

DISCOVER-AQ Outlook for Monday, July 18, 2011

Good flying conditions are forecasted for Monday, though we should keep an eye on possible late afternoon clouds. Clouds will probably be a problem for Tuesday. Wednesday through the weekend will likely be hazy, hot, and humid. This heatwave builds as the massive upper-level ridge plaguing the Plains moves east. Air quality is expected to be poor most of the work week.

Recommendations for July 18th-22nd

- Monday, July 18th: Fly – possible afternoon clouds –
TES special observation
- Tuesday, July 19th: No fly – clouds
- Wednesday, July 20th: Can Fly – MISR
- Thursday, July 21st: Can Fly
- Wednesday → Sunday – AQ should be awful, asthmatics
wheezing

Current Conditions at BWI, 11am

Baltimore-Washington International Airport

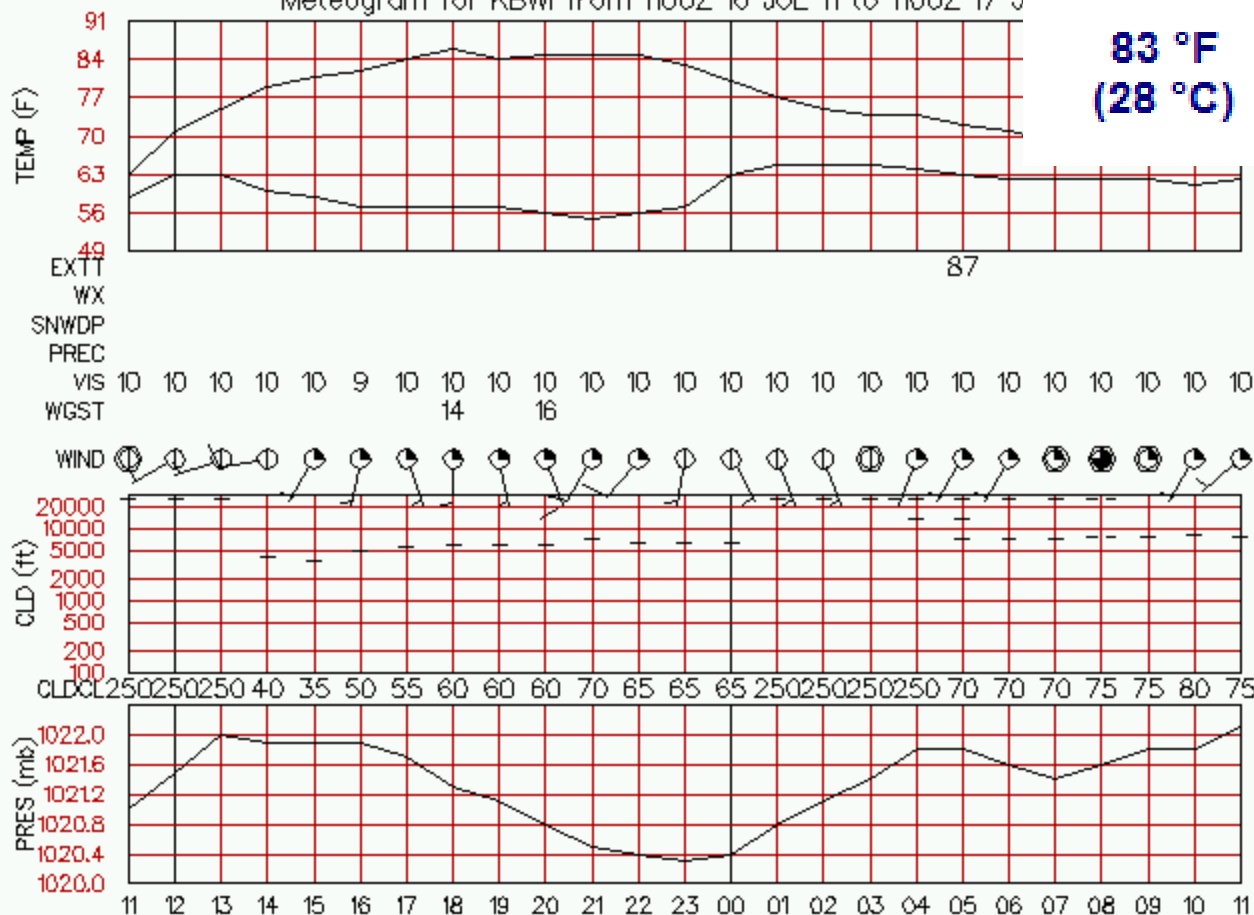
Lat: 39.19 Lon: -76.67 Elev: 148

Last Update on Jul 17, 10:54 am EDT

▼ Plymouth State Weather Center ▼

Partly Cloudy

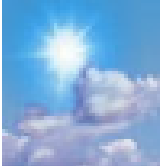



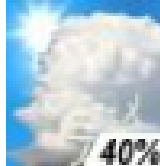

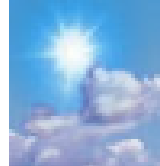


Meteogram for KBWI from 1100Z 16 JUL 11 to 1100Z 17 JUL 11













Humidity:	55 %
Wind Speed:	SW 6 MPH
Barometer:	30.19" (1022.3 mb)
Dewpoint:	65 °F (18 °C)
Heat Index:	85 °F (29 °C)
Visibility:	10.00 mi.

NWS Forecast for BWI

Forecast at a Glance

Today	Tonight	Monday	Monday Night	Tuesday	Tuesday Night	Wednesday	Wednesday Night	Thursday
								
Mostly Sunny	Partly Cloudy	Slight Chc Tstms	Chance Tstms	Chance Tstms	Chance Tstms	Mostly Sunny	Partly Cloudy	Chance Tstms
Hi 90 °F	Lo 70 °F	Hi 94 °F	Lo 74 °F	Hi 93 °F	Lo 73 °F	Hi 93 °F	Lo 75 °F	Hi 98 °F

“SYNOPSIS... HIGH PRESSURE WILL CONTINUE ACROSS THE MID ATLANTIC FOR THE REMAINDER OF THE WEEKEND. A FRONT WILL MOVE SOUTH ACROSS THE REGION ON TUESDAY...WITH HIGH PRESSURE RETURNING FOR THE REMAINDER OF THE WORK WEEK.”

Today Jul 17	Mon 18	Tue 19	Wed 20	Thu 21	Fri 22	Sat 23	Sun 24	Mon 25	Tue 26
									
Mostly Sunny	Partly Cloudy	Scattered T-Storms	Sunny	Mostly Sunny	Mostly Sunny	Isolated T-Storms	Isolated T-Storms	Isolated T-Storms	Scattered T-Storms
89°F High	94°	92°	94°	99°	98°	97°	96°	91°	90°
70° Low	74°	73°	75°	78°	78°	77°	74°	72°	71°

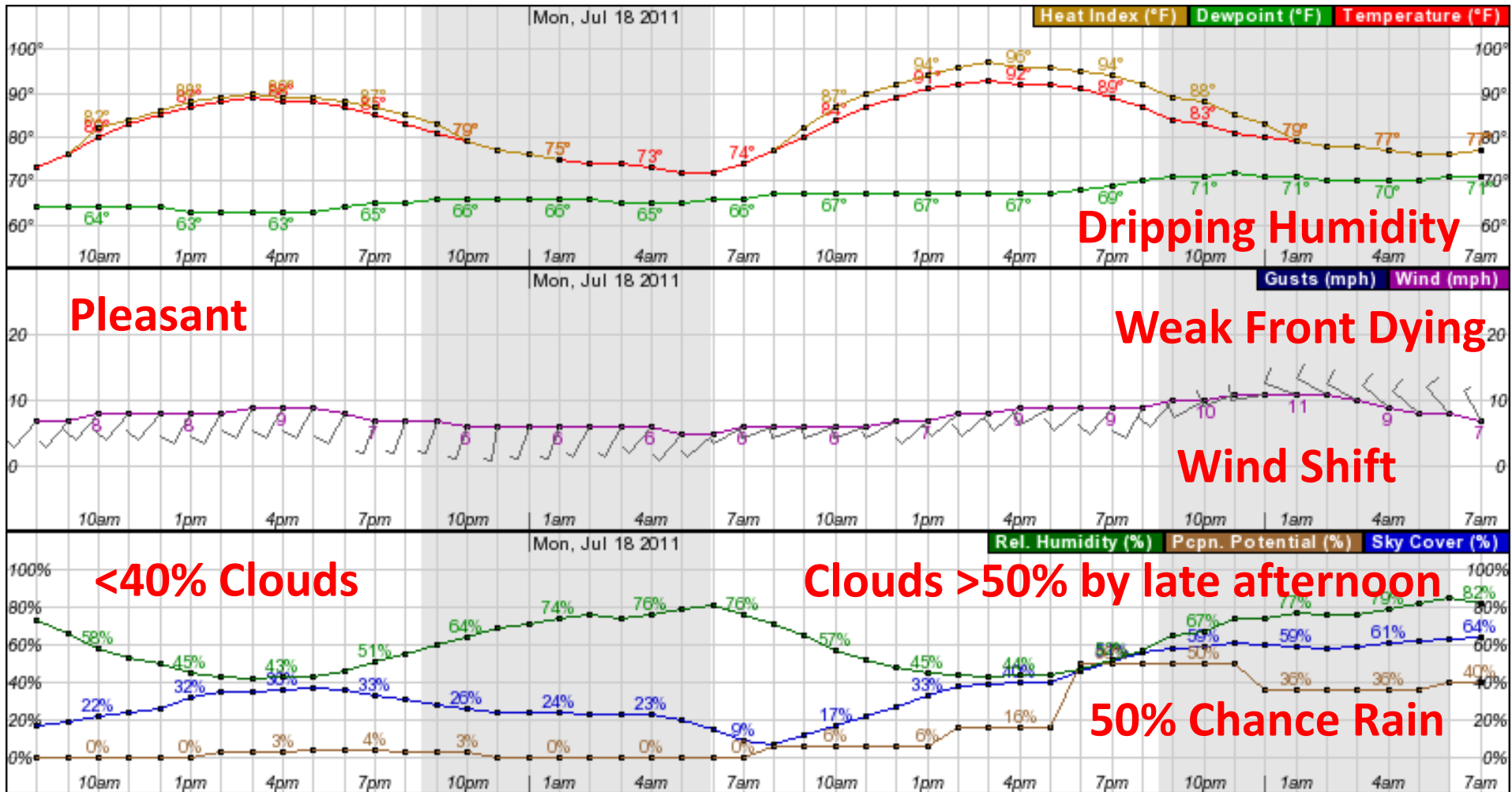


Today is the last mild day. Heat and humidity build Monday with evening precipitation possible.

Today →

Monday →

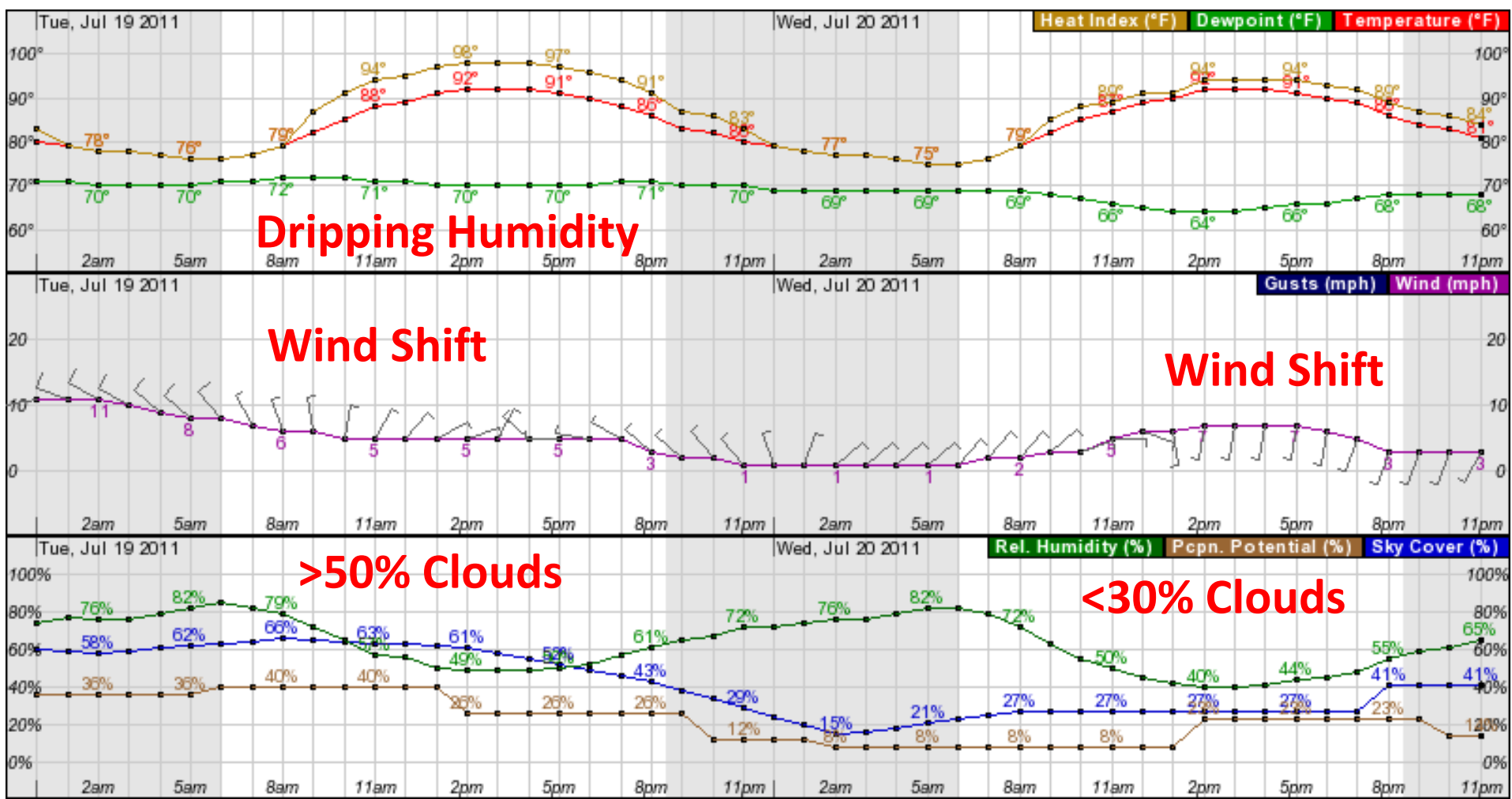
Tuesday →



Tuesday will likely be too cloudy all day, but Wednesday looks like a possible fly day.

