

DISCOVER-AQ Outlook for Saturday, July 22, 2011

After three flight days in a row, we will not be flying tomorrow. If we were interested in flying tomorrow, it would promise to be another hot and polluted day, but with the risk of greater amount of cloudiness and greater risk of afternoon thunderstorms than today. Sunday appears to be the day with the greatest chance of showers (40%). A frontal zone will slip through on Monday afternoon, keeping cloudiness in the forecast. Tuesday has some promise of being clear enough to fly. Air quality will likely be at least code orange tomorrow, but more uncertain for Sunday with the increased cloudiness.

Recommendations July 23rd-26th

July 23, Saturday: No Fly

July 24, Sunday: No Fly

July 25, Monday: Clouds?

July 26, Tuesday: Maybe Fly - Clouds?

Today



Haze

Hi 103 °F

Tonight



Slight Chc
Tstms

Lo 79 °F

Saturday



Chance
Tstms

Hi 100 °F

Saturday
Night



Chance
Tstms

Lo 77 °F

Sunday



Chance
Tstms

Hi 93 °F

Sunday
Night



Chance
Tstms

Lo 75 °F

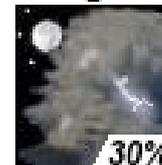
Monday



Chance
Tstms

Hi 89 °F

Monday
Night



Chance
Tstms

Lo 71 °F

Tuesday

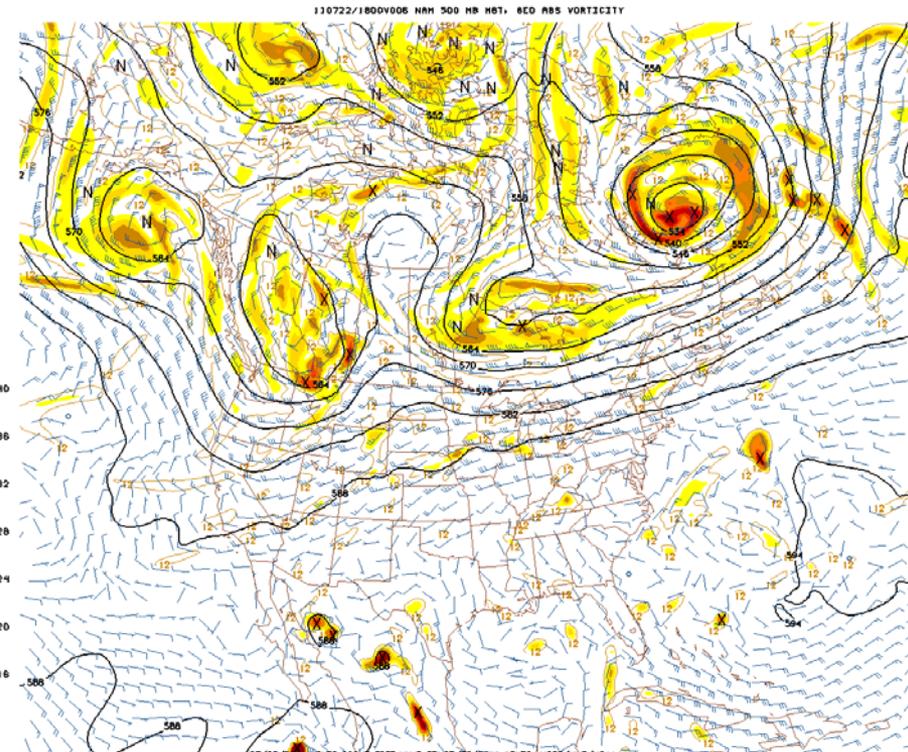
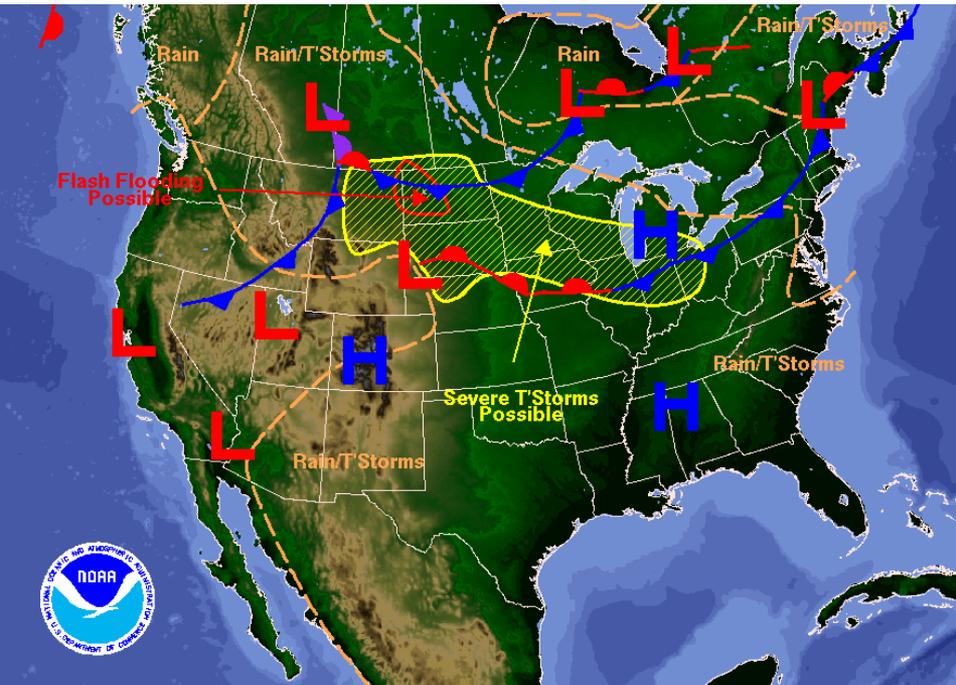


Chance
Tstms

Hi 89 °F

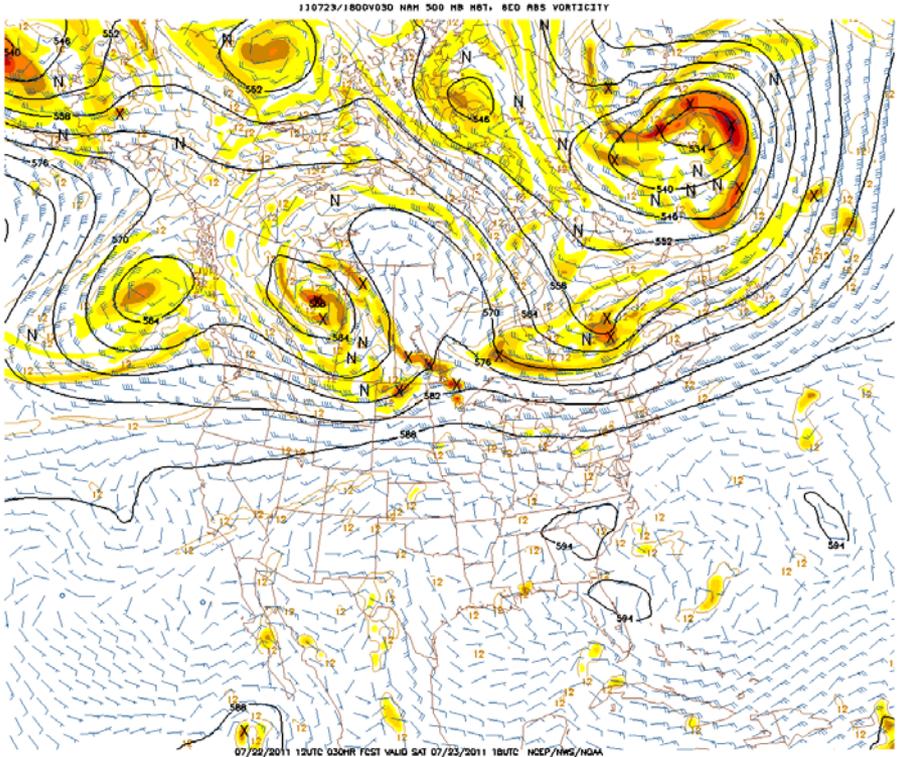
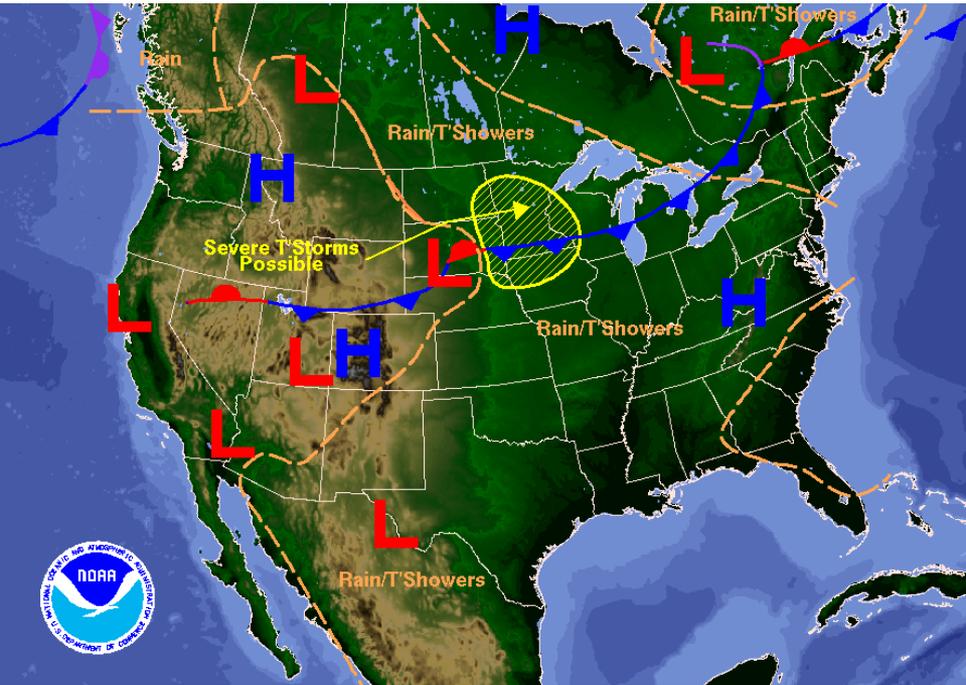
Today : Light southerly winds allow the extreme heat and humidity to persist over the Mid-Atlantic. A slight chance of thunderstorms late today and overnight as an upper level trough approaches from the west.

500 mb NAM at 2 PM.



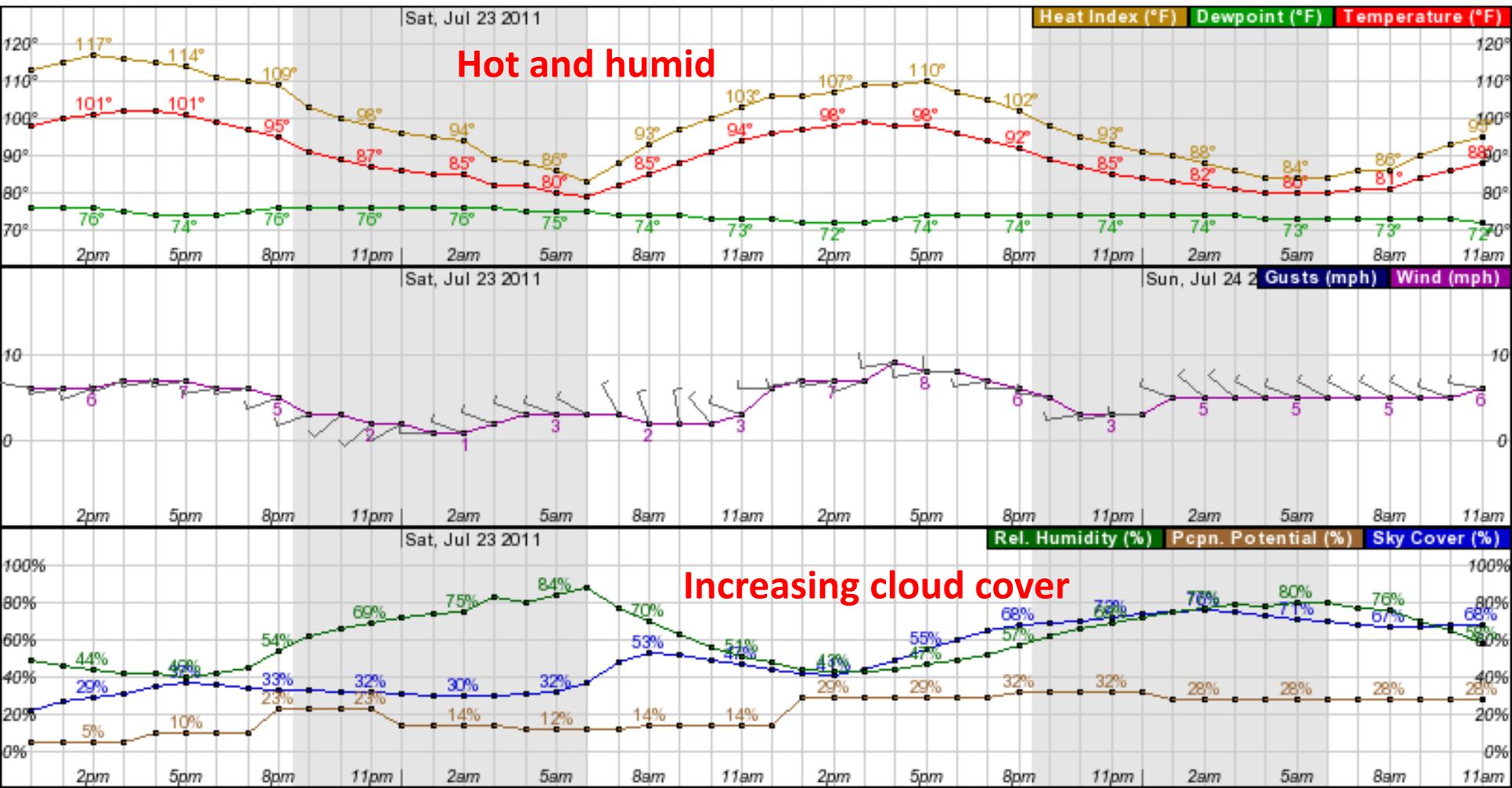
Tomorrow: Upper level trough to our north enhances cloud development and brings us a chance of thunderstorms.

500 mb NAM at 2 PM.



