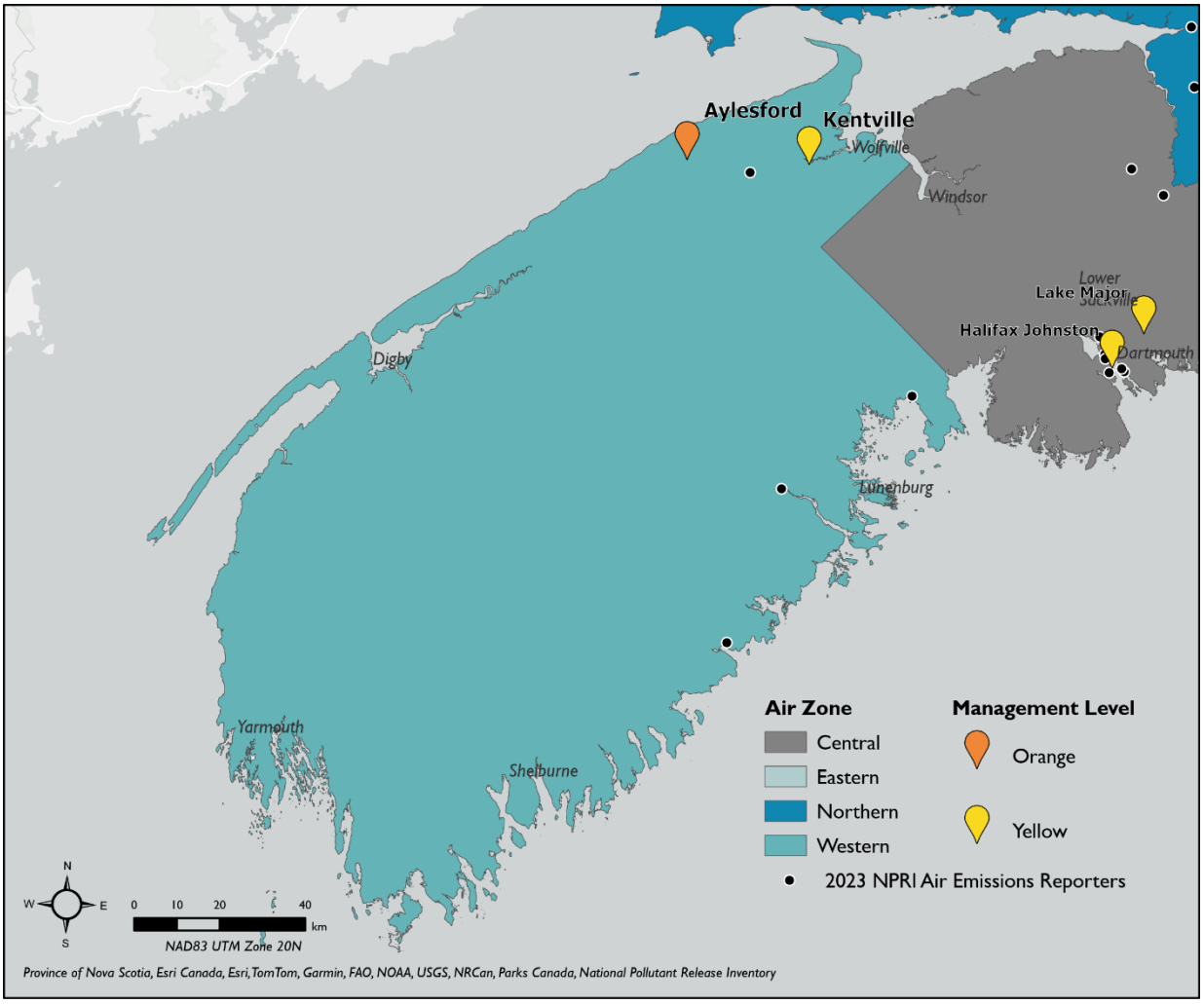


Figure 6. The location of ambient air monitoring stations in the western air zone.

