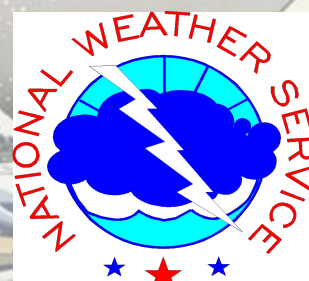


Overview of National Hurricane Center/ Tropical Analysis and Forecast Branch (TAFB) Marine Products and Services

Jeff Lewitsky
Jeffrey.Lewitsky@noaa.gov
NHC/TAFB Senior Meteorologist

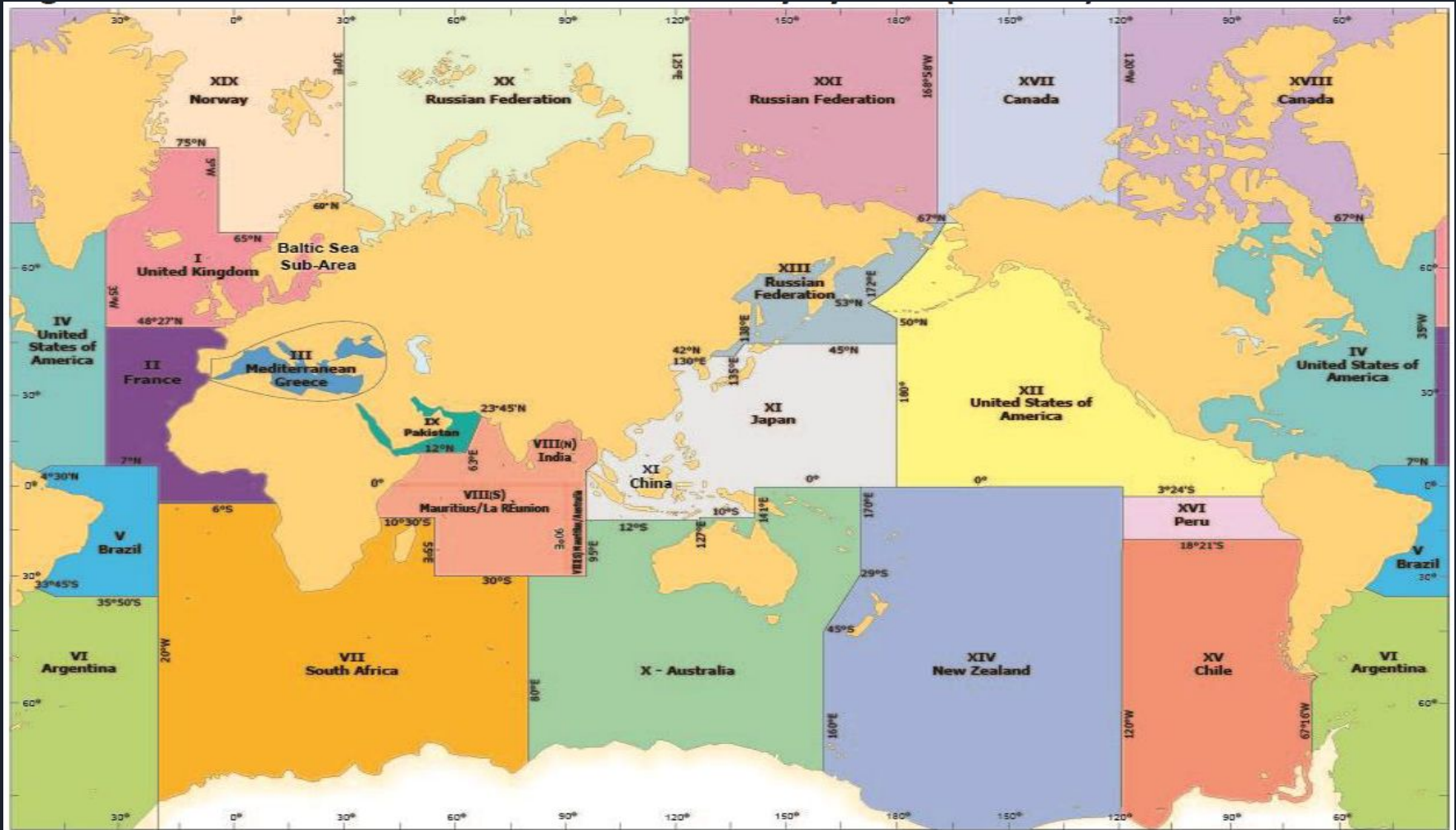
To provide meteorological analysis, forecasts and warnings over the tropical and subtropical oceans for the protection of life and property



Our Customers: The Mariners and the Mets

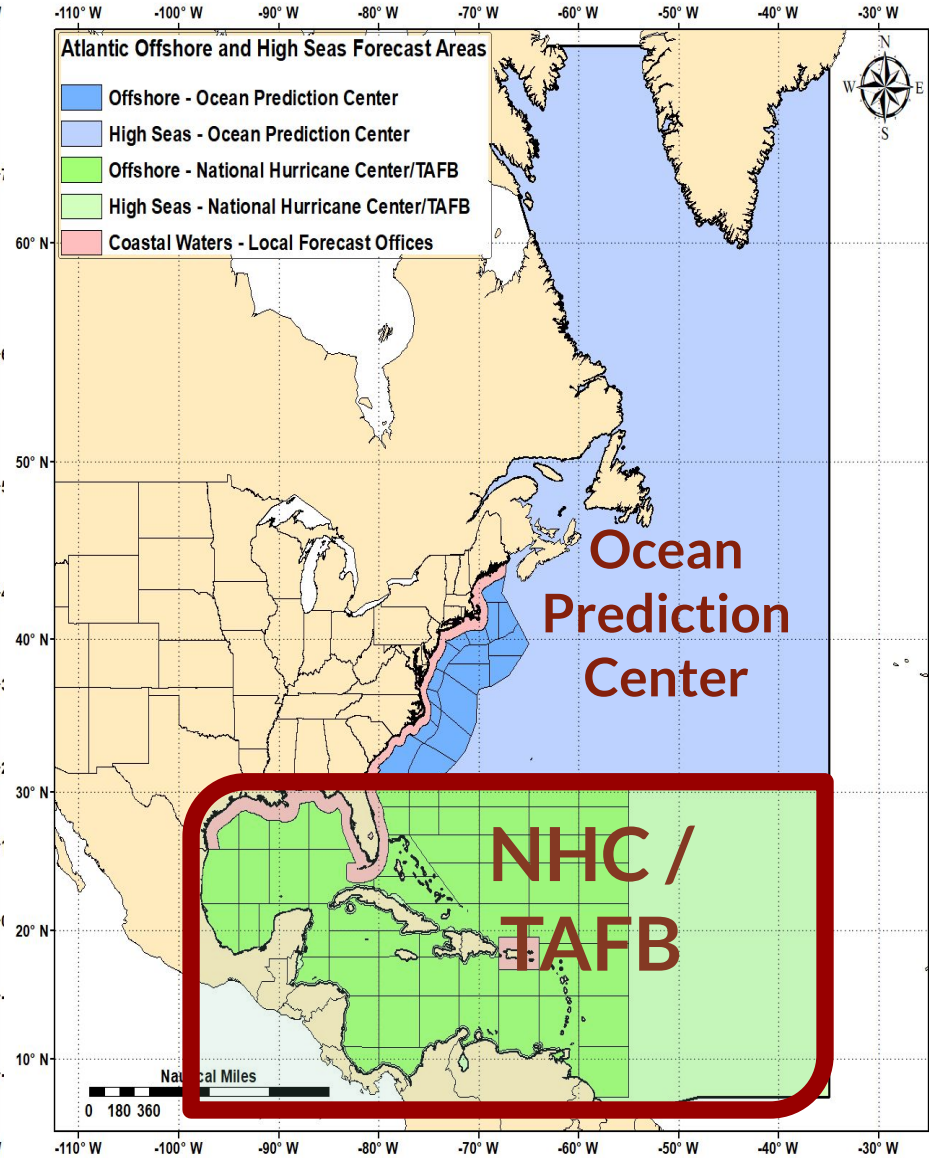
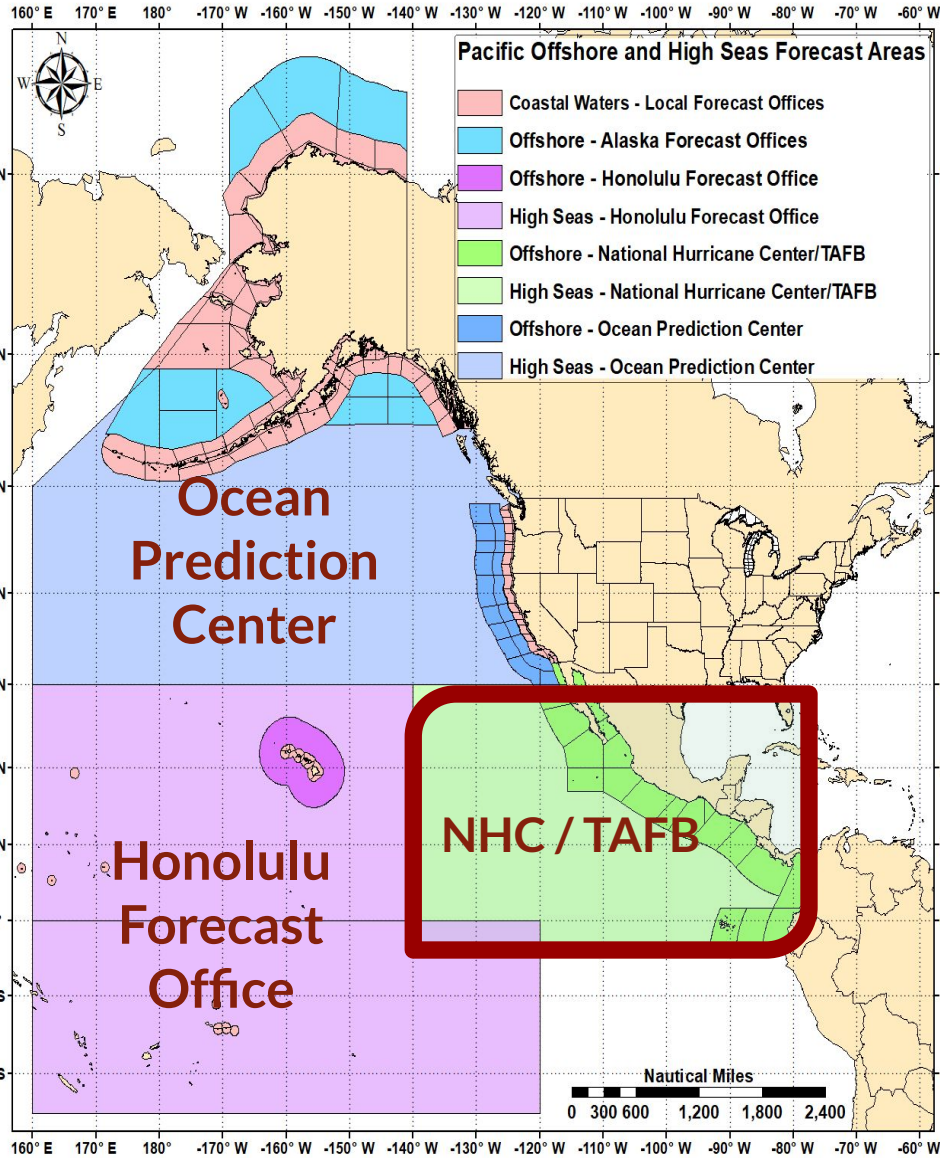


