

January 21, 2025

Lorna Morishita

Executive Director of Palliser Airshed Society
PO Box 23121 Medicine Hat Mall
Medicine Hat AB T1B 4C7

RE: Palliser Airshed Society (PAS) Ambient Air Monitoring Report – December 2024

Enclosed is the PAS Dashboard Report for the month of **December 2024**.

Continuous Monitoring – Crescent Heights, Brooks, Brooks – Meadow Place, Taber and Hanna Airpointer Monitoring Stations

Included in this report are: Monthly Air Monitoring Summary Table, Station Issue Summary, Station Summary Graphs and Station Wind Roses.

Continuous Monitoring Instrumentation Uptime Summary:

There were no uptimes less than 90% in December.

AAAQO/G Exceedance Summary:

There were no exceedances of the AAAQO/G in December.

If you have any questions, please contact the WSP office at 780.401.1356.

X *Patrick Andersen*

Patrick Andersen, B.Sc.
WSP AQM Data Specialist

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Lenin Flores
Project Manager

December 2024 Monthly Ambient Air Quality Summary

Dec-24 Palliser Airshed Society										Maximum Recorded Values						
Pollutant (units)	Objectives			Station	Monthly Average	1-Hour Minimum	Exceedence			1-hr		24-hr / 8-hr		Operational Time (%)	Calibration Date	
	1-hr	24-hr	30-day				1-hr	24-hr	30-day	Conc	Day	Conc	Day			
SO ₂ (ppb)	172	48	8	Crescent Heights	0.1	0.0	0	0	0	1.7	Dec-19 00:00	0.5	Dec-01	99.9	Dec-18	
NO (ppb)					2.8	0.0					51.0	Dec-04 02:00	8.3	Dec-28	99.9	Dec-18
NO ₂ (ppb)	159				8.8	0.6	0				40.9	Dec-04 02:00	18.0	Dec-21	99.9	Dec-18
NO _x (ppb)					11.6	0.6					91.9	Dec-04 02:00	25.2	Dec-21	99.9	Dec-18
O ₃ (ppb)	76				23.7	0.1	0				39.8	Dec-24 13:00	33.4	Dec-11	99.9	Dec-18
CO (ppm)					0.2	0.1					0.3	Dec-21 19:00	0.2	Dec-28	99.9	Dec-18
CO 8-Hour (ppm)	5				-	0.1	0				0.3	Dec-29 03:00	-	-	100.0	-
THC (ppm)					2.3	2.0					3.3	Dec-12 20:00	2.8	Dec-29	99.9	Dec-18
PM _{2.5} (µg/m ³)	80	29			6.5	0.2	0	0			46.7	Dec-22 05:00	15.8	Dec-22	99.9	Dec-18
ET (°C)					-4.3	-18.7					7.7	Dec-24 15:00	5.2	Dec-07	99.9	-
RH (%)					85.4	39.6					100.0	Dec-05 06:00	98.9	Dec-30	99.9	-
GSR (W/m ²)					38.4	0.0					326.8	Dec-02 12:00	61.5	Dec-02	99.9	-
WSPD (km/h)					3.0	0.1					31.4	Dec-24 13:00	16.9	Dec-08	99.9	08/11/24
WDIR						WSW									99.9	

Pollutant (units)	Analyzer			Notes
	Make		Model	
SO ₂	TEI		43i-TLE	Data logger failed to capture 1 hour of data December 3.
NO/NO ₂ /NO _x	TEI		42i	
O ₃	TECO		49i	
CO	TEI		48i-TLE	
THC	TECO		51C-LT	
PM _{2.5}	API		T640	
ET/RH	RMYoung		41382VC	
GSR	EPPLEY			
WS/WD	RMYoung		5305-10	

Dec-24 Palliser Airshed Society										Maximum Recorded Values					
Pollutant (units)	Objectives			Station	Monthly Average	1-Hour Minimum	Exceedence			Conc	Day	Conc	Day	Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day						
NO (ppb)				Brooks Meadow Place	1.5	0.0				28.7	Dec-13 10:00	11.1	Dec-13	99.9	Dec-17
NO ₂ (ppb)	159				7.1	0.2	0			29.8	Dec-21 22:00	17.8	Dec-21	99.9	Dec-17
NO _x (ppb)					8.5	0.0				51.9	Dec-21 21:00	26.9	Dec-13	99.9	Dec-17
O ₃ (ppb)	76				23.3	0.0	0			43.0	Dec-08 09:00	33.8	Dec-11	99.9	Dec-17
PM _{2.5} (µg/m ³)	80	29			8.7	0.3	0	0		34.8	Dec-15 15:00	19.8	Dec-30	99.9	Dec-17
ET (°C)					-6.3	-19.1				6.2	Dec-03 15:00	1.8	Dec-07	99.3	-
RH (%)					81.0	55.0				99.2	Dec-22 19:00	92.1	Dec-22	99.1	-
WSPD (km/h)					1.3	0.1				37.3	Dec-08 08:00	20.7	Dec-08	99.3	27/11/24
WDIR					WSW										99.3

