

Overview of Tropical Cyclone Forecasting at the National Hurricane Center

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National Hurricane Center

With Credit to Dr. Lisa Bucci, Hurricane Specialist at the National Hurricane Center



National Hurricane Center



- Located in Miami, FL, U.S. (Florida International University)
- Same location since 1995
- Building design team included Herb Saffir

National Hurricane Center (NHC; about 50 employees)



Tropical Analysis and Forecast Branch

Ocean analyses, forecasts and warnings

Satellite analyses of hurricanes (Dvorak)

Augment operational support staffing

Hurricane Specialist Unit

Tropical cyclone forecasts and warnings

Outreach and public awareness

Applied research and training

Technology and Science Branch

Applications development and technology integration

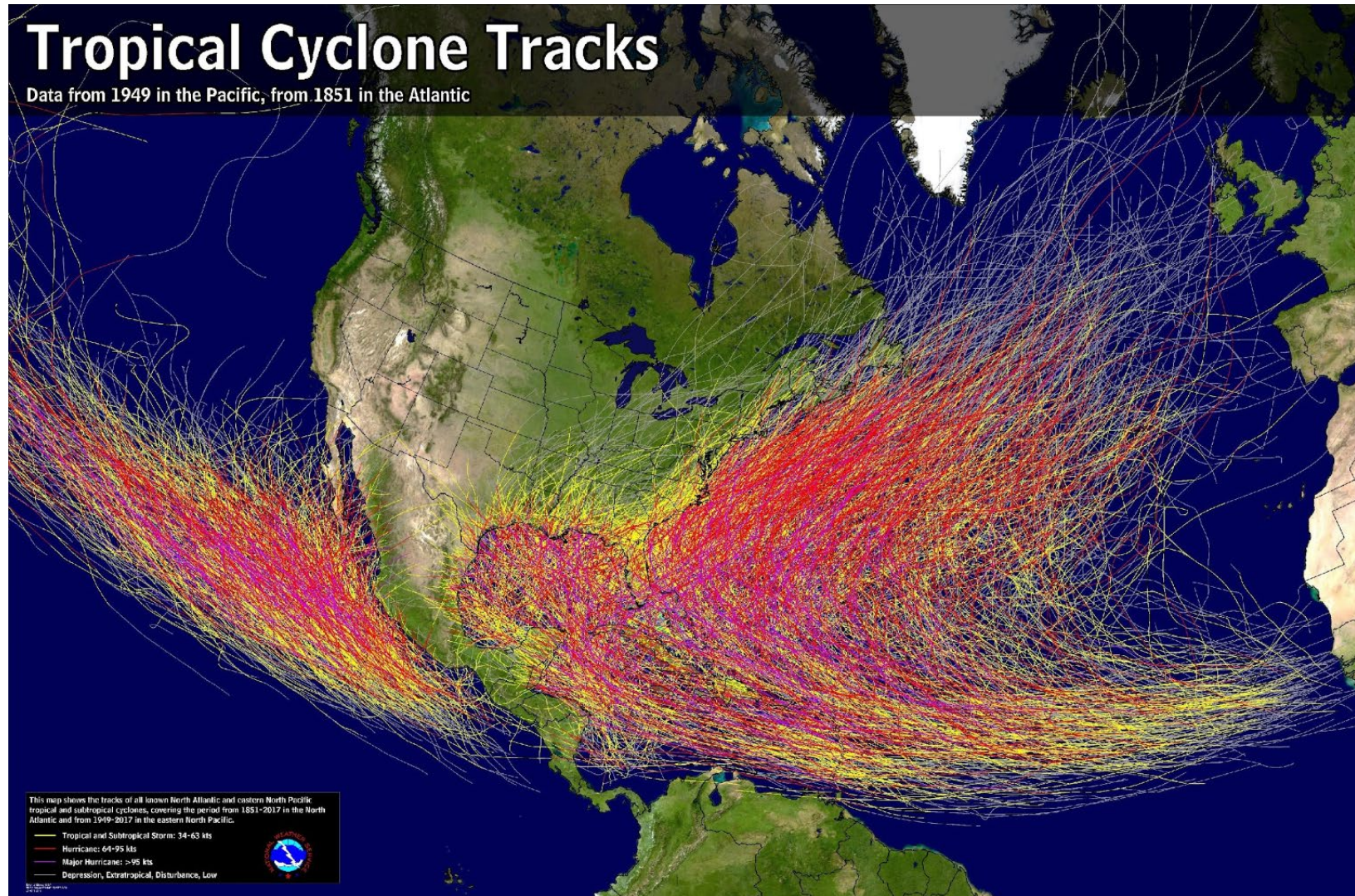
Storm surge guidance

Computer systems support

Applied research



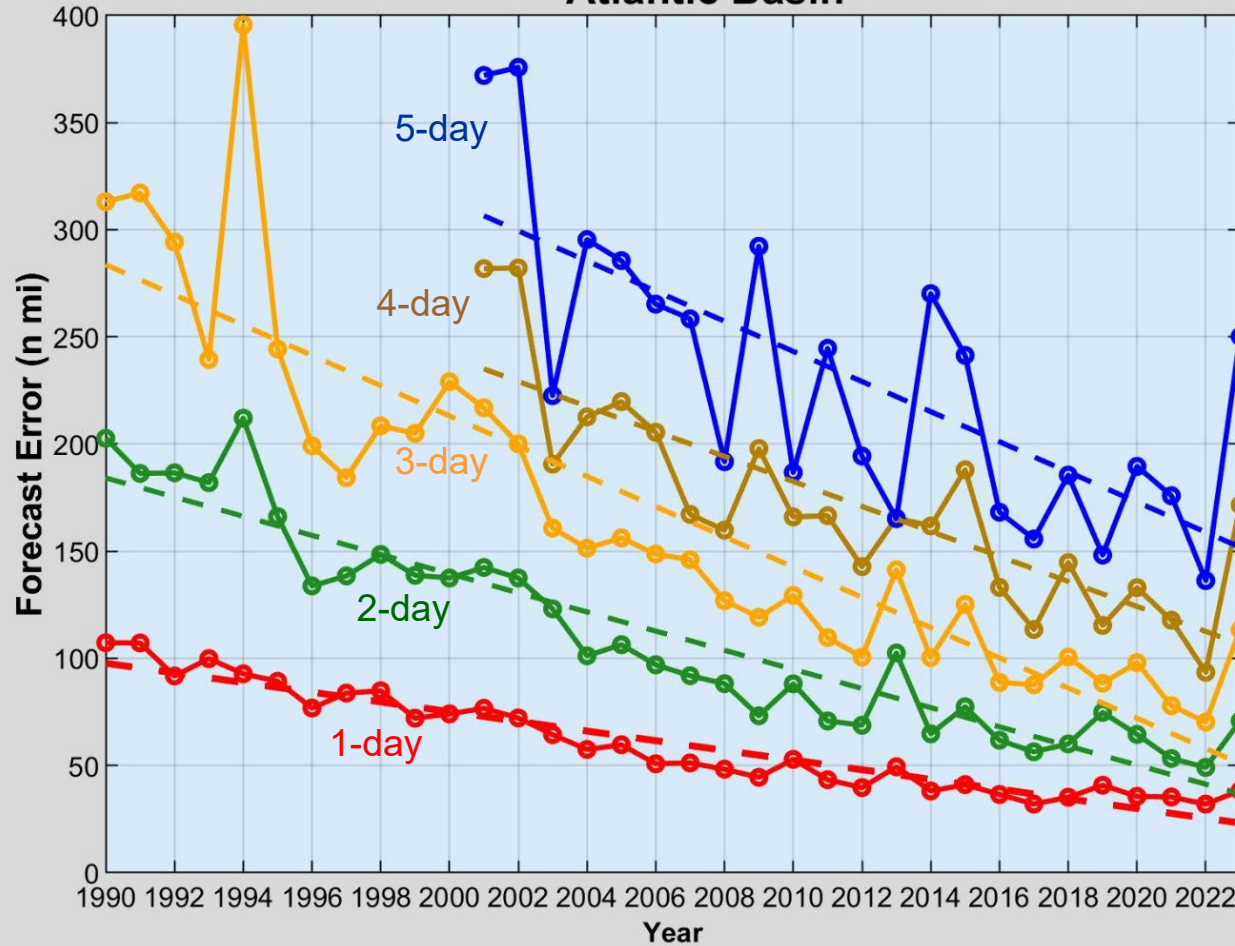
NHC's Area of Responsibility





Atlantic Track Errors

NHC Official Track Error Trend
Atlantic Basin



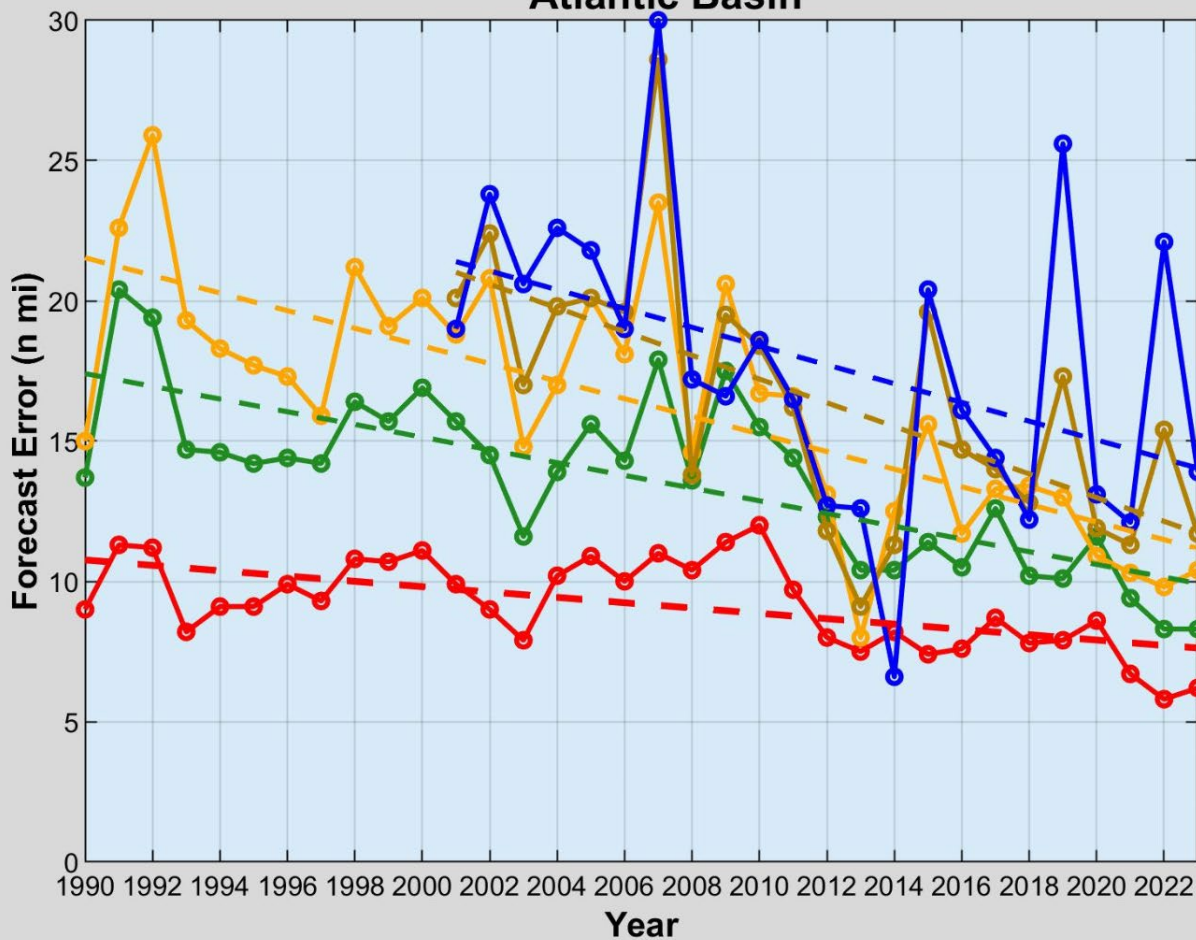
- Track errors went up sharply in 2023, largely due to Philippe
- Long-term decrease in errors

Time	N	Track Error (n mi)
012	372	23.8
024	333	38.3
036	297	53.2
048	265	70.8
060	235	91.1
072	209	113.4
096	166	171.6
120	130	250.2



Atlantic Intensity Errors

NHC Official Intensity Error Trend
Atlantic Basin



Intensity errors were near record lows at many forecast lead times in 2023

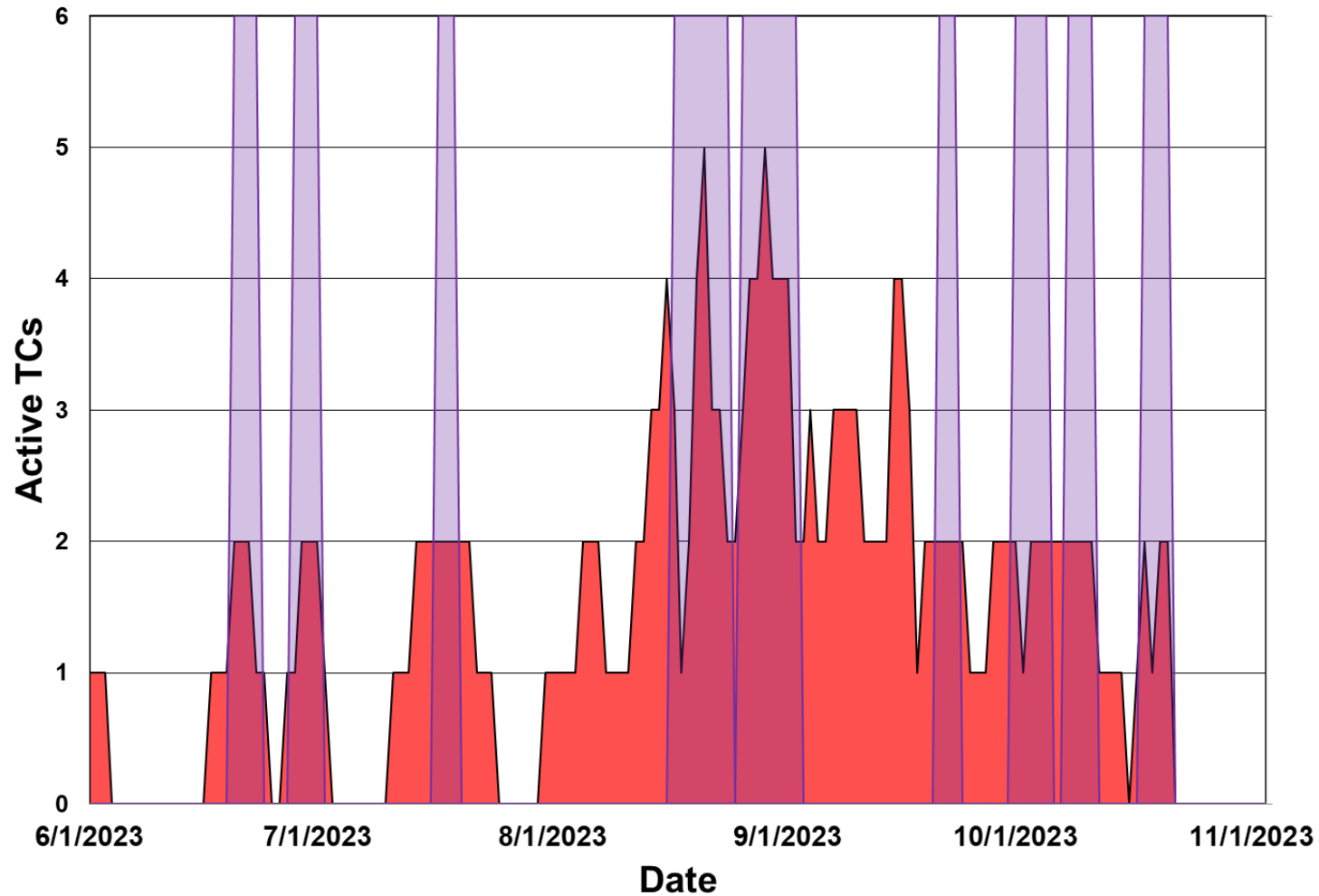
Preliminary Intensity records broken in 2023

Time	N	Intensity Error (kt)
012	372	4.2
024	333	6.2
036	297	7.2
048	265	8.3
060	235	9.2
072	209	10.4
096	166	11.7
120	130	13.9

2023 NHC Hurricane Season



2023 Atlantic and East Pacific Active TCs by Date



Atlantic: 20 named storms, 7 hurricanes, 3 major hurricanes (Franklin, Idalia, Lee).

Land impacts: Bret, **Harold**, Franklin, **Idalia**, **Lee**, **Ophelia**, Tammy, TD-21

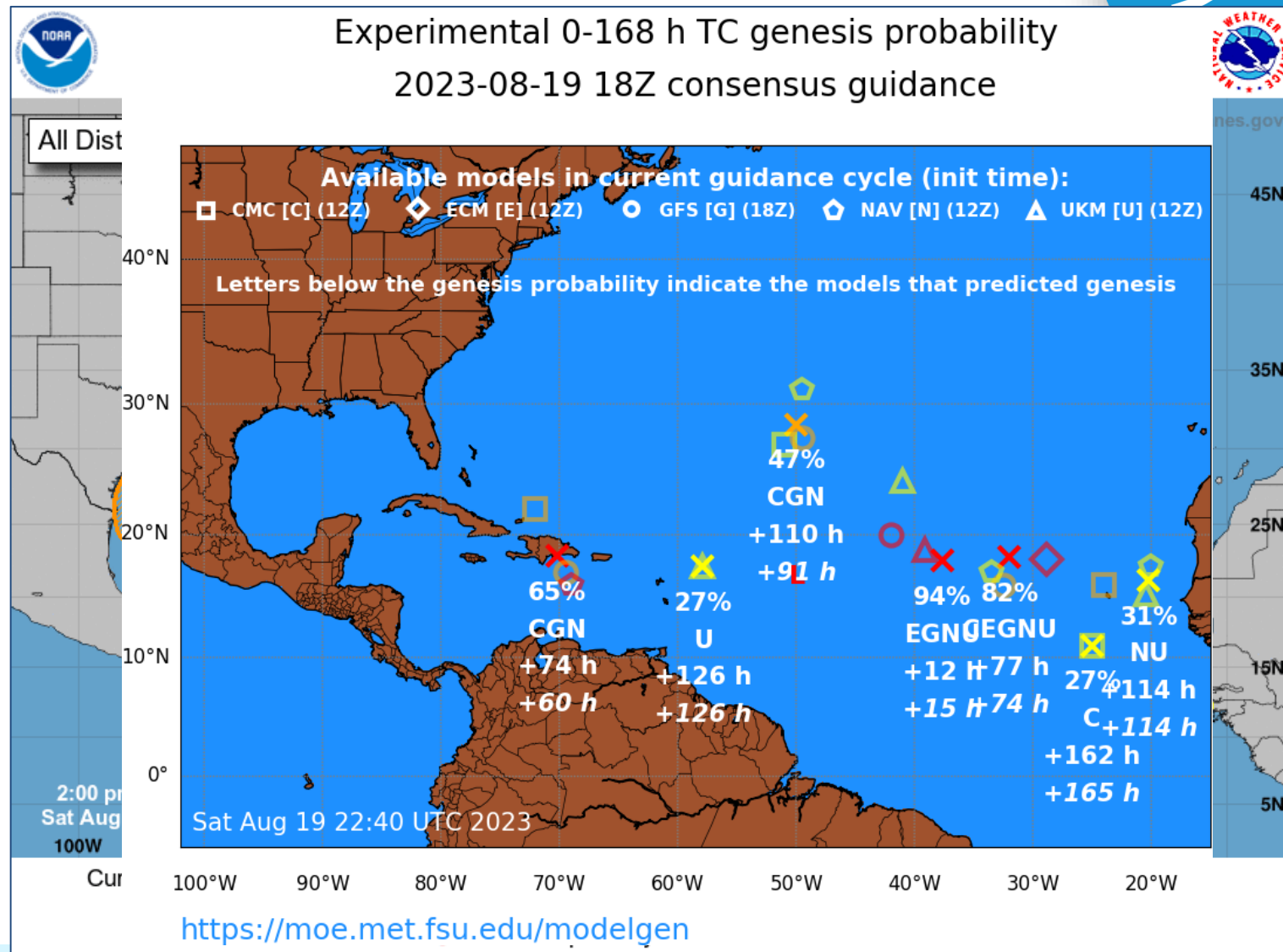
East Pacific: 16 named storms, 10 hurricanes, 8 major hurricanes.