Western air zone CAAQS achievement and management levels

Measurements of both GLO and $PM_{2.5}$ increased at the Aylesford and Kentville stations, falling within the 'orange' and 'yellow' management levels, respectively. The $PM_{2.5}$ 24-hour and annual metric falls within the 'yellow' management level, which was an increase from 'green' to 'yellow' at the Aylesford station. NO_2 measurements from the Kentville station continue to fall in the 'green' management level. In recent years, we had seen continued improvement in GLO measurements in the Western air zone, resulting in the management level moving from 'orange' to 'yellow' from 2020 to 2022 for this pollutant. Improvements were also seen in $PM_{2.5}$ measurements, with the management level remaining in the 'yellow'. As a result of the increased GLO measurements at the Aylesford station, the overall management level for the western air zone for 2023 has changed from the 'yellow' to the 'orange' level, after remaining in the 'yellow' management level between 2020 and 2022 (Tables 9 and 10).

	CAAQS		
	Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour (µg/m^3)	$PM_{2.5}$ Annual (µg/m^3)
Reporting Year	Aylesford (North Mountain)	Aylesford (North Mountain)	Aylesford (North Mountain)
2018	61	12¥	6.5¥
2019	60	12¥	5.9¥
2020	55	10	4.5
2021	55	10	4.4
2022	56	9	4.0
2023	59	11	4.1

Table 9. Year-to-year comparison of the Aylesford' s management levels and CAAQS measurements.

¥ Value is calculated from two-years of data, not three.

Reporting Year	CAAQS				
	Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour ($\mu g/m^3$)	$PM_{2.5}$ Annual ($\mu g/m^3$)	NO2 1-hour (ppb)	NO2 Annual (ppb)
	Kentville	Kentville	Kentville	Kentville	Kentville
2018	59	12	6.1	n/a	n/a
2019	58	12	6.3	n/a	n/a
2020	53	12	6.0	10	1.0
2021	50‡	12	5.4	9	0.9
2022	50‡	13	5.4	10	1.0
2023	55‡	14	5.4	10	0.8

Table 10. Year-to-year comparison of the Kentville's management levels and CAAQS measurements at each monitoring station.

‡ Value is calculated from two-years of data, not three.

Weather patterns in eastern North America generally move from the west and south to the east and north. Because of its location, the Western air zone receives long-range air pollutants that originate in the west, and the Eastern United States. Forest fires in western jurisdictions, and fossil fuel-fired power plants (Figure 8) and transportation to the south-west are significant sources of transboundary pollution for the western air zone.