Global High Seas Forecasts - International Maritime Organization

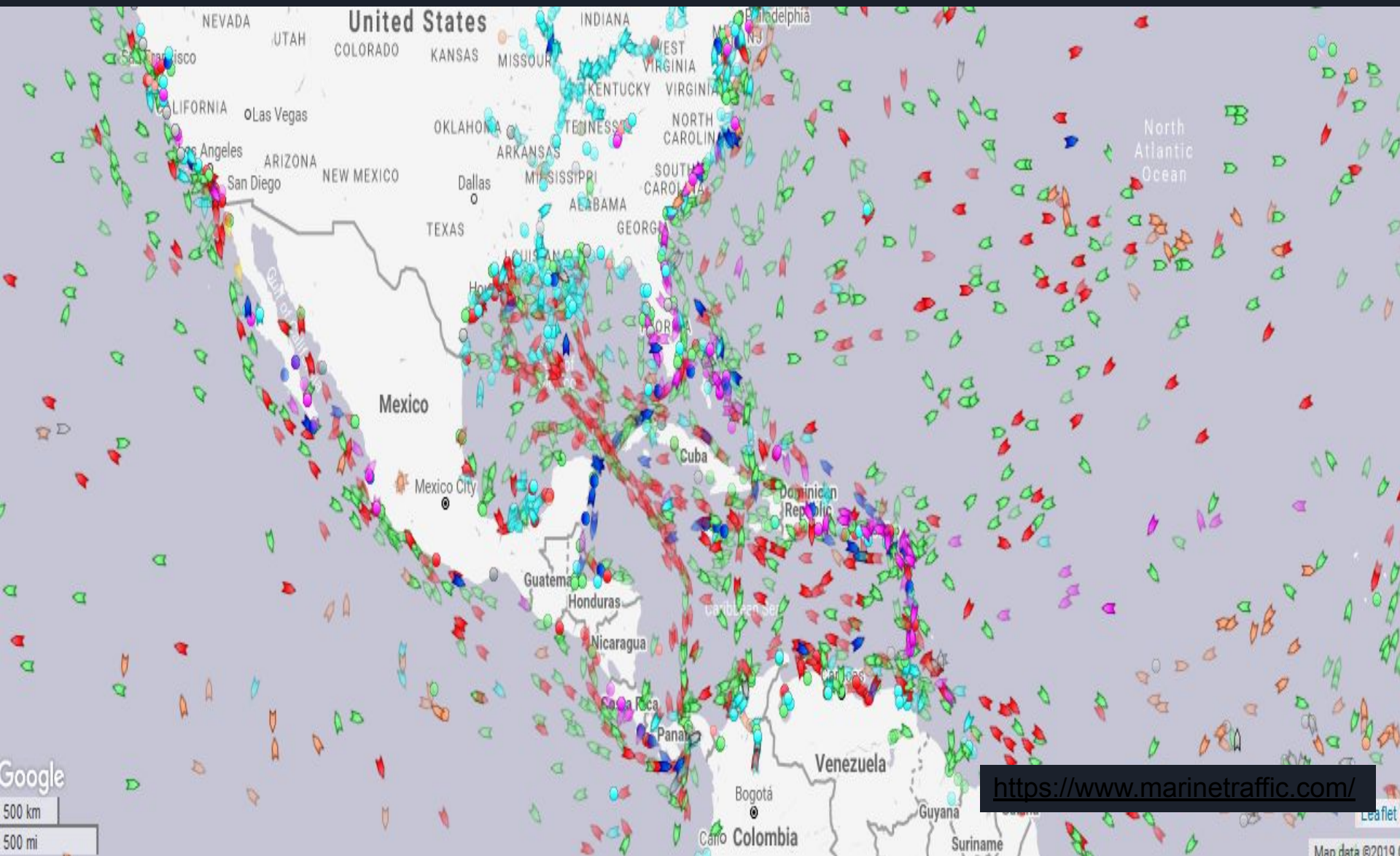




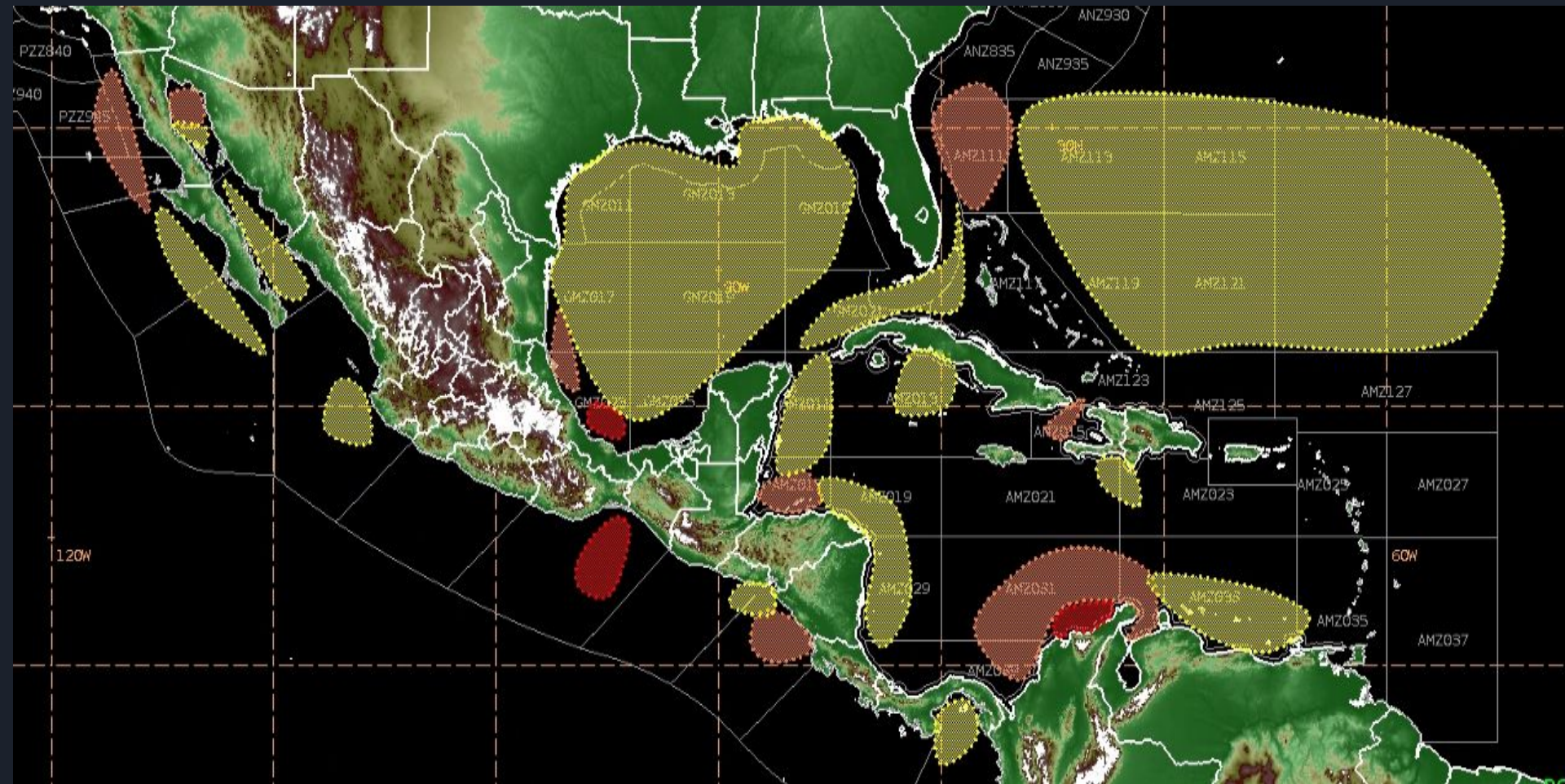
NHC/TAFB - Areas of Responsibility



Ships over the Open Ocean

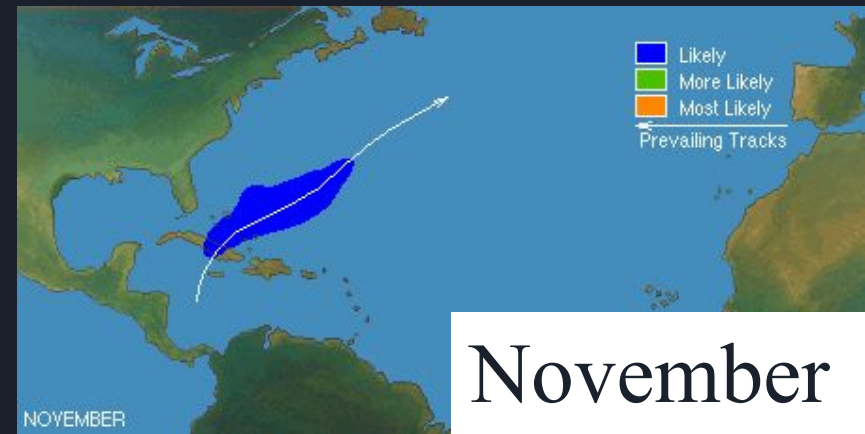
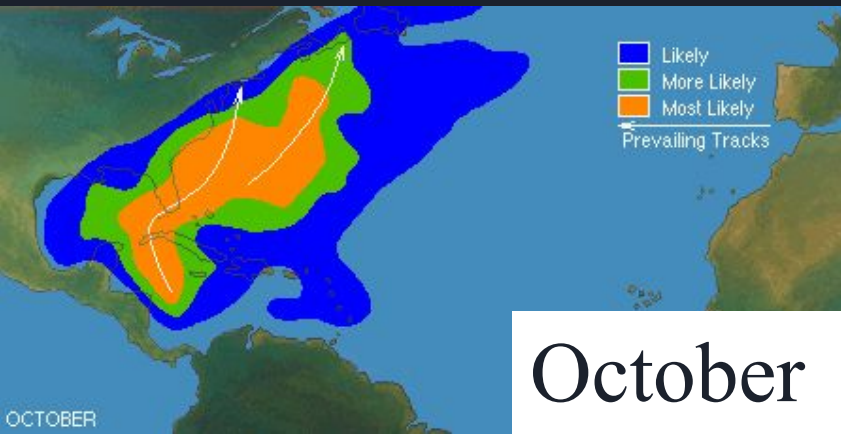
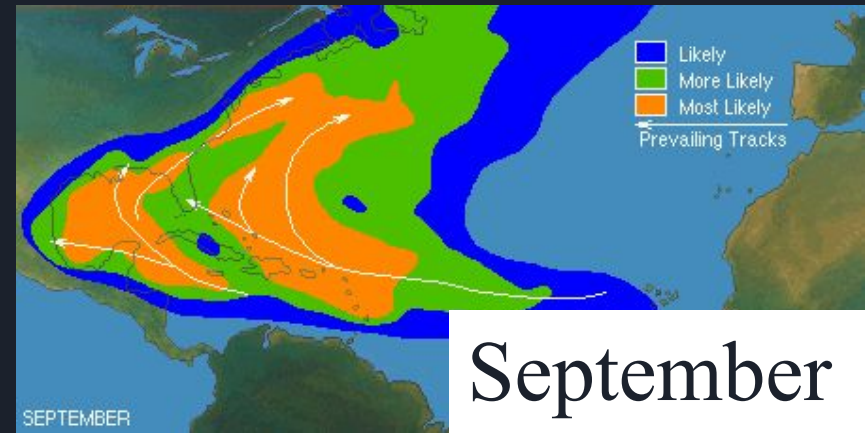
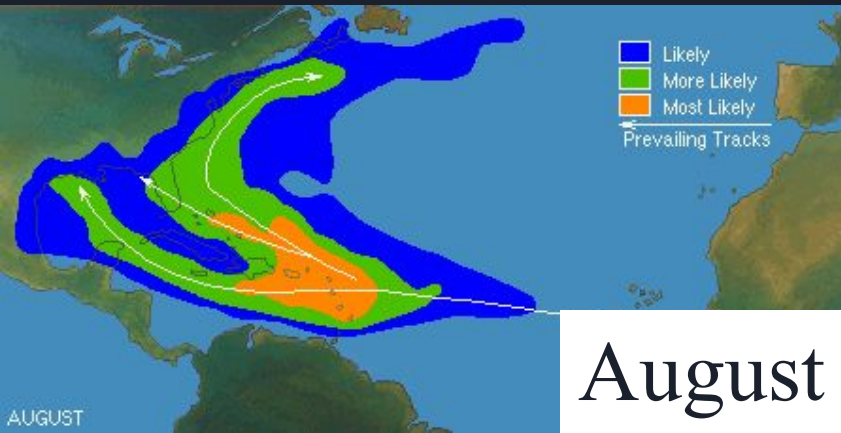
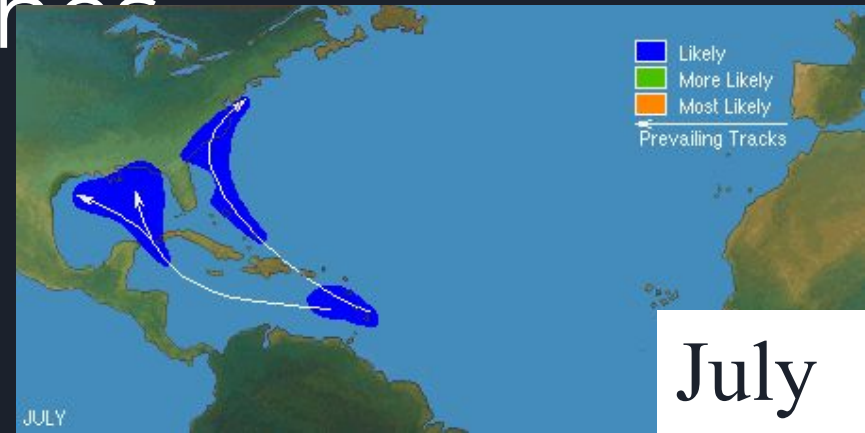
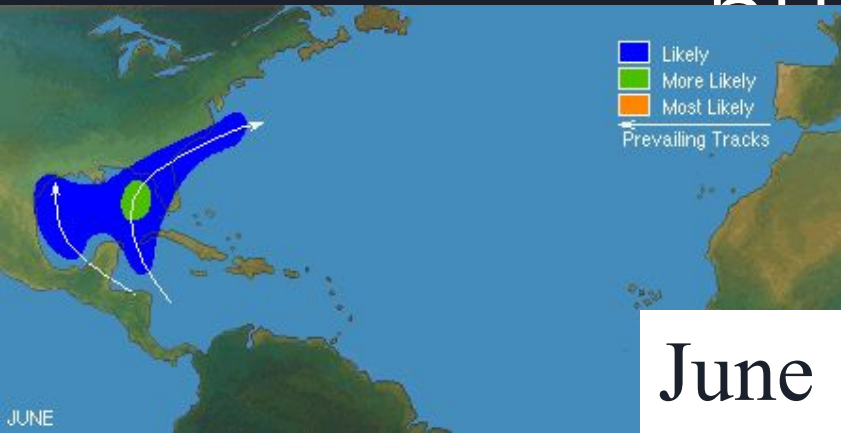