Pollutant (units)	Analyzer			Notes
	Make		Model	
NO/NO ₂ /NO _x	TEI		42iQ	Data logger failed to capture 1 hour of data December 3.
O ₃	TEI		49iQ	
PM _{2.5}	API		T640	
ET/RH				RH sensor replaced December 17.
WS/WD				Data logging offline during RH sensor replacement.

Dec-24				Palliser Airshed Society					Maximum Recorded Values						
Pollutant (units)		Objectives		Station	Monthly Average	1-Hour Minimum	Exceedence		1-hr		24-hr / 8-hr		Operational Time (%)	Calibration Date	
		1-hr	24-hr				30-day	1-hr	24-hr	30-day	Conc	Day			Conc
NO (ppb)				Hanna Airpointer	4.0	0.0				50.6	Dec-06 09:00	12.0	Dec-06	99.6	Dec-17
NO ₂ (ppb)	159				8.9	1.6	0			37.7	Dec-06 05:00	24.6	Dec-06	99.6	Dec-17
NO _x (ppb)					13.0	1.7				86.8	Dec-06 09:00	36.6	Dec-06	99.6	Dec-17
O ₃ (ppb)	76				24.0	0.2	0			37.3	Dec-03 14:00	32.4	Dec-11	99.7	Dec-18
PM _{2.5} (µg/m ³)	80	29			6.2	0.7	0	0		35.3	Dec-15 10:00	14.9	Dec-15	100.0	Dec-17
ET (°C)					-8.4	-21.3				4.3	Dec-03 14:00	0.0	Dec-08	99.7	-
RH (%)					82.2	45.3				96.6	Dec-08 10:00	92.9	Dec-22	99.7	-
WSPD (km/h)					0.8	0.0				16.8	Dec-24 11:00	8.5	Dec-11	99.7	-
WDIR					E									99.7	-

