

Non-Precipitation Warnings

(including Excessive Heat Threats)

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What are the hazards?

- o Wind Advisories/High Wind Warnings
- o Heat Advisories/Excessive Heat Warnings
- o Frost Advisories/Freeze Warnings
- o Dense Fog Advisories
- o Dense Smoke Advisories (rare)
- o Air Quality Alerts

→ *Watches may be issued 12 to 48 hours (or more) in advance of an event if there is a 50% chance of reaching warning criteria.*

Wind

o Advisory:

- ❖ Sustained winds of 31-39 mph (1 hr. or more)
- ❖ Wind gusts of 46-57 mph (any duration)

o Watch/Warning:

- ❖ Sustained winds 40+ mph (1 hr. or more)
- ❖ Wind gusts 58+ mph (any duration)

Dense Fog (Smoke) Advisory

- Widespread visibility $\frac{1}{4}$ mi or less
- Fog advisories much more common
- Smoke advisories extremely rare
 - ❖ E.g.: Forest fire
 - ❖ Collaborated between us, governing agency, and county

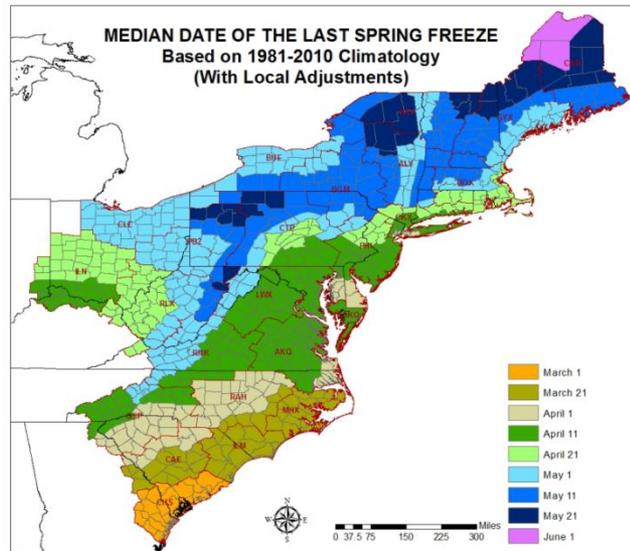
Air Quality Alert

- o Alert category is determined by...
 - ❖ Maryland Dept. of the Environment
 - ❖ Metropolitan Washington Council of Governments
 - ❖ Virginia Dept. of Environmental Quality
- o We relay the information
- o Issued for Code Orange or higher
- o Uses its own Product Identifier (PIL)
 - ❖ AEUS71 KLWX / WBCAQALWX

Frost/Freeze

- o Issued during the growing season
- o Criteria
 - ❖ Frost Advisory: temperatures between 32-36° with calm or light winds
 - ❖ Freeze Warning: temperatures below 32°

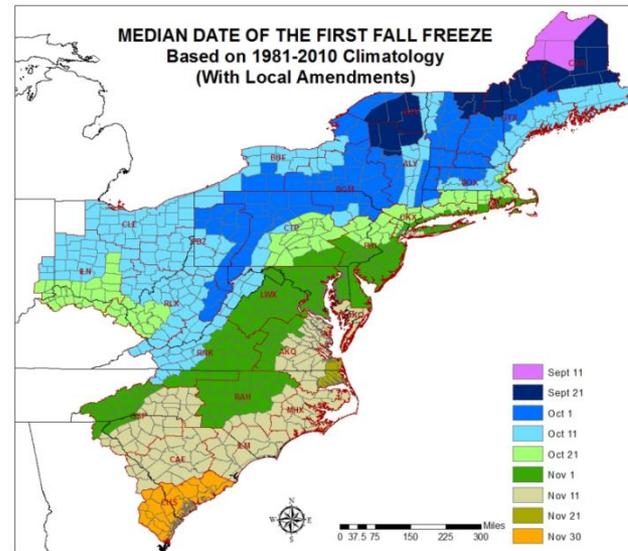
Growing season



- Start date is the median date of the last spring freeze
 - ❖ April 11
 - ❖ May 1 for the Potomac Highlands
- Discretion to start early if growing season dictates

Growing season

- o Ends in the autumn when:
 - ❖ Minimum shelter temperature of 32°F or less has been reached across a majority of a forecast zone.
 - ❖ Two weeks beyond median date of first freeze.
 - ✓ October 25 for the Potomac Highlands
 - ✓ November 15 elsewhere



Public Information Statement (PNS) will be issued to announce the end of the growing season for each zone or group of zones



Heat Operations

Issuing criteria (Guidelines)

- Advisory:
 - ❖ Heat index 105-109°F for 2 hours or more
- Watch/Warning:
 - ❖ Heat index 110°F+ for 2 hours or more
- There is flexibility in these criteria
 - ❖ Early season
 - ❖ Multi-day event
- Offices to our north and west use criteria that are 5 ° F lower
- WFO Mt. Holly uses different procedures for metro Philadelphia

Products/Actions

Beyond 48
hours

- Hazardous Weather Outlook (HWO)
- Area Forecast Discussion (AFD)
- Social media platforms

24-48
hours

- **Excessive Heat Watch** (50% confidence using warning criteria)
- **Public Information Statement** to highlight safety precautions