Land impacts: Beatriz, Calvin, **Hilary**, Lidia, Max, Norma, Otis



7-day Tropical Weather Outlook

- New in 2023
- Extended lead time for storm formation forecasts to 7 days

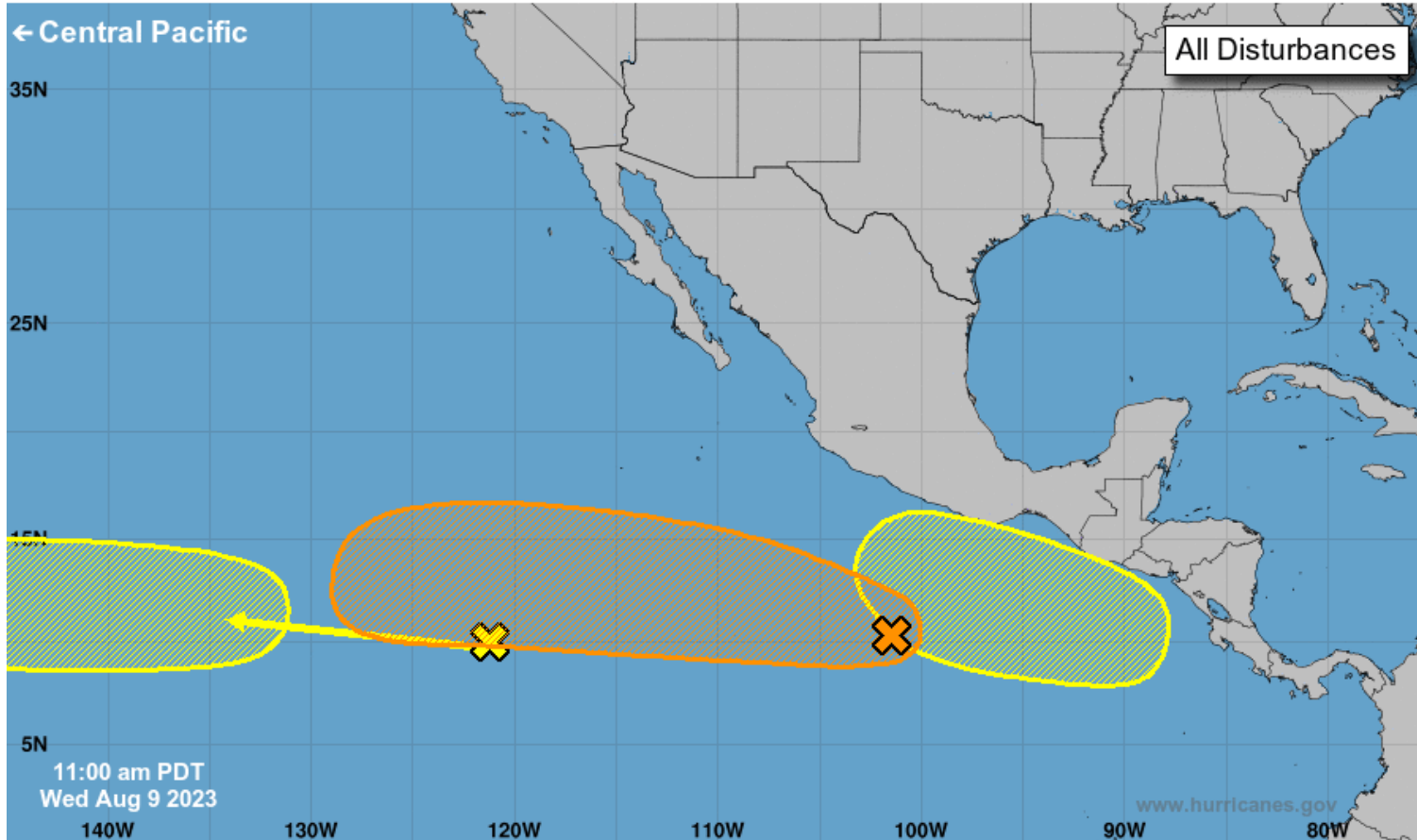




Hilary Genesis



Seven-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida



Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

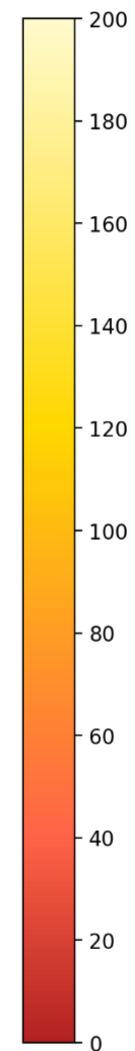
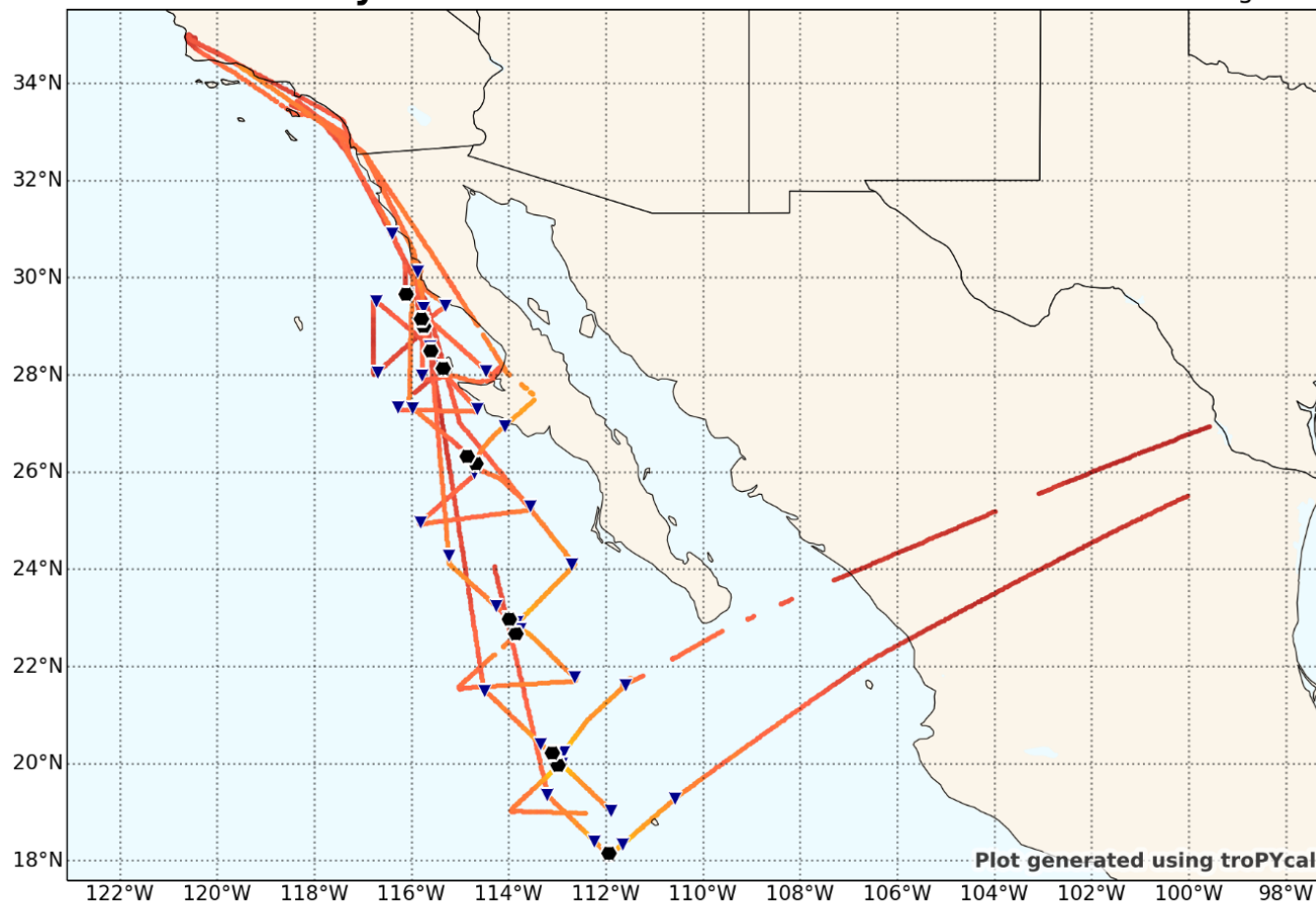
- Pre-Hilary disturbance introduced into Tropical Weather Outlook *almost 1 week before formation*
- Probability raised to **high** category *108 hours before formation*



Hilary Reconnaissance

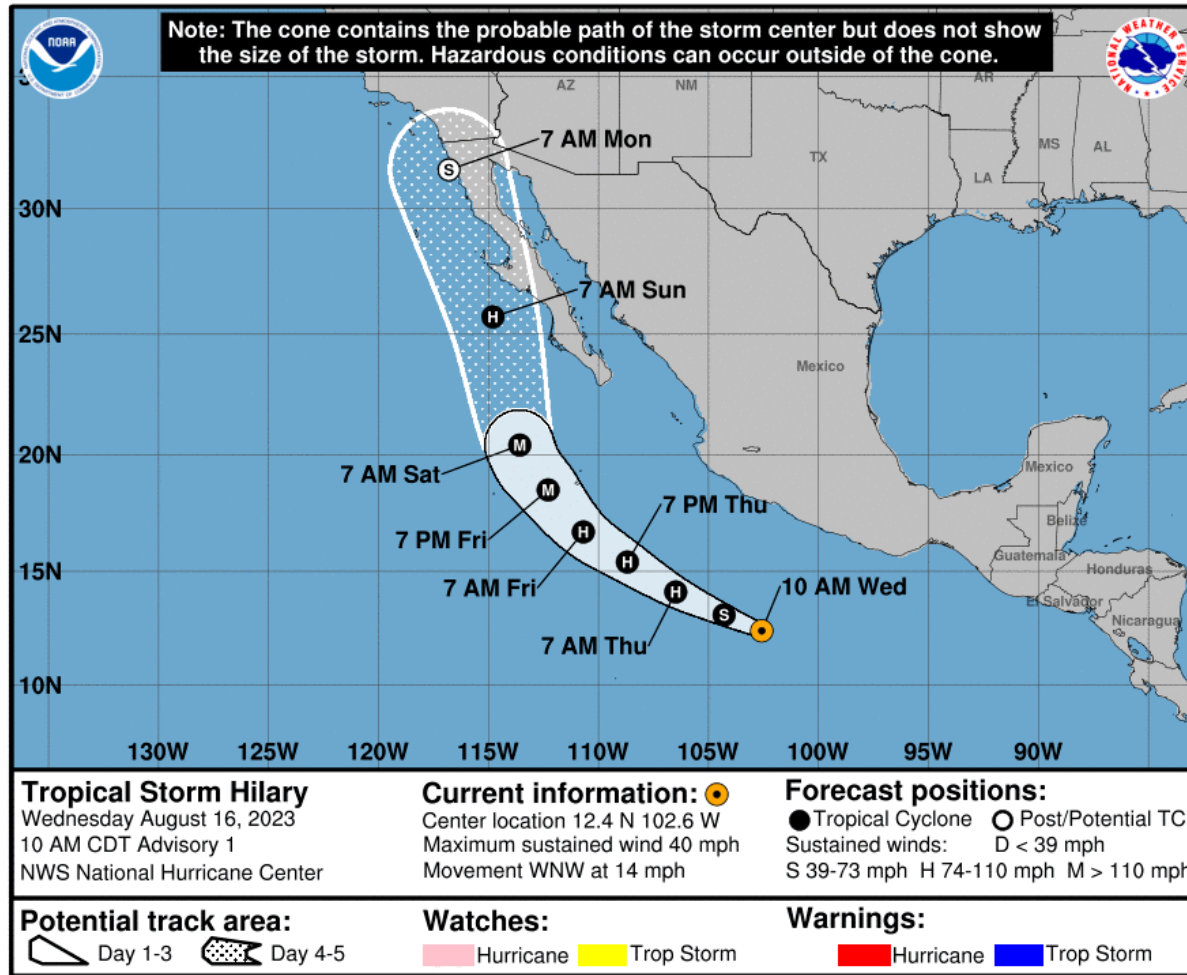
Hurricane HILARY Recon summary

Start ... 15:09 UTC 18 Aug 2023
End ... 17:30 UTC 20 Aug 2023





Cone Graphic

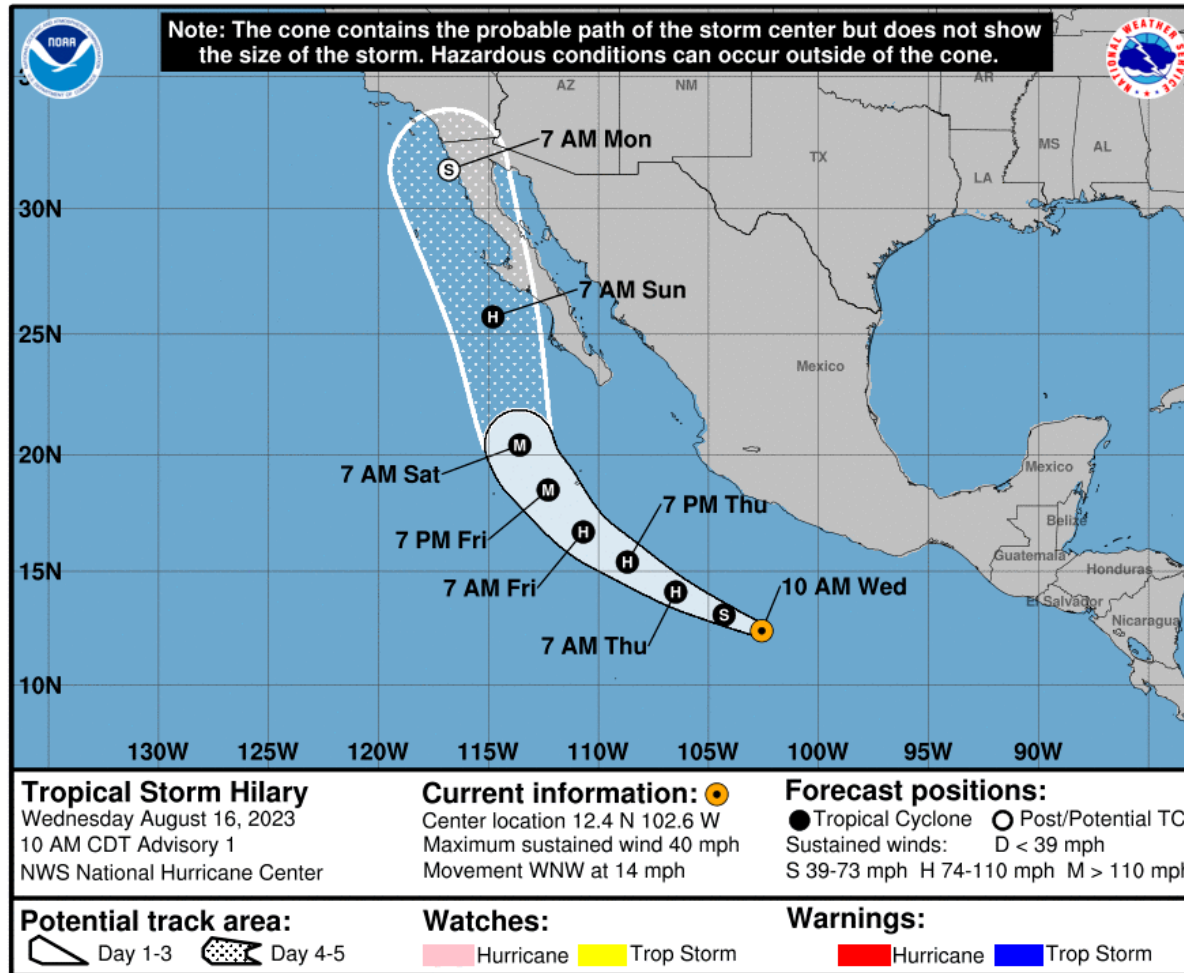


What does this mean?

- A. Possible Impacts area
- B. Size of wind field
- C. Model spread
- D. Past 5 years of track forecast error



Cone Graphic

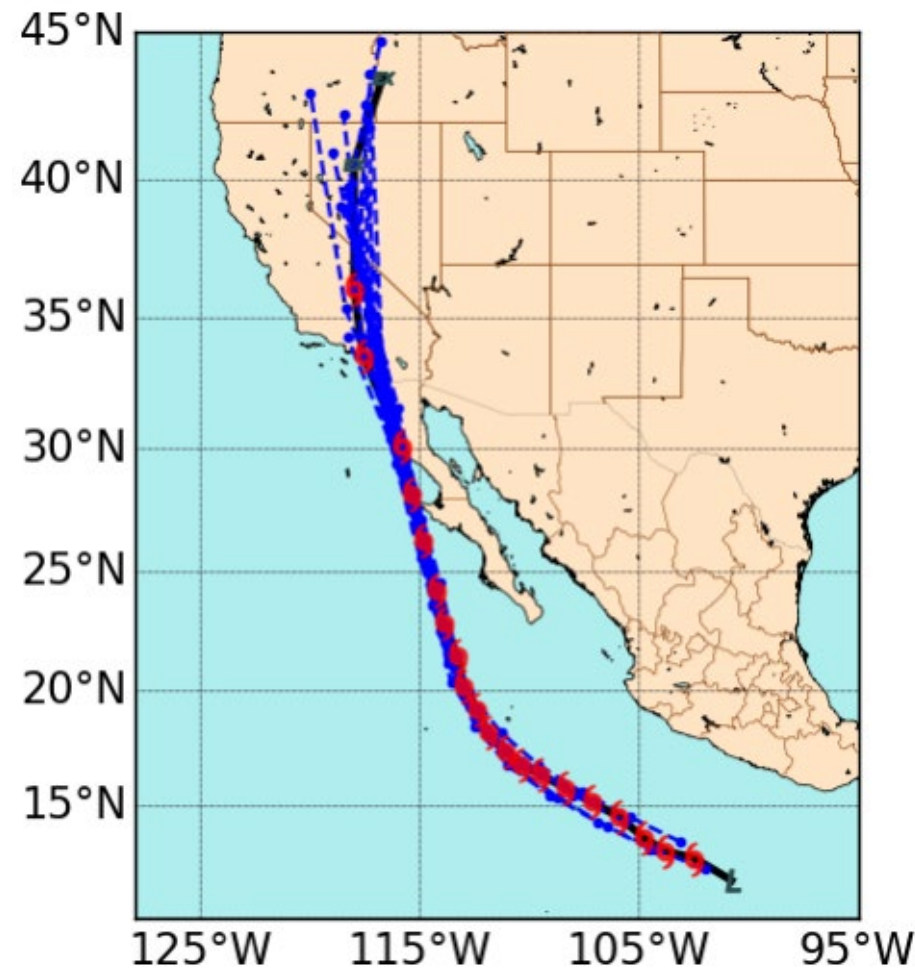
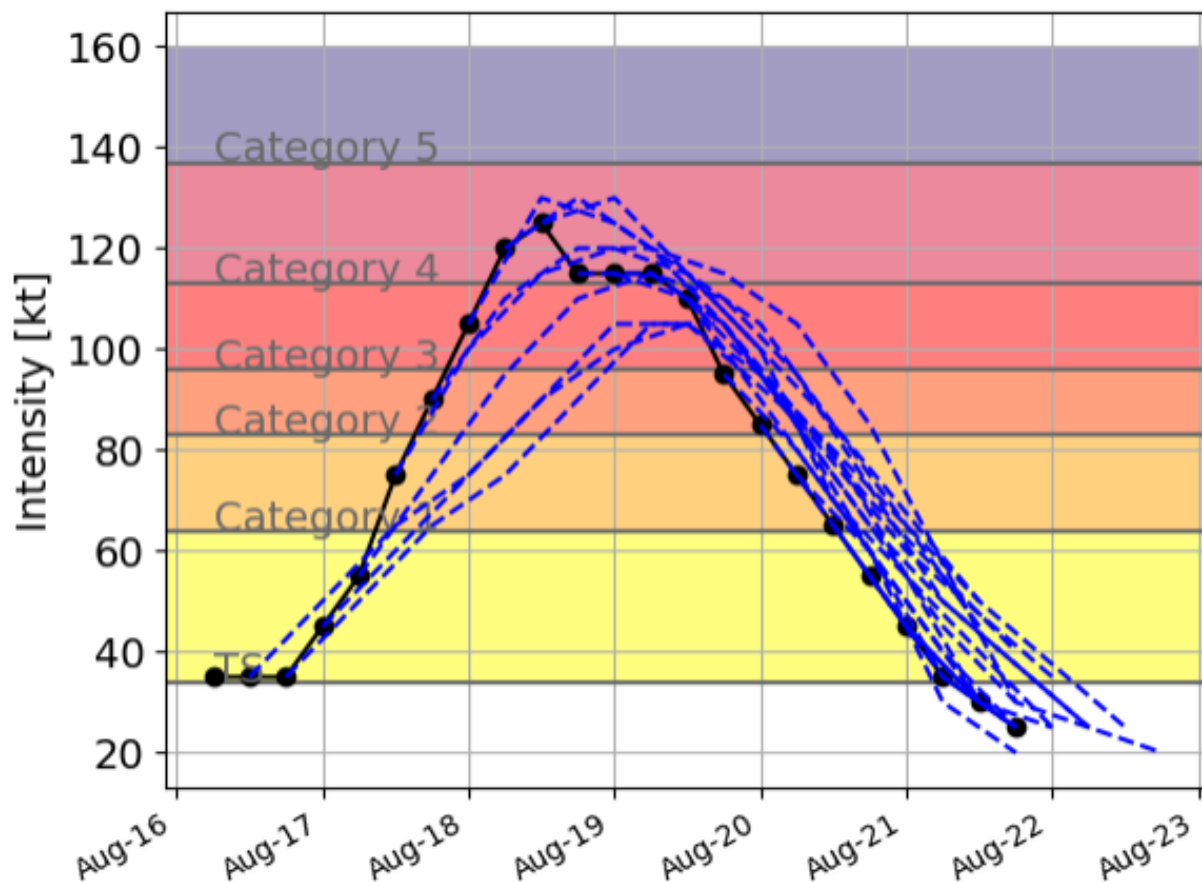


ERROR CONE

- Probable track of the center of the tropical cyclone
- Formed by connecting circles centered on each forecast point
- Each circle uses NHC historical (5-year) track errors *Actual storm position will be within the circle 67% of the time*



