

**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 – July 2024**

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

**Continuous Monitoring – Crescent Heights, Brooks, Taber 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:**

The CO analyzer at Crescent Heights failed July 11 and remains offline awaiting parts for repair, with an uptime of 34.3% in July. **Reference # 432264.**

**AAAQO/G Exceedance Summary:**

There were 8 1-hour and 8 24-hour exceedances of the PM<sub>2.5</sub> AAAQO/G (80/29 µg/m<sup>3</sup>) in July.

Station Name	Date	Start Time	End Time	1-Hour PM <sub>2.5</sub> Concentration	Wind Direction	Wind Speed	Reference Number
		(MST)	(MST)	(µg/m <sup>3</sup> )		(km/h)	
Brooks	22-Jul-24	22:00	23:00	107	E	14.4	431408
Brooks	22-Jul-24	23:00	00:00	103	ESE	16.6	431408
Brooks	23-Jul-24	00:00	01:00	106	ESE	13.6	431408
Brooks	23-Jul-24	01:00	02:00	99	ESE	11.2	431408
Brooks	23-Jul-24	02:00	03:00	83	SE	9.5	431408
Crescent Heights	23-Jul-24	02:00	03:00	86	NE	6.0	431409
Crescent Heights	23-Jul-24	03:00	04:00	90	NE	6.1	431409
Crescent Heights	23-Jul-24	04:00	05:00	86	NE	5.8	431409

Station Name	Date	24-Hour PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )	Wind Direction	Wind Speed (km/h)	Reference Number
Brooks	21-Jul-24	38	E	2.0	431411
Crescent Heights	21-Jul-24	51	E	3.8	431409
Brooks	22-Jul-24	36	SE	7.4	431411
Crescent Heights	22-Jul-24	46	ESE	4.9	431409
Taber	22-Jul-24	35	WSW	11.7	431408
Brooks	23-Jul-24	35	SSW	10.4	431411
Crescent Heights	23-Jul-24	47	SW	4.7	431409
Crescent Heights	25-Jul-24	33	WSW	13.0	431409

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

X *Patrick Andersen*

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Patrick Andersen, B.Sc.  
WSP AQM Data Specialist

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Lenin Flores  
Project Manager

# July 2024 Monthly Ambient Air Quality Summary

Jul-24				Palliser Airshed Society		Maximum Recorded Values						Operational Time (%)	Calibration Date			
Pollutant (units)	Objectives			Station	Monthly Average	1-Hour Minimum	Exceedence			1-hr				24-hr / 8-hr		
	1-hr	24-hr	30-day				1-hr	24-hr	30-day	Conc	Day			Conc	Day	
SO <sub>2</sub> (ppb)	172	48	8	Crescent Heights	0.0	0.0	0	0	0	0.5	Jul-21 17:00	0.2	Jul-21	99.9	Jul-10	
NO (ppb)					0.5	0.0					8.1	Jul-08 23:00	1.1	Jul-31	99.6	Jul-09
NO <sub>2</sub> (ppb)	159				4.2	0.8	0				21.3	Jul-25 00:00	5.8	Jul-24	99.6	Jul-09
NO <sub>x</sub> (ppb)					4.7	0.7					27.6	Jul-23 08:00	6.5	Jul-08	99.6	Jul-09
O <sub>3</sub> (ppb)	76				36.9	7.4	0				73.1	Jul-24 17:00	49.8	Jul-23	99.7	Jul-09
CO (ppm)					0.1	0.0					0.3	Jul-04 22:00	0.2	Jul-04	34.3	Jul-10
CO 8-Hour (ppm)	5				-	0.0	0				0.3	Jul-05 00:00	-	-	34.7	-
THC (ppm)					2.1	2.0					2.7	Jul-08 06:00	2.3	Jul-21	99.7	Jul-09
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	29			15.7	1.8	3	4			90.4	Jul-23 04:00	50.5	Jul-21	99.7	Jun-12
ET (°C)					23.1	11.1					38.6	Jul-24 17:00	29.0	Jul-23	99.9	-
RH (%)					53.9	10.1					100.0	Jul-01 07:00	92.0	Jul-01	99.9	-
GSR (W/m <sup>2</sup> )					282.9	0.0					986.1	Jul-05 13:00	350.3	Jul-09	99.9	-
WSPD (km/h)					3.0	0.0					28.0	Jul-18 05:00	14.2	Jul-25	99.9	-
WDIR					SW										99.9	-

Pollutant (units)	Analyzer			Notes
	Make	Model		
SO <sub>2</sub>	TEI	43i		Incomplete data capture for 1 hour on July 30.
NO/NO <sub>2</sub> /NO <sub>x</sub>	TEI	42i		Manual span check July 23.
O <sub>3</sub>	TECO	49i		Incomplete data capture for 1 hour during July 10 calibrations.
CO	TEI	48i-TLE		Analyzer maintenance performed July 9, allowed to stabilize and calibrated July 10. Analyer failed and was removed from service July 11, awaiting parts for repair.
THC	TECO	51C-LT		Incomplete data capture for 1 hour during July 10 calibrations.
PM <sub>2.5</sub>	SHARP	5030		Incomplete data capture for 1 hour during July 10 calibrations.
ET/RH	RMYoung	41382VC		
GSR	EPPLEY			
WS/WD	RMYoung	5305-10		

Jul-24				Palliser Airshed Society		Maximum Recorded Values						Operational Time (%)	Calibration Date			
Pollutant (units)	Objectives			Station	Monthly Average	1-Hour Minimum	Exceedence			1-hr				24-hr / 8-hr		
	1-hr	24-hr	30-day				1-hr	24-hr	30-day	Conc	Day			Conc	Day	
NO (ppb)				Taber	0.8	0.0				15.7	Jul-23 07:00	1.6	Jul-03	100.0	Jul-24	
NO <sub>2</sub> (ppb)	159				2.2	0.0	0				22.0	Jul-23 07:00	3.9	Jul-18	100.0	Jul-24
NO <sub>x</sub> (ppb)					3.0	0.0					37.7	Jul-23 07:00	5.2	Jul-30	100.0	Jul-24
O <sub>3</sub> (ppb)	76				32.9	5.7	0				61.9	Jul-21 15:00	45.5	Jul-25	100.0	Jul-24
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	29			12.1	0.3	0	1			52.6	Jul-24 16:00	35.3	Jul-22	100.0	Apr-24
ET (°C)					22.1	10.2					36.3	Jul-24 17:00	27.0	Jul-11	100.0	-
RH (%)					55.1	13.3					93.1	Jul-15 05:00	76.8	Jul-03	100.0	-
WSPD (km/h)					3.0	0.2					23.6	Jul-25 14:00	13.3	Jul-31	100.0	-
WDIR					WSW										100.0	-