Typical areas for gale conditions

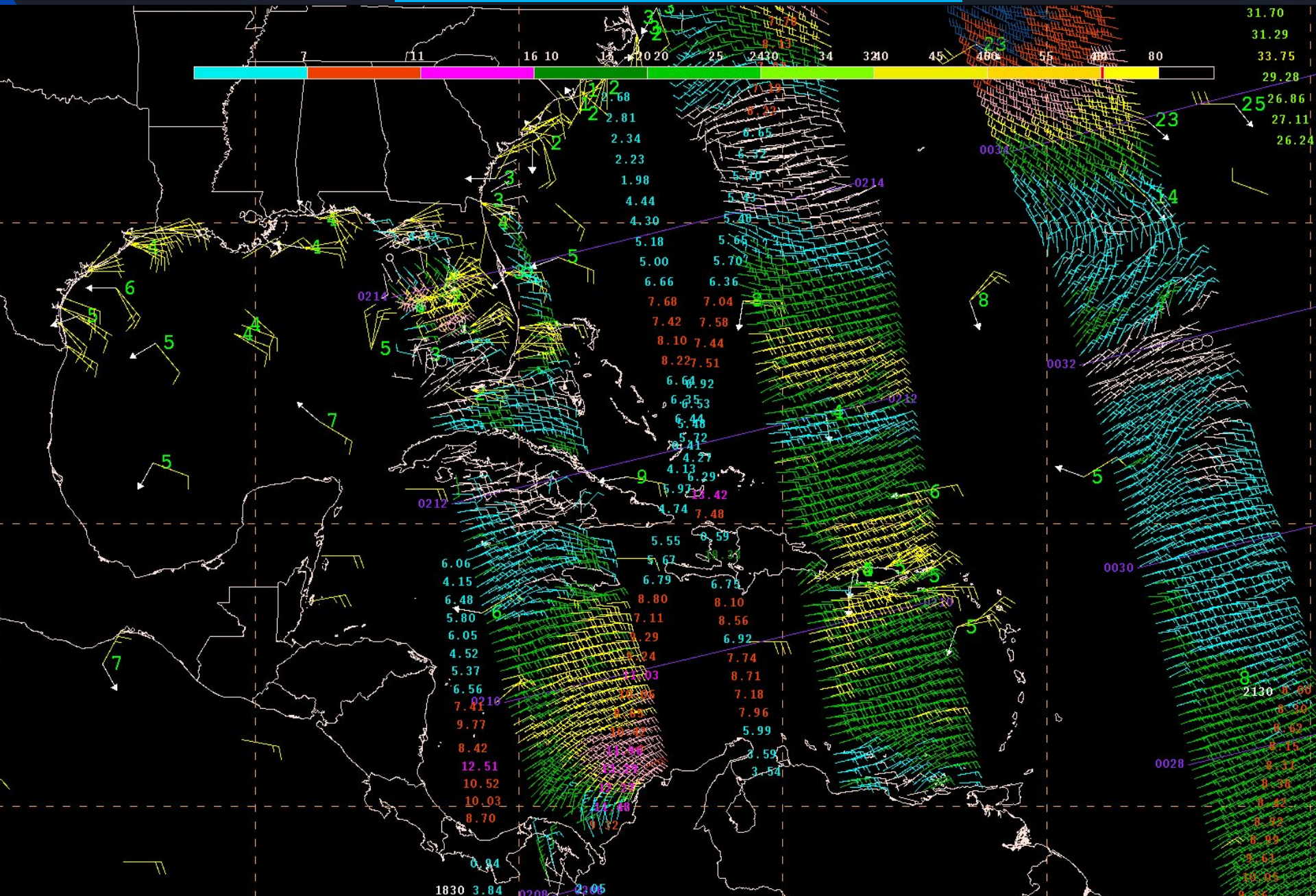


Note that the main areas for gales are near gaps and coastal terrain
- this is not a coincidence!

Typical areas for tropical storms and hurricanes



Tools - Observations





Voluntary Observing Ship (VOS) Program

A worldwide program of the World Meteorological Organization (WMO) to recruit ships & platforms to voluntarily observe and report marine meteorological and oceanographic conditions to ensure *Safety Of Life At Sea (SOLAS)*, and reduce commercial loss.



23 Countries Currently Participate

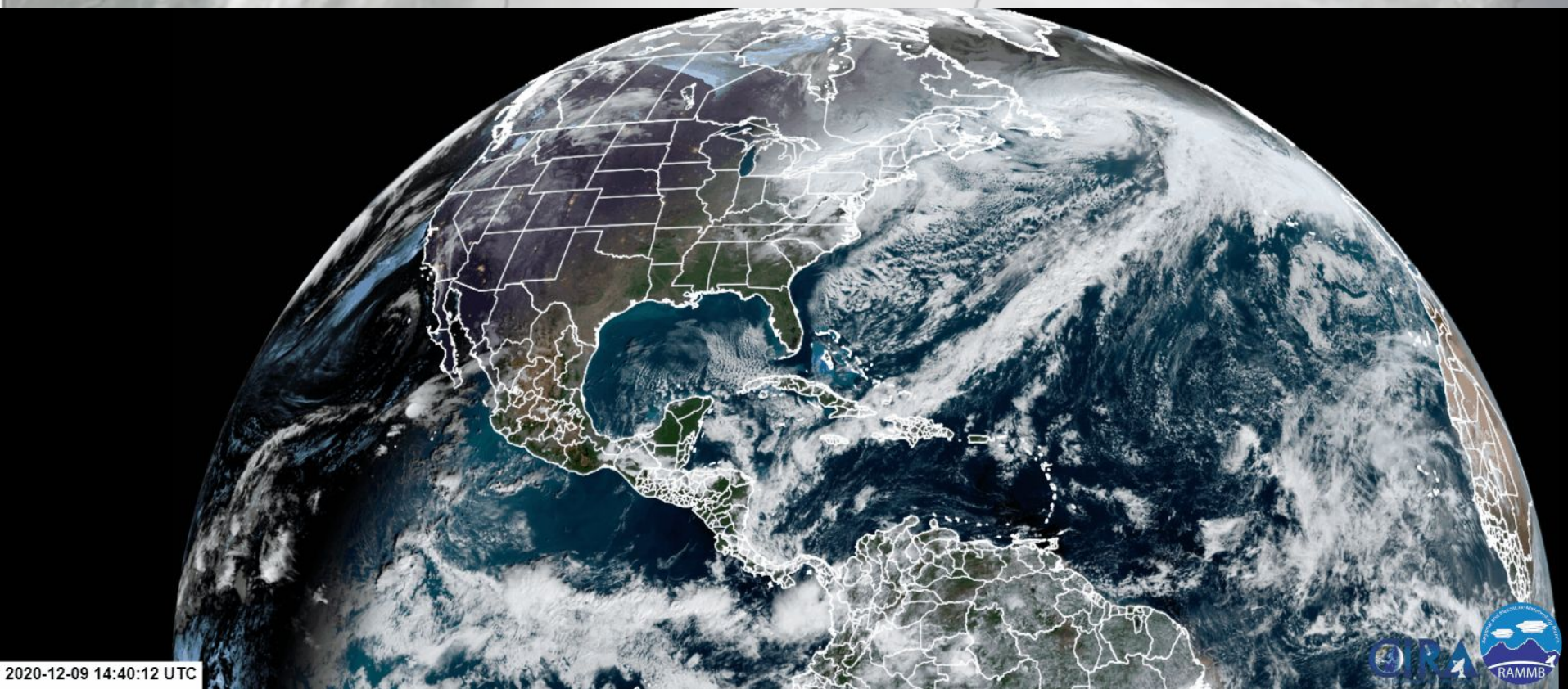
* There is only 1 Ship Observation For every 1000 Land Based Observations



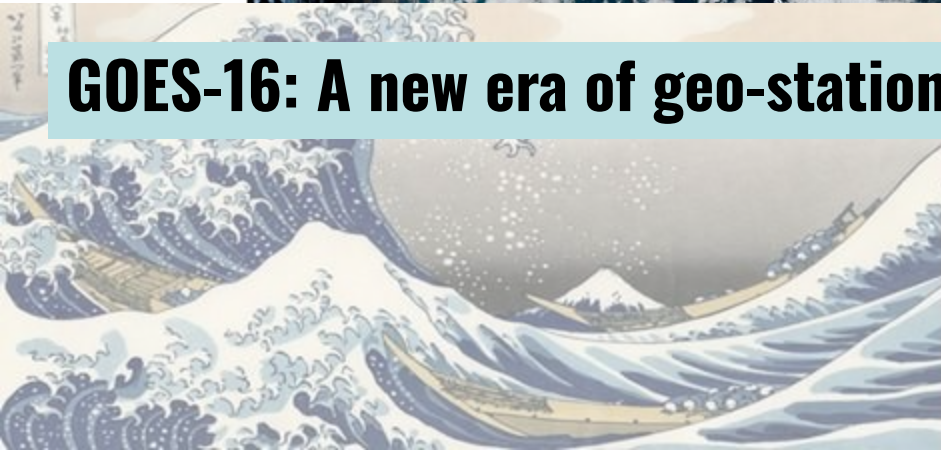
<https://www.vos.noaa.gov/>



Tools - Observations



GOES-16: A new era of geo-stationary satellite imagery and data

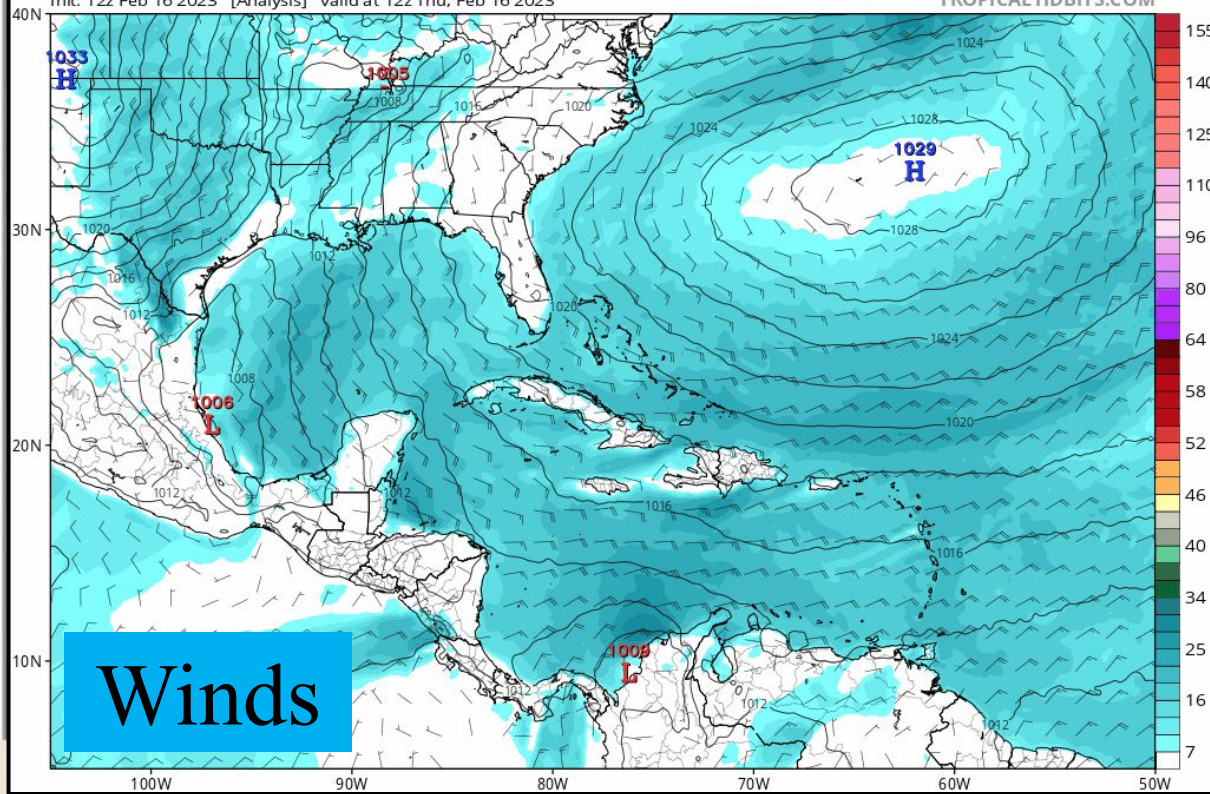


Tools - Models

GFS MSLP (mb) & 10m Wind Speed (kt)