Tuesday →

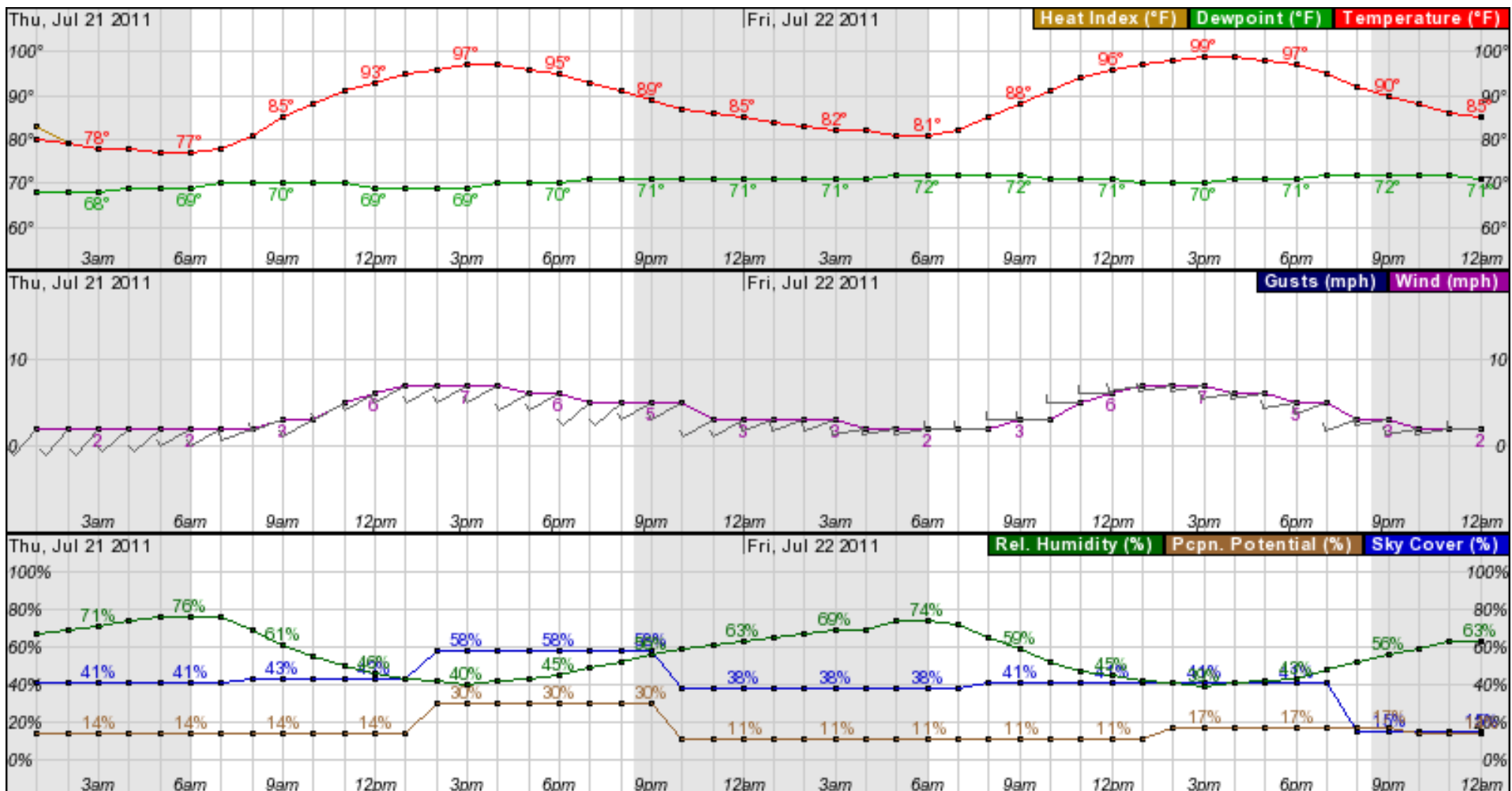
Wednesday →



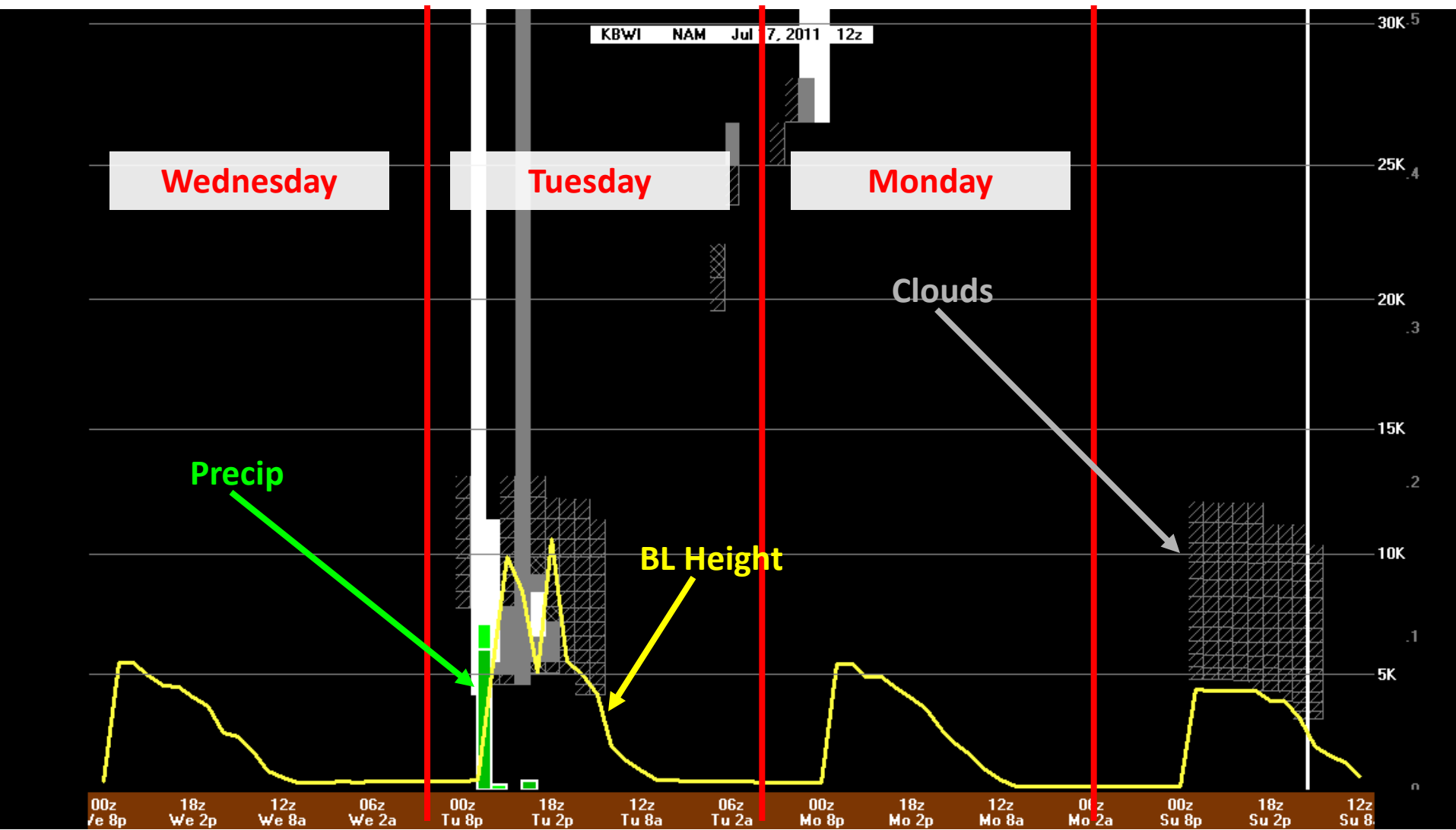
Hazy, Hot, & Humid – temperatures approaching 100°F.

Thursday→

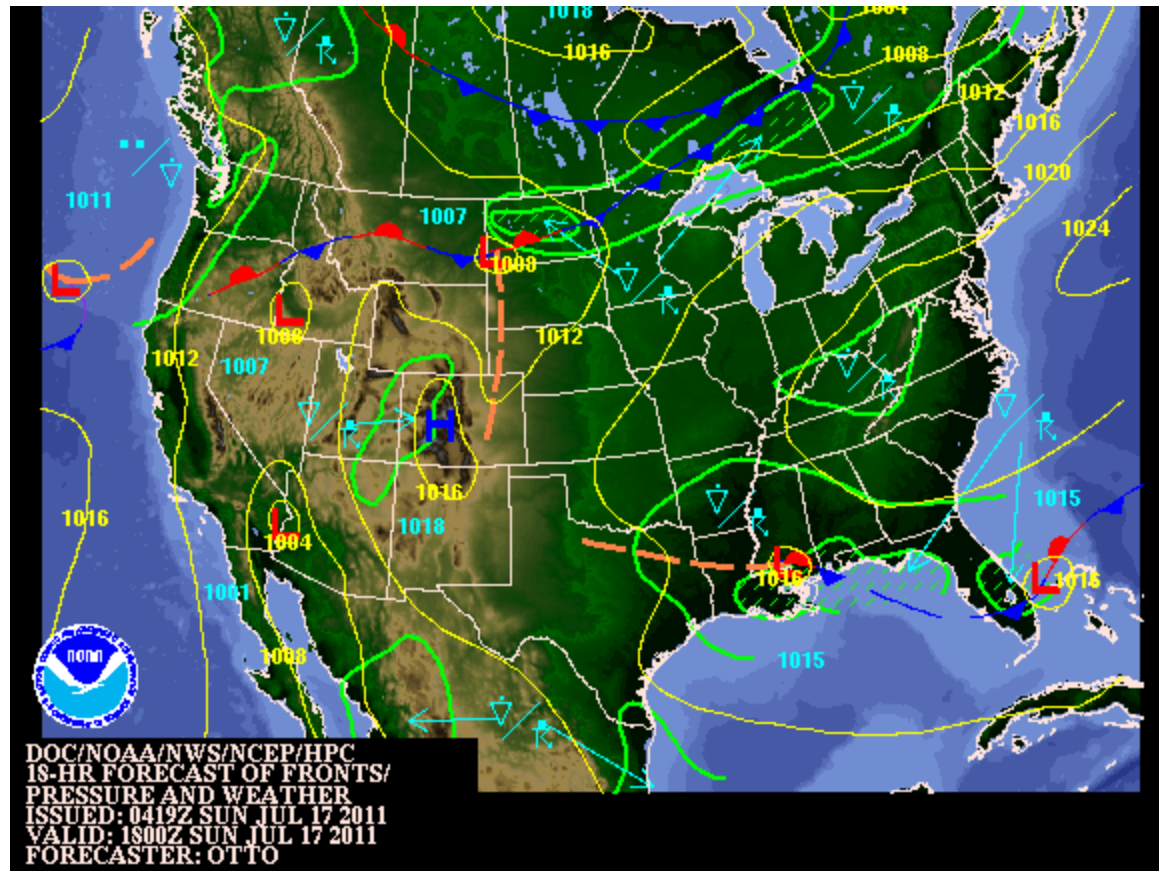
Friday→



BUFKIT seems to be an outlier in the forecast.



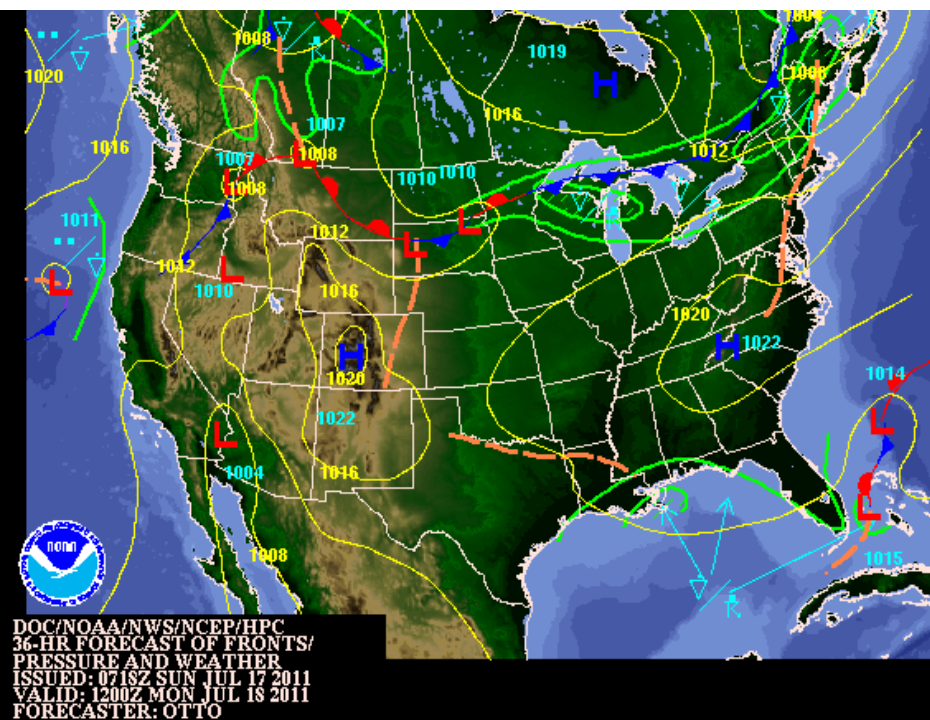
Today 2 pm: High pressure off East Coast. Moist southwest flow.



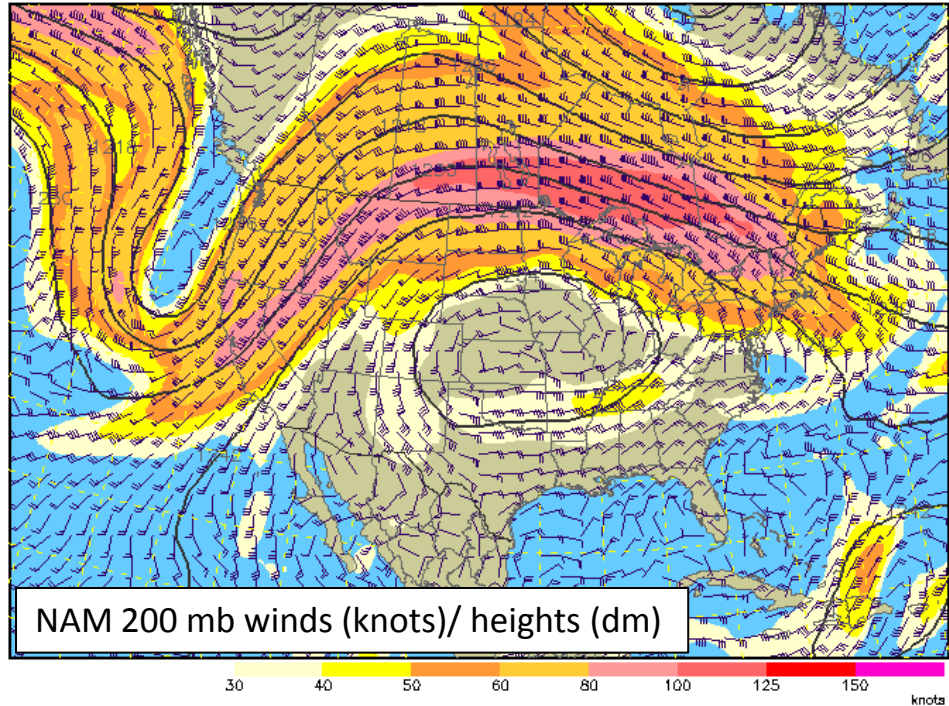
Tomorrow morning 8 am: Upper level low/trough over Eastern Canada intensifies.

Monday evening: The trough pushes SE through the Mid-Atlantic. The warm, humid airmass ahead of this trough will enable thunderstorm development.

But timing is difficult.