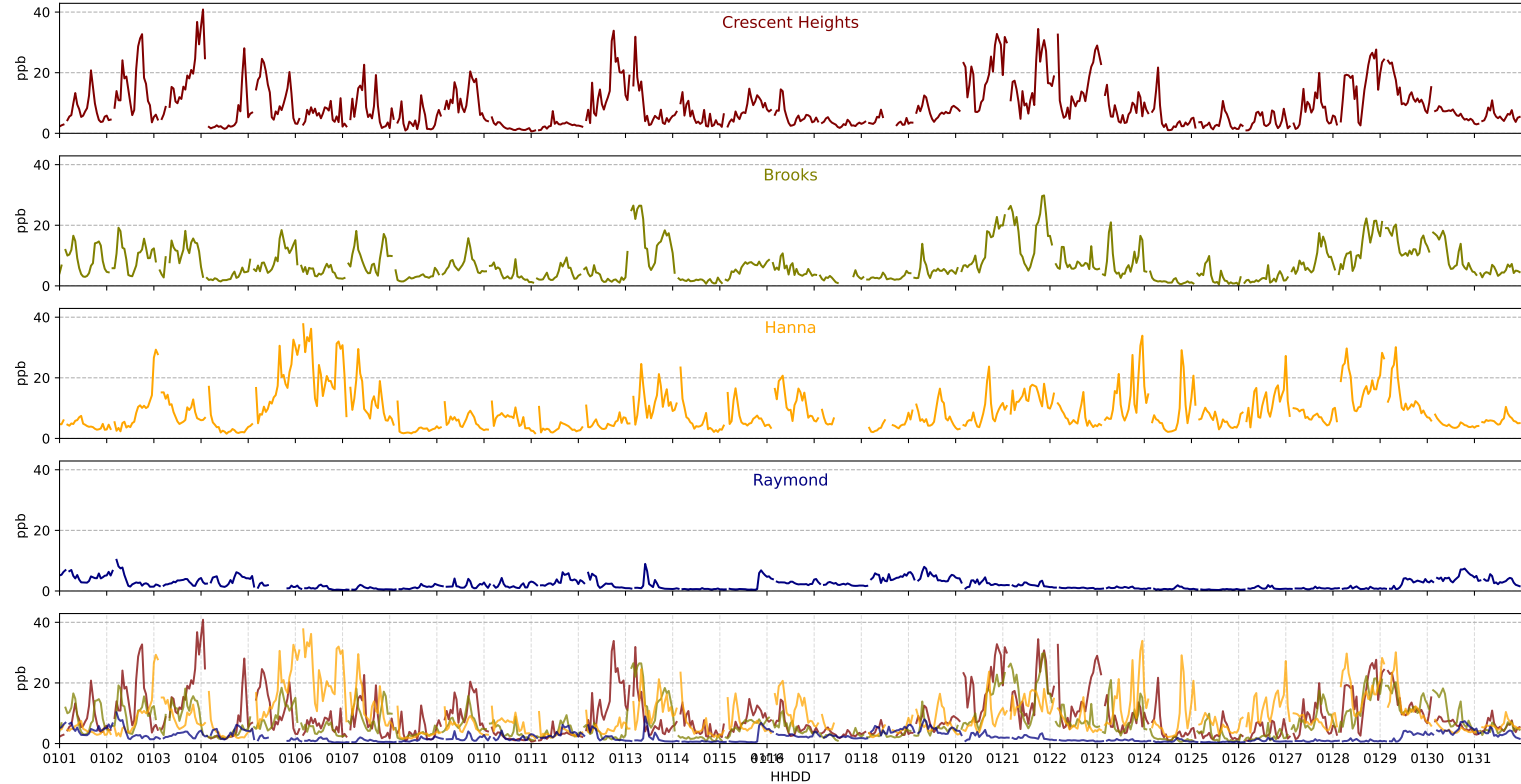
Pollutant (units)	Analyzer			Notes
	Make		Model	
NO/NO ₂ /NO _x	Airpointer API		200e	Analyzer offline during ozone install calibration December 18.
O ₃	Airpointer API		400e	Analyzer maintenance performed December 17, allowed to stabilize and calibrated December 18. Invalid readings returned for 2 hours December 19.
PM _{2.5}	Sharp		5030	
ET/RH				Data logger failed to capture 2 hours of data December 11.
WS/WD				Data logger failed to capture 2 hours of data December 11.

