

Weather and Air Quality: Reflection and Outlook During Smoke Conditions

Presenter: Weizhi Deng
Date: July 28, 2025

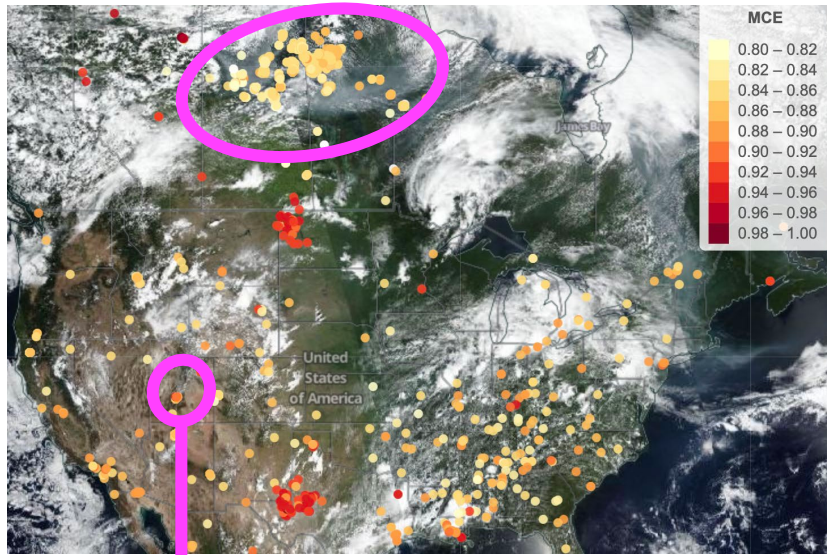


FireAQ is funded by NASA HAQ. We thank NASA GMAO and ECMWF CAMS for the model data products.

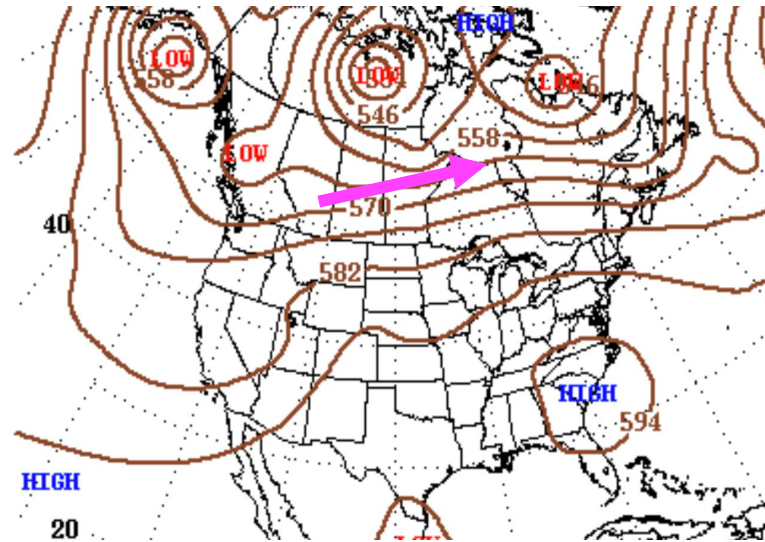
**EARTH SCIENCE
APPLIED SCIENCES**

Air Quality Reflection: Saturday July 26, 2025

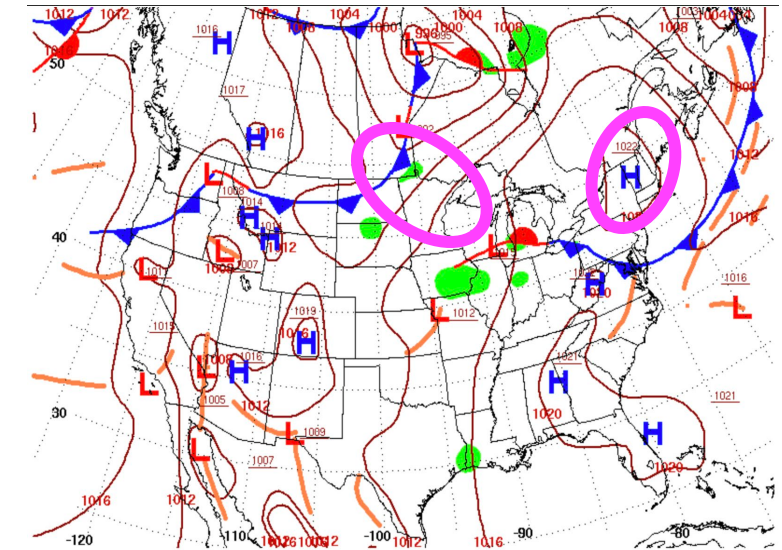
VIIRS FILDA-2 fire combustion efficiency