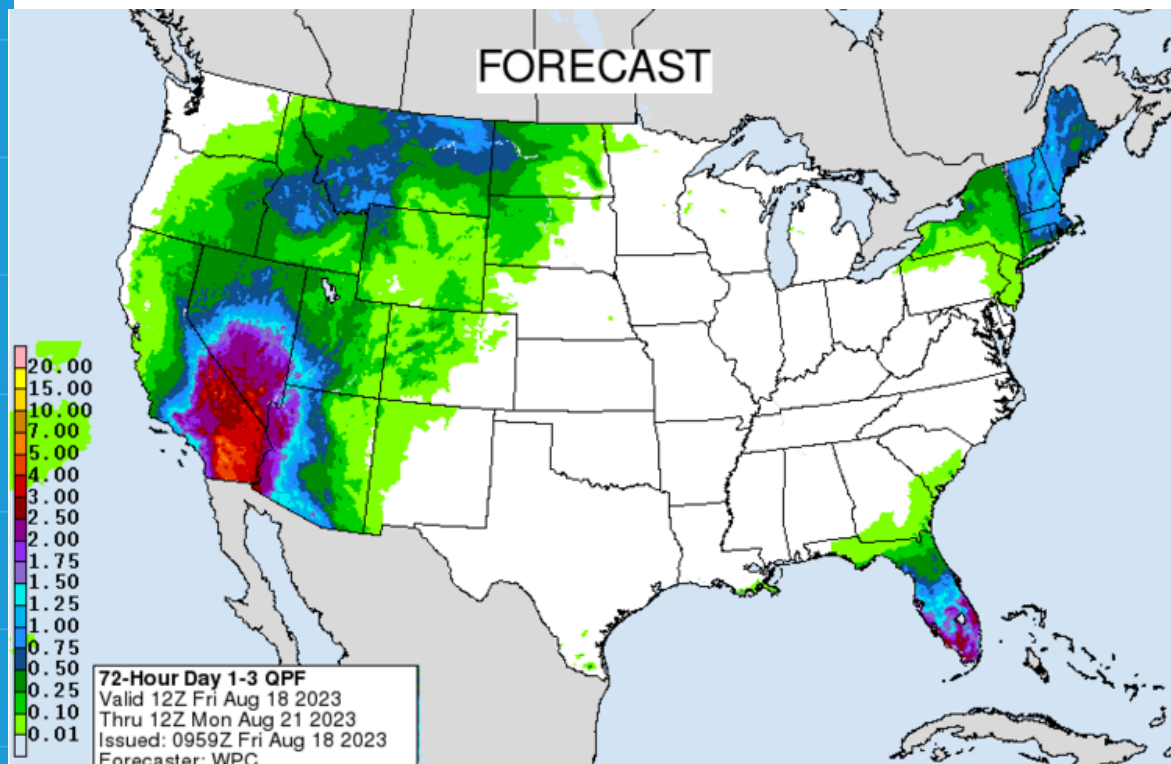
Hilary Track and Intensity Forecast



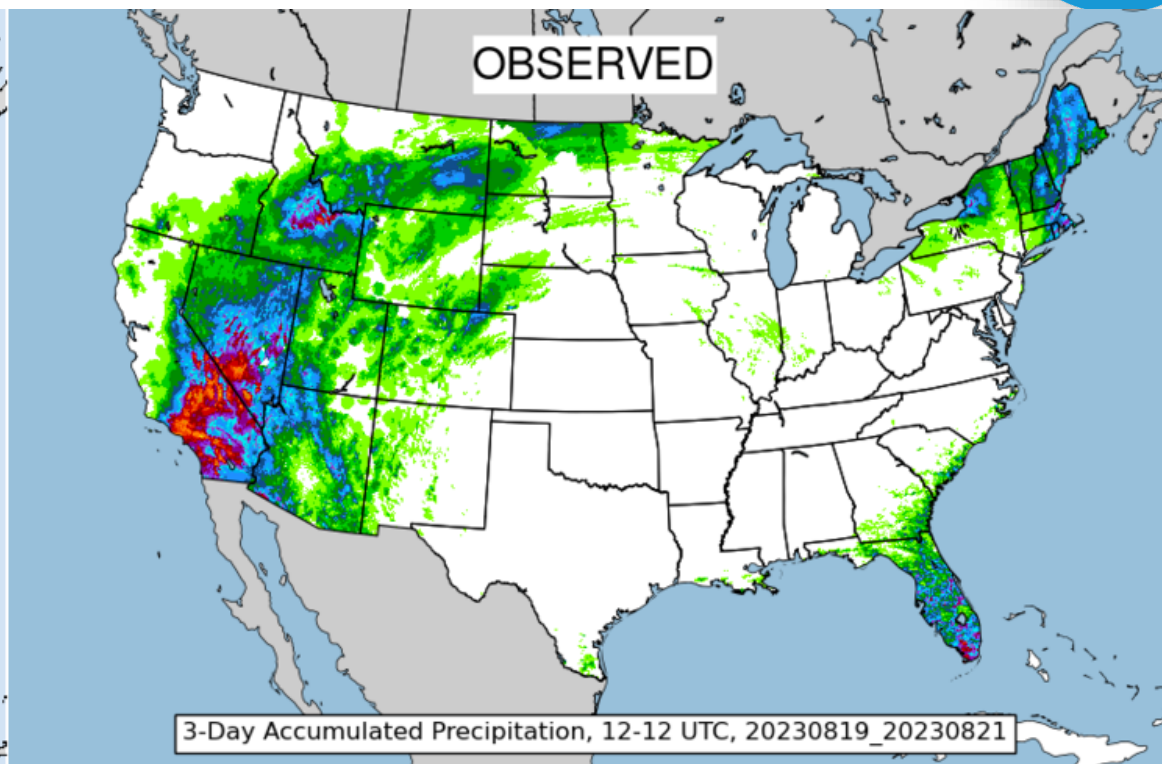
— OFCL —○— Working Best



Hilary – Rainfall Forecast



3 Day Rainfall Forecast from WPC valid 5 AM PDT Aug 18-Aug 21



3 Day Observed Rainfall Totals

Hilary – Coordination and Messaging



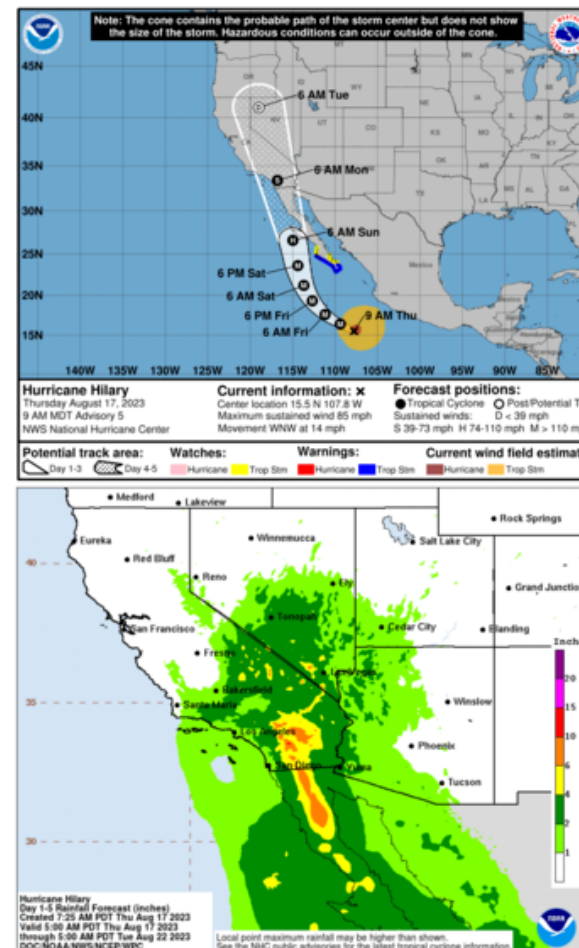
Key Messages for Hurricane Hilary Advisory 5: 9:00 AM MDT Thu Aug 17, 2023



1. Heavy rainfall associated with Hilary may produce areas of flash flooding and result in landslides over portions of Baja California Peninsula from late Friday into late Sunday. Rainfall impacts from Hilary within the Southwestern United States are expected to peak this weekend into Monday. Flash, urban, and arroyo flooding is possible with the potential for significant impacts.

2. Hilary has the potential to bring significant impacts to the Baja California Peninsula and portions of the southwestern United States this weekend and early next week, including after it becomes post-tropical. Although it is too soon to determine the location and magnitude of wind impacts, interests in these areas should monitor the progress of Hilary and updates to the forecast. Tropical Storm Warnings and Watches are now in effect for southern portions of Baja California Sur, and additional watches or warnings will likely be required later today.

3. Large swells from Hilary will spread northward along the coast of southwestern Mexico and the Baja California Peninsula during the next several days.



For more information go to hurricanes.gov

Hilary – Coordination and Messaging



Key Messages for Hurricane Hilary Advisory 10: 3:00 PM MDT Fri Aug 18, 2023

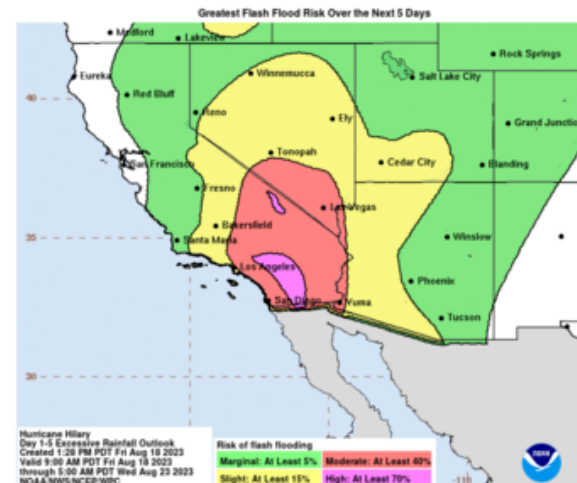
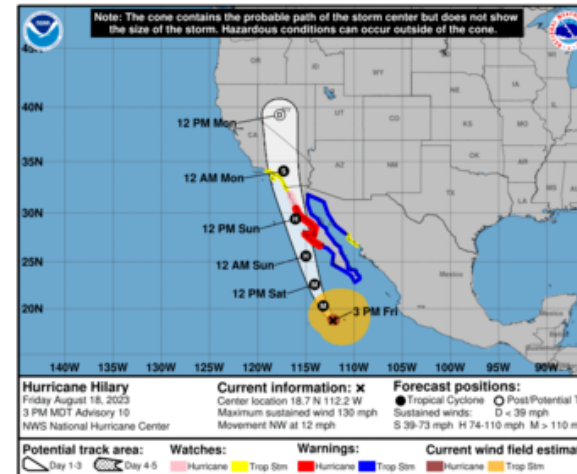


1. Heavy rainfall associated with Hilary will begin well in advance of the center, from the Baja California Peninsula into the Southwestern United States. Preparations for the impacts of flooding from rainfall should be completed as soon as possible, as heavy rain will increase ahead of the center on Saturday. In the Southwestern United States, flash, urban, and arroyo flooding is expected, with the potential for dangerous and locally catastrophic impacts.

2. Hurricane conditions are expected within portions of the hurricane warning area along the west-central coast of the Baja California Peninsula Saturday night and are possible in the Hurricane Watch area.

3. Tropical storm conditions are possible by late Sunday in portions of southern California where a Tropical Storm Watch is in effect.

4. Large swells generated by Hilary will affect portions of the coast of southwestern Mexico, the Baja California peninsula, and south California over the next few days. These swells are likely to cause life-threatening surf and rip current conditions.



For more information go to hurricanes.gov



Hilary – Impacts



Flooding in Cathedral City, CA (courtesy LA Times)

- Southern California experienced catastrophic flash flooding and debris flows, damaged bridges and railways, and major interstate closures
- 16 swift water rescues and dozens of people were rescued after becoming stranded
- Evacuations ordered along burn scars and in other flood prone areas

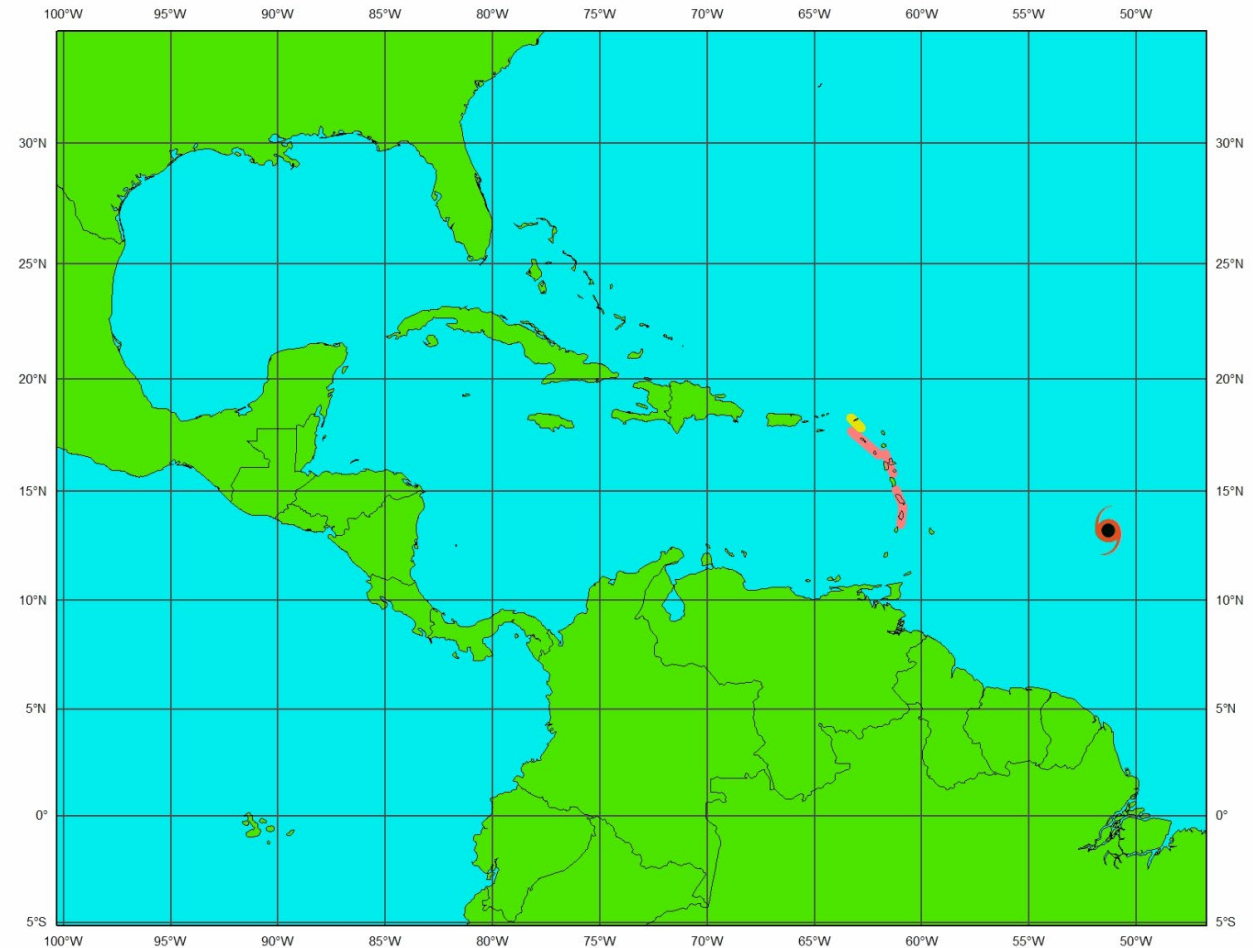


Flooding in Palm Springs, CA (courtesy AFP/Getty Images)



International Coordination

- NHC recommends the placement of watches and warnings
- Each country is responsible for issuing watches and warnings for their respective country or jurisdiction
- Coordinated with meteorological services throughout NHC's AOR





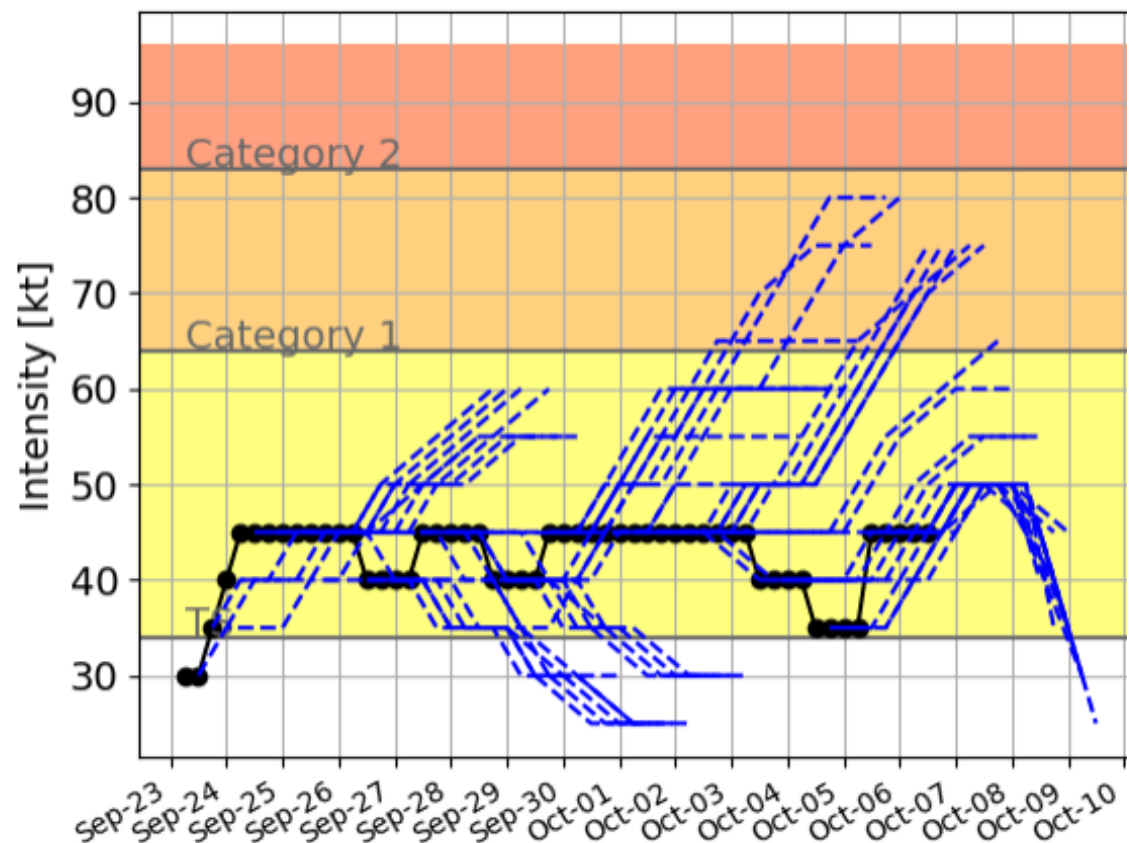
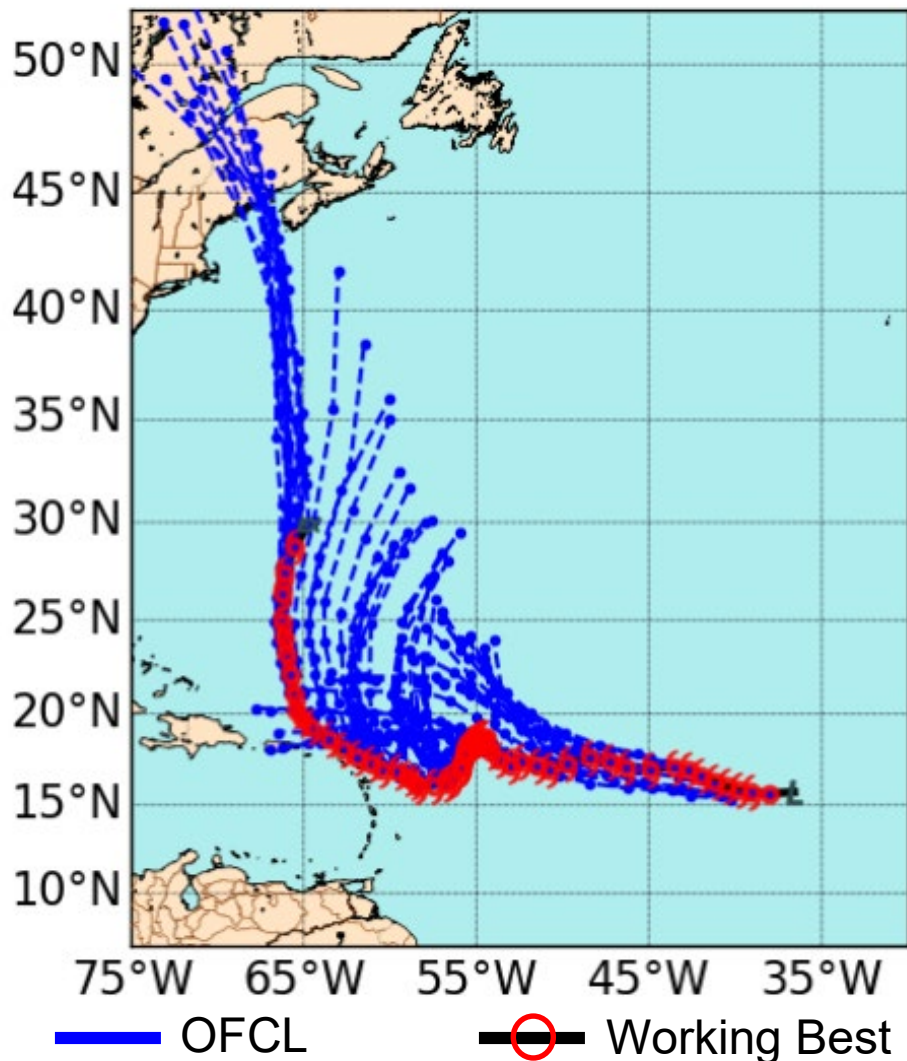
Challenge:

