

# 2020 Atlantic Season Wrap-Up

Mike Bilder

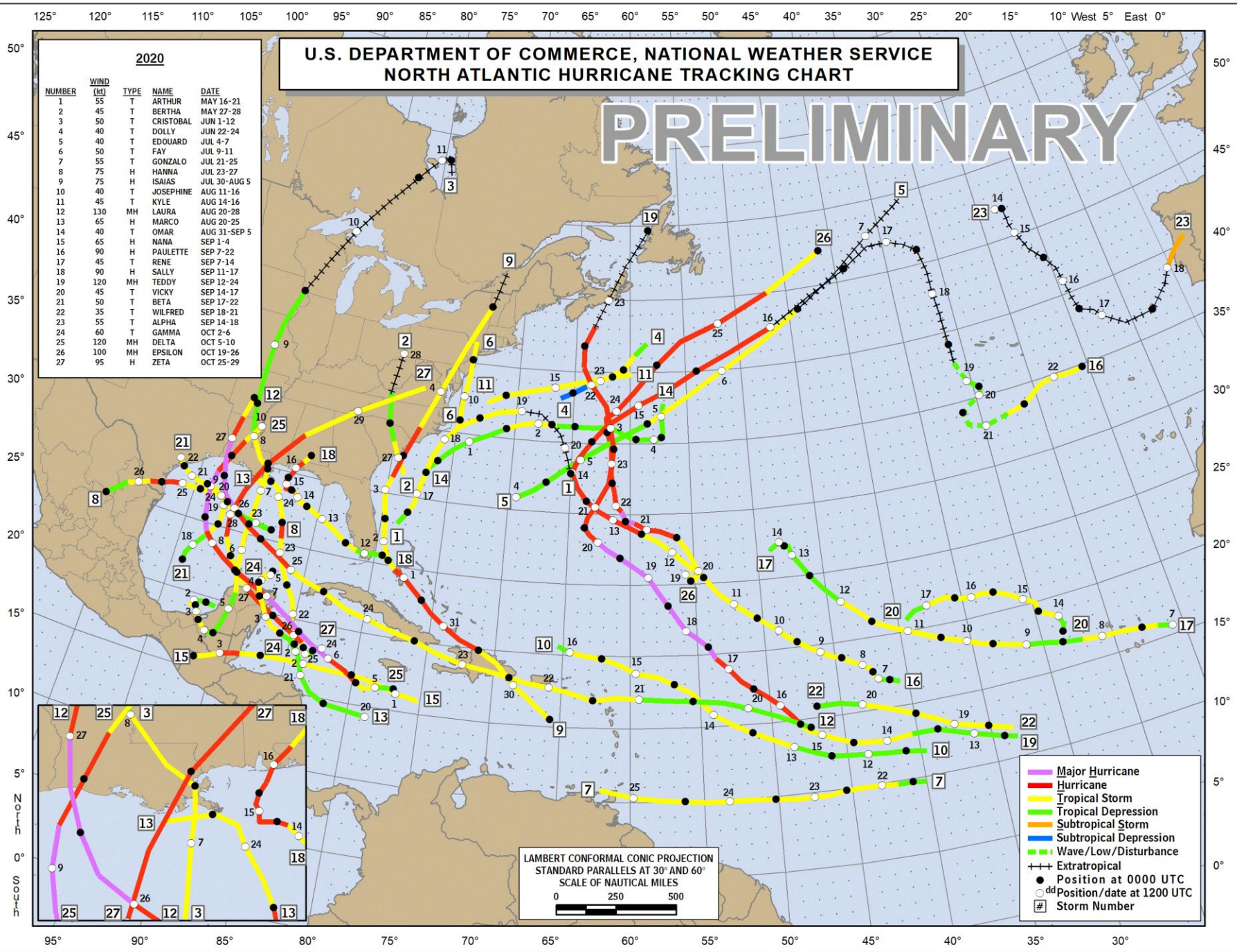
Hurricane Program Manager / HLT Lead

Region 3



# FEMA





Note: this graphic does not yet include Eta, Theta, and Iota.





# 2020 Atlantic Tropical Cyclone Names\*

Tropical Storm	<del>Arthur</del>	May 16	Hurricane	<del>Hanna</del>	July 22	Tropical Storm	<del>Omar</del>	Sept 1
Tropical Storm	<del>Bertha</del>	May 27	Hurricane	<del>Isaias</del>	July 29	Hurricane	<del>Paulette</del>	Sept 7
Tropical Storm	<del>Cristobal</del>	June 2	Tropical Storm	<del>Josephine</del>	Aug 13	Tropical Storm	<del>Rene</del>	Sept 7
Tropical Storm	<del>Dolly</del>	June 23	Tropical Storm	<del>Kyle</del>	Aug 14	Hurricane	<del>Sally</del>	Sept 12
Tropical Storm	<del>Edouard</del>	July 5	Hurricane	<del>Laura</del>	Aug 21	Hurricane	<del>Teddy</del>	Sept 14
Tropical Storm	<del>Fay</del>	July 9	Hurricane	<del>Marco</del>	Aug 21	Tropical Storm	<del>Vicky</del>	Sept 14
Tropical Storm	<del>Gonzalo</del>	July 22	Hurricane	<del>Nana</del>	Sept 1	Tropical Storm	<del>Wilfred</del>	Sept 18

\*Names provided by the World Meteorological Organization

Be prepared: Visit [hurricanes.gov](https://hurricanes.gov) and follow @NWS and @NHC\_Atlantic on Twitter.





# 2020 Greek Alphabet Tropical Cyclone Names


(As of Nov 16)

Subtropical Storm	<del>Alpha</del>	Sept 18	Hurricane	<del>Iota</del>	Nov 13	Rho
Tropical Storm	<del>Beta</del>	Sept 18		Kappa		Sigma
Tropical Storm	<del>Gamma</del>	Oct 2		Lambda		Tau
Hurricane	<del>Delta</del>	Oct 5		Mu		Upsilon
Hurricane	<del>Epsilon</del>	Oct 19		Nu		Phi
Hurricane	<del>Zeta</del>	Oct 25		Xi		Chi
Hurricane	<del>Eta</del>	Oct 31		Omicron		Psi
Tropical Storm	<del>Theta</del>	Nov 10		Pi		Omega

+ 1 Tropical Depression (TD 10)