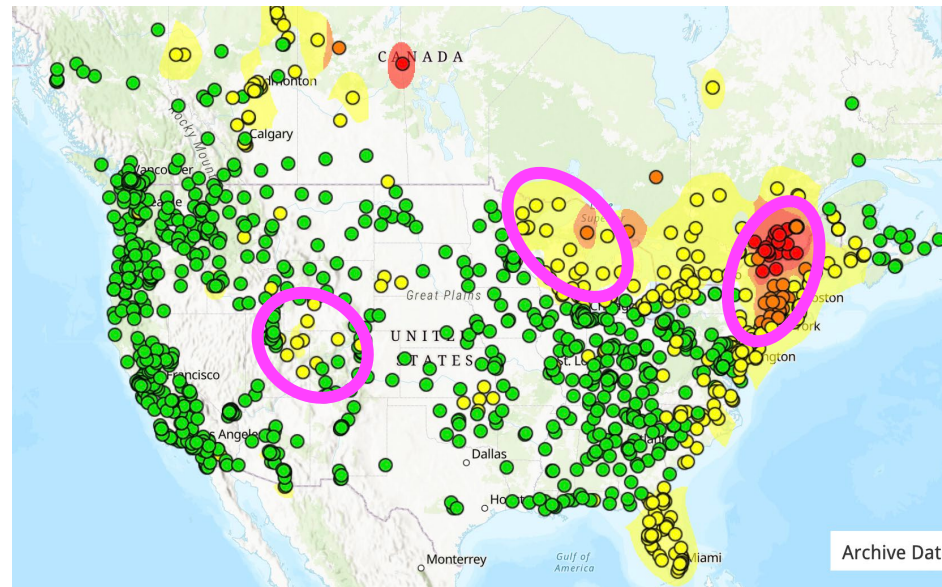
500 mb Contours



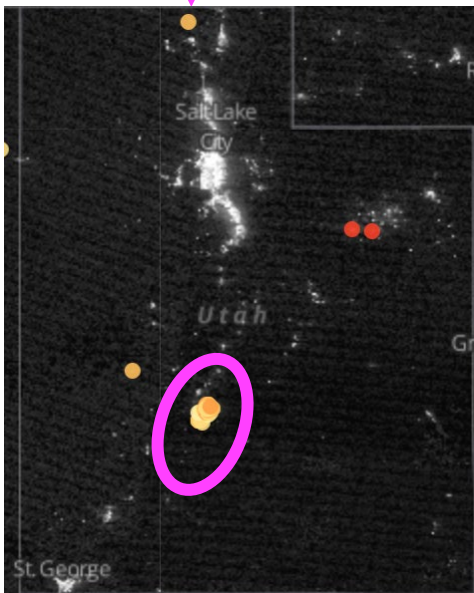
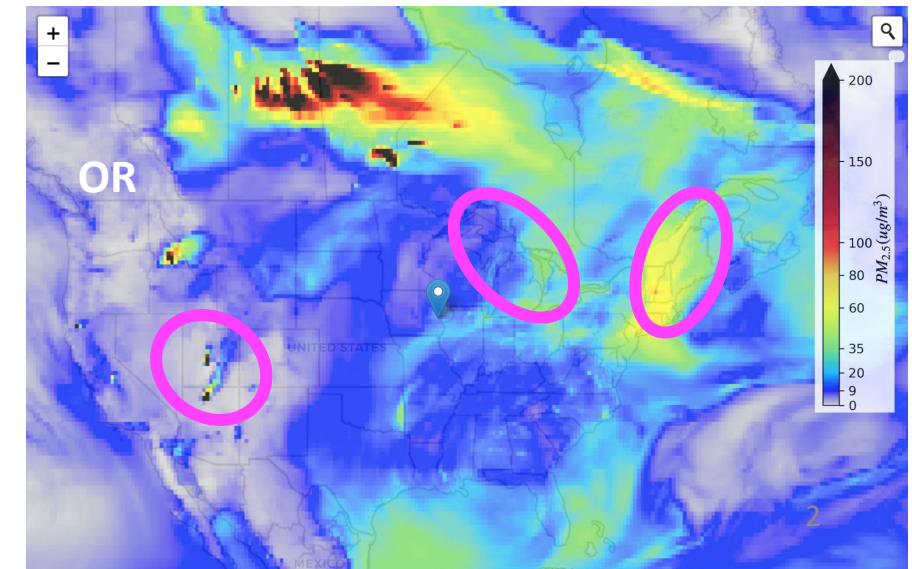
Surface Weather