2023 Atlantic Storm Track Forecasts





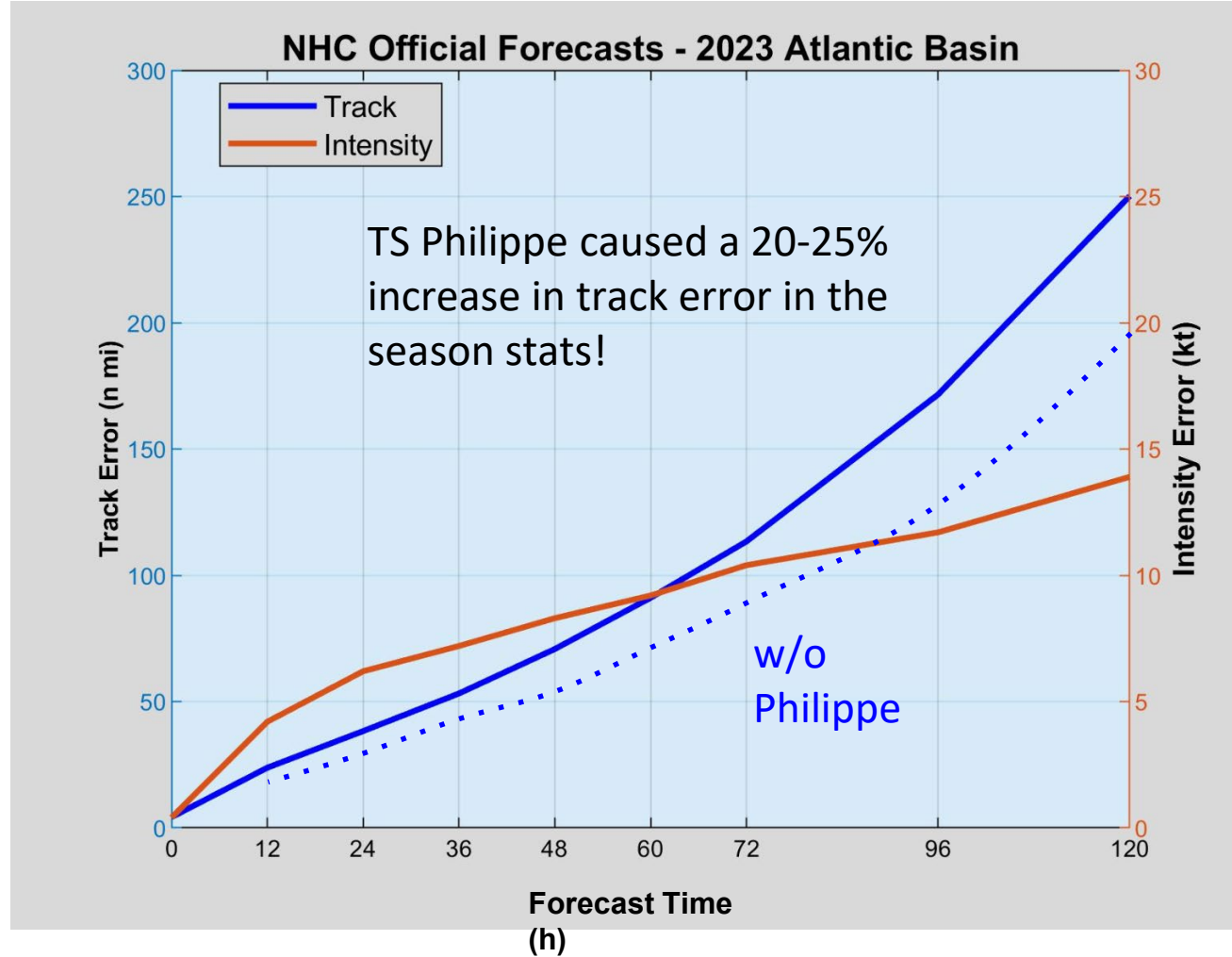
Challenge: Philippe Track Forecast



Intensity played a role in large track errors



Challenge: Philippe Track Forecast



Forecast Time (h)	Sample	Track Error (n mi)	Intensity Error (kt)
12	407	24.1	4.3*
24	363	38.4	6.3
36	324	52.2	7.4
48	290	68.9	8.3
60	260	89.3	9.2
72	234	112.4	10.2
96	188	171.1	11.4
120	148	251.9	13.1

* Records for accuracy

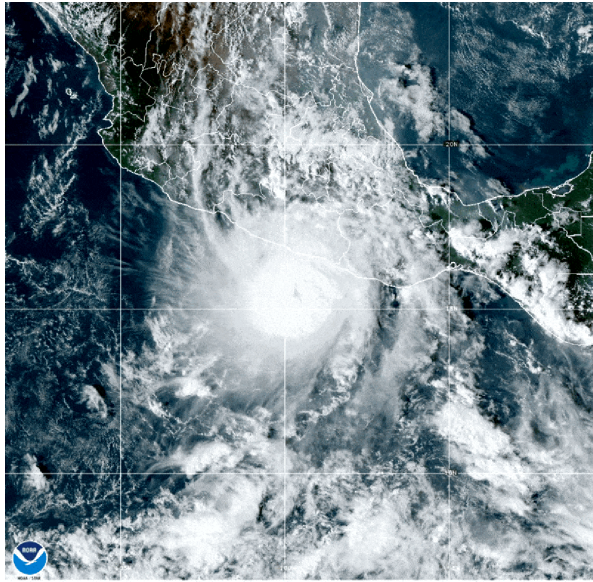


Challenge:

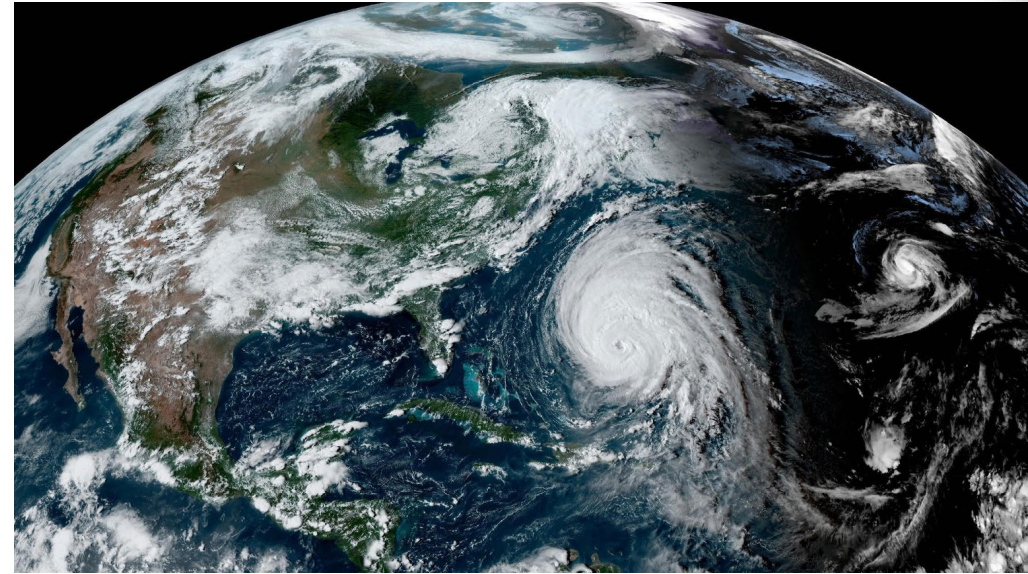
Rapid Intensification (and weakening)



Rapid Intensification (RI)



24 Oct 2023 22:00Z - NOAA/NESDIS/STAR - GOES-East - GEOCOLOR Composite - EP182023



East Pacific (max 24-h change)

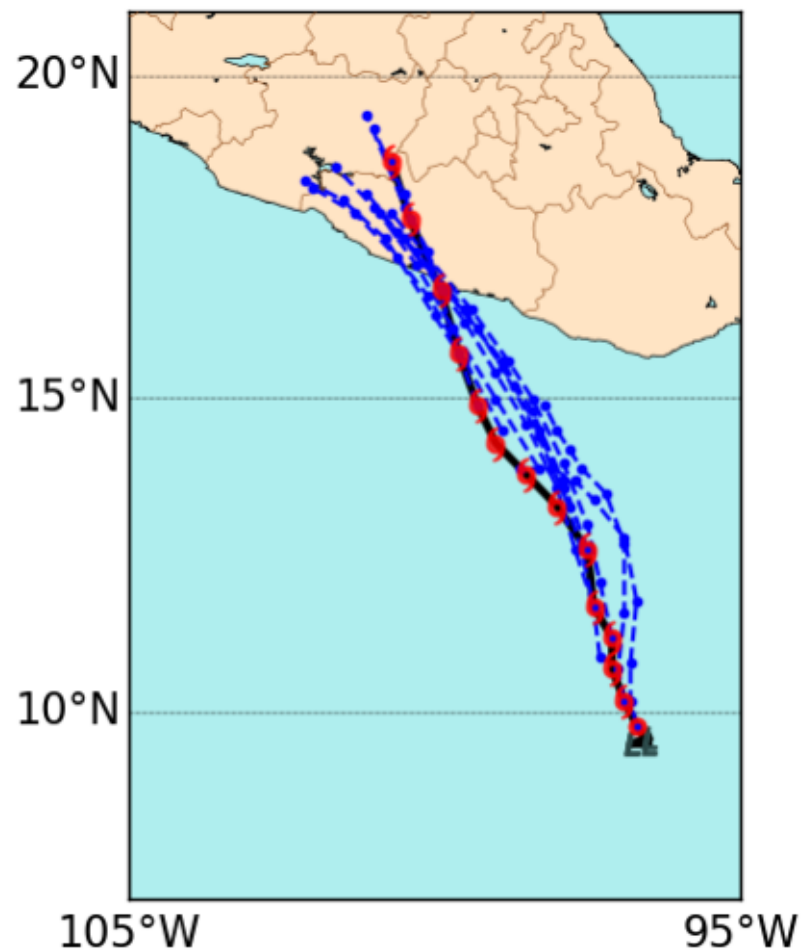
- Dora: 65 kt 110 kt
- Hilary: 55 kt 120 kt
- Jova: 75 kt 140 kt
- Lidia: 70 kt 120 kt
- Norma: 65 kt 115 kt
- Otis: 55 kt 145 kt

Atlantic (max 24-h change)