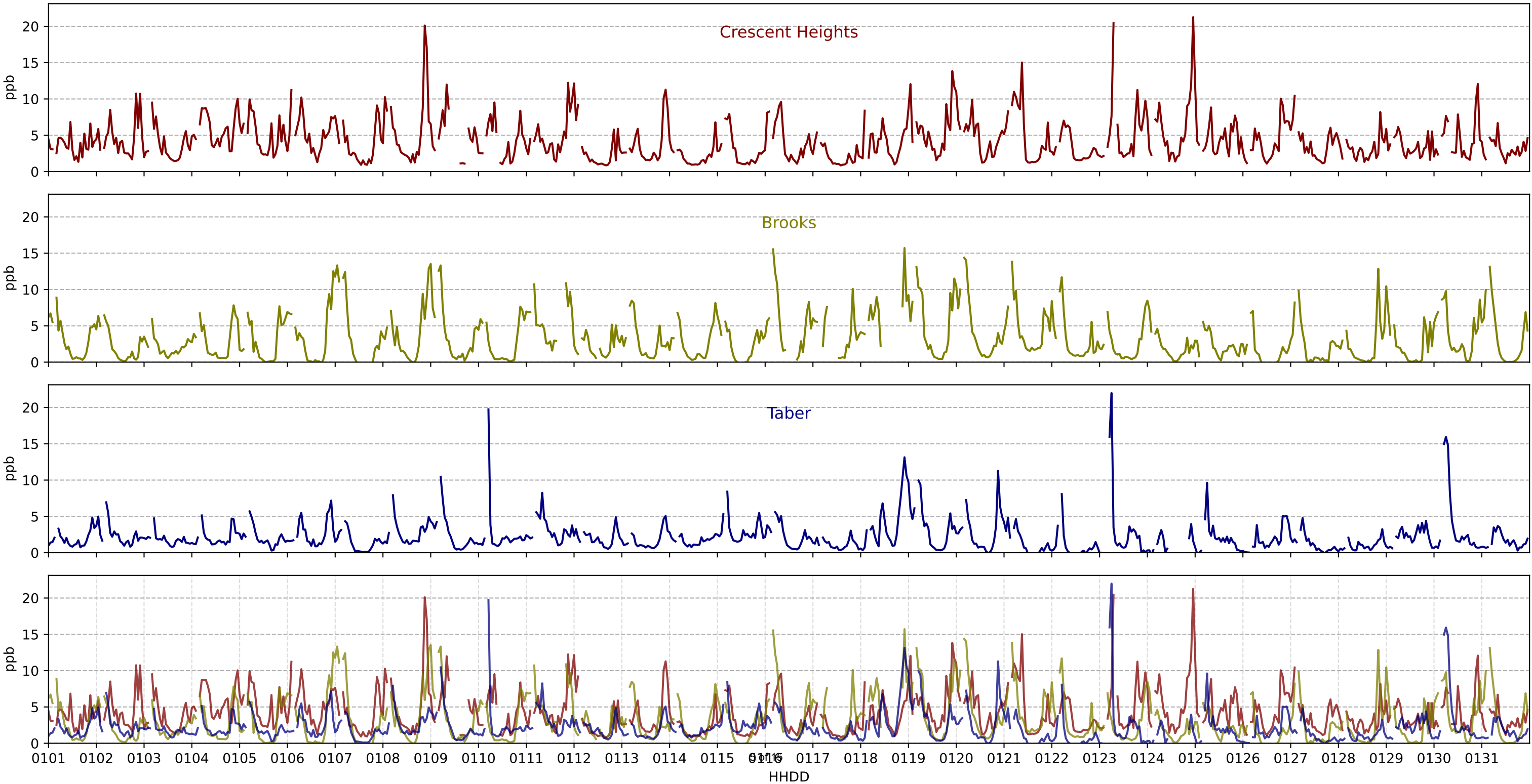
Pollutant (units)	Analyzer			Notes
	Make	Model		
NO/NO <sub>2</sub> /NO <sub>x</sub>	API	42i		
O <sub>3</sub>	API	T400		
PM <sub>2.5</sub>	SHARP	5030		
ET/RH	Vaisala	WXT520		
WS/WD	Vaisala	WXT520		

Jul-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)				Brooks	1.0	0.0				15.4	Jul-07 06:00	1.8	Jul-07	98.0	Jul-18			
NO <sub>2</sub> (ppb)	159				3.2	0.0	0			15.7	Jul-18 23:00	5.6	Jul-11	98.0	Jul-18			
NO <sub>x</sub> (ppb)					4.2	0.0				27.8	Jul-07 06:00	6.9	Jul-16	98.0	Jul-18			
O <sub>3</sub> (ppb)	76				34.0	1.7	0			71.1	Jul-23 17:00	47.6	Jul-23	98.7	Jul-18			
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	29			13.3	0.9	5	3		106.5	Jul-22 23:00	38.3	Jul-21	100.0	Apr-25			
ET (°C)					21.6	6.4				36.8	Jul-23 16:00	26.6	Jul-23	100.0	-			
RH (%)					51.2	9.7				90.1	Jul-01 04:00	70.4	Jul-01	100.0	-			
WSPD (km/h)					2.1	0.1				28.7	Jul-25 14:00	14.8	Jul-03	100.0	-			
WDIR					W									100.0	-			