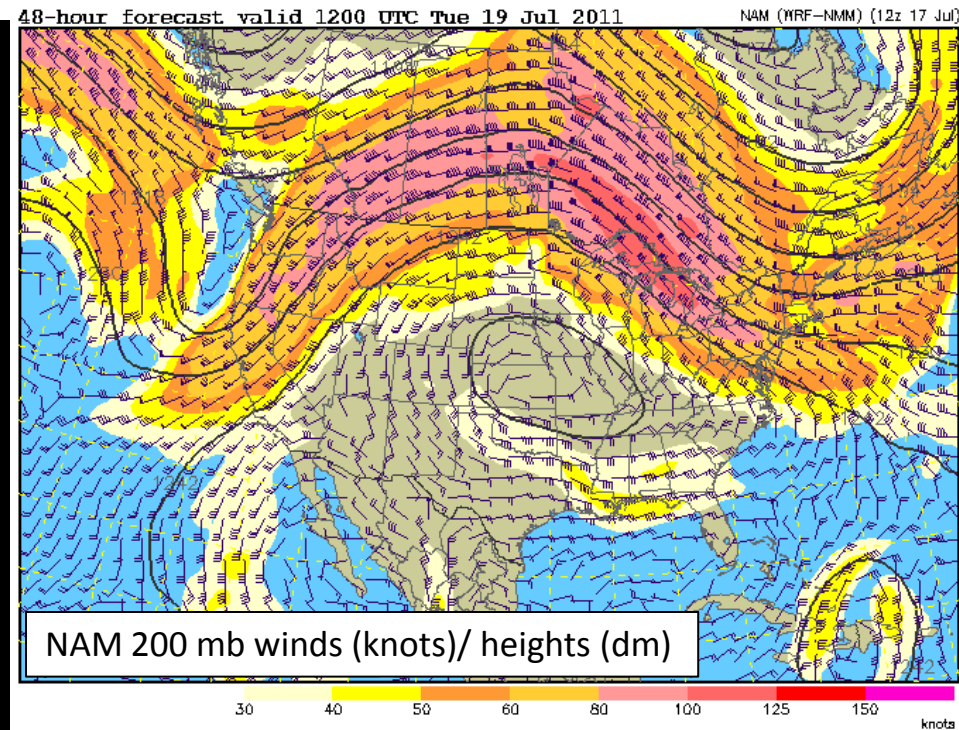
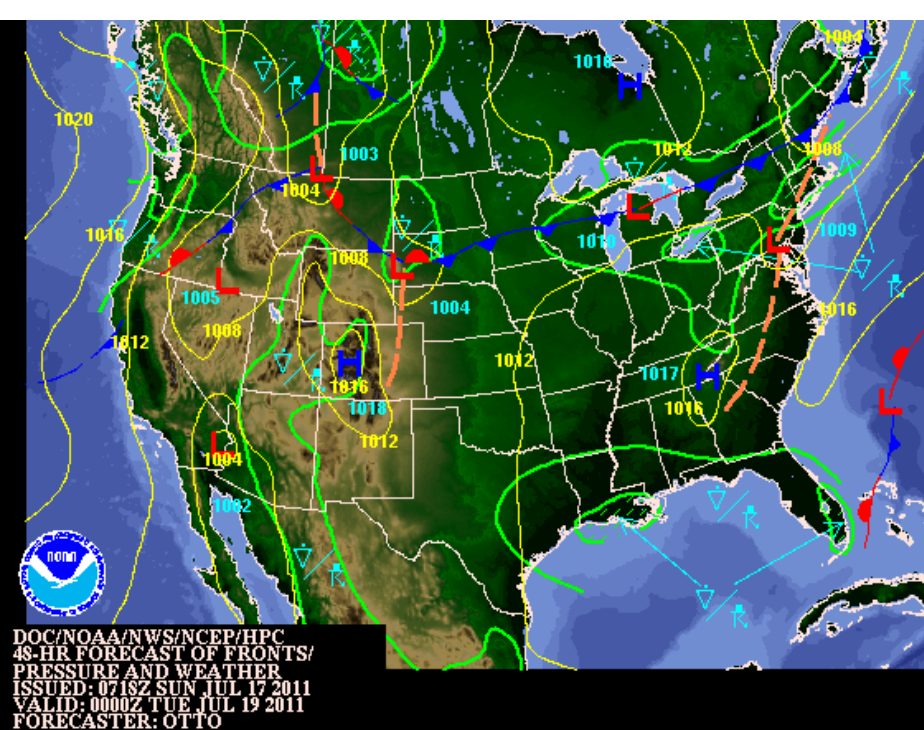


24-hour forecast valid 1200 UTC Mon 18 Jul 2011 NAM (MRF-NMM) (12z 17 Jul)

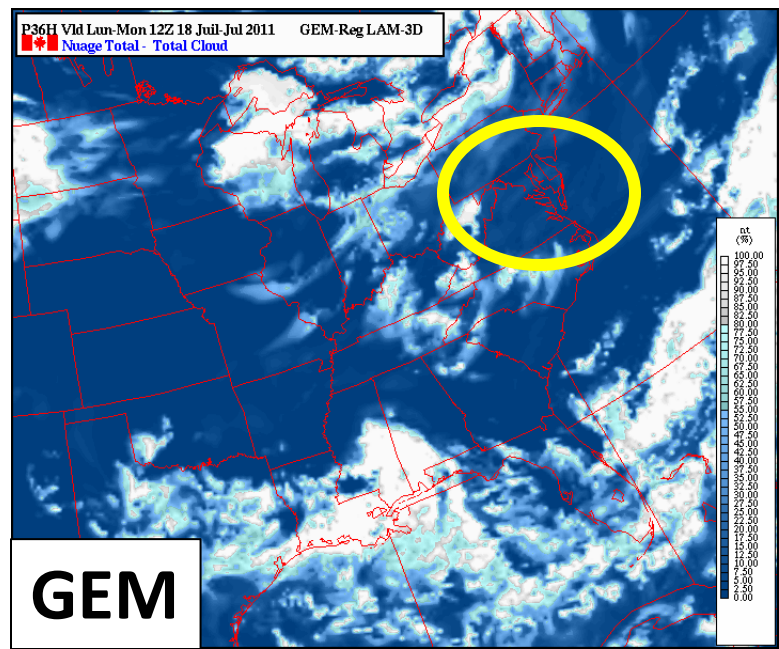
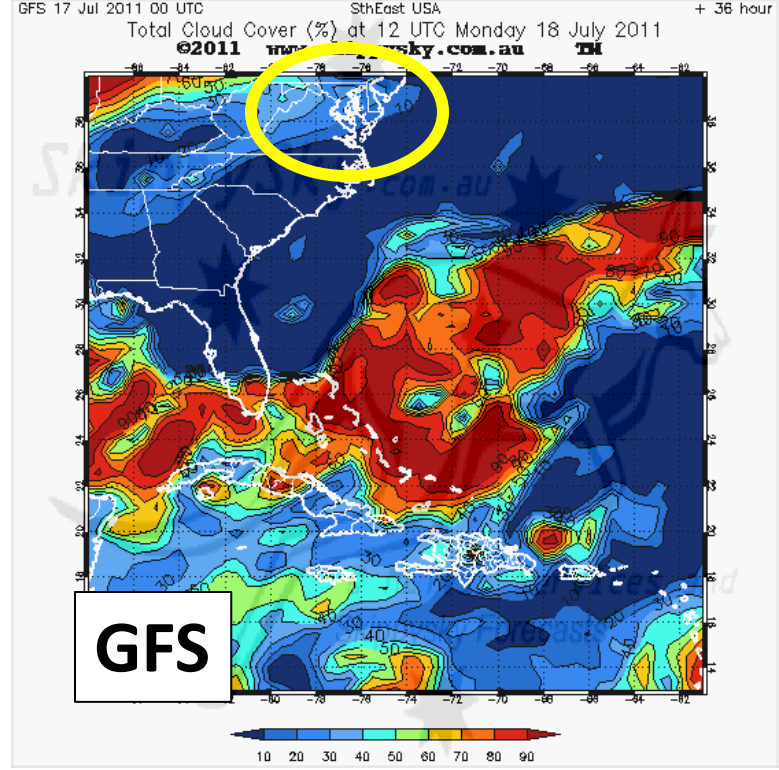
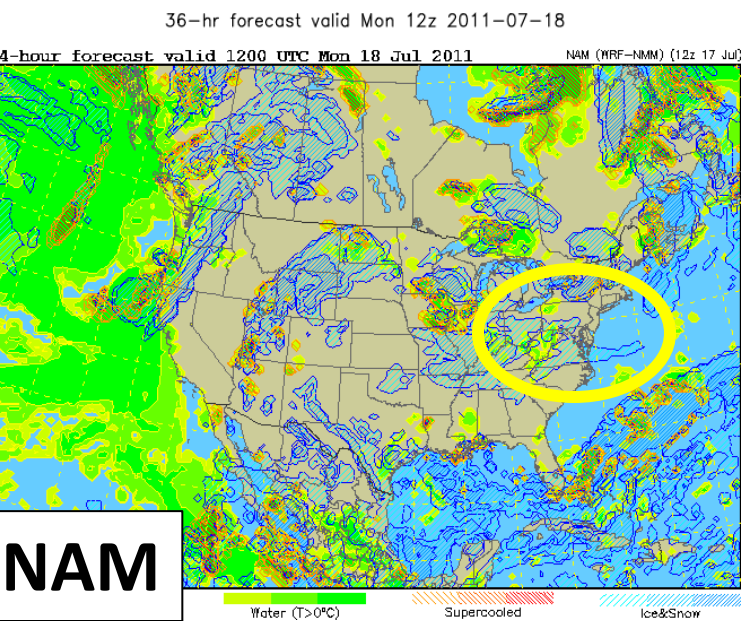
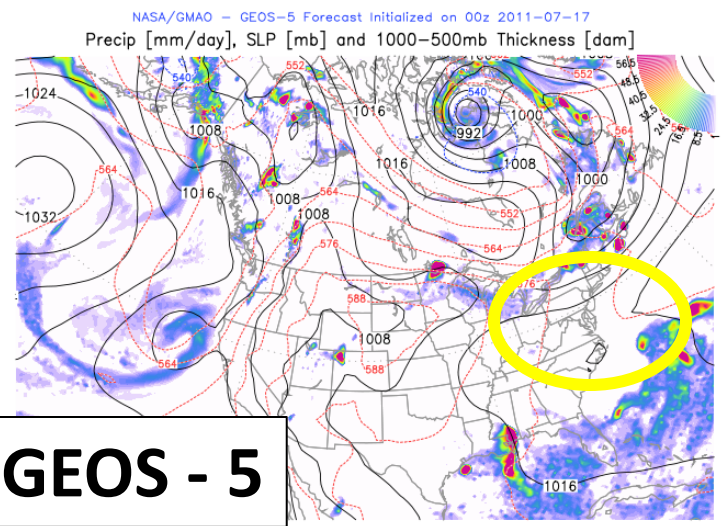


Tuesday 8 am: Upper level trough moves south through our area. Flow from the Bermuda High takes over.

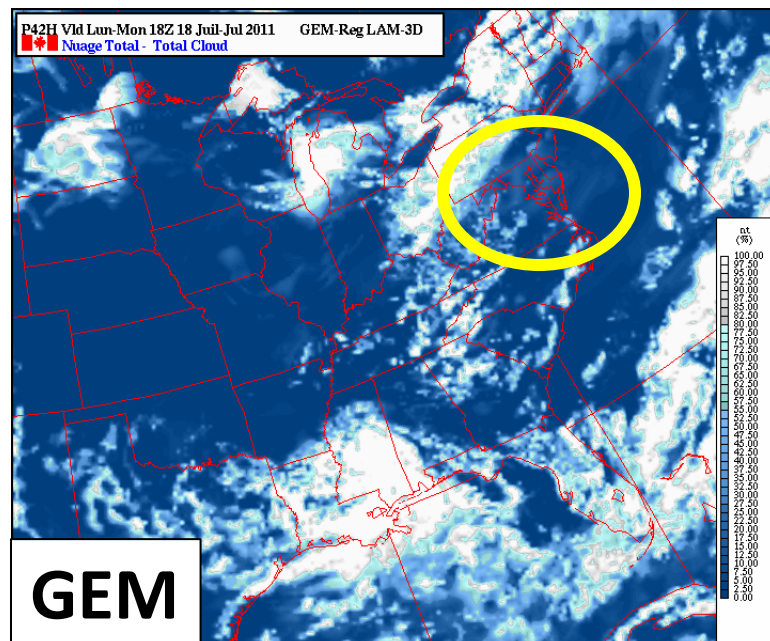
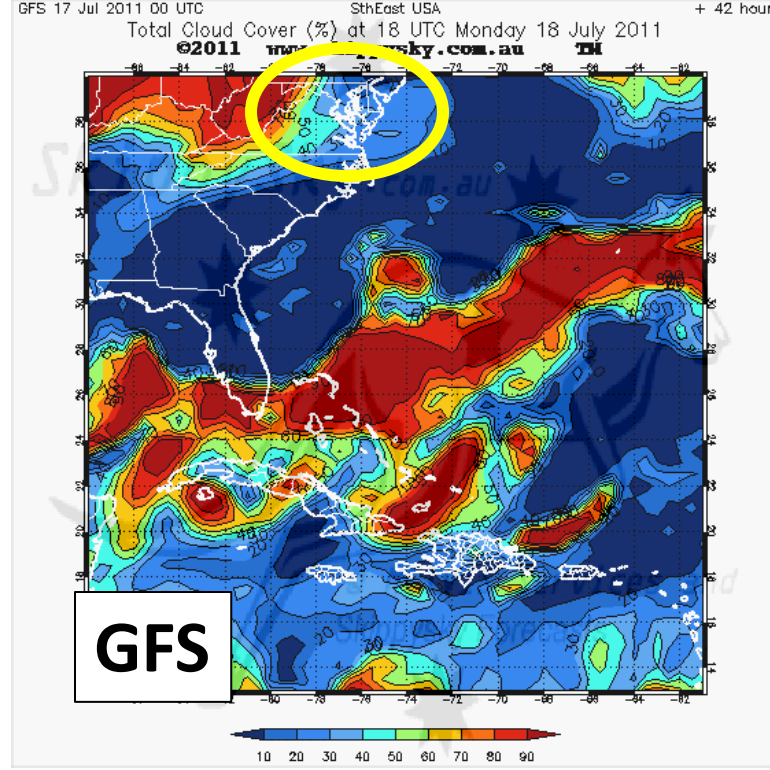
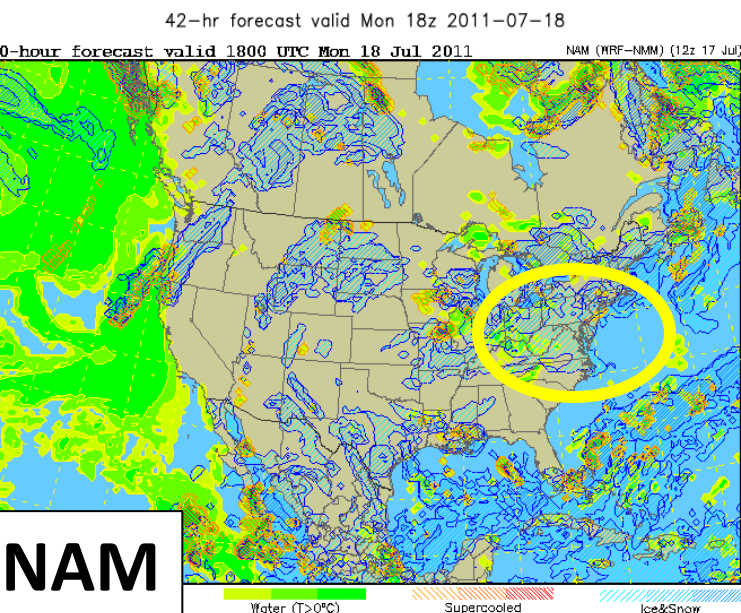
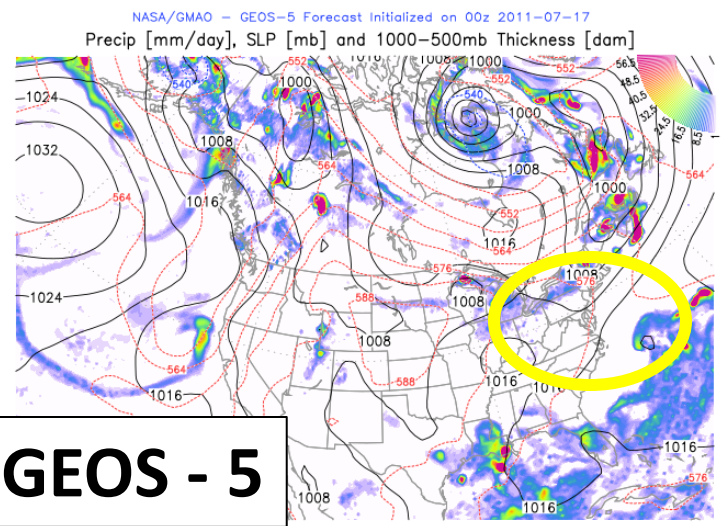
Ongoing thunderstorm activity is expected as the trough sags through the region.



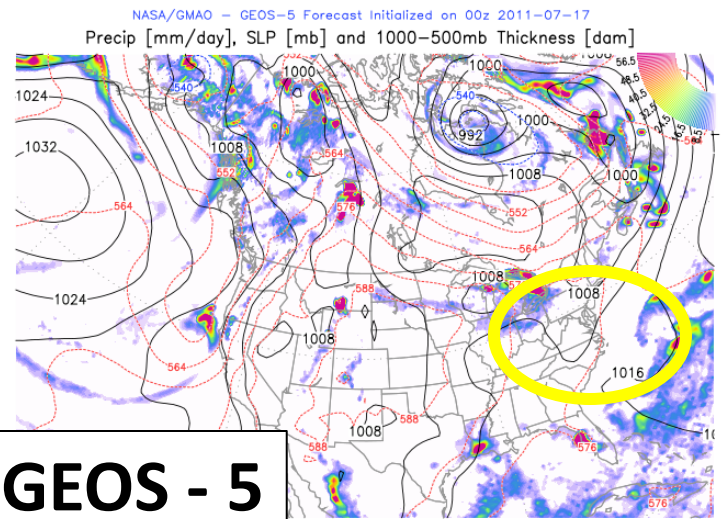
Monday 8 am: GFS forecasts some high level clouds (10-20%). NAM shows high level clouds (18K ft+) in western MD. GEM model is showing some thin cloud cover as well.