- Franklin: 85 kt 130 kt
- Idalia: 65 kt 105 kt
- Lee: 70 kt 145 kt

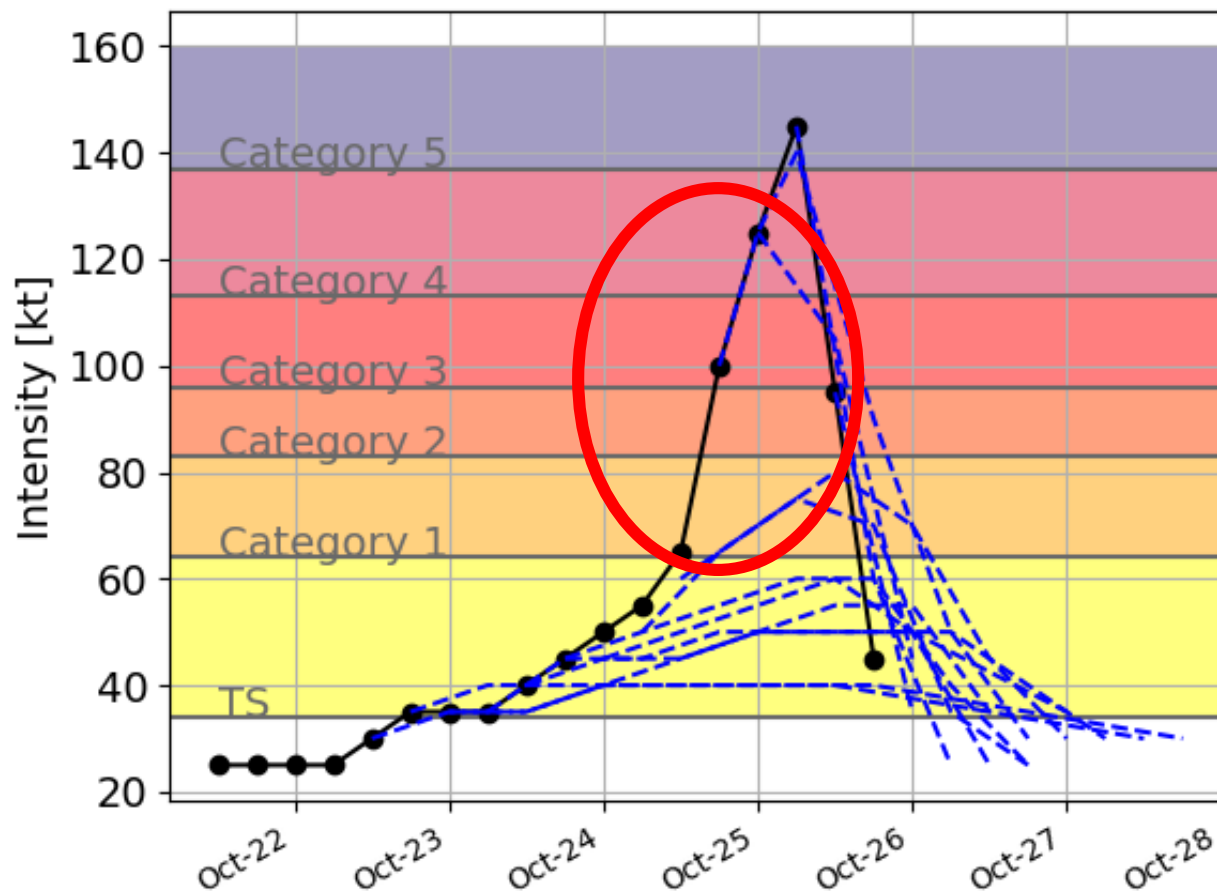


Otis Track and Intensity Forecast



— OFCL

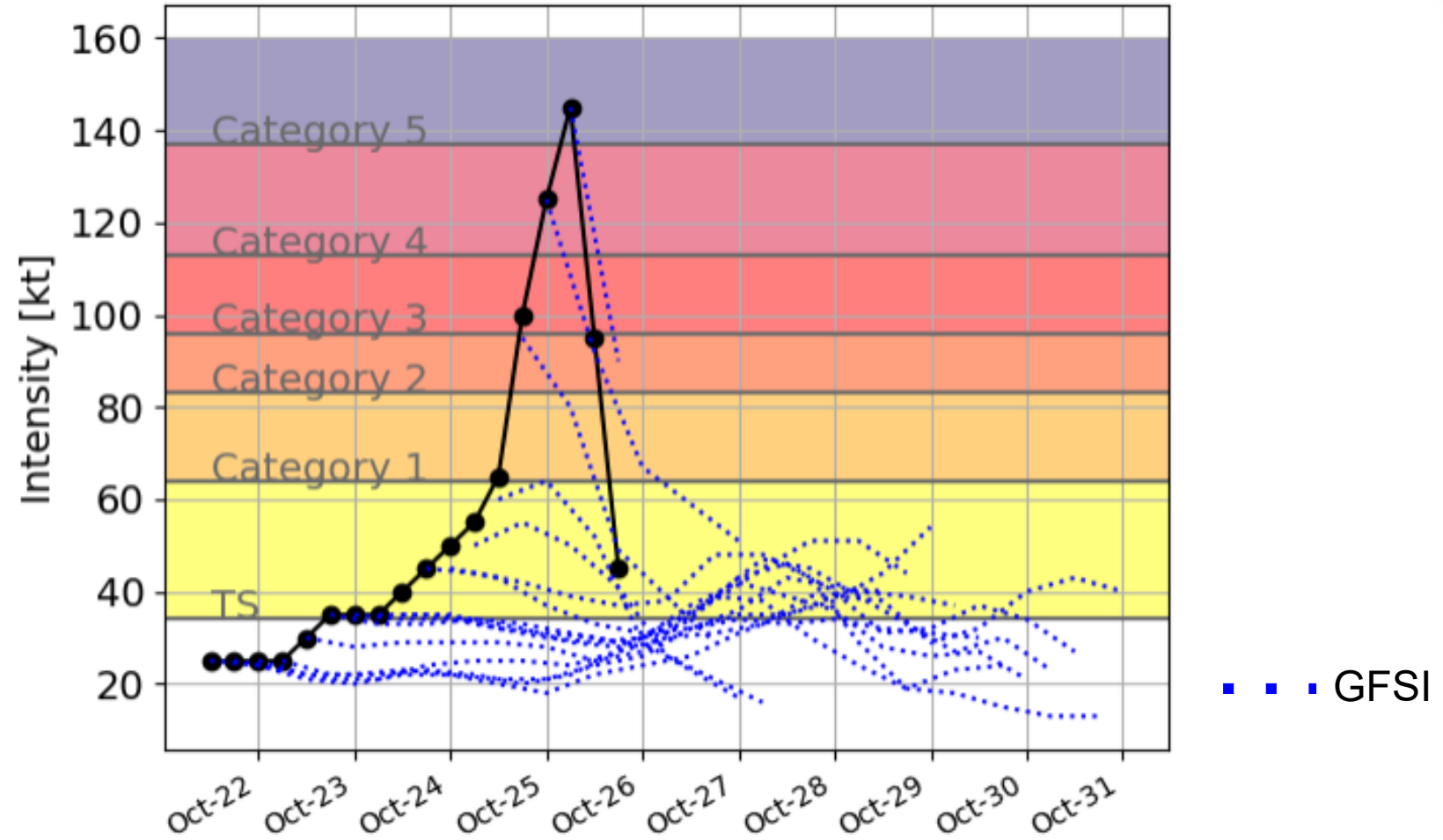
—○ Working Best



NHC and models missed RI



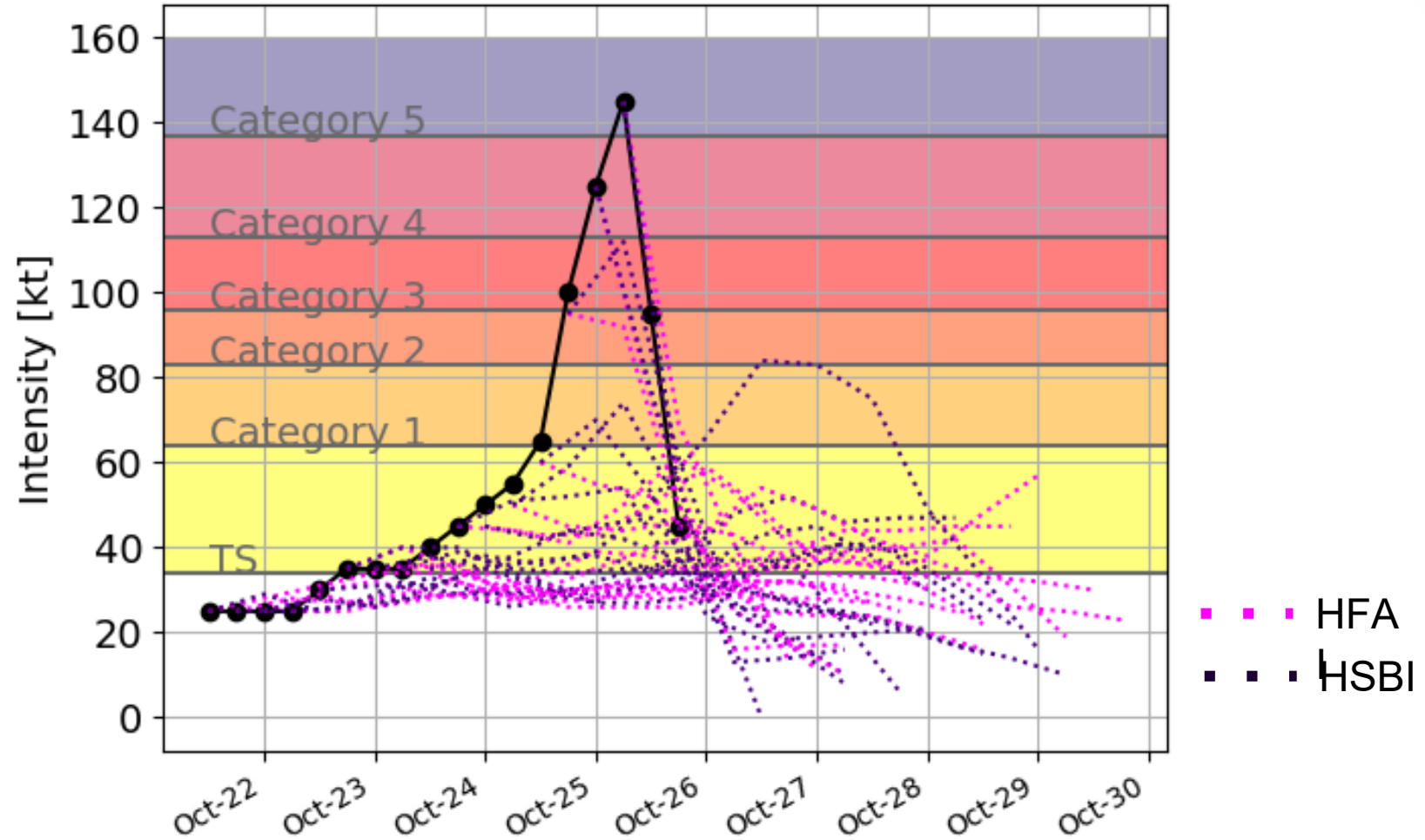
Otis Track and Intensity Forecast



Guidance completely missed RI



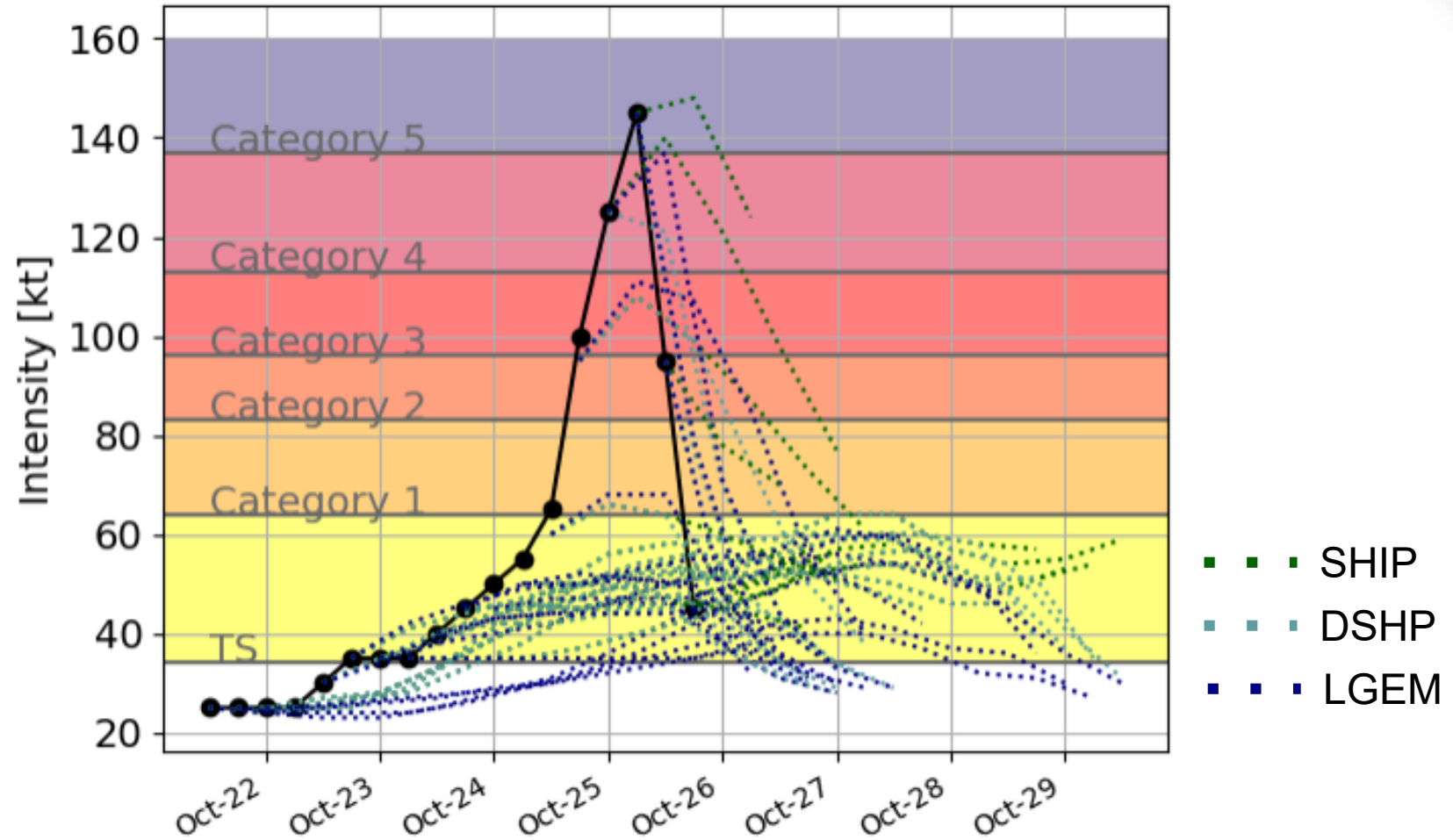
Otis Track and Intensity Forecast



Guidance completely missed RI



Otis Track and Intensity Forecast



Guidance completely missed RI

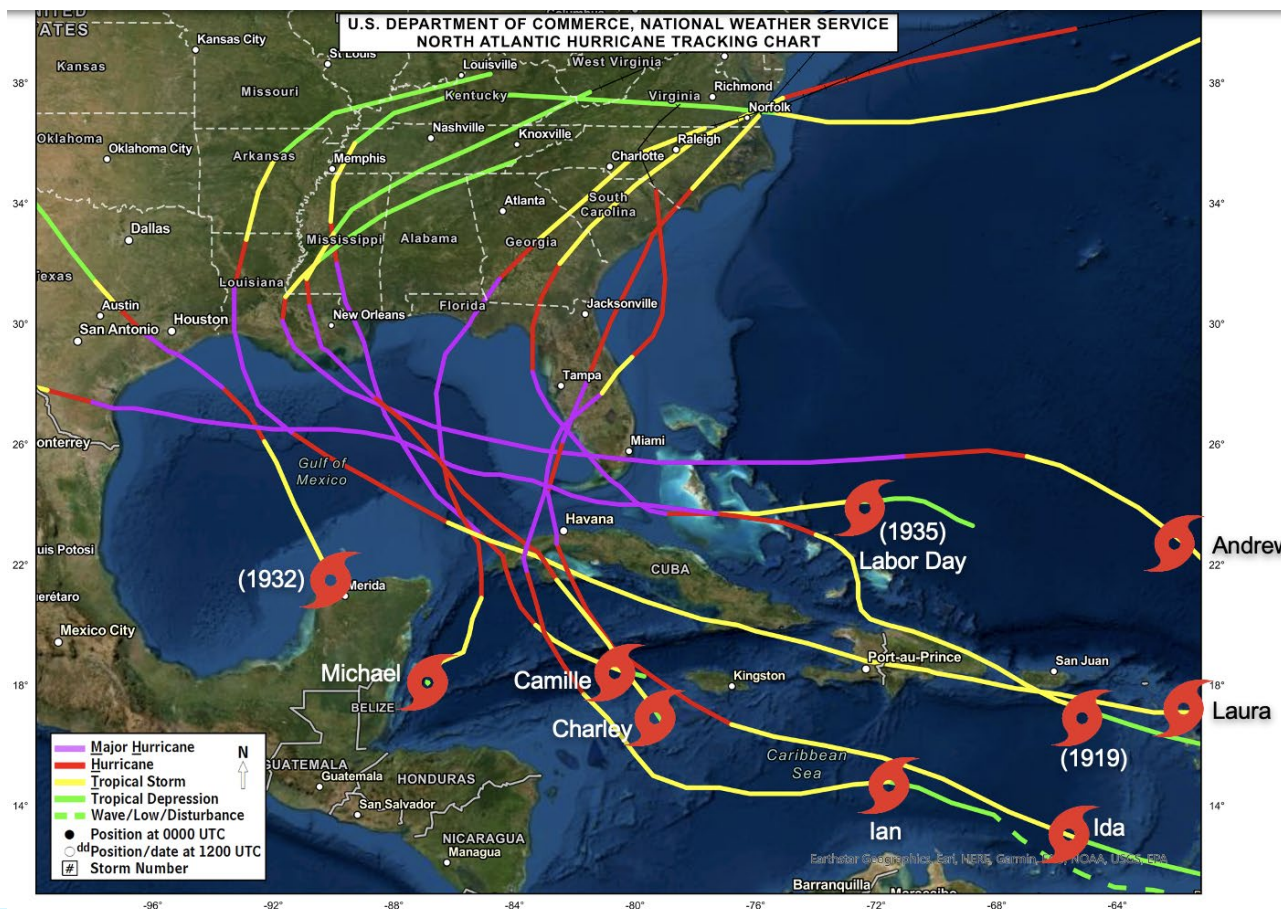


Challenge: Short Lead Times

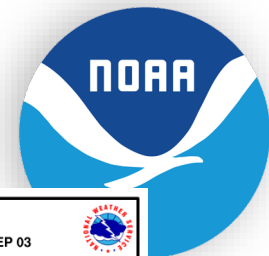
Strongest US Hurricanes (150+ MPH) in the last 100 years were all Tropical Storms 3 days before landfall

U.S. 150 mph+

- 1919 – Storm 2
- 1932 – Storm 2
- 1935 – Labor Day
- 1969 – Camille
- 1992 – Andrew
- 2004 – Charley
- 2018 – Michael
- 2020 – Laura
- 2021 – Ida
- 2022 – Ian



Average time to become a hurricane is 50 h before landfall



Challenge: Communicating Hazards

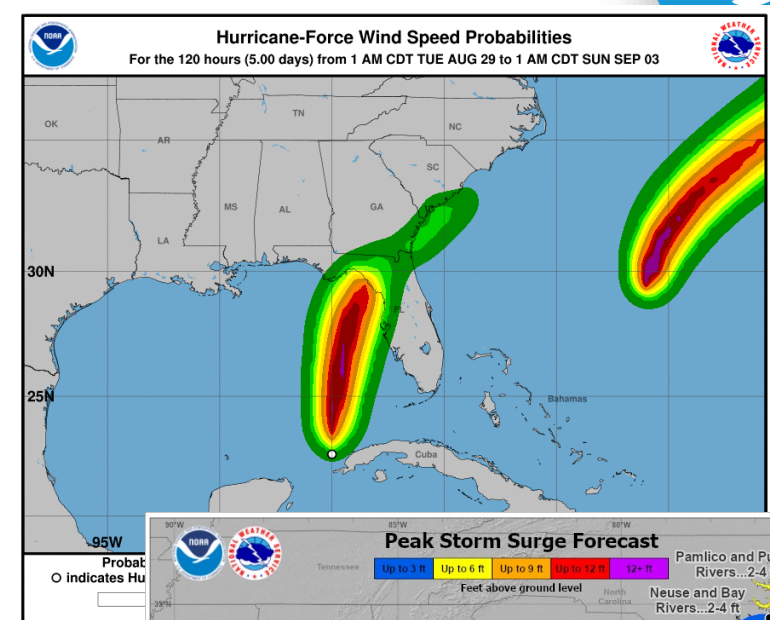
- Emphasize watches, warnings and hazard products
- Focus on risk communication, not category, storm status, or track of the storm center

Key Messages for Tropical Storm Ophelia

Advisory 8: 5:00 AM EDT Sat Sep 23, 2023

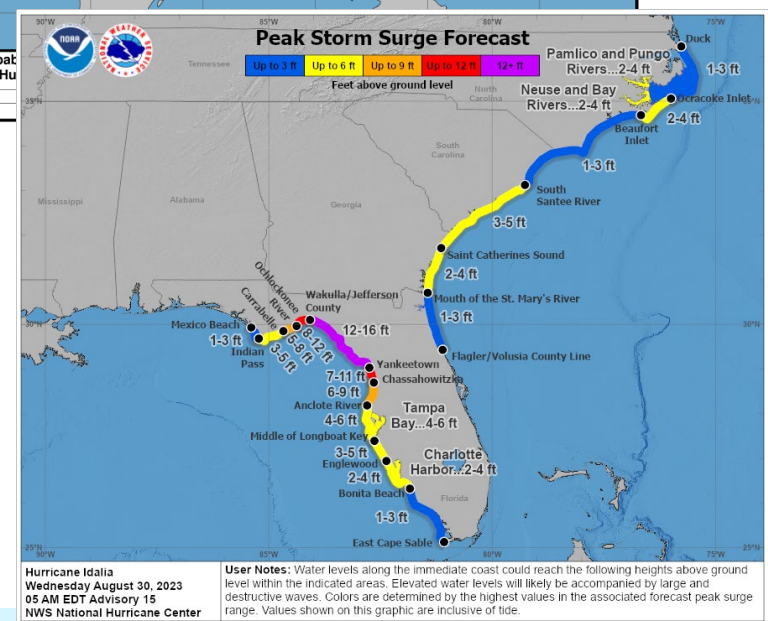
1. Tropical storm conditions are expected along portions of the southeastern and mid-Atlantic U.S. coasts within the Tropical Storm Warning area through tonight. Hurricane conditions are possible within the Hurricane Watch area early this morning.
2. There is a danger of life-threatening storm surge inundation over portions of eastern North Carolina and southeastern Virginia, including Pamlico and Albemarle Sounds, the Neuse and Pamlico Rivers, the lower James River, and the lower Chesapeake Bay, where Storm Surge Warnings are in place. Residents in these areas should follow advice given by local officials.
3. Heavy rainfall from this system may produce locally considerable flash, and urban flooding impacts across portions of the Mid-Atlantic states from North Carolina to New Jersey through Sunday.
4. Swells generated by this system will affect much of the U.S. east coast through the weekend, likely causing life-threatening surf and rip currents.

For more information go to hurricanes.gov



Understanding WPC Excessive Rainfall Risk Categories

No Area/Label	MARGINAL (MRGL)	SLIGHT (SLGT)	MODERATE (MDT)	HIGH (HIGH)
Flash floods are generally not expected.	Isolated flash floods possible	Scattered flash floods possible	Numerous flash floods likely	Widespread flash floods expected
Flash floods are generally not expected.	Localized and primarily affecting places that can experience rapid runoff with heavy rainfall.	Mainly localized. Most vulnerable are urban areas, roads, small streams and washes. Isolated significant flash floods possible.	Numerous flash flooding events with significant events possible. Many streams may flood, potentially affecting larger rivers.	Severe, widespread flash flooding. Areas that don't normally experience flash flooding, could. Lives and property in greater danger.
Flash flooding near me?	Flash Flooding	Flash Flooding	Flash Flooding	Flash Flooding
Flash flooding near me?	NO Flash Flooding	Flash Flooding	Flash Flooding	Flash Flooding
WEATHER PREDICTION CENTER				



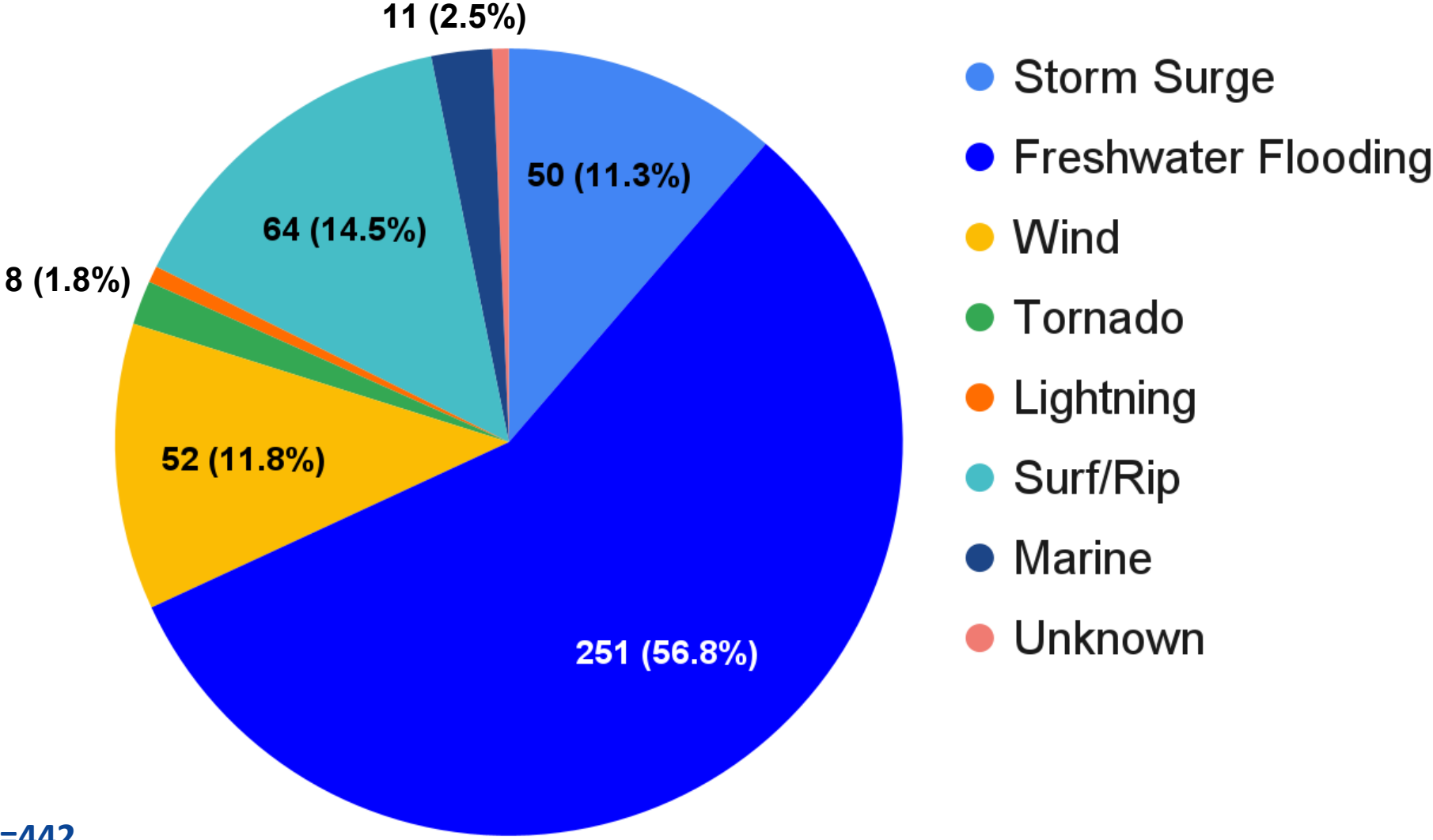


Question:

What's the deadliest hurricane hazard?