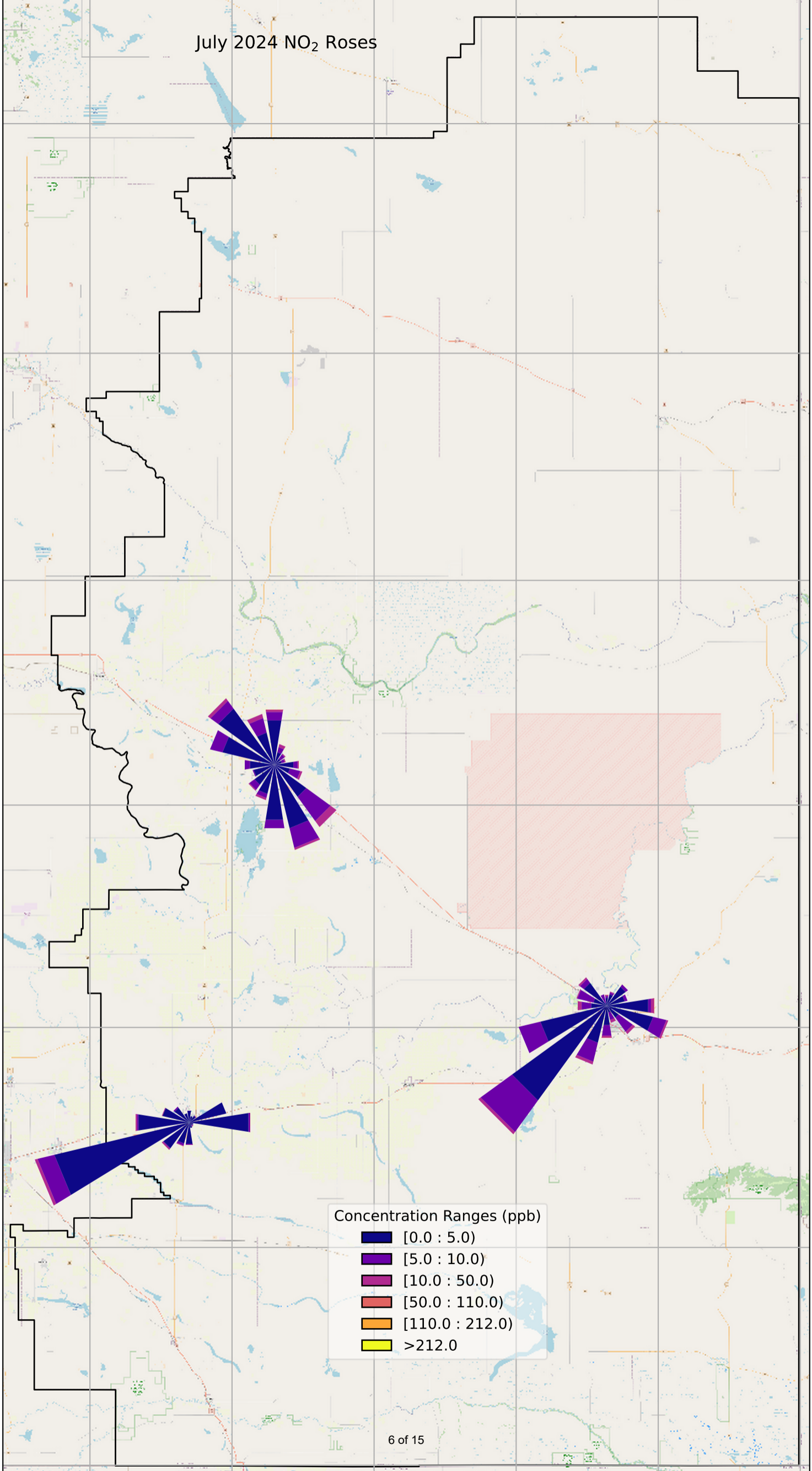
Pollutant (units)	Analyzer			Notes
	Make		Model	
NO/NO <sub>2</sub> /NO <sub>x</sub>	API		42i	Analyzer malfunctioned July 11, invalidating 4 hours of data. Manual span check July 12. Attempted calibration July 16 was aborted due to elevated station temperature. Attempted calibration was aborted due to zero air system failure. System was changed July 18 and calibrations successfully completed.
O <sub>3</sub>	API		T400	Per NO <sub>x</sub> notes, attempted calibrations July 16 and 17 were aborted. Calibration successfully completed July 18.
PM <sub>2.5</sub>	SHARP		5030	
ET/RH	Vaisala		WXT520	
WS/WD	Vaisala		WXT520	