AirNow PM_{2.5} AQI

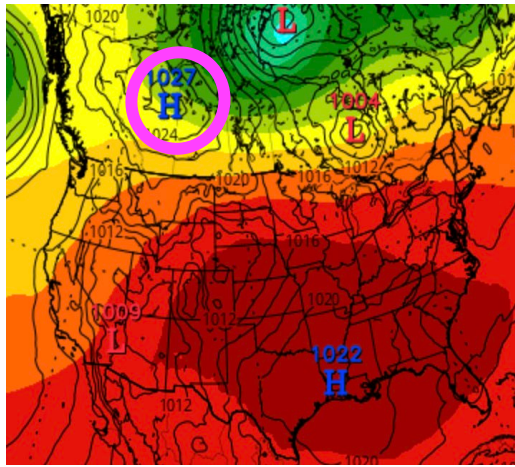


GEOS-FP PM_{2.5}

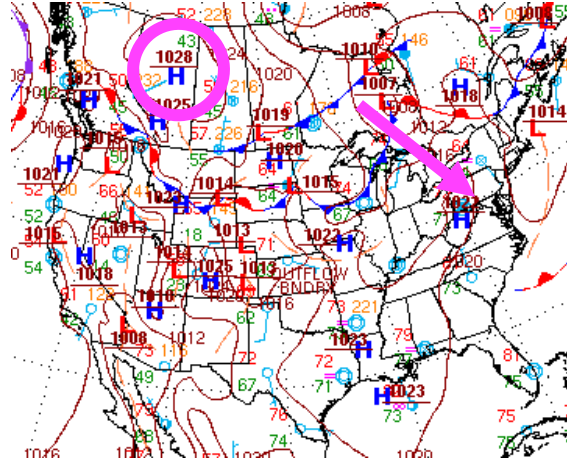


Current Status: July 28 , 2025

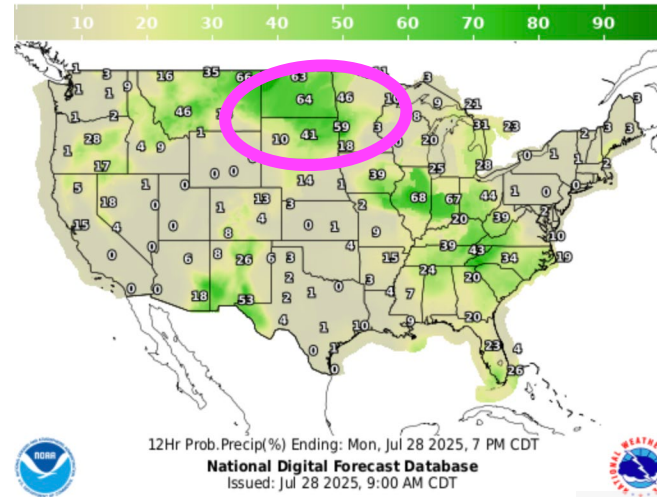
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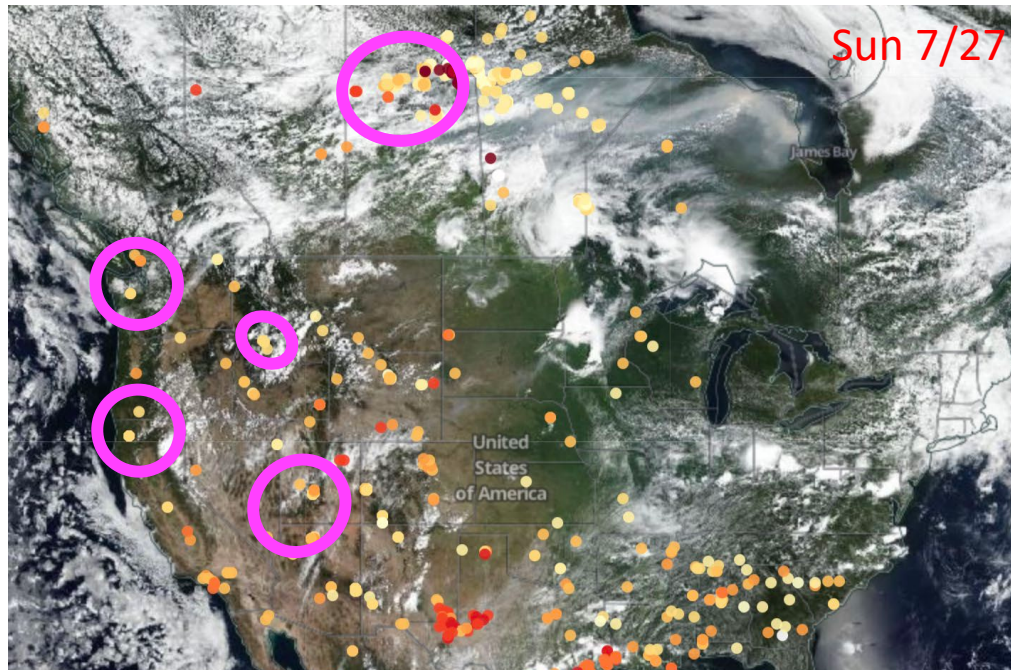
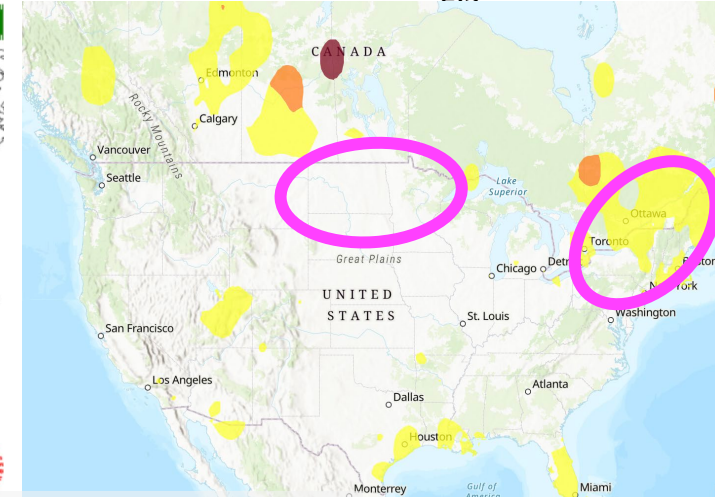
Surface Analysis



Precip. Prob.