# NOAA Hurricane Season Outlook

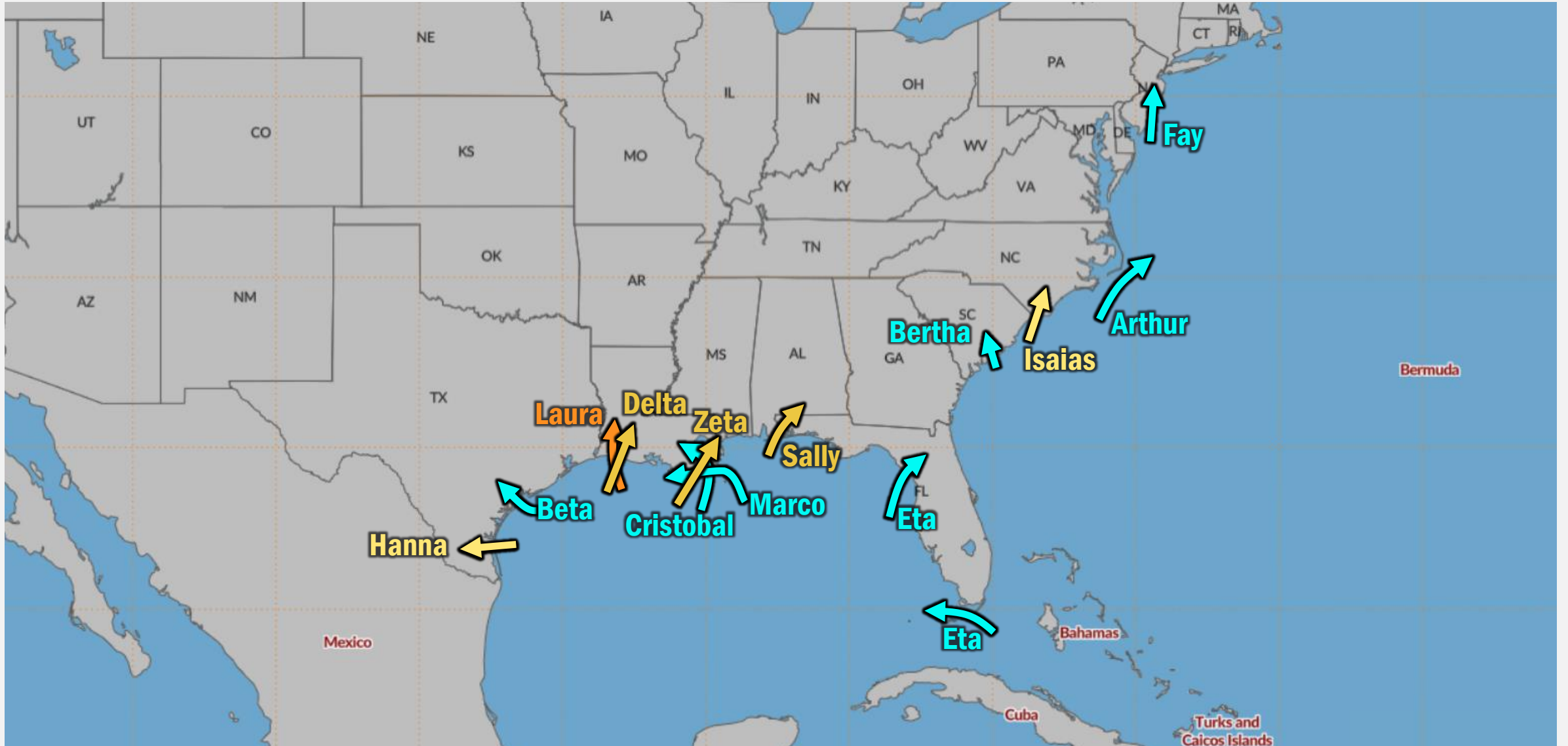
## ATLANTIC OUTLOOK

<b>ATLANTIC</b> 	<b>AVERAGE</b>	<b>MAY OUTLOOK</b>	<b>AUG OUTLOOK</b>	<b>ACTUAL*</b>
<b>NAMED STORMS</b>	<b>12</b>	<b>13-19</b>	<b>19-25</b>	<b>30</b>
<b>HURRICANES</b>	<b>6</b>	<b>6-10</b>	<b>7-11</b>	<b>13</b>
<b>MAJOR HURRICANES</b>	<b>3</b>	<b>3-6</b>	<b>3-6</b>	<b>6</b>

\*through November 16

# 2020 Atlantic Hurricane Season

## CONUS LANDFALLS/IMPACTS



## Historic Year

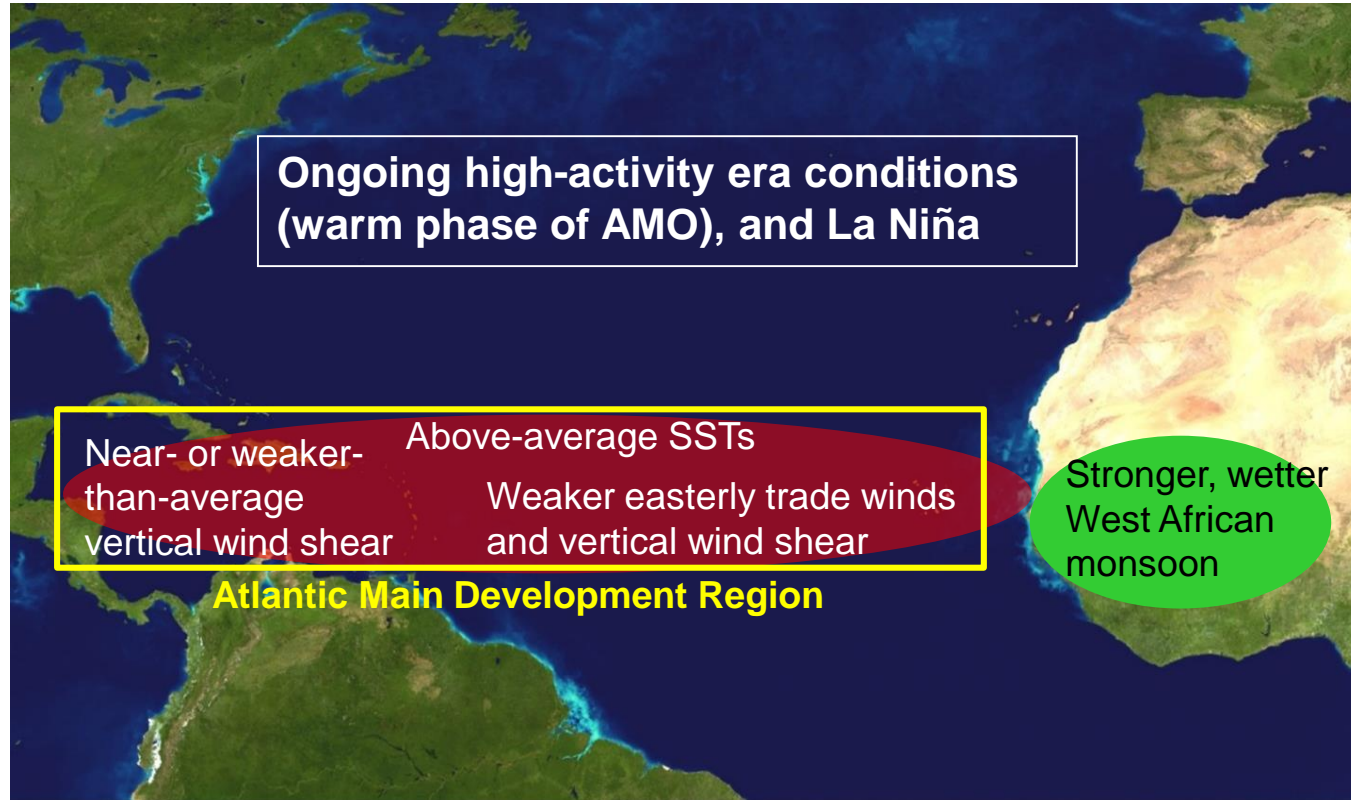
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- Traditional Atlantic season ends on Nov. 30, but tropical cyclones are possible in December.
- 2020 is the most hyperactive season on record, with 31 tropical cyclones (30 of which were named storms). 2nd most number of hurricanes (13), which trails 2005 by 2.
  - It's only the 2nd season in which NHC had to resort to the Greek alphabet for storm names (2005 was the other time it happened).
- Several formation timing records were broken this year.
- 12 named storms made landfall in CONUS – most on record.
- 6th most Accumulated Cyclonic Energy (ACE) generated in a single Atlantic season.
  - The Greek alphabet storms alone generated enough ACE to meet the average ACE of a normal Atlantic season (66-111 ACE).
  - 2nd most ACE generated in November in the Atlantic (most since 1932). Most number of Major Hurricanes to form in November.
- Latest Cat 5 hurricane in the Atlantic (Iota).