# July 2024 NO<sub>2</sub>

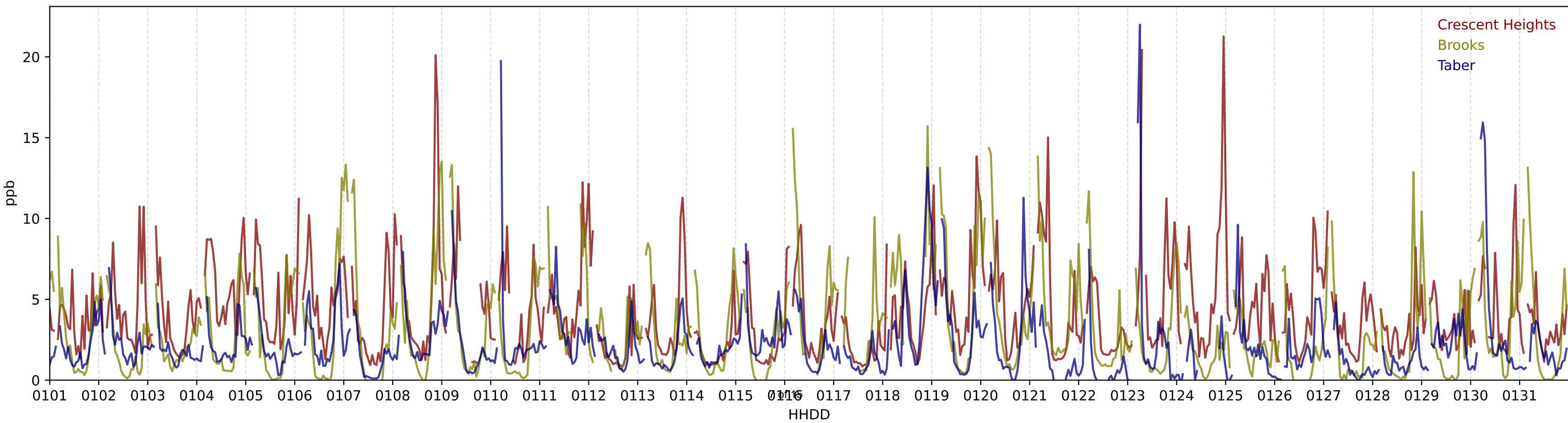
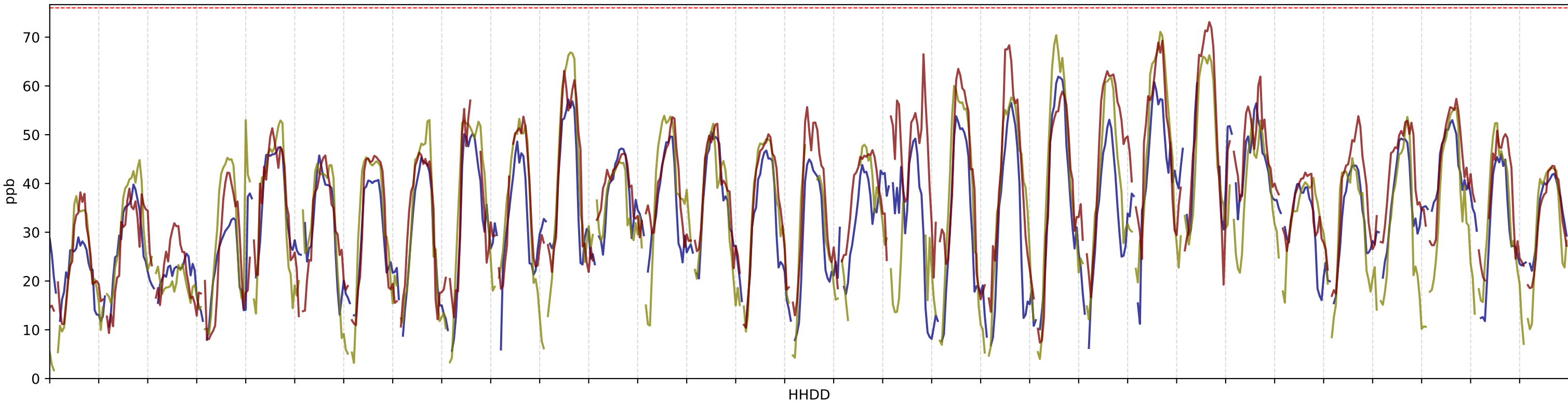
NO<sub>2</sub> AAAQO = 172 ppb



