

Weather and Air Quality: Reflection and Outlook During Smoke Conditions

Presenter: Megan Christiansen
Date: August 28, 2023

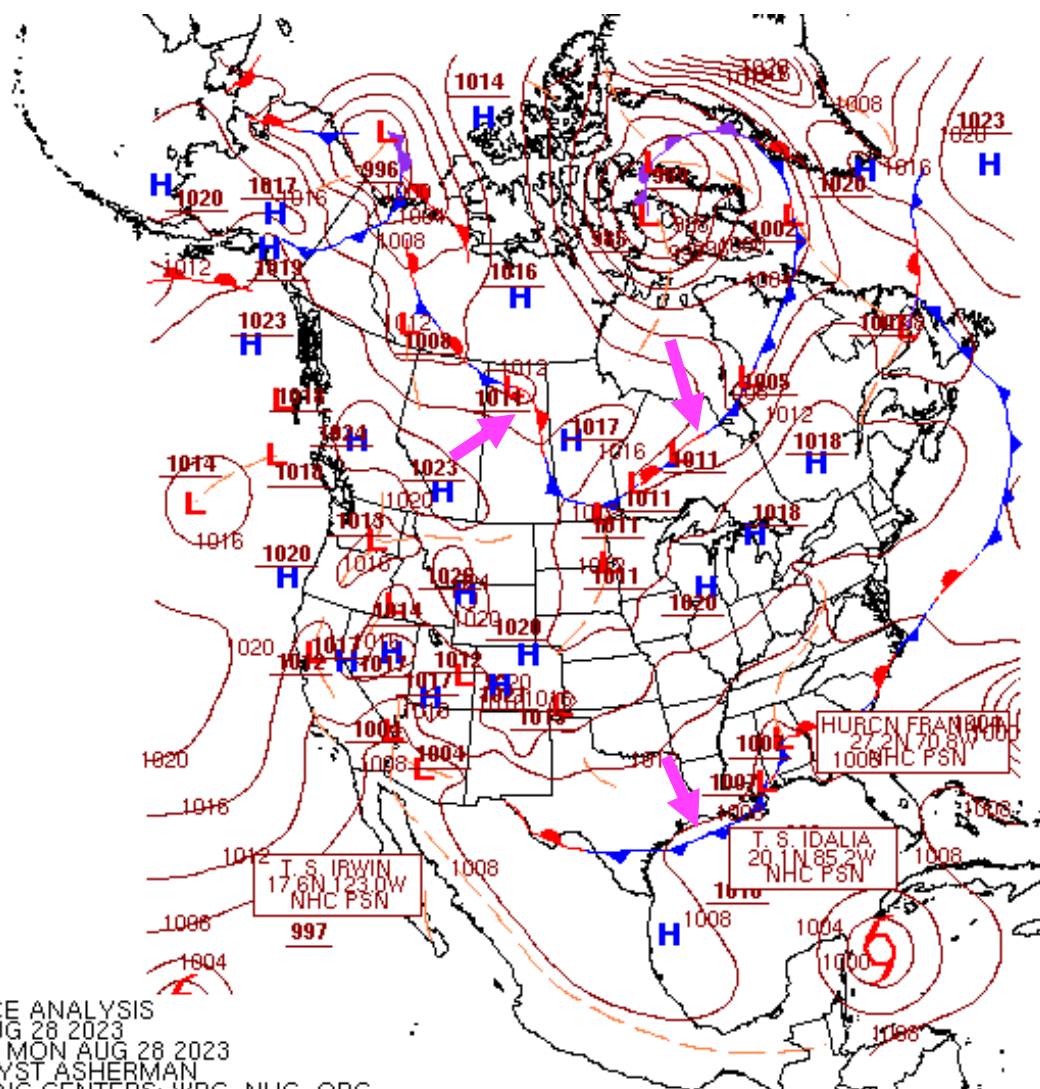


FireAQ is funded by NASA HAQ. We thank NASA GMAO and
NRL for the model data products.

EARTH SCIENCE
APPLIED SCIENCES

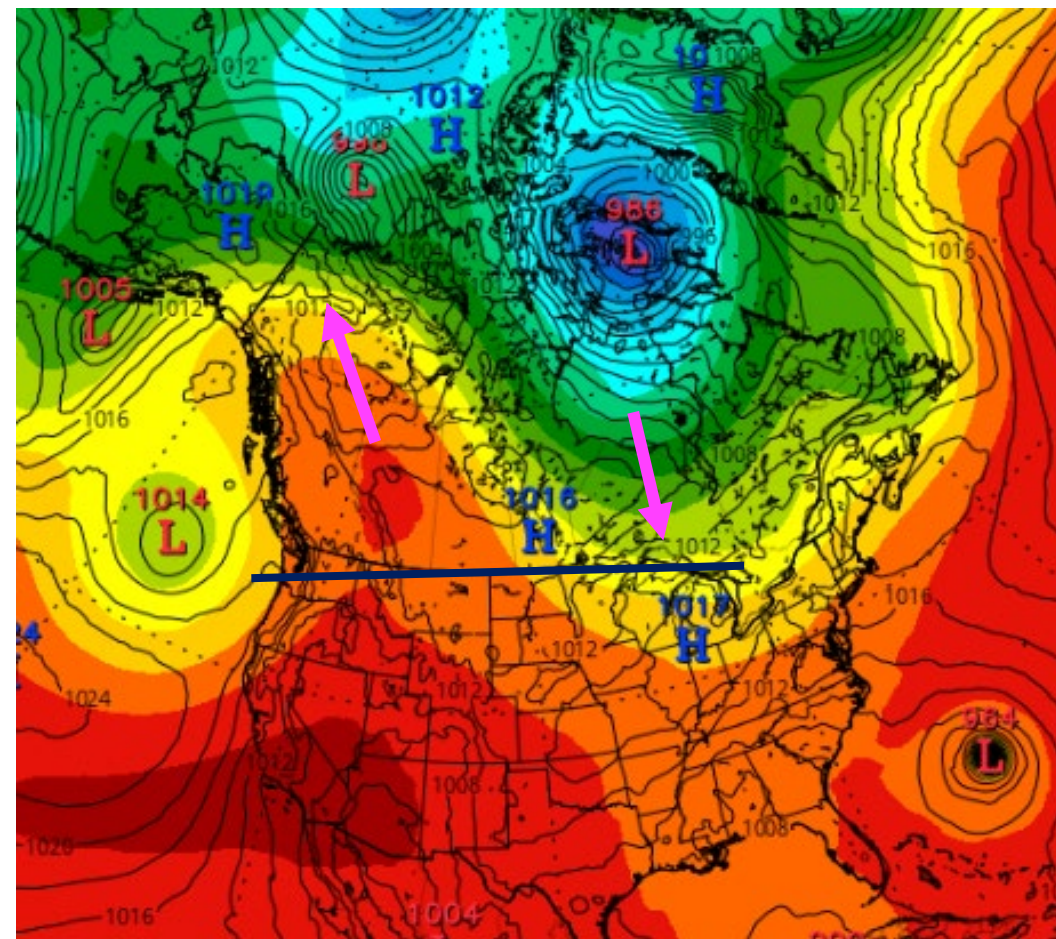
Current Status: August 28, 2023

Surface Analysis

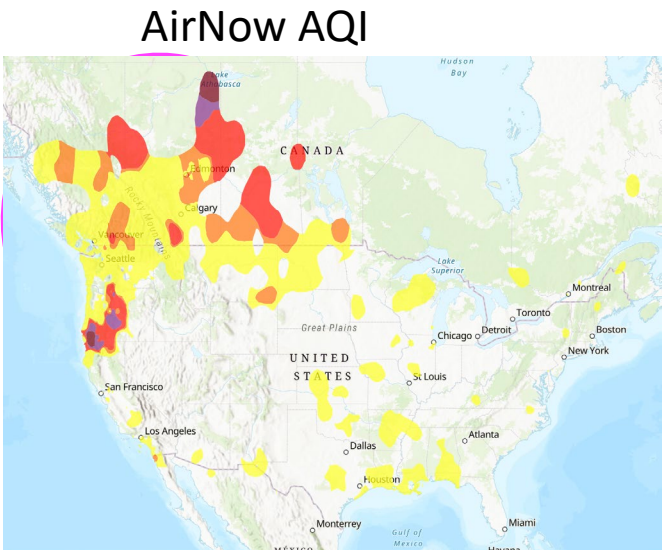
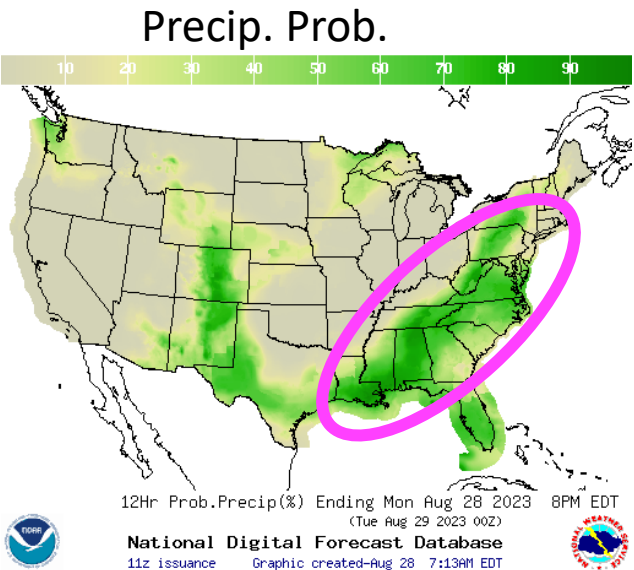
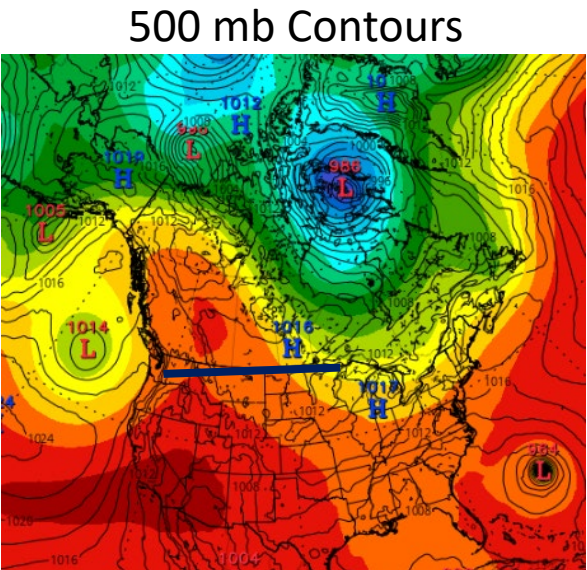
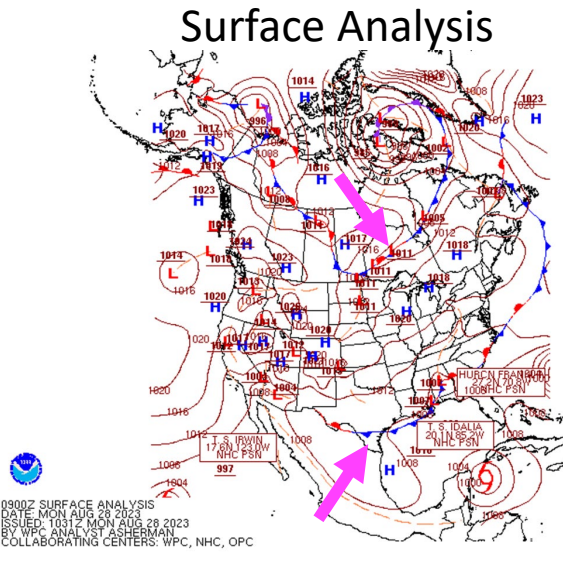