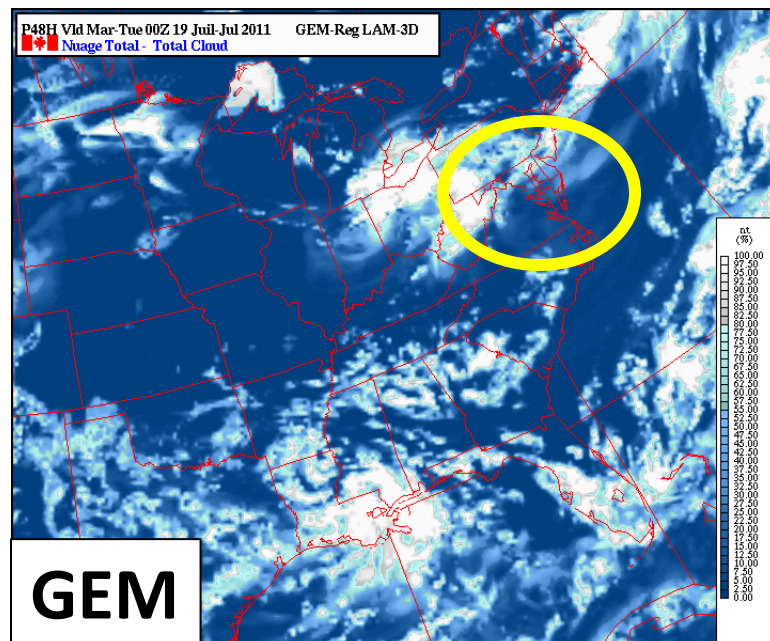
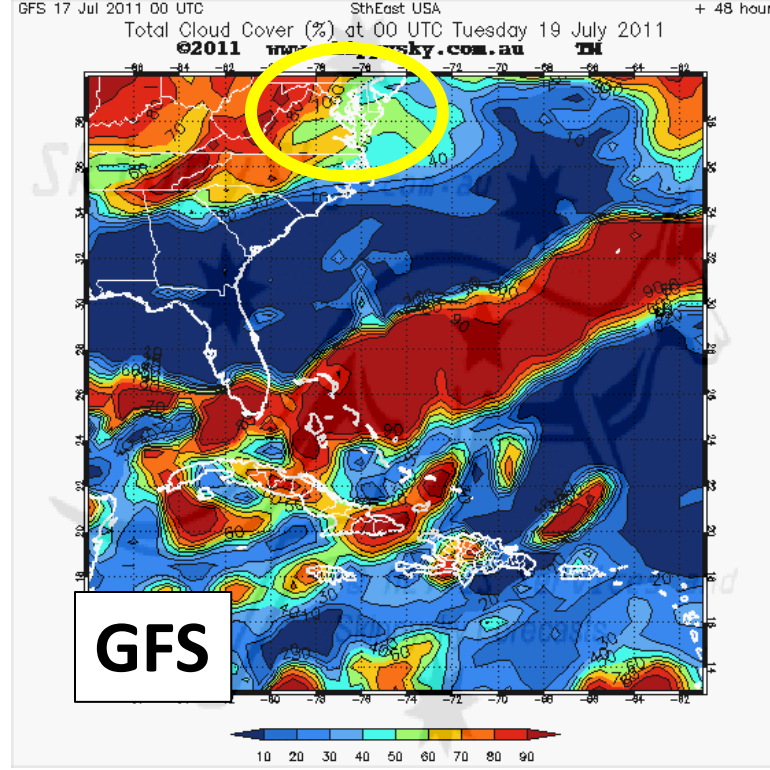
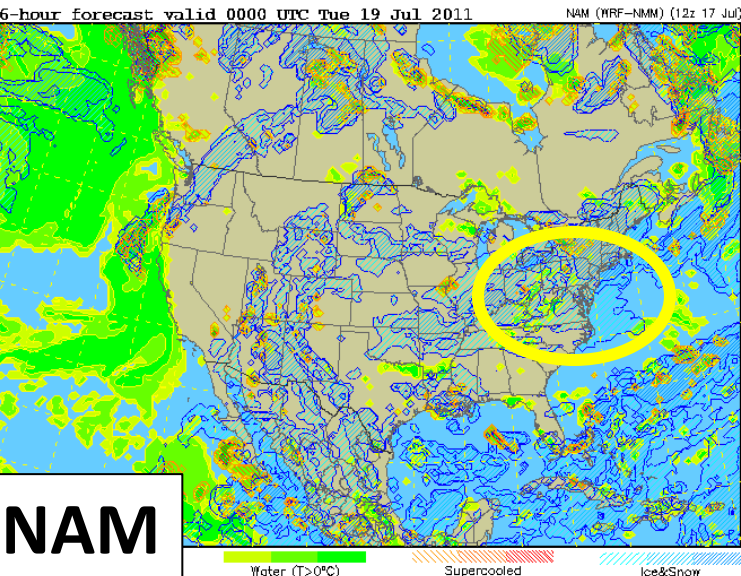
Monday 2 pm: GFS forecasts some high level clouds (10-30%). NAM showing widespread high level (18K+ ft) cloud cover over Mid-Altantic. GEM model is showing some thin cloud cover as well.



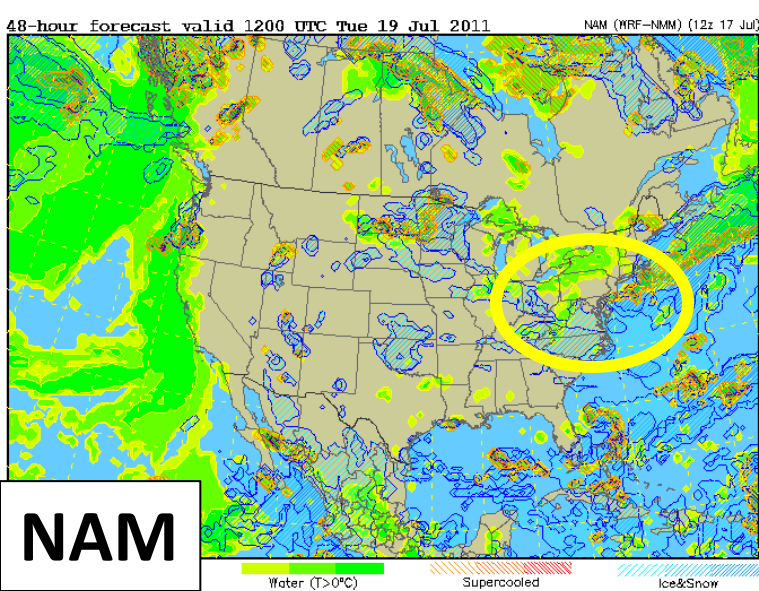
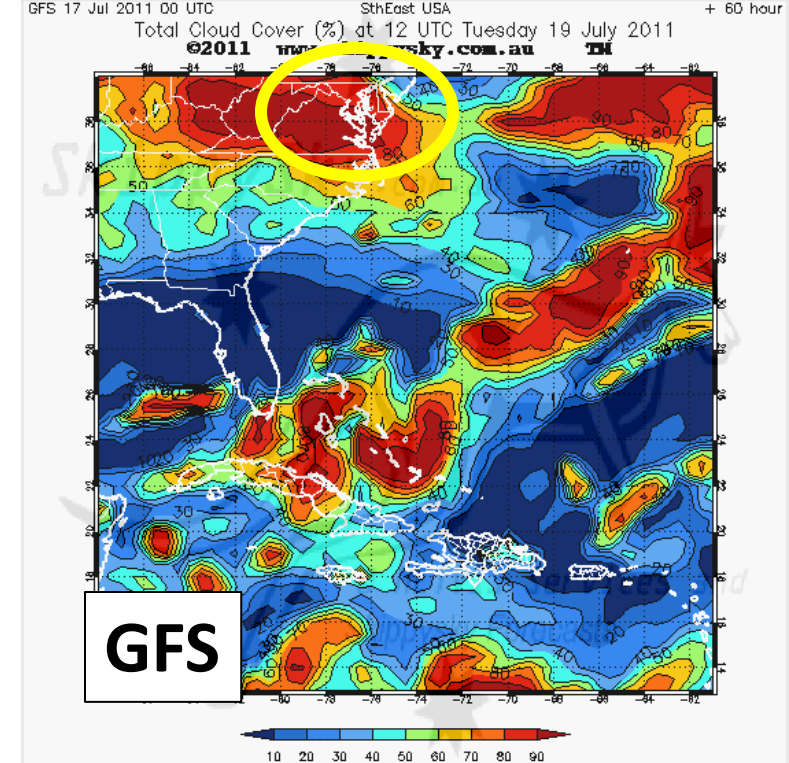
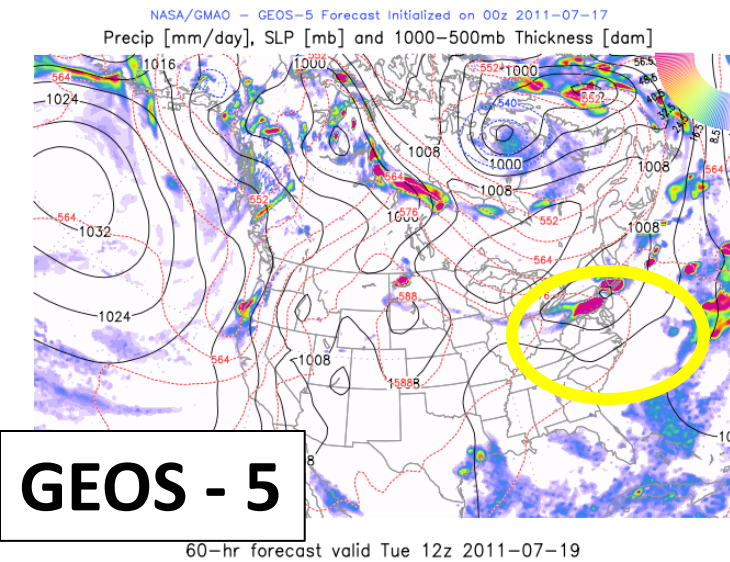
Monday 8 pm: GFS forecasts high level cloud cover (50-80%). NAM showing widespread high level (18K+ ft) cloud cover over Mid-Altantic. GEM model showing some clouds cover as well.



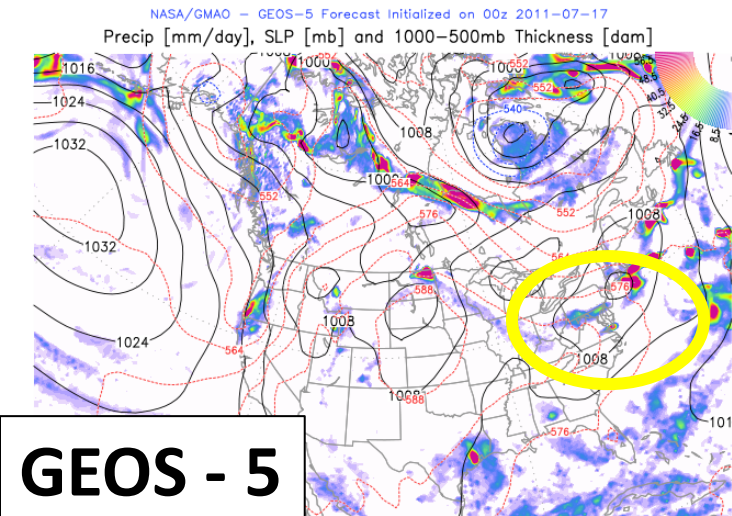
48-hr forecast valid Tue 00z 2011-07-19



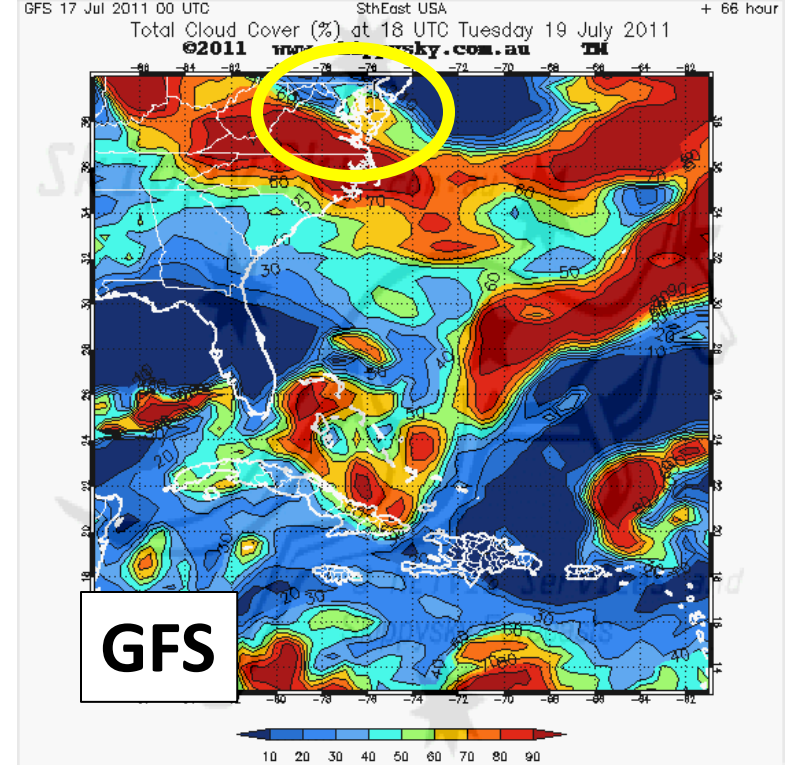
Tuesday 8 am: GFS forecasts mid and high level cloud cover (~80%).



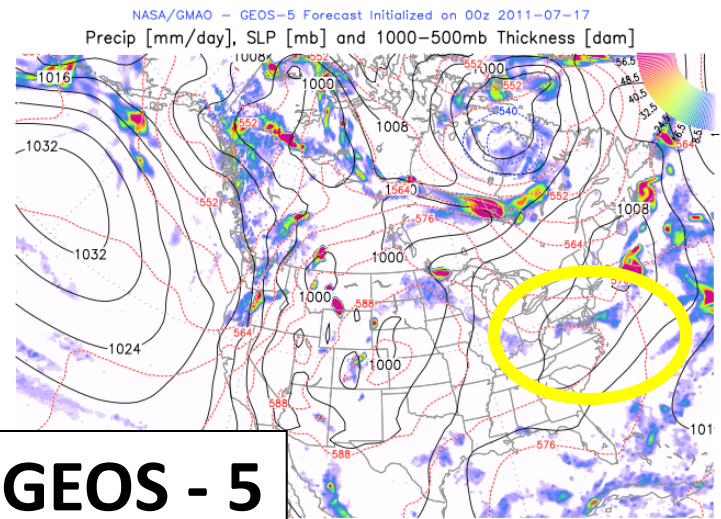
Tuesday 2 pm: GFS forecasts mid level cloud cover (40+%). Thinner, high level cloud cover moving south.