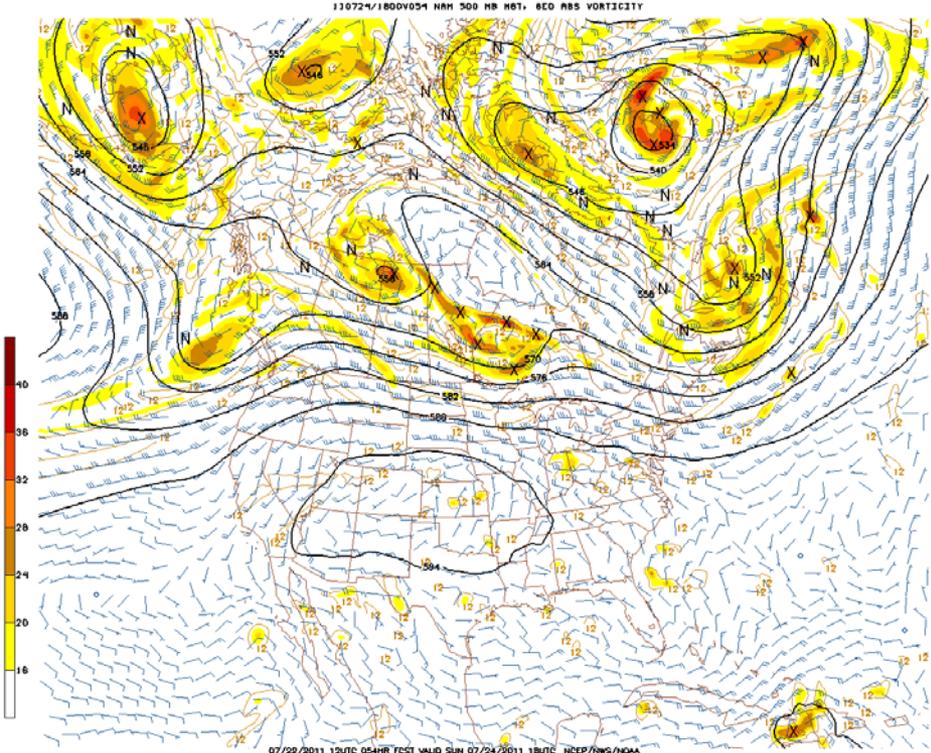
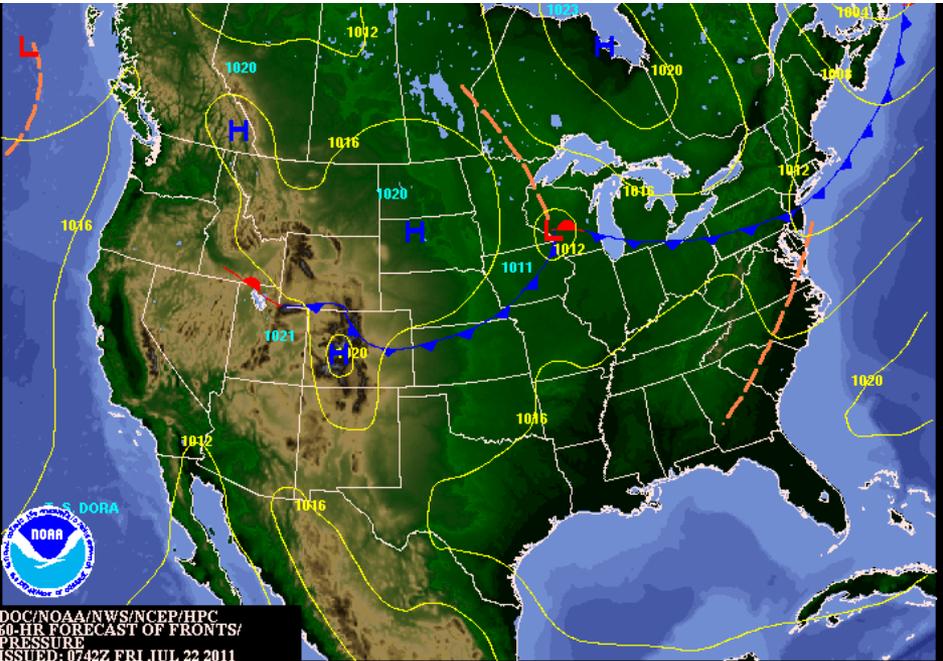
Today: Stay hydrated! Hot, humid, and stagnant conditions persist.
Saturday: Heat and humidity sticks around. Cloud cover on the rise.

Today → Saturday →



Sunday: Larger chance of thunderstorms than Saturday as cold front enters Maryland.

500 mb NAM at 2 PM.

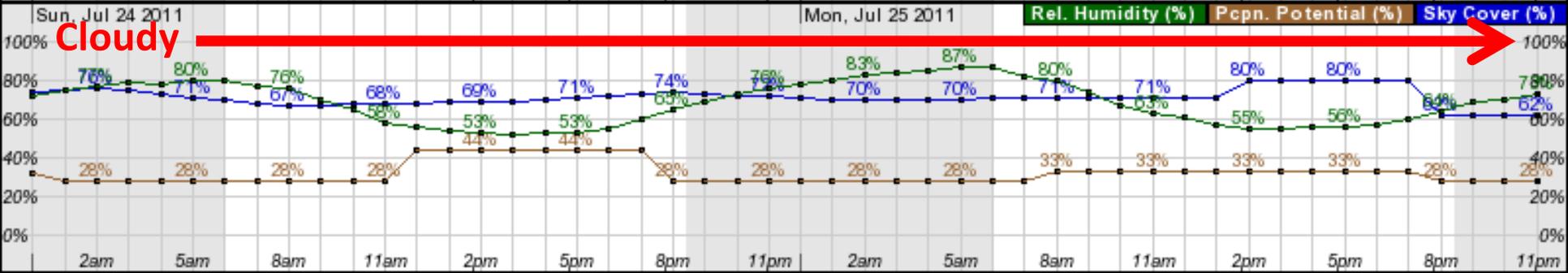
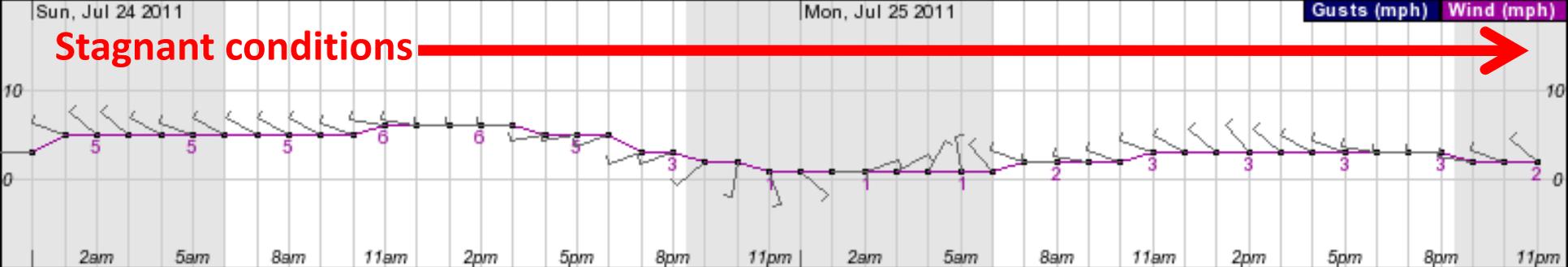
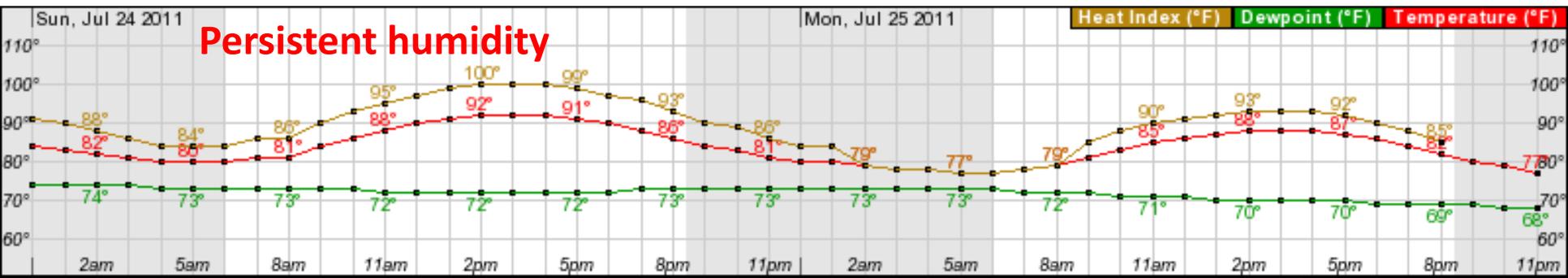


Sunday: Cloudy and humid.

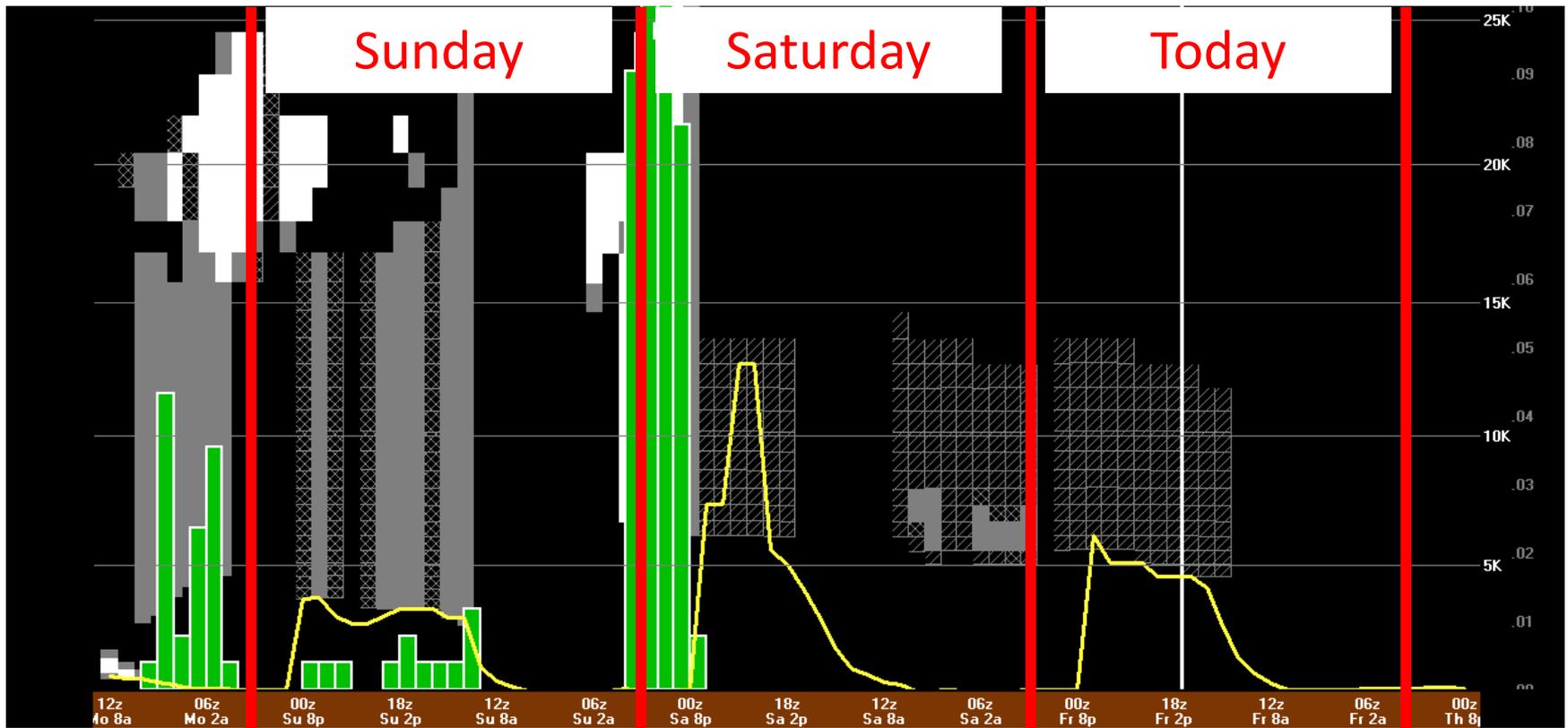
Monday: Cloudy and decreasing temperatures and humidity.

Sunday →

Monday →



BUFKIT – NAM (00 UTC 22 July)



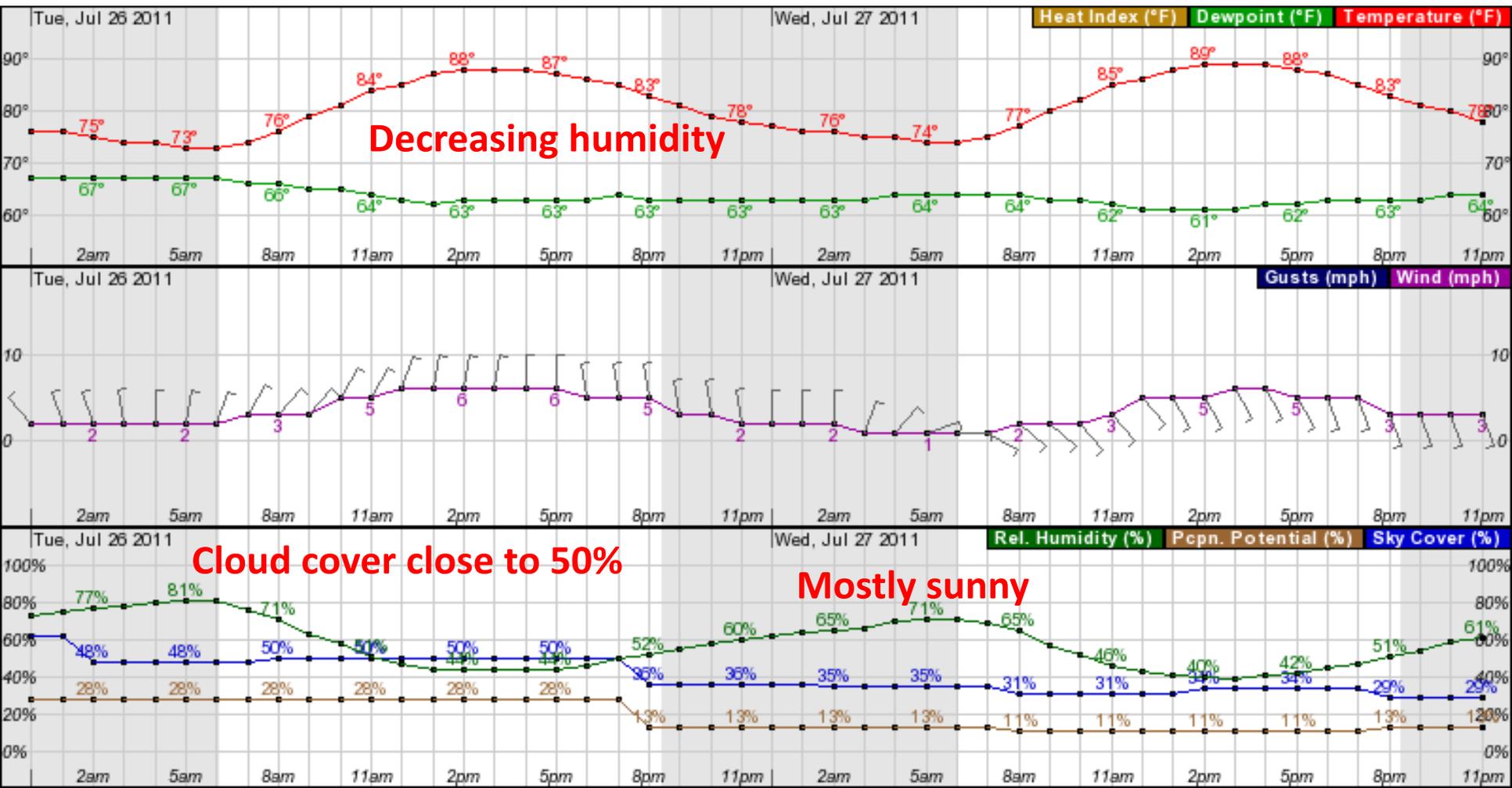
-Precipitation Saturday evening and Sunday.

Tuesday: Seasonal conditions and cloud cover around 50%.