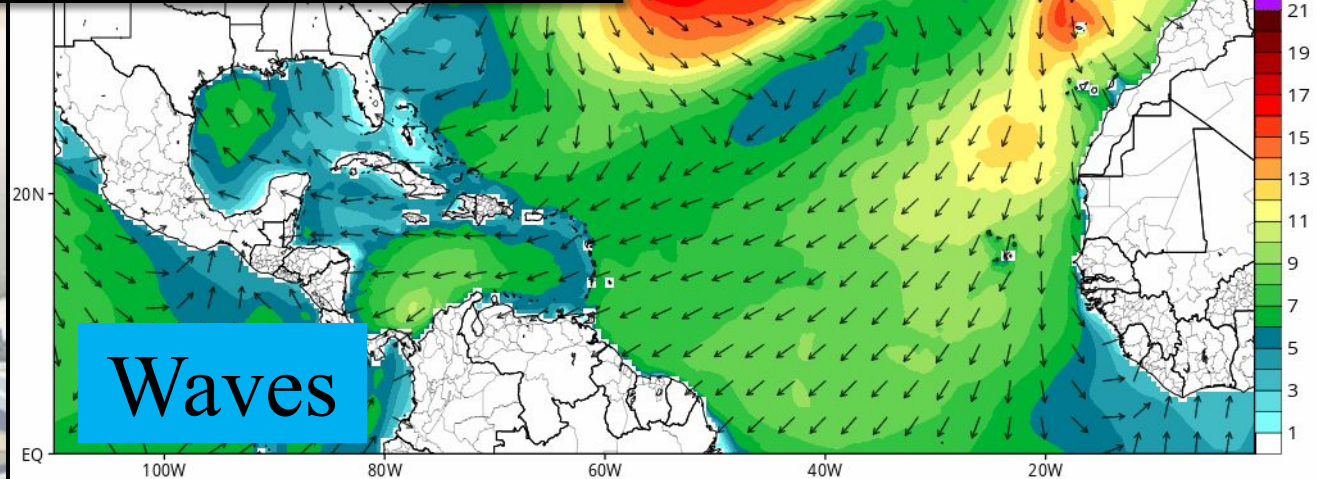
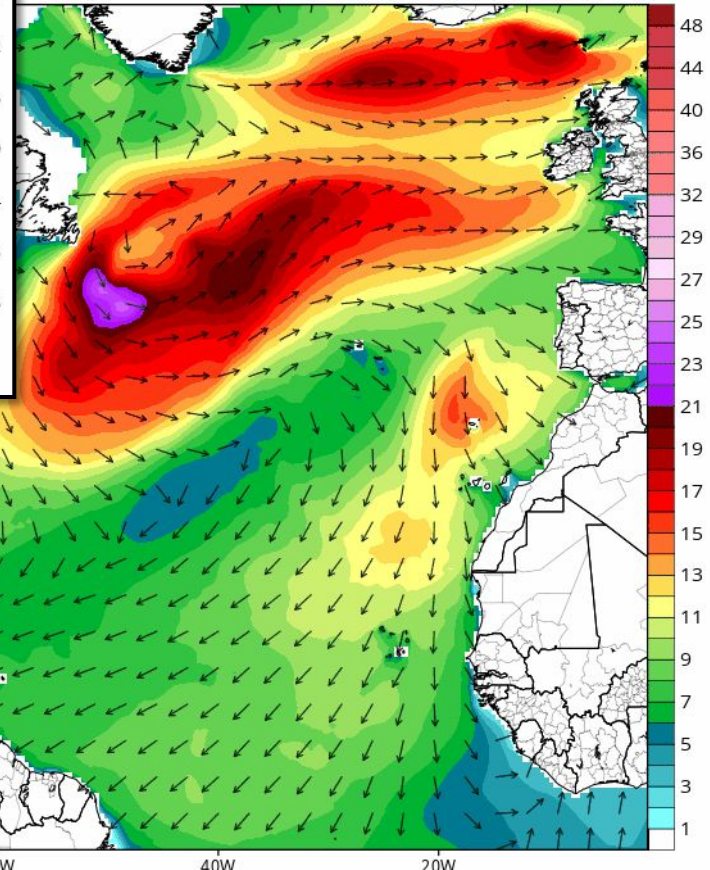
Init: 12z Feb 16 2023 [Analysis] valid at 12z Thu, Feb 16 2023

TROPICALTIDBITS.COM

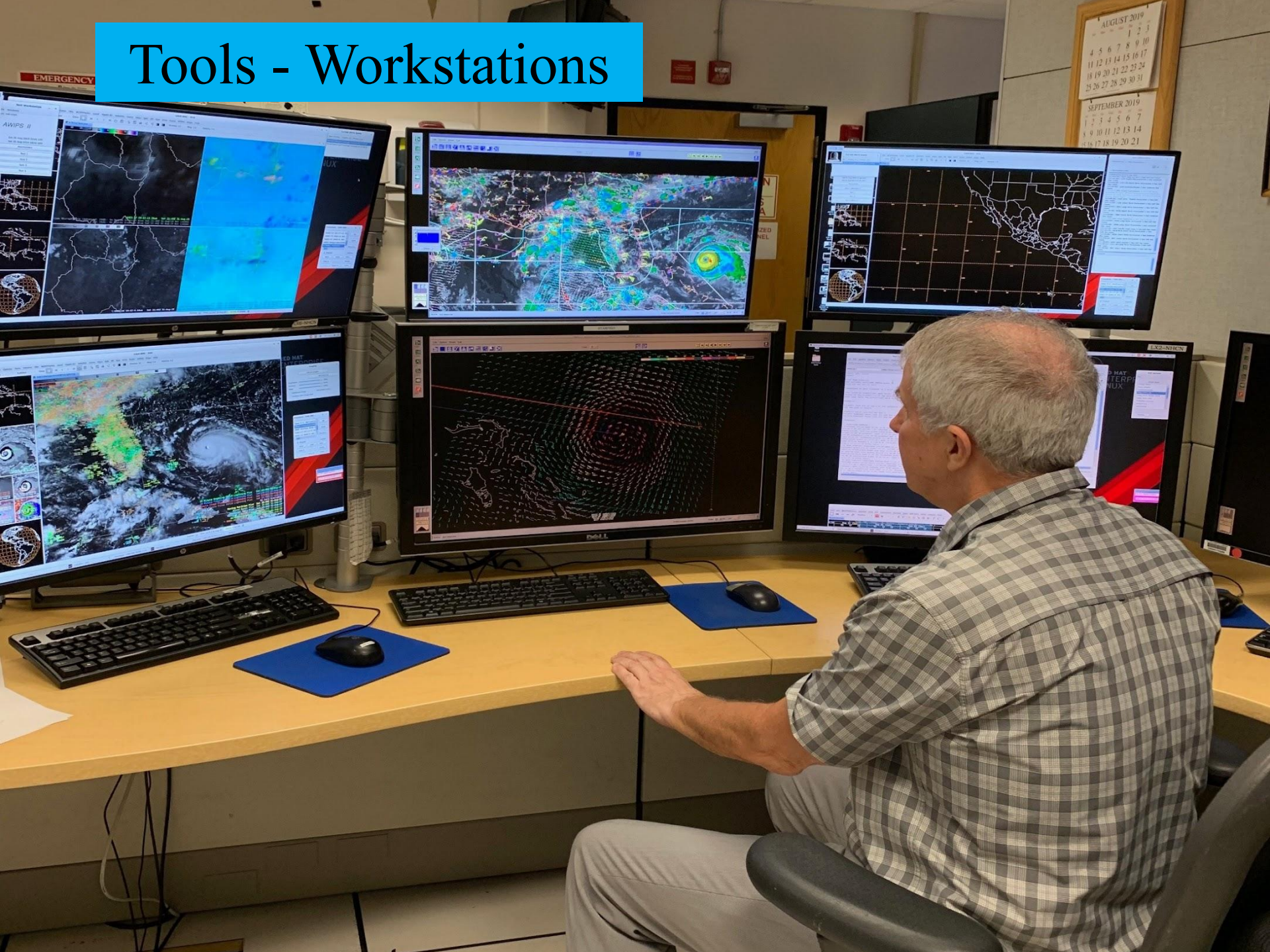


ed Wind-Waves and Swells

TROPICALTIDBITS.COM



Tools - Workstations



TAFB National Digital Forecast Database

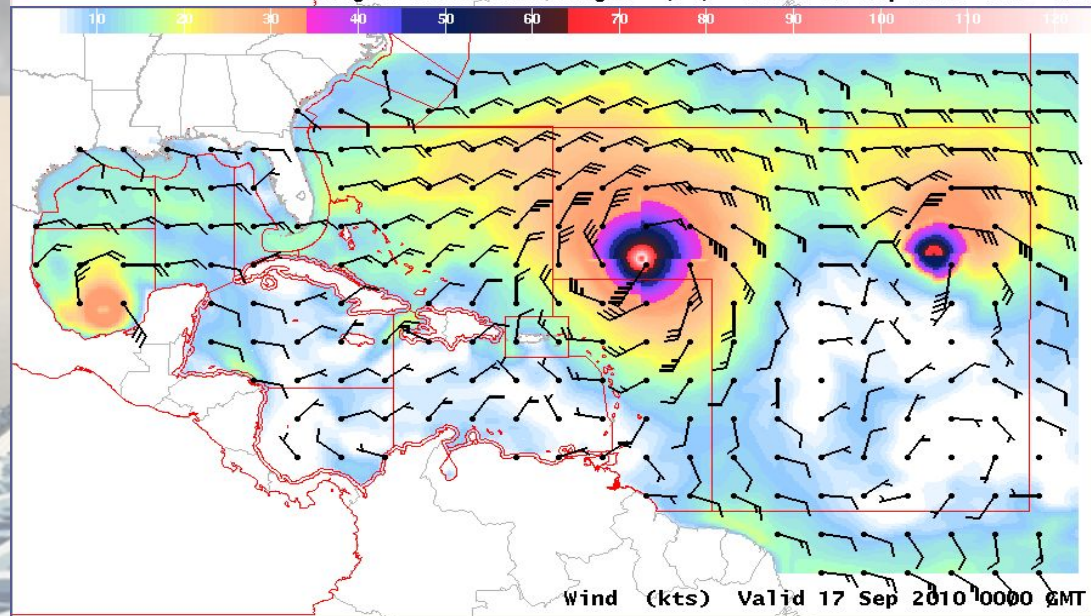
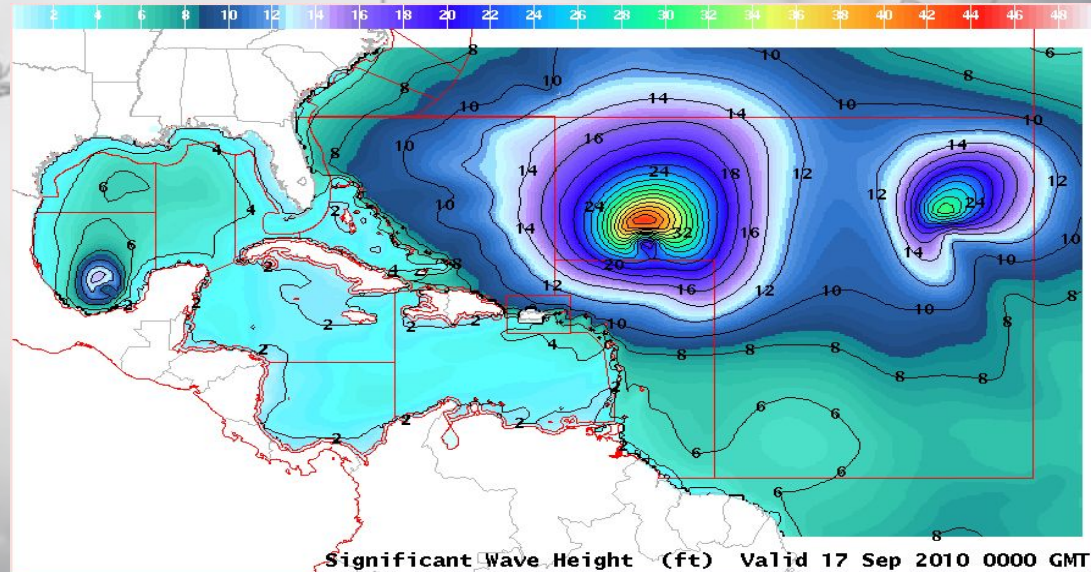
Gridded Marine Forecasts

Spatial/Temporal resolution

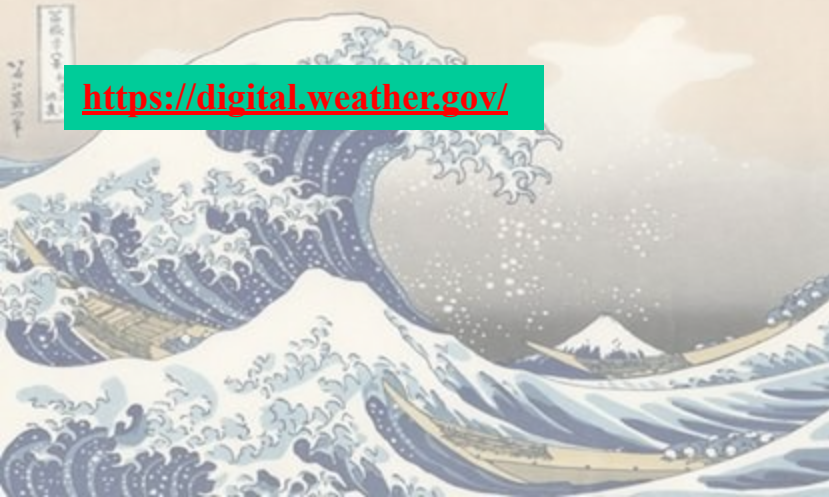
- 10 KM
- 6 Hourly out to 144 hr
(3 Hourly to 72 hr)

Parameters

- 10-M Wind/Gusts
- Significant Wave Height
- Hazards



<https://digital.weather.gov/>



NHC/TAFB Wind and Wave Forecasts

High Seas and Offshores Text Forecasts

HIGH SEAS FORECAST
NWS NATIONAL HURRICANE CENTER
1030 UTC FRI OCT 02 2015

SUPERSEDED BY NEXT ISSUANCE IN 6 HOURS

SEAS GIVEN AS SIGNIFICANT WAVE HEIGHT...WHICH IS THE AVERAGE HEIGHT OF THE HIGHEST 1/3 OF THE WAVES. INDIVIDUAL WAVES MAY BE MORE THAN TWICE THE SIGNIFICANT WAVE HEIGHT.