0900Z SURFACE ANALYSIS
DATE: MON AUG 28 2023
ISSUED: 1031Z MON AUG 28 2023
BY WPC ANALYST ASHERMAN
COLLABORATING CENTERS: WPC, NHC, OPC

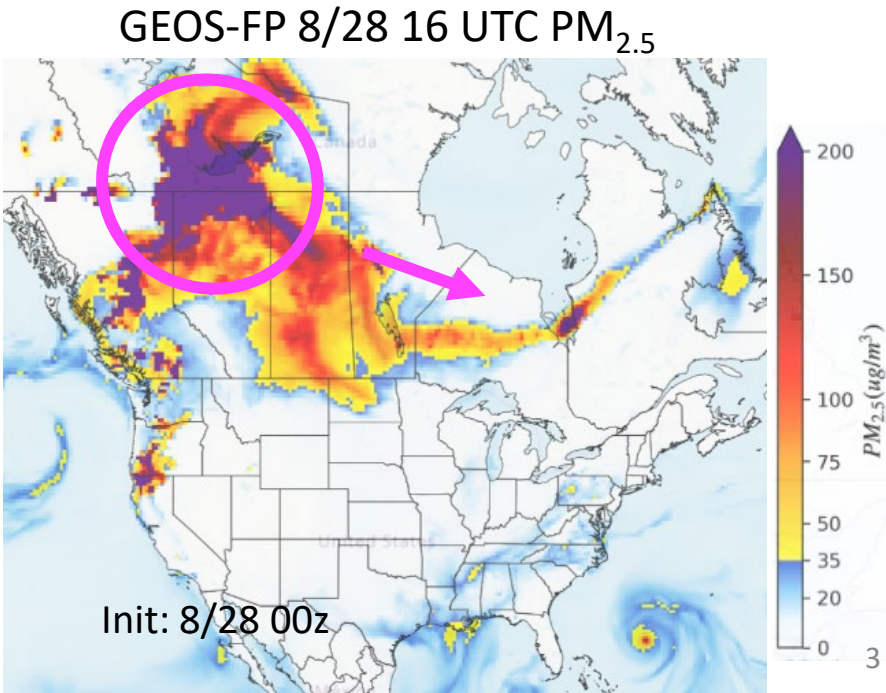
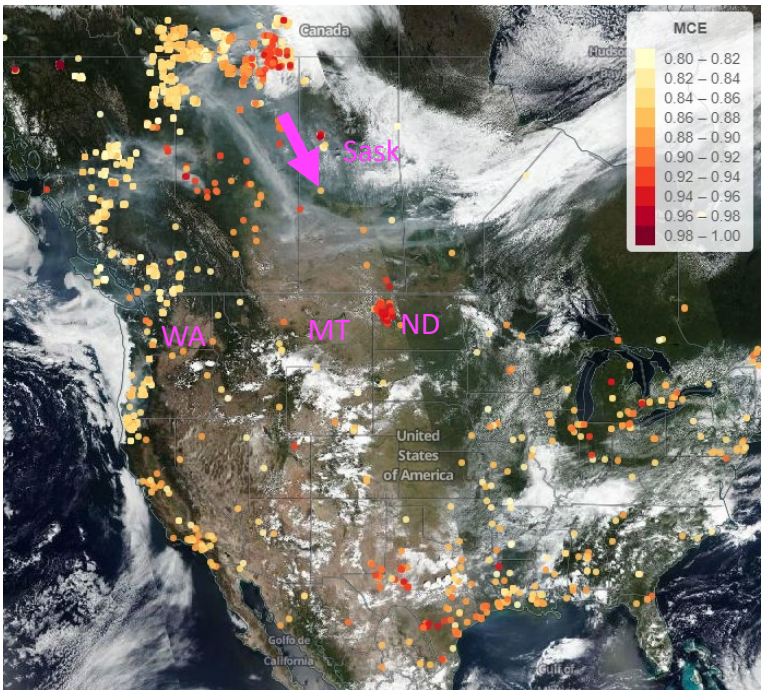
500 mb Contours



Current Status: August 28, 2023

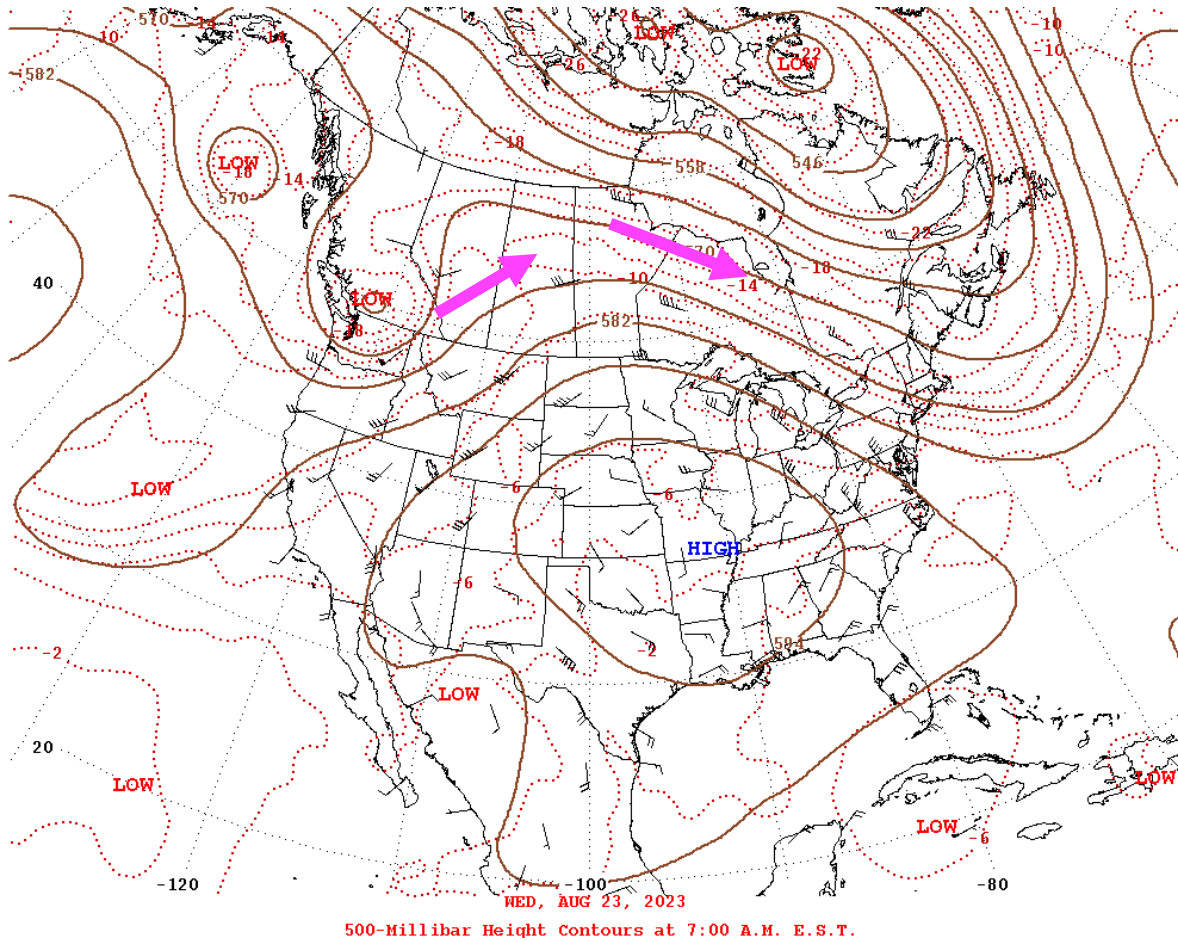


FILDA2 MCE
(Sun 8/27)

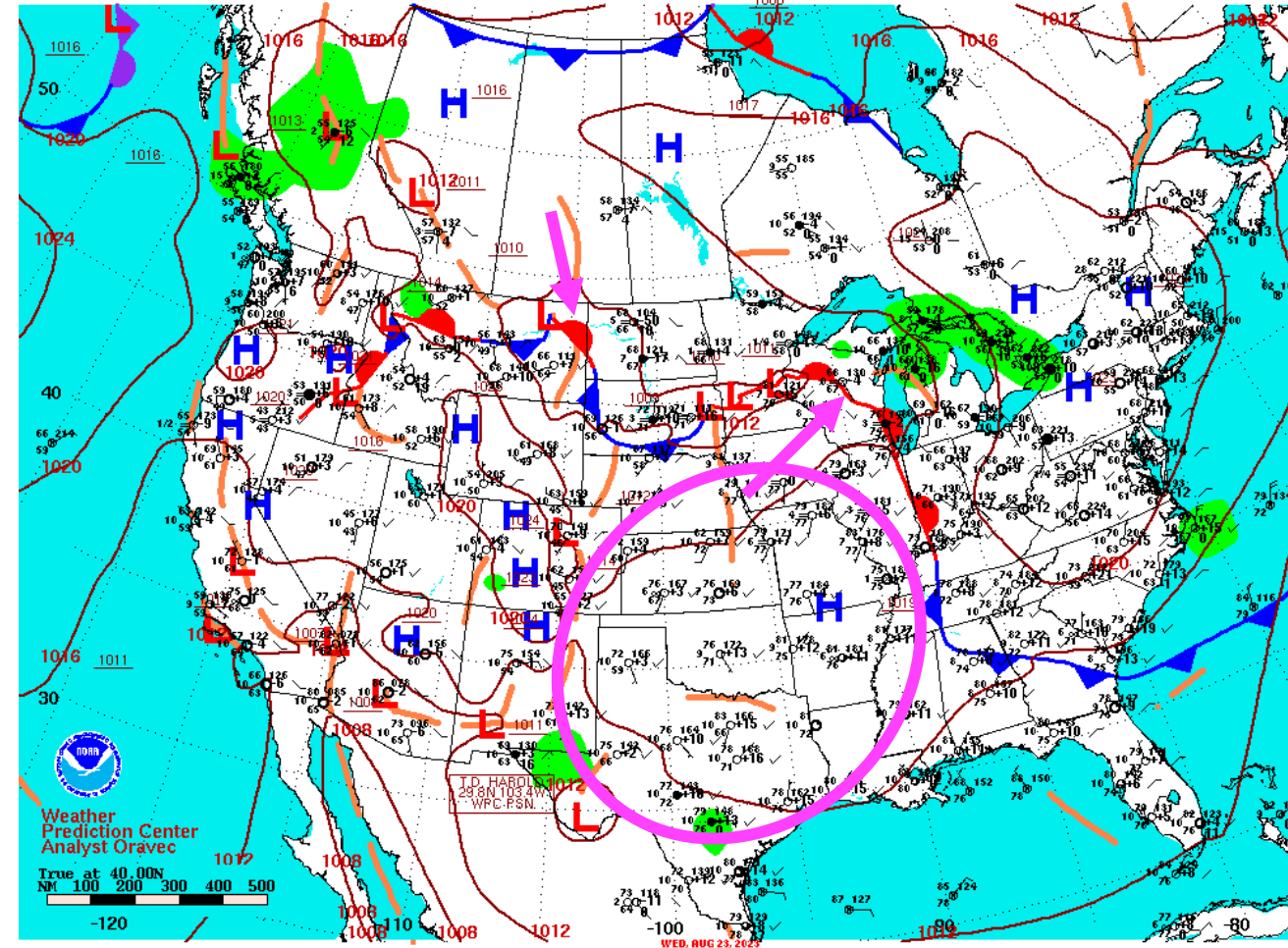


Air Quality Reflection: Wednesday August 23, 2023

500 hPa Contours



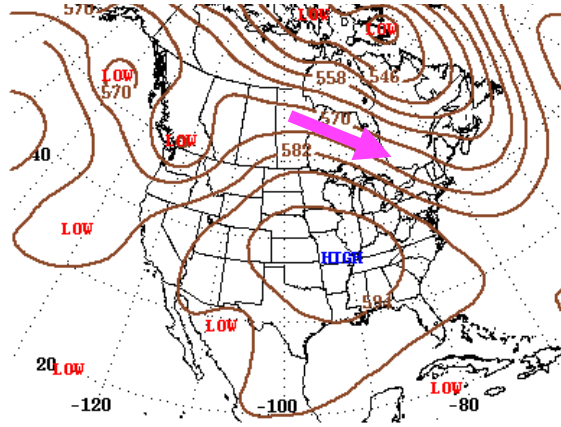
Surface Weather



Surface Weather Map and Station Weather at 7:00 A.M. E.S.T.