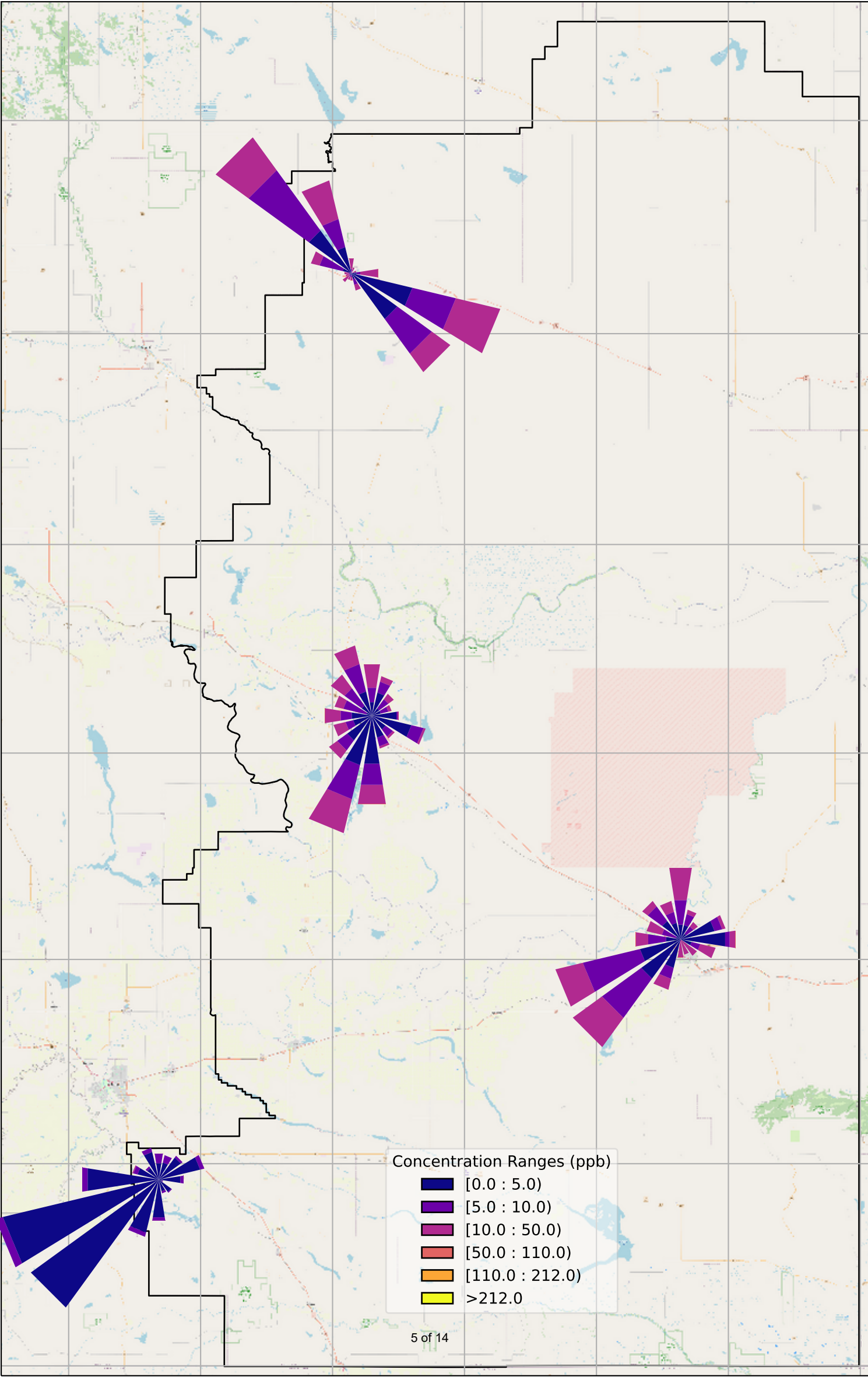
Dec-24				Palliser Airshed Society									Maximum Recorded Values					
Pollutant (units)		Objectives		Station	Monthly Average	1-Hour Minimum	Exceedence			1-hr		24-hr / 8-hr		Operational Time (%)	Calibration Date			
		1-hr	24-hr				30-day	1-hr	24-hr	30-day	Conc	Day	Conc			Day		
NO (ppb)				Raymond Airpointer	0.3	0.0				11.5	Dec-12 10:00	1.8	Dec-19	100.0	Dec-05			
NO ₂ (ppb)	159				2.2	0.3	0			10.3	Dec-02 06:00	4.9	Dec-19	100.0	Dec-05			
NO _x (ppb)					2.6	0.3				16.3	Dec-12 10:00	6.7	Dec-19	100.0	Dec-05			
O ₃ (ppb)	76				28.1	1.1	0			44.0	Dec-03 06:00	36.9	Dec-03	100.0	Dec-05			
PM _{2.5} (µg/m ³)	80	29			6.6	0.0	0	0		48.1	Dec-31 09:00	25.3	Dec-31	90.9	Dec-05			
ET (°C)					-1.2	-21.4				12.6	Dec-24 15:00	7.0	Dec-07	100.0	-			
RH (%)					71.0	29.3				100.0	Dec-04 10:00	99.5	Dec-16	100.0	-			
WSPD (km/h)					1.7	0.0				9.1	Dec-06 21:00	5.0	Dec-06	100.0	-			
WDIR					WSW										100.0	-		

Pollutant (units)	Analyzer			Notes
	Make		Model	
NO/NO ₂ /NO _x	Airpointer API		200e	
O ₃	Airpointer API		400e	
PM _{2.5}	Sharp		5030	Sample tape failed December 7, analyzer returned to service December 9.
ET/RH				
WS/WD				