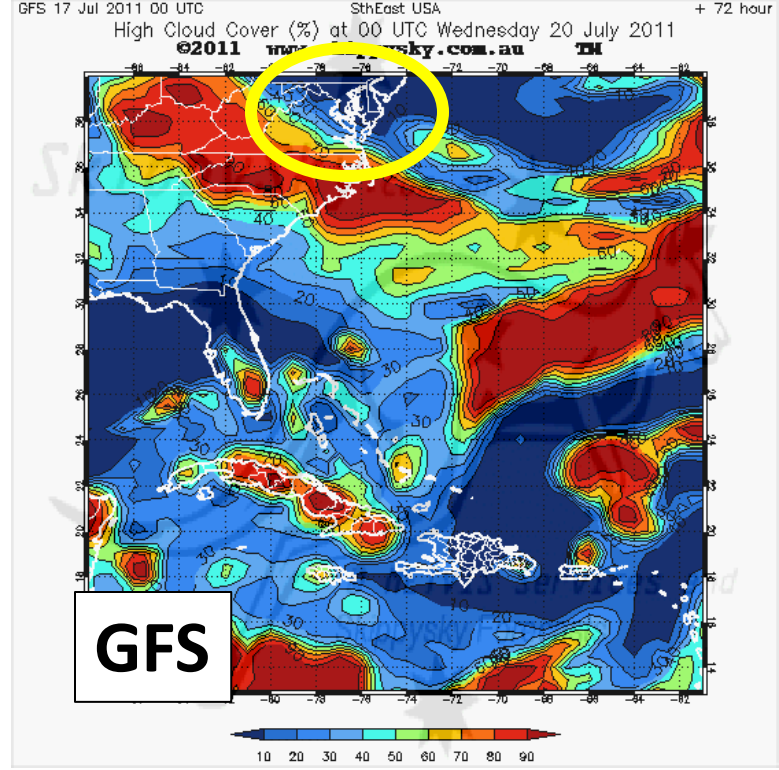
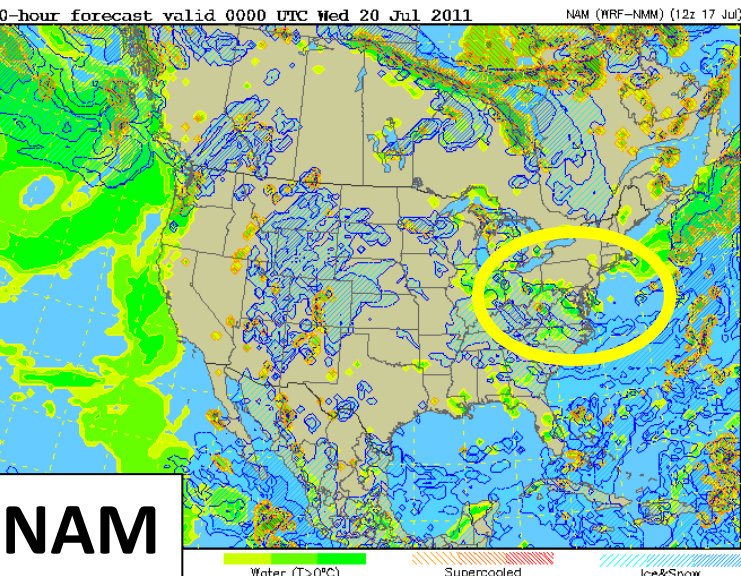
66-hr forecast valid Tue 18z 2011-07-19



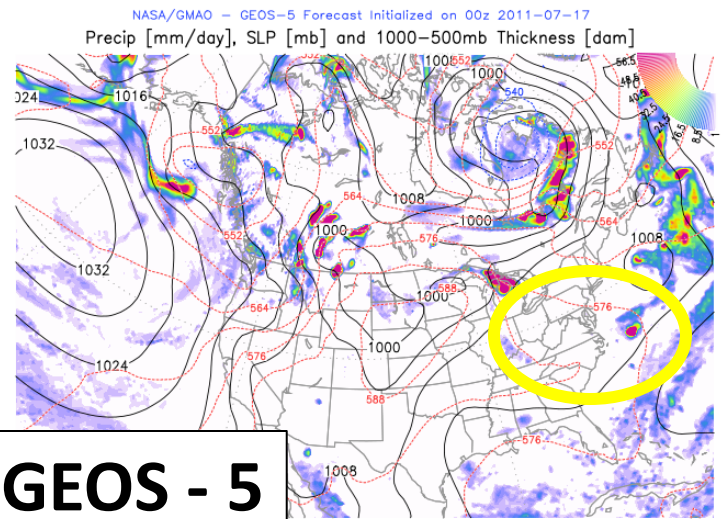
Tuesday 8 pm: NAM forecasting some clouds above 18K ft.



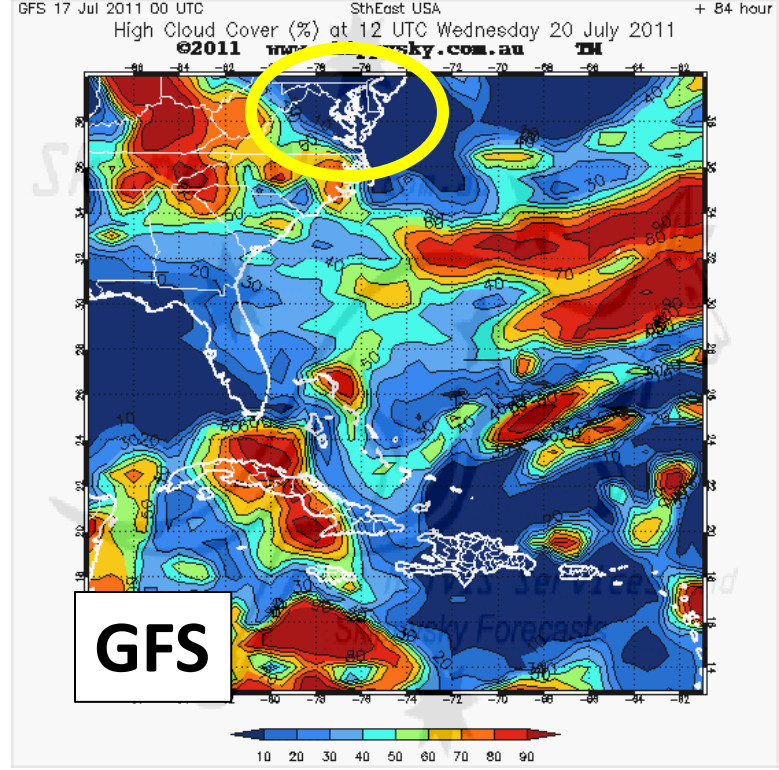
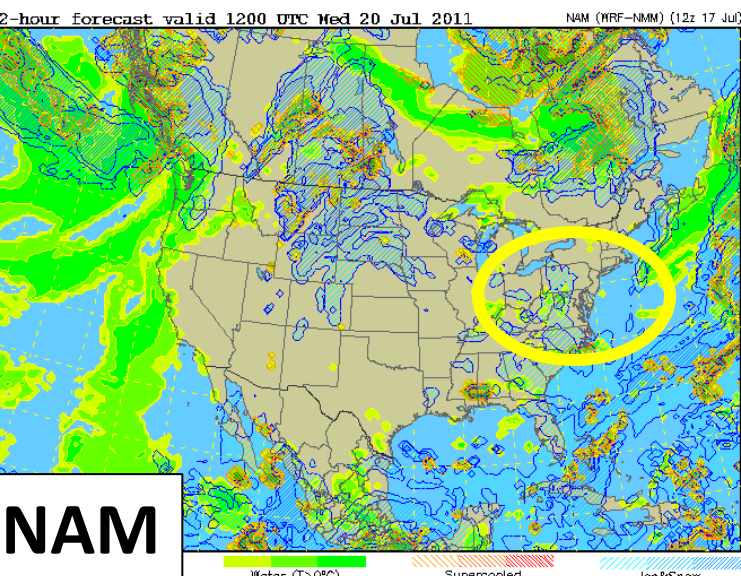
72-hr forecast valid Wed 00z 2011-07-20



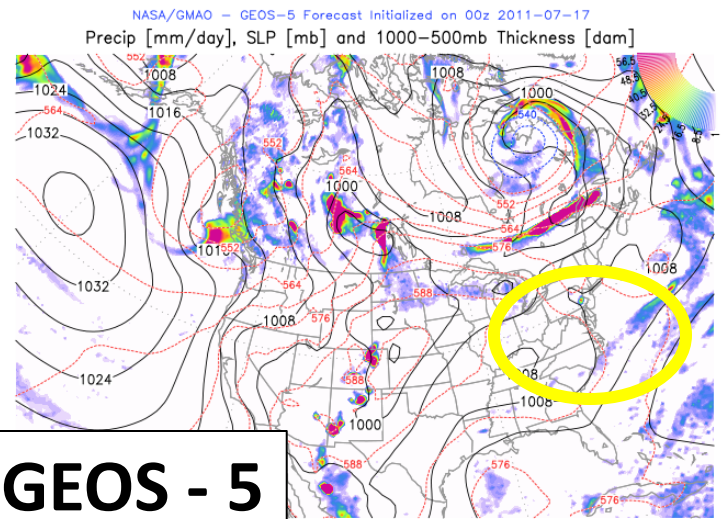
Wednesday 8 am: All models clear



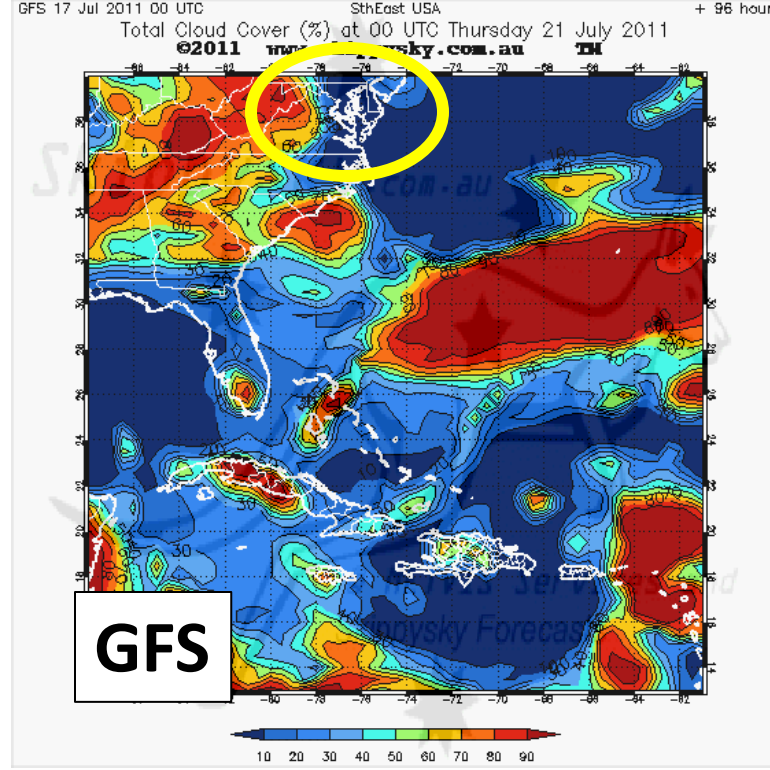
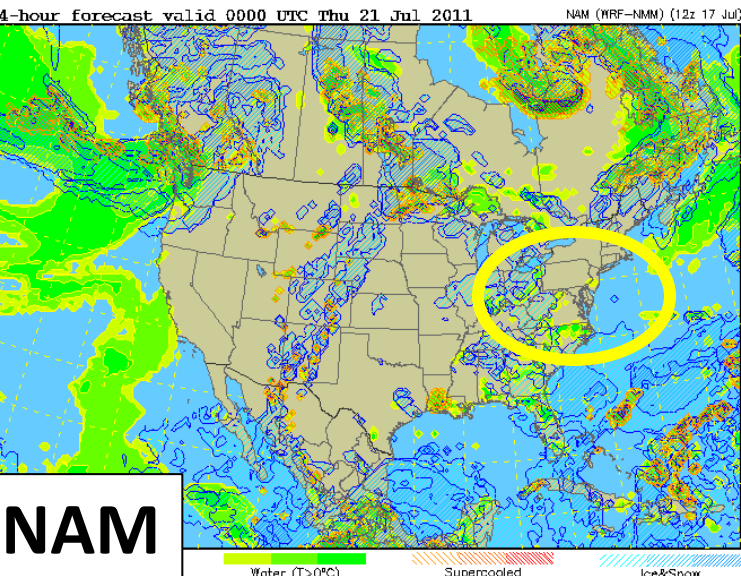
84-hr forecast valid Wed 12z 2011-07-20



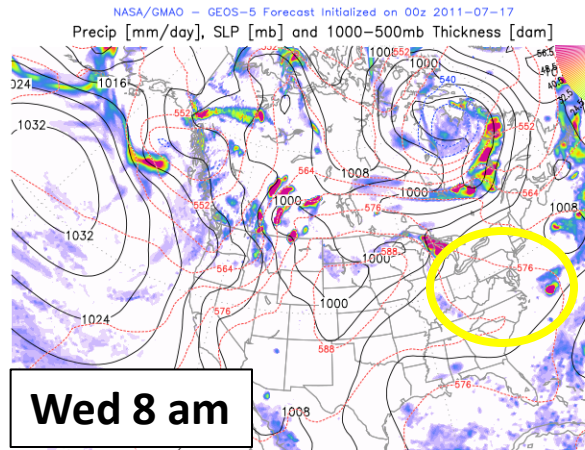
Wednesday 8 pm: All models clear



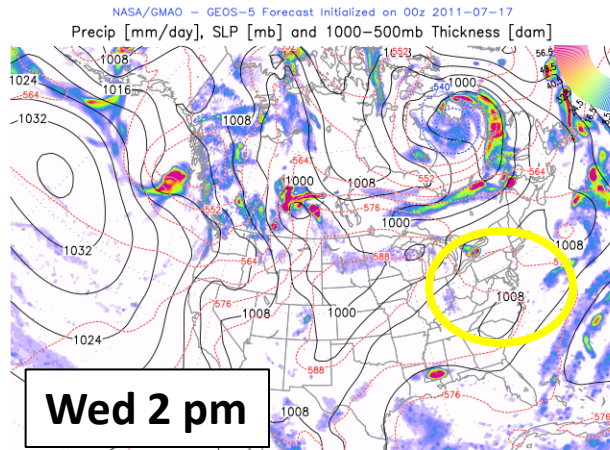
96-hr forecast valid Thu 00z 2011-07-21



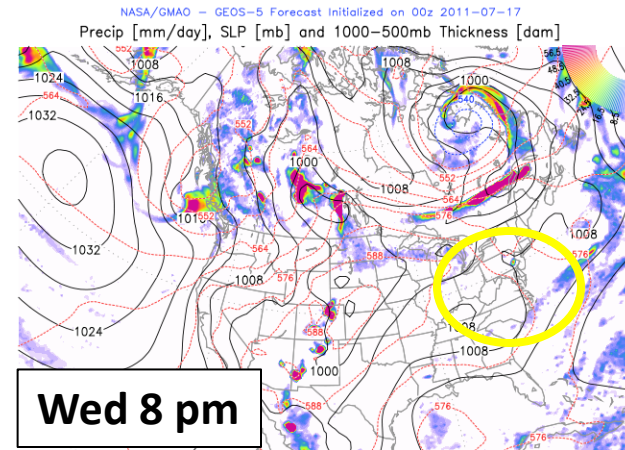
GEOS-5 extended forecast: No precip forecast for Wed or Thu