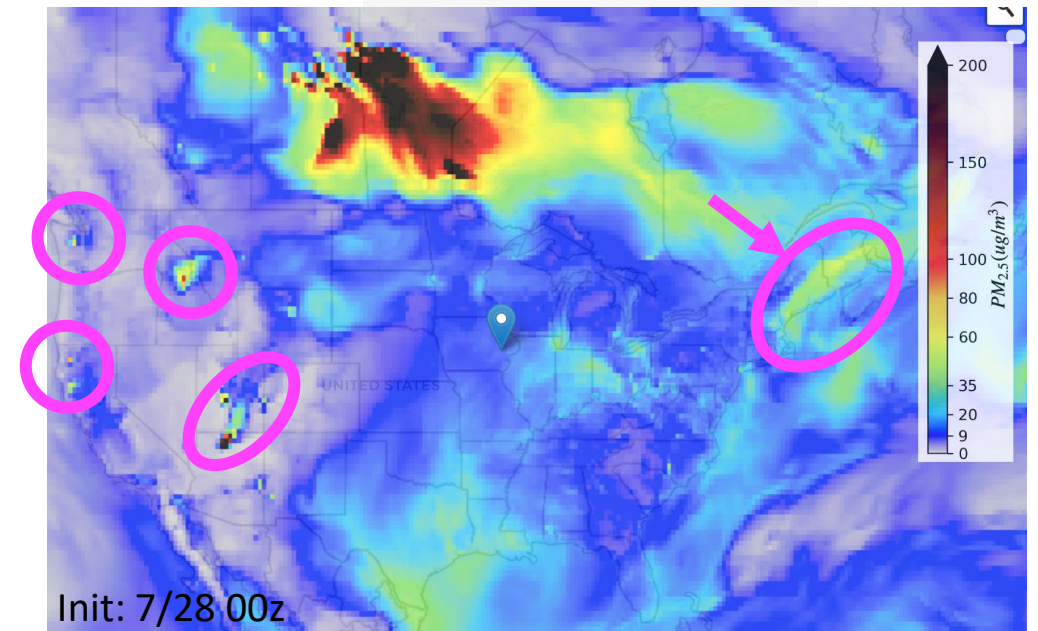


AirNow PM_{2.5} AQI



Sun 7/27

GEOS-FP 07/28 PM_{2.5}

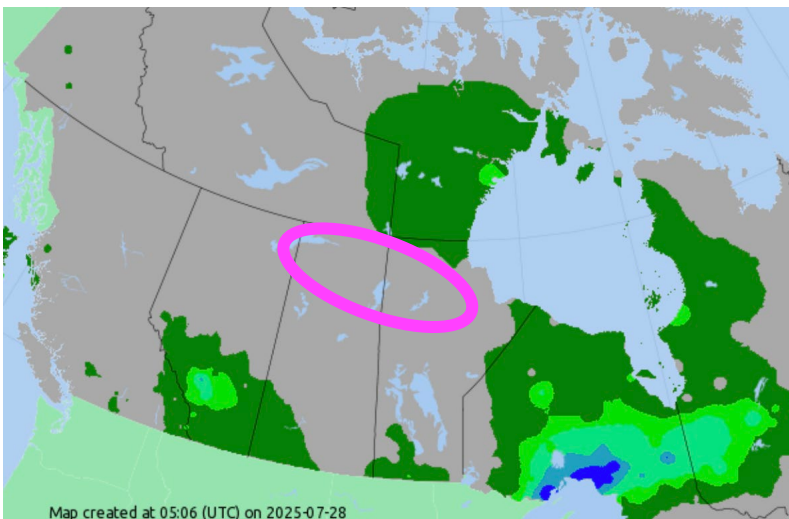


Init: 7/28 00z

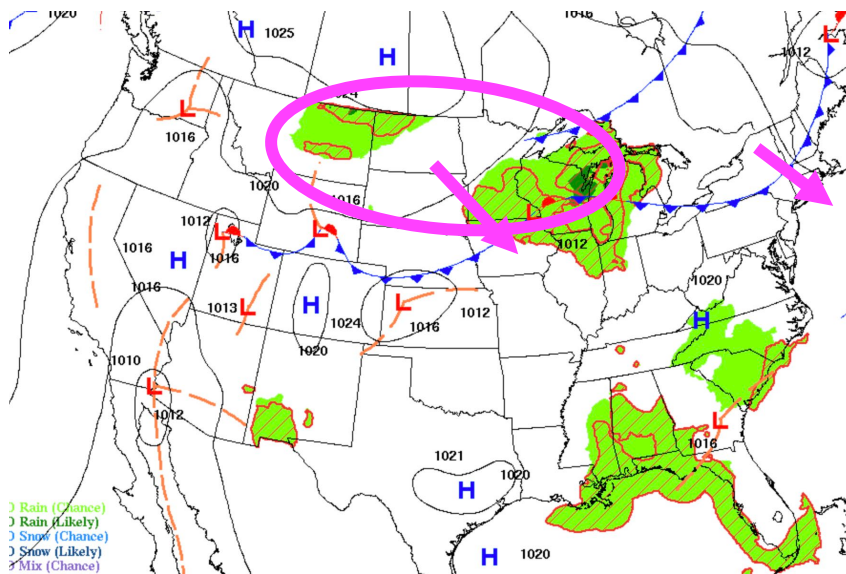
Outlook: Short Range (1–3 days)

Environment Canada preci.