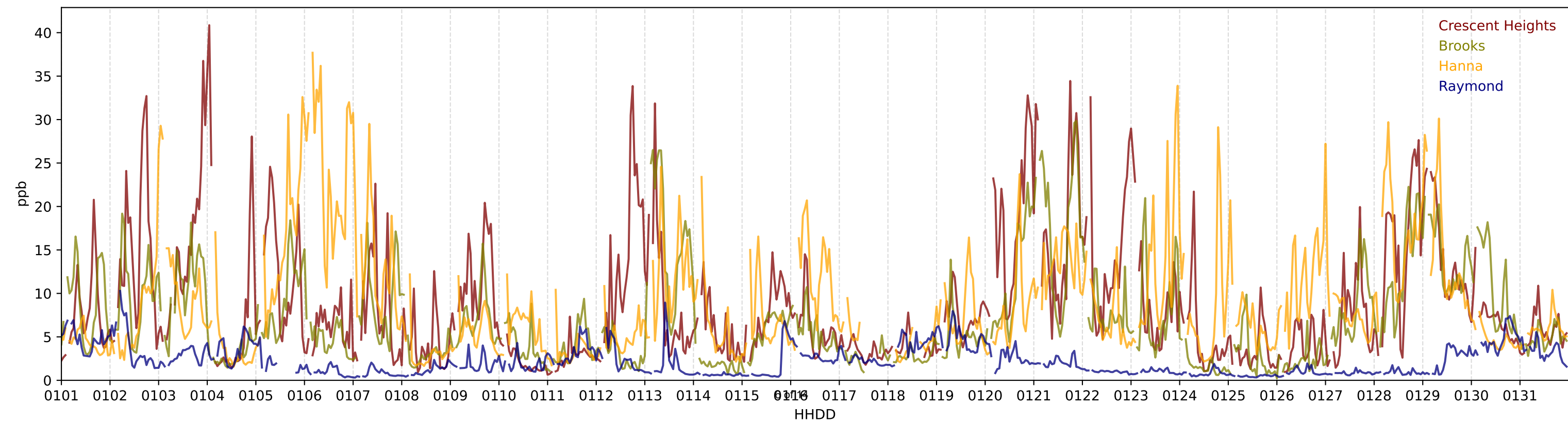
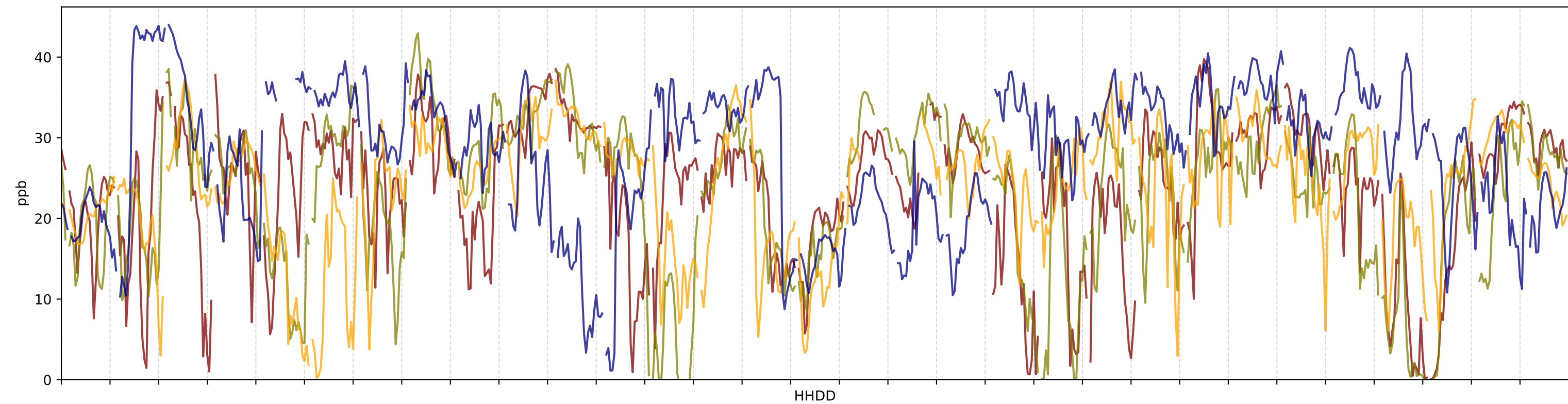
December 2024 NO₂