Within 12-
24 hours

- **Excessive Heat Warning/Heat Advisory**

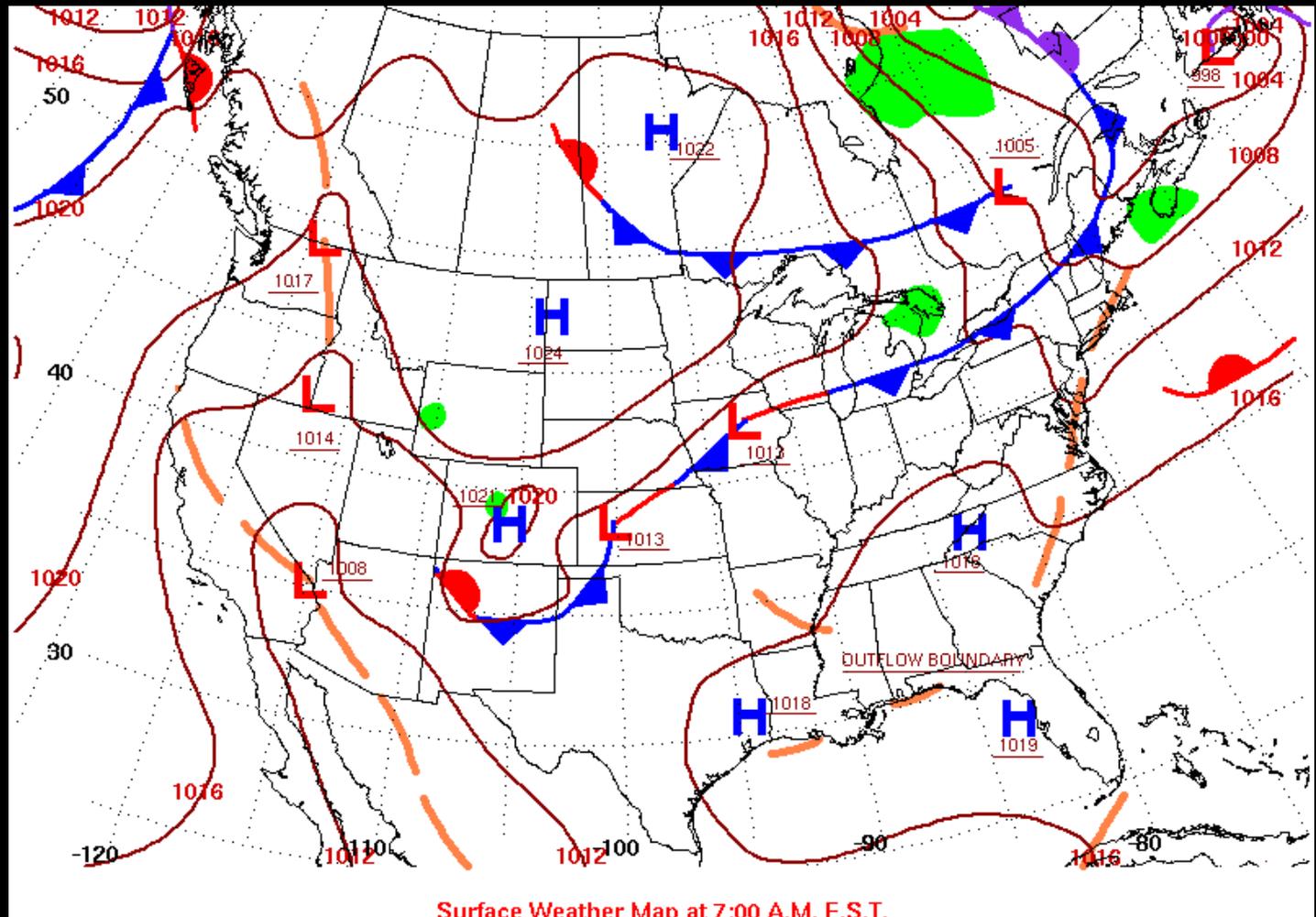
NOTE: All listed actions are cumulative

July 1-8, 2012...with modifications

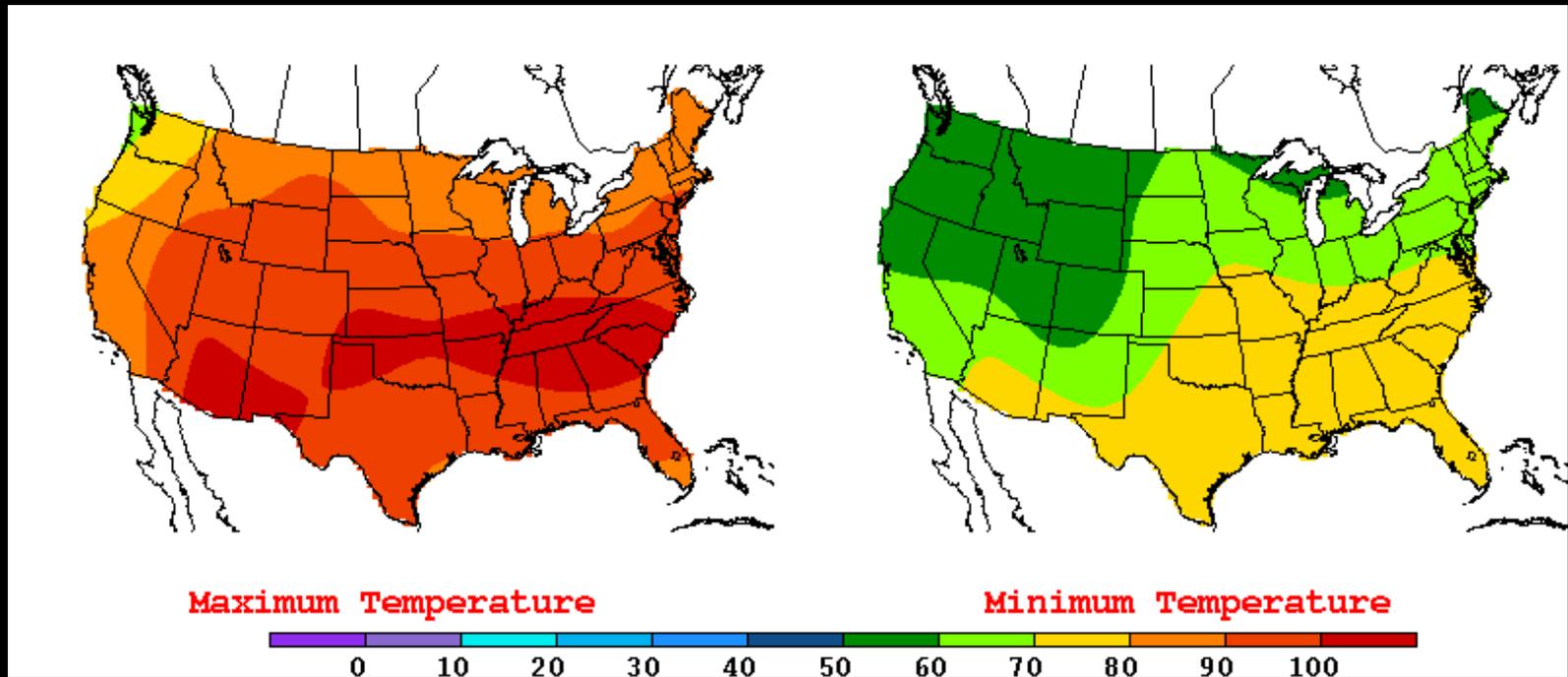


EXTREME HEAT SCENARIO

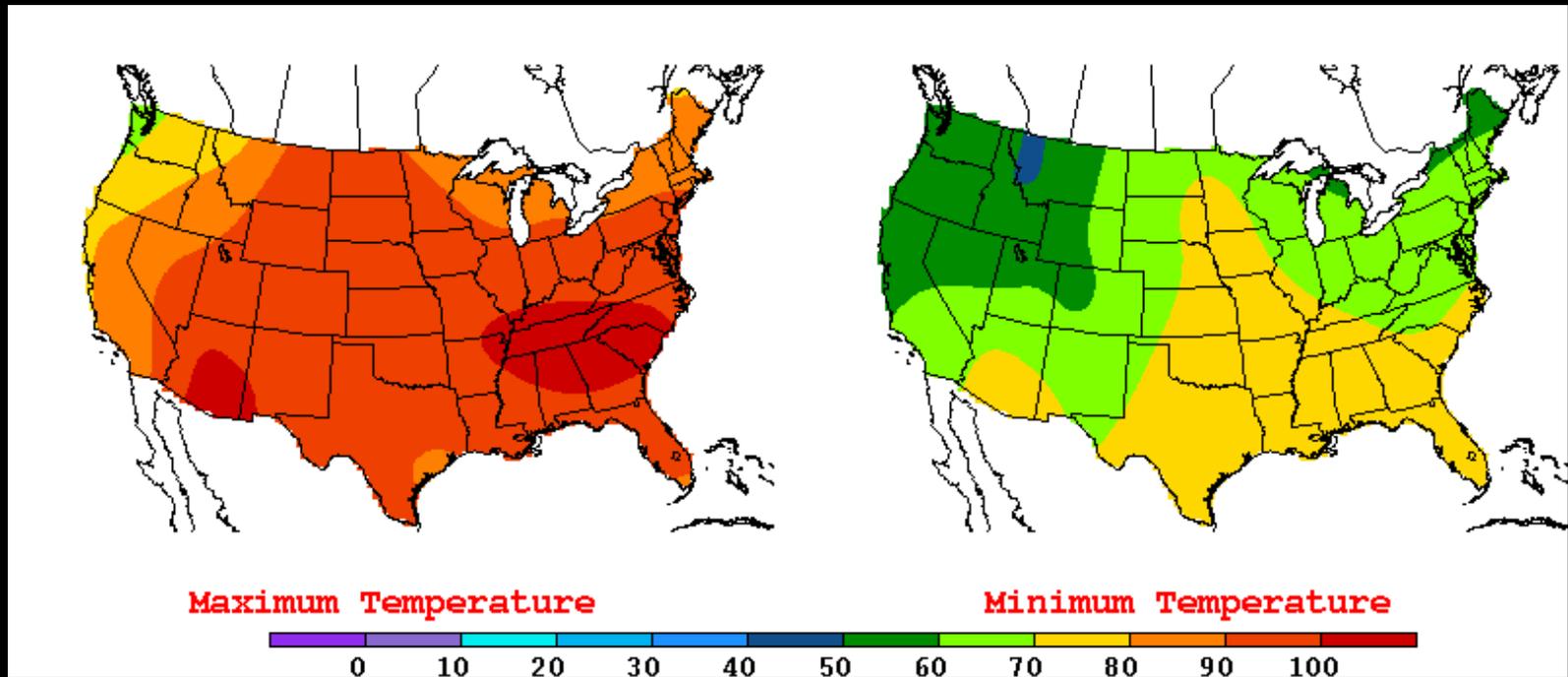
Sample Setup



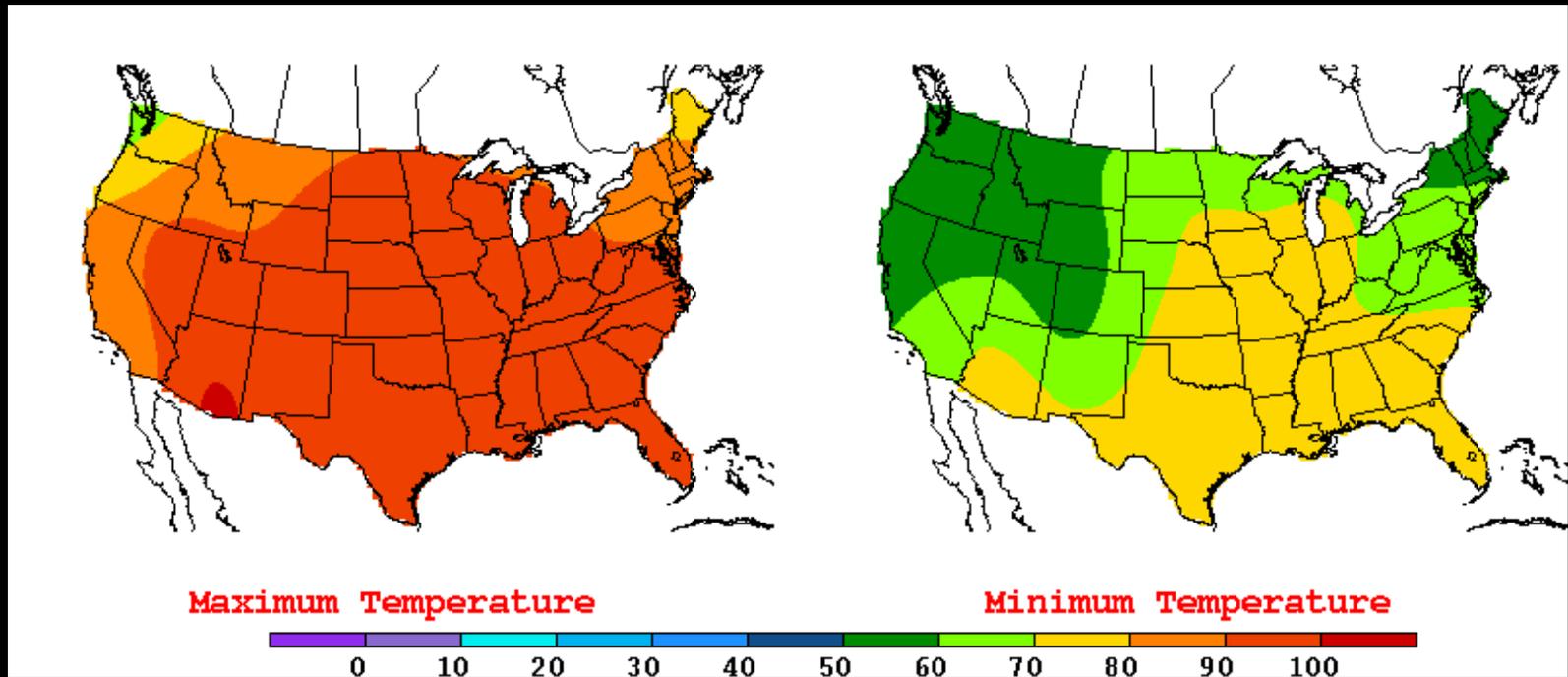