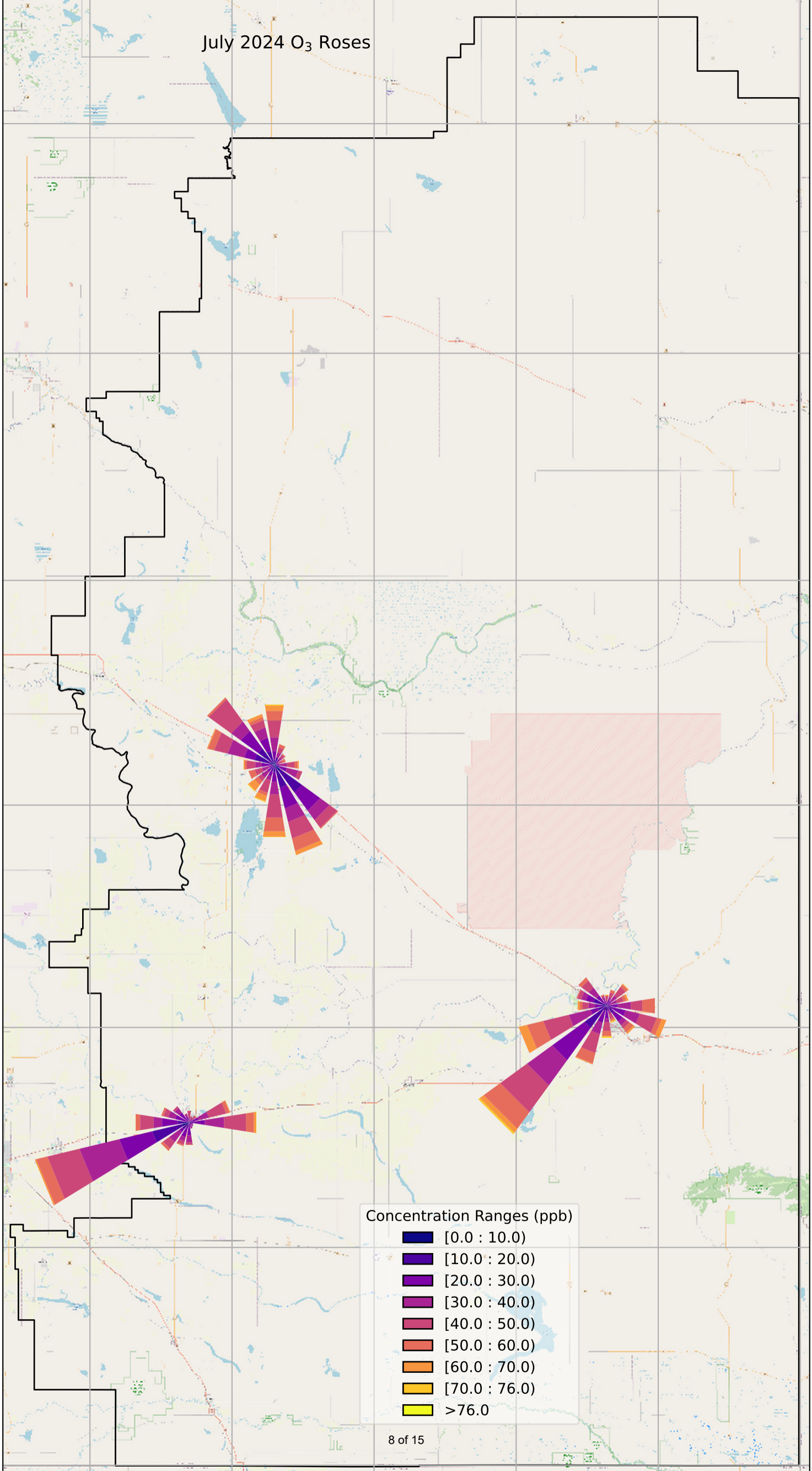
# July 2024 NO<sub>2</sub> Roses



July 2024 O<sub>3</sub> vs NO<sub>2</sub>



July 2024 O<sub>3</sub> Roses



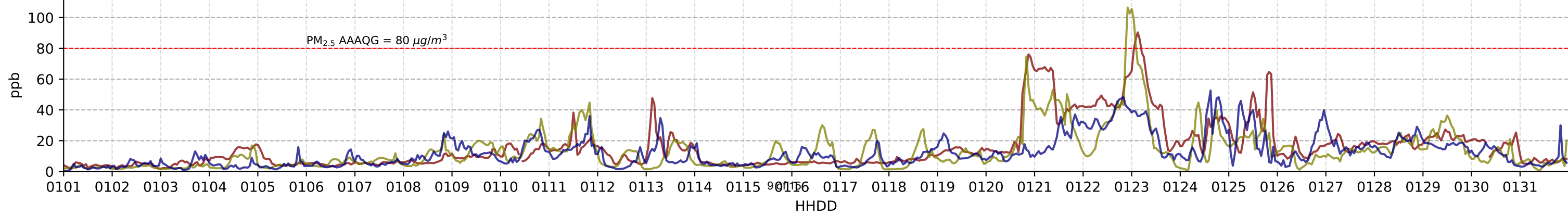
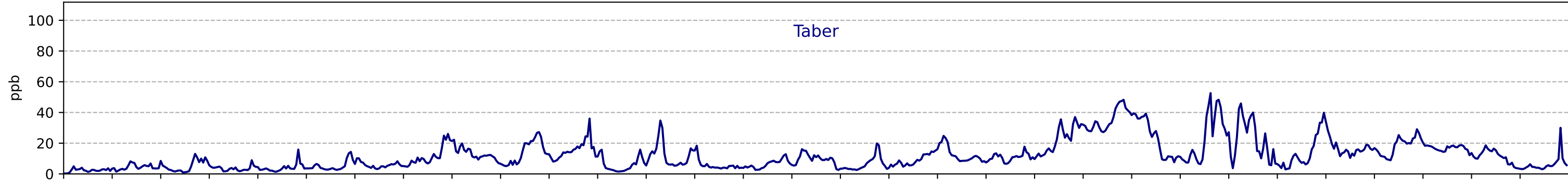
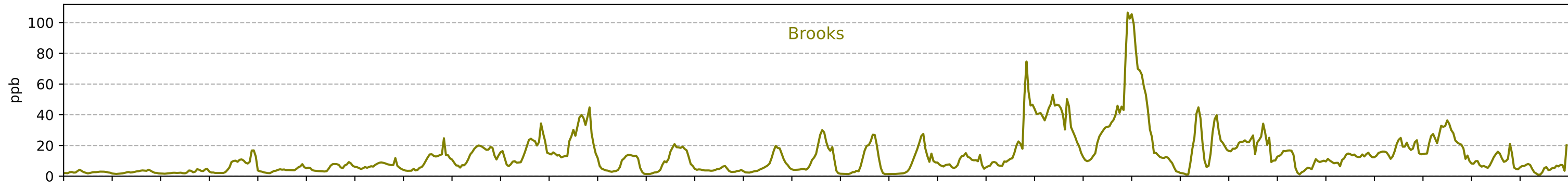
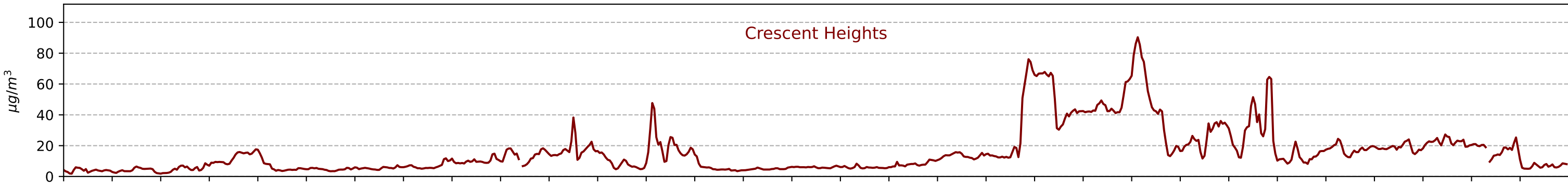
Concentration Ranges (ppb)

- [0.0 : 10.0)
- [10.0 : 20.0)
- [20.0 : 30.0)
- [30.0 : 40.0)
- [40.0 : 50.0)
- [50.0 : 60.0)
- [60.0 : 70.0)
- [70.0 : 76.0)
- >76.0