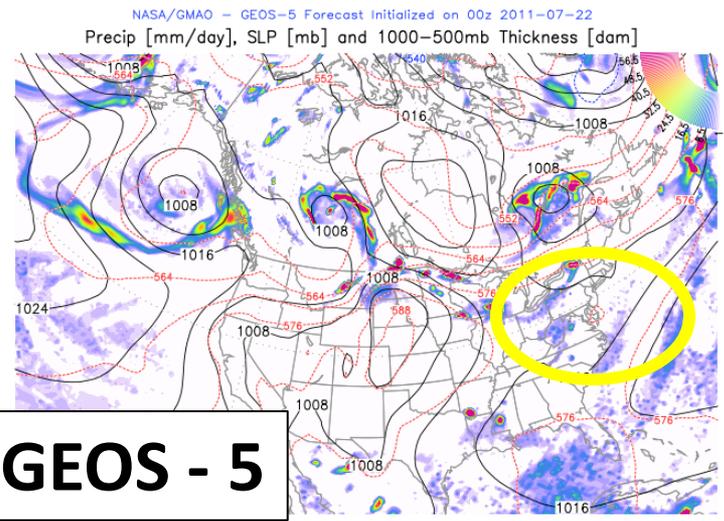
Wednesday: Mostly clear and dewpoints in the low 60s.

Tuesday →

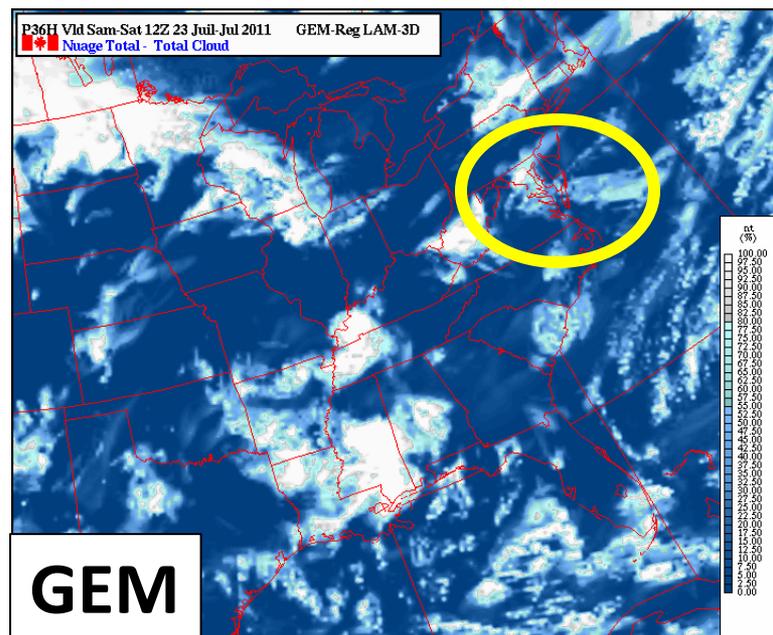
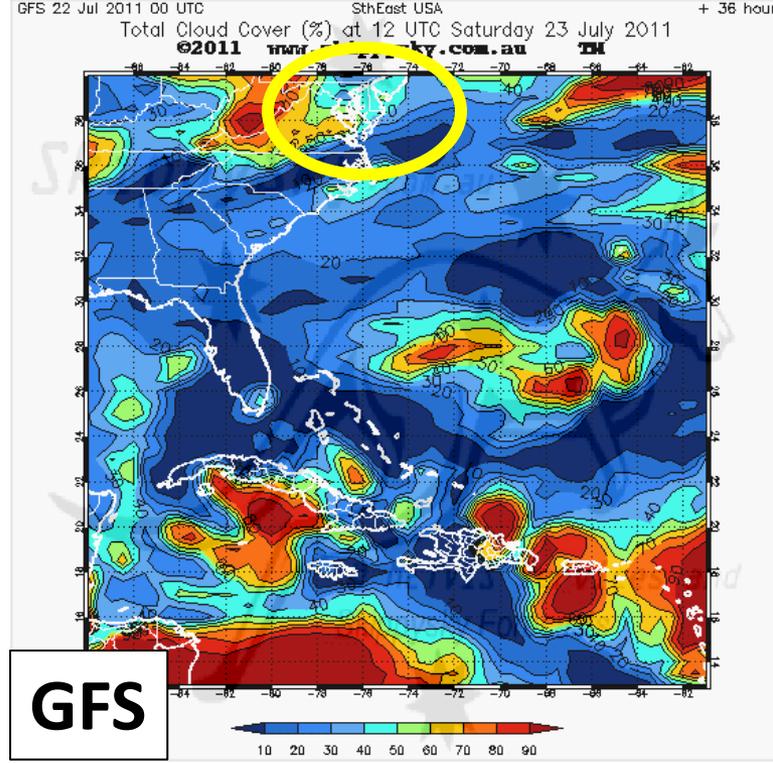
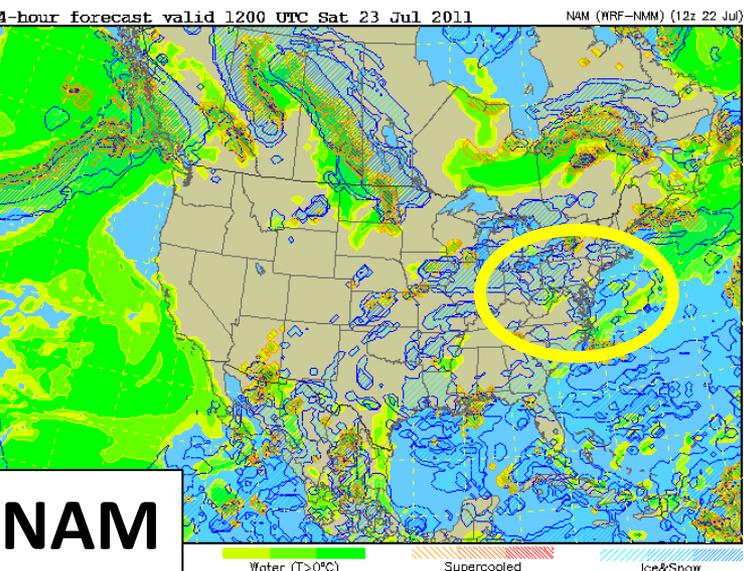
Wednesday →



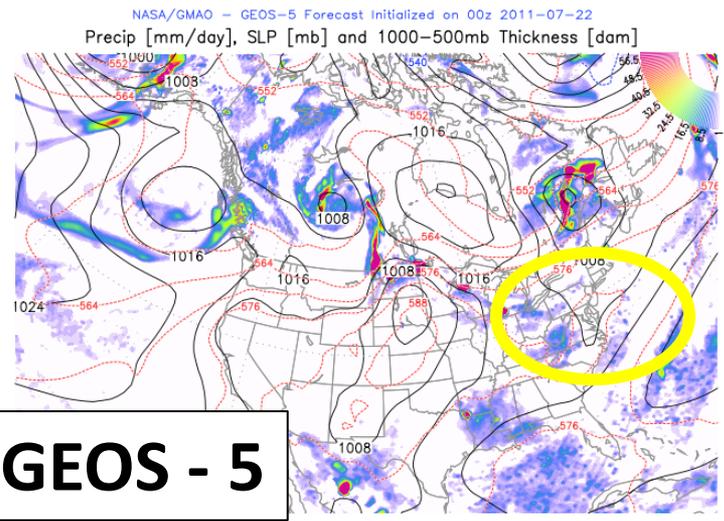
Saturday 8 am: Clouds present in GFS, NAM, and GEM. GFS cloud fraction < 50%; GEM cloud fraction > 50%.



36-hr forecast valid Sat 12z 2011-07-23

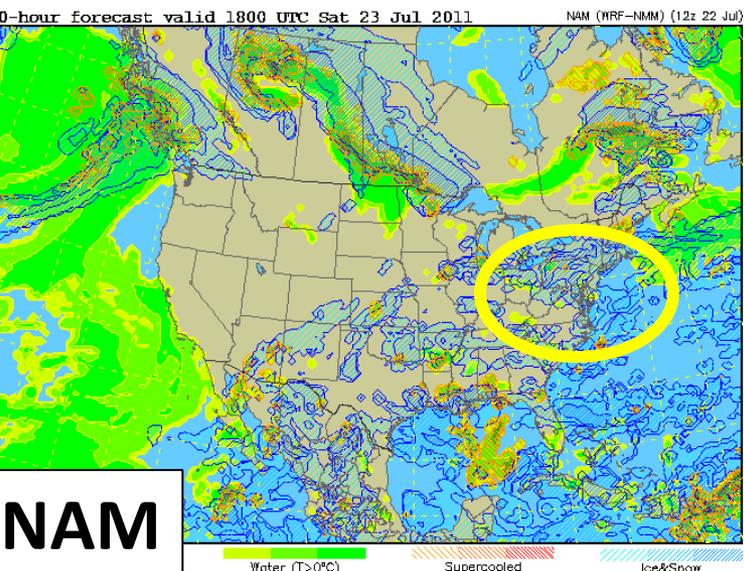


Saturday 2 pm: Clouds present in GFS, NAM, and GEM. GFS cloud fraction > 50%; GEM cloud fraction < 50%.

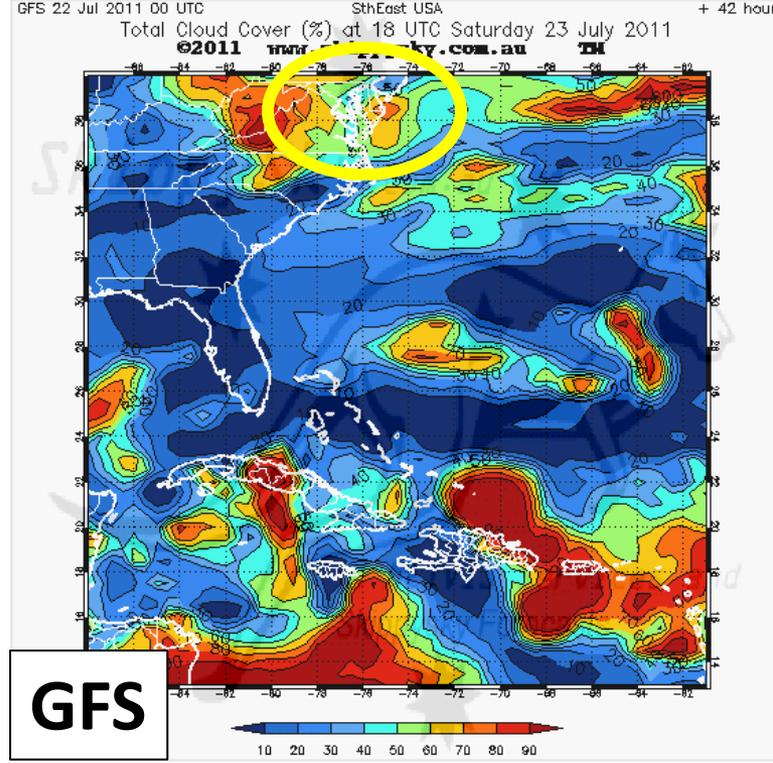


GEOS - 5

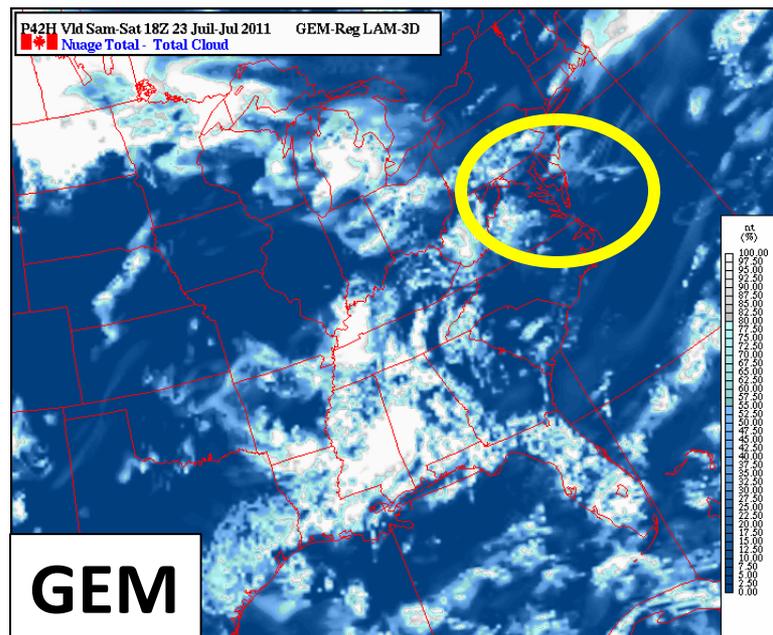
42-hr forecast valid Sat 18z 2011-07-23



NAM

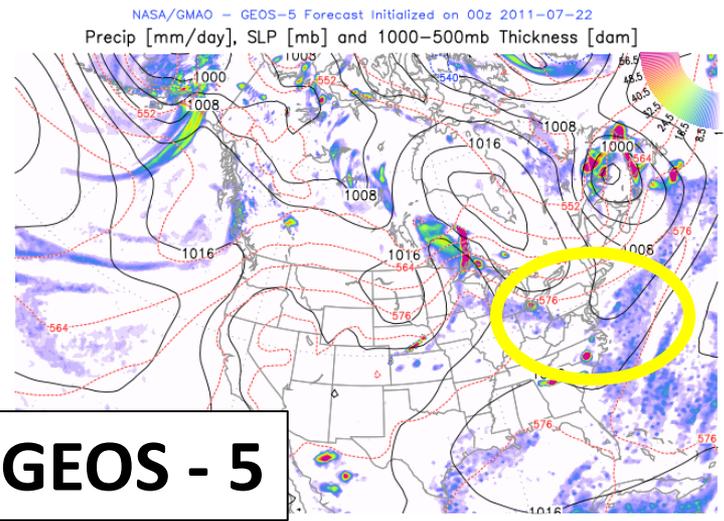


GFS

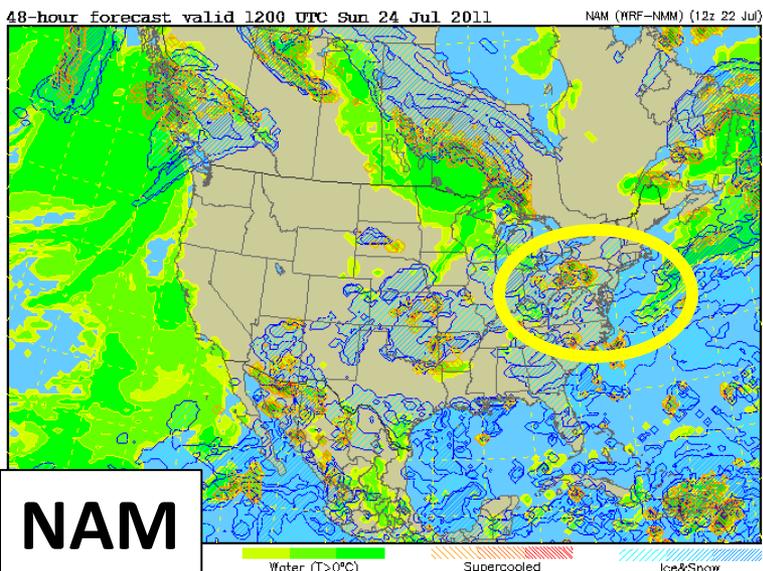
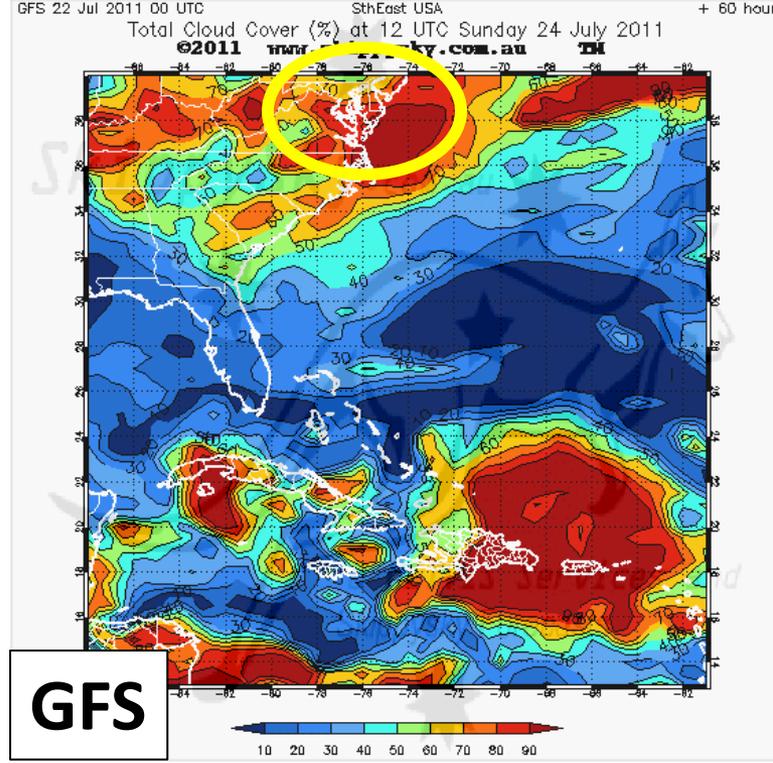