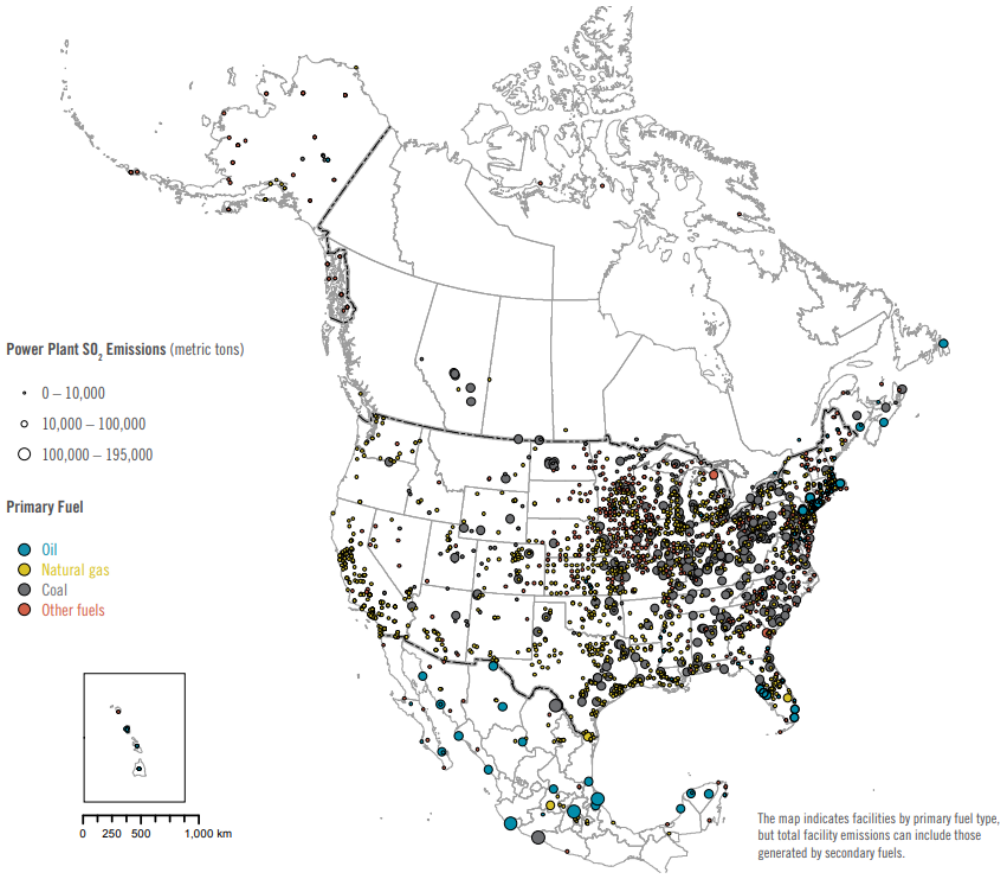


Figure 8. This map identifies the locations of North American power plants and the relative size of their NO_x emissions.[17] Emissions from sources Southwest of Nova Scotia can affect the province's ambient air quality.[18]

Ground level ozone is formed when sunlight reacts with 'precursor' pollutants, such as NO_x and volatile organic compounds (VOCs), from sources such as forest fires, power plants, and transportation. The potential for ozone formation in an area depends on if the environment is saturated or limited in NO_x. Rural environments, like that of the Western air zone, tend to be limited in NO_x, as evidenced by the 2023 NO_2 data from Kentville, so that an increase in NO_x generally correlates with increased concentrations of GLO. Urban environments that are saturated with NO_x, like downtown Halifax, generally experience an increase in GLO concentrations when NO_x is decreased.

[17] Data are taken from the Commission for Environmental Cooperation of North America (CEC) power plant emissions project. http://www3.cec.org/islandora/es/item/10236-north-american-power-plant-air-emissions-en.pdf

[18] For more information, see *Case study of a trans-boundary air pollution event in Nova Scotia* https://novascotia.ca/nse/air/docs/NovaScotiaTransboundaryEvent2004.pdf.

Northern Air Zone

Northern air zone monitoring stations and emission sources

There is one monitoring station in the northern air zone, located in the Town of Pictou. The Cobequid Mountain Range is a prominent geographical feature that runs west to east through the northern air zone, and the Maritime Lowlands ecoregion, to the north of the Cobequid Mountains, is characterised by having "the lowest precipitation levels in the Maritime provinces."[19] A coal-fired power plant, tire manufacturing plant, pulp and paper plant (shut down in 2020), as well as additional industrial sources are found in this region (Figure 7).