Observed temperatures—July 1, 2012



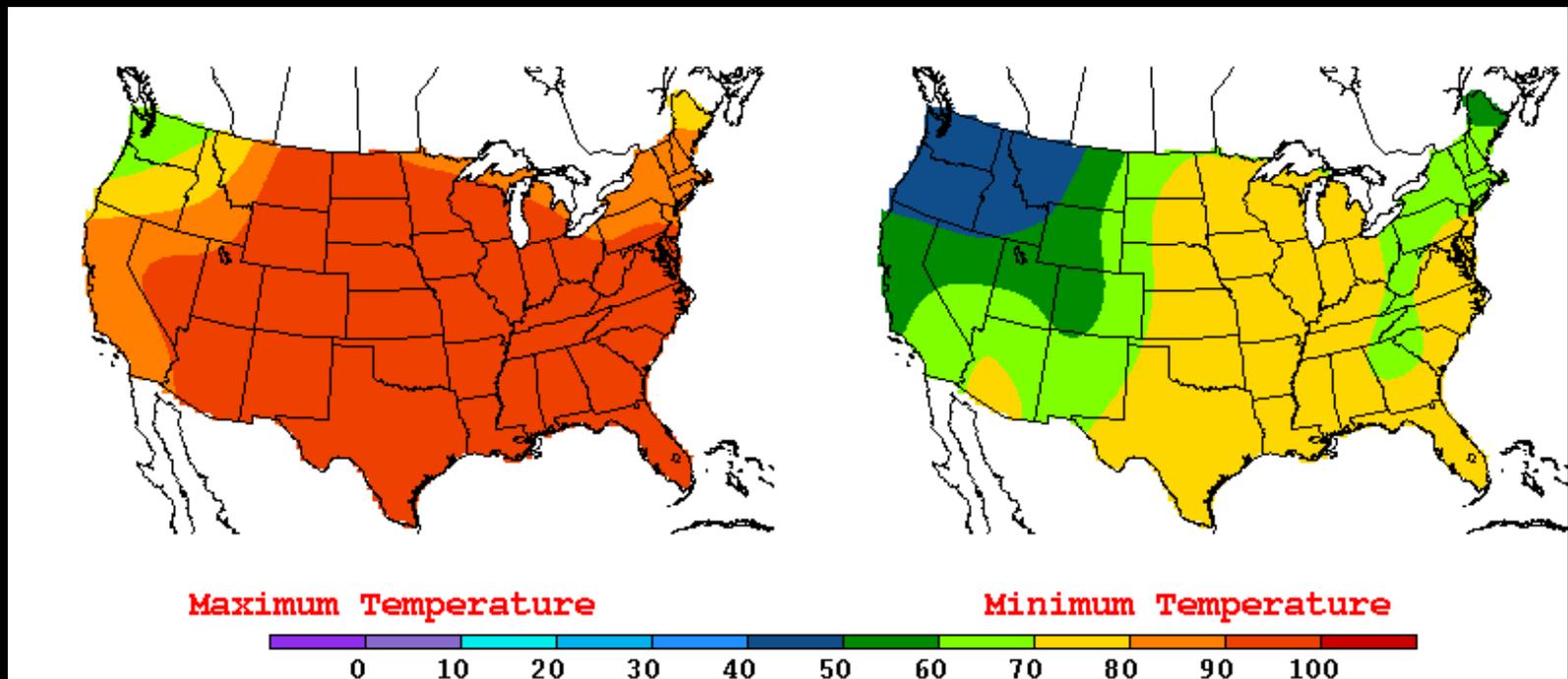
Observed temperatures—*July 2, 2012*



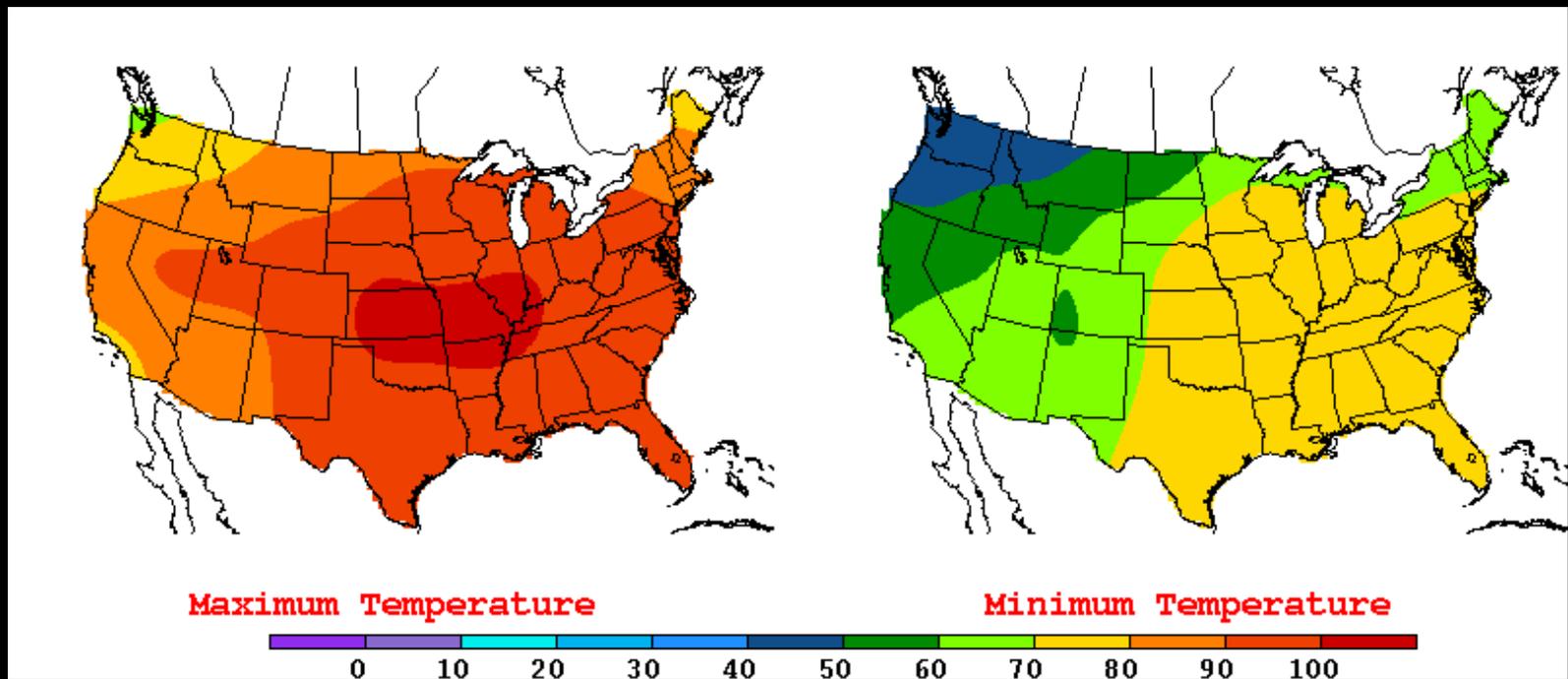
Observed temperatures—*July 3, 2012*



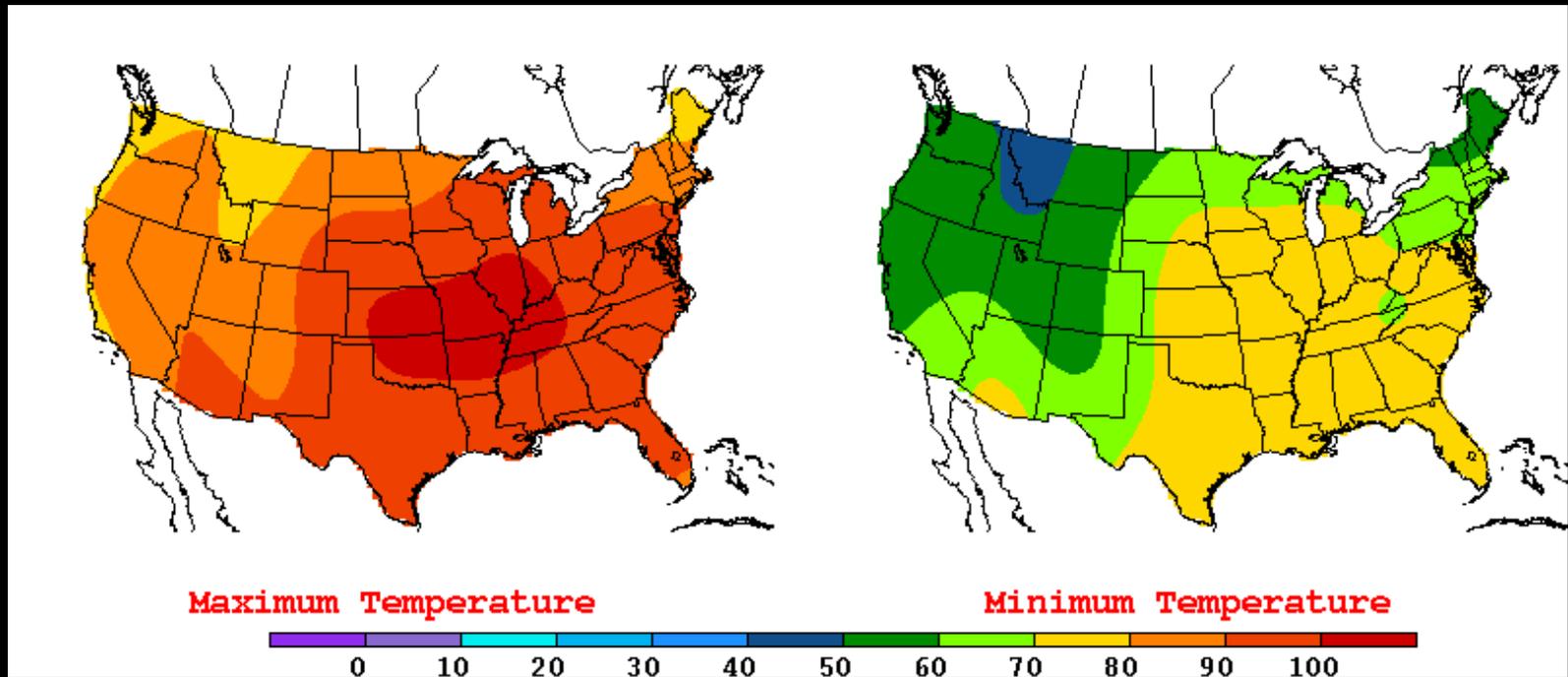
Observed temperatures—July 4, 2012



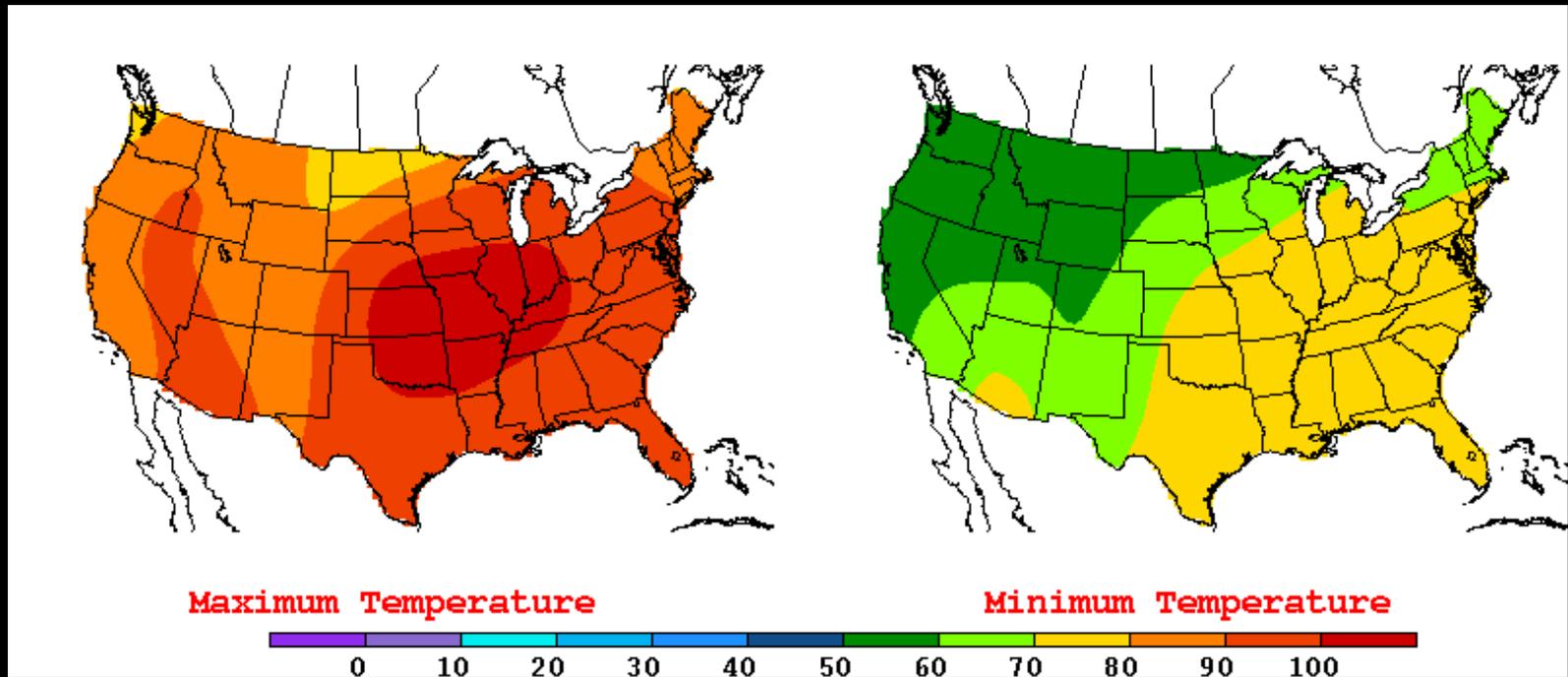
Observed temperatures—*July 5, 2012*