GEM

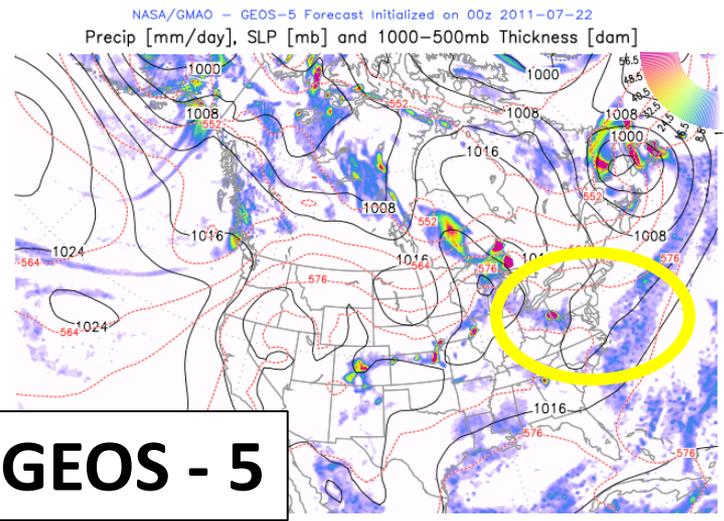
Sunday 8 am: Mostly cloudy.



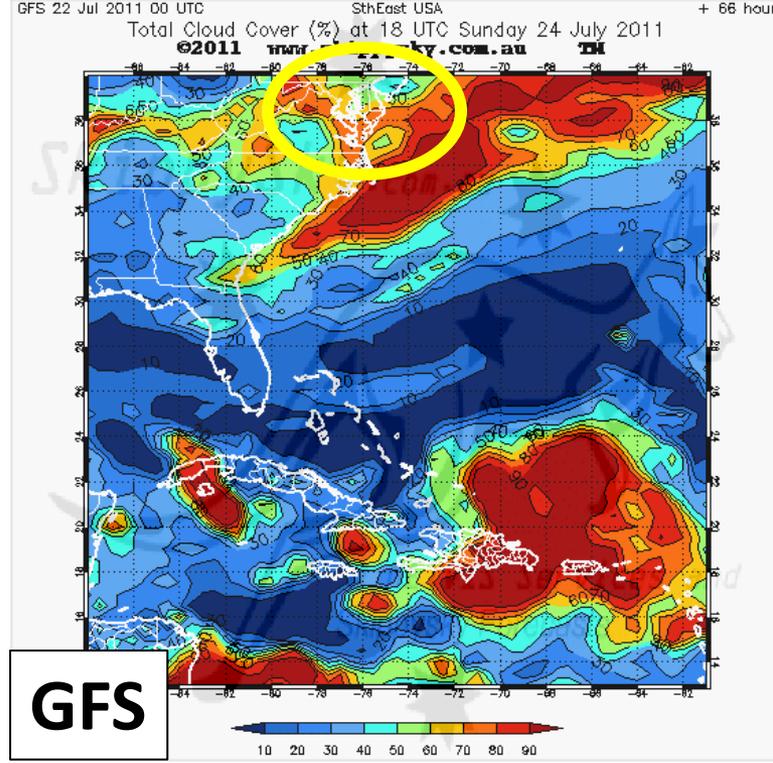
60-hr forecast valid Sun 12z 2011-07-24



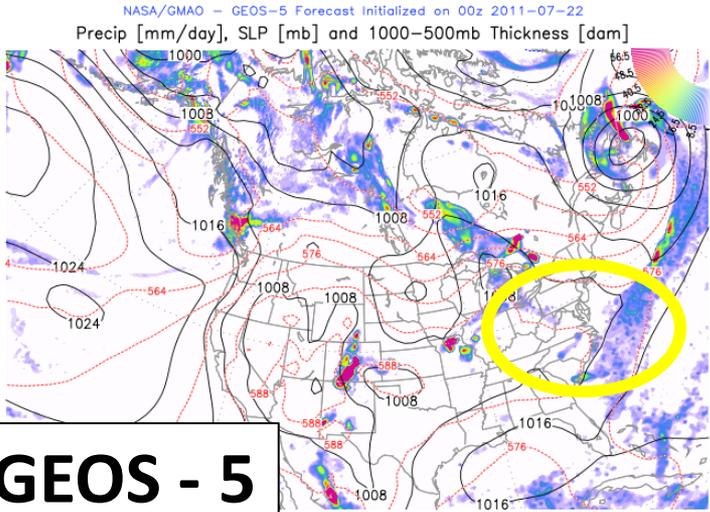
Sunday 2 pm: Mostly cloudy.



66-hr forecast valid Sun 18z 2011-07-24

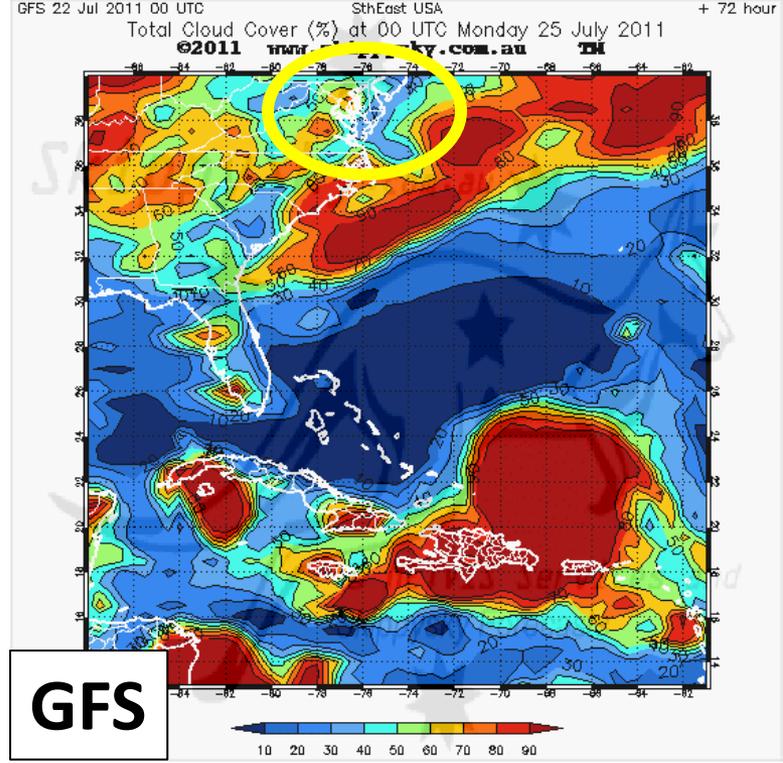


Sunday 8 pm: Cloudy.



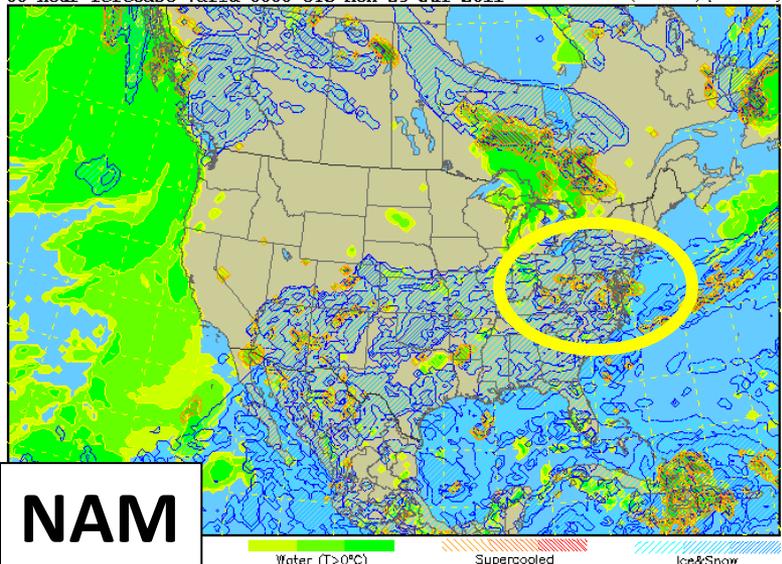
GEOS - 5

72-hr forecast valid Mon 00z 2011-07-25



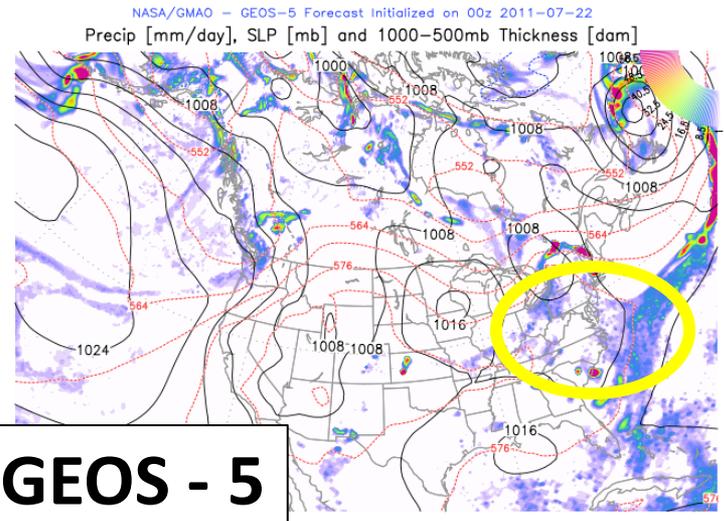
GFS

60-hour forecast valid 0000 UTC Mon 25 Jul 2011 NAM (MRF-NMM) (12z 22 Jul)

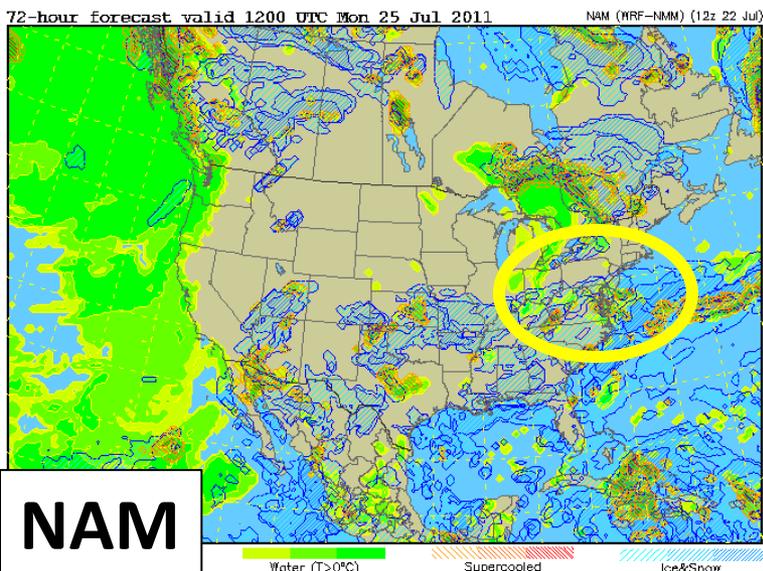
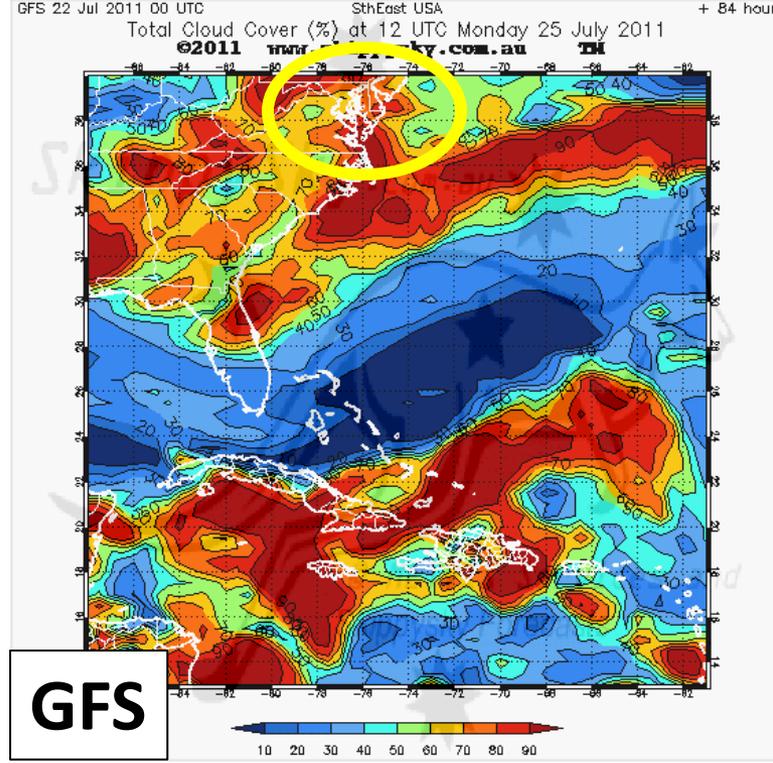


NAM

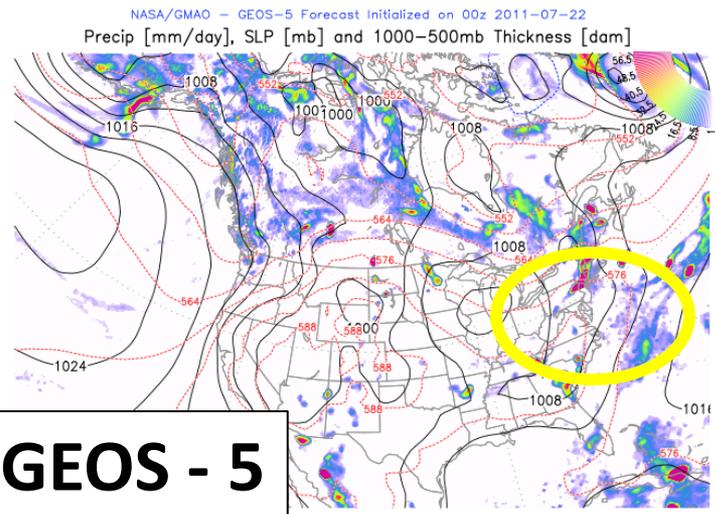
Monday 8 am: Mostly cloudy.