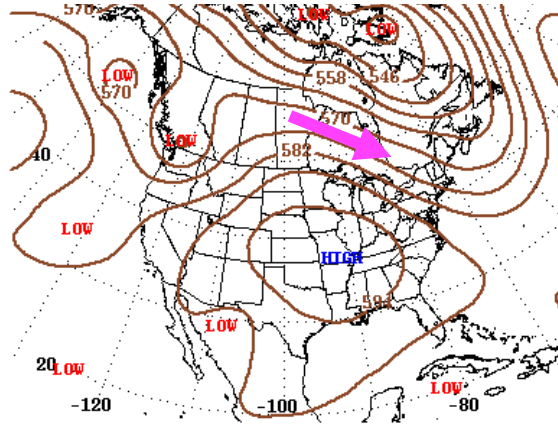
Air Quality Reflection: Wednesday August 23, 2023

500 hPa Contours



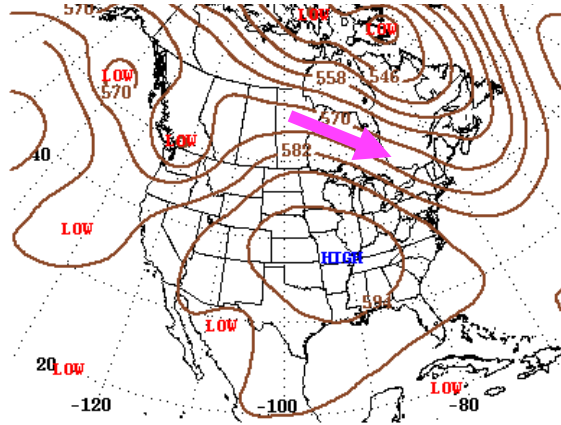
Air Quality Reflection: Wednesday August 23, 2023

500 hPa Contours



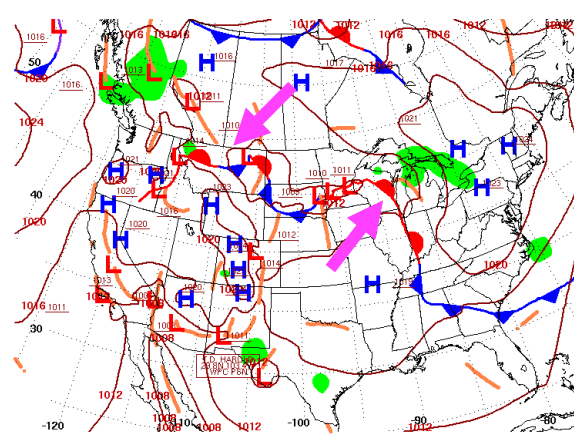
Air Quality Reflection: Wednesday August 23, 2023

500 hPa Contours



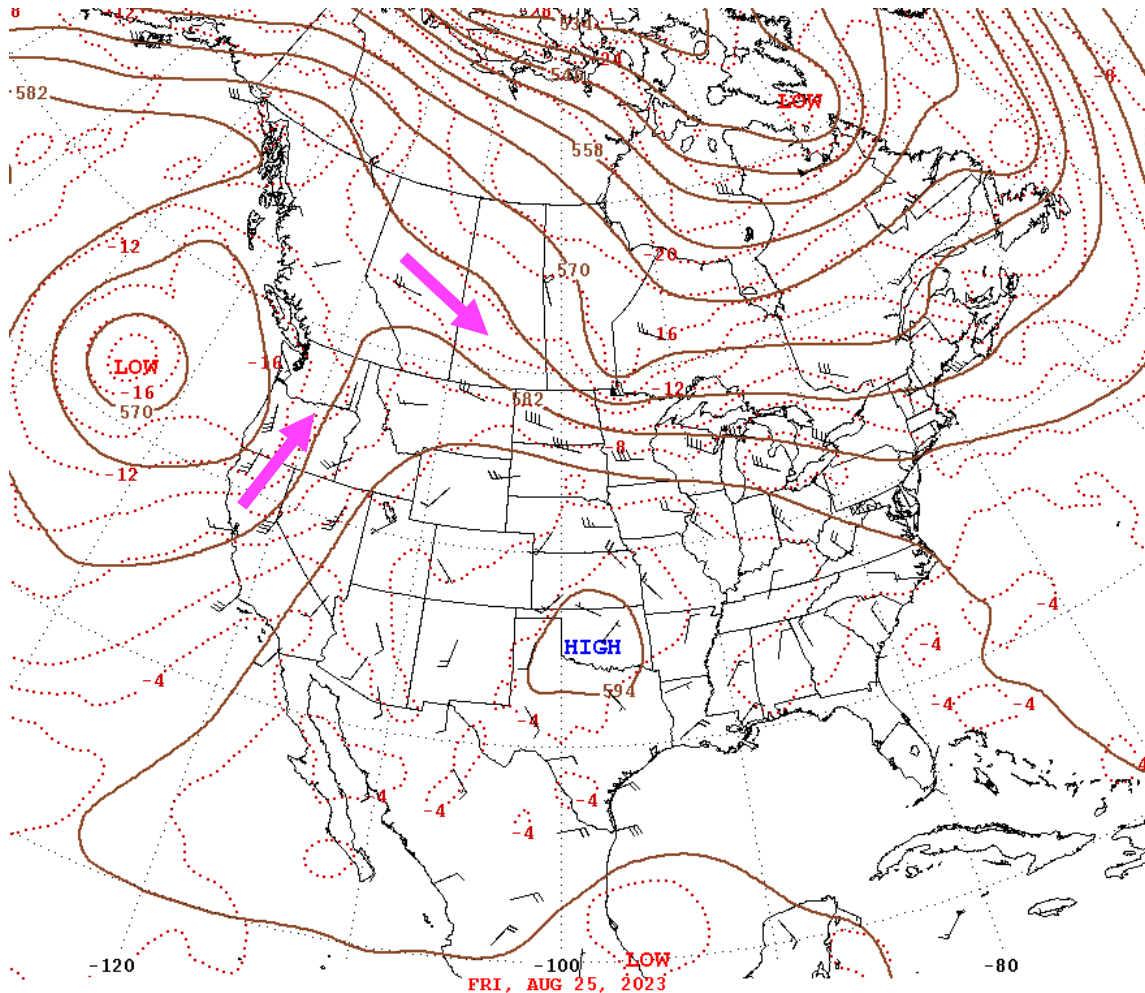
500-Millibar Height Contour at 7:00 A.M. E.S.T.

Surface Weather



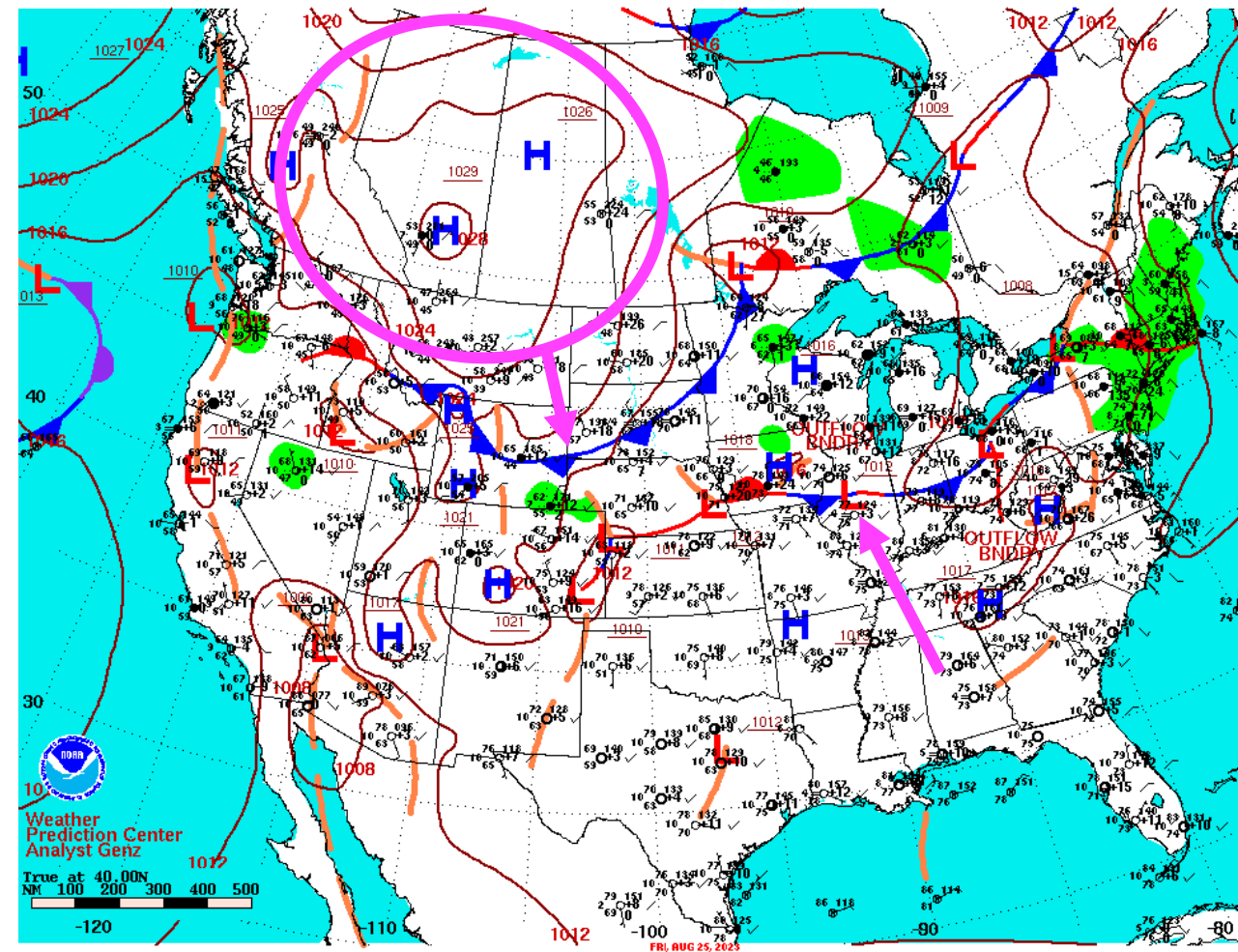
Air Quality Reflection: Friday August 25, 2023

500 hPa Contours



500-Millibar Height Contours at 7:00 A.M. E.S.T.