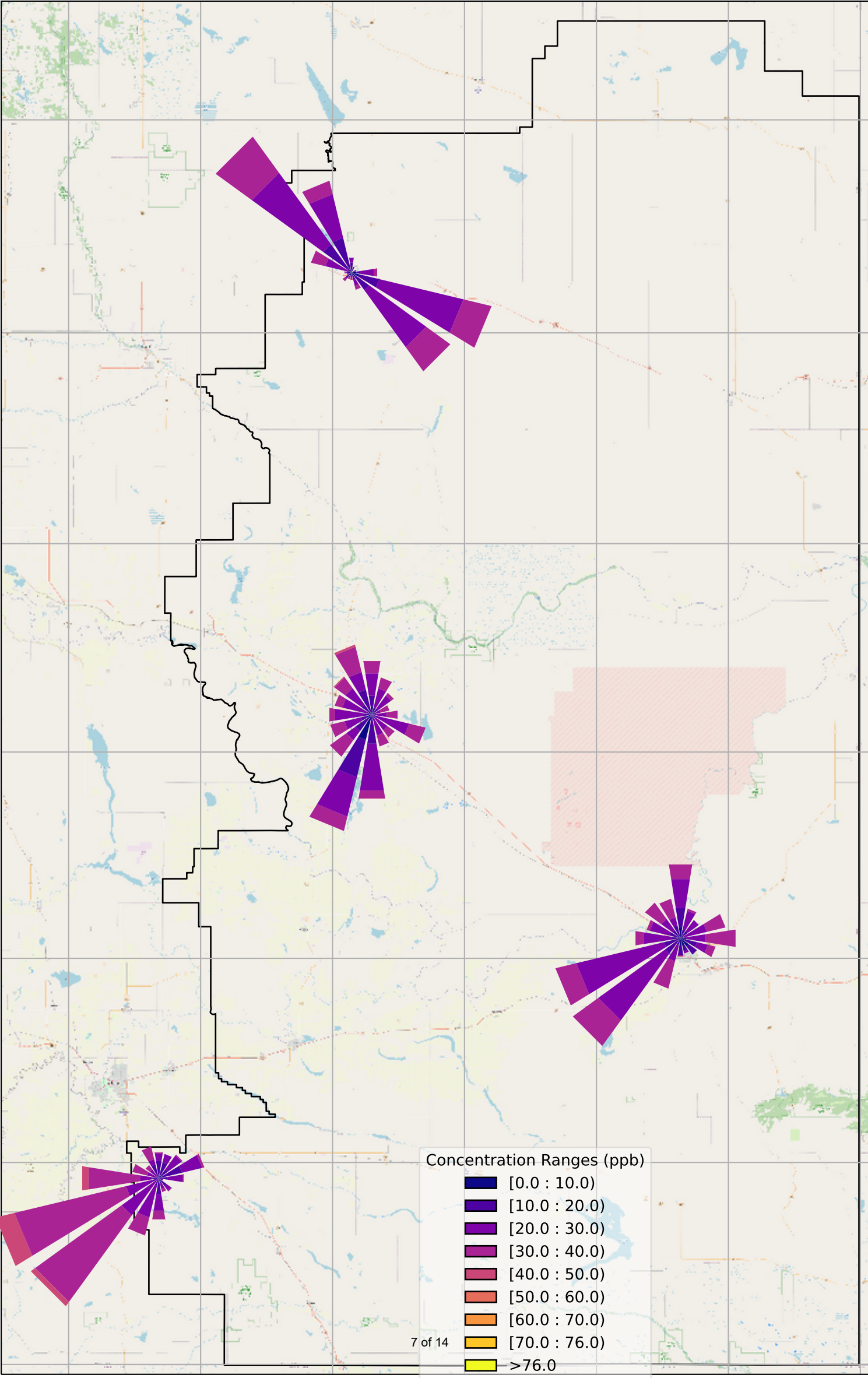
NO₂ AAAQO = 172 ppb





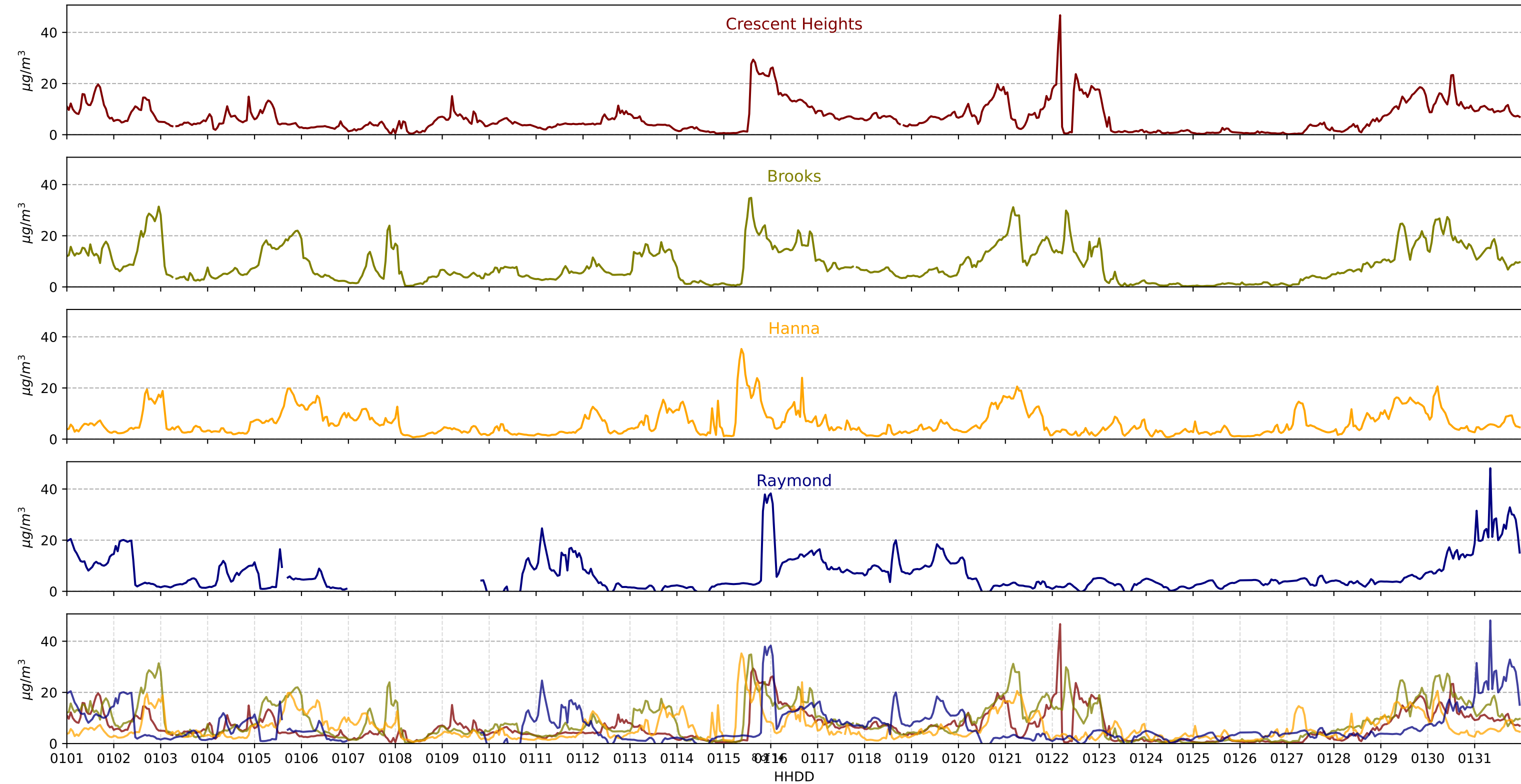
December 2024 O₃ vs NO₂