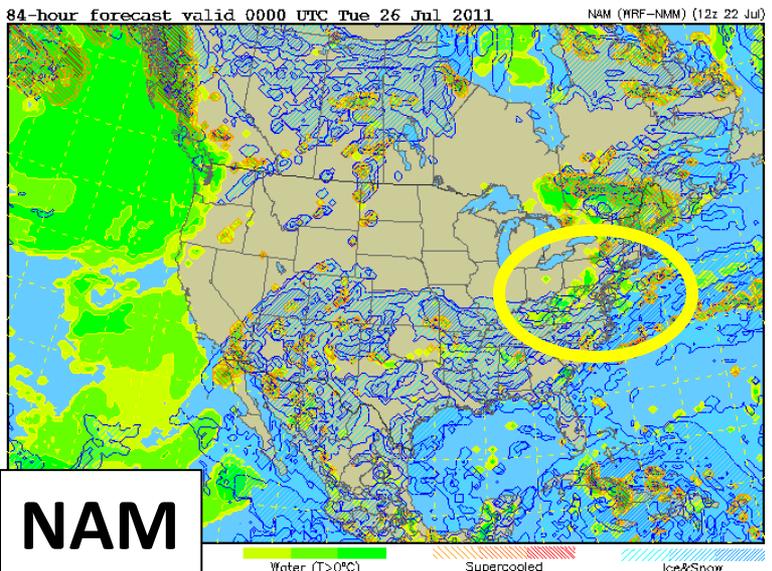
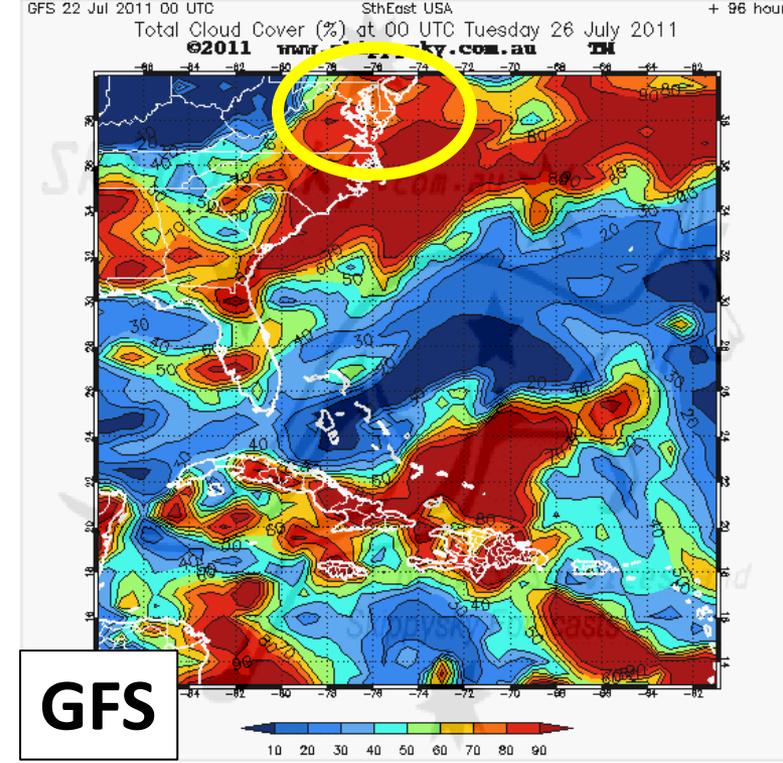
84-hr forecast valid Mon 12z 2011-07-25



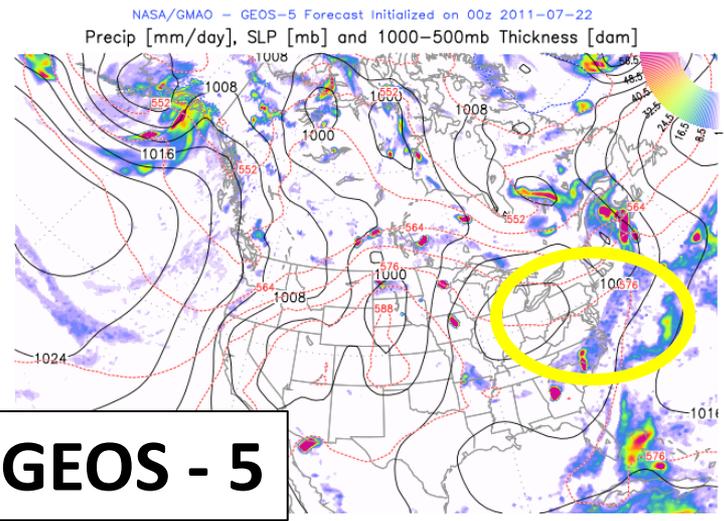
Monday 8 pm: Mostly cloudy.



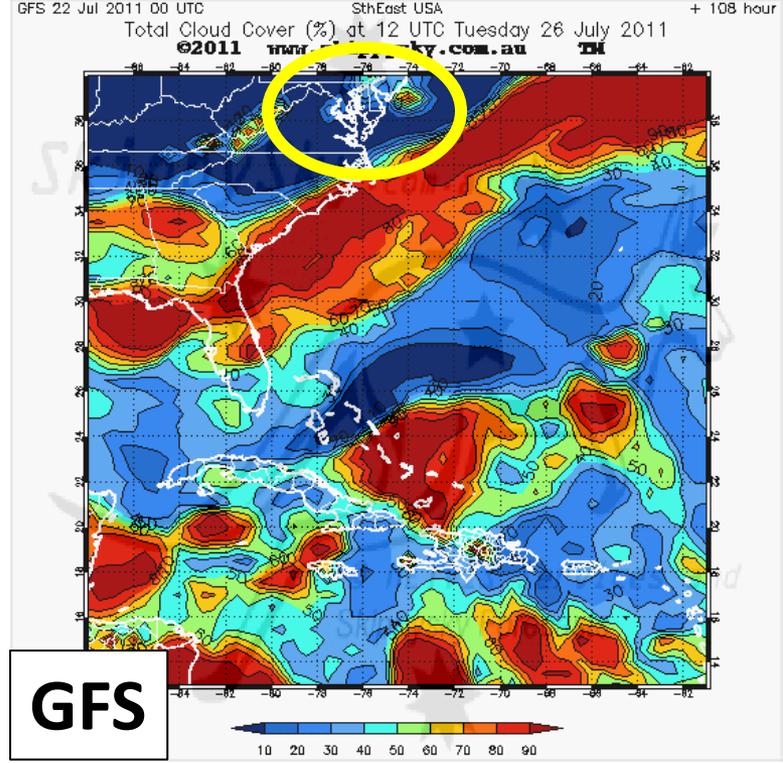
96-hr forecast valid Tue 00z 2011-07-26



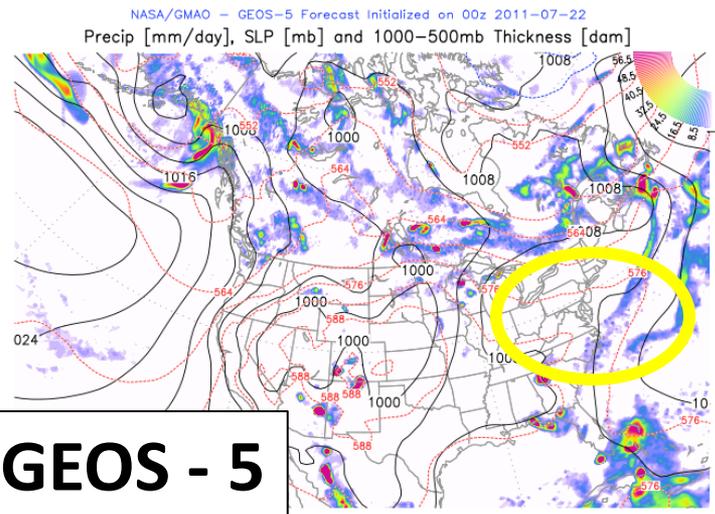
Tuesday 8 am: Mostly sunny.



108-hr forecast valid Tue 12z 2011-07-26

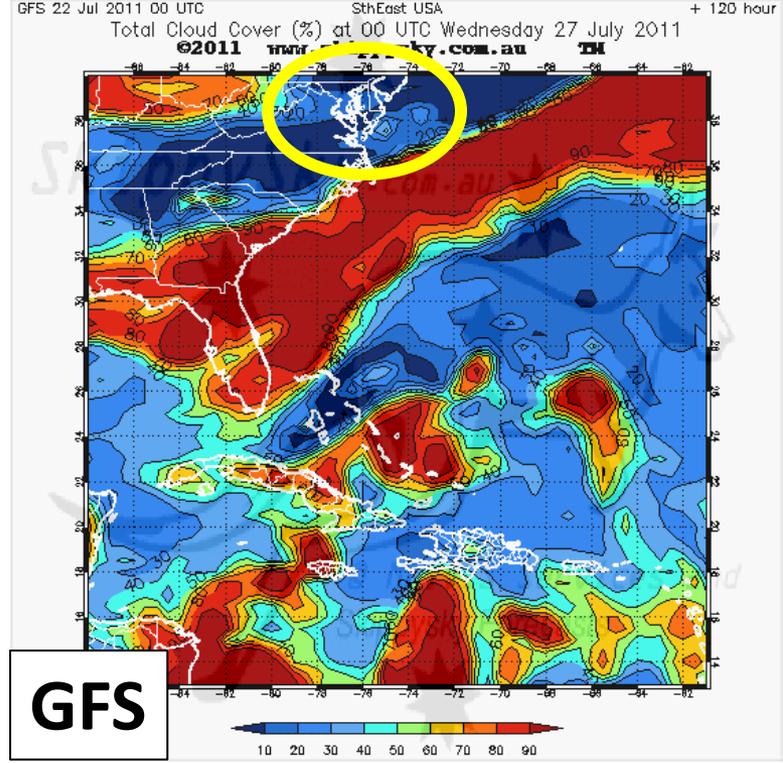


Tuesday 8 pm: Mostly sunny.



GEOS - 5

120-hr forecast valid Wed 00z 2011-07-27



GFS

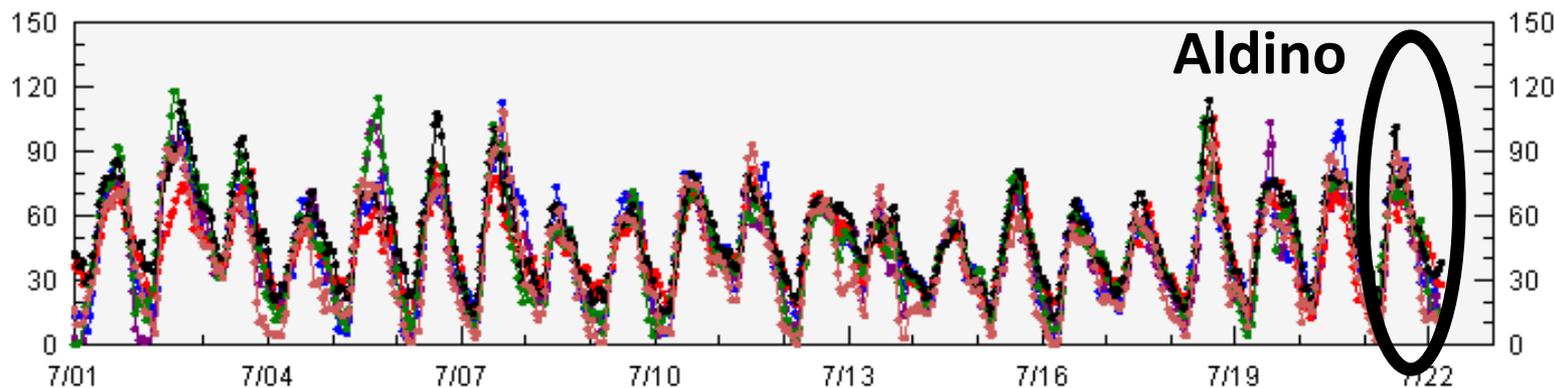
Extended forecast (Tuesday through Thursday):

Decreasing cloud cover Tuesday into Wednesday as cold front moves further offshore and high pressure builds back into the Mid-Atlantic.