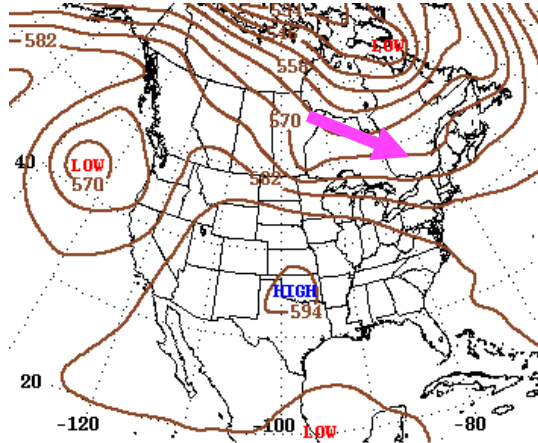
Surface Weather



Surface Weather Map and Station Weather at 7:00 A.M. E.S.T.

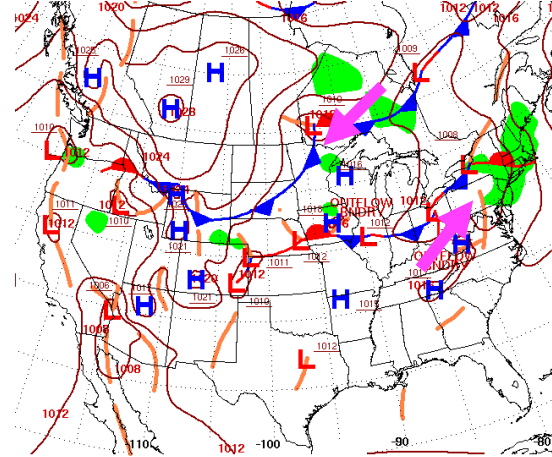
Air Quality Reflection: Friday August 25, 2023

500 hPa Contours



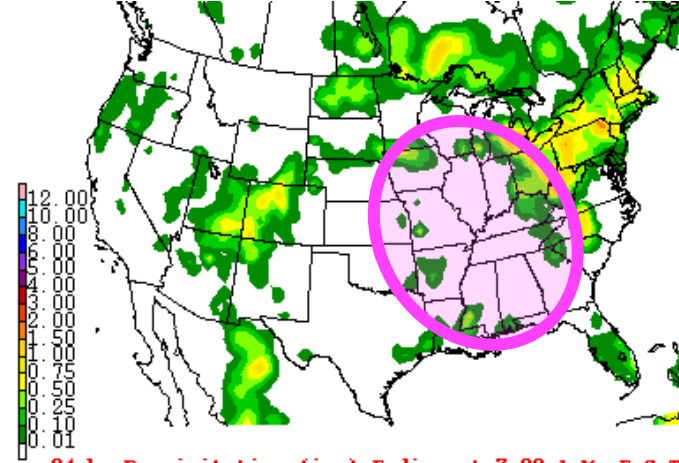
500-Millibar Height Contour at 7:00 A.M. E.S.T.

Surface Weather



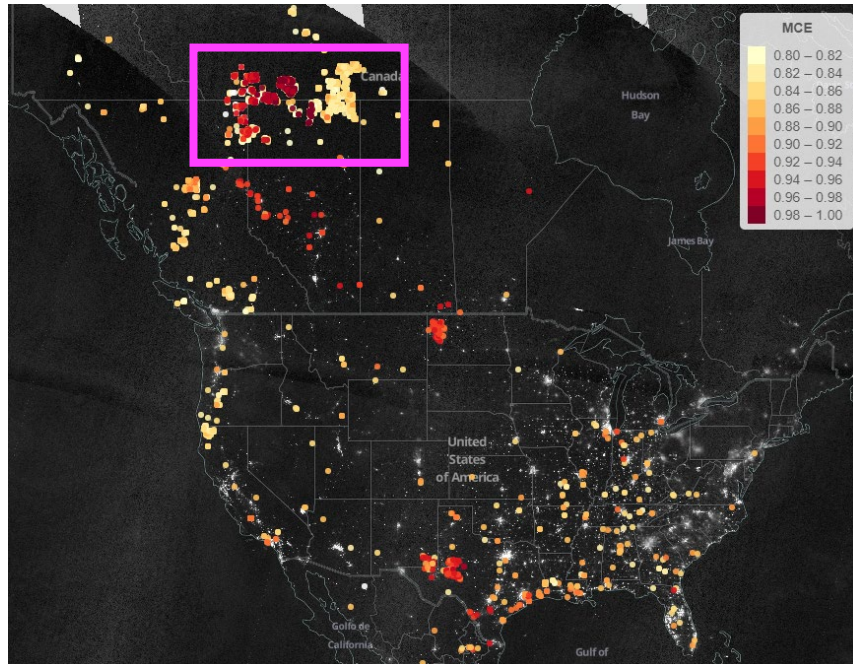
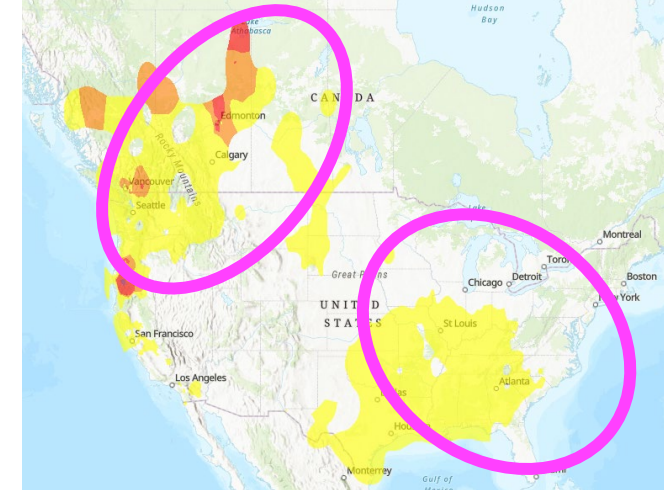
Surface Weather Map at 7:00 A.M. E.S.T.

Precipitation

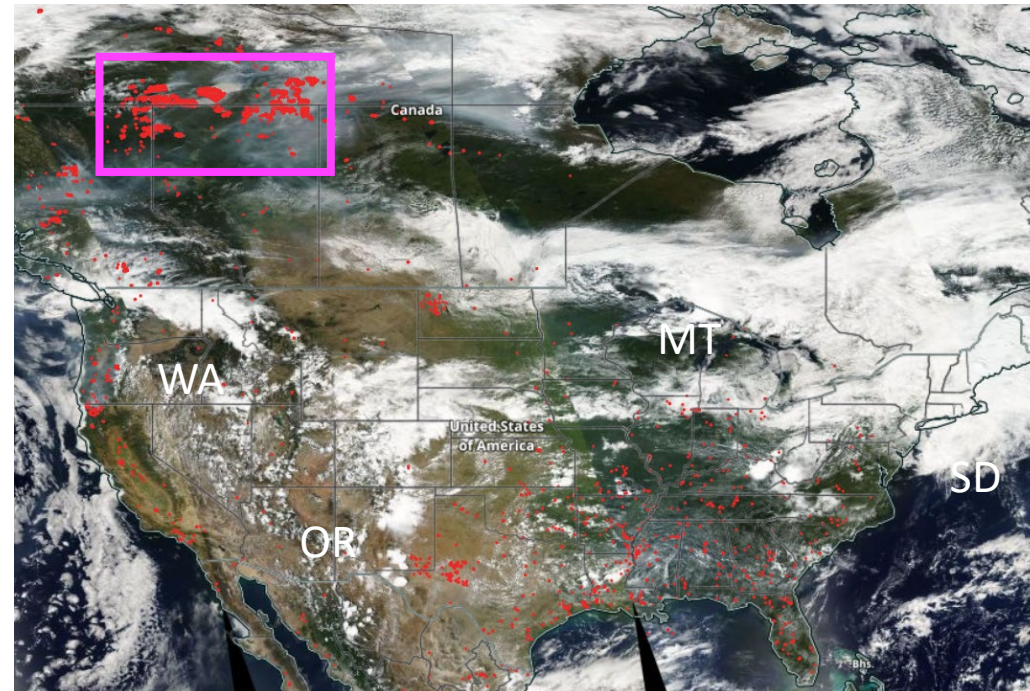


24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

AirNow AQI



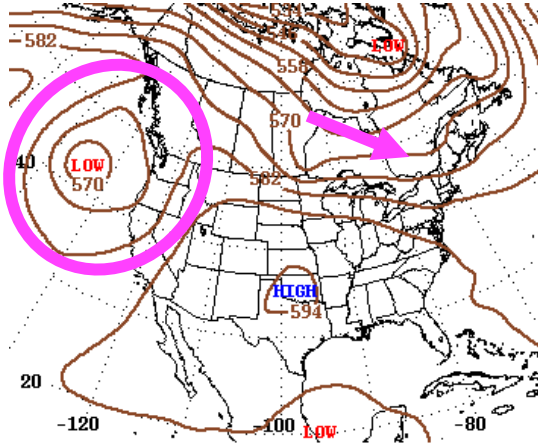
FILDA2 fire anomalies (displaying MCE)



NASA Suomi
Fire Anomalies

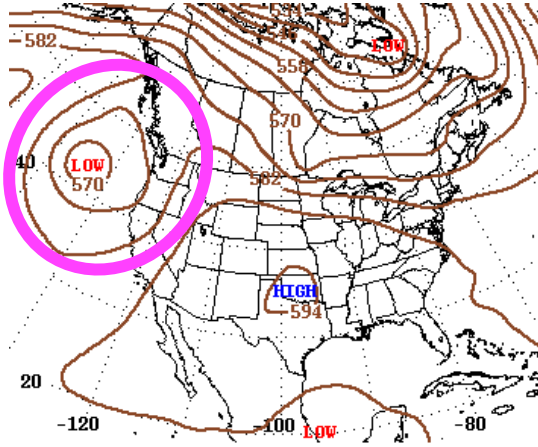
Air Quality Reflection: Friday August 25, 2023

500 hPa Contours



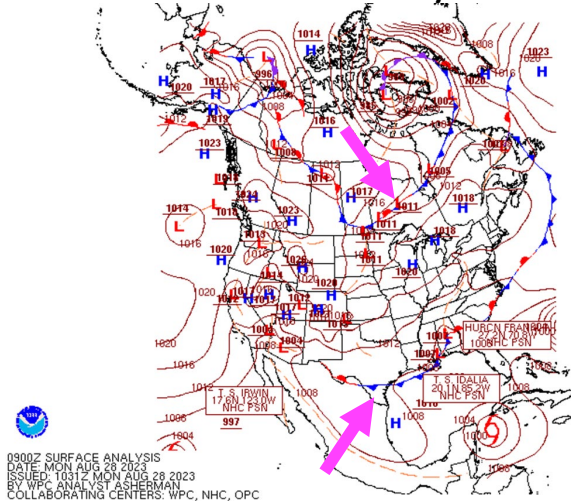
Air Quality Reflection: Friday August 25, 2023