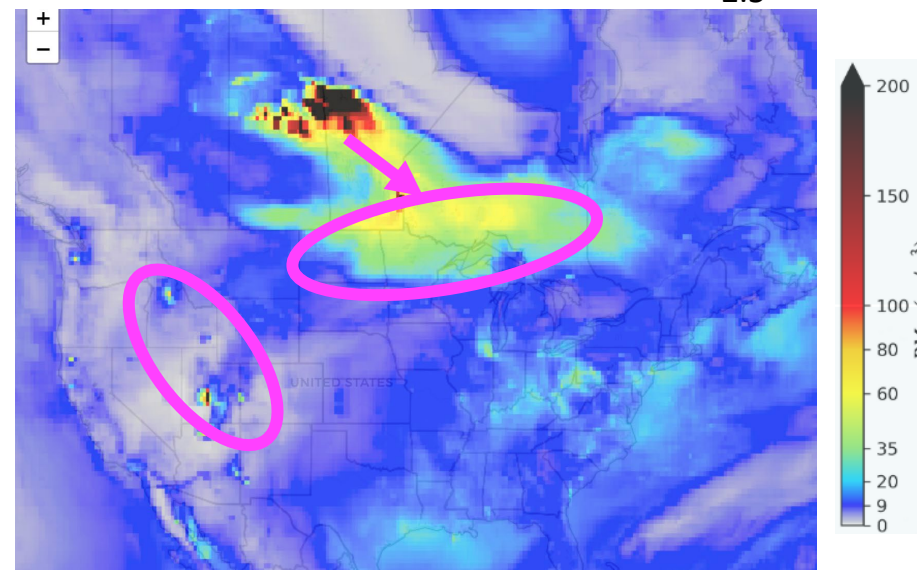
Tuesday 7/29



US NWS Surface Forecast

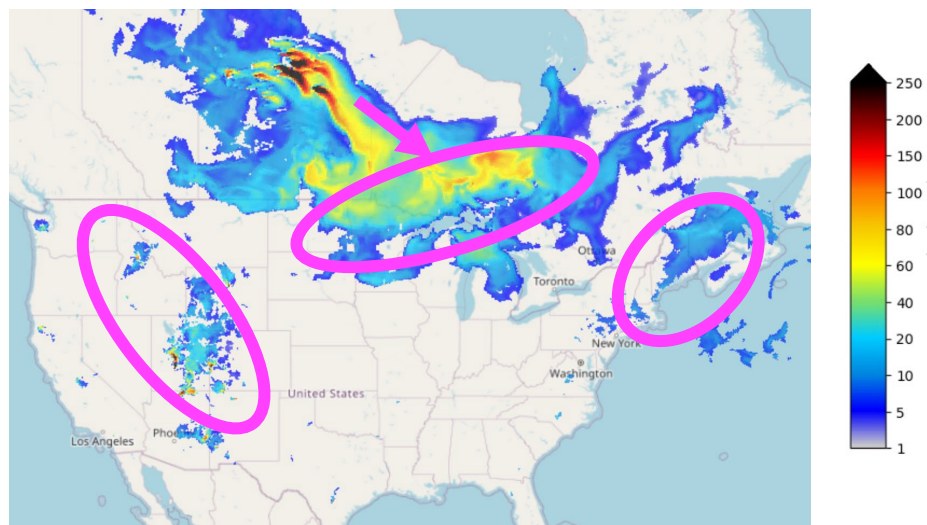


Model Ensemble Daily Mean $PM_{2.5}$ (GEOS-FP, CF, CAMS)



Day 2 of
7/28 initialization

Canada MSC AniMET



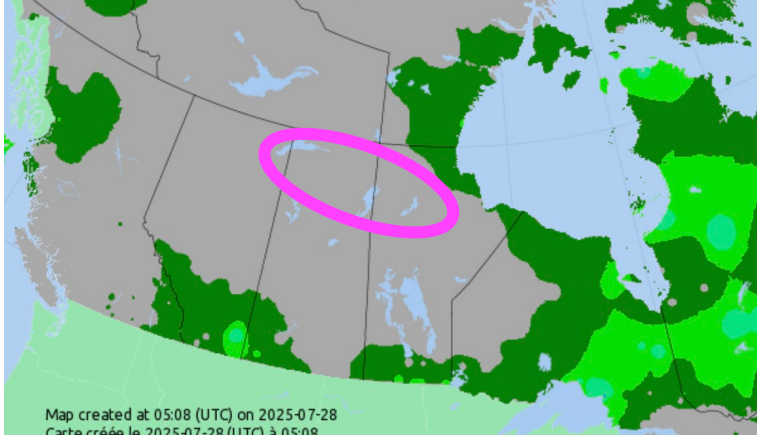
Init: 7/28 00z
Valid: 7/29 15z

Outlook: Short Range (1–3 days)