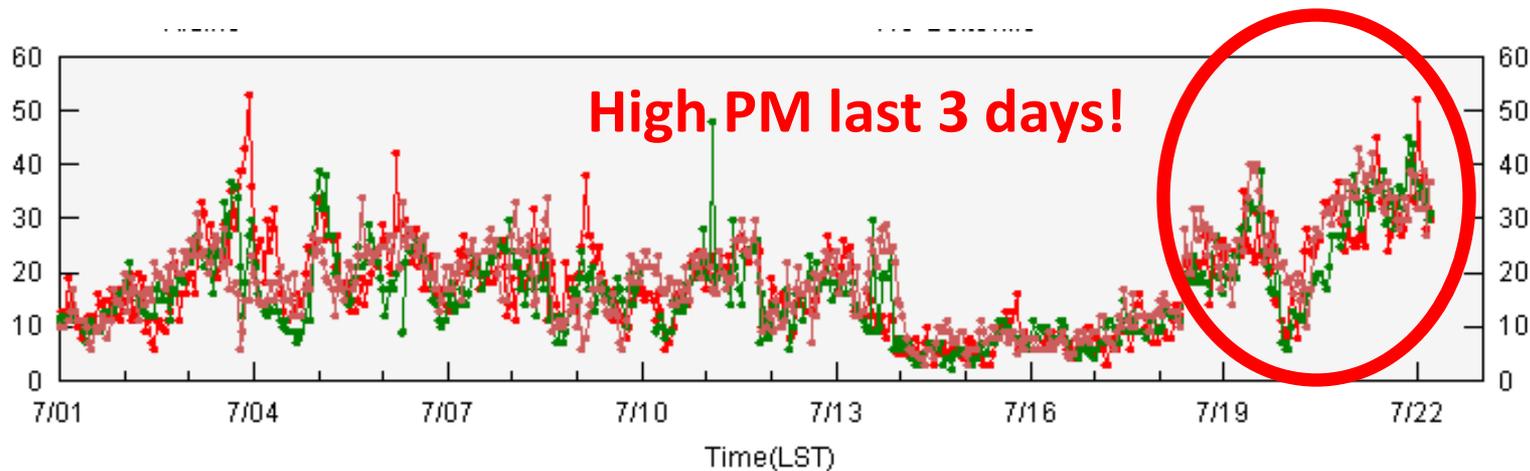
MDE Surface Sites

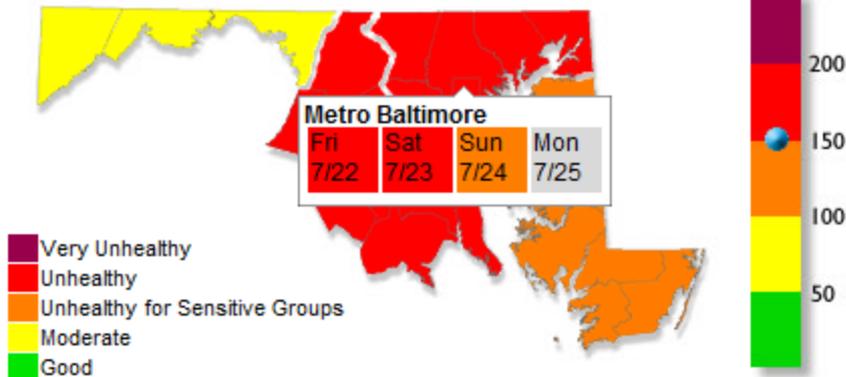
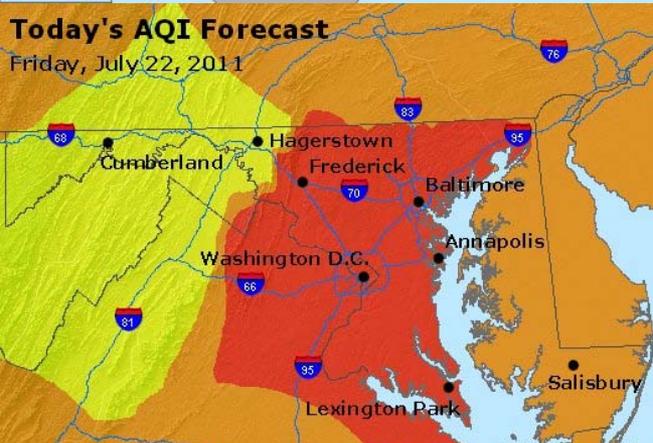
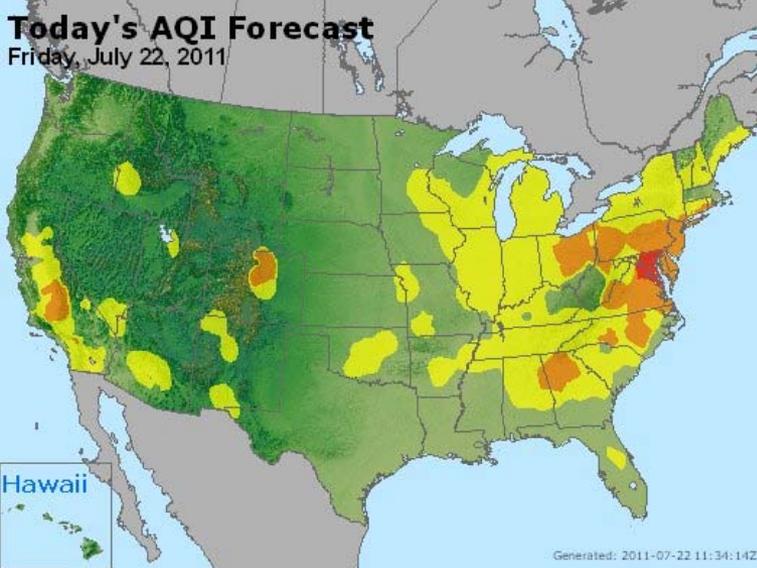
Padonia Beltsville Edgewood Aldino Essex Fairhill

Ozone (ppbv) 1 hr

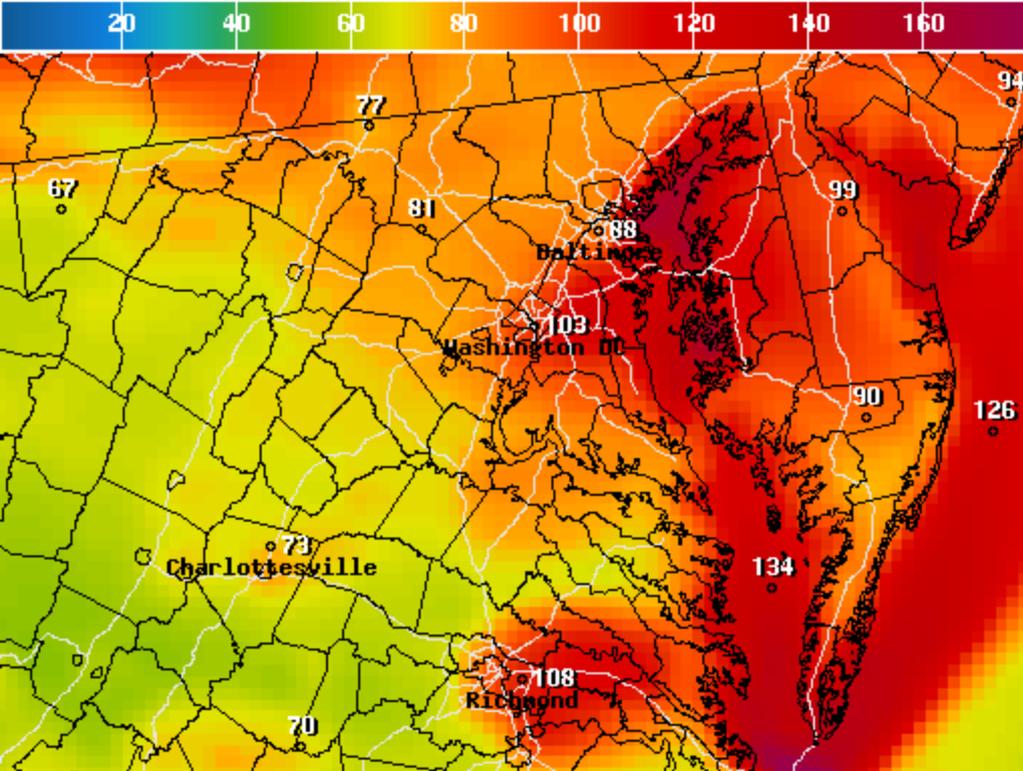


PM2.5 (ug/m³) 1 hr





Air Quality Forecast			
Today's High		Tomorrow's High	
Air Quality Index (AQI)		Air Quality Index (AQI)	
151	Unhealthy	151	Unhealthy
Health Message: Active children and adults, and people with lung disease, such as asthma, should avoid prolonged or heavy exertion outdoors. Everyone else, especially children, should reduce prolonged or heavy exertion outdoors.		Health Message: Active children and adults, and people with lung disease, such as asthma, should avoid prolonged or heavy exertion outdoors. Everyone else, especially children, should reduce prolonged or heavy exertion outdoors.	
AQI - Pollutant Details			
Ozone	151 Unhealthy	Ozone	151 Unhealthy
Particles (PM2.5)	102 Unhealthy for Sensitive Groups	Particles (PM2.5)	99 Moderate
<p>Forecast Discussion: A strong high pressure system will continue to dominate the weather over much of the Eastern U.S. through at least Saturday temperatures and heat index expected to beyond 100 F. Please monitor latest forecasts and warnings. In regards to air quality, there is still no relief in sight until another system moves into the area early next week. On Saturday, very light/stagnant winds at the surface combined with westerly transport aloft and mostly clear skies will cause widespread Unhealthy for Sensitive Groups (USG) conditions across the region for ozone. Isolated locations along the Baltimore-Washington corridor are expected observe Unhealthy ozone conditions. Particle pollution will also be elevated at Moderate/USG threshold as well. Poor air quality conditions are anticipated once again on Sunday. The wild card will be increased cloud covers due to a weak cold front moving into the area from the north. At this time, USG ozone are predicted to ensure the public are taking precautions to stay safe through this heat wave as well as poor air quality event. Air pollution levels are expected to decrease on Sunday due to weakening of the high pressure and increased cloud covers. Both ozone and particle pollution are expected to improve to Moderate/USG threshold. - MDE</p>			

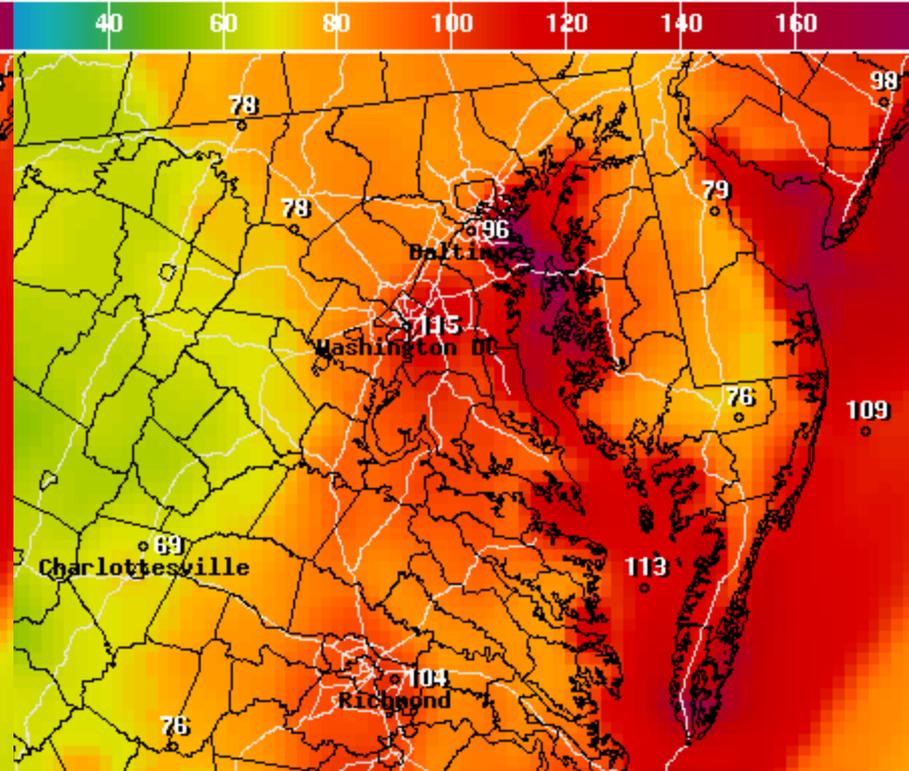


Maximum 1Hr Ozone(PPB) Ending Fri Jul 22 2011 11PM EDT
(Sat Jul 23 2011 03Z)

National Digital Guidance Database
06z model run Graphic created-Jul 22 7:44AM EDT



1-hr Max Ozone (ppbv) Friday



Maximum 1Hr Ozone(PPB) Ending Sun Jul 24 2011 12AM EDT
(Sun Jul 24 2011 04Z)

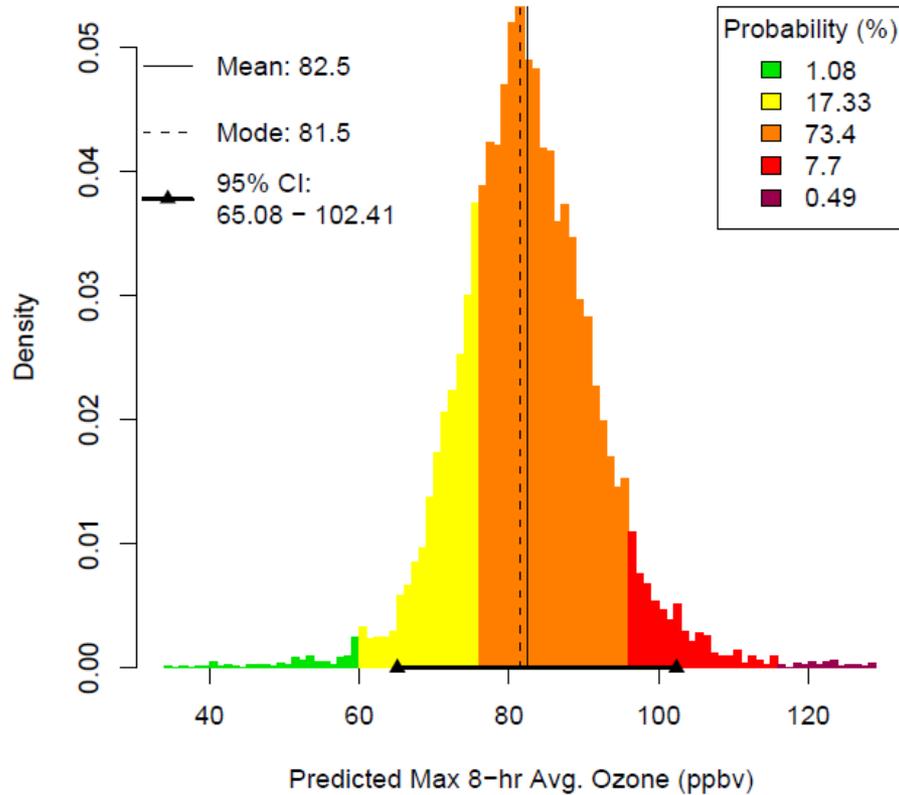
National Digital Guidance Database
06z model run Graphic created-Jul 22 7:44AM EDT



