Department of Environmental Conservation's Air Monitoring Program
Community-Based Air Monitoring Project
2024-25 Winter Season Air Quality Report for NPS – Denali National Park and Preserve

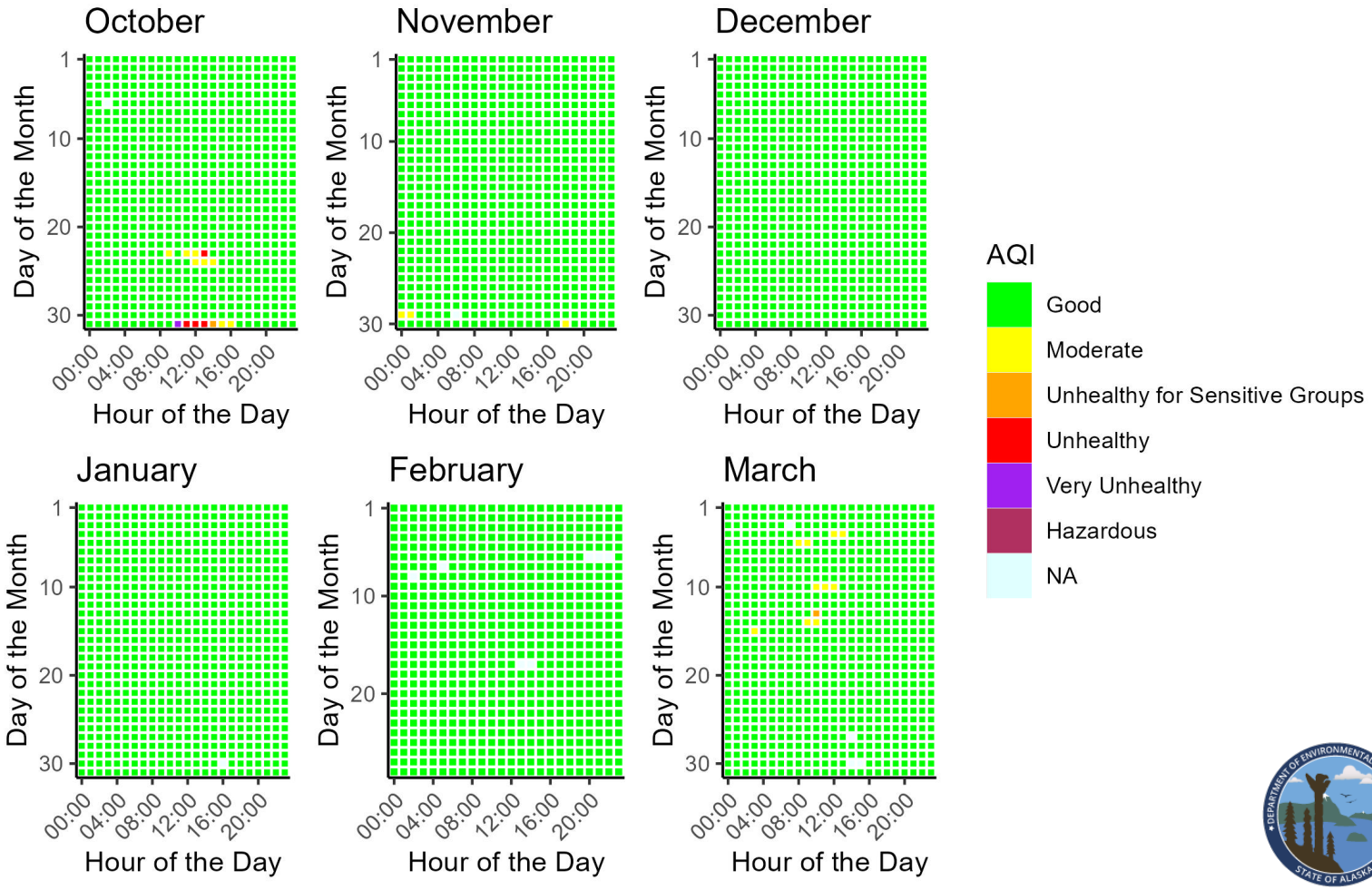
The QuantAQ MODULAIR™ sensor in Denali (63.7216 ° N, 148.9671 ° W) was installed on 06/12/2024.

The sensor measures for carbon monoxide (CO), ozone (O_3), nitrogen oxide (NO), nitrogen dioxide (NO_2), particulate matter ($PM_{2.5}$ and PM_{10}), temperature (°C), and relative humidity (RH). Data is collected every minute and is then processed into hourly averages.

The sensor in Denali has run well since its installation in June of 2024; there have been no physical issues with the sensor.