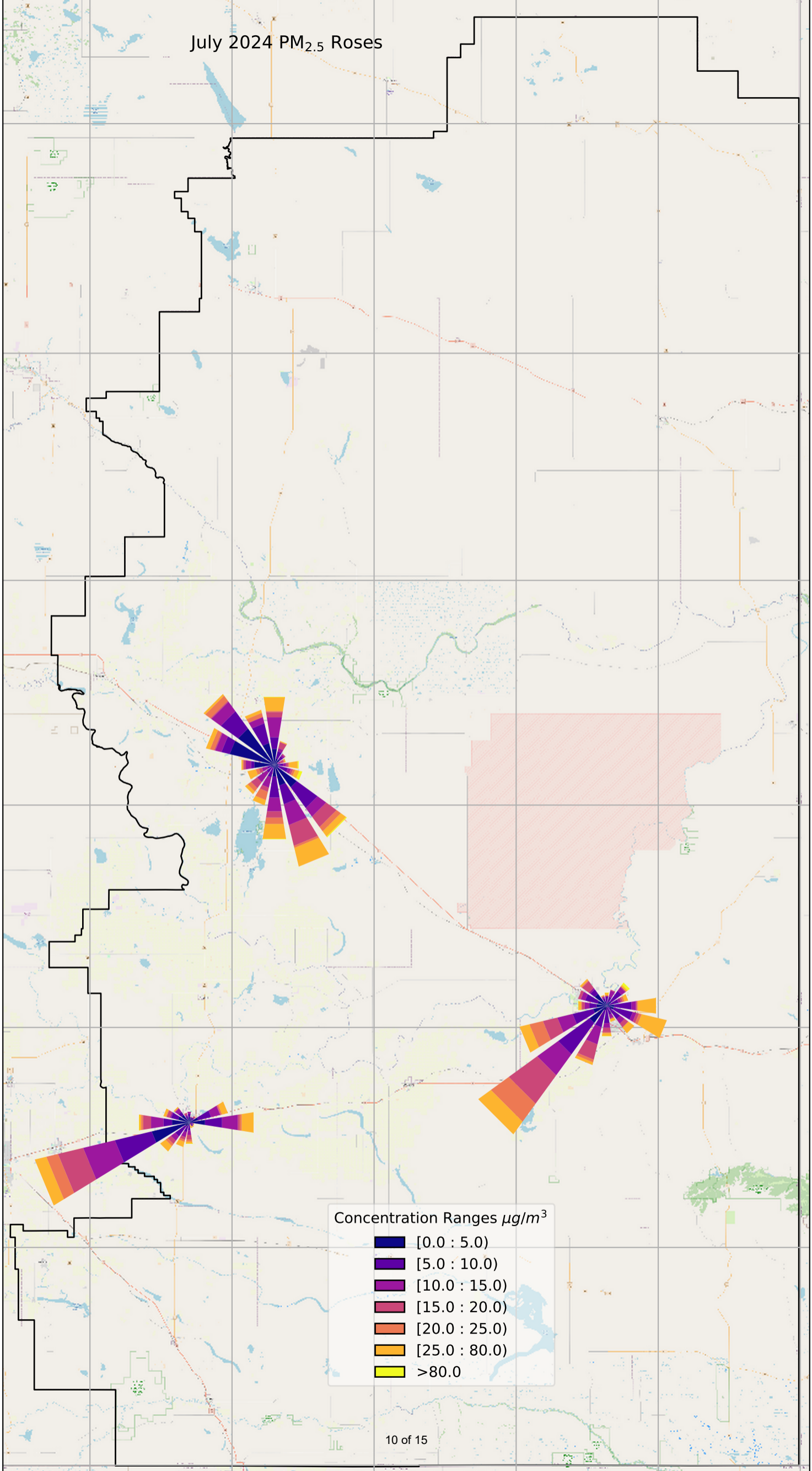


# July 2024 PM<sub>2.5</sub>

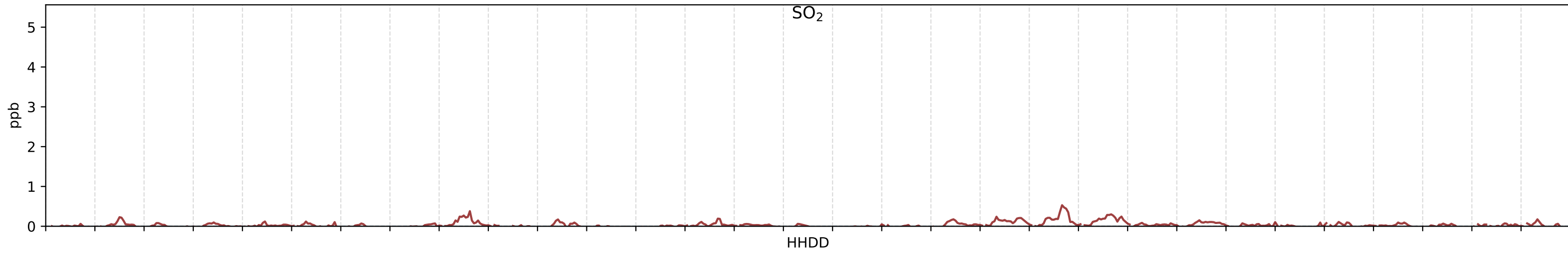
PM<sub>2.5</sub> AAAQG = 80  $\mu\text{g}/\text{m}^3$



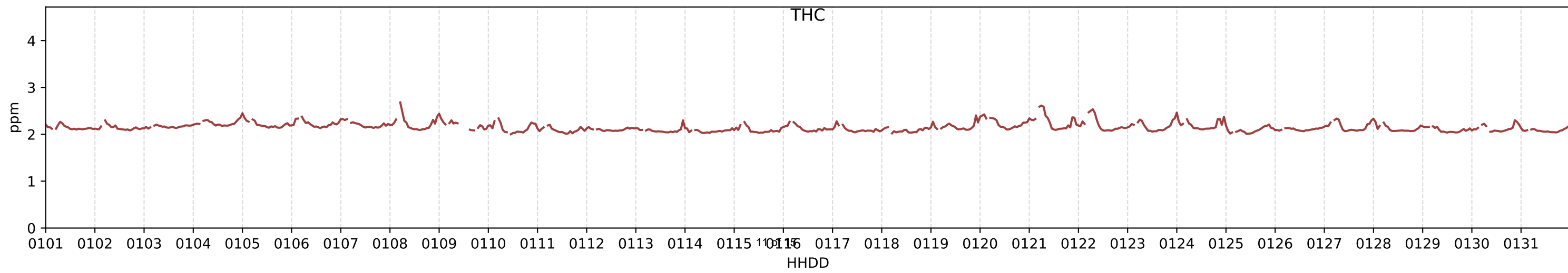
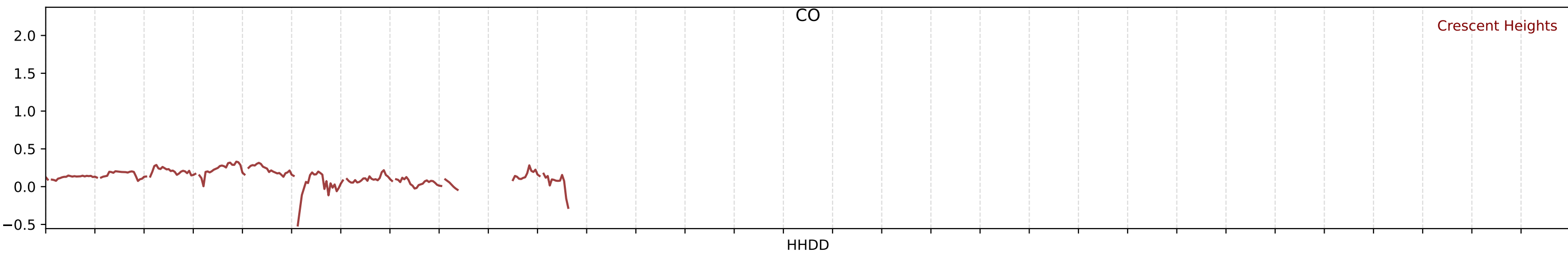
July 2024 PM<sub>2.5</sub> Roses