PAN PAN

ATLANTIC FROM 07N TO 31N W OF 35W INCLUDING CARIBBEAN SEA AND GULF OF MEXICO.

SYNOPSIS VALID 0600 UTC FRI OCT 02.

24 HOUR FORECAST VALID 0600 UTC SAT OCT 03.

48 HOUR FORECAST VALID 0600 UTC SUN OCT 04.

.WARNINGS.

...HURRICANE WARNING...

.HURRICANE JOAQUIN NEAR 23.3N 74.7W 935 MB AT 0900 UTC OCT 02 MOVING NW OR 315 DEG AT 3 KT. MAXIMUM SUSTAINED WINDS 115 KT GUSTS 140 KT. TROPICAL STORM FORCE WINDS WITHIN 160 NM W SEMICIRCLE...140 NM NE QUADRANT AND 180 NM SE QUADRANT. SEAS 12 FT OR GREATER WITHIN 400 NM NE QUADRANT...150 NM SE QUADRANT...120 NM SW QUADRANT...AND 300 NM NW QUADRANT WITH SEAS TO 39 FT. ELSEWHERE S OF 28N BETWEEN 70W AND 78W WINDS 20 TO 33 KT. SEAS 9 TO 12 FT. N OF 28N BETWEEN 70W AND 75W E WINDS 20 TO 25 KT SEAS 8 TO 10 FT. REMAINDER OF AREA N OF 21N BETWEEN 65W AND 78W AND OUTSIDE OF THE BAHAMAS WINDS 20 KT OR LESS. SEAS 8 TO 11 FT IN MIXED SWELL.

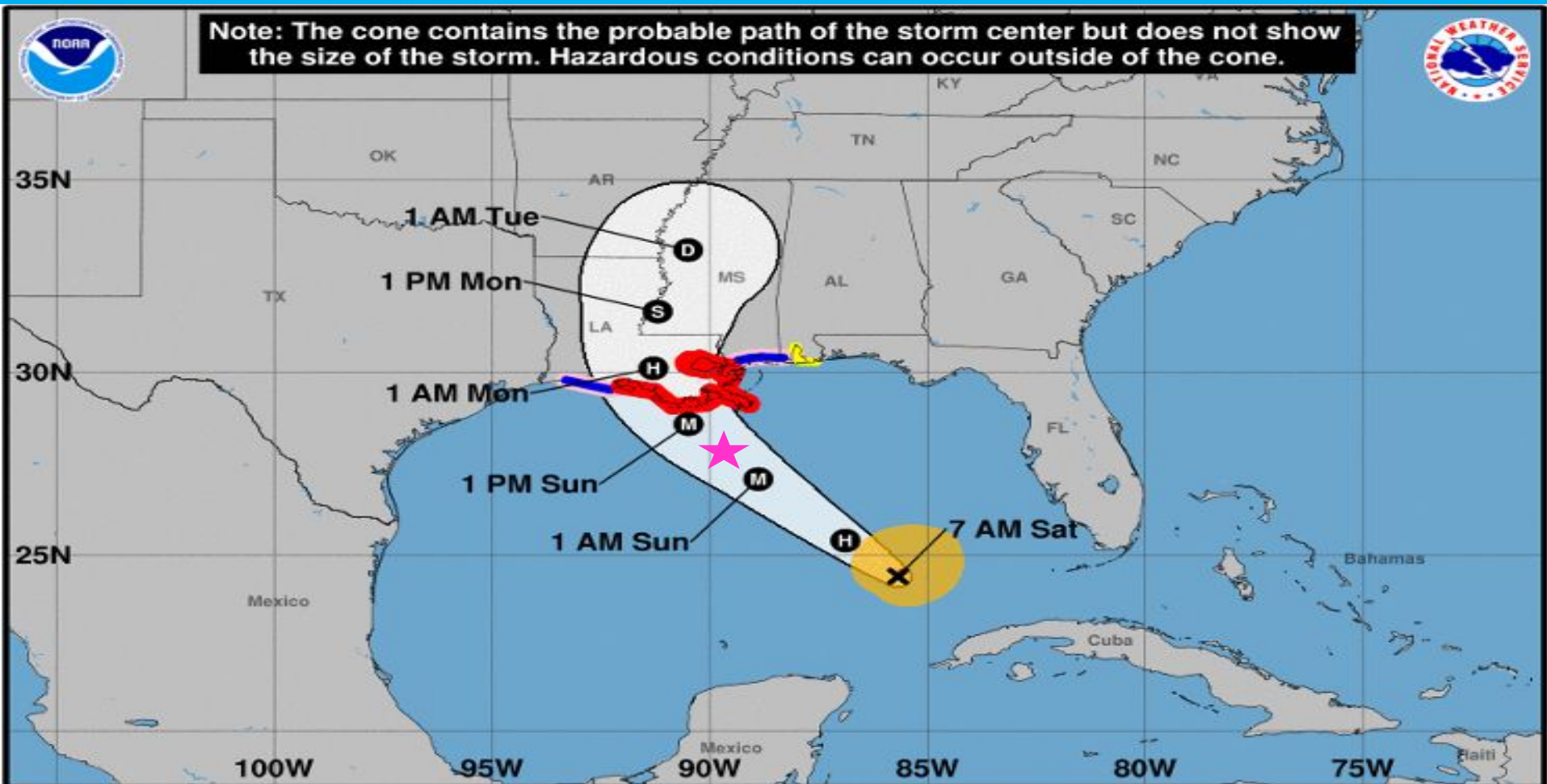
Graphics

24HR WIND (KT) / WAVE (FT) FORECAST
ISSUED: 17:27 UTC OCT 3 2015
VALID: 12 UTC OCT 4 2015
FCSTR: NELSON

Grids

Significant Wave Height (ft) Valid 17 Sep 2010 0000 GMT

Tools – Incorporating NHC’s Tropical Storm/Hurricane Forecast



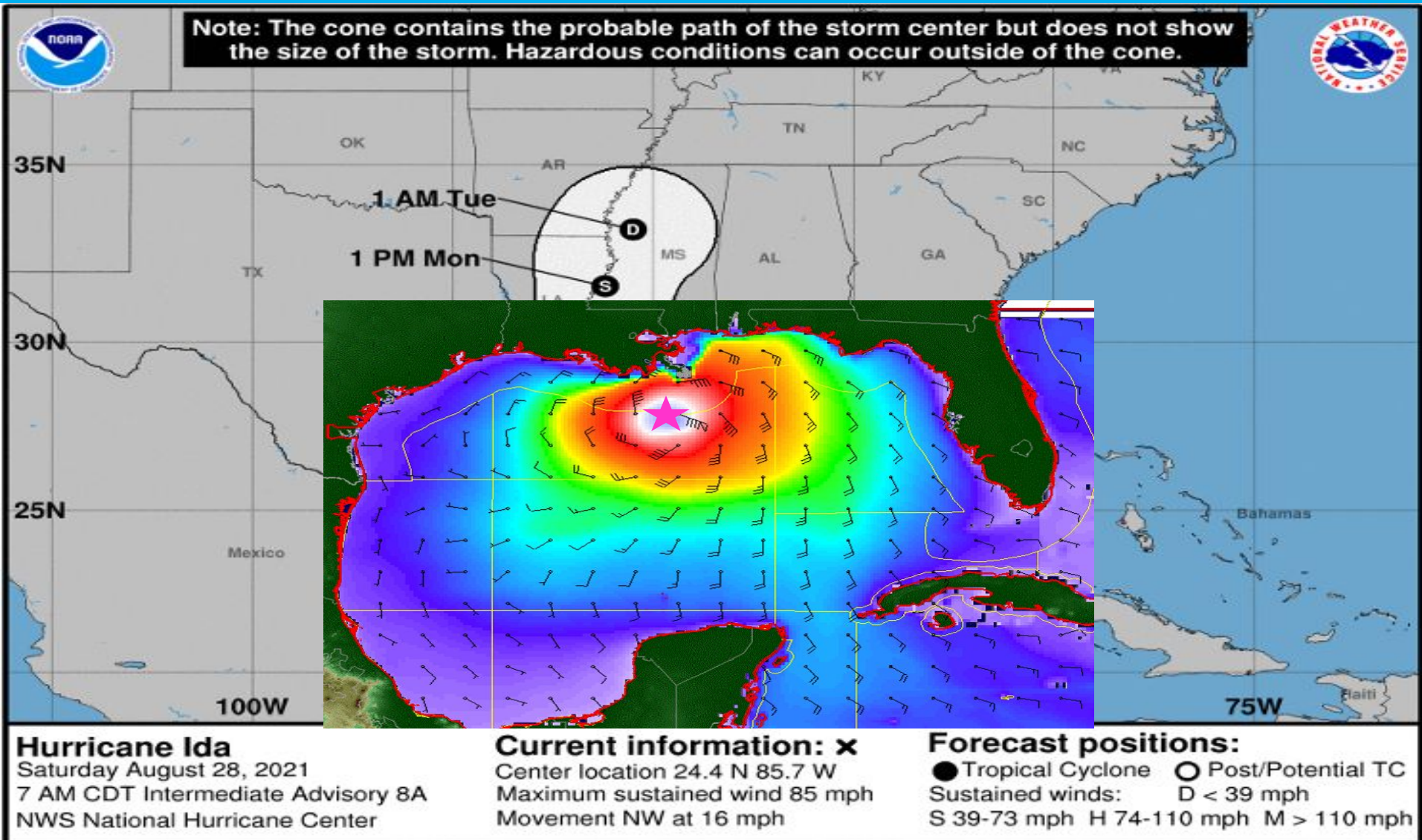
Hurricane Ida
 Saturday August 28, 2021
 7 AM CDT Intermediate Advisory 8A
 NWS National Hurricane Center

Current information: X
 Center location 24.4 N 85.7 W
 Maximum sustained wind 85 mph
 Movement NW at 16 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area: Day 1-3 (white outline), Day 4-5 (dotted outline)
Watches: Hurricane (pink), Trop Stm (yellow)
Warnings: Hurricane (red), Trop Stm (blue)
Current wind extent: Hurricane (brown), Trop Stm (yellow)