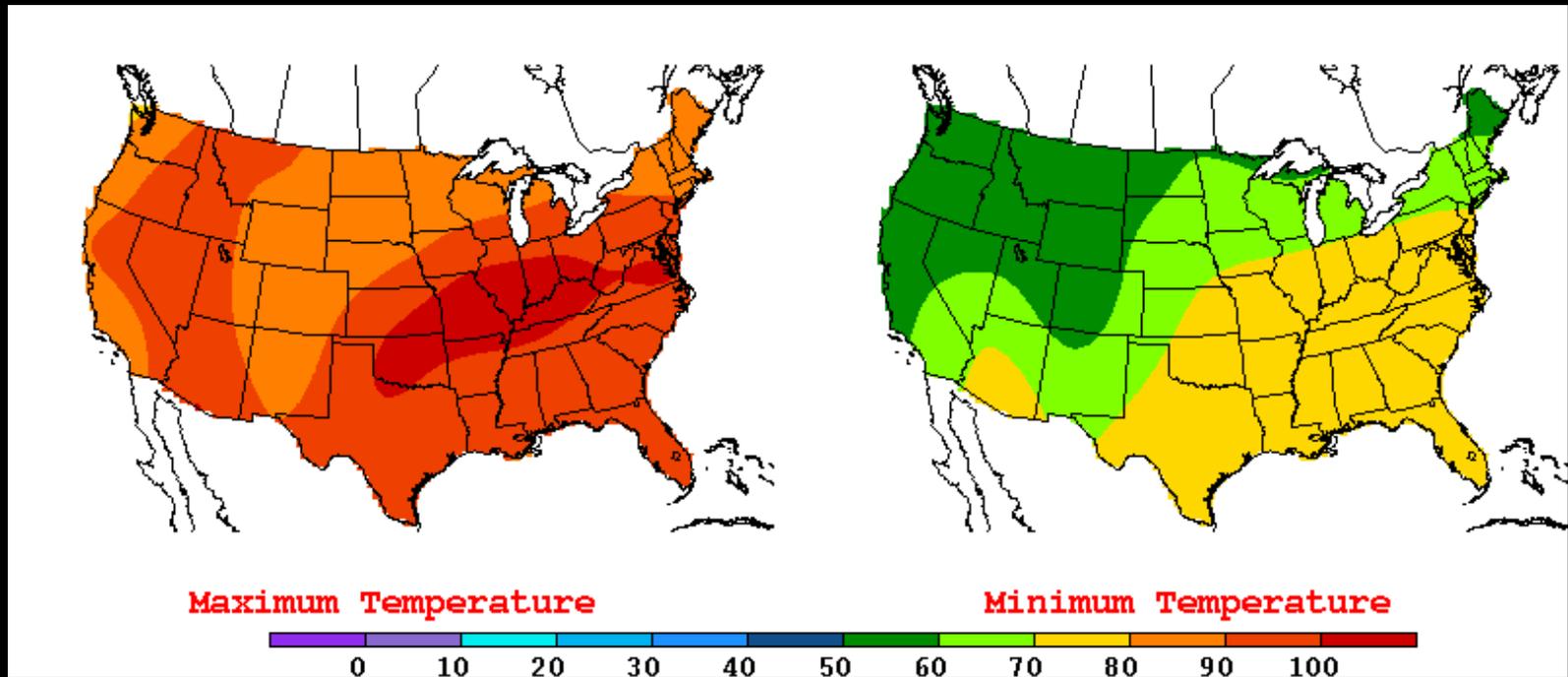
Observed temperatures—July 6, 2012



Observed temperatures—July 7, 2012



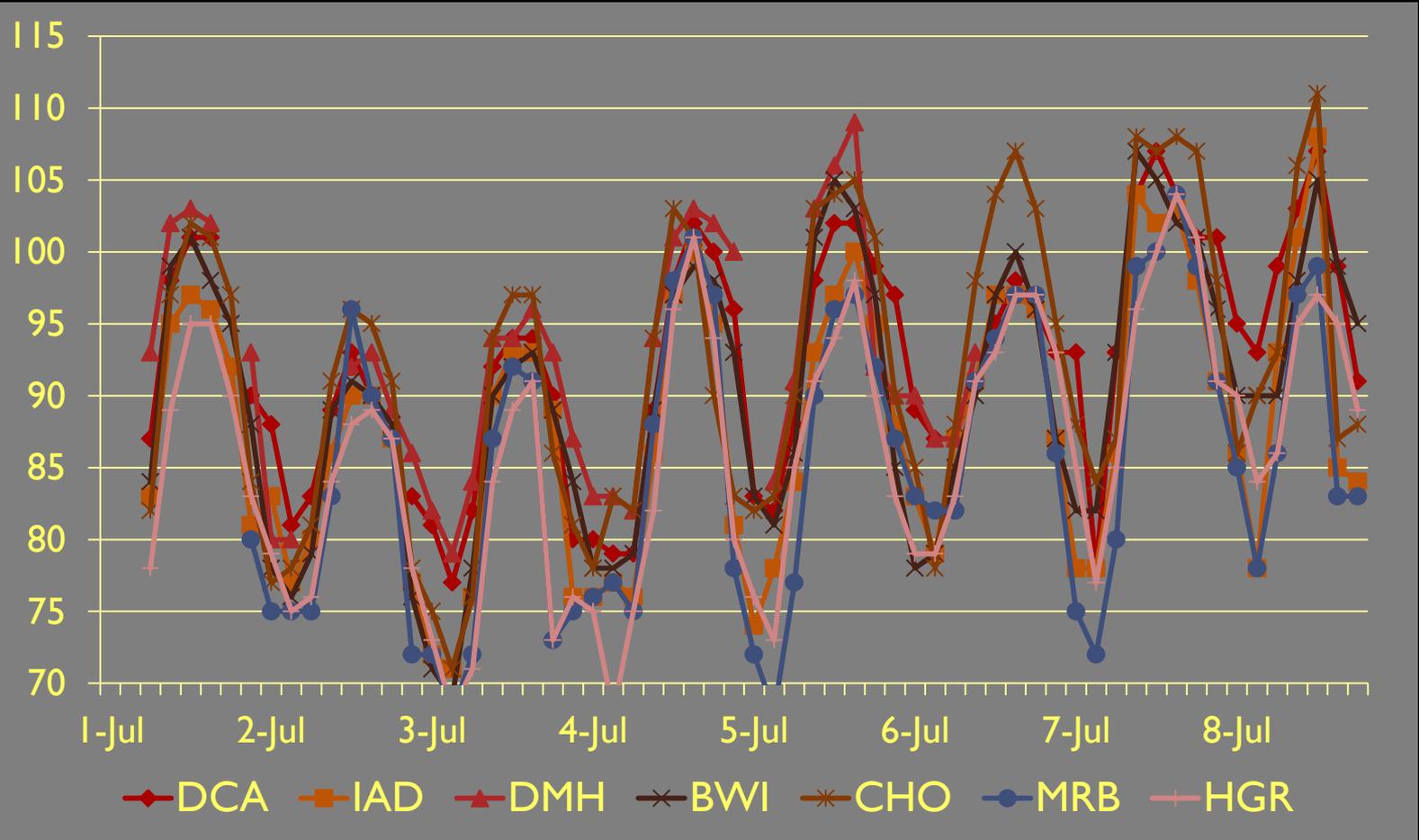
Observed temperatures— July 8, 2012



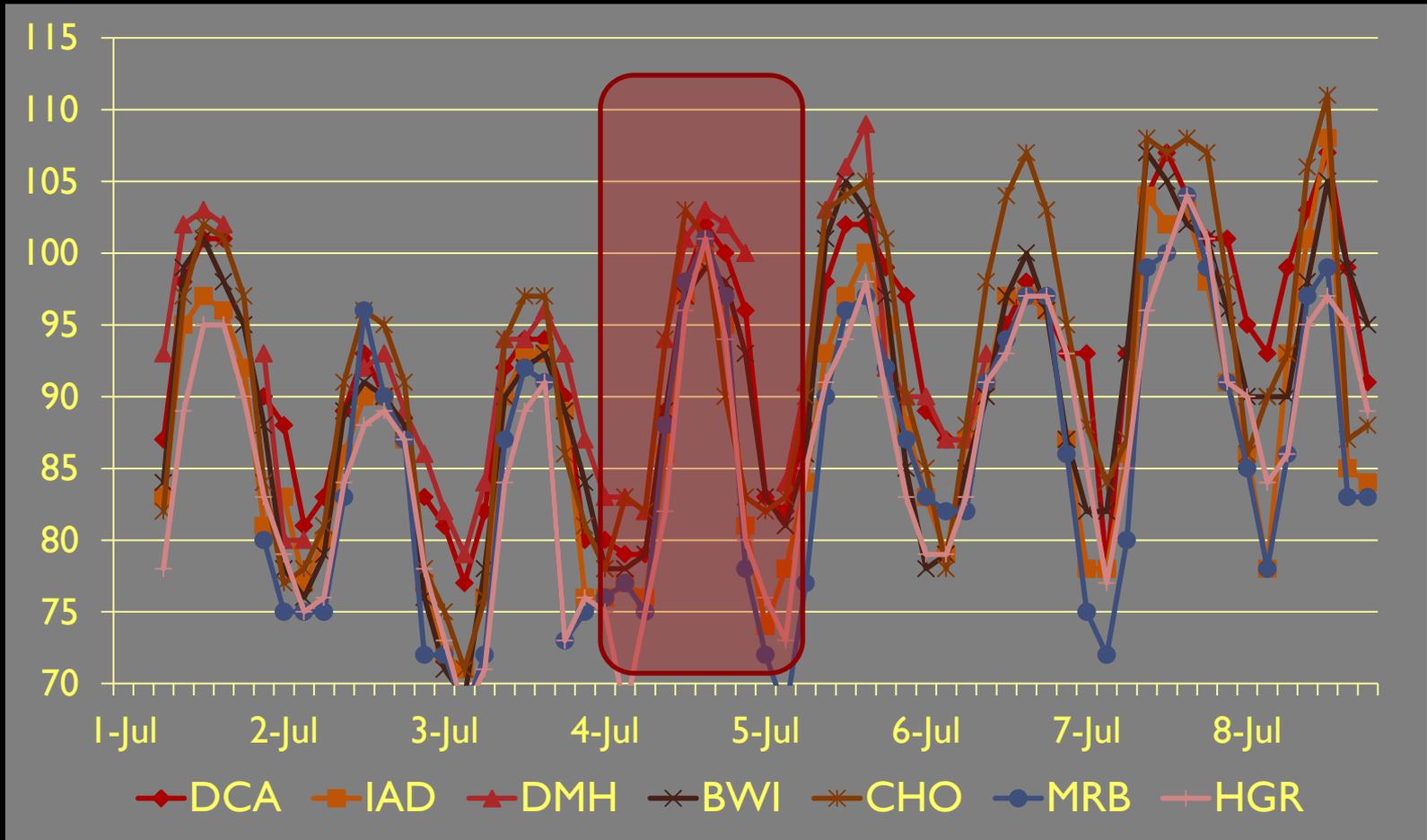
Local temperatures

	DCA		IAD		DMH		BWI		CHO		MRB		HGR	
July	High	Low												
1	99	77	96	71	101	82	97	73	101	73	--	--	96	71
2	95	79	92	73	96	76	94	71	95	74	91	67	92	69
3	98	75	95	68	100	78	96	67	99	70	92	65	93	68
4	99	75	96	70	100	80	97	74	100	74	96	68	96	68
5	100	80	98	71	103	83	99	78	104	78	94	68	95	71
6	100	81	98	76	103	83	99	75	100	76	95	72	96	73
7	105	82	101	75	108	84	104	76	105	78	100	71	101	76
8	102	77	101	76	99	87	100	81	106	78	97	74	93	78