# Environmental Factors that fueled the 2020 Atlantic Season



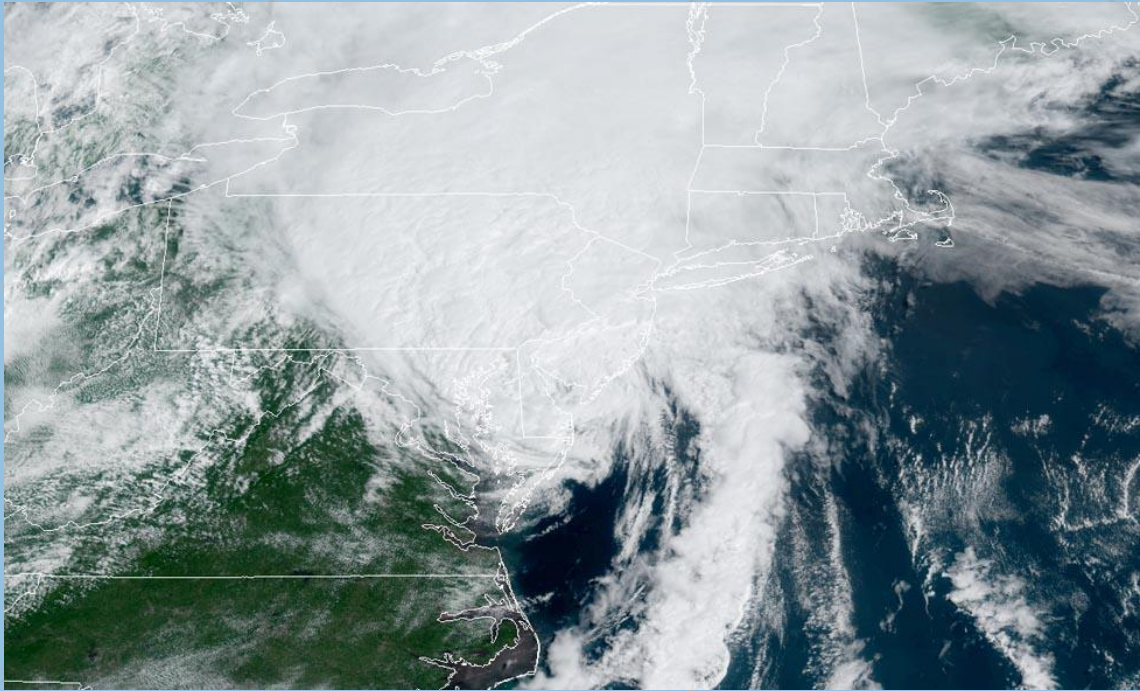
1. Ongoing high-activity era conditions favor more hurricane activity. These conditions include above-average sea surface temperatures in the Main Development Region, along with
2. Weaker trade winds, weaker vertical wind shear, and a stronger, wetter west African monsoon.
3. El Niño was not expected; in fact, La Niña is occurring, meaning either no suppression of, or a reinforcement of, the high-activity era conditions.