500 hPa Contours

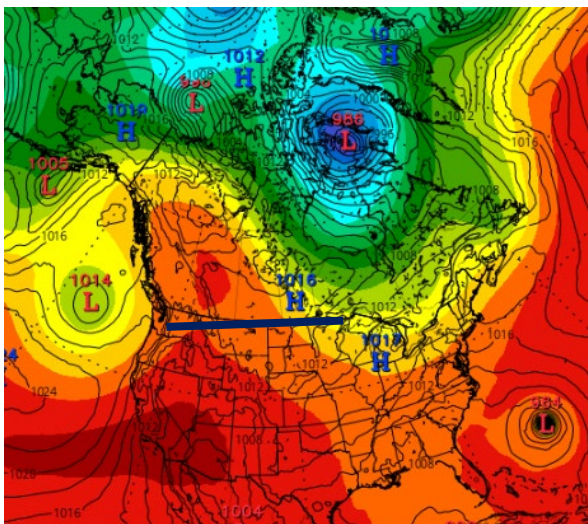


Current Status: August 28, 2023

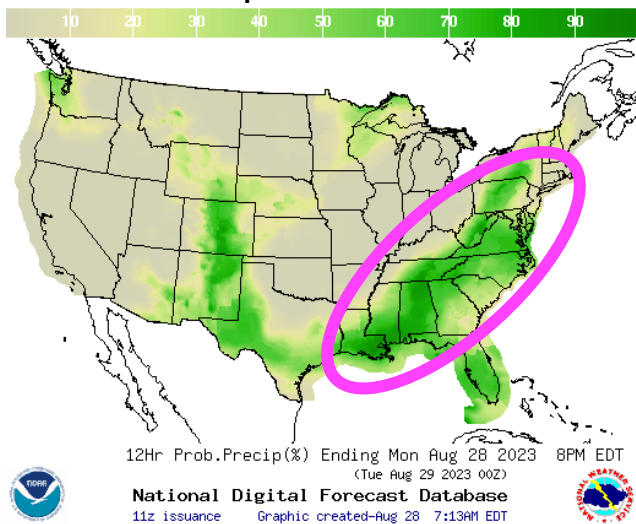
Surface Analysis



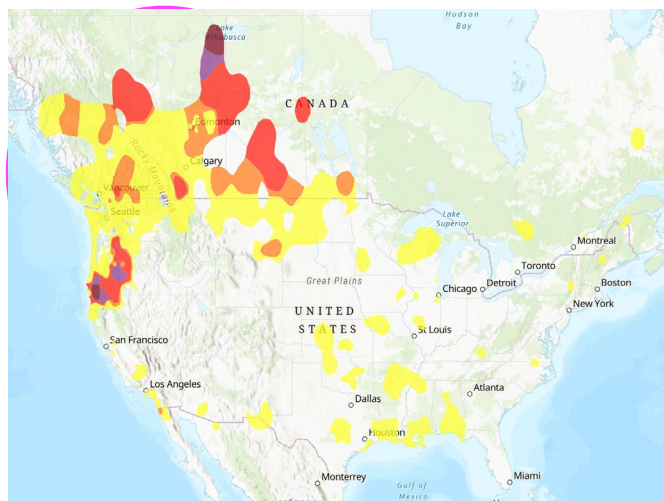
500 mb Contours



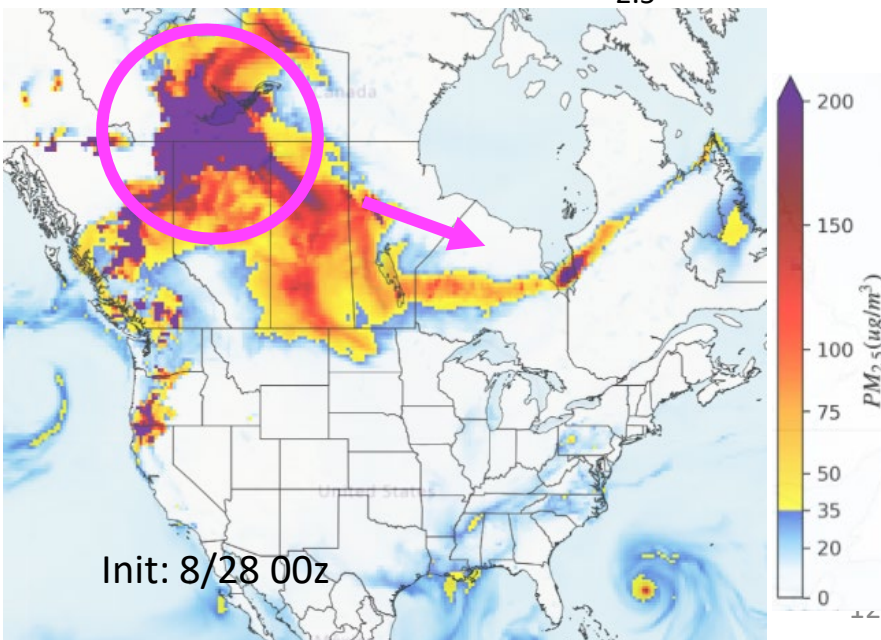
Precip. Prob.



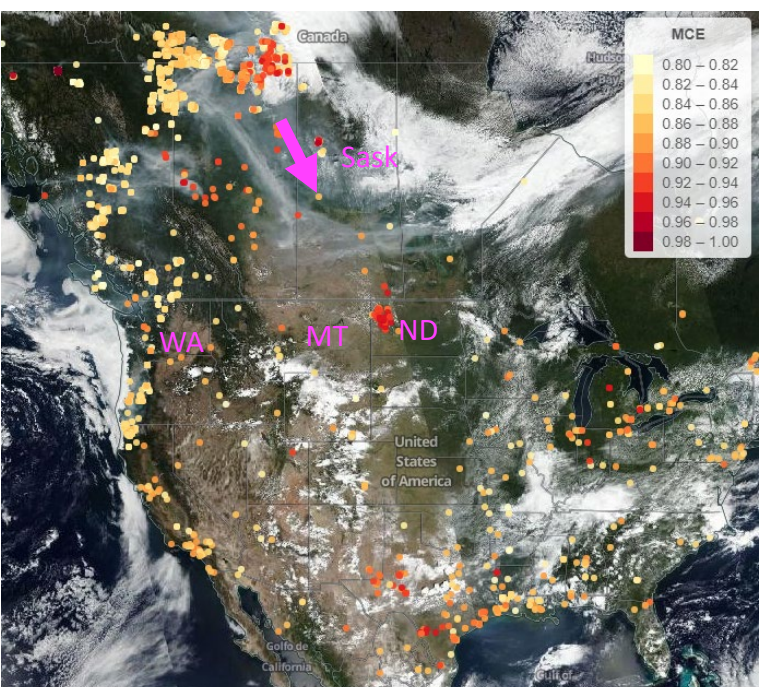
AirNow AQI



GEOS-FP 8/28 16 UTC PM_{2.5}



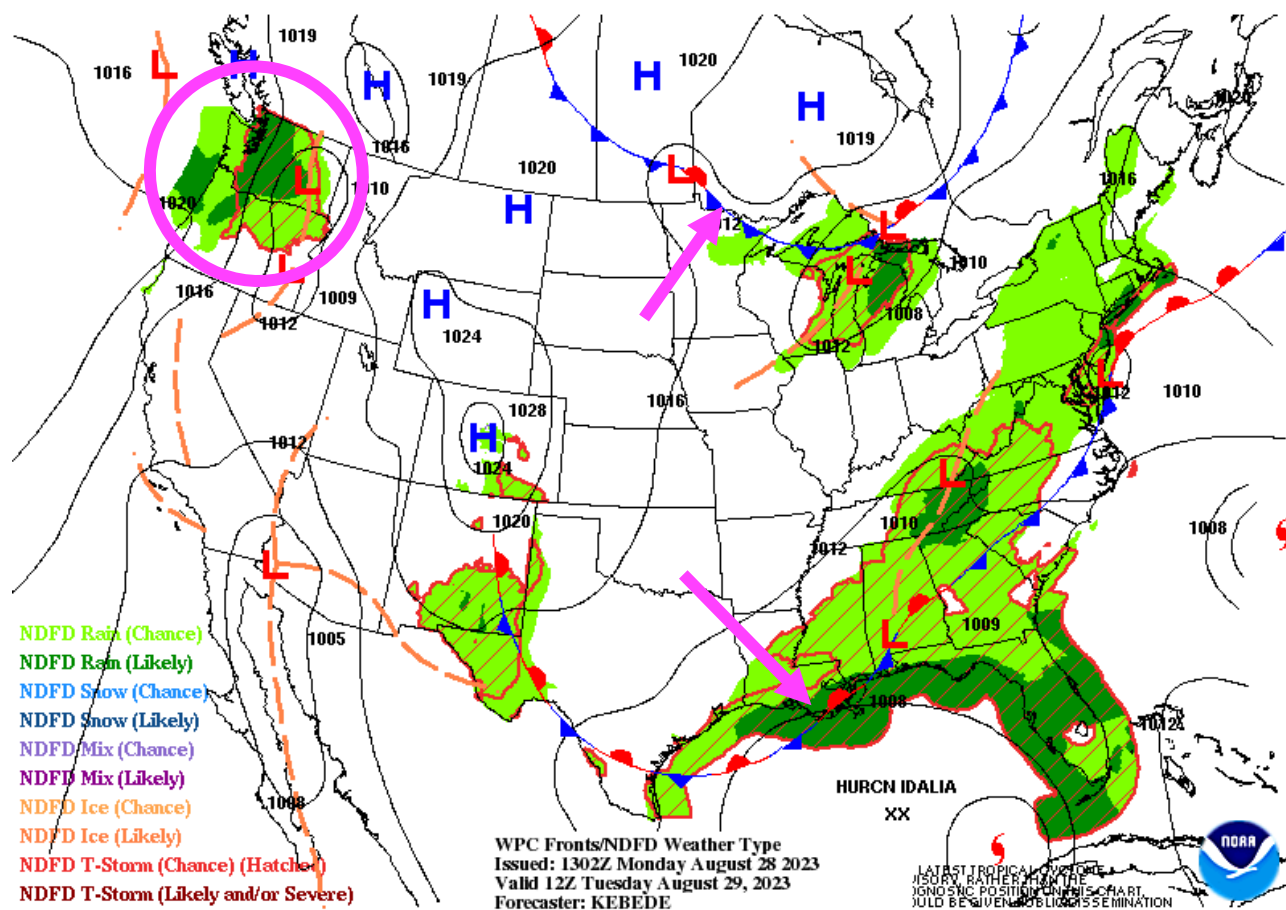
FILDA2 MCE
(Sun 8/27)