Heat index values

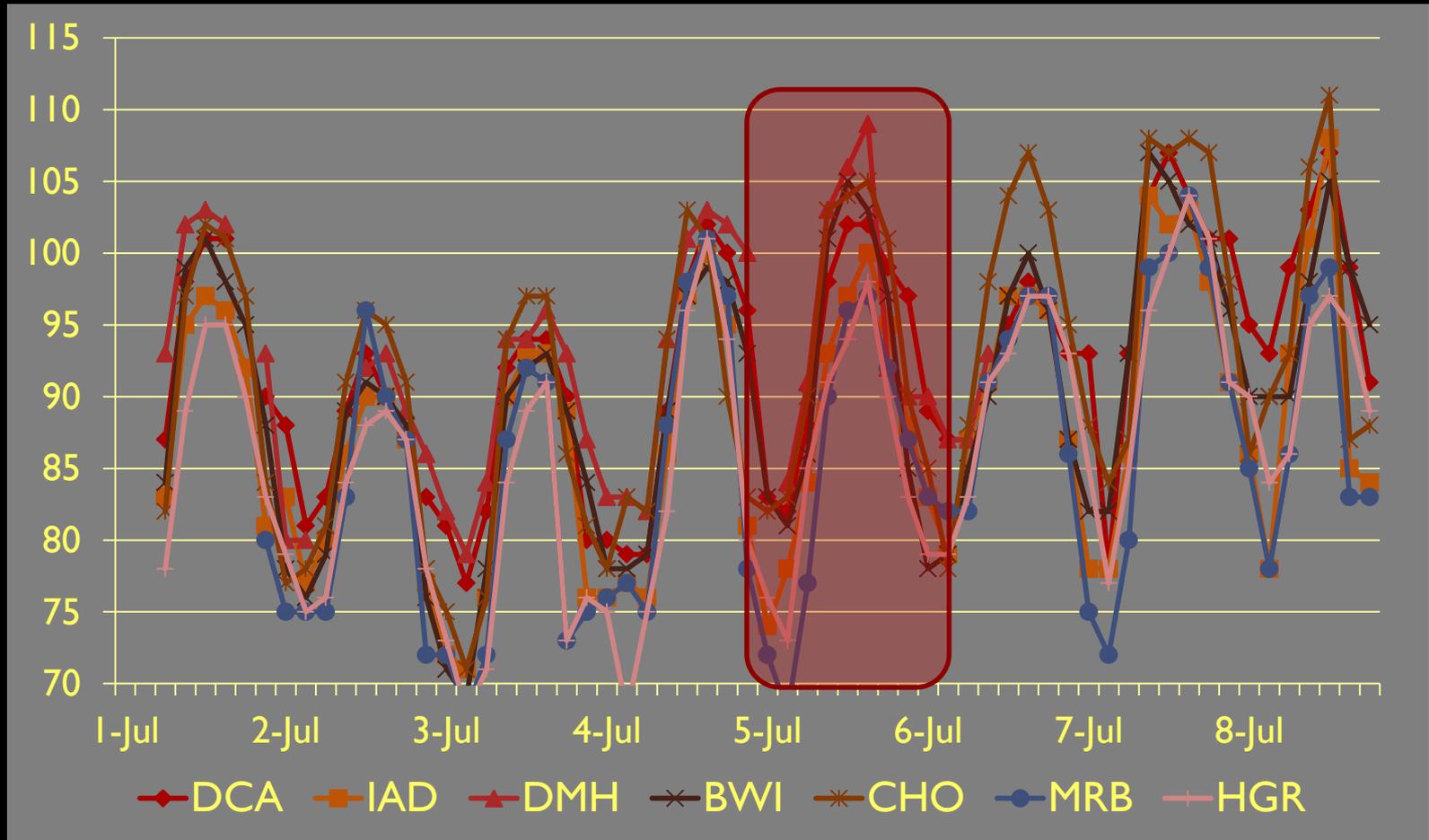


What did we do?



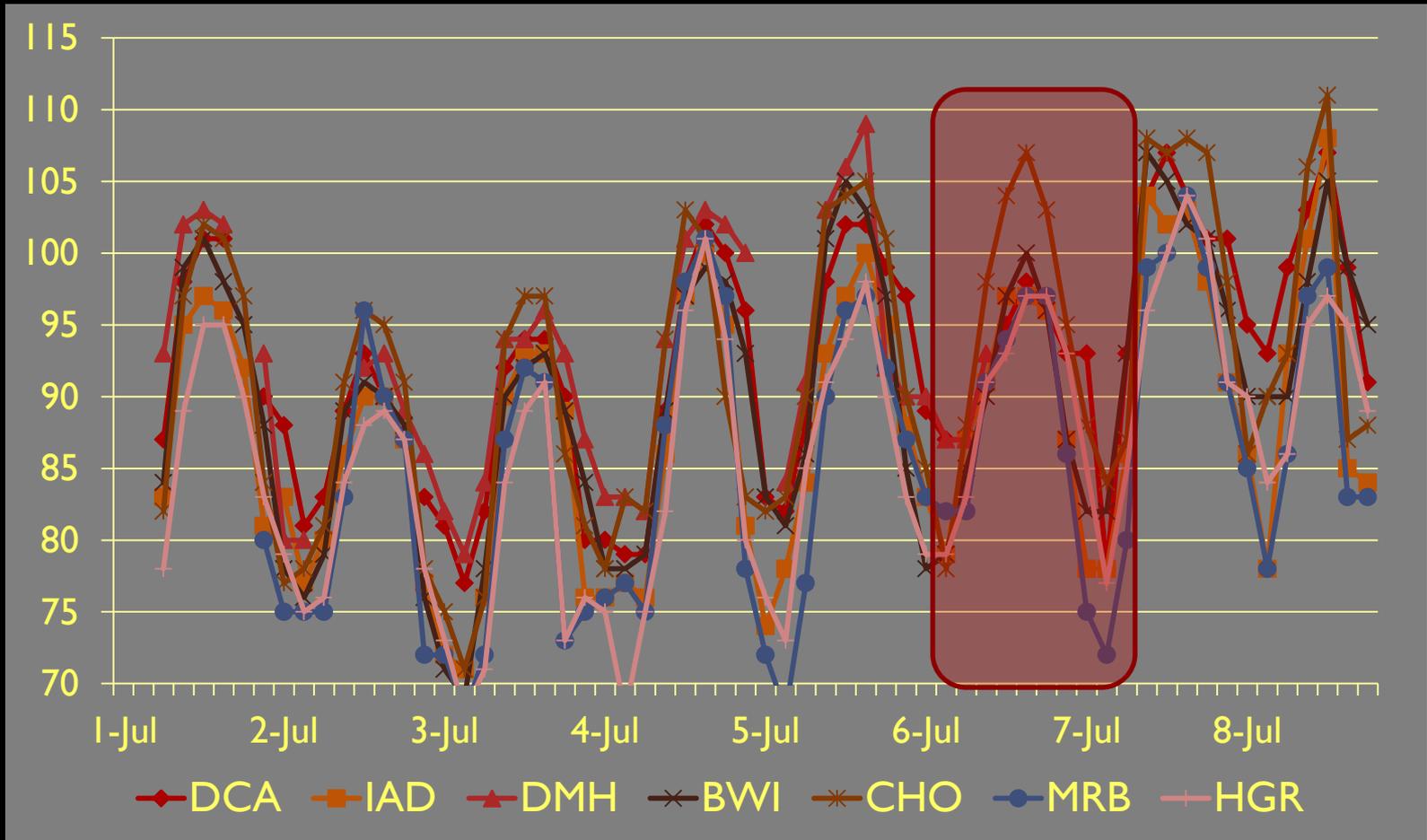
Heat Advisory east of the Blue Ridge

What did we do?



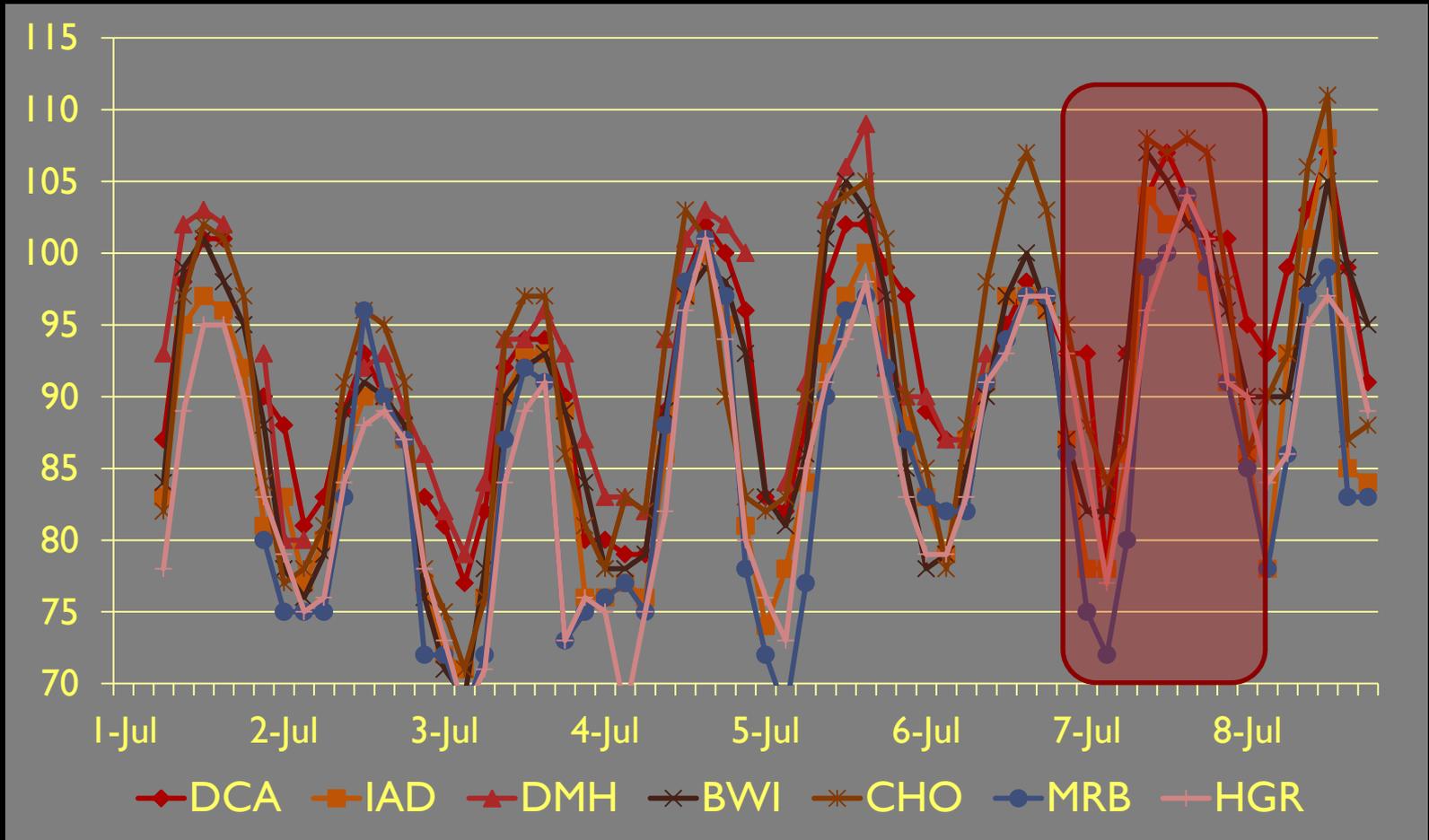
Excessive Heat Warning for Baltimore City; Heat Advisory elsewhere east of the Blue Ridge

What did we do?