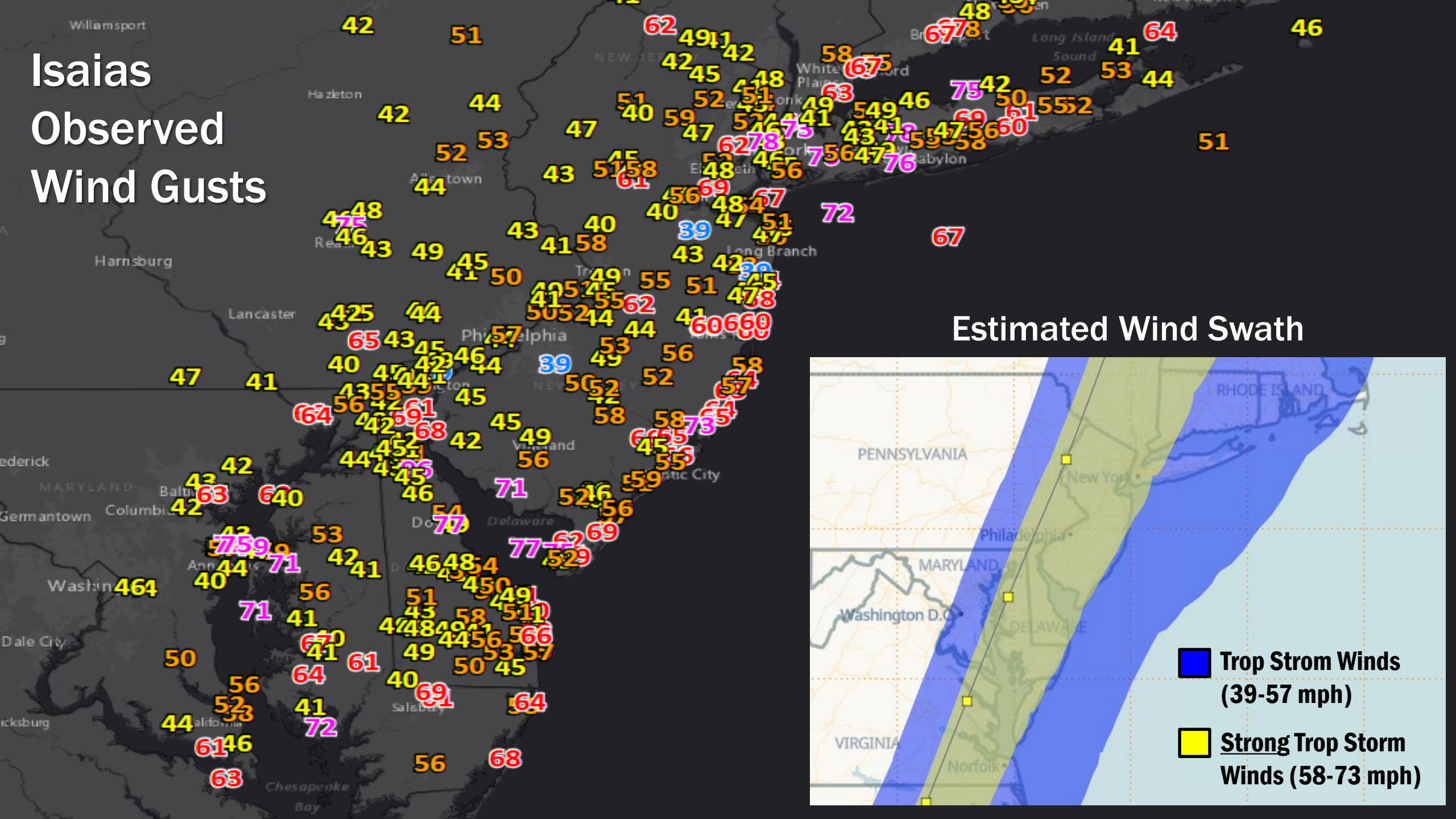


# Hurricane Isaias

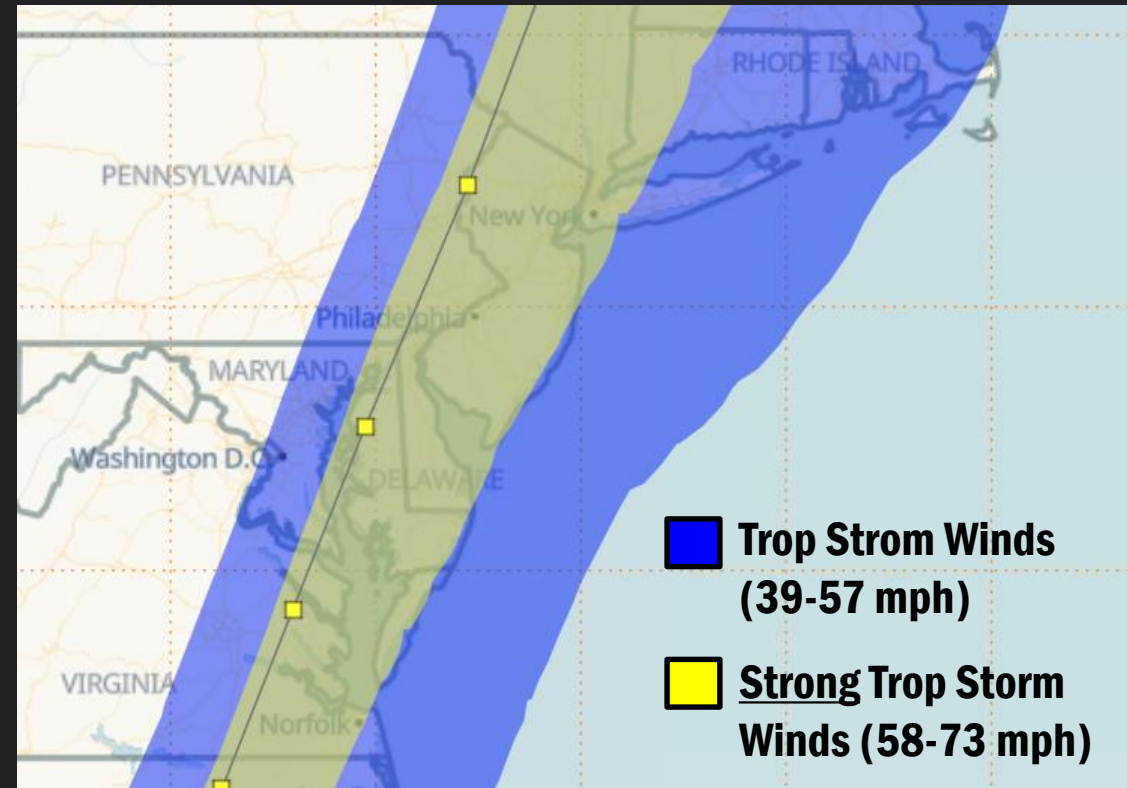
Jul. 28 - Aug. 5, 2020



# Isaias Observed Wind Gusts

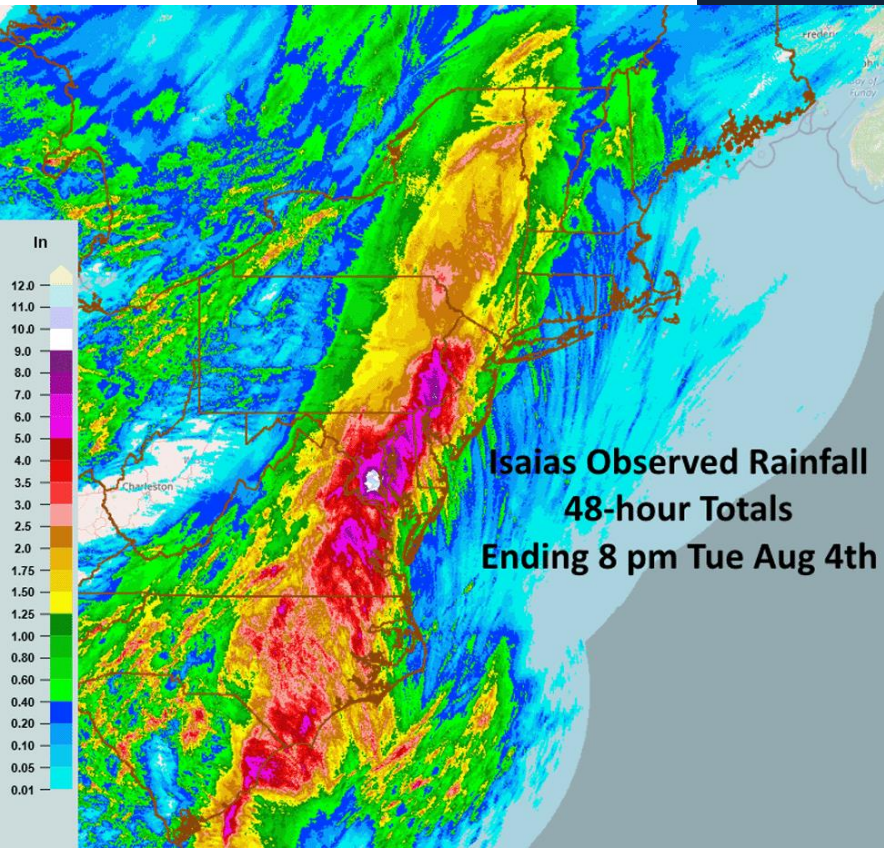


## Estimated Wind Swath





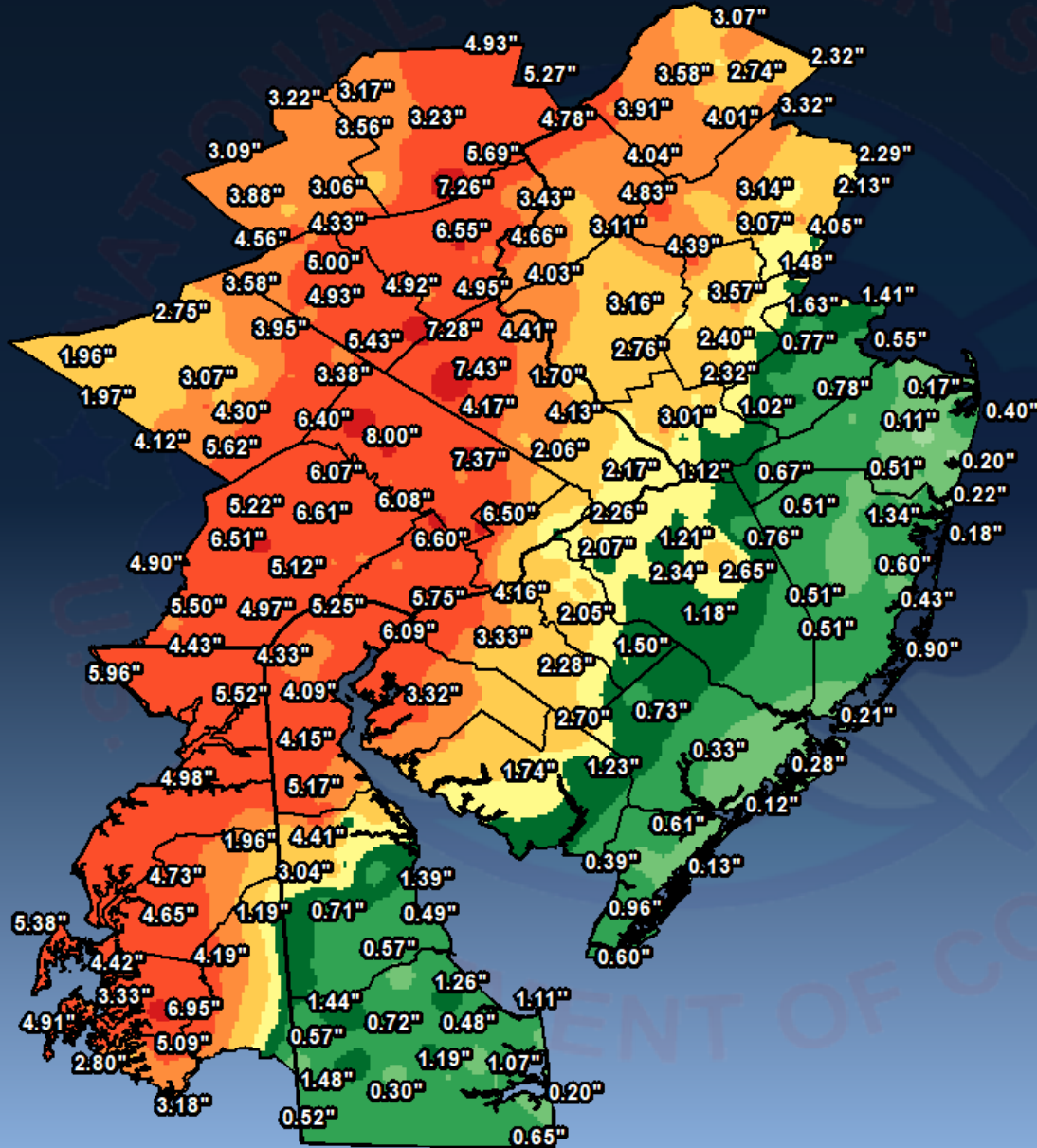
# Isaias Observed Rainfall (Storm Total)