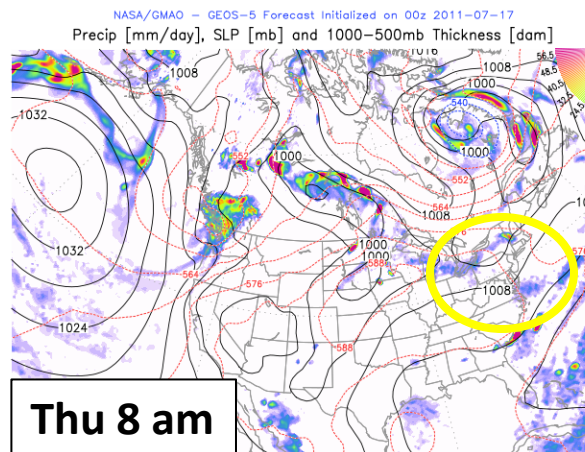
84-hr forecast valid Wed 12z 2011-07-20



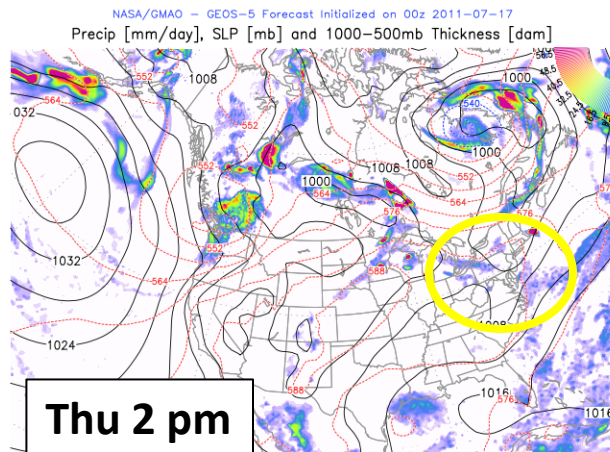
90-hr forecast valid Wed 18z 2011-07-20



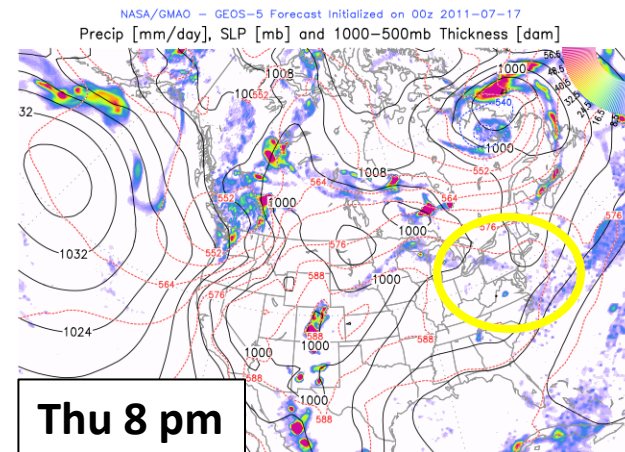
96-hr forecast valid Thu 00z 2011-07-21



108-hr forecast valid Thu 12z 2011-07-21

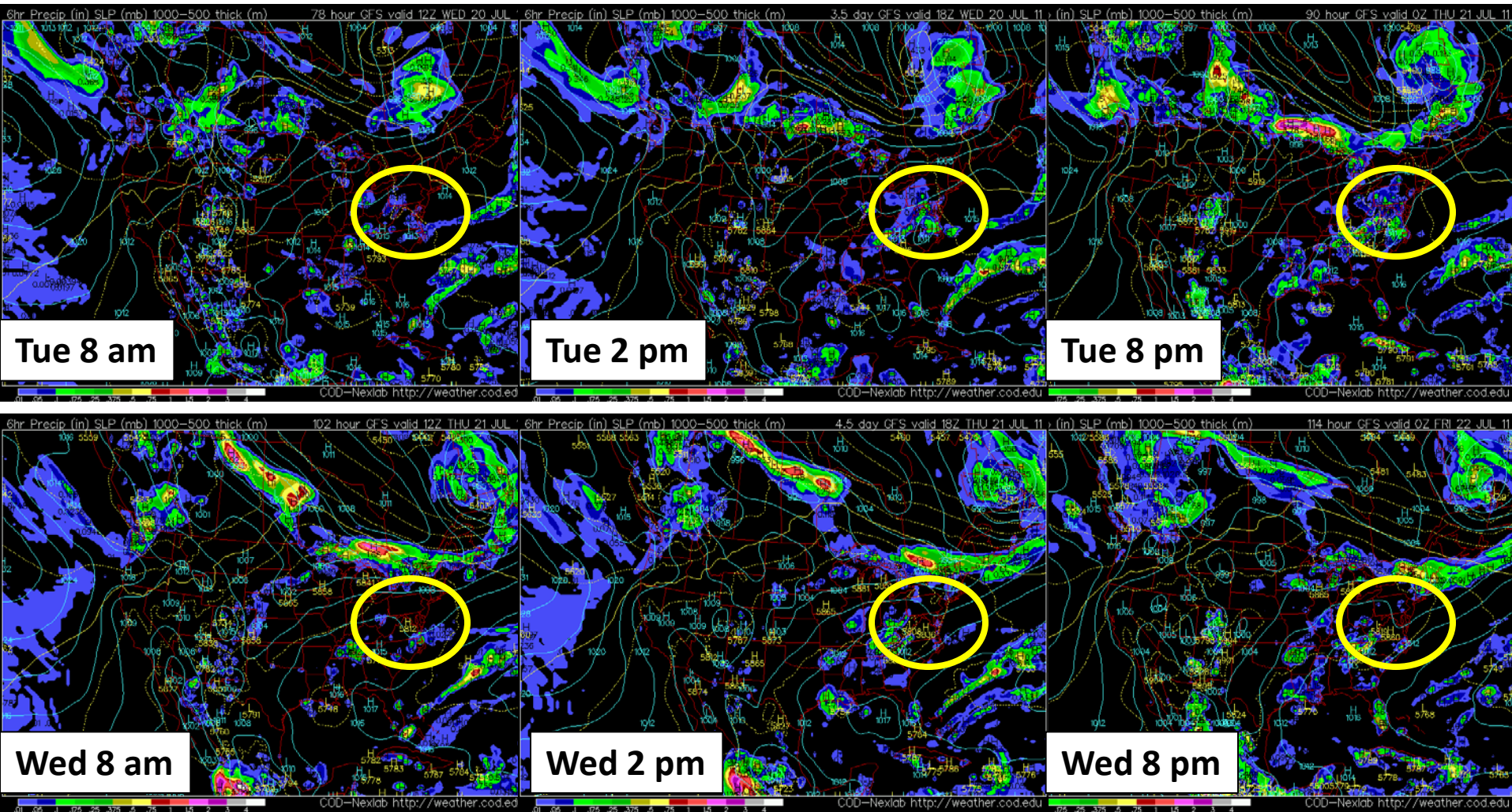


114-hr forecast valid Thu 18z 2011-07-21



120-hr forecast valid Fri 00z 2011-07-22

GFS extended forecast: Precip forecast for midday and evening Tuesday



NWS Forecast Discussion

.NEAR TERM /THROUGH TONIGHT/... SURFACE HIGH PRESSURE HAS MOVED OFF THE MID ATLANTIC COAST. HIGH WILL REMAIN OFFSHORE THROUGH THE NEXT 24 HOURS...INCREASING MOISTURE WITH TIME. ALREADY HAVE SOME CLOUDS ACROSS THE SOUTHWEST [CWA](#) WITH GENERALLY CLEAR SKIES FURTHER NORTHEAST INTO MARYLAND. THIS PARTLY TO [MOSTLY CLOUDY](#) SOUTHWEST/[MOSTLY CLEAR](#) NORTHEAST [GRADIENT](#) WILL [LIKELY](#) LAST THROUGH SUNRISE PER MODEL [RH](#) FIELDS. MORNING SHOULD BE DRY. [CU](#) DEVELOPMENT WILL OCCUR THIS AFTERNOON...MOST ROBUST ACROSS THE HIGHLANDS/RIDGES. THIS IS WHERE A FEW SHOWERS/THUNDERSTORMS MAY ALSO [POP](#) DURING THE MID TO LATE AFTERNOON. WOULDN'T BE SURPRISED FOR AN [ISOLATED CELL](#) TO OCCUR OVER THE CENTRAL SHENANDOAH VALLEY EITHER...BUT ANY ACTIVITY WILL TEND TO BE DIURNALLY-DRIVEN AND DISSIPATE WITH THE SETTING OF THE SUN. PATCHY [FOG](#) MAY OCCUR LATE AT NIGHT OVER THE CENTRAL SHENANDOAH VALLEY...ESPECIALLY IF ANY RAIN OCCURS AND SKIES CLEAR OUT. WARMING TREND WILL CONTINUE TODAY...WITH TEMPERATURES EAST OF THE BLUE [RIDGE](#) [LIKELY](#) GETTING NEAR 90 DEGREES. DEWPOINTS WILL BE BACK IN THE LOWER TO MID 60S SO IT WILL FEEL A LITTLE MORE HUMID THAN THE PAST COUPLE OF DAYS TOO. MINIMA WILL ALSO BE HIGHER THAN RECENT NIGHTS...WITH LOWER 70S IN DOWNTOWN WASHINGTON AND BALTIMORE AND MID TO UPPER 60S IN THE SUBURBS. && .

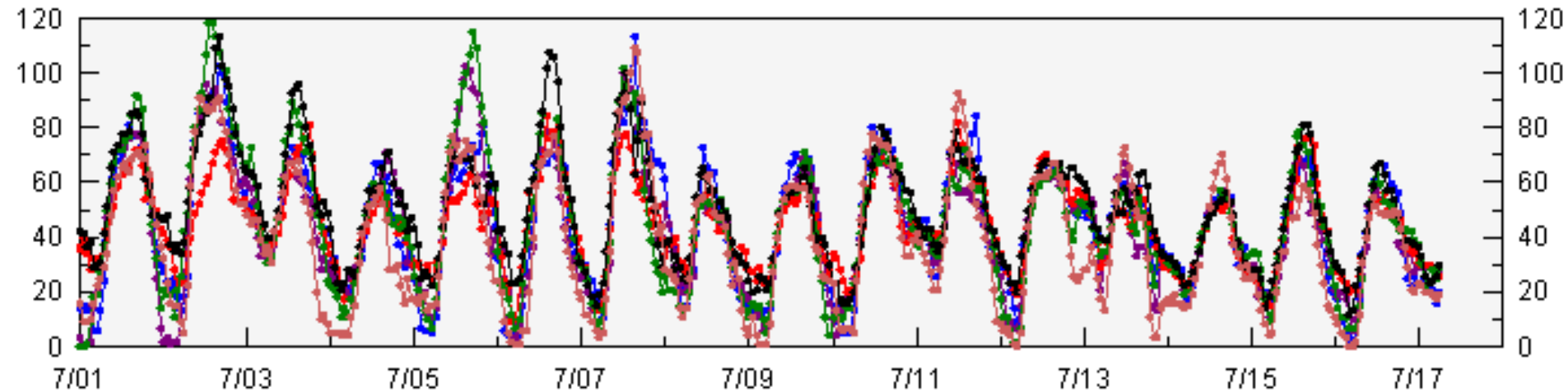
SHORT TERM /MONDAY THROUGH TUESDAY/... A [TROUGH](#) OVER ERN CANADA WILL AMPLIFY SOUTH ACROSS THE NERN [CONUS](#) MONDAY THROUGH TUESDAY...PUSHING THE ERN [CONUS](#) PORTION OF THE EAST-WEST ORIENTED [RIDGE](#) SOUTH. MONDAY...WITH THE LOW LEVEL [RIDGE](#) AXIS DRAPED ACROSS THE [SRN](#) MID ATLANTIC...EXPECT LIGHT SWLY [SFC FLOW](#). THE 00Z [GFS](#) AND 12Z [ECMWF](#) BOTH DEPICT 20 TO 22C 850MB TEMPS ACROSS THE LWX [CWA](#) BY MONDAY EVENING. UNDER IDEAL CONDITIONS THIS WOULD LEAD TO MAX TEMPS IN THE [UPR](#) 90S. HOWEVER...CLOUDS WILL BE MOVING IN FROM THE NORTH...SO MAX TEMPS WERE RAISED ONLY A COUPLE DEGREES...STILL IN THE MID 90S. MONDAY EVENING...A [TROUGH](#) EXTENDING FROM A LOW OVER NRN QUEBEC PUSHES SOUTHEAST THROUGH THE MID ATLANTIC. THE WARM/HUMID AIRMASS AHEAD OF THIS [TROUGH](#) WILL ENABLE [THUNDERSTORM](#) DEVELOPMENT. CONSIDERING THE [NWLY FLOW](#) OVERSPREADING THE REGION WITH THIS [TROUGH](#)...TIMING/AREAL COVERAGE OF [POPS](#) ARE DIFFICULT. THE EXPECTATION IS FOR [THUNDERSTORM](#) CLUSTERS/SYSTEMS TO SPREAD SOUTH/SOUTHEAST. THE INITIAL ROUND...ASSOCIATED WITH THE LEADING [SFC TROUGH](#) IS [PROGGED](#) TO CROSS MONDAY EVENING PER 00Z GUIDANCE. THEREFORE HIGH CHANCE [POPS](#) WERE INTRODUCED ACROSS THE NORTHERN AND EASTERN PORTIONS OF THE [CWA](#) FOR THE FIRST HALF OF MONDAY NIGHT FOR NOW. PWATS THROUGH THIS TIME WILL INCREASE INTO THE TWO INCH RANGE...THE GREATEST THREAT WILL BE HYDROLOGIC FROM HEAVY RAIN. HOWEVER...BULK [SHEAR](#) IN THE 30 TO 40 [KT](#) RANGE WILL KEEP THE ACTIVITY MOVING. REST OF MONDAY NIGHT THROUGH TUESDAY...ONGOING [THUNDERSTORM](#) ACTIVITY IS EXPECTED AS THE [TROUGH](#) SAGS THROUGH THE REGION...SO CHANCES WERE BROADBRUSHED ACROSS THE [CWA](#). DETAILS IMPOSSIBLE BECAUSE DEVELOPMENT WILL DEPEND ON BOUNDARIES LAID BY THE INITIAL WAVE OF [CONVECTION](#). LOW CONFIDENCE OF TEMPERATURES THROUGH THIS TIME CONSIDERING CHANCES FOR THUNDERSTORMS AND CLOUD COVER. LEANED TO THE CLOUDY SIDE...SO WENT JUST UNDER GUIDANCE...LOW TO MID 90S FOR MAX TEMPS TUESDAY. && .

LONG TERM /TUESDAY NIGHT THROUGH SATURDAY/... TUESDAY NIGHT THROUGH MIDWEEK...[TROUGH](#) MOVES SOUTH OF THE [CWA](#) AND DISSIPATES AS [FLOW](#) FROM THE [BERMUDA HIGH](#) TAKES OVER. [DIURNAL](#) TREND IN CLOUDS/CONVECTIVE STORMS PARTICULARLY OVER TERRAIN LOOKS TO BEGIN ON WEDNESDAY. MAX TEMPS WEDNESDAY MID 90S. LATE NEXT WEEK AND WEEKEND...SWLY [FLOW](#) ADVECTS PERHAPS /HOPEFULLY?/ THE WARMEST AIR OF THE YEAR ACROSS THE MID ATLANTIC. DEEP LOW LEVEL MIXING WITH 850MB TEMPS 22 TO EVEN 24C WOULD BRING MAX TEMPS IN THE [UPR](#) 90S TO AROUND 100F FROM THURSDAY THROUGH THE WEEKEND. DEWPOINTS AT LEAST 70F THROUGH MOST OF THIS TIME...SO HEAT HEADLINES LOOK LIKE A SURE BET. AFTERNOON CONVECTIVE STORM PATTERN FOR THE BLUE [RIDGE](#) AND WEST THROUGH THIS TIME. REMNANTS OF THE [TROUGH](#) TO OUR SOUTH LOOK TO COME THROUGH ON THURSDAY...SO CHANCE [POPS](#) FOR THUNDERSTORMS WERE ADDED THAT AFTERNOON.