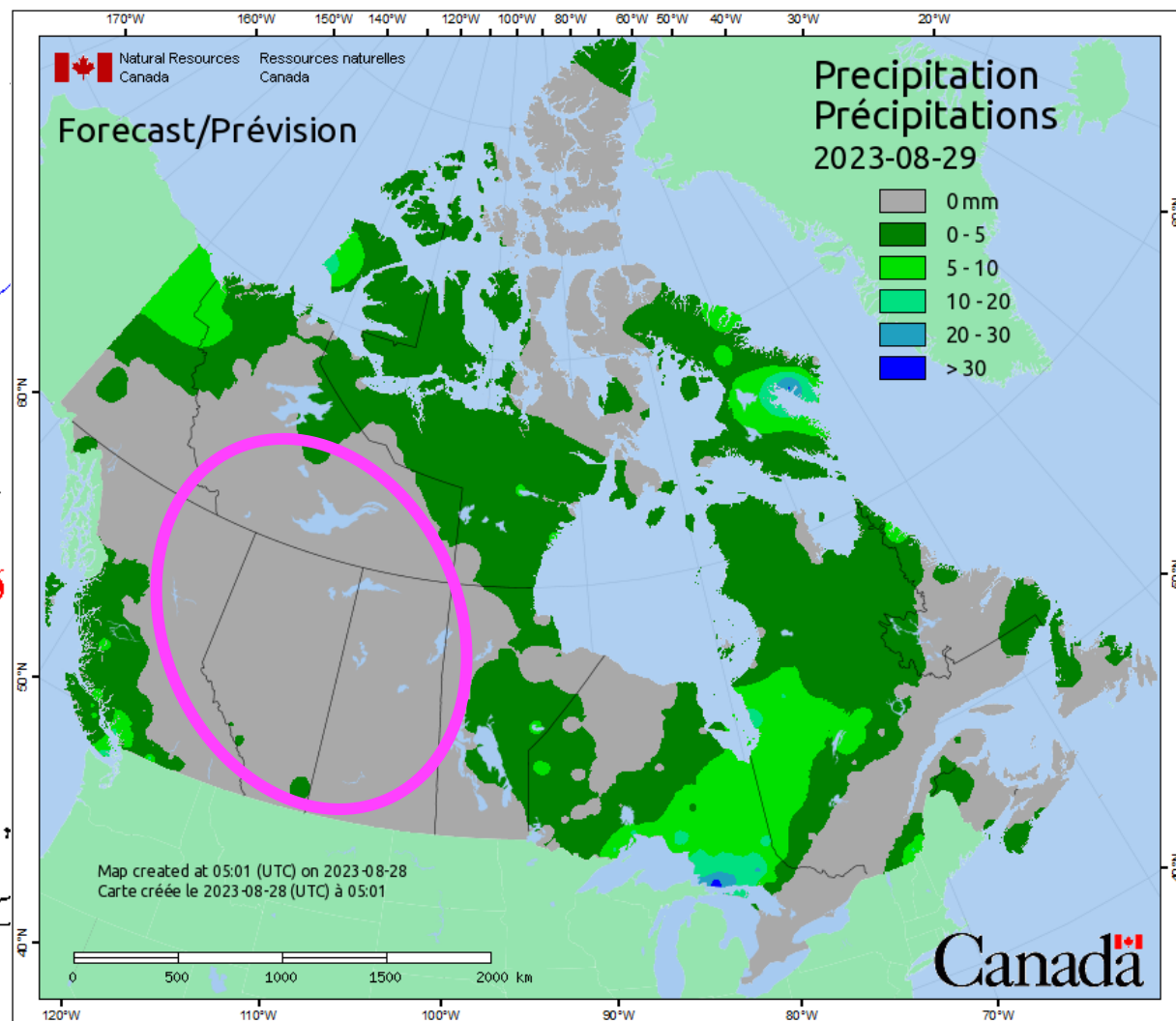
Outlook: Short Range (1–3 days)

Surface Forecast (**Tuesday 8/29**)

US NWS Forecast

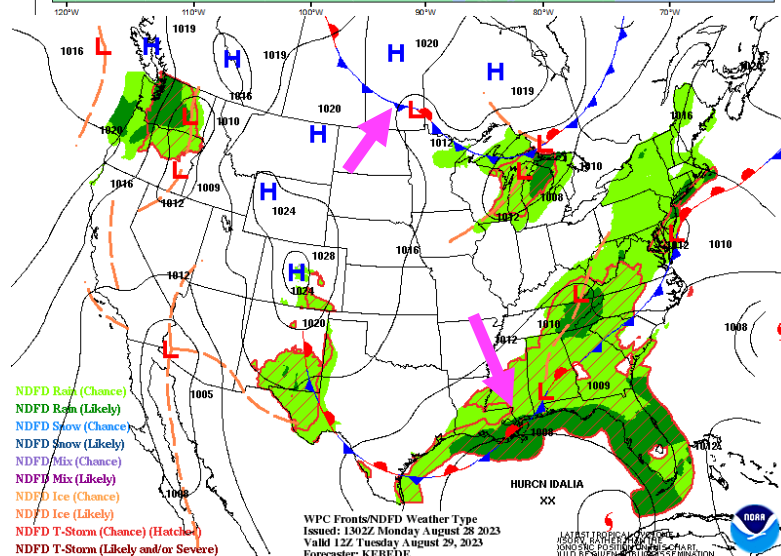
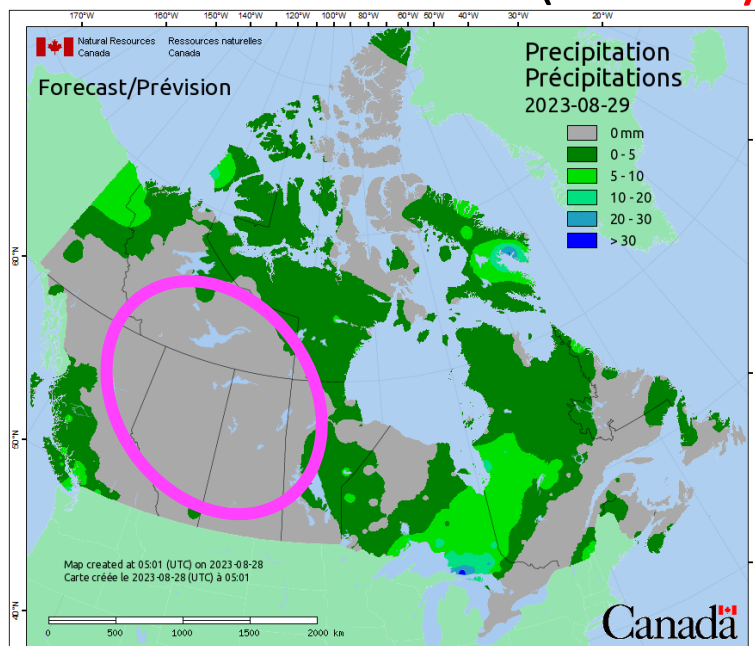


Environment Canada Forecast



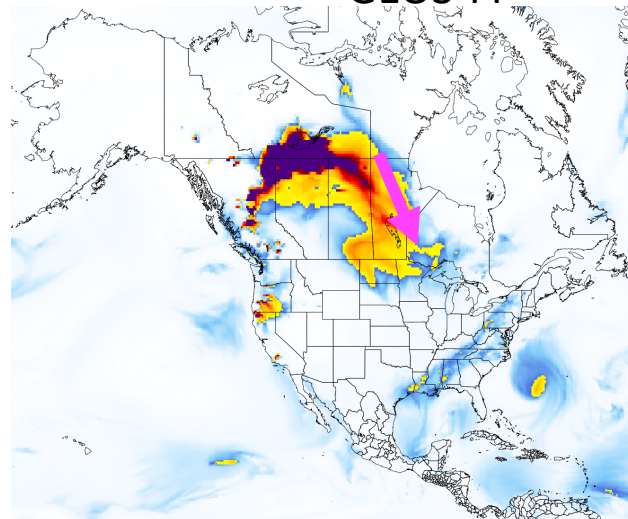
Outlook: Short Range (1–3 days)

Surface Forecast (Tuesday 8/29)

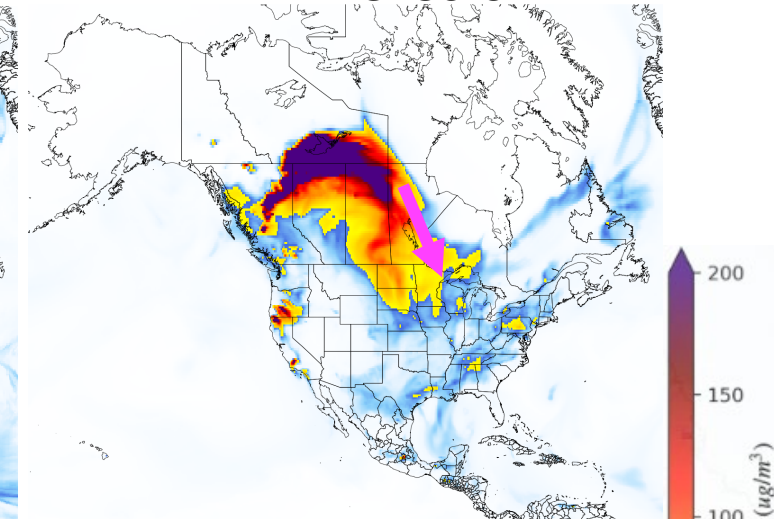


Model Means $PM_{2.5}$ (Tues 8/29)

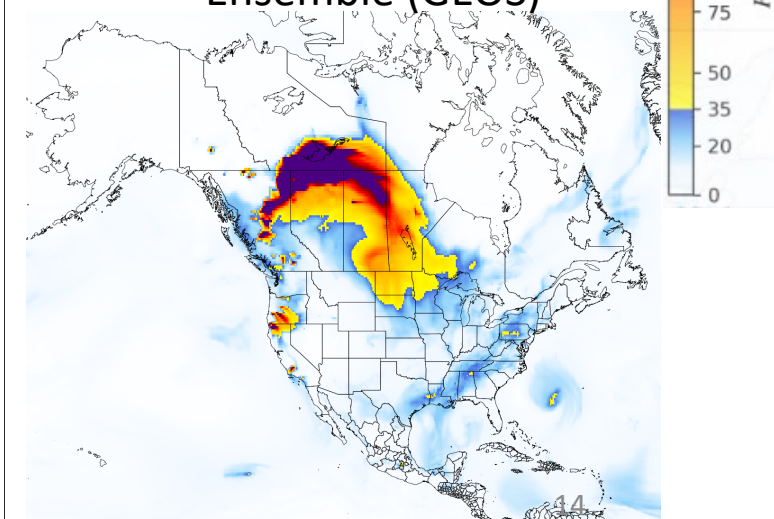
GEOS-FP



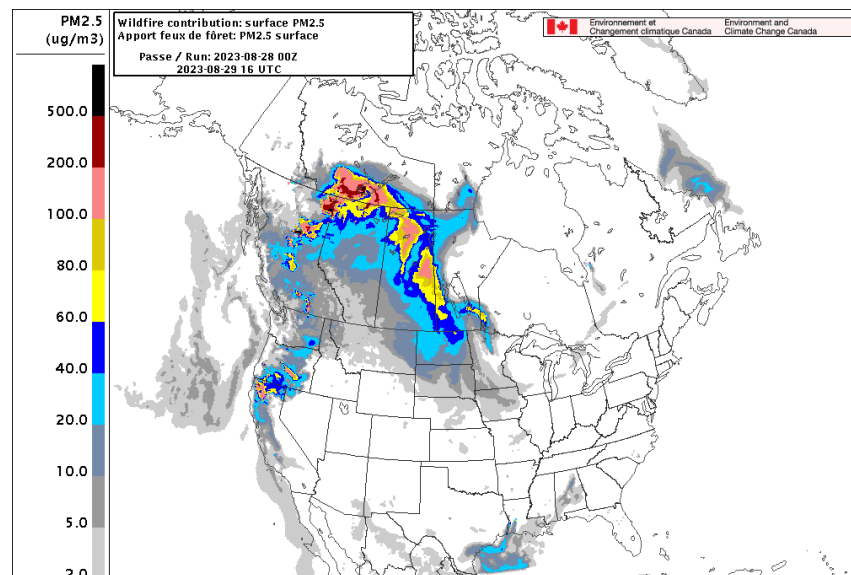
GEOS-CF



Ensemble (GEOS)