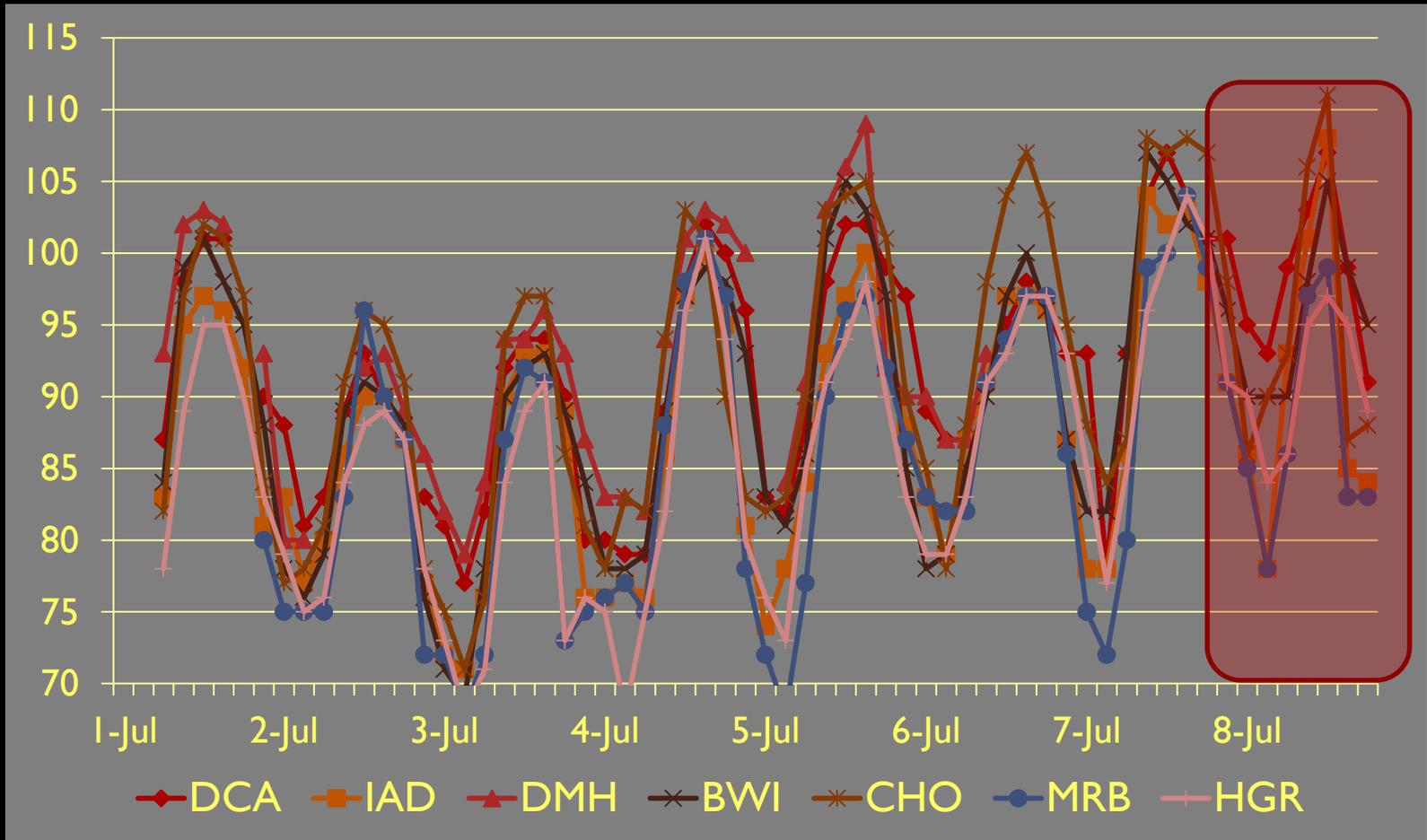
Heat Advisory east of the Blue Ridge

What did we do?



Heat Advisory almost entire area or responsibility

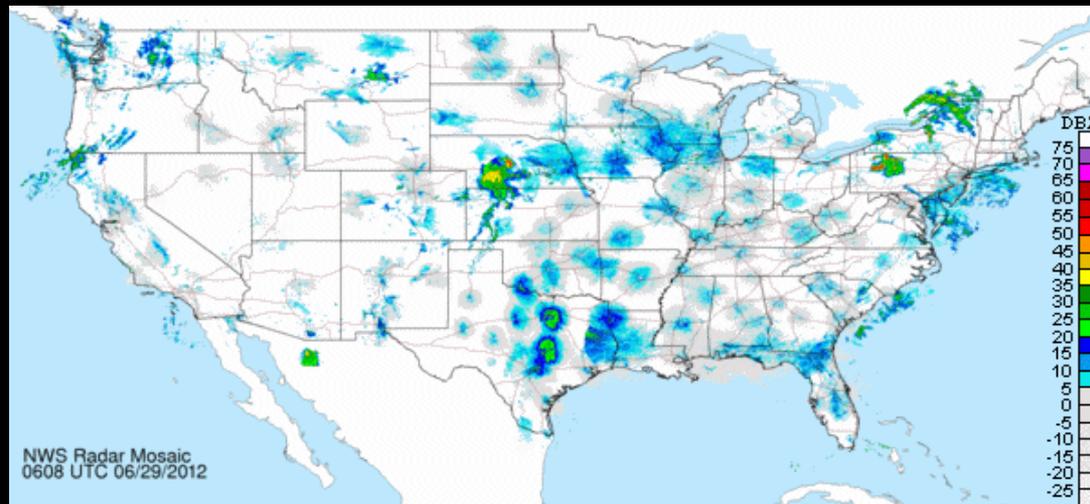
What did we do?

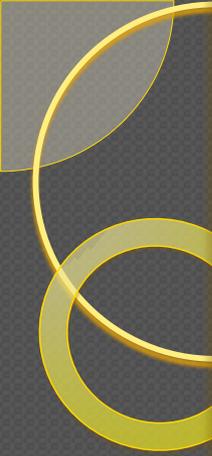


Heat Advisory east of the Blue Ridge

If you recall...

- It was generally seasonably warm through June 28th. There was a hot period June 20-22.
- The derecho came through June 29th, after the hottest day of the month.
- Although there were massive power outages, a fair amount of restoration had taken place on June 30th.
 - How did you respond to the heat?
 - How did power outages change your plans going into this week compared to “normal”?



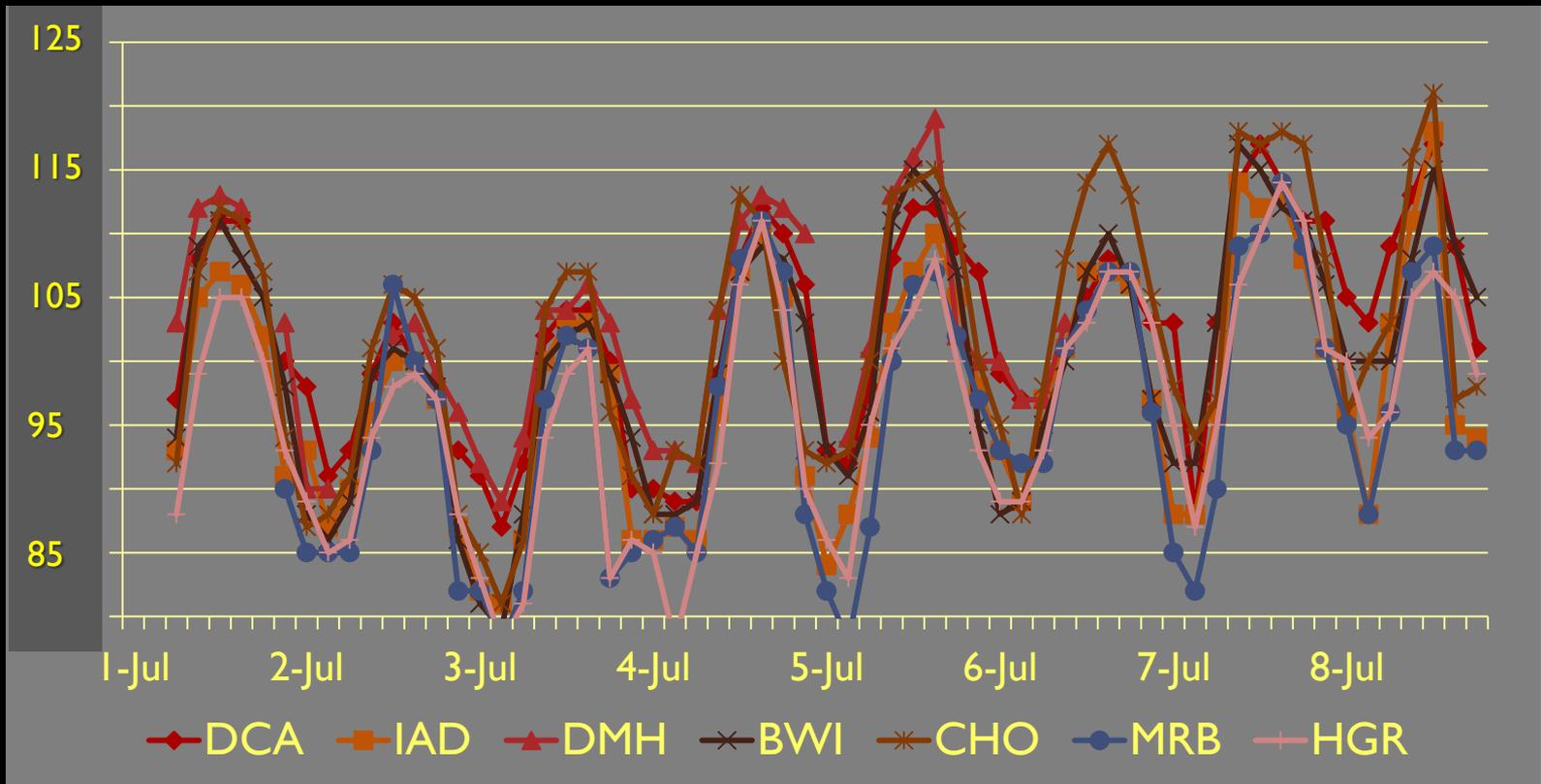


What if...