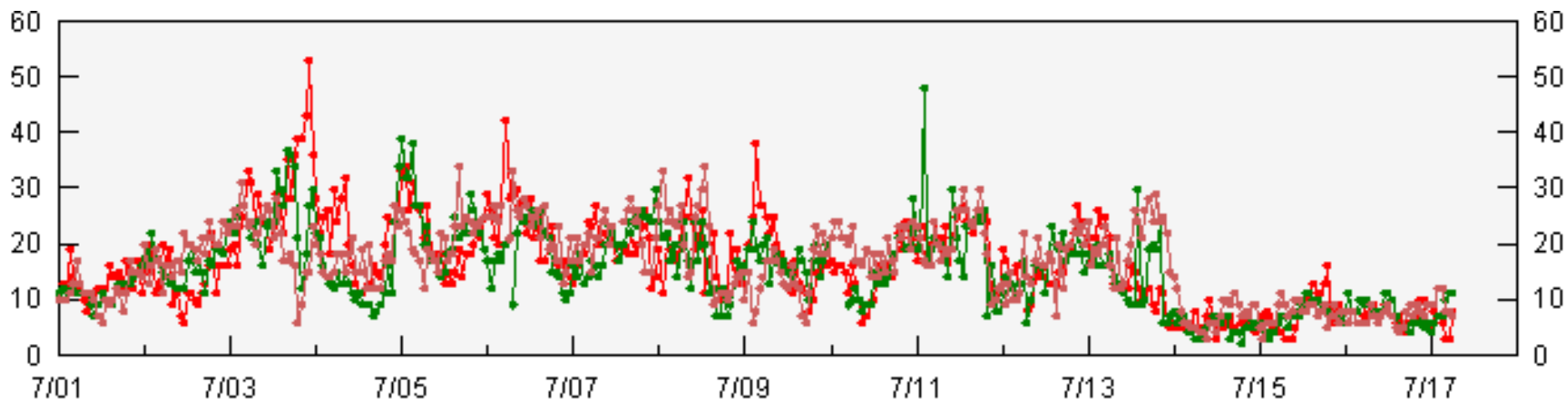
MDE Surface Sites

Padonia Beltsville Edgewood Aldino Essex Fairhill

Ozone (ppbv) 1 hr



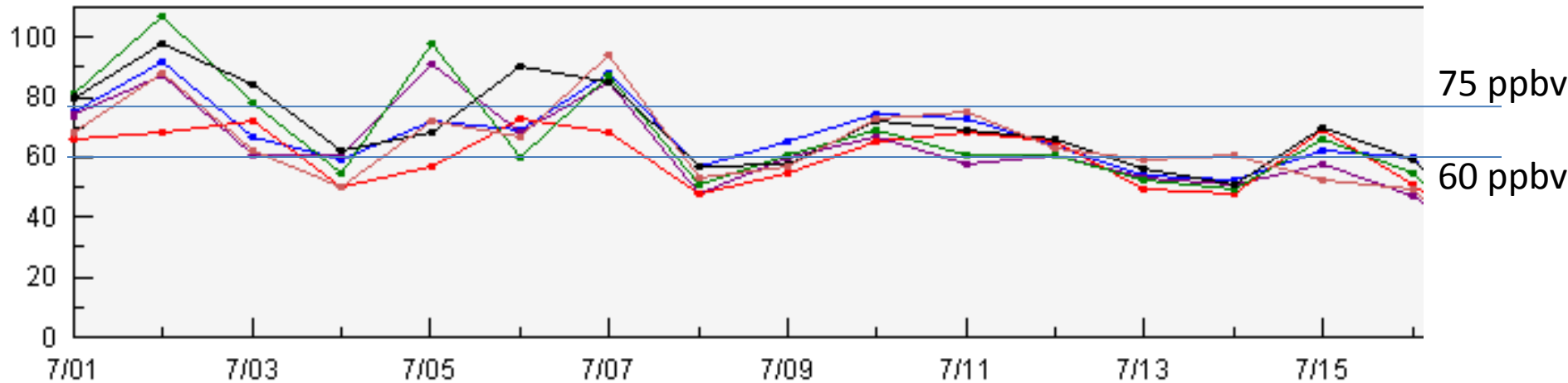
PM2.5 ($\mu\text{g}/\text{m}^3$) 1 hr



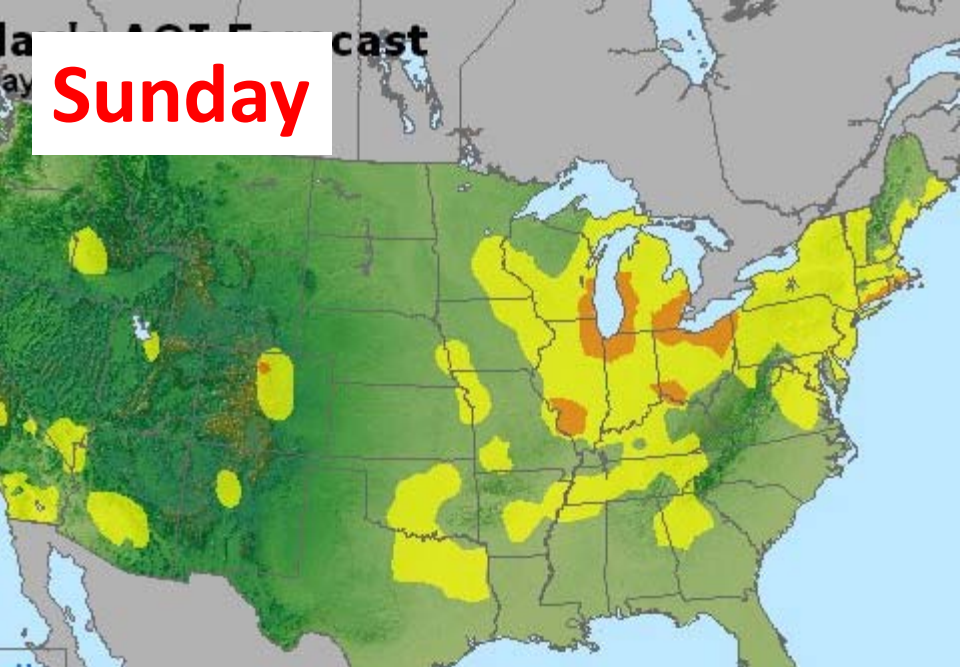
MDE Surface Sites

Padonia Beltsville Edgewood Aldino Essex Fairhill

Ozone (ppbv) 8 hr

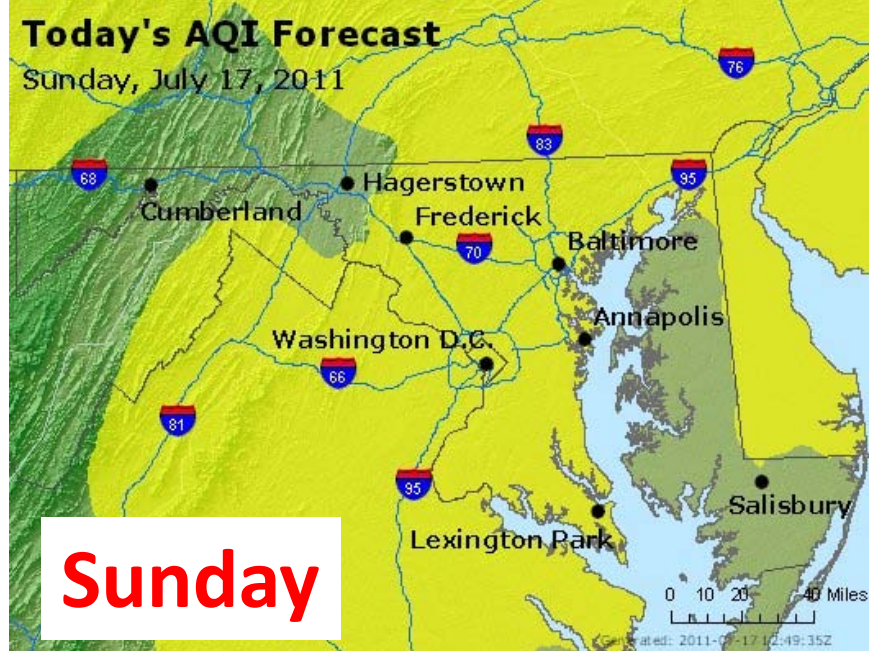


Sunday



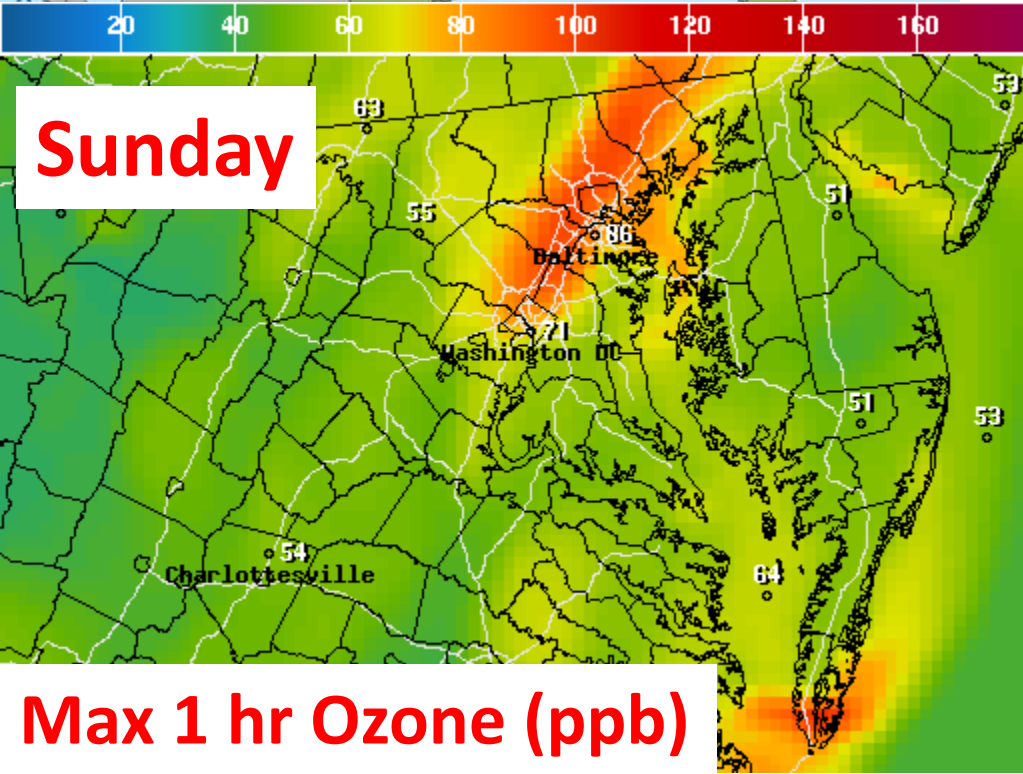
Today's AQI Forecast

Sunday, July 17, 2011



Sunday

Sunday



Air Quality Forecast

Today's High

Air Quality Index (AQI)

67

Moderate

Health Message: Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors.

Tomorrow's High

Air Quality Index (AQI)

106

Unhealthy for Sensitive Groups

Health Message: Active children and adults, and people with lung disease, such as asthma, should reduce prolonged or heavy exertion outdoors.

AQI - Pollutant Details

Ozone

67

[Moderate](#)

Ozone

106

[Unhealthy for Sensitive Groups](#)

Particles (PM_{2.5})

49

[Good](#)

Particles (PM_{2.5})

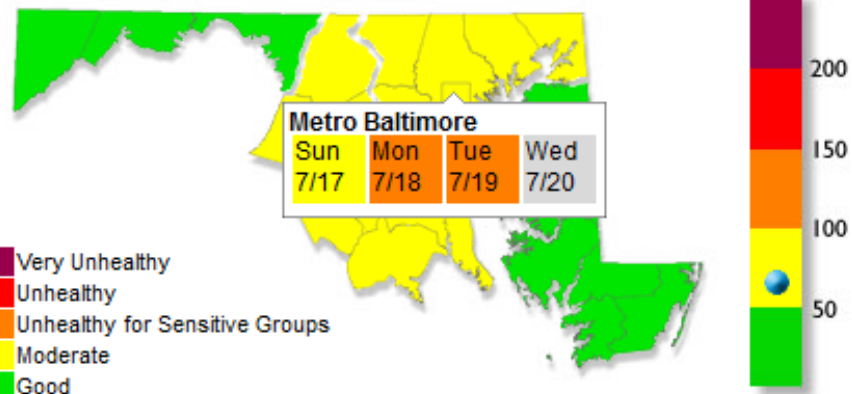
57

[Moderate](#)

Max 1 hr Ozone (ppb)

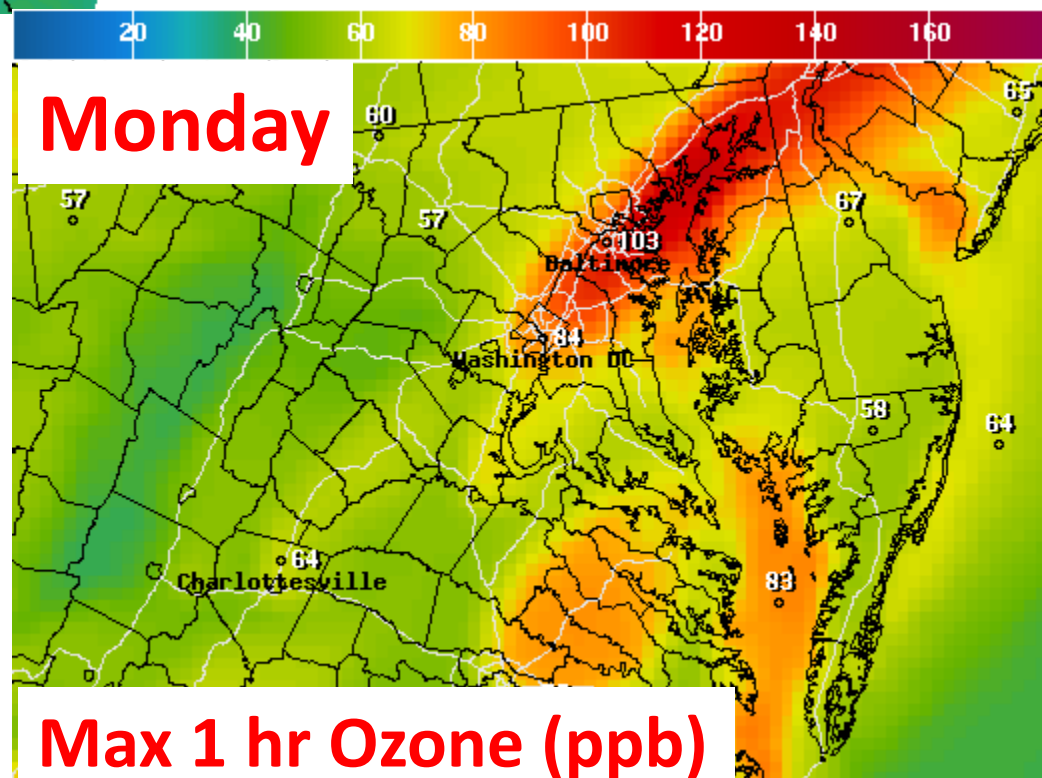
Monday

Max 1 hr Ozone (ppb)

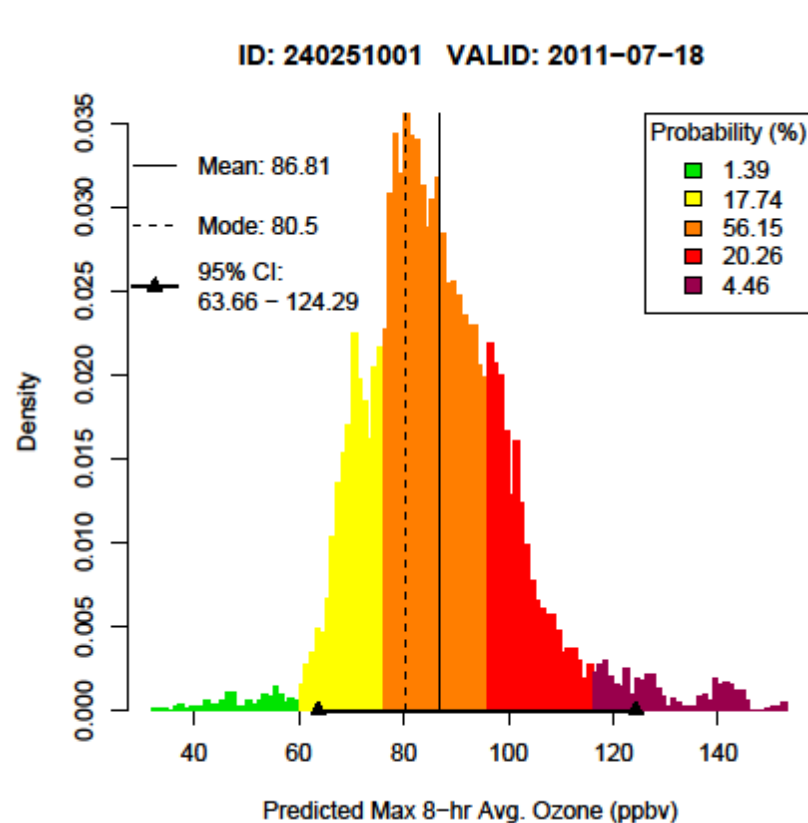


Monday

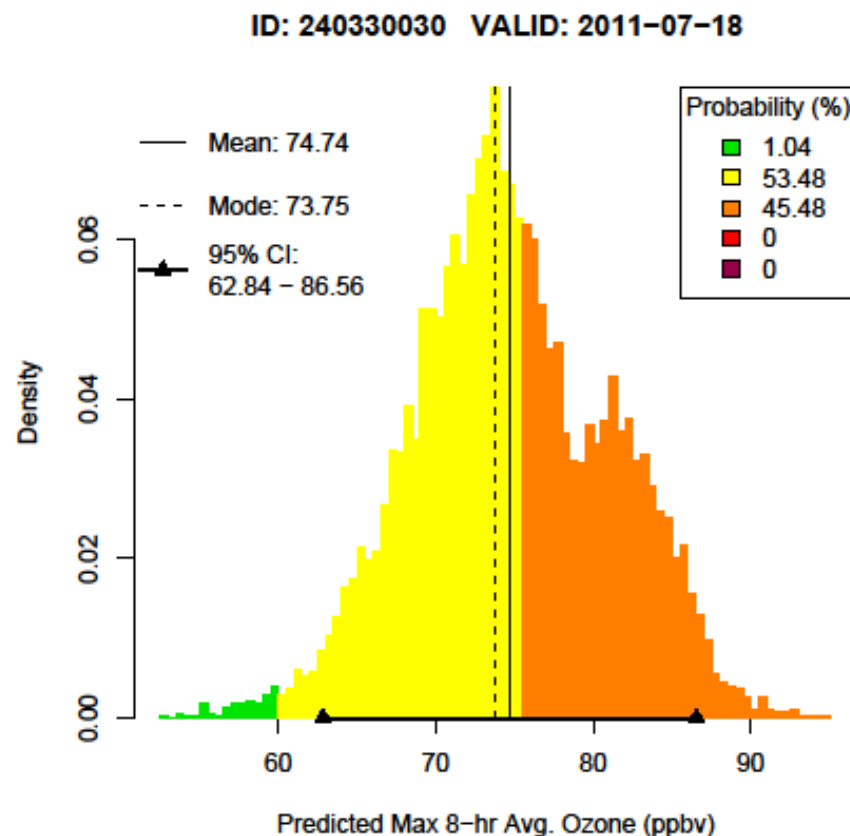
Max 1 hr Ozone (ppb)