SO<sub>2</sub> AAAQO = 172 ppb

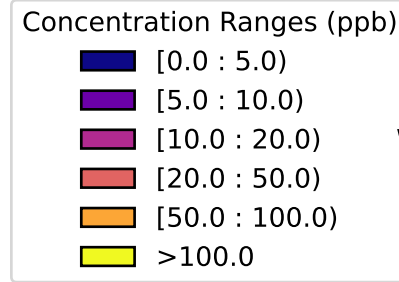
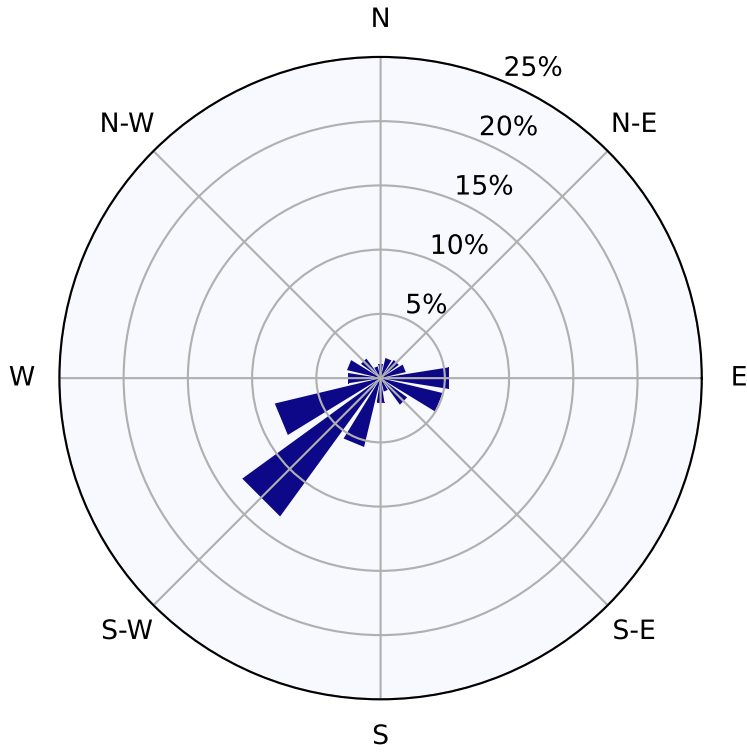


CO AAAQO = 13 ppm

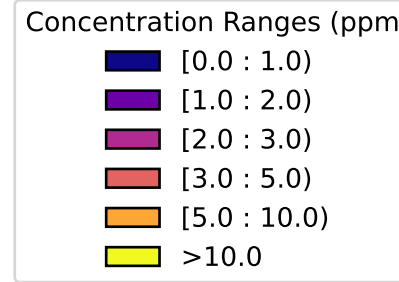
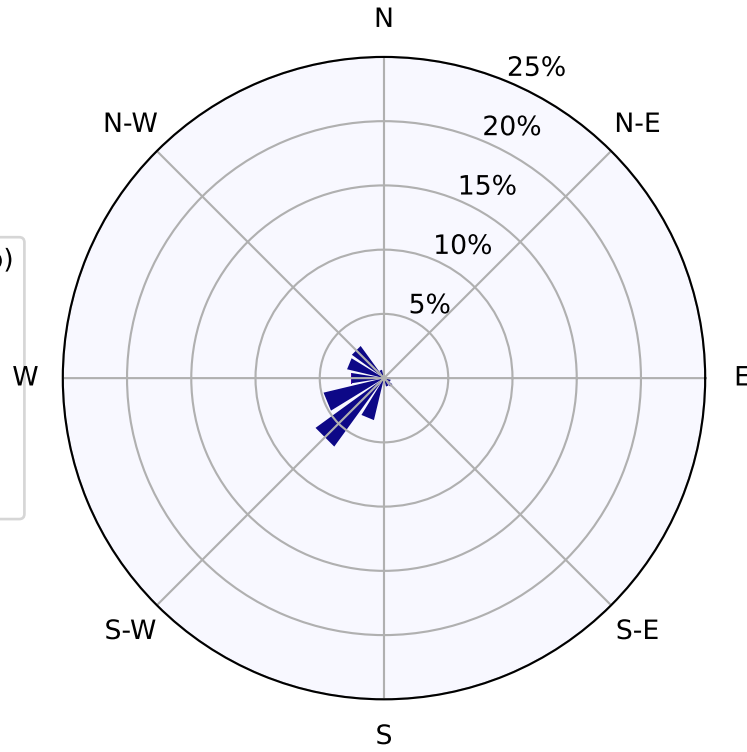