## National Weather Service Mount Holly/Philadelphia

### Tropical Storm Isaias Preliminary Storm Total Rainfall

Analysis Data Source: Regional Observations



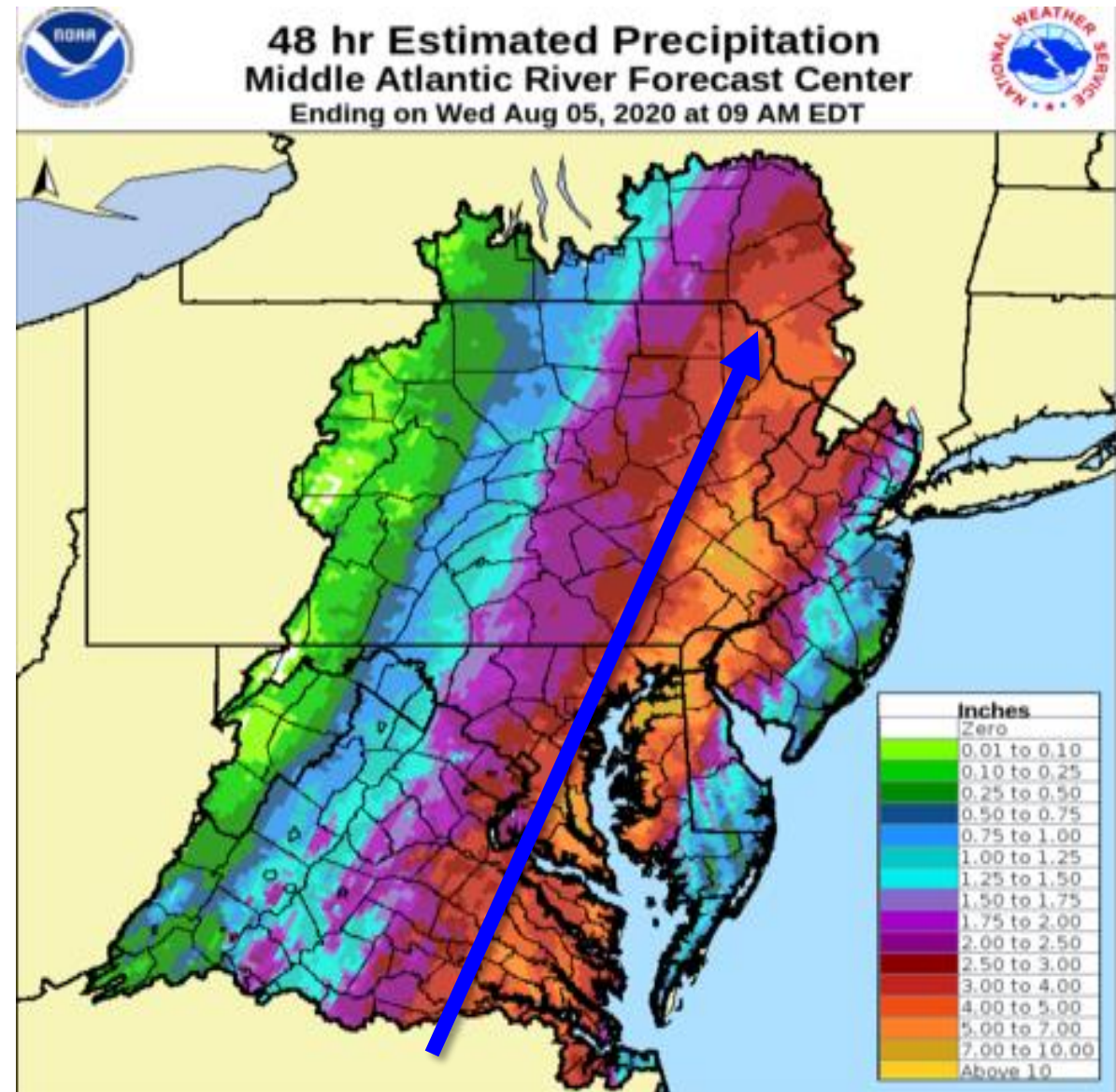
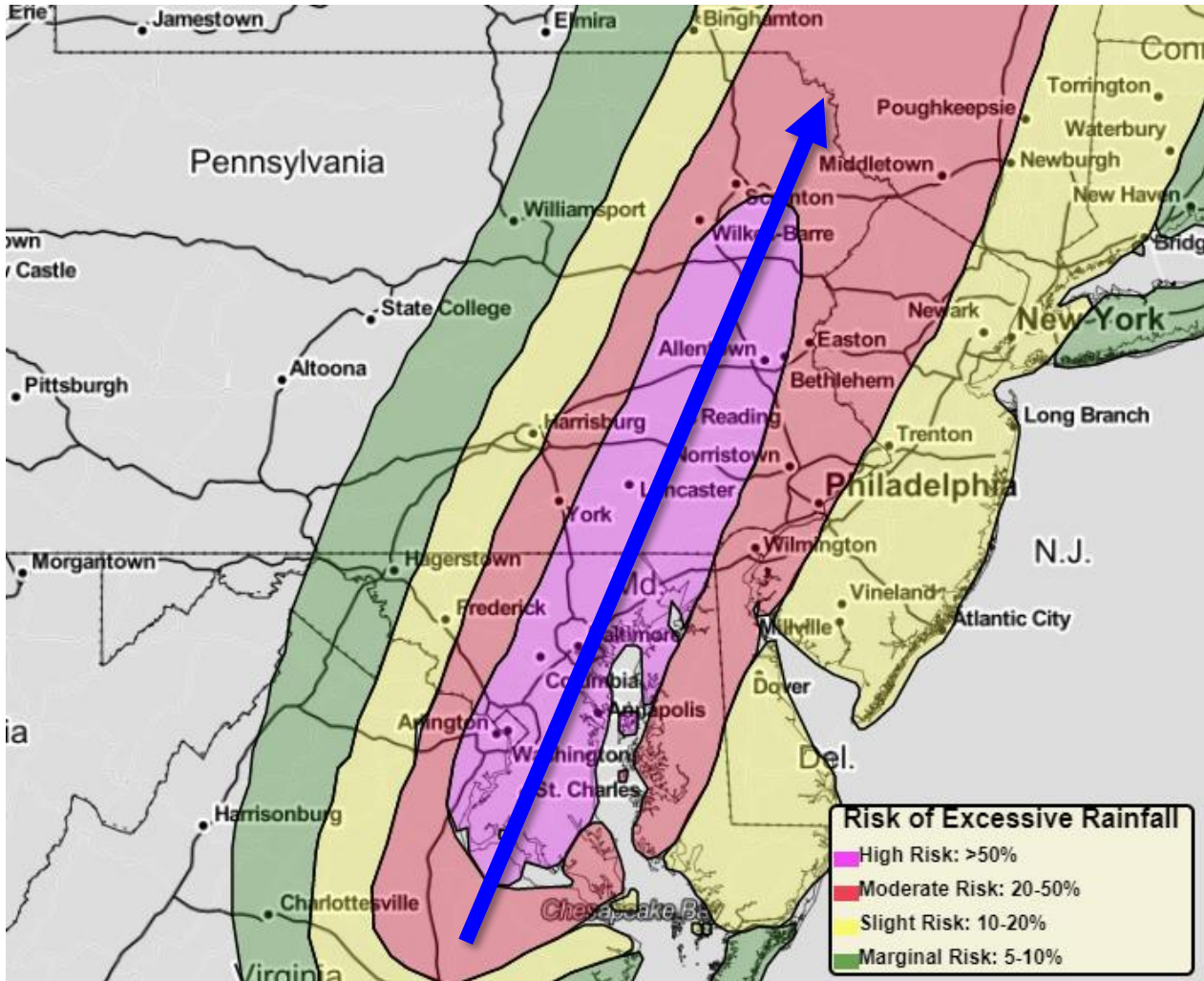
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08/05/2020 02:12AM