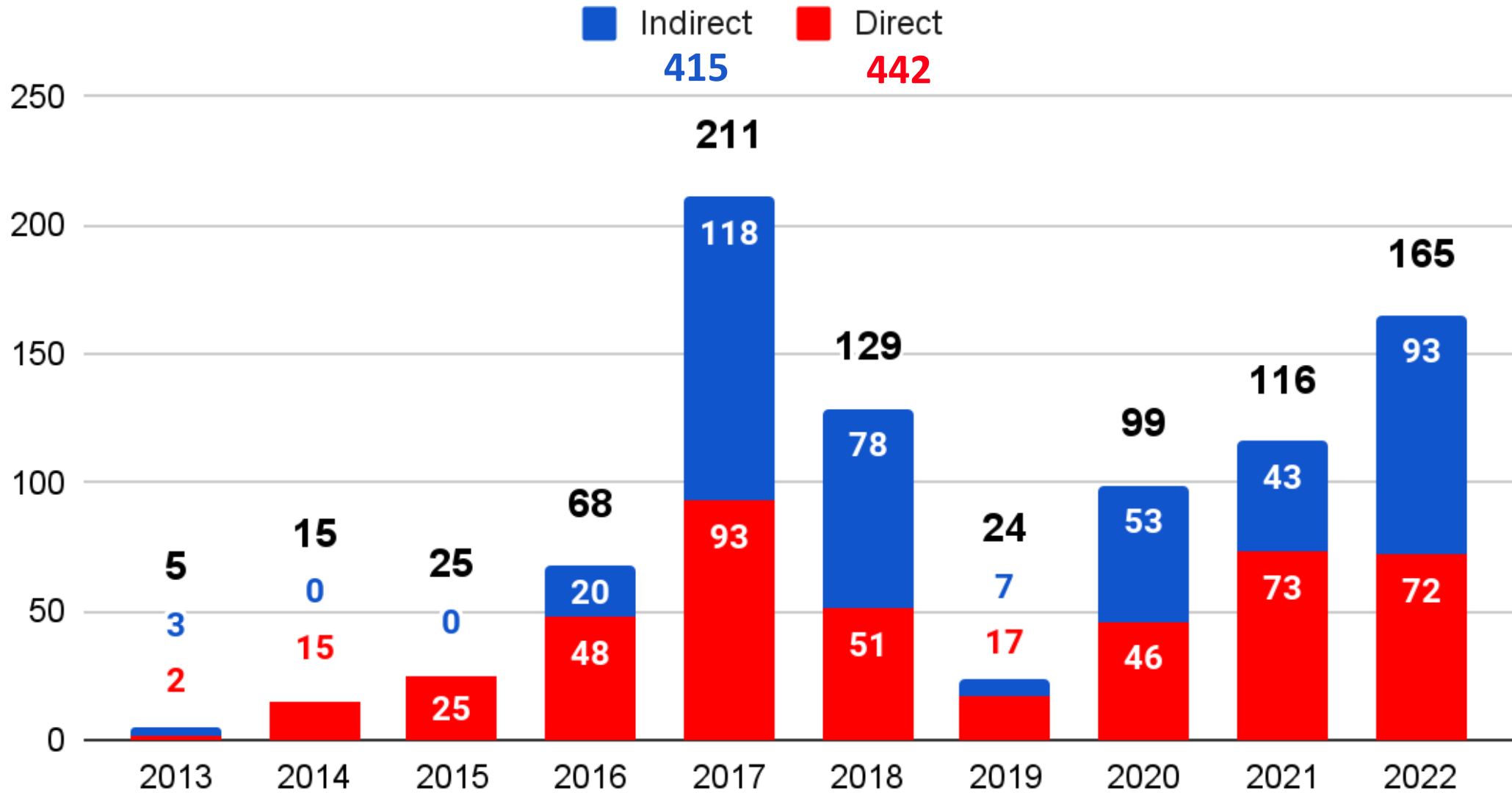


Direct Fatalities 2013-2022

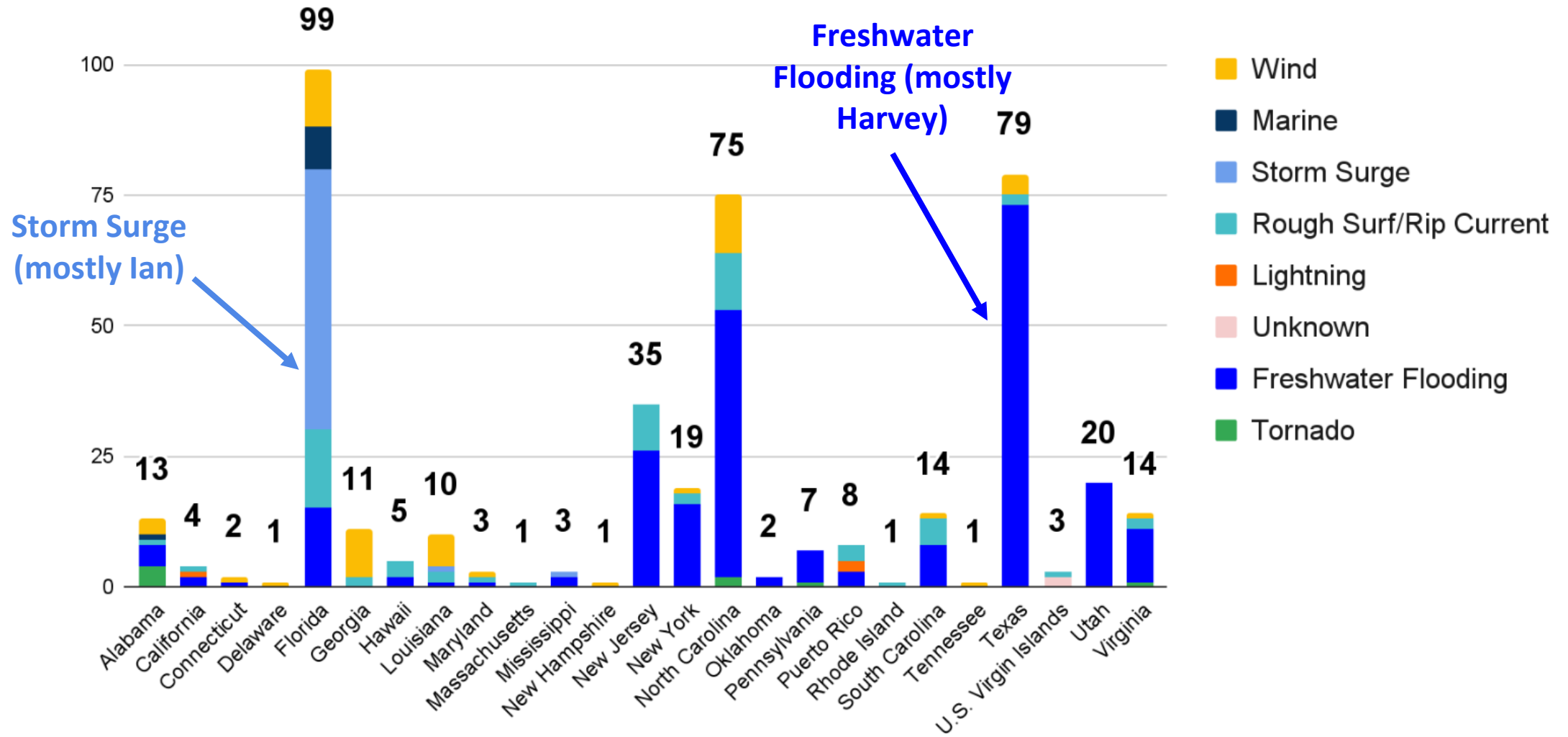


N=442

2013-2022 Fatalities by Year



Direct Fatalities by State - 2013-2022

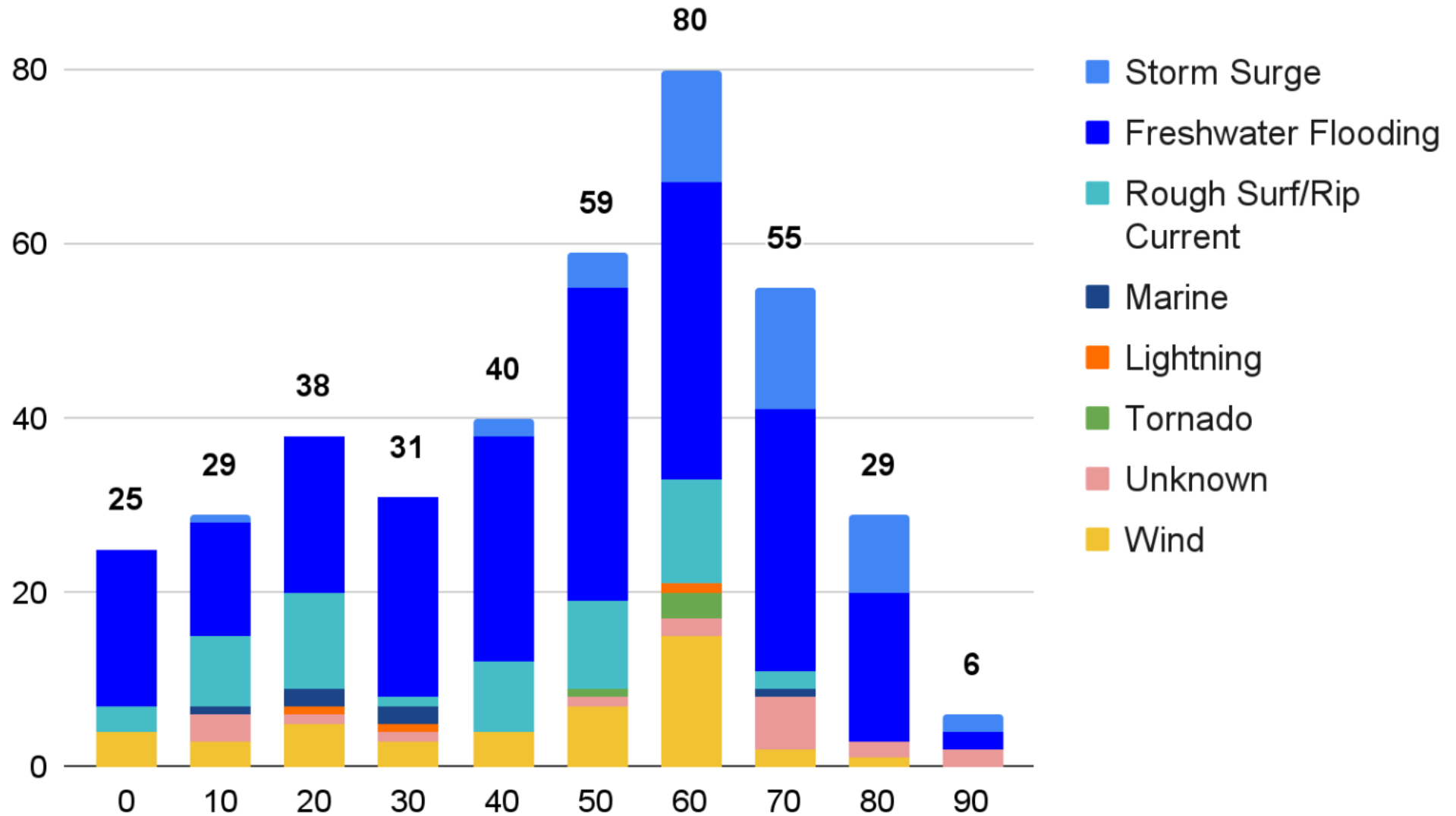




Question:
**Who's the most vulnerable to
hurricane hazards?**




Direct Fatalities by Age - 2013-2022







Tailoring the Message

Distant Hurricanes Can Be Deadly

 Hurricanes that are far away can still create deadly rip currents and waves.

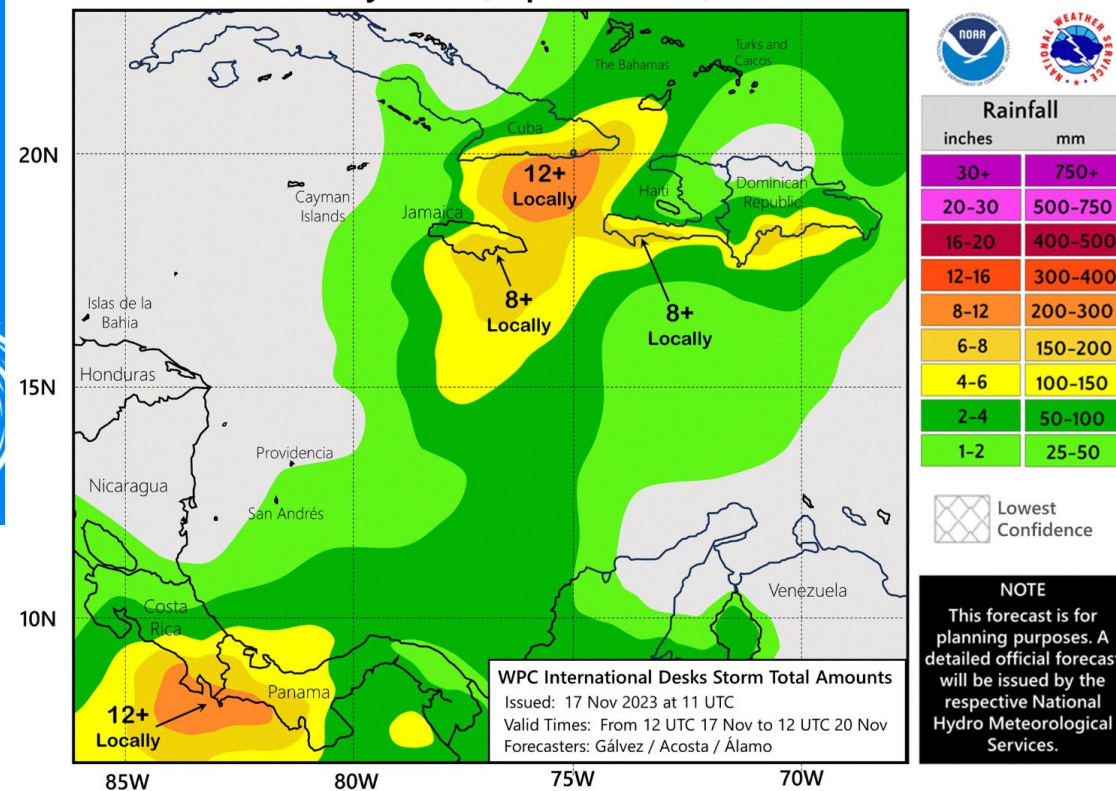
 Never assume that the ocean is safe, even if the weather is nice.

 For maximum safety, swim near a lifeguard.

 Check the forecast before you go:
weather.gov/beach



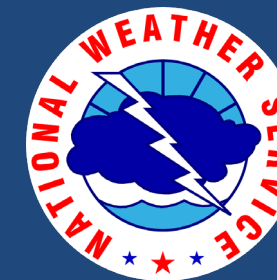
Total Rainfall with Potential Tropical Cyclone Twenty-Two (Experimental)





NHC Overview Summary

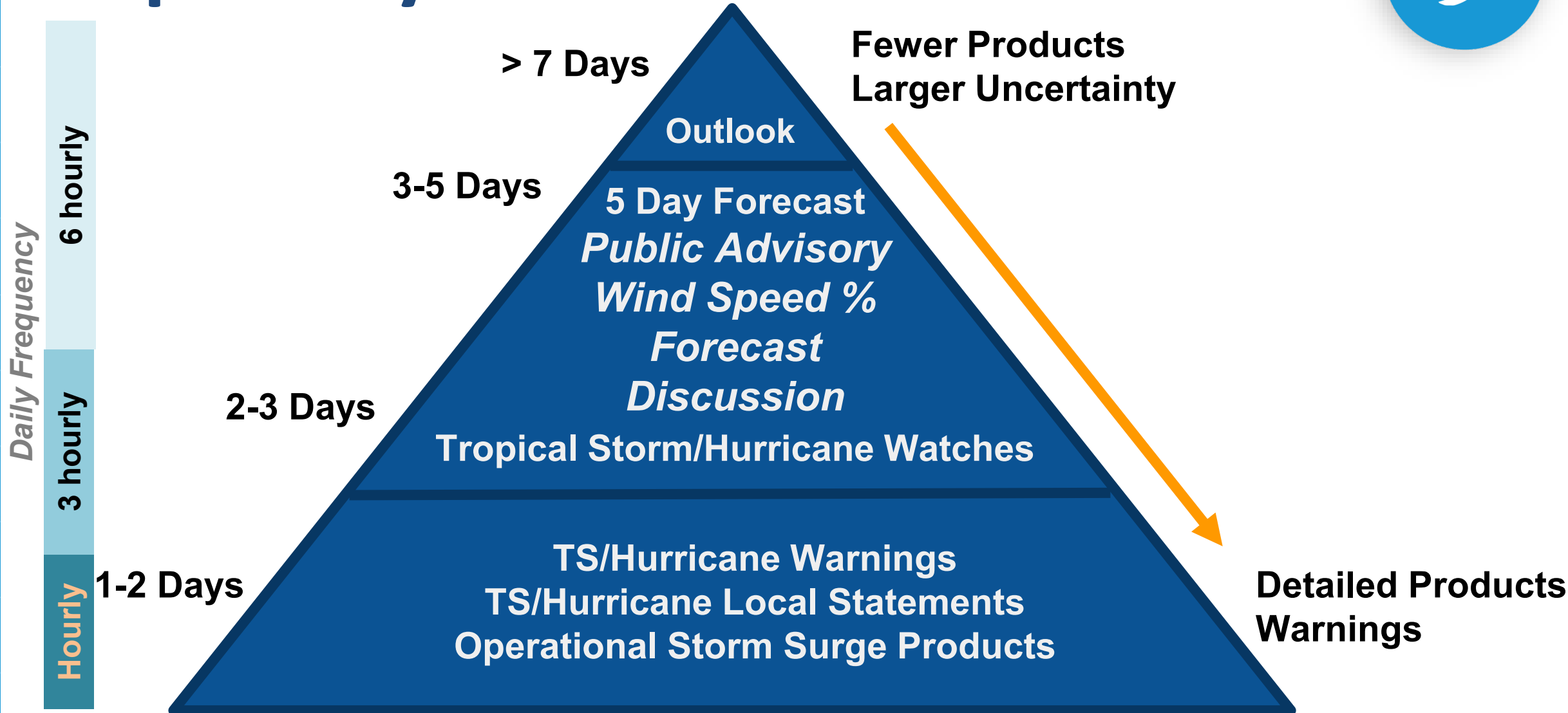
- Track and intensity predictions steadily improving
- Extended the tropical weather outlook to 7 days
- Rapid Intensification remains a challenge
 - Example: Otis was completely missed by forecasters and models
- Focused on hazard-oriented messaging
 - Provide impact based decision support services
- Examine fatality trends to identify vulnerable populations and refine communication



How the Tropical Cyclone Advisory “package” is Built



Tropical Cyclone Products





U.S. landfall: Idalia

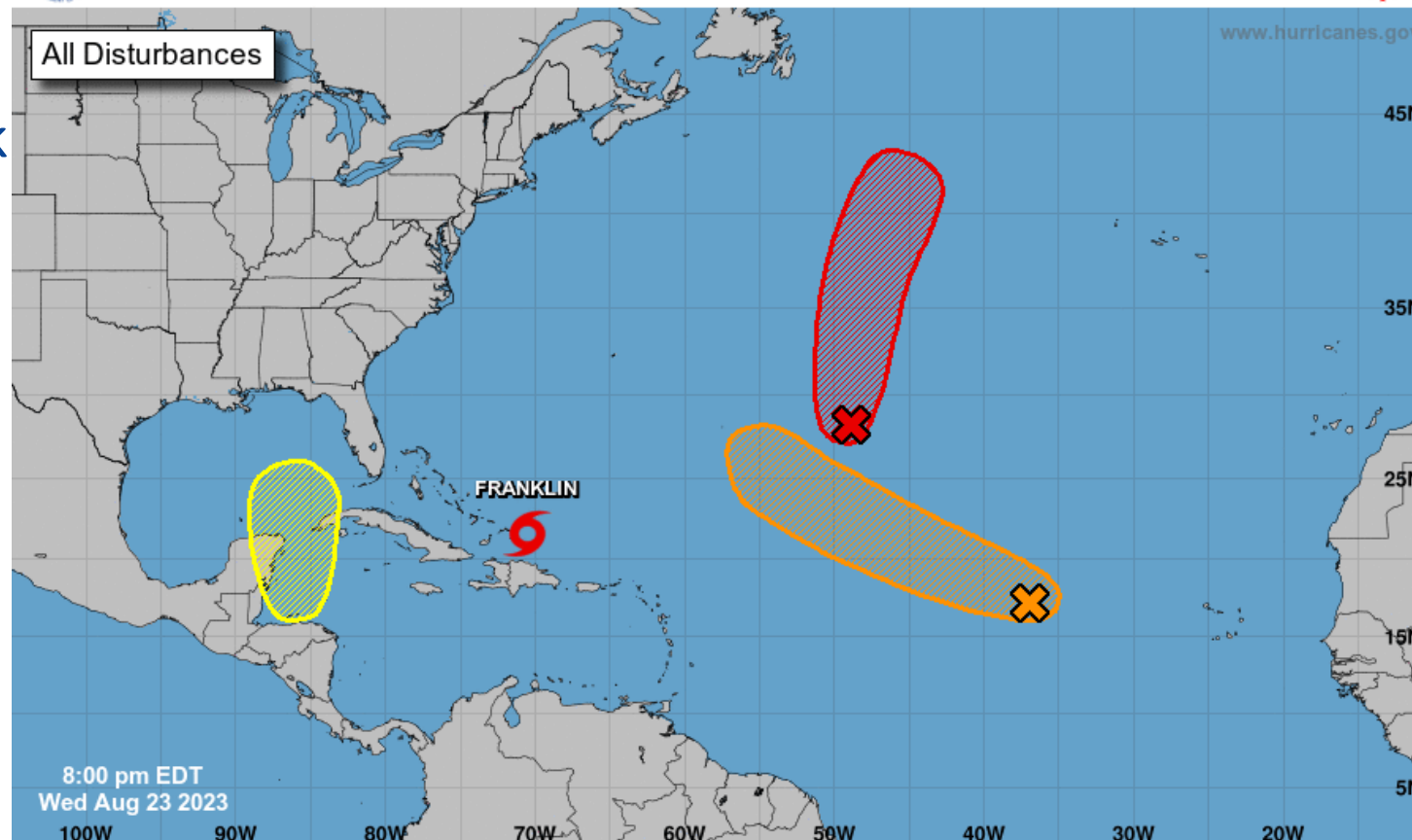


Seven-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida



Entered into the NHC Tropical Weather Outlook 60 h before genesis.

7-day formation probability raised to **high** category 36 h before genesis



Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

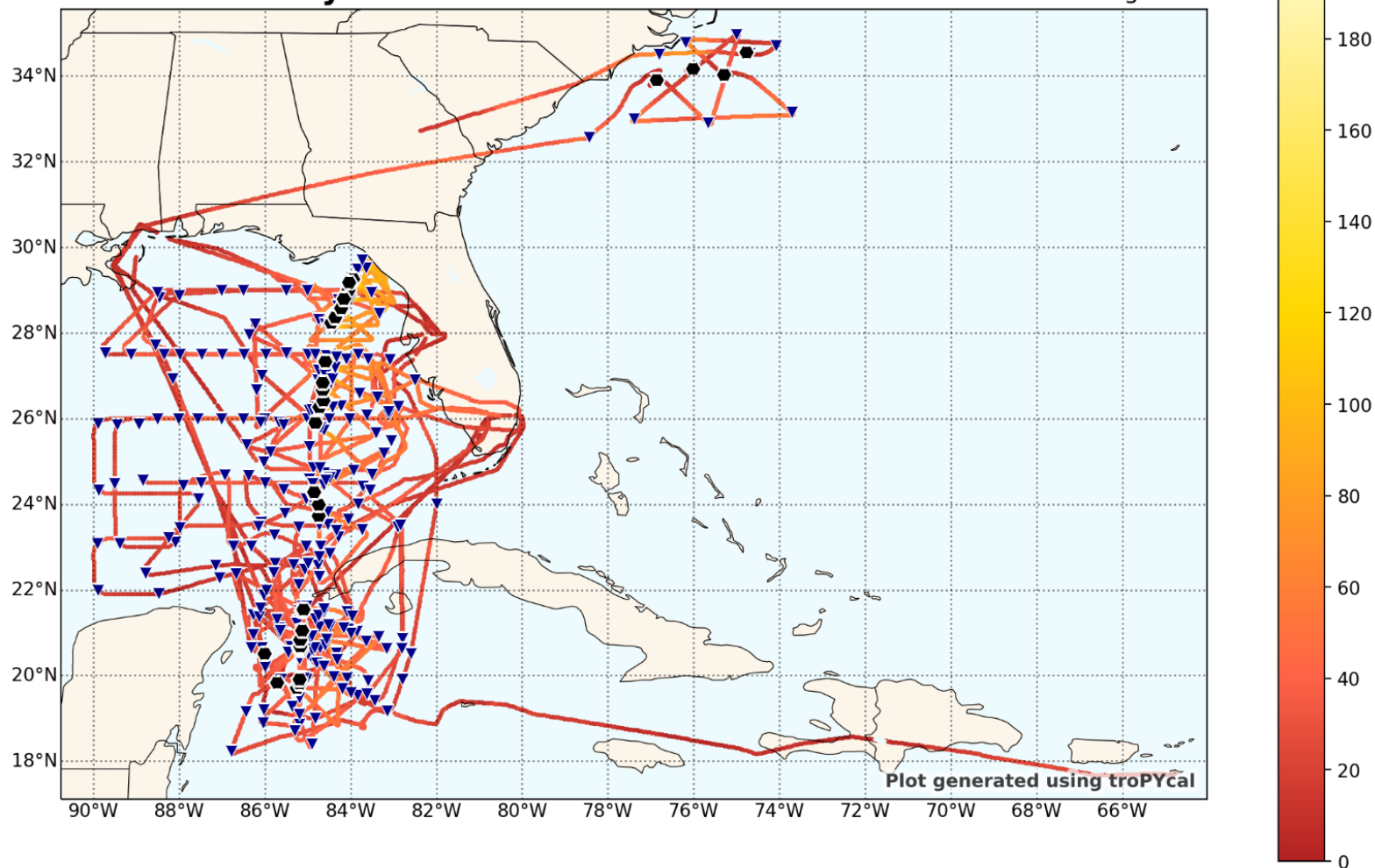
Post-Tropical Cyclone or Remnants



Planning Hurricane Recon

Hurricane IDALIA Recon summary

Start ... 09:44 UTC 27 Aug 2023
End ... 18:04 UTC 31 Aug 2023





Making a forecast

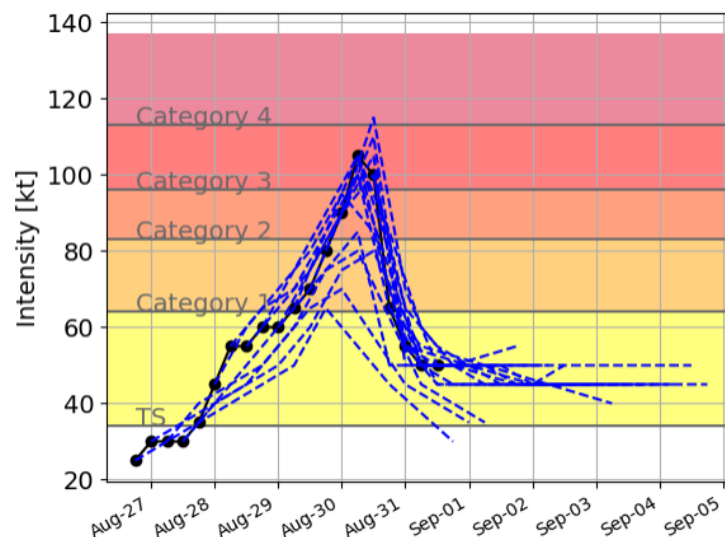
Track

Where is the storm going?