July 2024

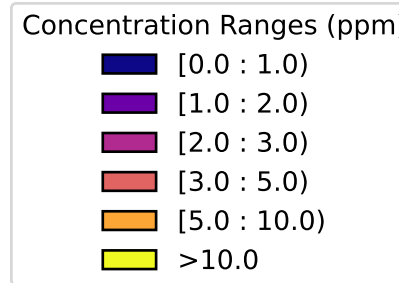
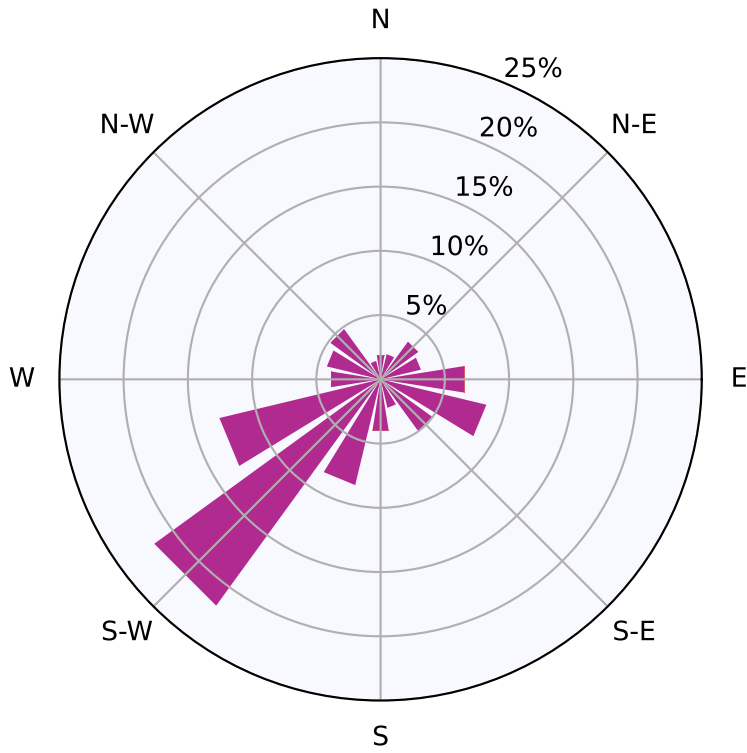
Crescent Heights SO<sub>2</sub>

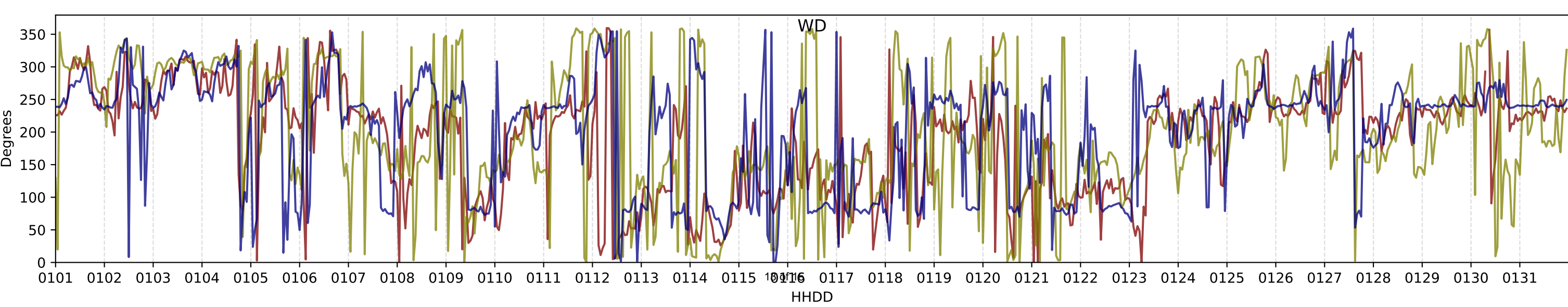
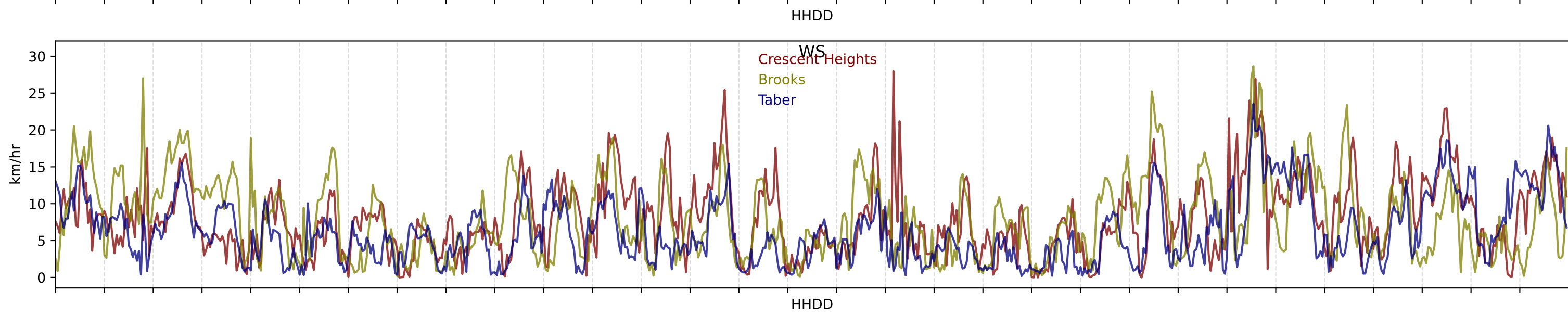
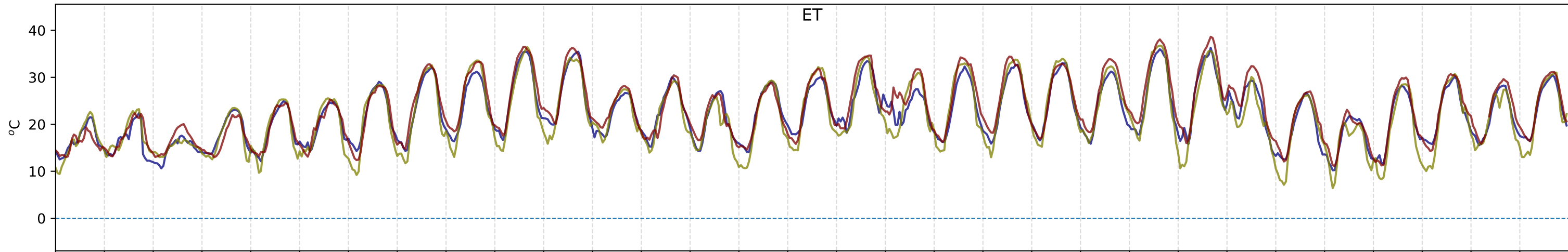


Crescent Heights CO



Crescent Heights THC





July 2024 WS Roses