# Isaias Excessive Rainfall Outlook

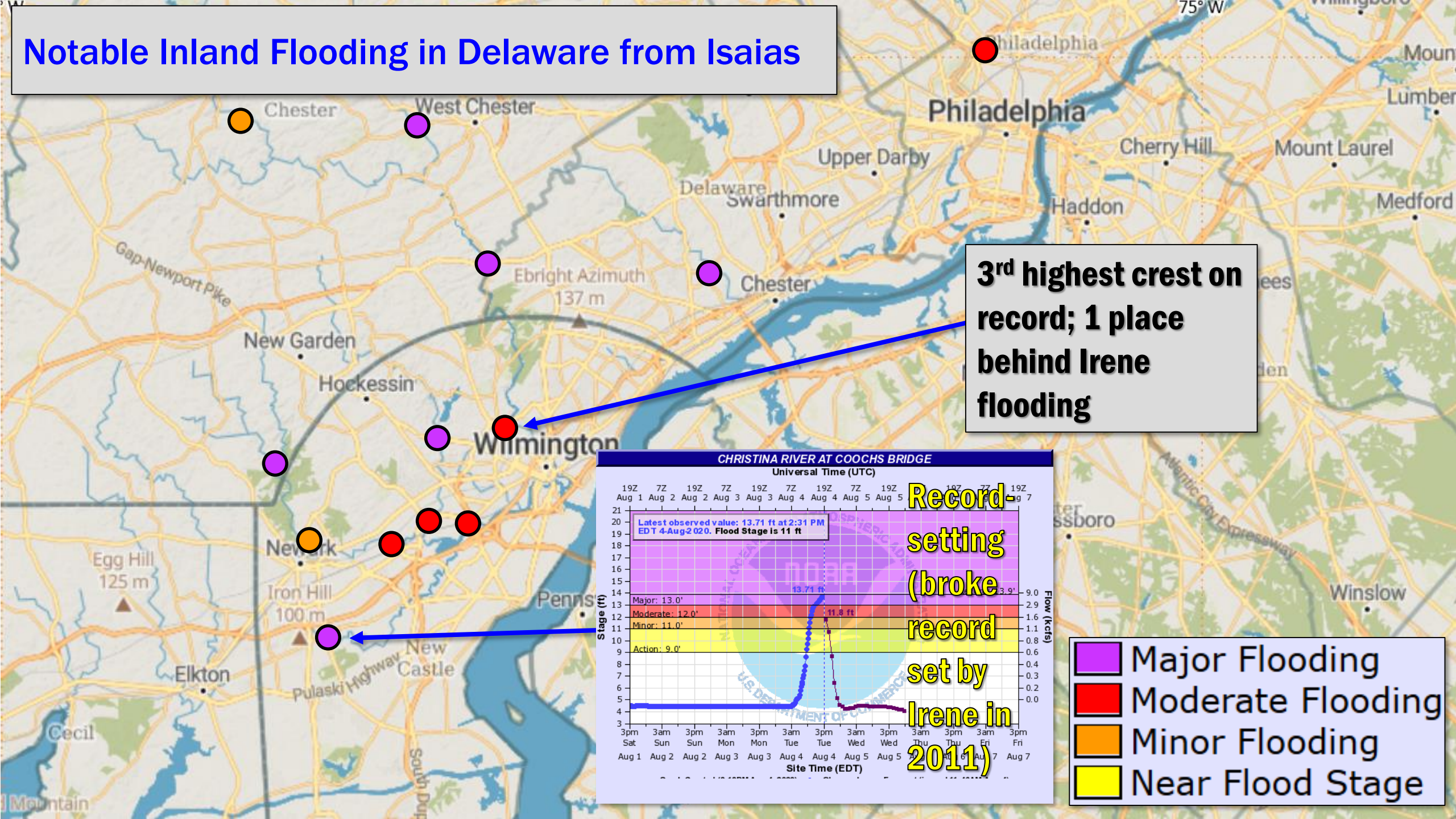
(issued morning of Aug. 4)



Big Takeaway: locations in the Moderate Risk areas should be prepared for High Risk-level impact, especially given the track uncertainty with weaker tropical systems.



# Notable Inland Flooding in Delaware from Isaias







Thompson Bridge Rd. in New Castle, Co.



Christina River in Newark



Hockessin

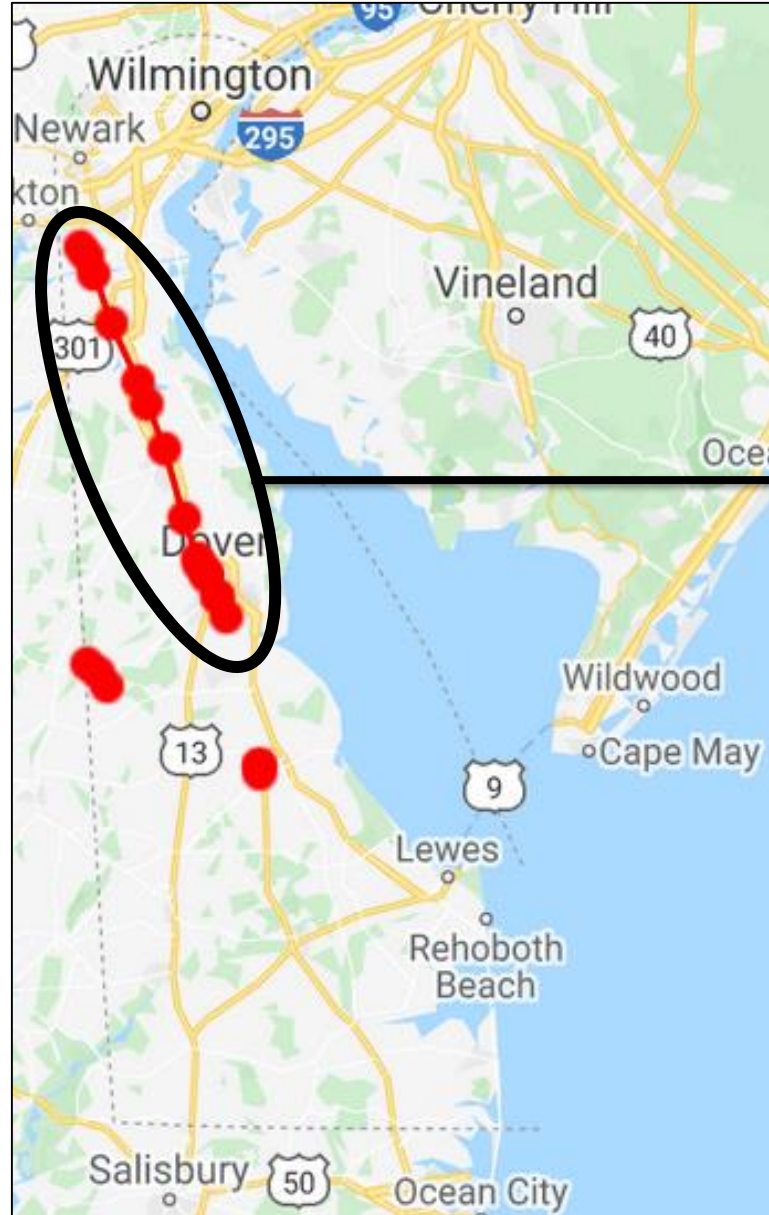
# Isaias Inland Flooding in Delaware

Photos courtesy of DeIDOT, Josh Shannon/Newark Post, and Hockessin Fire Co.