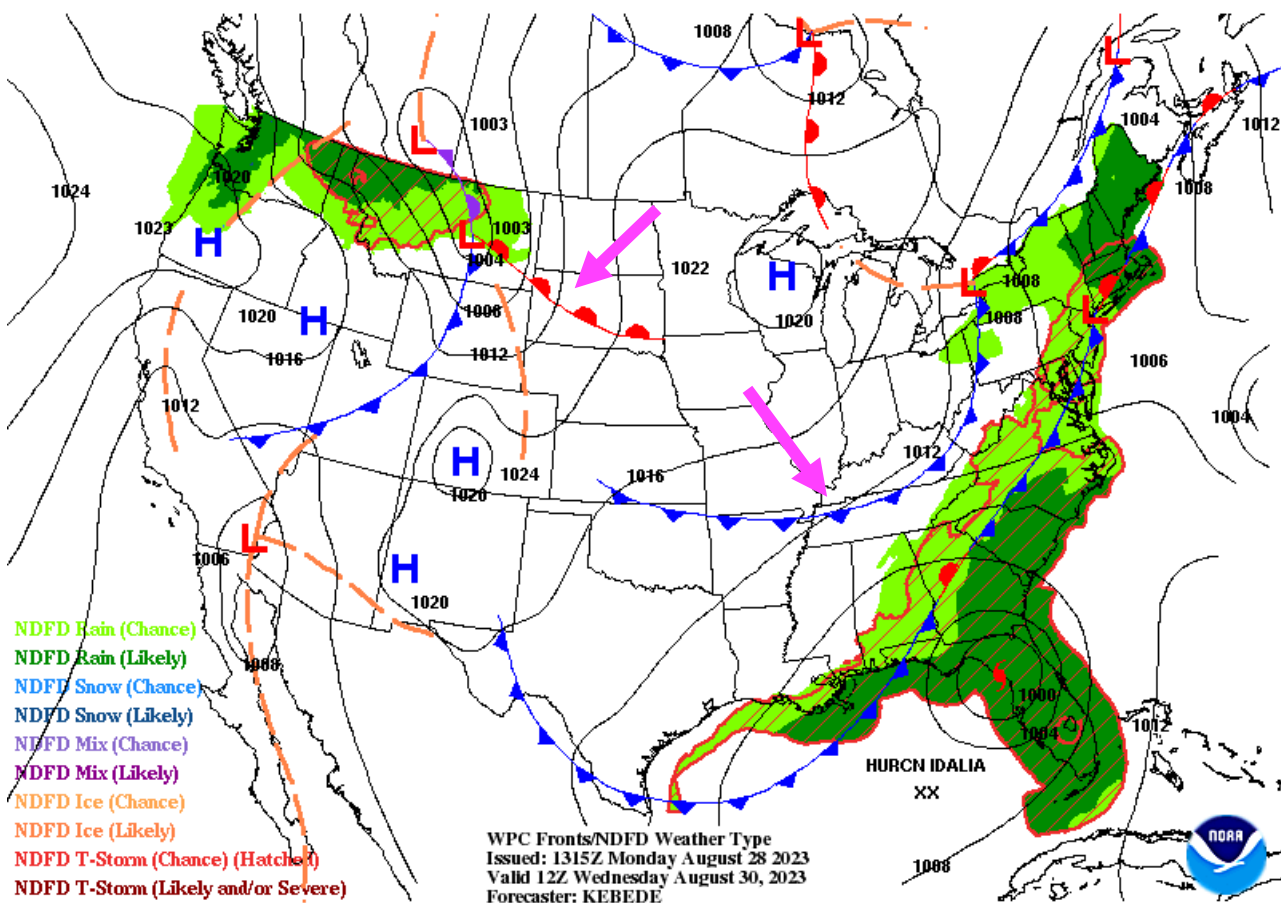
Day 3 of 8/27 initialization



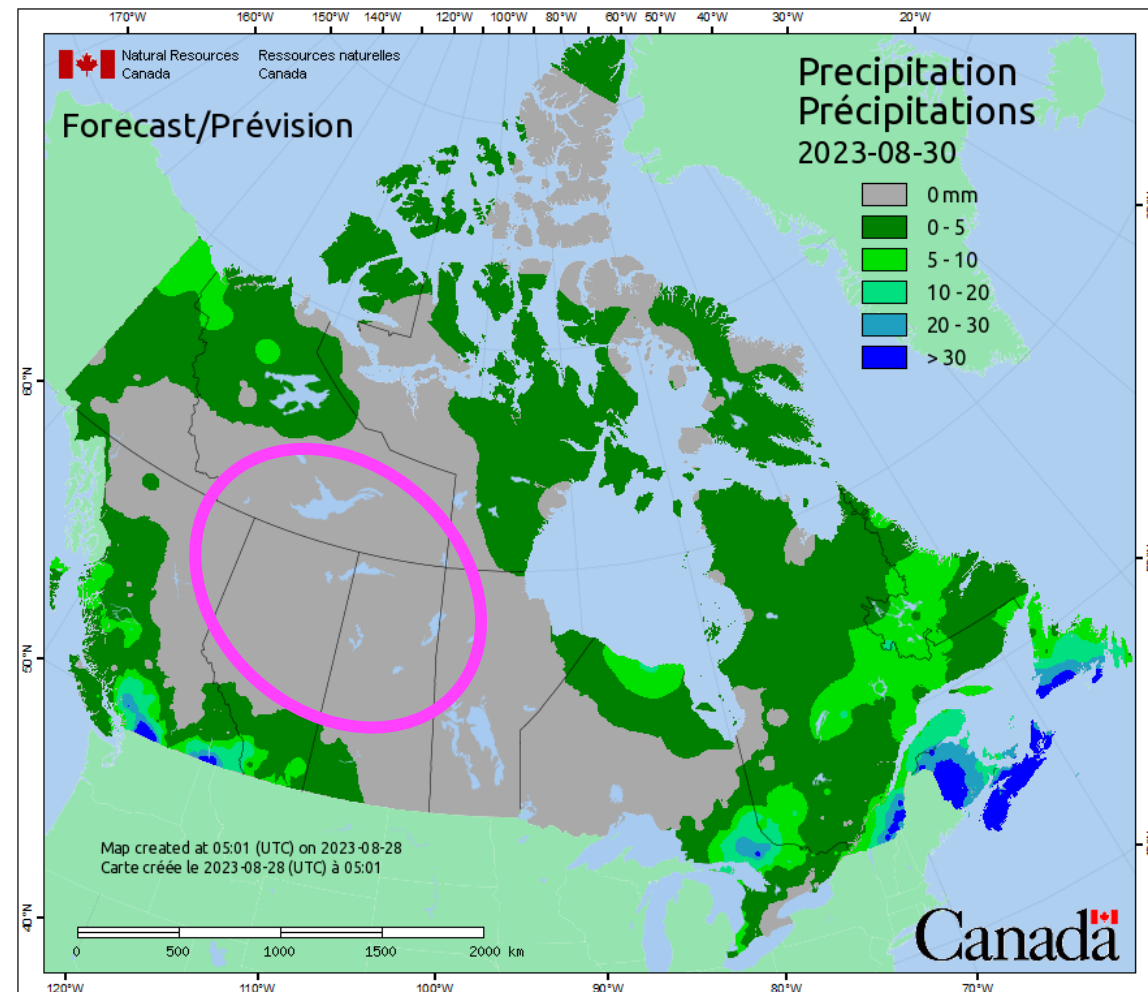
Outlook: Short Range (1-3 days)

Surface Forecast (**Wednesday 8/30**)

US NWS Forecast



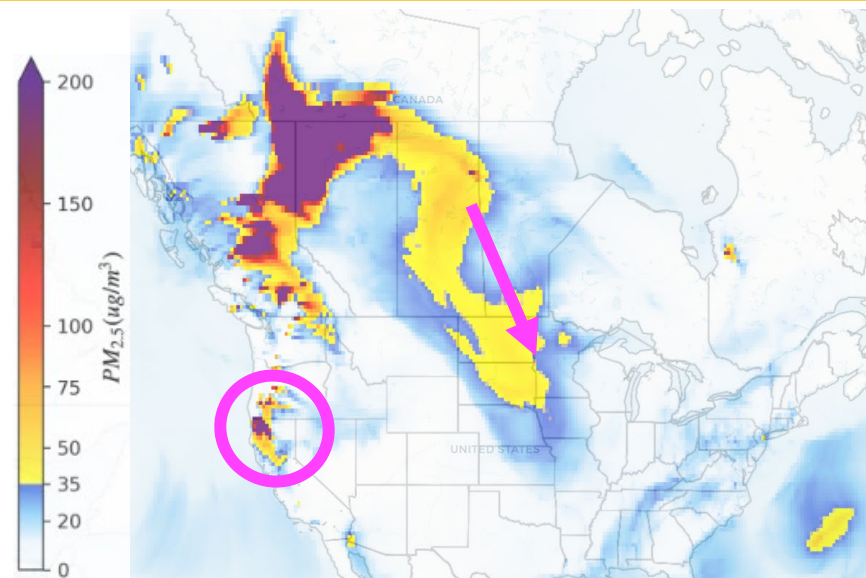
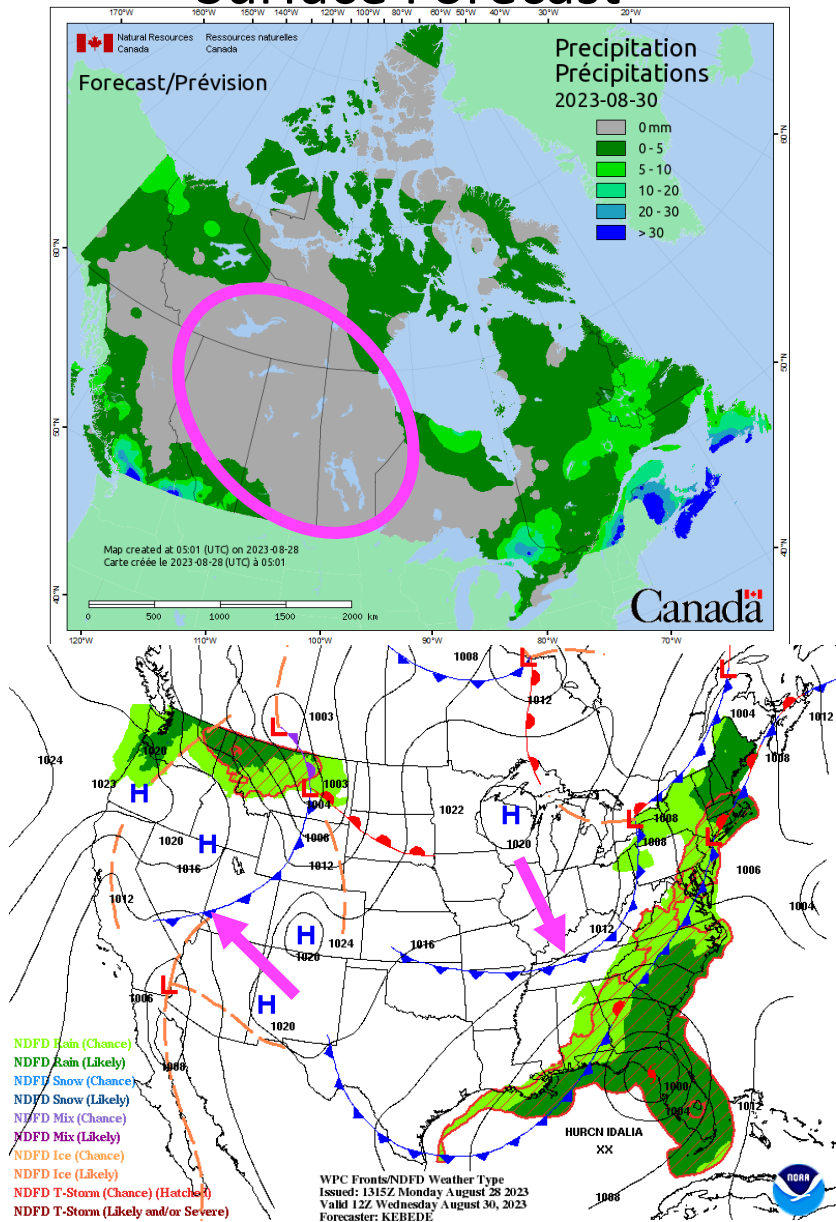
Environment Canada Forecast