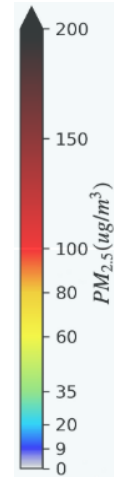
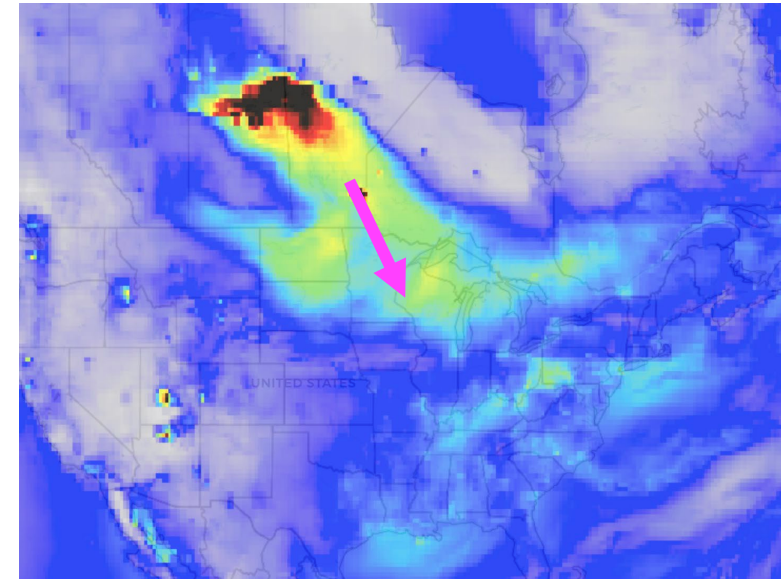
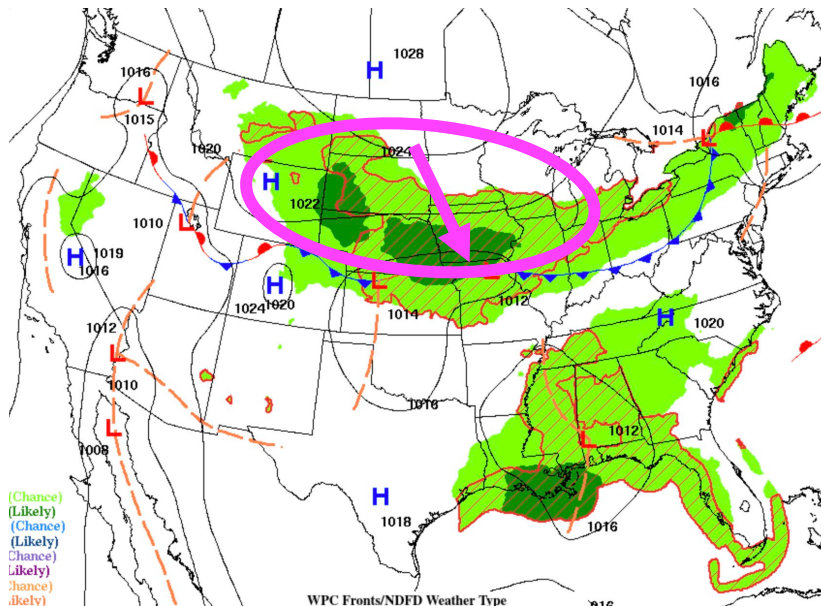
Surface Forecast

Wednesday 7/30

Model Ensemble Daily Mean $PM_{2.5}$ (GEOS-FP, CF, CAMS)

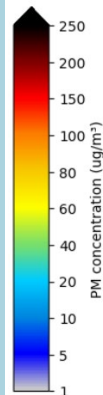
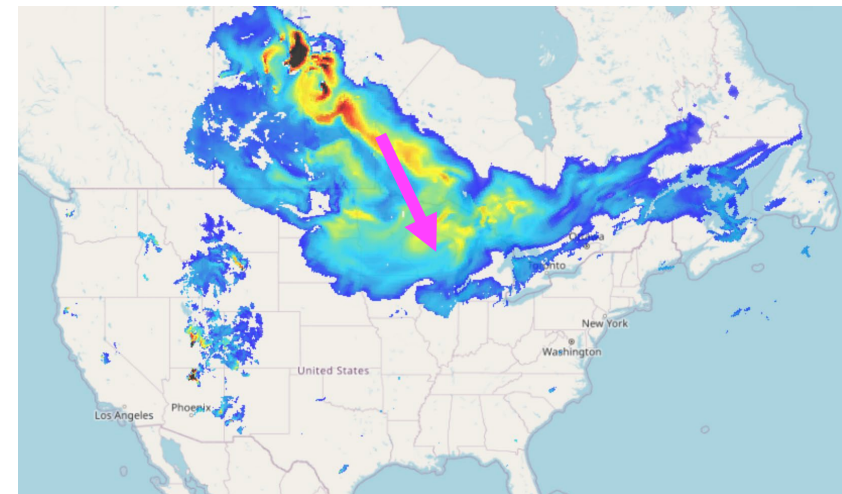