- This were June 1-8. The spring was mild, almost cool. Few have acclimated to extreme summer heat. What do you do differently?

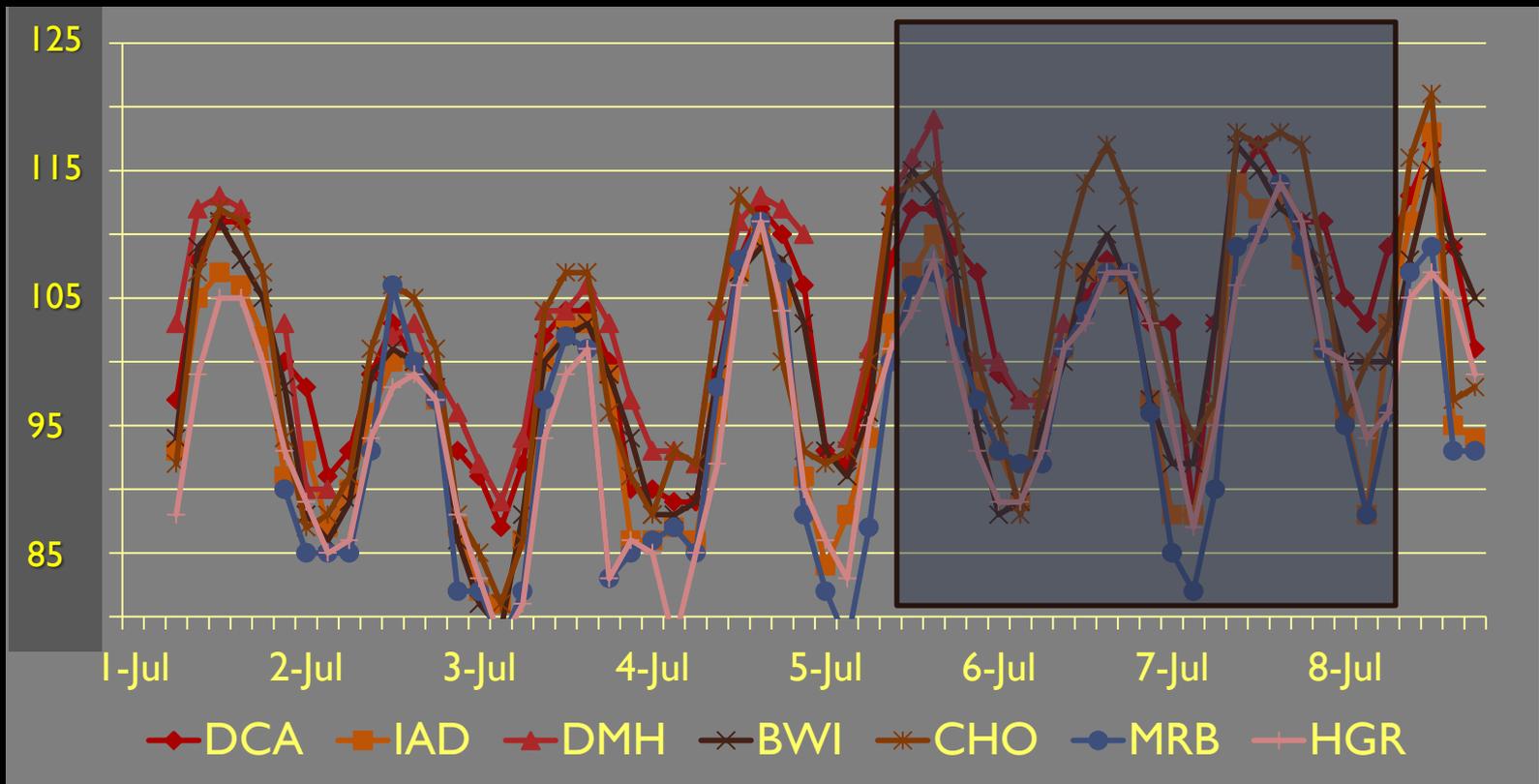
What if...

- It were 10 degrees warmer?



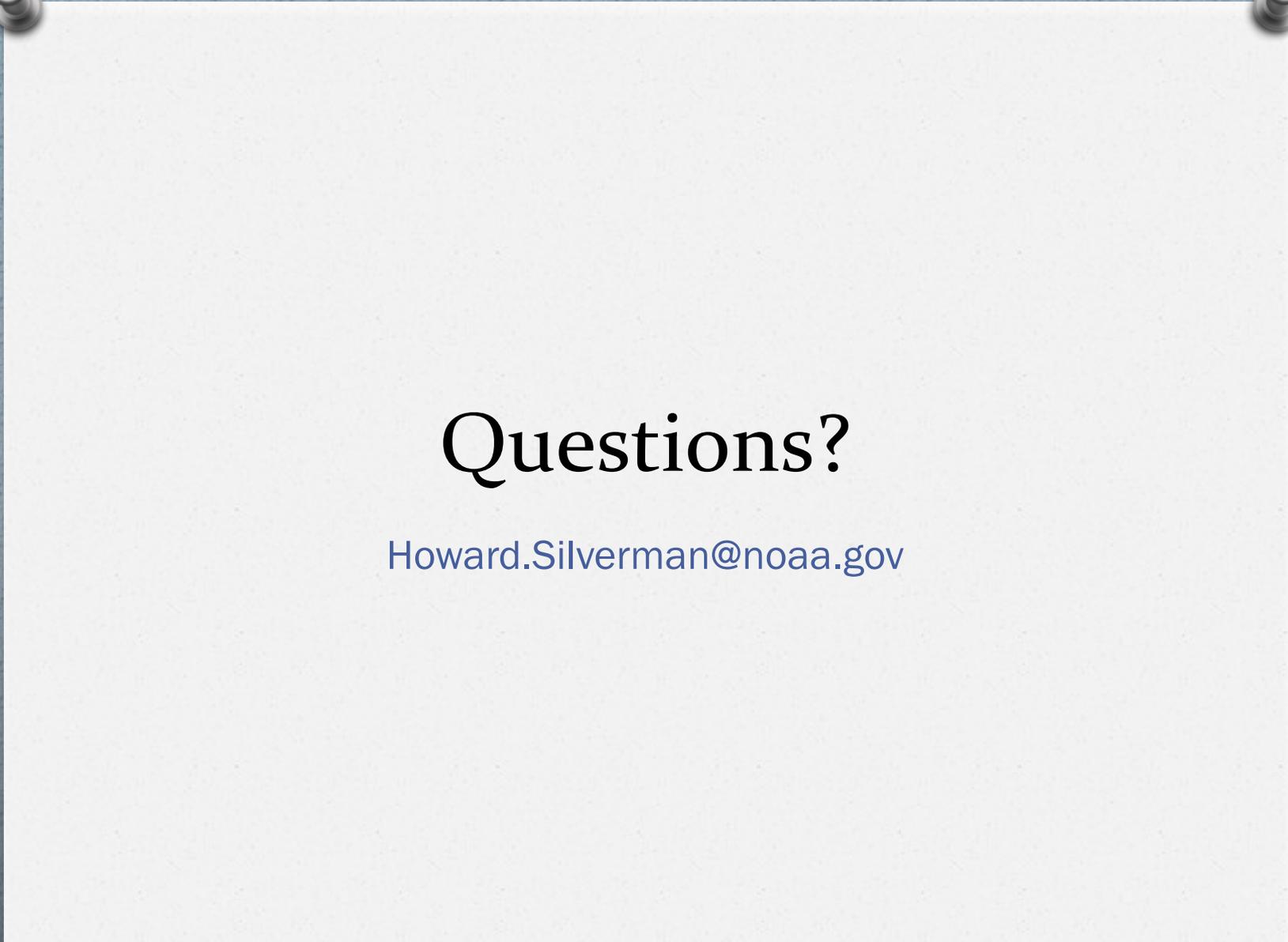
What if...

- It were 10 degrees warmer and there were a massive (multi-day) power outage on July 5th?



How realistic is this?

Top 10 Max Temperatures					
DCA		IAD		BWI	
106	07-20-1930	105	07-22-2011	107	07-10-1936
106	08-06-1918	104	07-16-1988	106	07-22-2011
105	07-07-2012	104	08-20-1983	105	07-06-2010
105	08-17-1997	103	07-29-2011	105	08-20-1983
105	07-10-1936	103	07-03-1966	105	06-29-1934
104	06-29-2012	102	06-29-2012	105	08-07-1918
104	07-29-2011	102	08-15-1988	105	08-06-1918
104	07-16-1988	102	07-06-1977	104	07-18-2012
104	07-09-1936	101	07-18-2012	104	07-07-2012
104	07-21-1926	101	07-08-2012	104	07-16-1988



Questions?

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