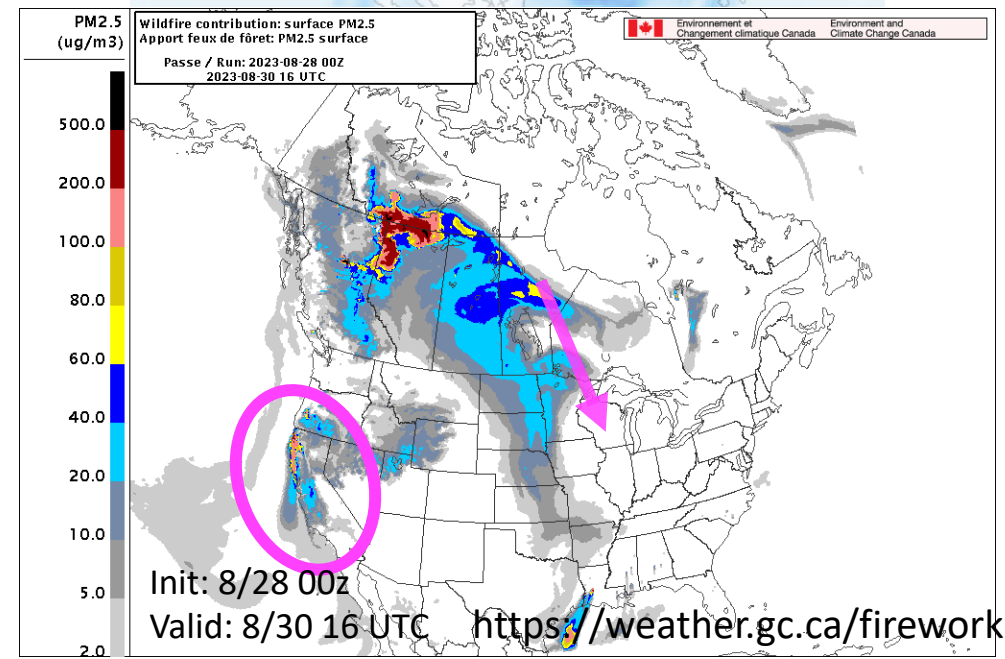
Outlook: Short Range (1–3 days)

Surface Forecast

(Wednesday 8/30)

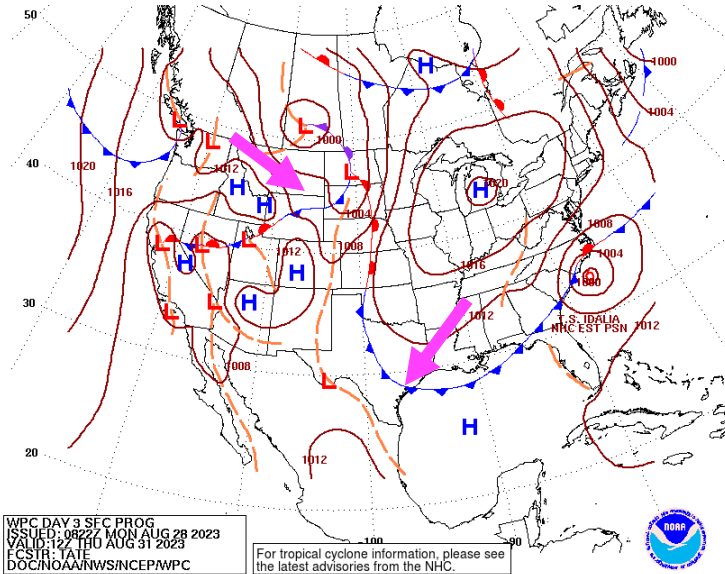


GEOS-FP Day 3 (8/30), Init: 8/28 00z

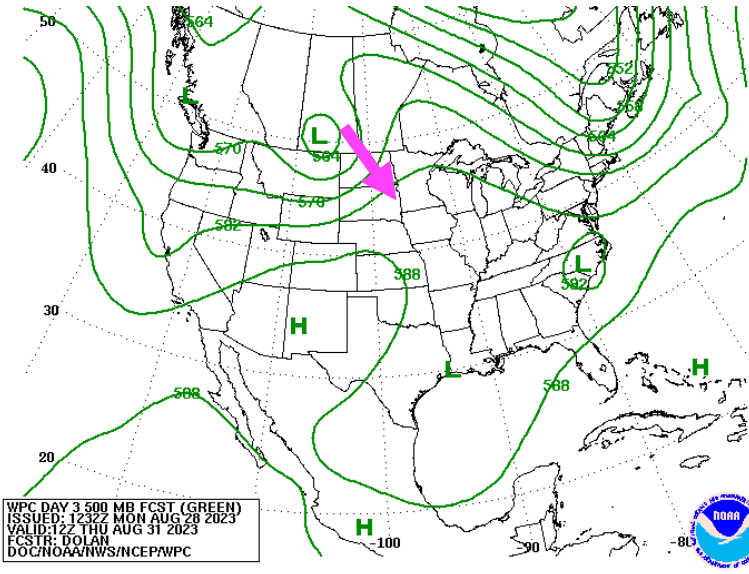


Outlook: Medium Range

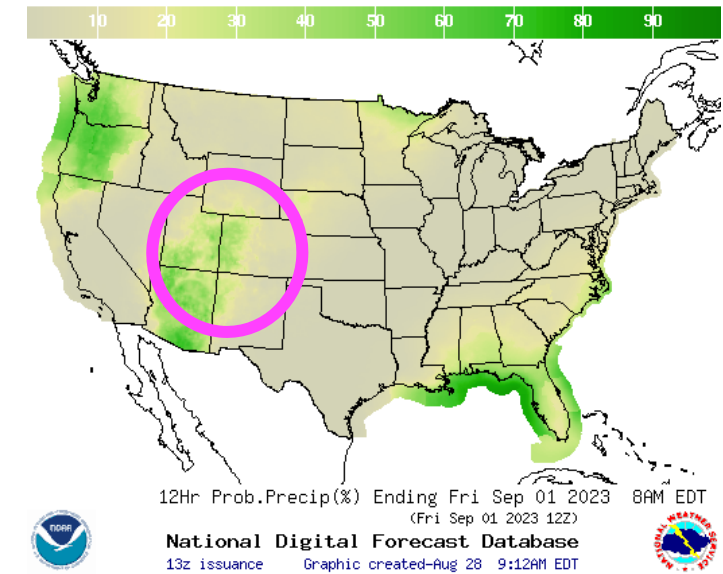
500 hPa Contours



Sea Level

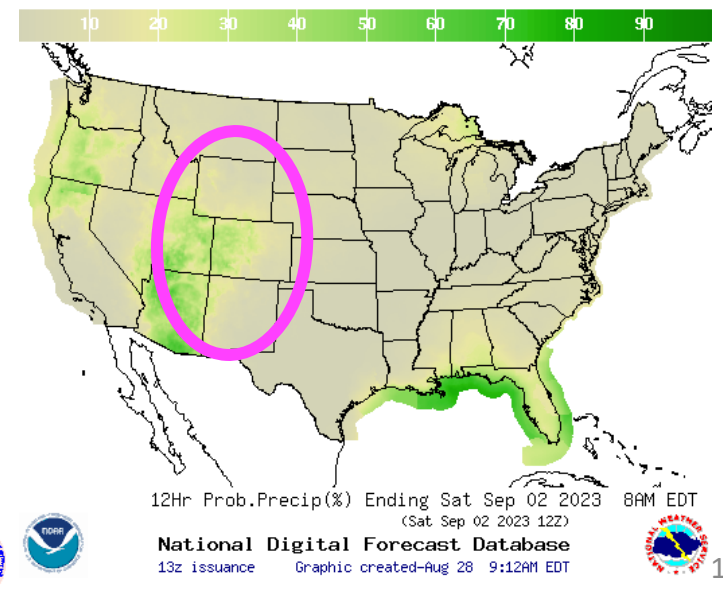
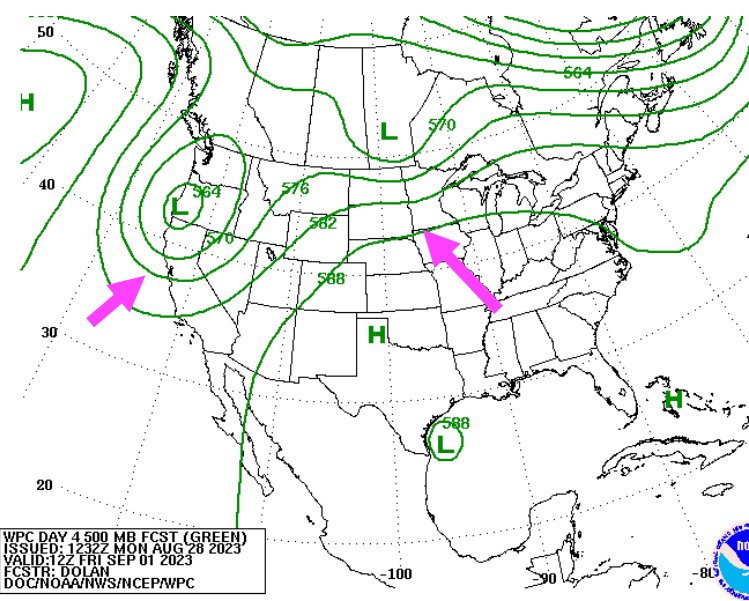
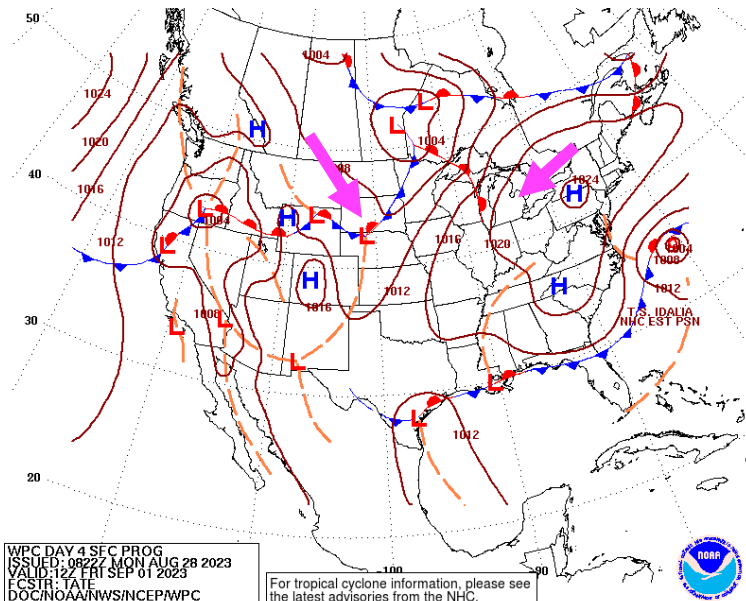


Precip Prob.



Thursday
8/31

Friday
9/1



Summary

Monday : Smoke from wildfires in northern Alberta/Sask. Canada is being transported south and impacting air quality in the north central US. Northern California air quality is also impacted by local wildfire smoke.

M → W : Under warm and dry conditions the Canadian wildfire smoke will most likely continue to be transported further into the Central US ahead of a cold front system. Central CA is forecasted to be impacted by smoke from the Northern CA wildfires.

Th → F : Warm and dry conditions will persist in the Central US. As a stable high pressure system sets up, any smoke already in the region will likely persist through Friday.

AirNow AQI