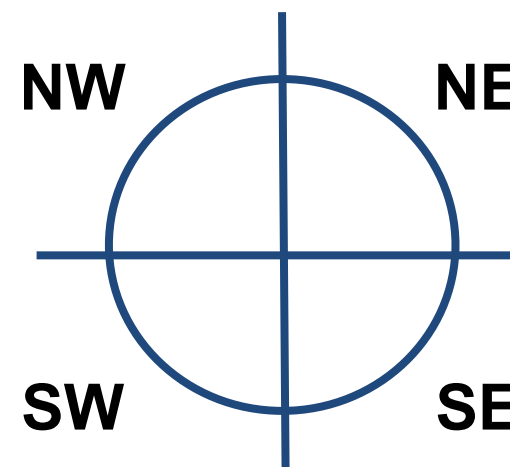
Intensity

How strong will the storm be?



Wind Radii

How big will the storm be (by quadrant)?



SUMMARY OF NWP MODELS USED BYNHC FOR TC TRACK PREDICTION

ATCF ID Tracker	Global/Regional Model Name	Horizontal Resolution	Vertical Levels and Coordinates	Data Assimilation	Convective Scheme	Cycle/Run Frequency	CONSENSUS INCLUSION
NVGM/NVGI	Navy Global Environmental Model	Spectral ~31km	60 Hybrid Sigma-pressure	NAVDAS-AR 4D-VAR	Simplified Arakawa-Schubert (SAS)	6 hr (144 hr) 00/06/12/18 UTC	NO
AVNO/AVNI (GFSO/GFSI)	Global Forecast system	Finite Volume Cubed Sphere (FV3) 13km	127 Hybrid Sigma-pressure	GSI/4D-VAR EnKF hybrid, including TC central pressure	Simplified Arakawa-Schubert [Arakawa and Schubert (1974) / Pan and Wu (1994)]	6 hr (240 hr) 00/06/12/18 UTC	YES
EMX/EMXI EMX2	European Centre for Medium-Range Weather Forecasts	Spectral ~9km	137 Hybrid Sigma-Pressure	4D-VAR	Tiedke mass flux [Tiedke (1989)]	12 hr (240 hr) 00/12 UTC 06/18 UTC tracks available in 2021	YES
EGRR/EGRI EGR2	U.K. Met Office Global Model	Grid Point ~10km	70 Hybrid Sigma-Pressure	4D-VAR Ensemble Hybrid	UKMET [Gregory and Rowntree (1990)]	12 hr (144 hr) 00/12 UTC	YES
CMC/CMCI	Canadian Deterministic Prediction System	Grid Point ~25km	80 Hybrid Sigma-Pressure	4D-VAR ensemble Hybrid	Kain -Fritsch [Kain and Fritsch (1990, 1993)]	12 hr (240 hr) 00/12 UTC	NO
HAFSA/HAFSB (ALSO HWRF)	Hurricane Analysis and Forecast System	Grid Configuration 3 nests 12-6-2 km	81 Hybrid Sigma-Pressure	4D-EnVar	SAS mom. mix. + GFS shallow convection (6km and 18km) 2km nest – none	6 hr (126 hr) 00/06/12/18 UTC Runs commence on NHC/JTWC request	YES
HMON	Hurricane Multi-scale Ocean-coupled Non-hydrostatic model	Grid Configuration 3 nests 18-6-2 km	51	None	SAS	6 hr (126 hr) 00/06/12/18 UTC Runs commence on NHC/JTWC request	NO
CTCX/CTCI	NRL COAMPS-TC (using GFS for IC and BC)	Grid Configuration 3 nests 45-15-5 km	40	3D-VAR (NAVDAS) EnKF DART	Kain-Fritsch Kain and Fritsch (1990, 1993)	6 hr (126 hr) 00/06/12/18 UTC Runs commence on 1 st NHC/JTWC advisory	YES 43



Also, consensus models:

TVCA/TVCE (variable model consensus),

HCCA, (HFIP corrected consensus), and

FSSE (Fla. State University

Superensemble, also a corrected

consensus)

and global model ensembles



Question: What's the best model?





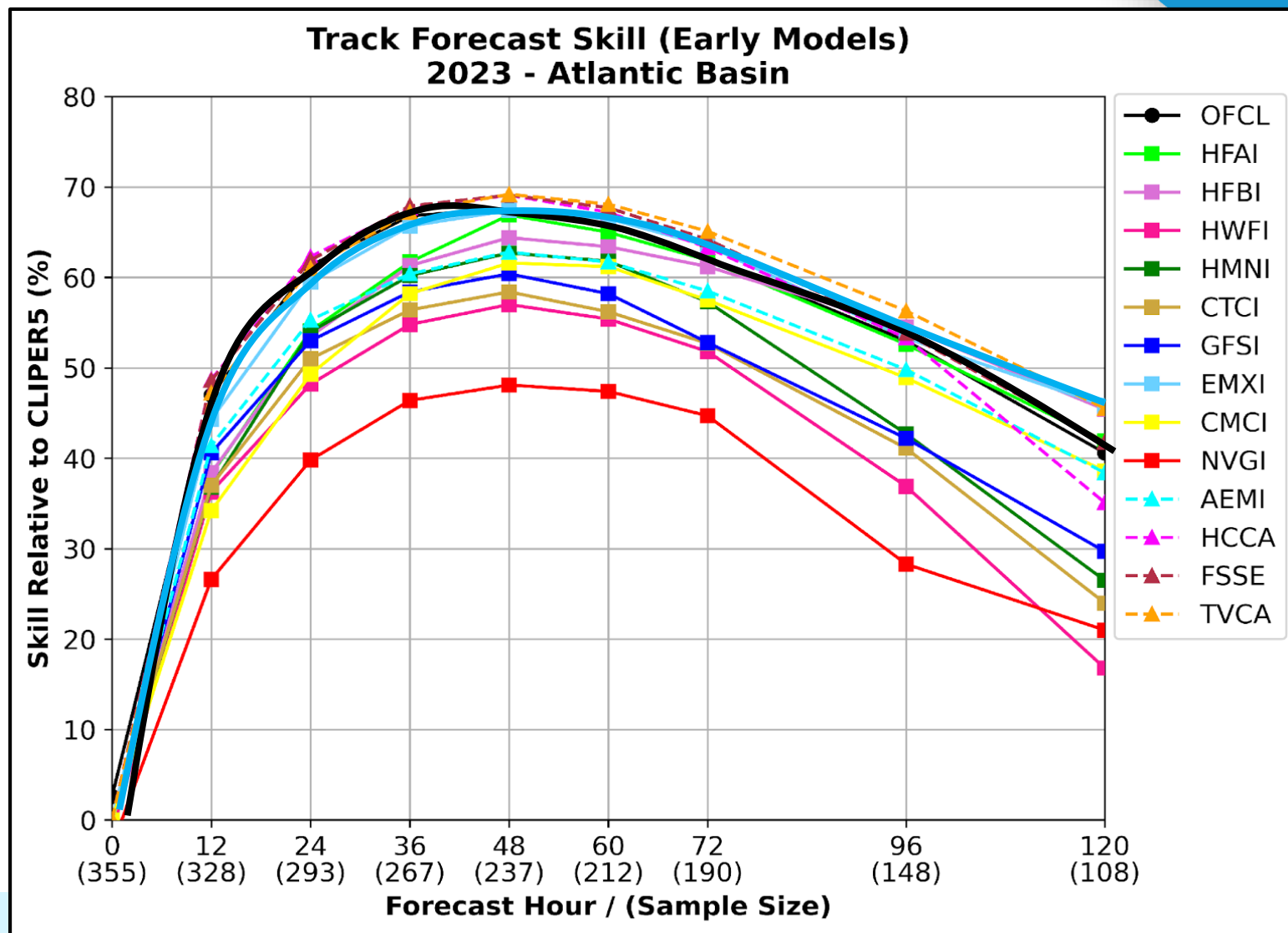
Answer: It Varies

NHC forecasts (OFCL) were close to, but slightly outperformed by the HCCA and TVCA consensus aids at most forecast times.

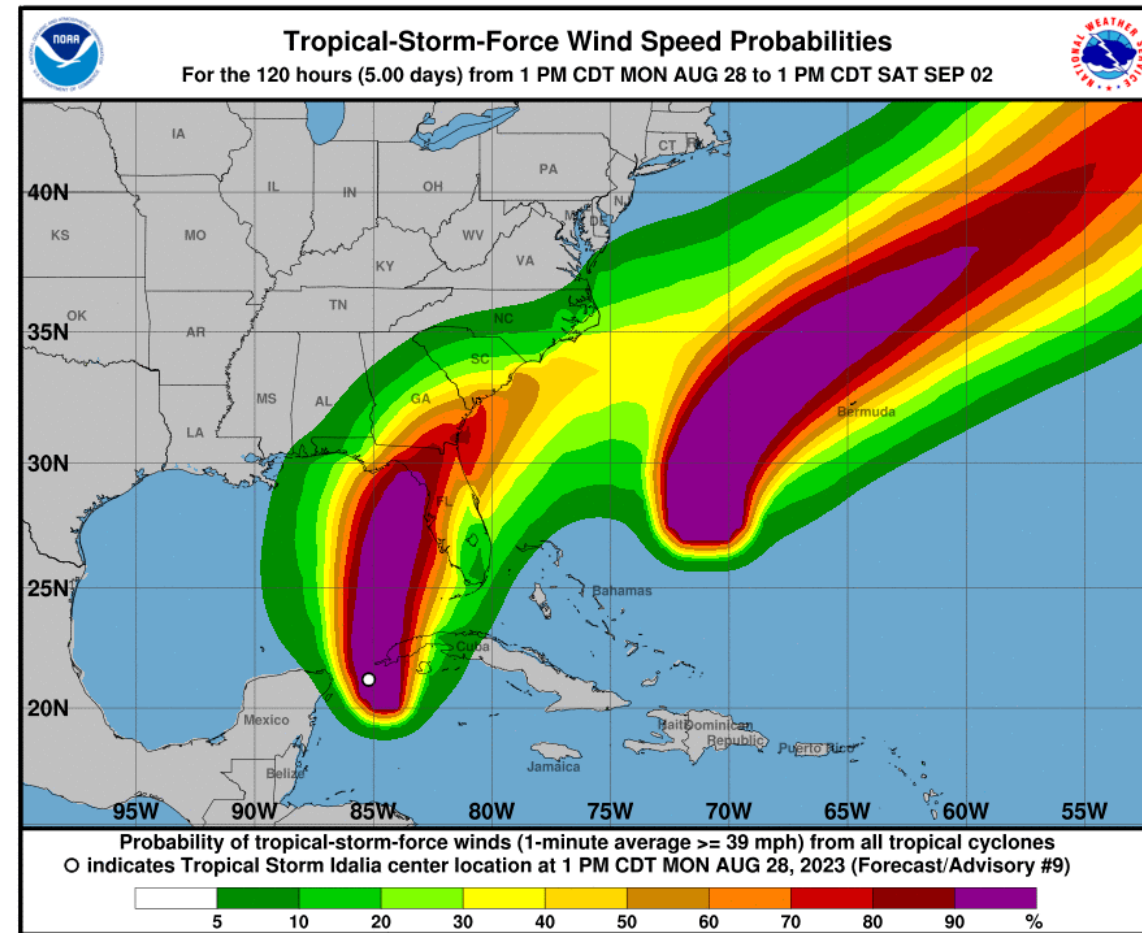
EMXI (European Center) best individual model and as good as consensus aids at long leads.

HFBI and HFAI quite good, better than HWFI and HMNI

GFSI notably less skill than EMXI and CMCI outperformed GFSI after 36 h



Translate Forecast into Products





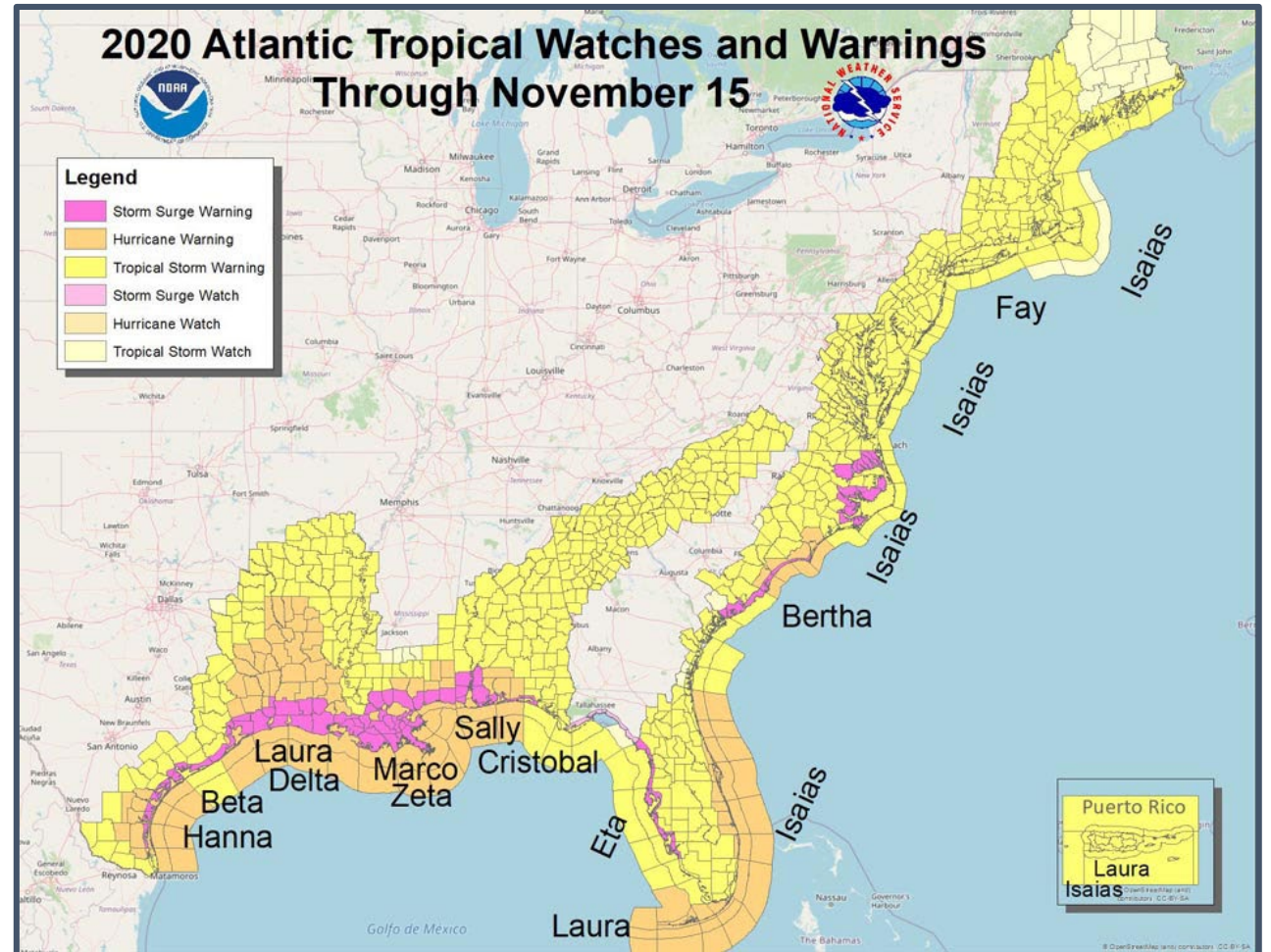
Watches and Warnings

Watch

Hurricane conditions are **possible** in a watch area, generally **within 48 hours**

Warning

Hurricane conditions are **expected** in a warning area, generally **within 36 hours**

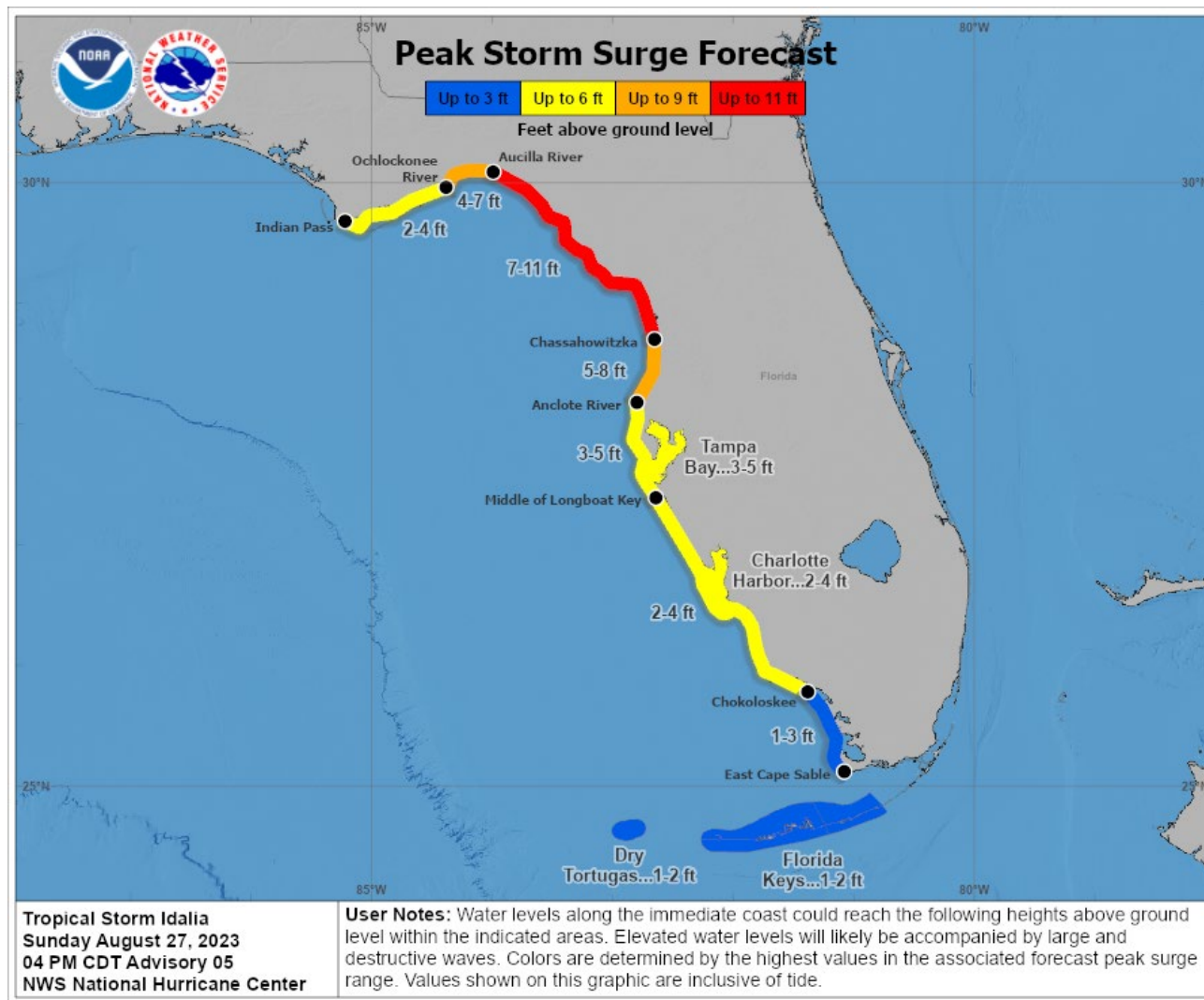




Hurricane Idalia – Storm Surge

Initial Peak Storm Surge
Graphic, Idalia Advisory 5
4 PM CDT August 27

Initial Storm Surge Watch
issued from Indian Pass to
Chokoloskee





Translate Forecast into Products

Public Advisory

Hurricane IDALIA

ZCZC MIATCMAT5 ALL
TTAA00 KNHC DDHMM

HURRICANE IDALIA FORECAST/ADVISORY NUMBER 13
NWS NATIONAL HURRICANE CENTER MIAMI FL AL102023
2100 UTC TUE AUG 29 2023

NOTICE... LAND-BASED TROPICAL CYCLONE WATCHES AND WARNINGS ARE NO LONGER INCLUDED IN THE TROPICAL CYCLONE FORECAST/ADVISORY...(TCM). CURRENT LAND-BASED COASTAL WATCHES AND WARNINGS CAN BE FOUND IN THE MOST RECENTLY ISSUED TROPICAL CYCLONE PUBLIC ADVISORY...(TCP).