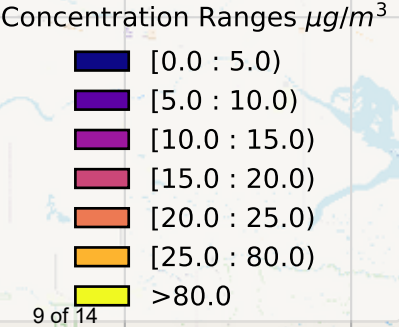
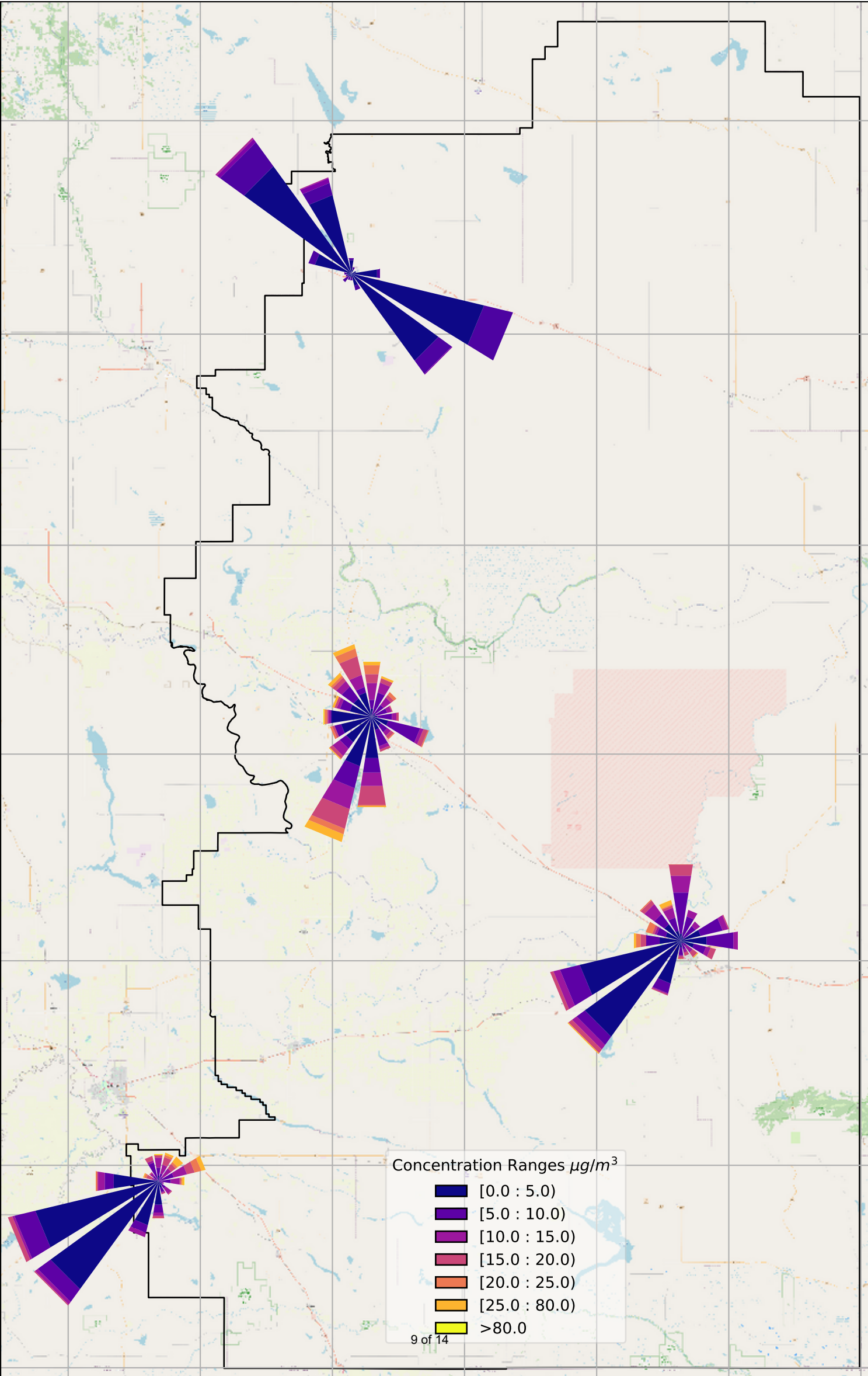




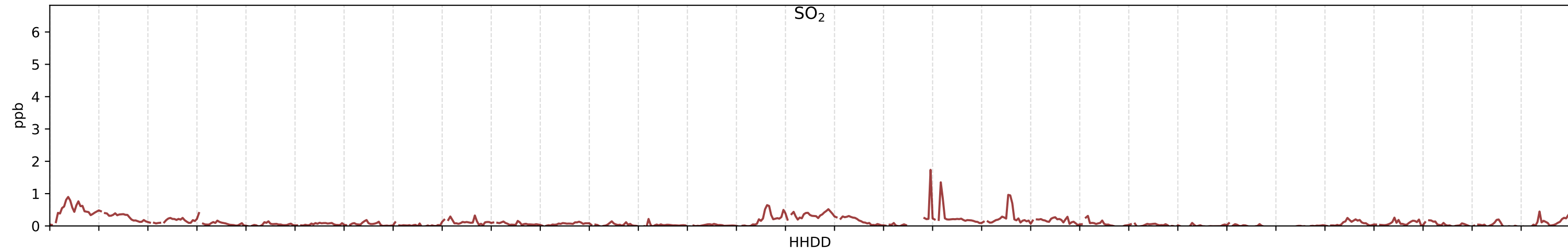
December 2024 PM_{2.5}

PM_{2.5} AAAQG = 80 $\mu\text{g}/\text{m}^3$





SO₂ AAAQO = 172 ppb



CO AAAQO = 13 ppm