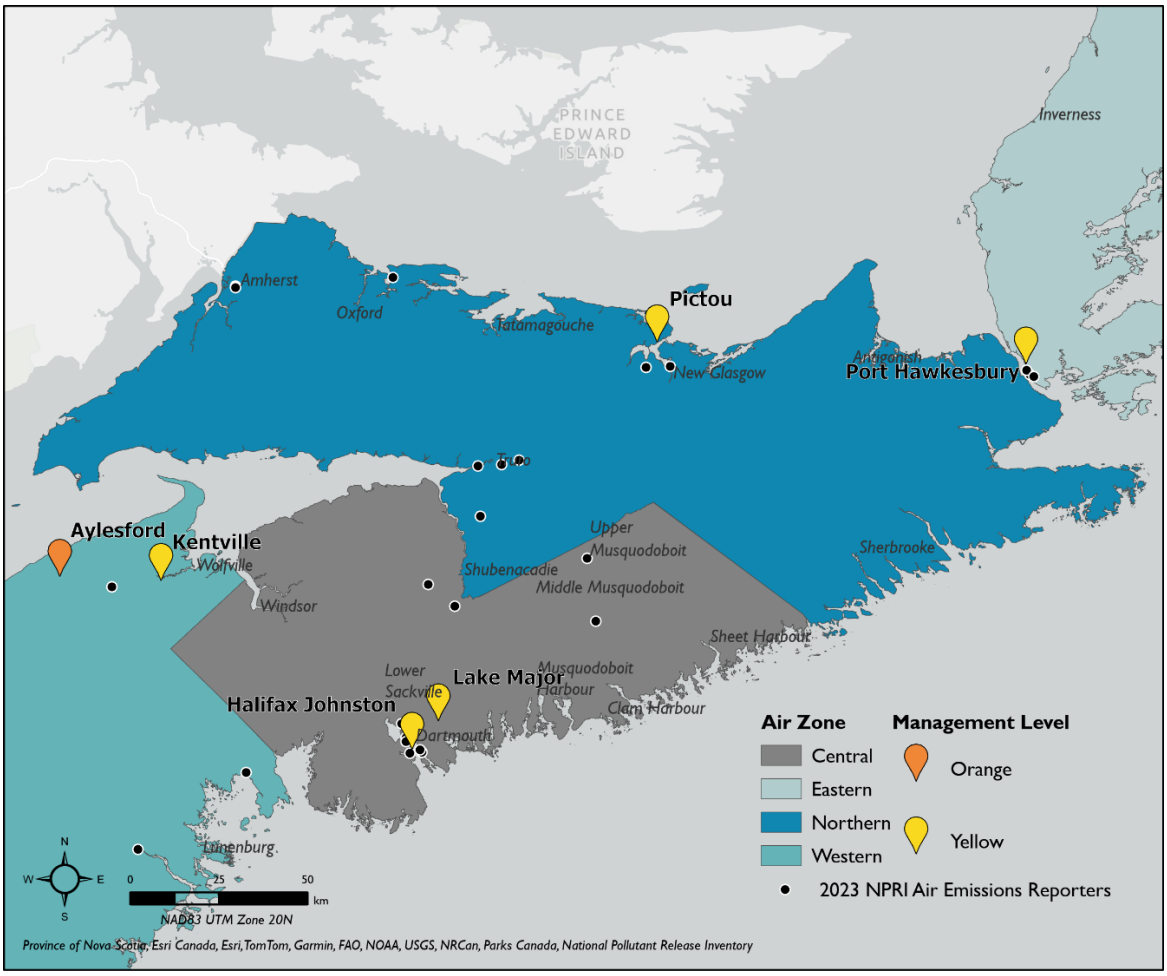


Figure 7. The location of the ambient air monitoring station in the northern air zone.

[19] Webb and Marshall (1999). *Ecoregions and ecodistricts of Nova Scotia*. Agriculture and Agri-Food Canada & Environment Canada. Accessed at http://sis.agr.gc.ca/cansis/publications/surveys/ns/nsee/nsee_report.pdf.

Northern air zone CAAQS achievement and management levels

This year the management level for GLO remained 'yellow', as in the two years before. The 24-hr $PM_{2.5}$ metric saw a slight increase resulting in a move from the 'green' to 'yellow' management level, while the annual $PM_{2.5}$ metric remained in the 'green' management level. SO_2 and NO_2 both fall in the 'green' management levels. This results in an overall management level of 'yellow' for the northern air zone (Table 11).

	CAAQS						
	Ozone 8-hour (ppb)	$PM_{2.5}$ 24-hour (µg/m³)	$PM_{2.5}$ Annual (µg/m³)	SO2 1-hour (ppb)	SO2 Annual (ppb)	NO2 1-hour (ppb)	NO2 Annual (ppb)
Reporting Year	**Pictou**	**Pictou**	**Pictou**	**Pictou**	**Pictou**	**Pictou**	**Pictou**
2018	48	10	5.1	n/a	n/a	n/a	n/a
2019	50	10	5.2	n/a	n/a	n/a	n/a
2020	51	10	5.0	28	0.5	12	1.0
2021	51	10	5.0	26	0.4	11	1.0
2022	51	10	4.8	29	0.5	13	1.0
2023	52	11	5.0	22	0.3	11	0.7

Table 11. Year-to-year comparison of the northern air zone's management levels and CAAQS measurements.

Summary

There was a general trend of slight increases in GLO and $PM_{2.5}$ measurements across the province for the 2021-2023 reporting period. Many factors may be at play, however it is important to note that 2023 was the most active wildfire season in recent history across Nova Scotia and Canada as a whole. Wildfire smoke may be carried hundreds or even thousands of kilometres from a fire zone, causing the impacts of wildfire smoke to be far-reaching, depending on current weather conditions.

Contact Us

For more information on ambient air quality monitoring, the AQMS, ambient air quality data or related products visit novascotia.ca/nse/air or contact us at air@novascotia.ca.