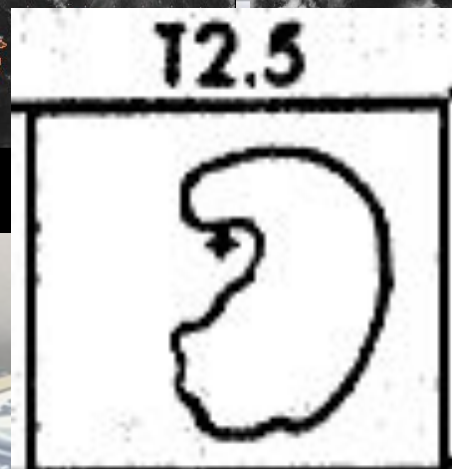
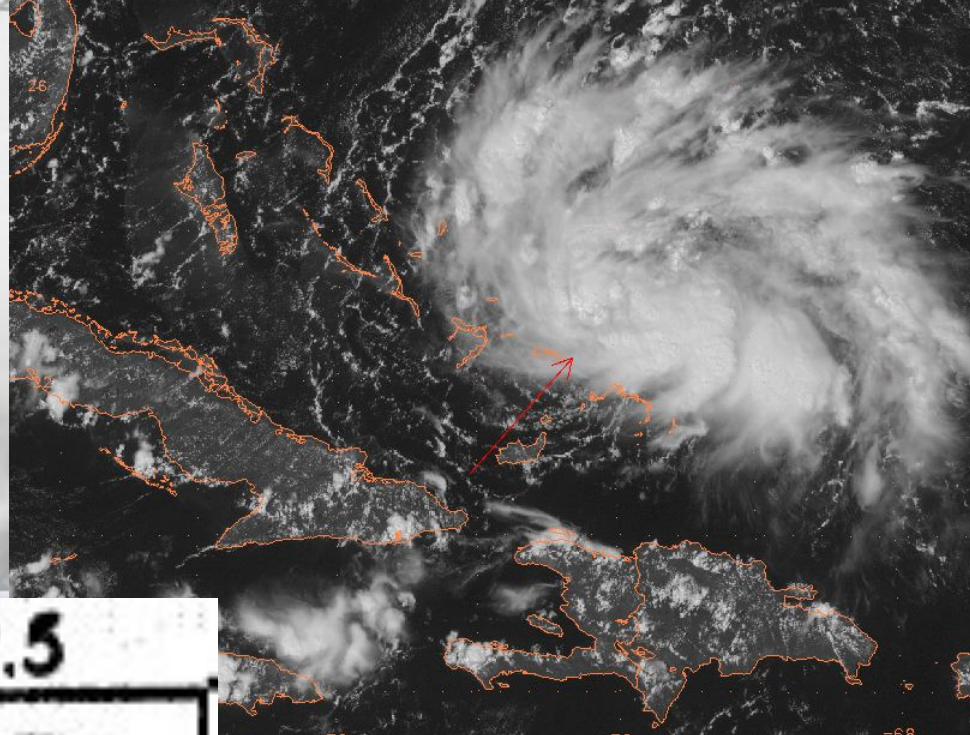
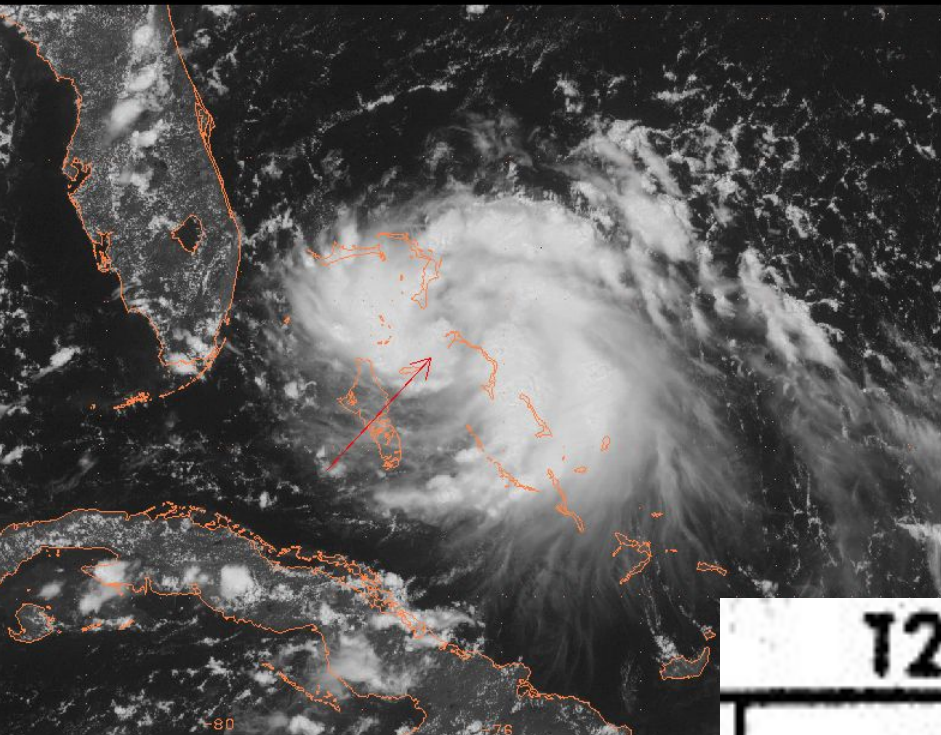
Tools – Incorporating NHC’s Tropical Storm/Hurricane Forecast



Satellite Imagery – Dvorak Technique

Katrina August 24

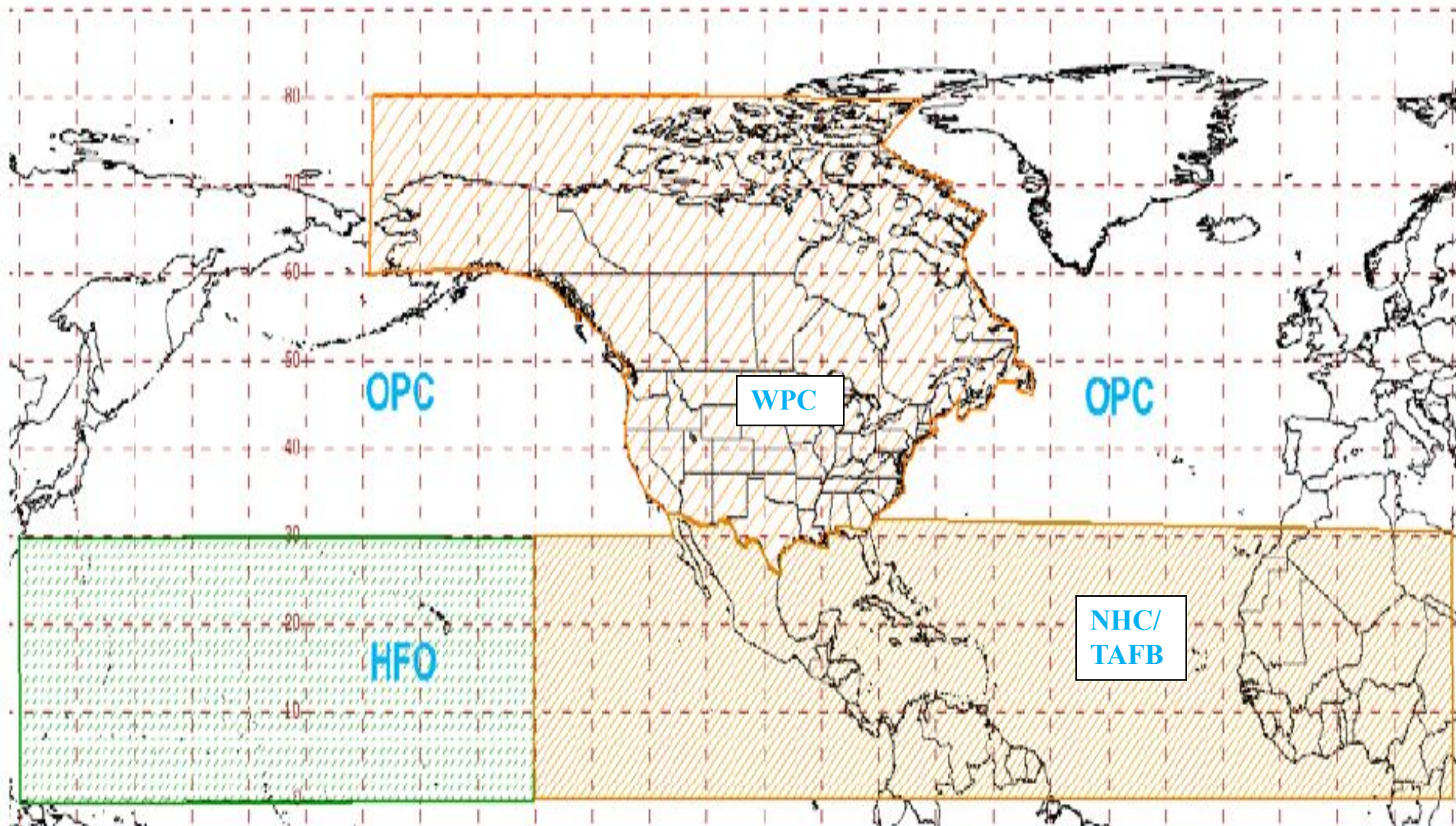
Rita September 18



Unified Surface Analysis

Areas of Responsibility

https://www.nhc.noaa.gov/tafb_latest/USA_latest.gif



Tropical Weather Discussions

The Tropical Weather Discussion describes major synoptic weather features and significant areas of disturbed weather in the tropics.

<https://www.nhc.noaa.gov/txt/MIATWDAT.shtml>

Content:

Special Features

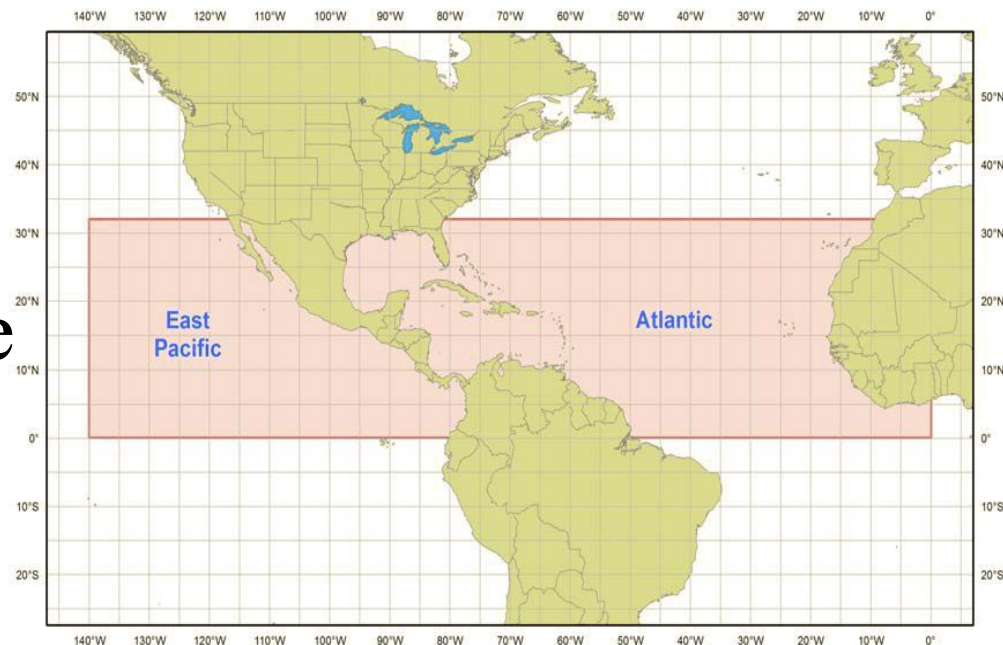
- Tropical Disturbances
- Tropical Cyclones
- Gales/Storm/Hurricane

Warnings

Tropical Waves

ITCZ

Discussion



TAFB High Seas

- High Seas Forecast is a text forecast issued primarily for large ocean going vessels.
- High Seas Forecast includes synopsis of primary weather features and a 48 hour forecast.
- High Seas Forecast primarily for strong winds (25 KT or greater) and/or seas 8 FT or higher.
- TAFB issues two text high seas forecasts four times a day.

<https://www.nhc.noaa.gov/text/MIAHSFAT2.shtml>

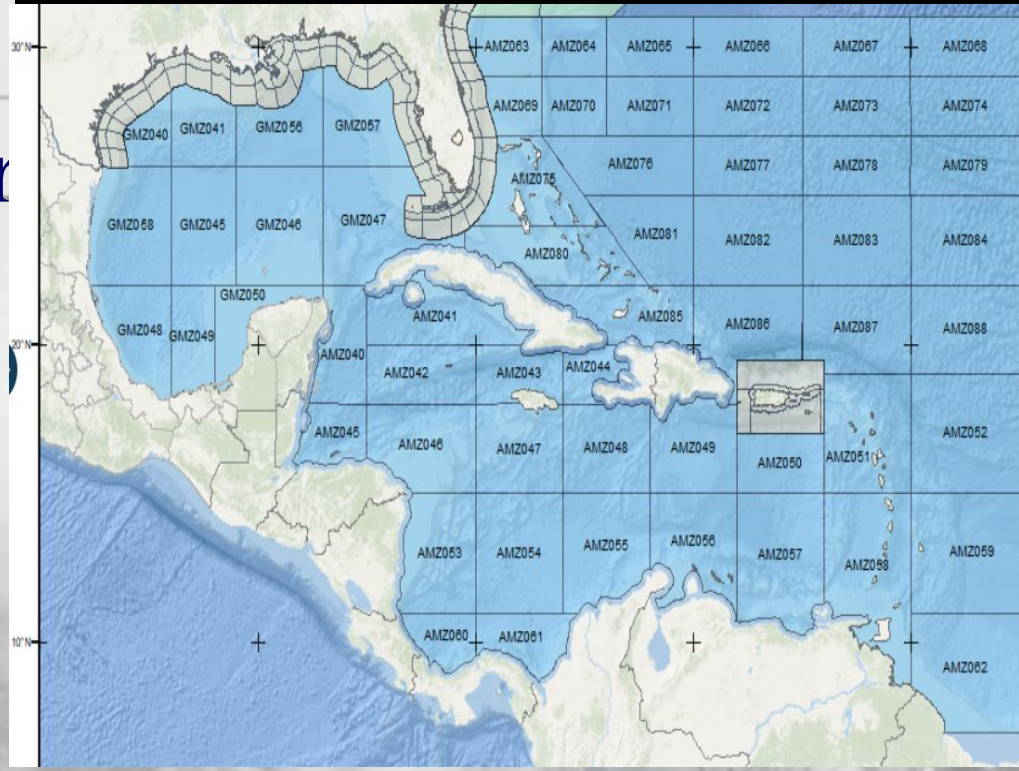


**OFF's are 5-day
wind and wave
forecasts designed for
any vessel going
offshore (beyond 60
nautical miles)**

Gale/Storm Warnings
issued up to 48 hours in
advance for non-tropical
features.

**Tropical Storm/ Hurricane
Warnings** issued up to 48
hours in advance for
tropical cyclones.

TAFB Offshore Zones



<https://www.nhc.noaa.gov/marine/offshores.php>

OFF's are 5-day wind and wave forecasts designed for any vessel going offshore (beyond 60 nautical miles)

Gale/Storm Warnings issued up to 48 hours in advance for non-tropical features.