NAQFC-MOS valid for Monday

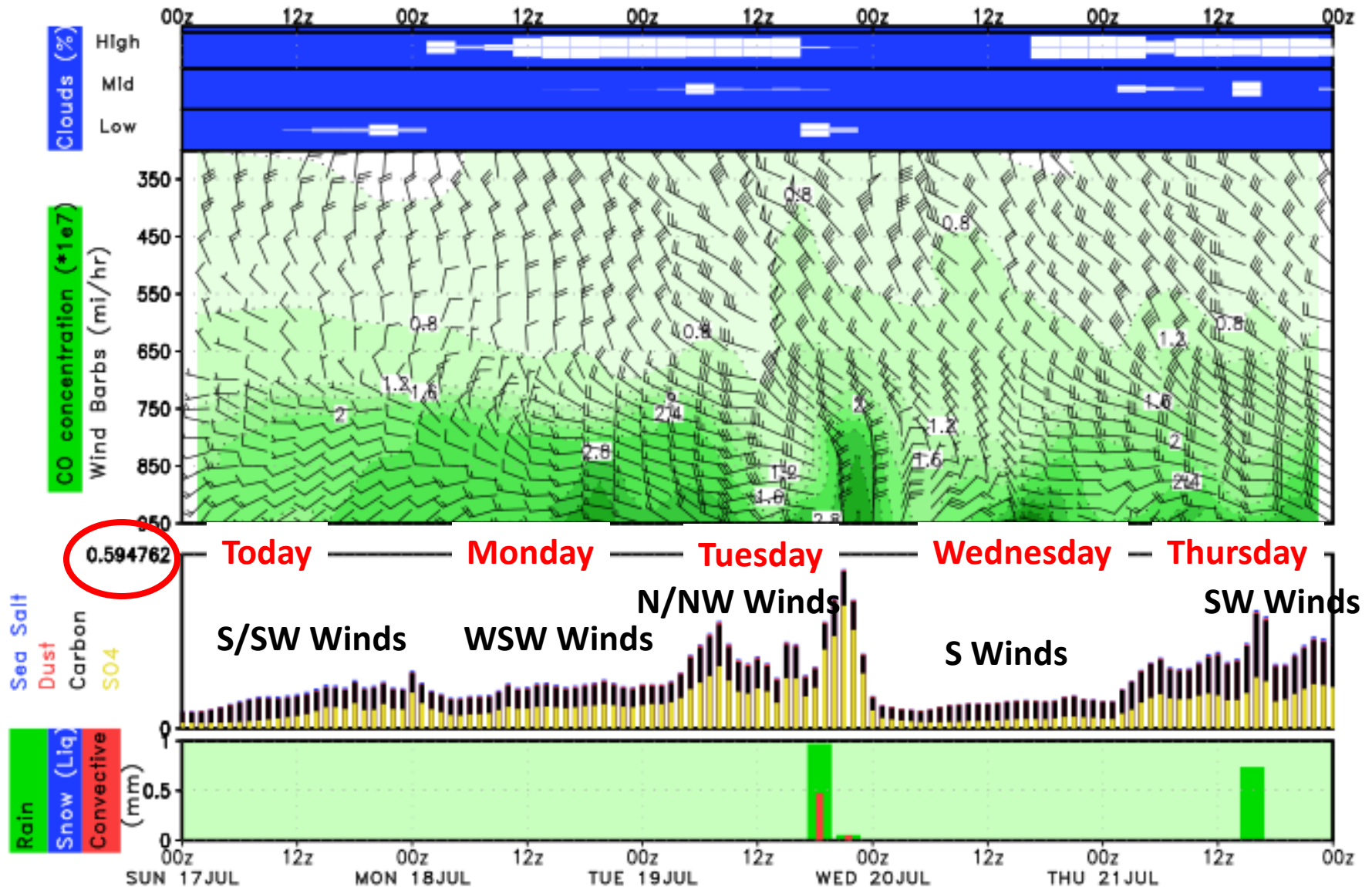


Edgewood

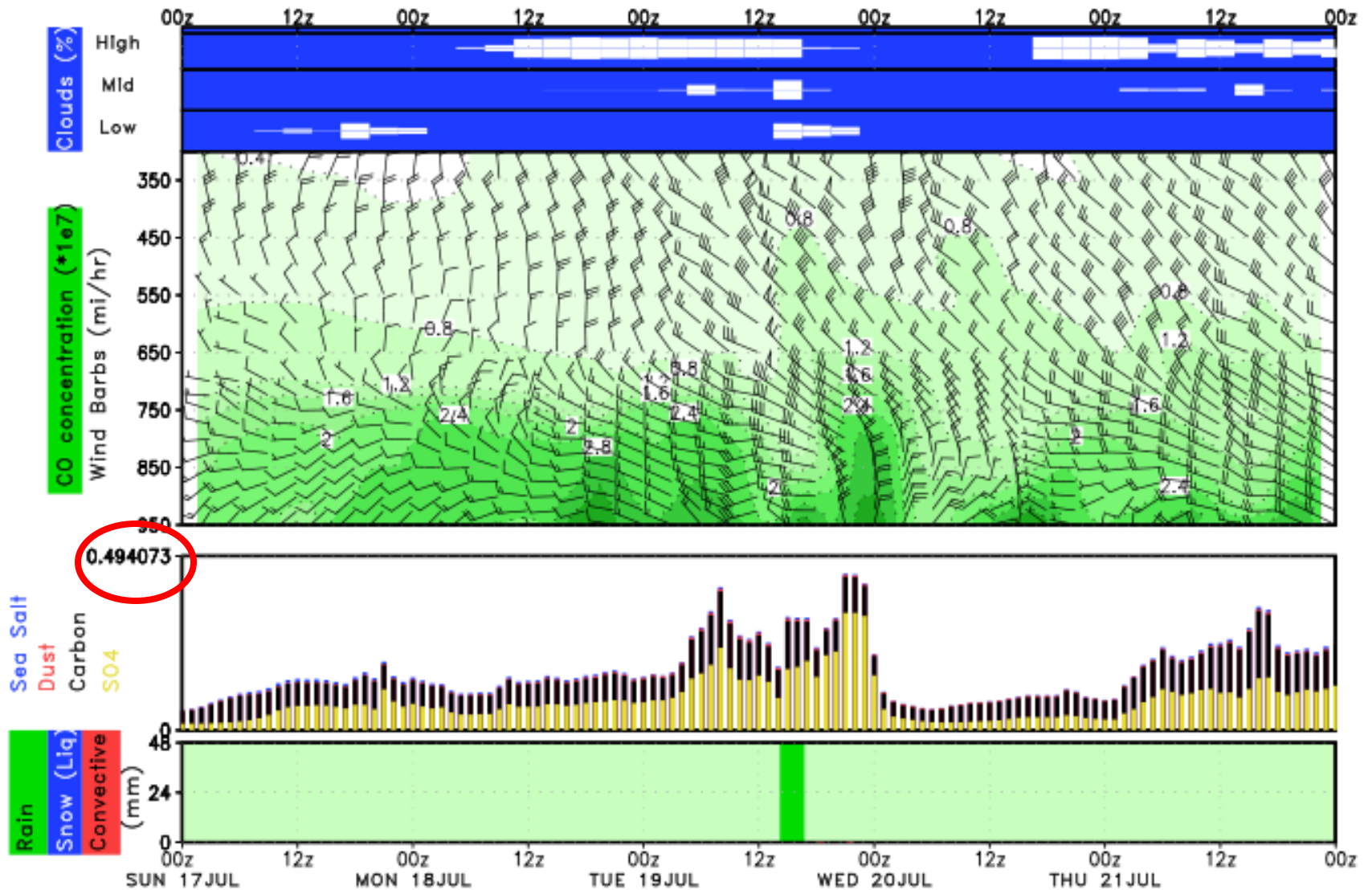


Beltsville

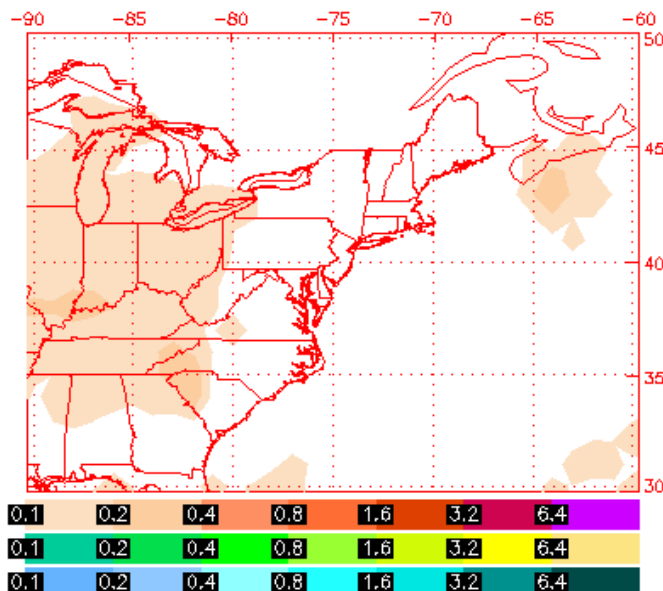
Essex



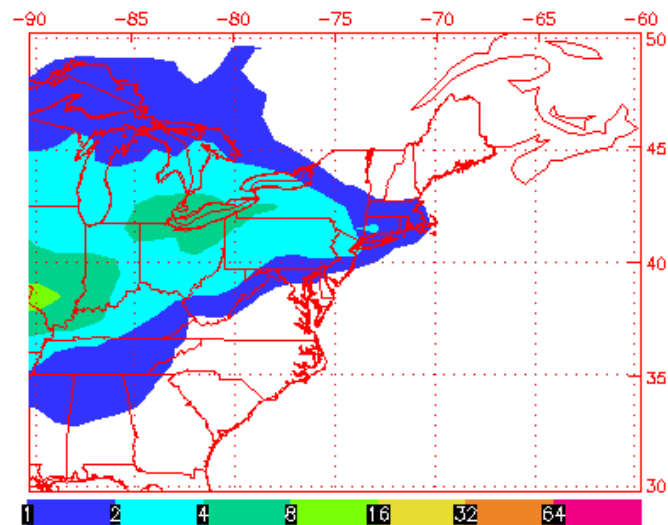
Beltsville



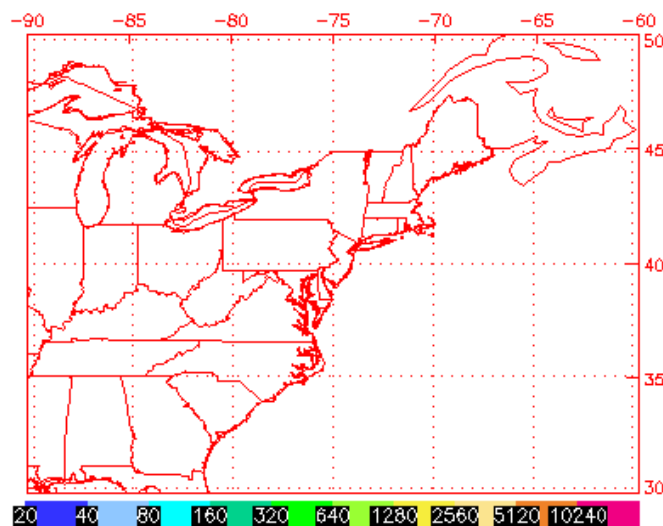
NAAPS Total Optical Depth for 00:00Z 17 Jul 2011
Sulfate: Orange/Red, Dust: Green/Yellow, Smoke: Blue



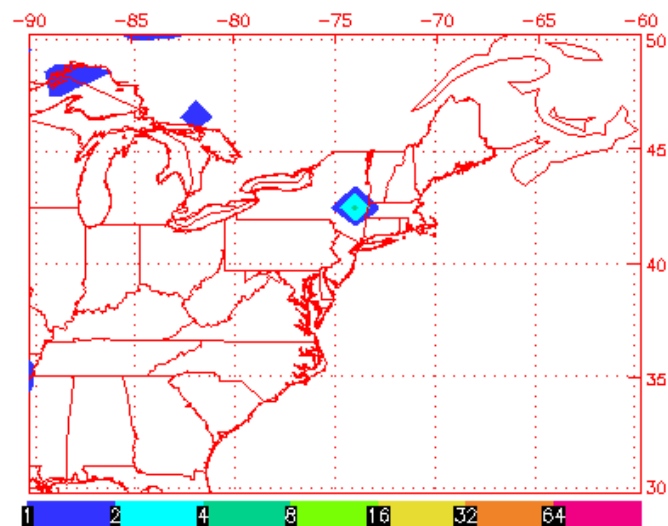
Sulfate Surface Concentration ($\mu\text{g}/\text{m}^3$)
for 00:00Z 17 Jul 2011



Dust Surface Concentration ($\mu\text{g}/\text{m}^3$)
for 00:00Z 17 Jul 2011



Smoke Surface Concentration ($\mu\text{g}/\text{m}^3$)
for 00:00Z 17 Jul 2011



AQI Forecast Discussion

A high pressure system off the Mid-Atlantic coast will continue to bring south/southeasterly flow across the region on Sunday. This air-mass is maritime in nature; thus, it's somewhat clean. Ozone levels is expected to reach into the low Moderate range along the Baltimore-Washington corridor due to mostly clear skies and light winds. Elsewhere, ozone levels will be Good. Particle pollution levels are currently in the single digit and are expected to remain in the Good range for Sunday. On Monday, this high pressure extends back over the southern Mid-Atlantic. Coupled with the approaching cold front, southwesterly winds will be enhanced over the region. This situation is typical for ozone production and AQI is expected to increase into the Unhealthy for Sensitive Groups (USG) category along the Baltimore-Washington corridor. Elsewhere will observe Moderate ozone. Particle pollution will increase into the Moderate range due to increasing humidity and transported aerosols. On Tuesday, the approach of the cold front could initiate some thunderstorms although it's still uncertain. At this time, USG conditions are still anticipated to continue on Tuesday along the I-95 corridor and east of it. Particle pollution will continue to increase well into the Moderate range. - MDE