US NWS Forecast



Day 3 of
7/28 initialization

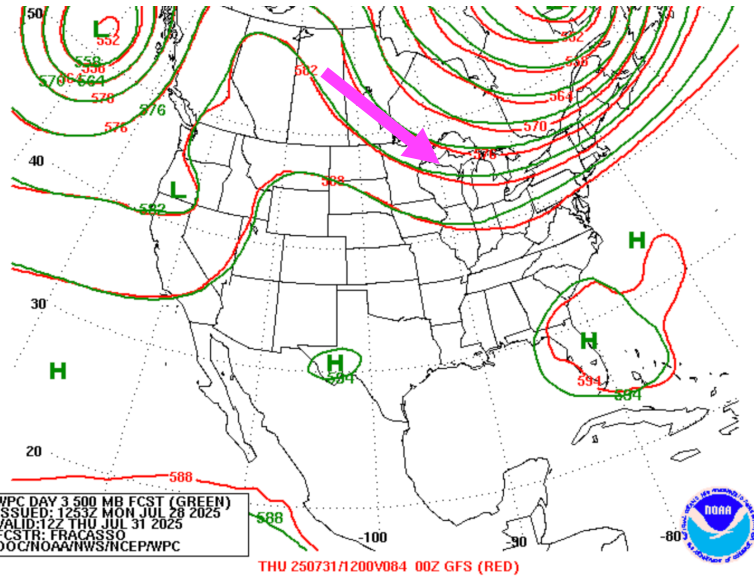
Canada MSC AniMET



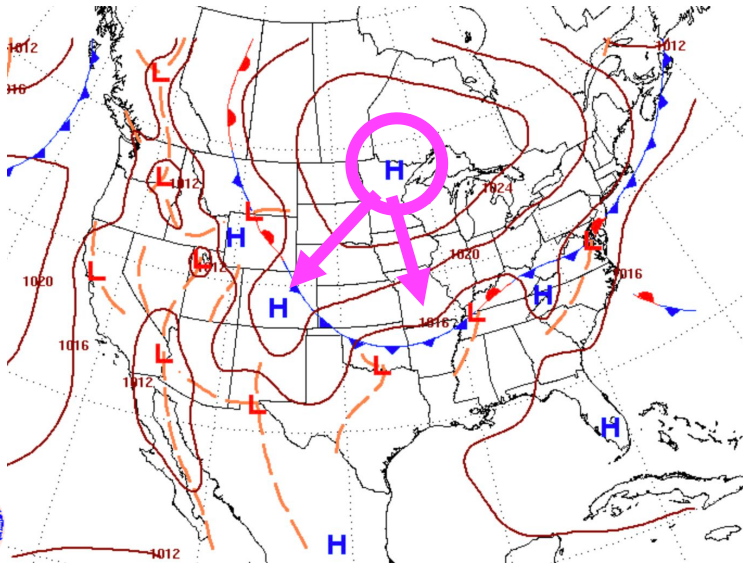
Init: 7/28 00z
Valid: 7/30 15z

Outlook: Medium Range

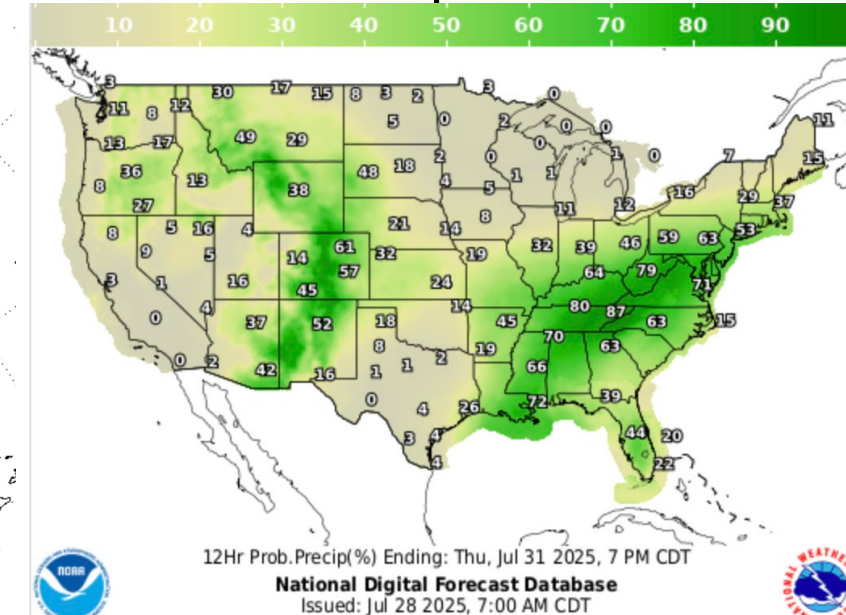
500 mb Contours



Sea Level

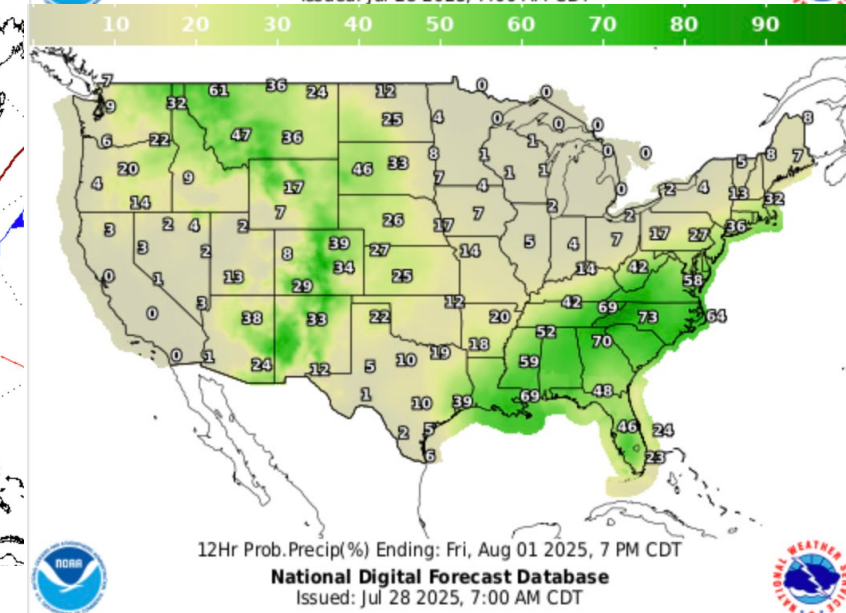
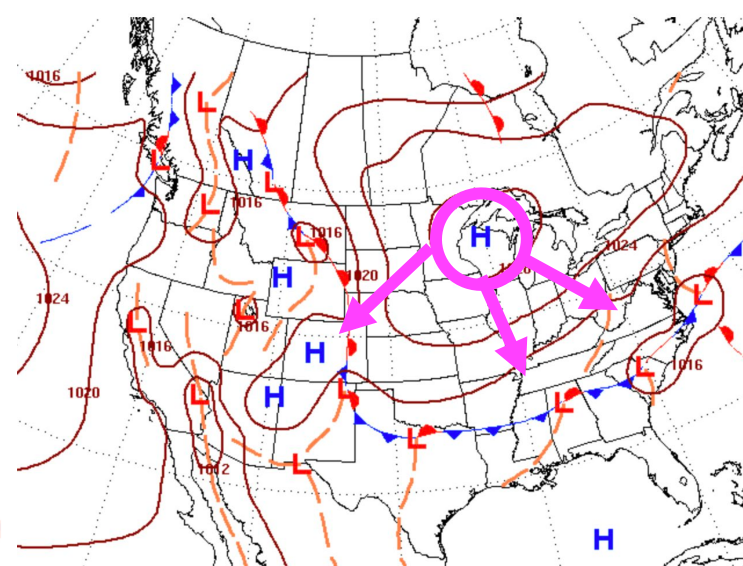
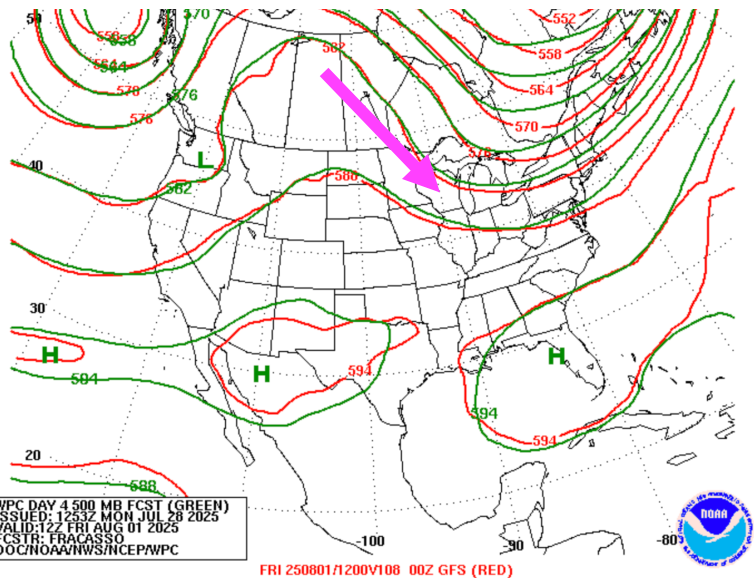


Precip Prob.



Thurs
7/31

Friday
8/1



Summary

Monday:

Canadian fire smoke reaches Northeast US (ME, MA, NY)

Good air quality in Upper Midwest thanks to precipitation

Local fire impacts in ID, UT, AZ, as well as some small fires in CA and WA

T → W:

Canadian fires are likely to persist. Smoke is predicted to transport over Upper Midwest (ND, MN, MI) and Northeast US (MA) on Tuesday and further to the South (SD, IA, WI, IL) on Wednesday.

Keep an eye on fires in ID, UT, AZ, CA, WA

Th → F:

The Midwest is possibly going to be impacted by Canadian smoke.