# Isaias Tornadoes in Delaware

- 3 confirmed tornadoes in DE.
- The Kent Co. – New Castle Co. Tornado rated an EF2 (EF2+ = “Significant”)
  - Track length was 35 mi. (longest track in DE history; prev. record was 18 mi. in 1988)
- Sandtown Tornado rated EF1
- Milford Tornado rated EF1



## DESTRUCTION IN DELAWARE

An EF1 tornado, with a maximum wind speed of 105 mph and maximum path width of 200 yards, traveled 20.2 miles in Kent and New Castle counties Tuesday.

**Between Mount Pleasant and Glasgow**  
The tornado is believed to have dissipated in this area, but the tornadoes were gone into Cecil County, Maryland.

**Brennan Estates**  
9:24 a.m.: Cassandra and James Boyd leave their breakfast unfinished on the table to head to their basement when alarms go off on their phones. They lose their roof.

**Summit Bridge Farms**  
9:20 a.m. - 9:25 a.m.: Dorri and Steve Pursel's two teenage sons are upstairs when part of an upstairs wall is ripped off. The family also loses part of their roof.

**Parkside**  
Homes are damaged in this neighborhood. Some roof material and siding is blown off homes, and several garage doors are blown out. The side wall of one home is entirely blown out.

**MIDDLETOWN**  
**Estates at Dove Run**  
9:20 a.m.: Bernardo Traber's garage door is ripped off and a large window is blown in.

**C-Line Stables**  
9:20 - 9:20 a.m.: Tornado tears children and horses as it tears parts of roof off stable.

**Blackbird Landing Road**  
Trees are snapped or uprooted, and some roofs are damaged. The garage of a home is destroyed.

**Gum Bush Road**  
Trees are snapped or uprooted, and some roofs are damaged.

**Helen's Sausage House**  
9:20 a.m.: Tornado topples huge nearby tree at its base.

**DELAWARE**  
**Department of Transportation weather station**  
A 56-mph wind gust is recorded.

**Corn in the field bordering the Childs' home on Black Diamond Road north of Smyrna is left flattened Friday by the tornado.**

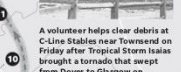
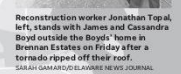
**William Henry Middle School and nearby warehouse**  
Sections of the school's roof are blown off, and sections of the metal walls of the warehouse are torn off. A couple tractor-trailers also are flipped on their side.

**Westview Terrace**  
9:55-9 a.m.: A tree crashes into the back of Helen Foreman's house.

**Dyer's Tree Farm**  
A garage receives heavy damage.

**Veronica Foreman stands in the doorway of the Westview Terrace home where she lives with her grandmother, Helen. She was at work when storms hit the area.**

**Power lines hung in the street and broken trees dotted yards on Division Street in Dover after storms blew through on Tuesday.**



## Tornado

Continued from Page 3A

The tornado crossed their driveway, where it slammed a car into the garage, leaving the metal door buckled. It toppled Childs, drywall falling on him. He had to crawl toward his living room from a door that led to the garage.

The trailer started an in-ground pool outside toward their home, shattered a fence and then "lifted up," Childs said, before collapsing seven very tall long, new-de pipes bordering his property and a neighbor's. After rising to their feet, Childs, his wife and 40-year-old mother-in-law were uninjured, but part of the roof and some of the walls were gone as the Childs' master bedroom on the second floor, a large wooden bed frame sat in the corner.

The pool was full of patio furniture and glass. The wall it once rested against was gone, with large and jagged pieces of the roof and ceiling resting on it or dangling above it.

Her bedroom set's over 100 years old. Childs said, "We thought that when we were slating. Right there is the bed I lay in. If it had been nighttime, I don't know what would have happened. All I know is, the beds weren't stacked out because I think what fell on it kept it from being sucked out."

What did get blown out of the room were five rings, including Anne's wedding band and engagement ring, that she kept on a nightstand.

Four were found, including the previous wedding and engagement rings, when family members and friends launched a search in the yard outside later.

Never saw nothing like it," Childs said.

**Between 9:10 and 9:20 a.m., 25:00 after touch down**

The sounds came first, and it was not just heavy wind and steady rain.

"I heard screaming," said Calotts Cline, who operates Townsend's C-Line Stables, a 66-acre facility that provides riding lessons, equestrian competition, a therapeutic center and boarding for horses.

Cline was in the center's grooming area, a large rectangular building attached to the stables. There were 50 horses on the grounds Tuesday morning, including three in the stables enjoying their breakfast, when the tornado appeared out of nowhere and the screams of children followed.

Cline and another adult gathered three students and the five huddled together on the floor in the stable, near a door and close to the entrance to the grooming area. There, large sections of the corrugated metal roof were being flung into the gray slip and rain was pouring onto the floor, creating muddy pools.

"We all sat down right in this little corner, and we just hugged each other and just put our heads down and told the kids we would be OK," said Cline, who opened the century-old 1966. "We just made it, and I thank God for that truthfully."

Nobody was hurt and neither were any horses, except for one that suffered a small laceration.

"It was scary because the roof was just coming off so quickly," said Kaylee Yearnsley, 12, who was with Cline.

See TORNADO, Page 5A



**Downed or snapped trees lie on cars and buildings across the grounds of the Greens at Cedar Chase apartment complex in Dover after storms blew through.**

**Greens at Cedar Chase**  
9 a.m., inside a third-floor apartment, a resident, Grace, said she felt the building move when a tree fell.

**Delaware Eye Care Center**  
Just before 9 a.m., Ryan Coon hears what sounds like a train while sitting in the office.

**Poplar Lane to the neighborhood around Steele Road**  
Trees sustain significant damage.

**Eagle Meadows Apartment Homes**  
8:55 a.m.: Tornado touches down near here.



**Power lines hung in the street and broken trees dotted yards on Division Street in Dover after storms blew through on Tuesday.**