1-hr Max Ozone (ppbv) Saturday

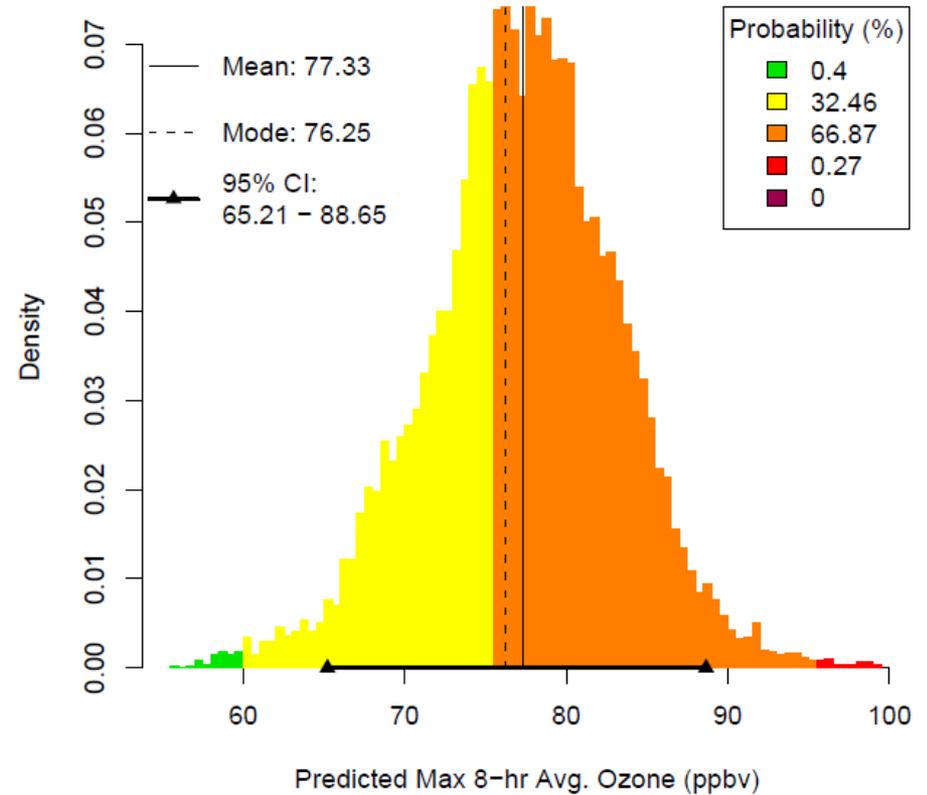
NAQFC-MOS valid for Saturday

ID: 240251001 VALID: 2011-07-23



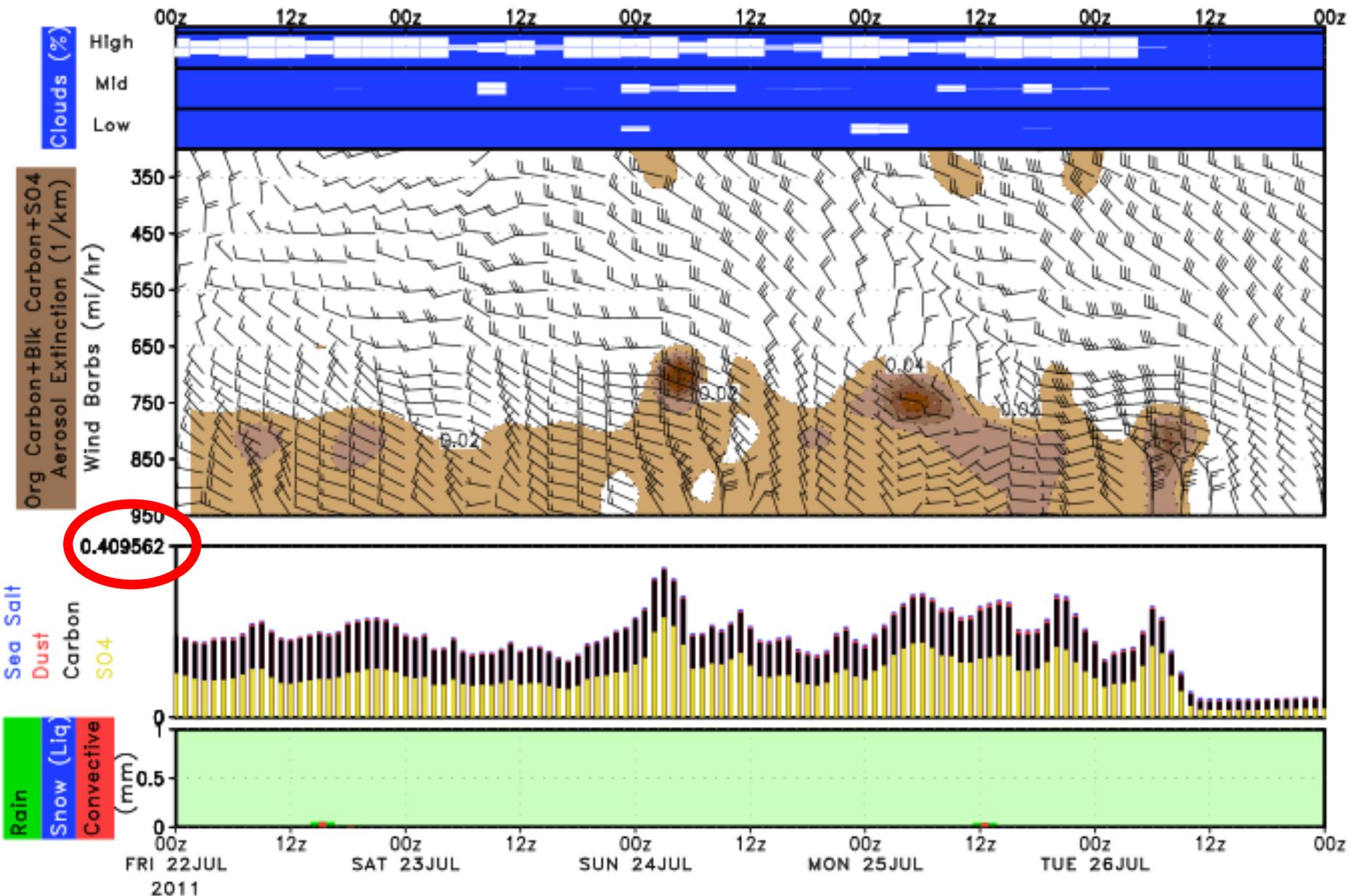
Edgewood

ID: 240330030 VALID: 2011-07-23



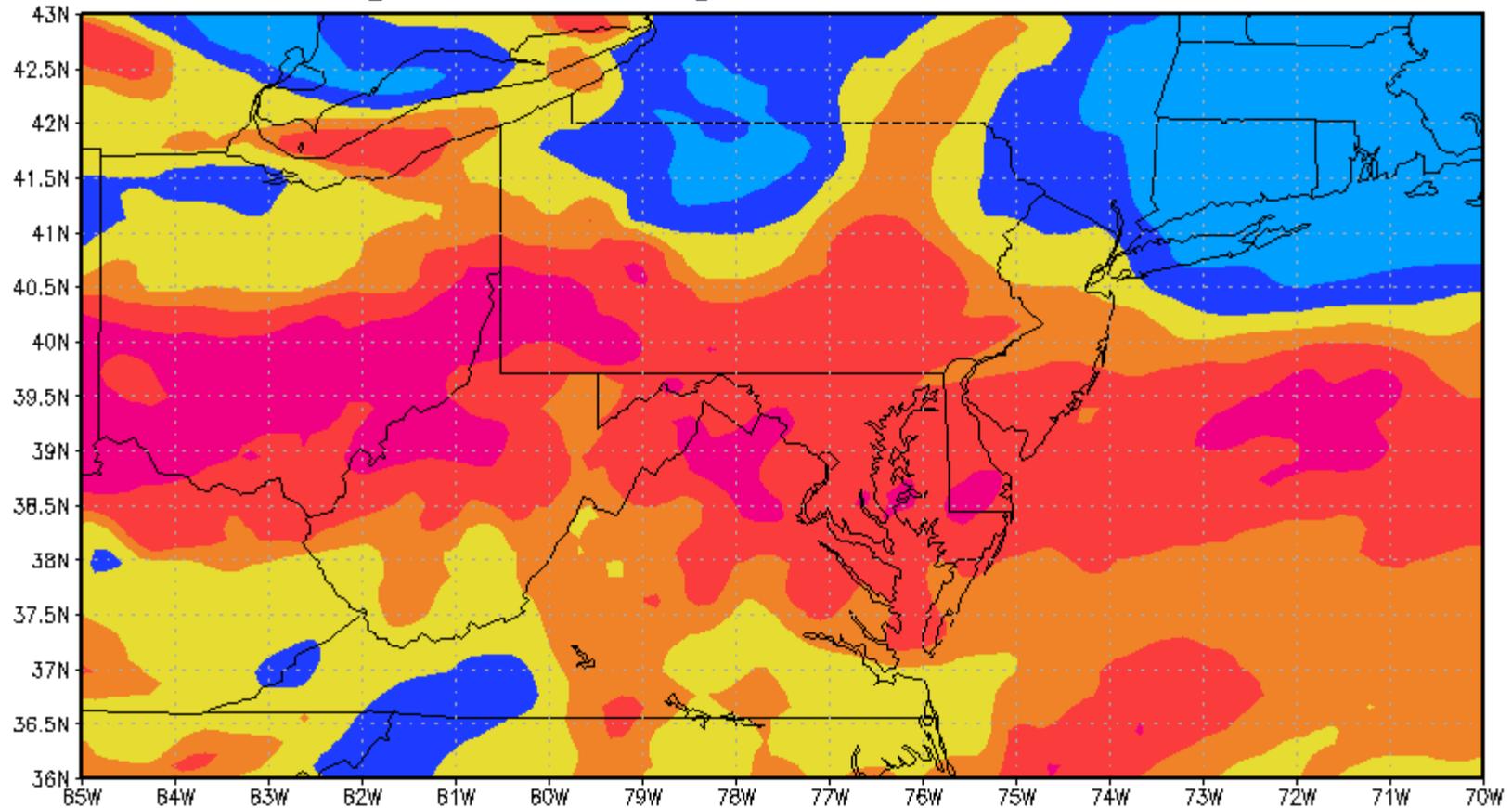
Beltsville

Essex

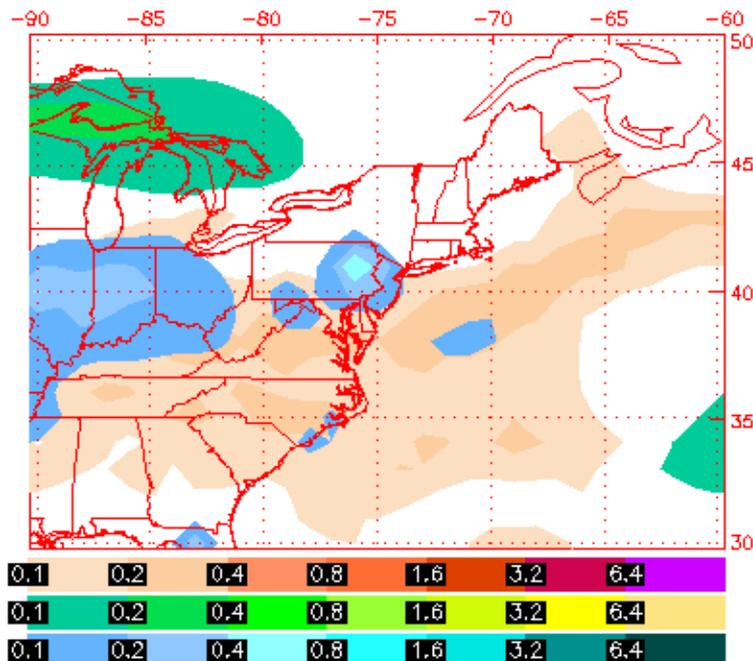


CMAQ AOD at 7 AM Saturday

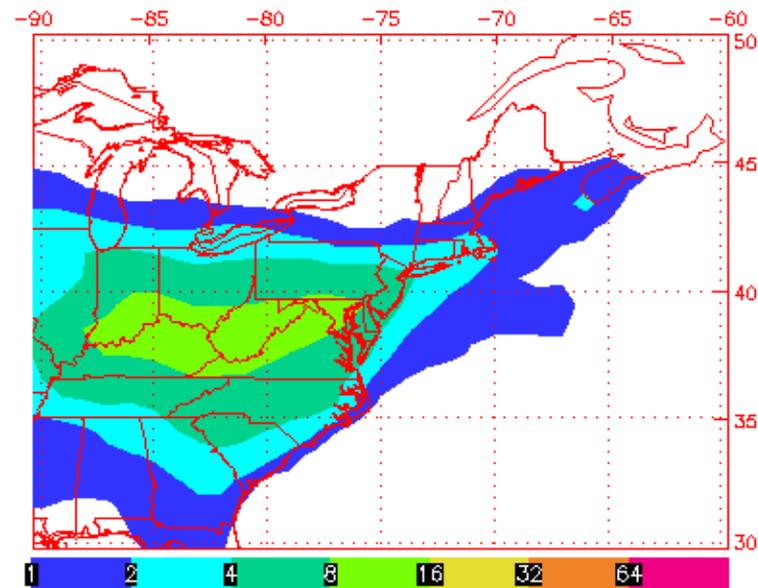
Column AOD [Dimensionless] at surface Valid 11 JUL 23 2011



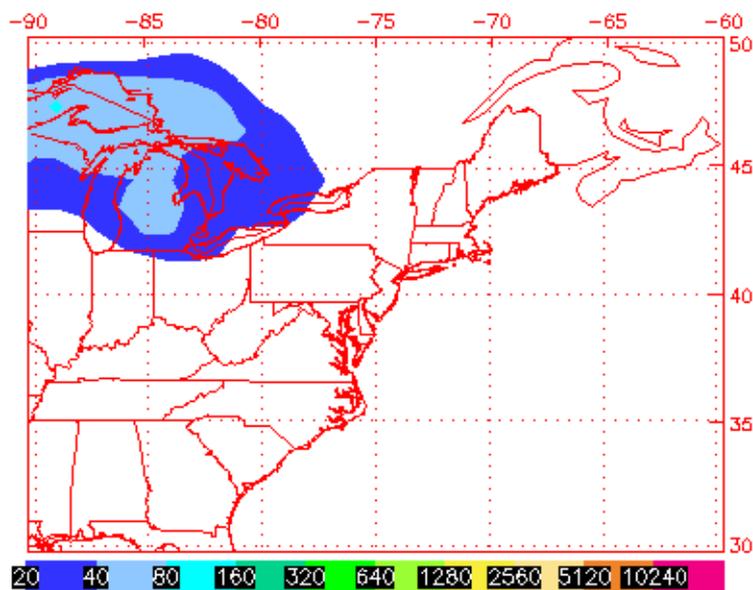
NAAPS Total Optical Depth for 18:00Z 22 Jul 2011
 Sulfate: Orange/Red, Dust: Green/Yellow, Smoke: Blue



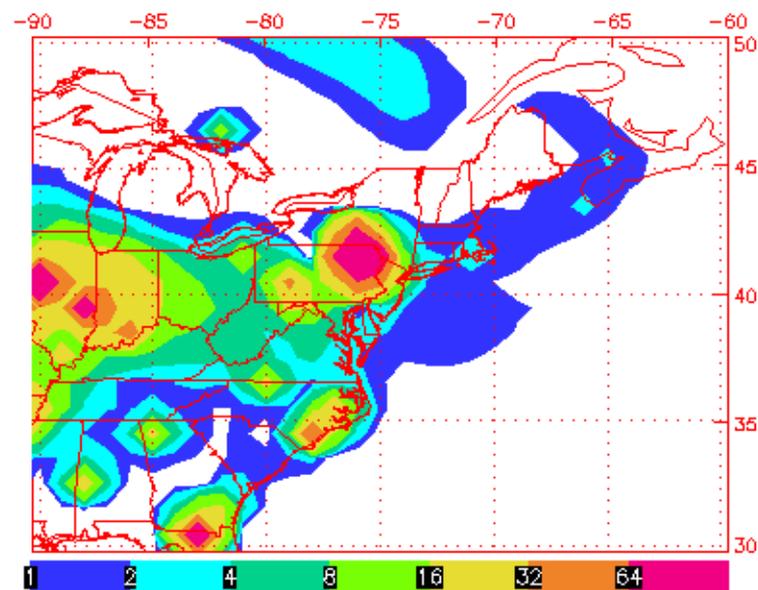
Sulfate Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 18:00Z 22 Jul 2011



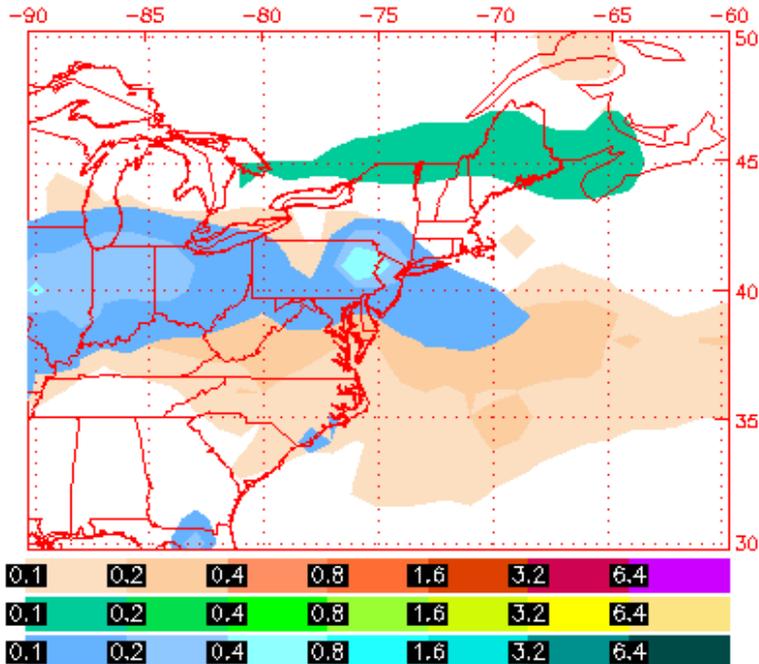
Dust Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 18:00Z 22 Jul 2011