HURRICANE CENTER LOCATED NEAR 26.1N 84.8W AT 29/2100Z
POSITION ACCURATE WITHIN 15 NM

PRESENT MOVEMENT TOWARD THE NORTH OR 360 DEGREES AT 14 KT

ESTIMATED MINIMUM CENTRAL PRESSURE 972 MB
MAX SUSTAINED WINDS 85 KT WITH GUSTS TO 105 KT.
64 KT..... 20NE 15SE 10SW 10NW.
50 KT..... 50NE 40SE 20SW 20NW.
34 KT.....120NE 140SE 50SW 60NW.
12 FT SEAS..150NE 120SE 90SW 90NW.

WINDS AND SEAS VARY GREATLY IN EACH QUADRANT. RADII IN NAUTICAL MILES ARE THE LARGEST RADII EXPECTED ANYWHERE IN THAT QUADRANT.

REPEAT...CENTER LOCATED NEAR 26.1N 84.8W AT 29/2100Z
AT 29/1800Z CENTER WAS LOCATED NEAR 25.3N 84.8W

FORECAST VALID 30/0600Z 28.3N 84.5W
MAX WIND 100 KT...GUSTS 120 KT.
64 KT... 25NE 25SE 15SW 15NW.
50 KT... 50NE 50SE 25SW 25NW.
34 KT...100NE 160SE 60SW 60NW.

FORECAST VALID 30/1800Z 31.0N 82.9W...INLAND
MAX WIND 75 KT...GUSTS 90 KT.
64 KT... 15NE 15SE 10SW 0NW.
50 KT... 30NE 30SE 20SW 15NW.
34 KT... 90NE 170SE 50SW 40NW.

Hurricane IDALIA

ZCZC MIATCPAT5 ALL
TTAA00 KNHC DDHMM CCB

BULLETIN
Hurricane Idalia Advisory Number 13...Corrected
NWS National Hurricane Center Miami FL AL102023
500 PM EDT Tue Aug 29 2023

Corrected Tropical Storm Warning area

...IDALIA NOW A CATEGORY 2 HURRICANE...
...LIFE-THREATENING STORM SURGE AND HURRICANE CONDITIONS EXPECTED ALONG PORTIONS OF THE GULF COAST OF FLORIDA TONIGHT AND WEDNESDAY...

SUMMARY OF 500 PM EDT...2100 UTC...INFORMATION

LOCATION...26.1N 84.8W
ABOUT 195 MI...310 KM SW OF TAMPA FLORIDA
ABOUT 300 MI...480 KM S OF TALLAHASSEE FLORIDA
MAXIMUM SUSTAINED WINDS...100 MPH...155 KM/H
PRESENT MOVEMENT...N OR 360 DEGREES AT 16 MPH...26 KM/H
MINIMUM CENTRAL PRESSURE...972 MB...28.71 INCHES

WATCHES AND WARNINGS

CHANGES WITH THIS ADVISORY:

A Hurricane Watch has been issued from the mouth of the St. Mary's River northward to Edisto Beach.

A Storm Surge Watch has been issued from Beaufort Inlet to Drum Inlet, North Carolina, as well as the Neuse and Pamlico Rivers.

A Tropical Storm Warning has been issued from South Santee River

Marine Advisory



Translate Forecast into Products

Tropical cyclone discussion (TCD)

Hurricane Idalia Discussion Number 13
NWS National Hurricane Center Miami FL AL102023
500 PM EDT Tue Aug 29 2023

The first stages of an eye have been taking shape in visible satellite imagery. The hurricane has a relatively small Central Dense Overcast and a prominent band of deep convection extending over the eastern semicircle, reaching across the Florida peninsula southward across western Cuba. An Air Force Reserve Hurricane Hunter aircraft just measured a peak 700-mb flight-level wind of 91 kt with the pressure falling to 972 mb. The initial intensity is therefore set at 85 kt.

Idalia is moving faster toward the north, or 360/14 kt, between a mid-level trough over the northwestern Gulf of Mexico and a subtropical ridge over the Greater Antilles. Idalia is expected to continue moving northward and turn north-northeastward as it approaches the Big Bend region of Florida during the next 12-24 hours. There is very little spread among the track guidance, and the NHC official forecast has been placed very close to the HCCA and TVCX consensus aids during the first 24 hours. This has resulted in a westward shift of about 20-25 n mi compared to the previous forecast, although it should be stressed that additional shifts to the track will be possible until the center reaches land.

After landfall, Idalia is expected to turn toward the northeast and then east, moving near or along the coast of Georgia and the Carolinas in 36-48 hours. Uncertainty in the track forecast is still quite large after 48 hours, with many of the global hurricane models turning Idalia southward, while some of the regional hurricane models still show the storm moving out to sea. As a result, the official track forecast continues to show slow motion on days 4 and 5.

The 12-hour intensity forecast shows a 100-kt major hurricane. It is imperative to realize that Idalia is expected to continue strengthening beyond that time, possibly close to the 110 kt shown in the previous forecast, before the center reaches land. Weakening is expected after landfall, but due to the system's expected fast motion, it is possible that Idalia could maintain hurricane intensity as it moves across southern Georgia and approaches the coasts of Georgia and South Carolina. After Idalia's center moves offshore over the western Atlantic, strong shear is likely to limit re-intensification, and the official forecast essentially flatlines the intensity on days 2-5.



Changes in the forecast

Uncertainty

Forecast reasoning

Key messages



Translate Forecast into Products

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FKNT23 KNHC 280853
TCANT3

HURRICANE FRANKLIN ICAO ADVISORY NUMBER 31
NWS NATIONAL HURRICANE CENTER MIAMI FL AL082023
0900 UTC MON AUG 28 2023

TC ADVISORY	
DTG:	20230828/0900Z
TCAC:	KNHC
TC:	FRANKLIN
ADVISORY NR:	2023/031
OBS PSN:	28/0900Z N2712 W07048
MOV:	NNW 07KT
INTST CHANGE:	INTSF
C:	0956HPA
MAX WIND:	100KT
FCST PSN +3 HR:	28/1200Z N2734 W07053
FCST MAX WIND +3 HR:	105KT
FCST PSN +9 HR:	28/1800Z N2818 W07106
FCST MAX WIND +9 HR:	110KT
FCST PSN +15 HR:	29/0000Z N2903 W07103
FCST MAX WIND +15 HR:	115KT
FCST PSN +21 HR:	29/0600Z N2948 W07100
FCST MAX WIND +21 HR:	115KT
FCST PSN +27 HR:	29/1200Z N3042 W07036
FCST MAX WIND +27 HR:	110KT
RMK:	THE FORECAST POSITION INFORMATION IN THIS PRODUCT IS INTERPOLATED FROM OFFICIAL FORECAST DATA VALID AT 0000... 0600...1200...AND 1800Z.
NXT MSG:	20230828/1500Z

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ICAO Advisory

Automatically
interpolated based on our
deterministic forecast

Key Messaging



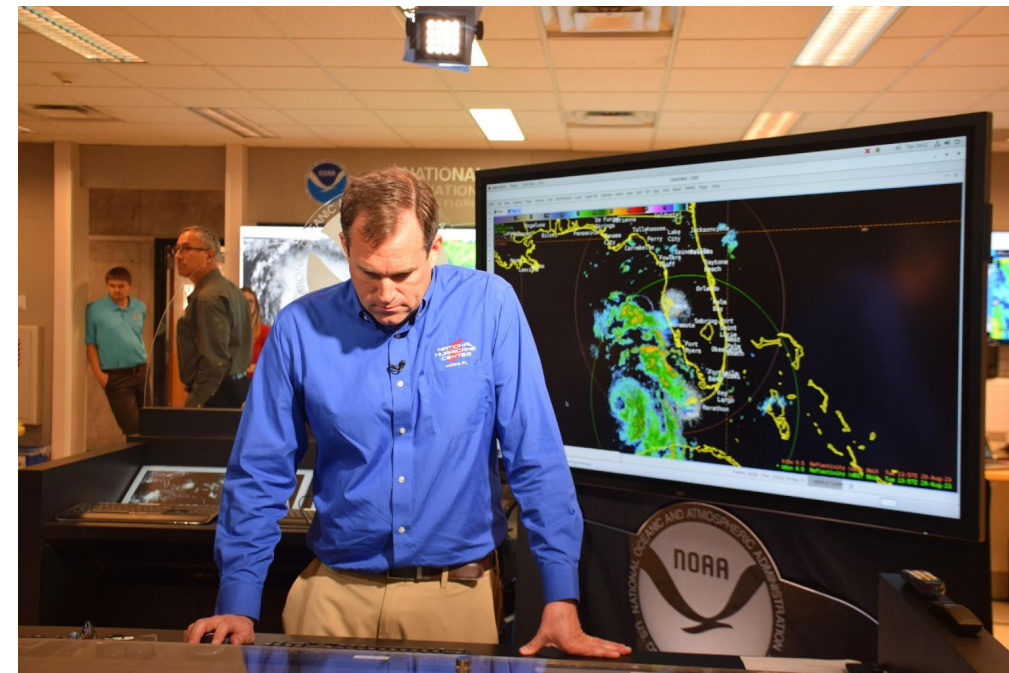
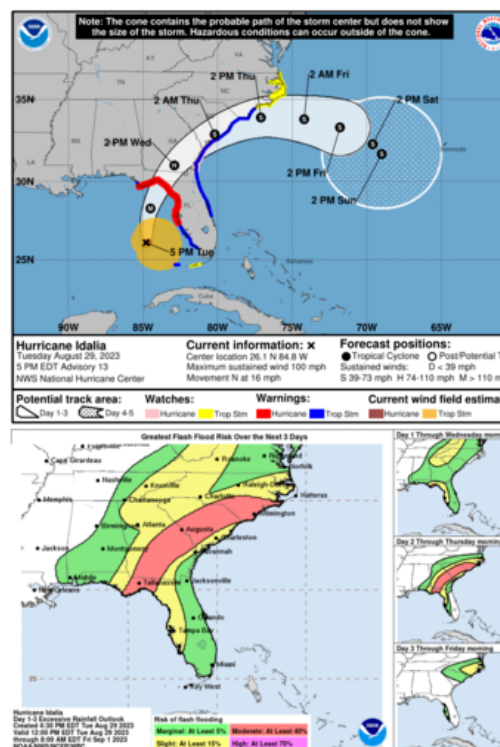
Key Messages for Hurricane Idalia Advisory 13: 5:00 PM EDT Tue Aug 29, 2023



1. Catastrophic impacts from storm surge inundation of 10 to 15 feet above ground level and destructive waves are expected somewhere between Aucilla River and Yankeetown, Florida. Life-threatening storm surge inundation is likely elsewhere along portions of the Florida Gulf Coast where a Storm Surge Warning is in effect. Residents in these areas should follow any advice given by local officials.

2. There is the potential for destructive life-threatening winds where the core of Idalia moves onshore in the Big Bend region of Florida, with hurricane conditions expected elsewhere in portions of the Hurricane Warning area along the Florida Gulf Coast. Strong winds will also spread inland across portions of northern Florida and southern Georgia near the track of the center of Idalia where Hurricane Warnings are in effect. Residents in these areas should be prepared for long-duration power outages. Damaging hurricane-force winds are possible in portions of eastern Georgia and southeastern South Carolina where Hurricane Watches are in effect.

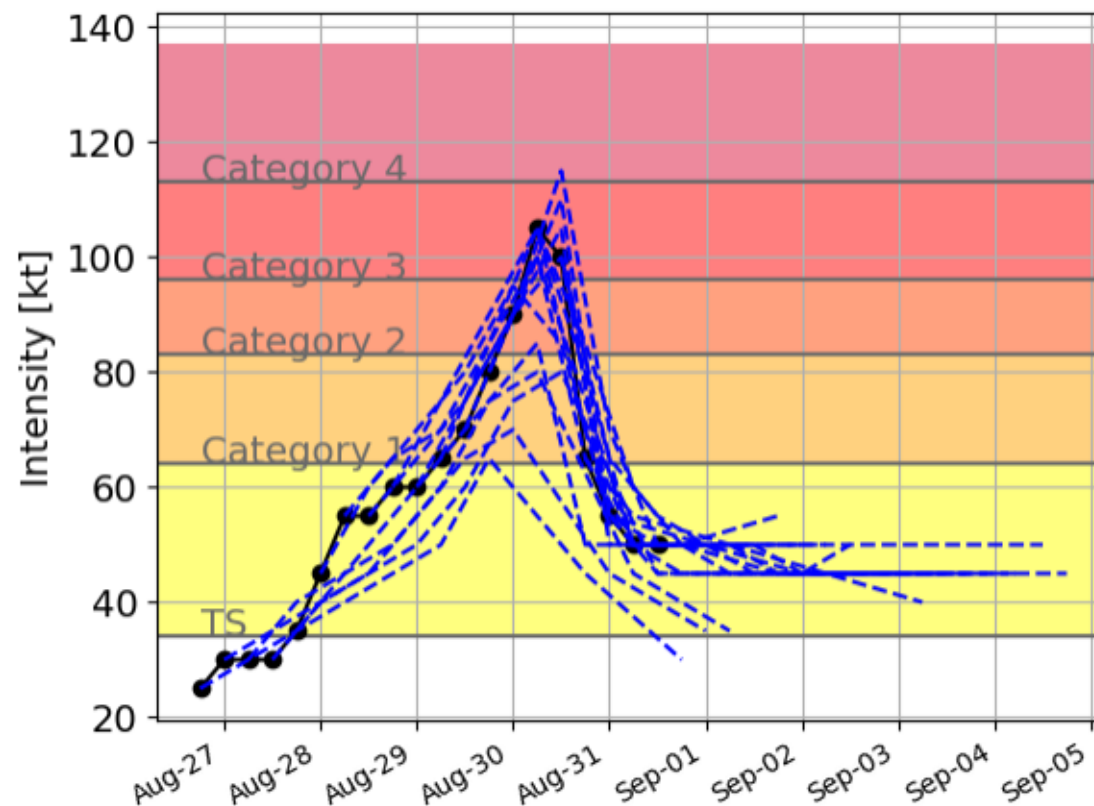
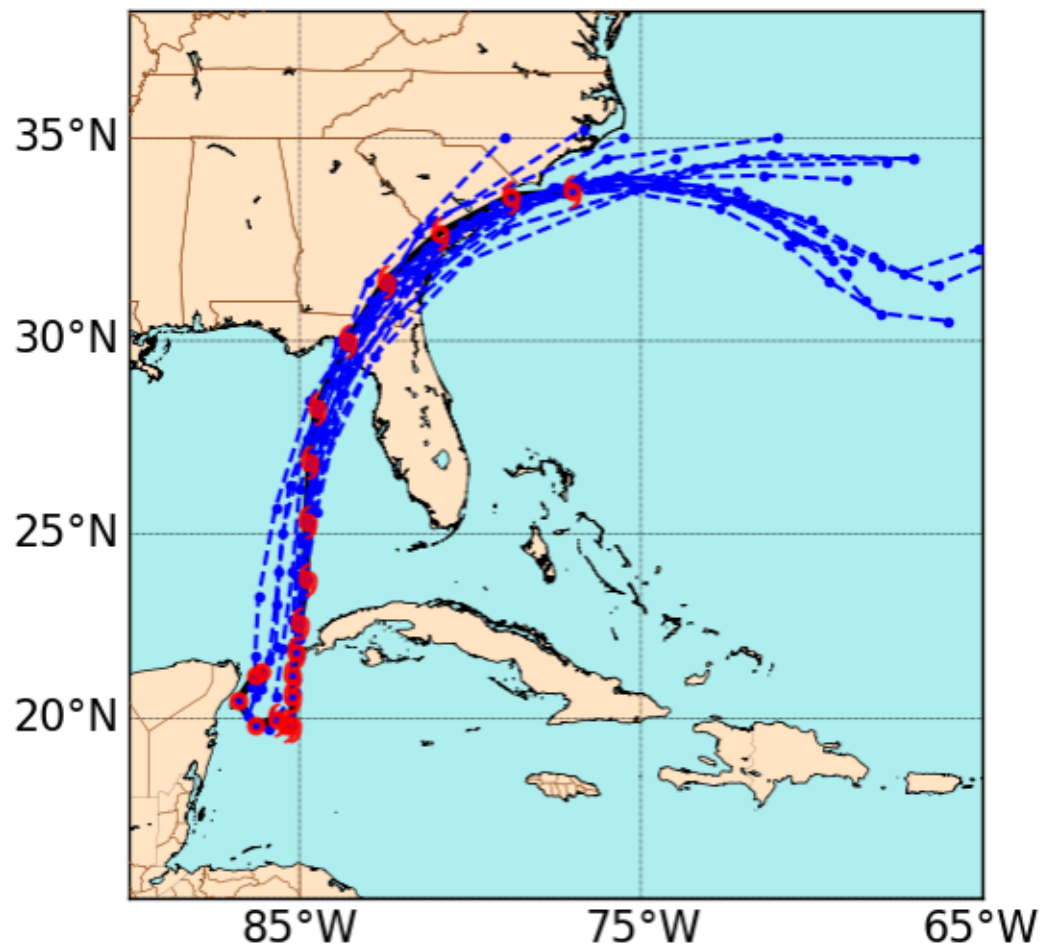
3. Areas of flash, urban, and moderate river flooding, with locally considerable impacts, are expected across the Florida Big Bend, central Georgia and South Carolina, through eastern North Carolina later tonight into Thursday.



For more information go to hurricanes.gov



Idalia Track and Intensity Forecast

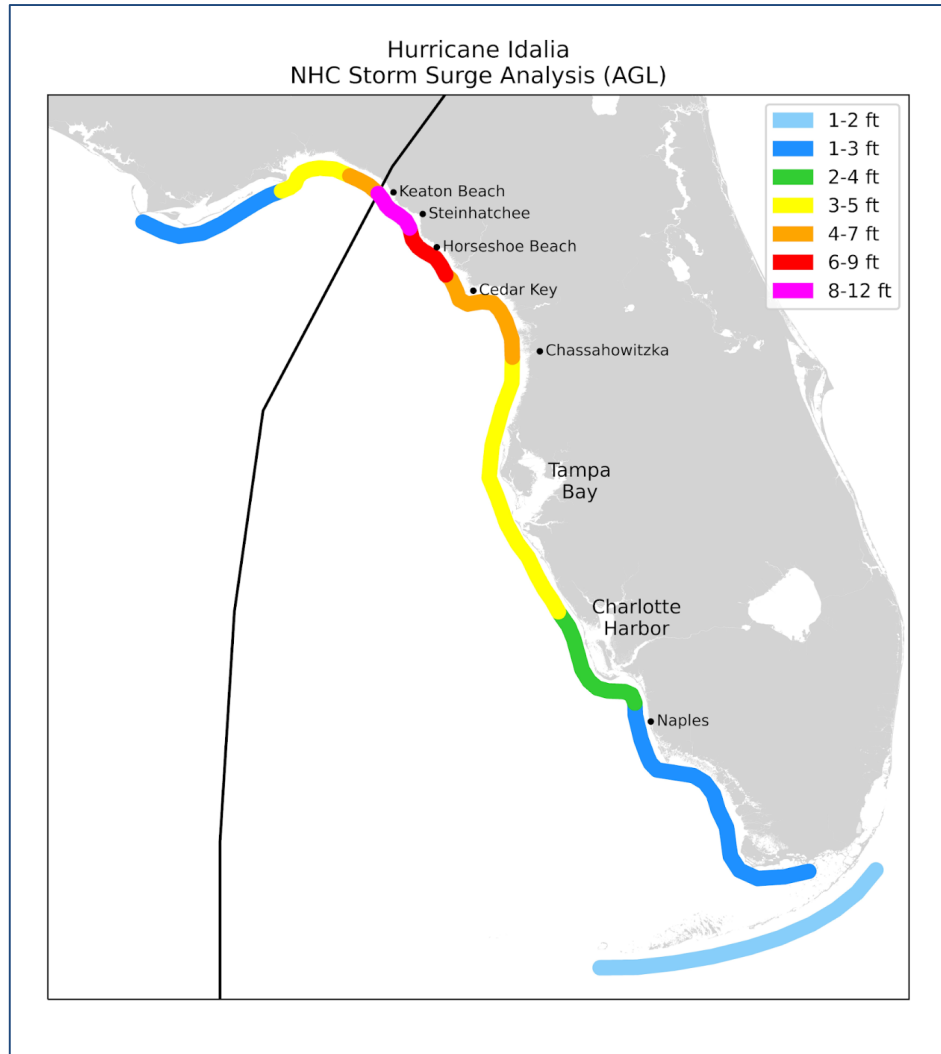


— OFCL

○ Working Best



Idalia – Preliminary Storm Surge Analysis



Preliminary analysis of storm surge inundation from Idalia based on observations and a model simulated hindcast

No Storm Surge Fatalities!



Thank you!

Questions?

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