TAKE US/USA TODAY NETWORK/GETTY IMAGES SOURCE: NATIONAL WEATHER SERVICE AND NEWS JOURNAL REPORTING

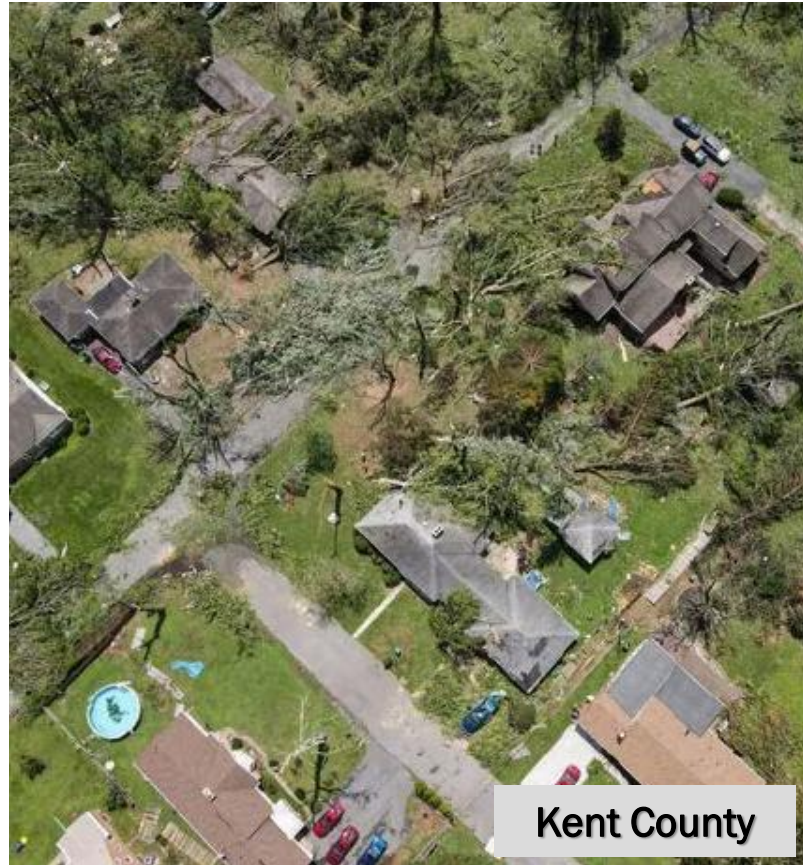




Dover



Dover



Kent County



Middletown



Kirkwood

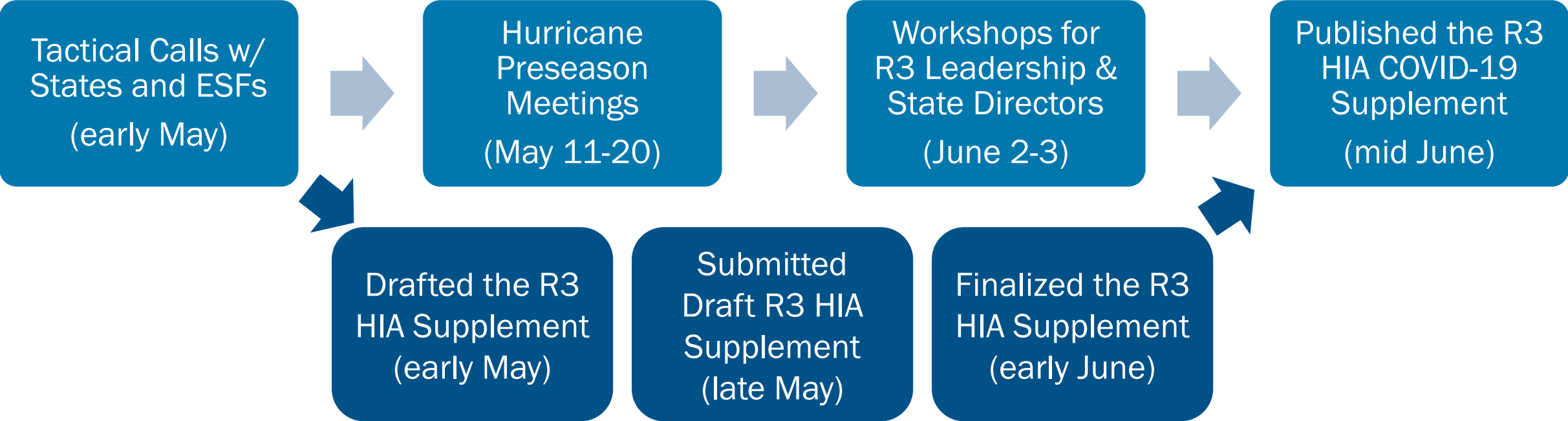
# Isaias Tornadoes in Delaware

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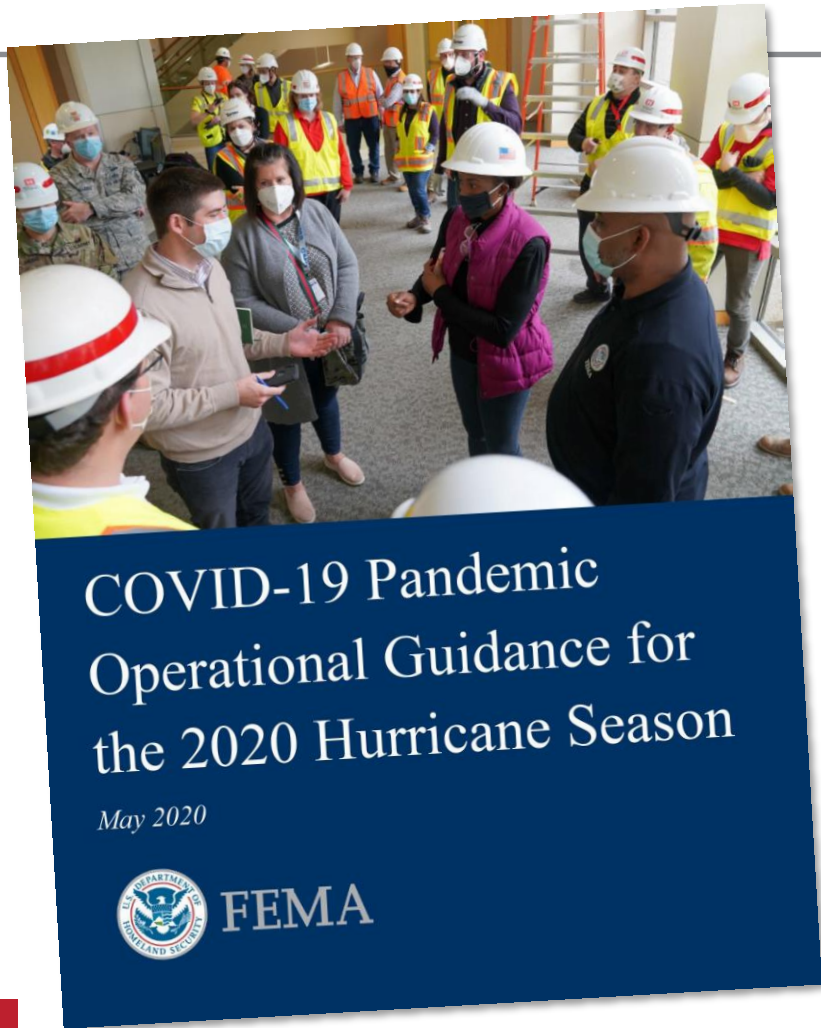
Photos courtesy of DEMA, 6ABC Philadelphia, and Matthew Blanchfield



# Region 3 Hurricane-COVID Planning Timeline



# COVID-Hurricane Operational Guidance from FEMA HQ



- Published in May 2020
- Describes anticipated challenges to disaster operations posed by COVID-19;
- Highlights planning considerations for emergency managers based on current challenges;
- Outlines how FEMA plans to adapt response and recovery operations;
- Includes guidance, checklists and resources to support emergency managers response and recovery planning.
- **The COVID-19 Supplement to the Region 3 Hurricane Incident Annex complements this guidance.**





# COVID-19 Impact on R3 Hurricane Planning

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- Sheltering and transporting evacuees more complicated.
- Both congregate and non-congregate sheltering options being explored.
- Evacuation of hospitals and other facilities may be more complicated this year and take longer.
- The sharing of resources between impacted and non-impacted States may be limited this year, given that nearly all States still may be in response mode one way or another.
- Public messaging will be critical.
- **We need to be prepared for COVID-19 to still be a threat during the 2021 hurricane season.**



# Tropical Cyclone Names for the 2021 Atlantic Season

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**Ana**

**Bill**

**Claudette**

**Danny**

**Elsa**

**Fred**

**Grace**

**Henri**

**Ida**

**Julian**

**Kate**

**Larry**

**Mindy**

**Nicholas**

**Odette**

**Peter**

**Rose**

**Sam**


**Teresa**

**Victor**

**Wanda**





The logo consists of the letters 'H', 'L', and 'T' in a stylized, blocky font. The 'H' and 'T' are white with red outlines, while the 'L' is solid black. They are set against a red background.

**13** Days until the end of the  
2020 Hurricane Season

**195** Days until the start of the  
2021 Hurricane Season

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