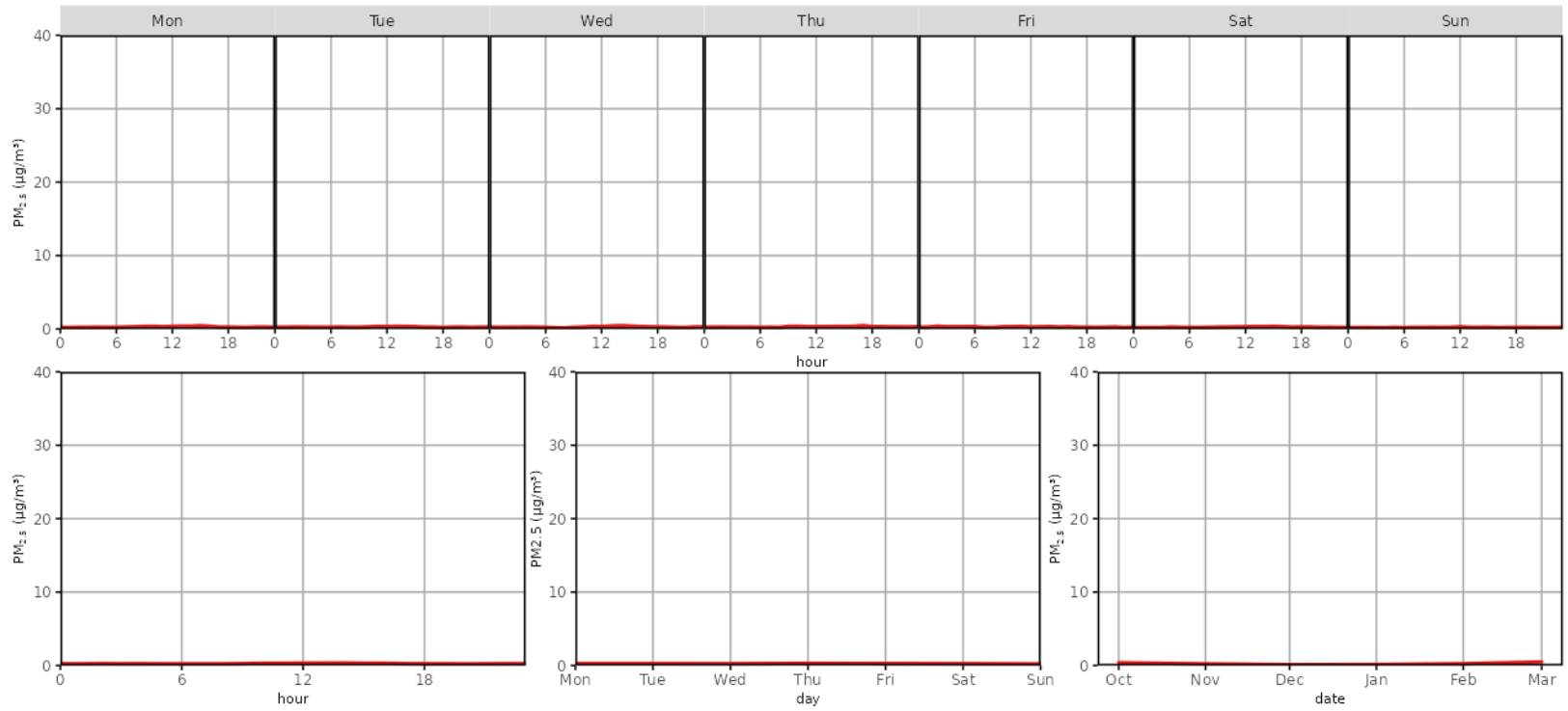
This data report covers the date range of October 1, 2024, to March 31, 2025.

Daily $PM_{2.5}$ Air Quality Index (AQI) for October 1, 2024 - March 31, 2025



2024-25 Winter Season Air Quality Report for Denali NP

Median $PM_{2.5}$ Concentrations for October 1, 2024 - March 31, 2025



Descriptive Statistics of Air Pollutants*

Parameter	1-hr $PM_{2.5}$ (µg/m³)	24-hr $PM_{2.5}$ (µg/m³)	1-hr PM_{10} (µg/m³)**	24-hr PM_{10} (µg/m³)**	1-hr O_3 (ppb)	1-hr NO_2 (ppb)	1-hr NO (ppb)	1-hr CO (ppb)
Min	0.01	0.03	0.00	0.00	11.16	6.08	1.38	0.30
Mean	0.64	0.63	1.49	1.49	26.14	23.20	4.25	0.42
1st Max	175.79	18.81	178.00	19.50	37.72	31.74	13.14	0.80
2nd Max	66.77	5.78	160.00	9.38	37.33	31.17	12.82	0.80

Data Discussion

Denali's $PM_{2.5}$ ambient air quality for the winter 2024-25 season fell mostly in the "good" range of the Air Quality Index (AQI; more information about AQI is provided on page 3), with two periods in October that reached into the "unhealthy" and "very unhealthy" AQI ranges due to smoke from prescribed brush pile burns occurring around the sensor. Elevated $PM_{2.5}$ levels were brief (1-4 hours) and returned to the "good" AQI range immediately following the burn periods. Diurnal patterns show little variability of $PM_{2.5}$ concentrations across different times of day or days of the week.

* These statistics are based on preliminary data readings and are intended to provide a brief overview of sensor activity. Finalized data may be obtained upon request and through our annual statistical reports. Data from the community sensor network is non-regulatory and not comparable to the EPA's National Ambient Air Quality Standards (NAAQS; more information about the EPA NAAQS is provided on page 3).

** PM_{10} particle sensors are influenced by weather events such as fog and snow due to hygroscopic effects, creating false maximum values that do not pose health risks.

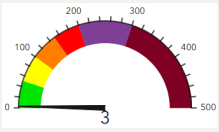
2024-25 Winter Season Air Quality Report for Denali NP

Resources

Alaska Department of Environmental Conservation

EPA NAAQS Information

Air Quality Index (AQI) Basics



Real-Time AQI Data

Data Access

To access historical data for your community's sensor, please email a request to: AMQA-Data-Request@alaska.gov . Data will be provided in Excel or .csv format.

Questions or Comments?

Please contact us!

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