Tropical Storm/ Hurricane Warnings issued up to 48 hours in advance for tropical cyclones.

https://www.nhc.noaa.gov/marine/offshores_eastpac.php

TAFB Offshore Zones



**Four new zones –
March 8th, 2023**

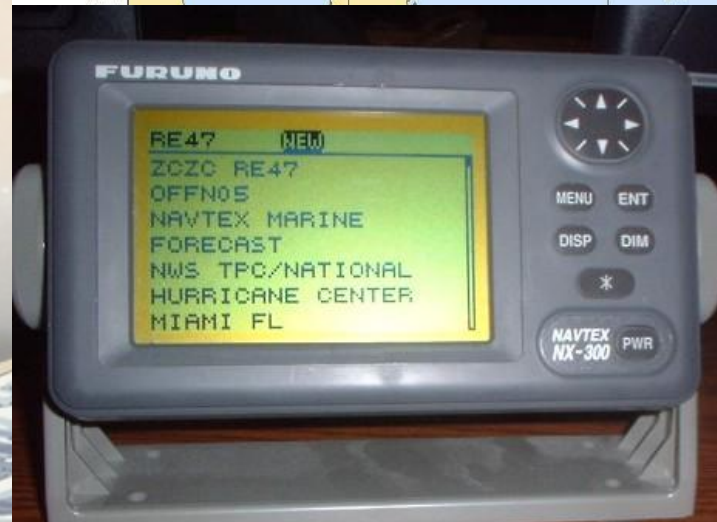
Navigational Telex (NAVTEX)

NAVTEX is an internationally required broadcast of coastal urgent marine safety information to ships.

In the United States there are 12 U.S. Coast Guard transmitter locations. TAFB products are transmitted from Miami, San Juan, and New Orleans, and contribute to the Charleston broadcast.

<https://www.nhc.noaa.gov/text/MIAOFFN04.shtml>

NAVTEX Zones



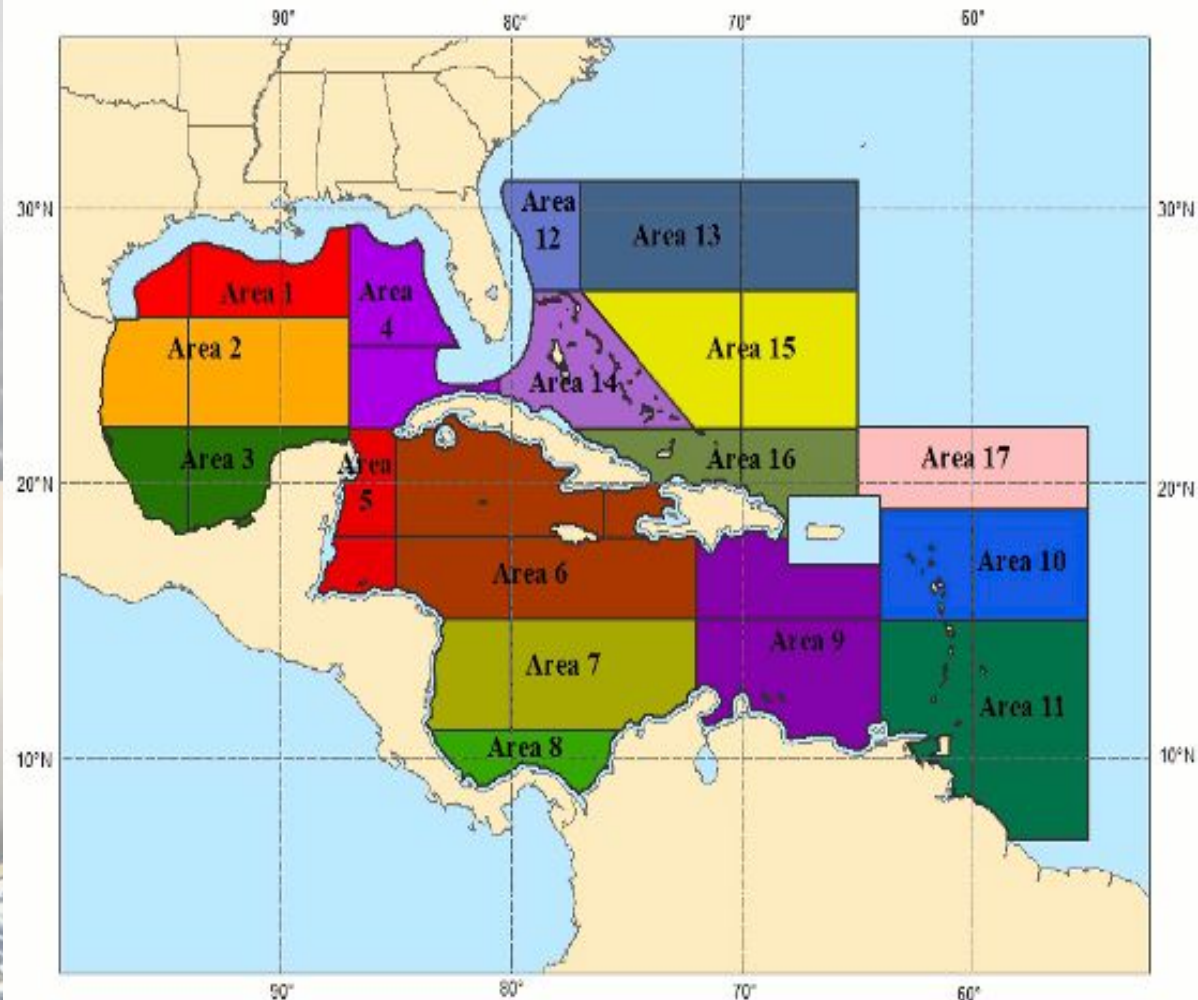
High Frequency Voice Broadcasts (VOBRA)

The USCG broadcasts basic weather information prepared by the NWS (**Ocean Prediction Center**, **National Hurricane Center** and **Honolulu Forecast Office**) via high frequency voice broadcasts (VOBRA) to vessels operating in areas beyond the range of coastal NOAA Weather Radio.

The VOBRA forecasts are prepared at a lower resolution than the offshore forecasts.

<https://www.nhc.noaa.gov/text/MIAOFFEN21.shtml>

VOBRA Zones



MARINE RADIOFAX

TAFB provides graphical products for three U.S. Coast Guard transmitters:

NEW ORLEANS (NMG)

POINT REYES (NMC)

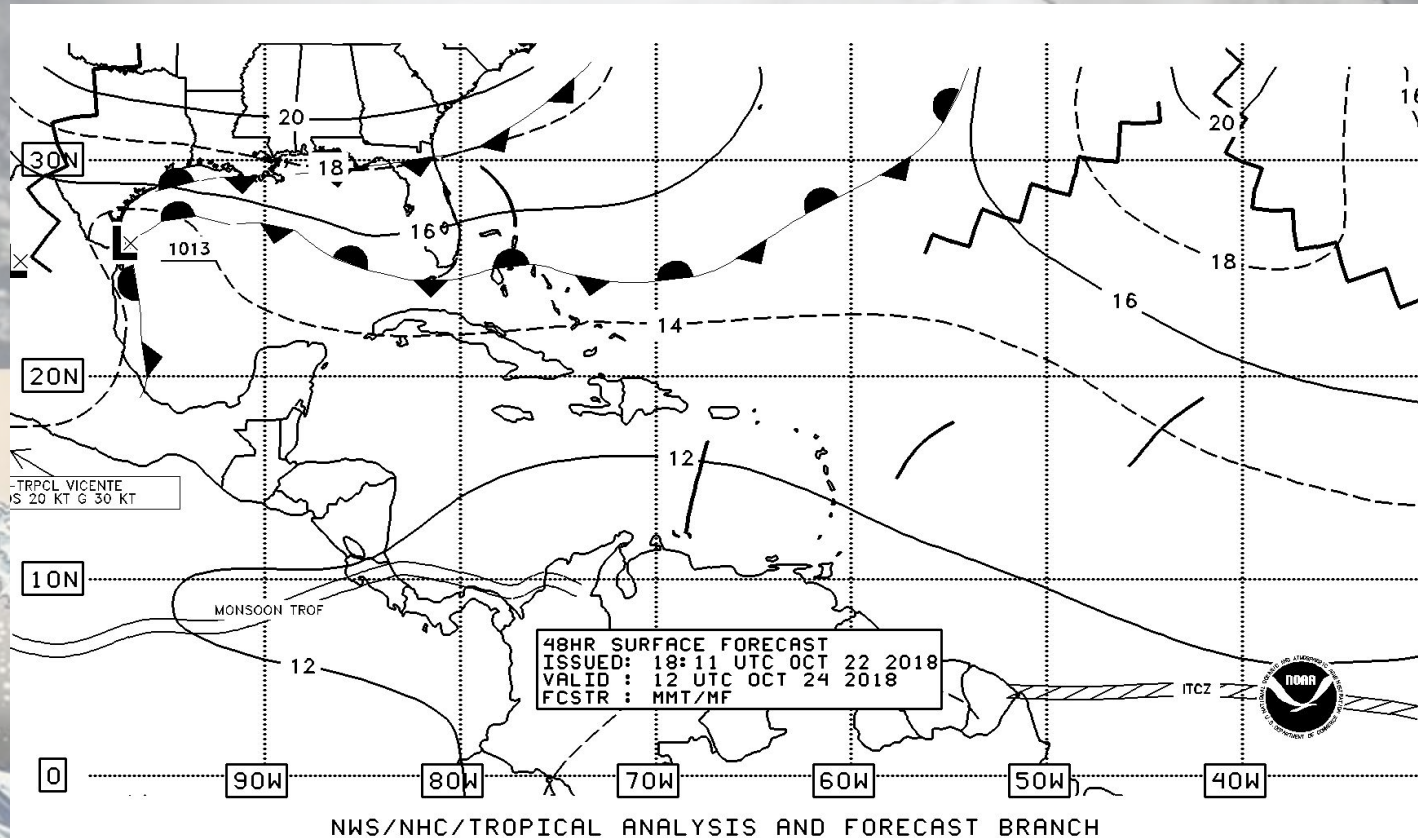
HAWAII (KVM70)



Surface Prog Graphics

- Fronts, troughs, tropical cyclones, tropical waves, ridges
- 24, 48, and 72 hr Forecasts
- W. Atlantic, Caribbean, Gulf of Mexico, and E. Pacific
- Issued twice daily

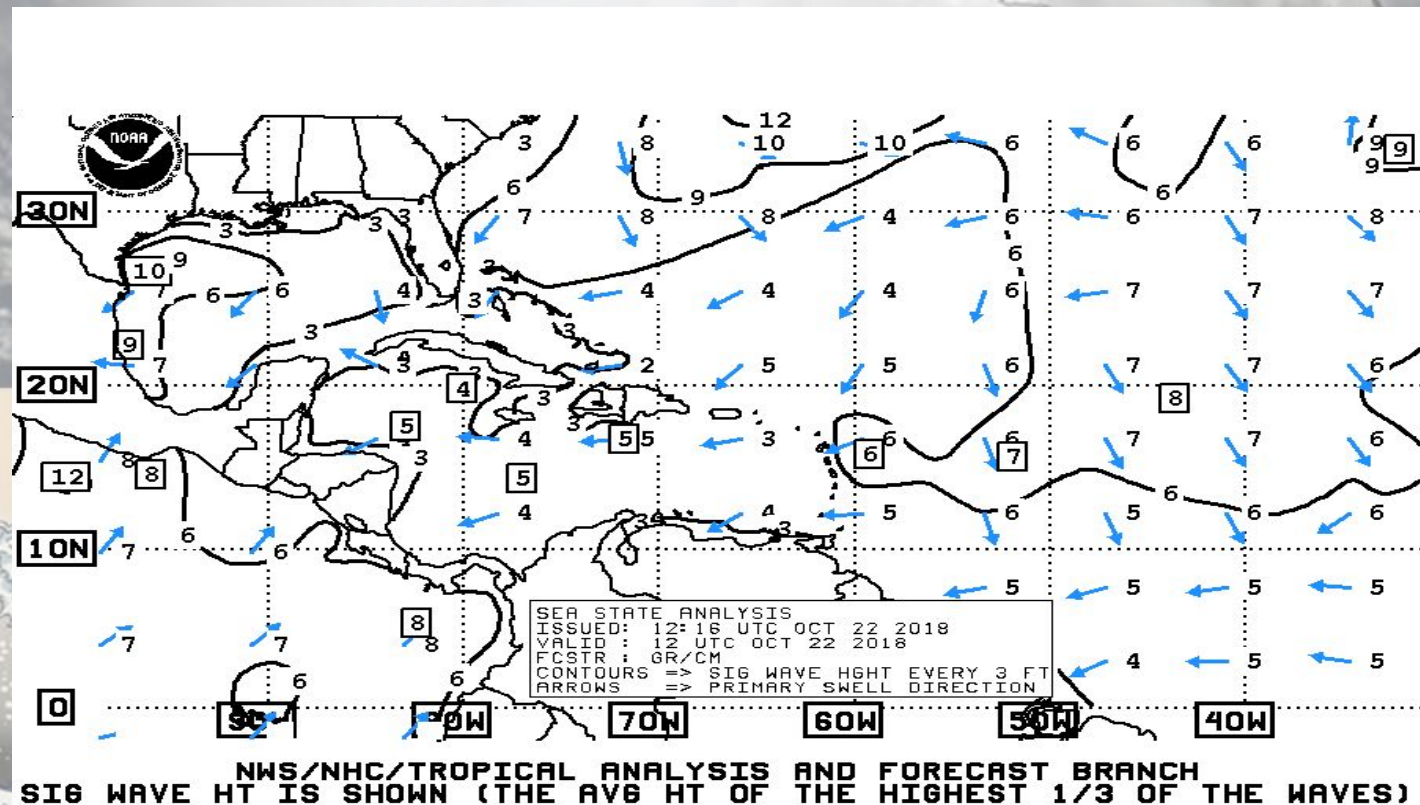
https://www.nhc.noaa.gov/tafb_latest/atlsfc72_latestBW.gif