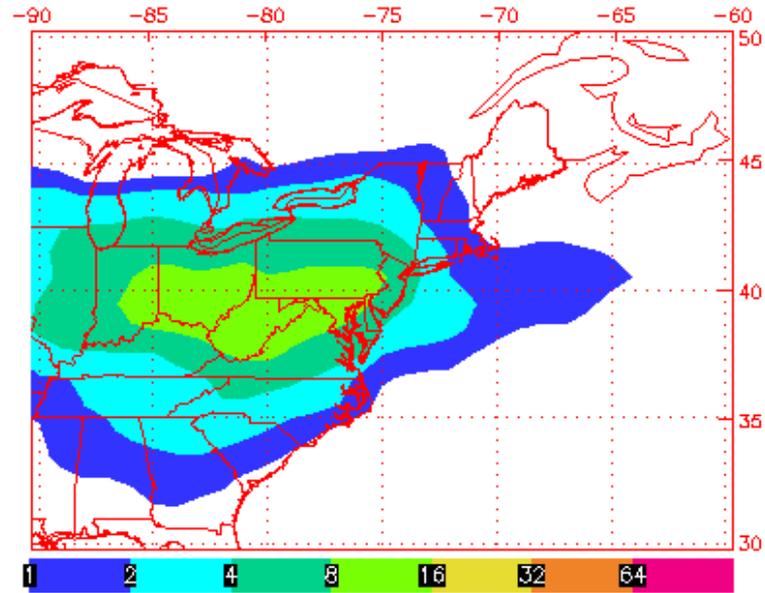
Smoke Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 18:00Z 22 Jul 2011



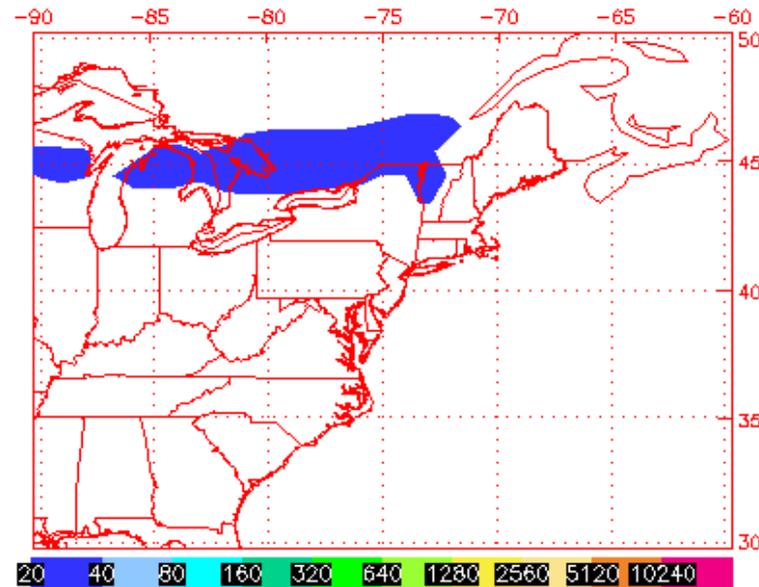
NAAPS Total Optical Depth for 18:00Z 23 Jul 2011
 Sulfate: Orange/Red, Dust: Green/Yellow, Smoke: Blue



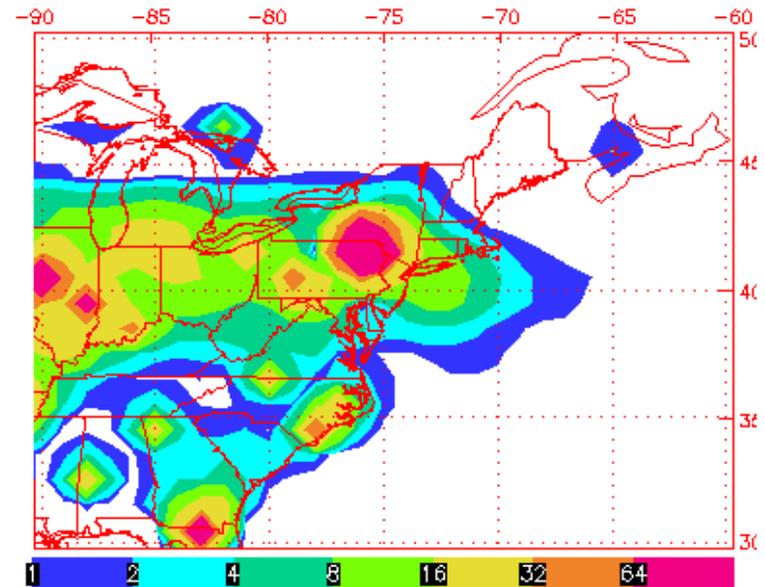
Sulfate Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 18:00Z 23 Jul 2011



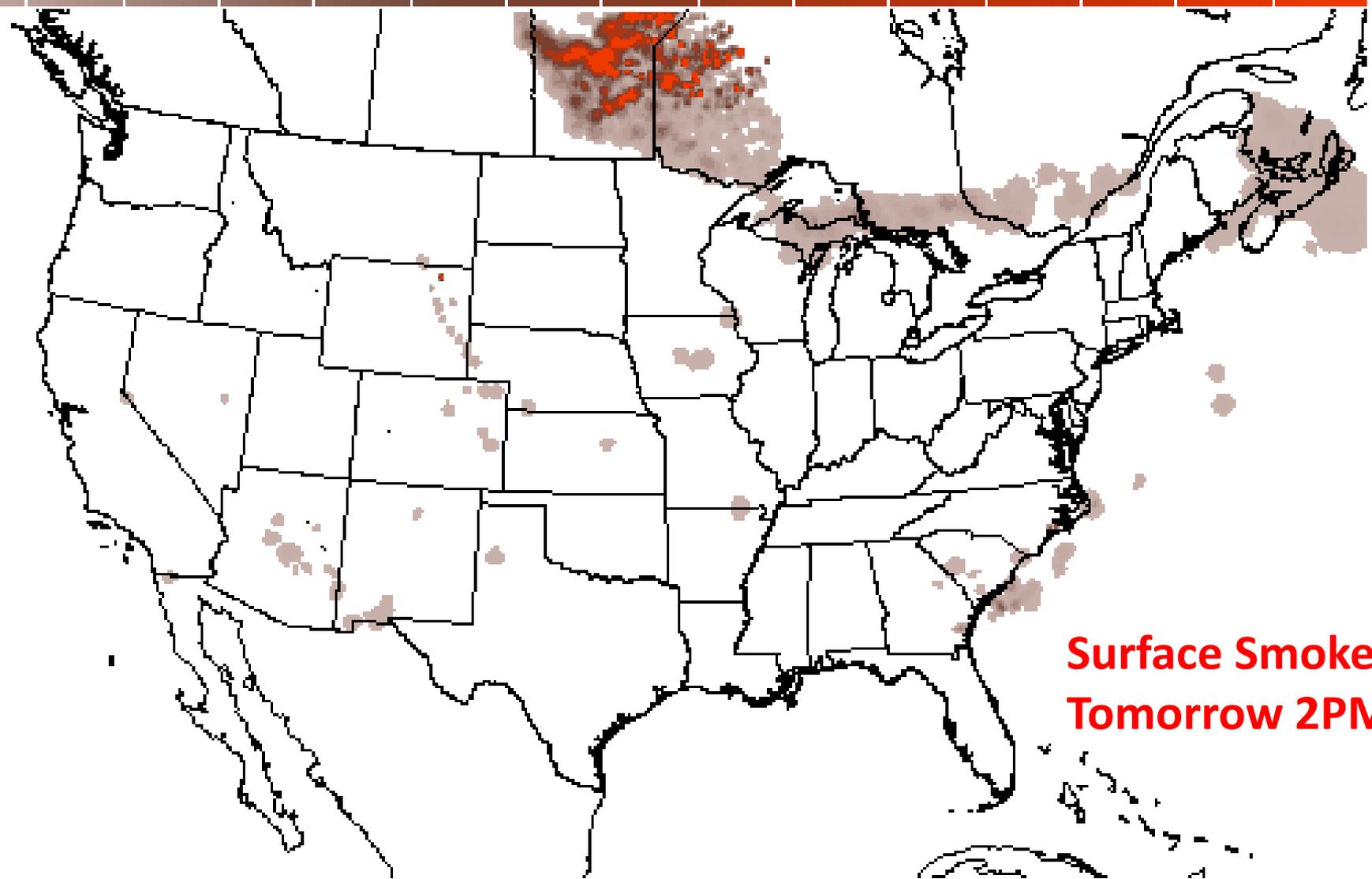
Dust Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 18:00Z 23 Jul 2011



Smoke Surface Concentration ($\mu\text{g}/\text{m}^3$)
 for 18:00Z 23 Jul 2011



10 20 30 40 50 60 70 80 90 100 110 120 130 140



**Surface Smoke
Tomorrow 2PM**

1Hr Surface Smoke (micrograms/m³) Sat Jul 23 2011 2PM EDT
(Sat Jul 23 2011 18Z)



National Digital Guidance Database

06z model run Graphic created-Jul 22 8:17AM EDT

AREA FORECAST DISCUSSION
NATIONAL WEATHER SERVICE BALTIMORE MD/WASHINGTON DC
1029 AM EDT FRI JUL 22 2011

.SYNOPSIS... STRONG HIGH PRESSURE WILL IMPACT THE MID ATLANTIC TODAY. A FRONT SLIPS INTO THE MID-ATLANTIC LATE SATURDAY AND REMAINS OVER THE AREA THROUGH MONDAY...WHEN ANOTHER COLD FRONT WILL MOVE THROUGH. THEN...HIGH PRESSURE BUILDS IN.

.NEAR TERM /THROUGH TONIGHT/... HEAT CONTINUES TODAY UNDER A STRONG DOME OF HIGH PRESSURE OVERHEAD. AT 10 AM...HEAT INDICES AT WASHINGTON NATIONAL AND THE MARYLAND SCIENCE CENTER WERE ALREADY AROUND 110!!

HEAT HEADLINES REMAIN AS IS...WITH MUCH OF THE CWA UNDER AN EXCESSIVE HEAT WARNING THROUGH THIS EVENING FOR HEAT INDEX VALUES REACHING 115. SOME PLACES MAY HAVE HEAT INDEX VALUES SLIGHTLY HIGHER. PLEASE REFER TO WBCNPWLWX FOR ADDITIONAL DETAILS INCLUDING PRECAUTIONARY/PREPAREDNESS ACTIONS FOR THIS DANGEROUS HEAT EVENT.

WITH UPPER RIDGE AND ASSOCIATED HIGH HEIGHTS/TEMPERATURES IN PLACE AND GENERAL LACK OF SYNOPTIC FORCING...COVERAGE OF ANY THUNDERSTORMS SHOULD BE LIMITED. HOWEVER...GIVEN THE AMOUNT OF CAPE FORECAST /4000 J/KG/...ANY ISOLATED THUNDERSTORMS THAT ARE ABLE TO POP UP WOULD QUICKLY GROW AND COULD BECOME STRONG/SEVERE WITH DAMAGING MICROBURST WINDS. WITH HIGH PRECIPITABLE WATERS...HEAVY RAINFALL WOULD ALSO OCCUR. MESOSCALE INFLUENCES WOULD LIKELY DRIVE ANY CONVECTION. WILL OBVIOUSLY HAVE TO WATCH ANY POSSIBLE BAY BREEZE...BUT TERRAIN/OROGRAPHICS MAY WIND UP BEING THE DOMINANT FORCE FOR CELLS INITIATING LATE THIS AFTERNOON /4-5 PM/. OUTFLOWS WILL THEN PLAY A ROLE ON WHETHER OR NOT CONVECTION CAN MOVE TO THE EAST THIS EVENING BEFORE DIMINISHING.

.SHORT TERM /SATURDAY THROUGH MONDAY/... MID-ATLC WILL RESIDE ON NE PERIPHERY OF INTENSE UPR RDG THRU WKEND. EXCESSIVE HEAT AGAIN EXPECTED ON SAT...WITH MAXIMA IN EXCESS OF 100F MANY AREAS E OF BLUE RIDGE. WITH HIGH RELATIVE HUMIDITY...HEAT INDICES WILL RESIDE ABOVE 110F FOR MUCH OF THE DAYTIME HOURS IN THESE AREAS. HEAT ADZY OUT FOR AREAS W OF BLUE RIDGE...WHERE HEAT INDICES SHUD HOLD IN 105-109F RANGE. DAILY HIGH MAXIMA AND MINIMA IN JEOPARDY SAT...SEE CLIMATE SECTION FOR DETAILS.

IN ADDITION TO SAT HEAT...SHWRS/TSTMS PSBL ESPECIALY DURG AFTN/EVE. CVRG LIKELY TO BE GREATER THAN FRI AS LEE TROF BCMS MORE PRONOUNCED...BUT STILL SCATTERED IN NATURE. WITH SBCAPE WELL ABV 2000J/KG AND STEEP LLVL LAPSE RATES...SVR WET MICROBURSTS APPEAR PSBL. IN ADDITION...PWATS INCR TO WELL OVR 2 INCHES...AND COMBINED WITH DEEP WARM LYR AND WEAK FLOW AT NEARLY ALL LEVELS...THERE IS A THREAT OF SLOW-MOVING HIGHLY EFFECTIVE RAINFALL PRODUCERS. DESPITE FAIRLY DRY ANTECEDENT CONDS...RISK FOR LOCALIZED FLASH FLOODING WILL EXIST. DIURNAL LULL IN CNVCTN SAT NGT FOLLOWED BY EVEN GREAT CVRG OF SHWRS/TSTMS SUN AFTN/EVE AS FRONT SLIPS ACRS MASON-DIXON LINE. SIMILAR ENVIRONMENTAL CONDS FOR TSTM CHARACTERISTICS AS SAT...SO AFOREMENTIONED SVR/FLASH FLOOD RISKS CONT.

LITTLE RH RELIEF THRU LATE MON...WHEN CDFNT SHUD MOVE THRU CWA...BRINGING CHC POPS. TEMPS WILL RMN ABV NRML...BUT SIGNIFICANT CLOUD-COVER MAY INHIBIT WRMG TO SOME XTNT. STILL...HEAT INDICES AT LEAST ON SUN AFTN APPEAR LIKELY TO XCD 100F ALONG AND E OF I-95 CORRIDOR.

.LONG TERM /MONDAY NIGHT THROUGH THURSDAY/... CDFNT MOVES THRU MON EVE/NGT...BRINGING SEASONAL TEMPS AND LOWER RH IN ITS WAKE FOR TUE. AFTER FRONT AND ASSOCIATED UPR SHRTWV TROF MOVE E OF RGN BY TUES NGT...HIPRES BUILDS IN WITH DRY AND GRADUALLY HIGHER TEMPS THRU MIDDLE OF NEXT WK.