Sea State Analysis Graphics

- Significant Wave Height Analysis (the average height of the highest one-third of the waves) and Primary Swell Direction
- W. Atlantic, Caribbean, Gulf of Mexico, and E. Pacific
- Issued twice daily

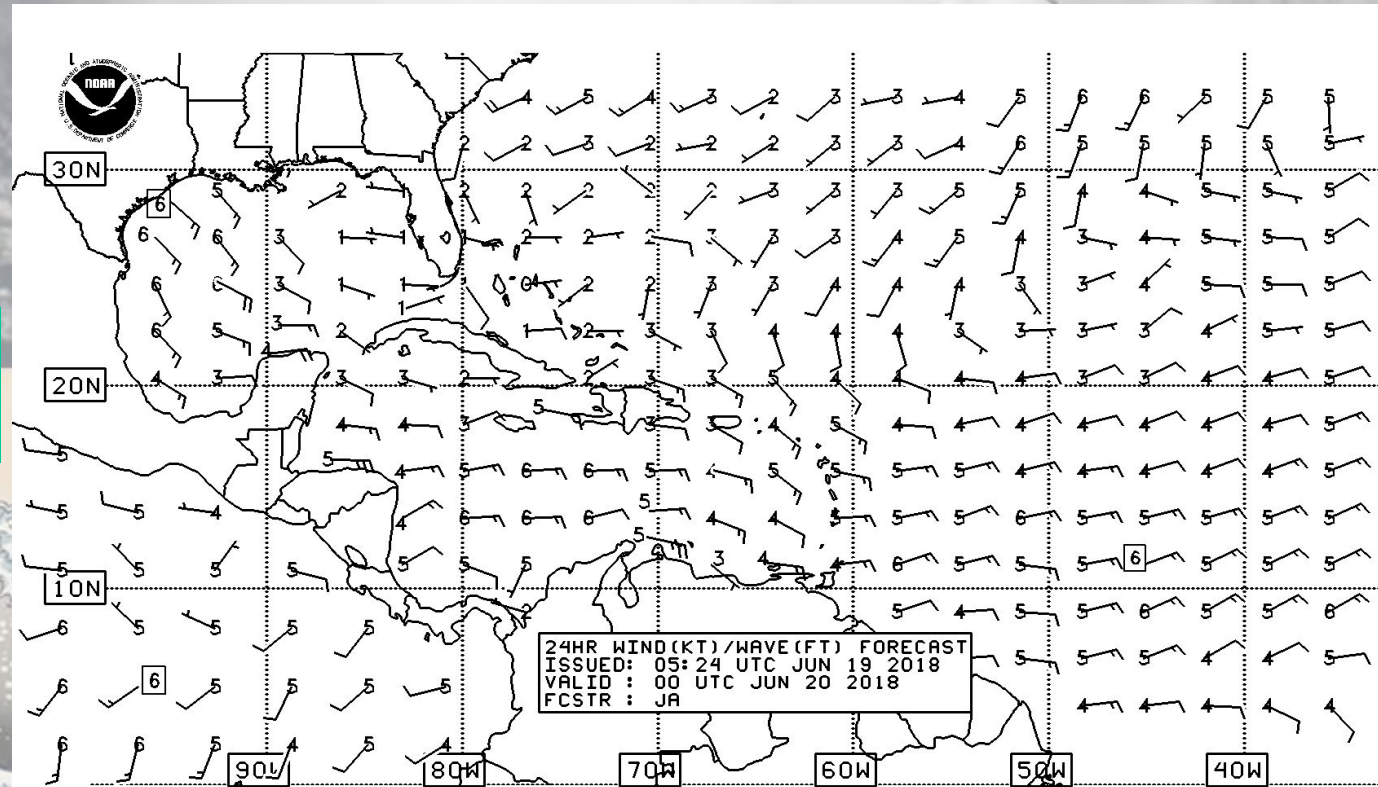
https://www.nhc.noaa.gov/tafb_latest/atlsea_latestBW.gif



WIND / WAVE Forecast Graphics

- Surface Winds and Significant Wave Height Predictions
- 24, 48, and 72 hr Forecasts
- W. Atlantic, Caribbean, Gulf of Mexico, and E. Pacific
- Issued twice daily

https://www.nhc.noaa.gov/tafb_latest/atl72_latestBW.gif

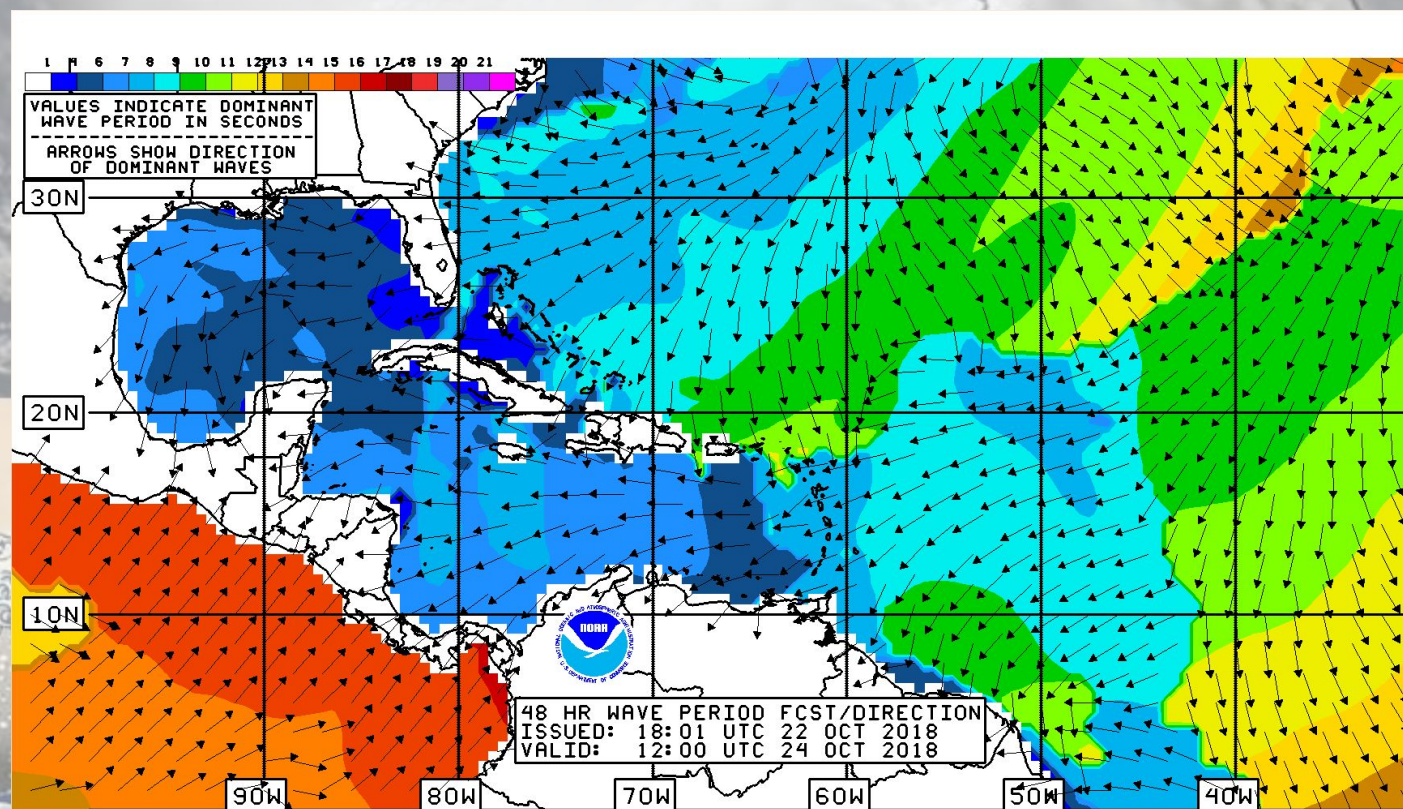


NWS/NHC/TROPICAL ANALYSIS AND FORECAST BRANCH
SIG WAVE HT IS SHOWN (THE AVG HT OF THE HIGHEST 1/3 OF THE WAVES)

WAVE PERIOD/DIRECTION Forecast Graphics

- Dominant wave period and direction
- 48 and 72 hr Forecasts
- W. Atlantic, Caribbean, Gulf of Mexico, and E. Pacific
- Issued twice daily

https://www.nhc.noaa.gov/tafb_latest/atl48per_latest.gif

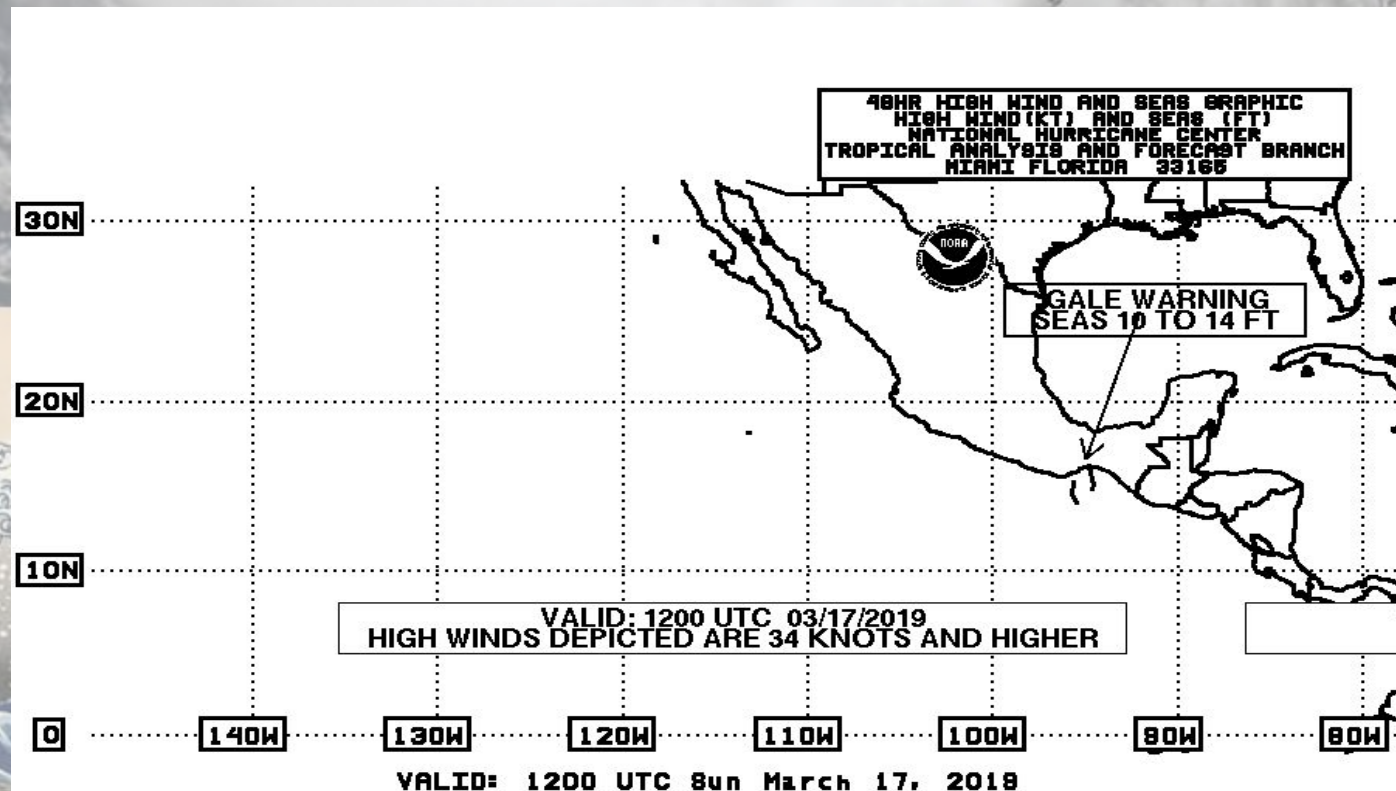


NWS/NHC/TROPICAL ANALYSIS AND FORECAST BRANCH

High Wind and Seas Graphic

- 48 hr forecast depiction of Gale, Storm, and Hurricane-Force Wind Warnings (with peak seas)
- W. Atlantic, Caribbean, Gulf of Mexico, and E. Pacific
- Issued four times daily
- Issued 1 December to 14 May

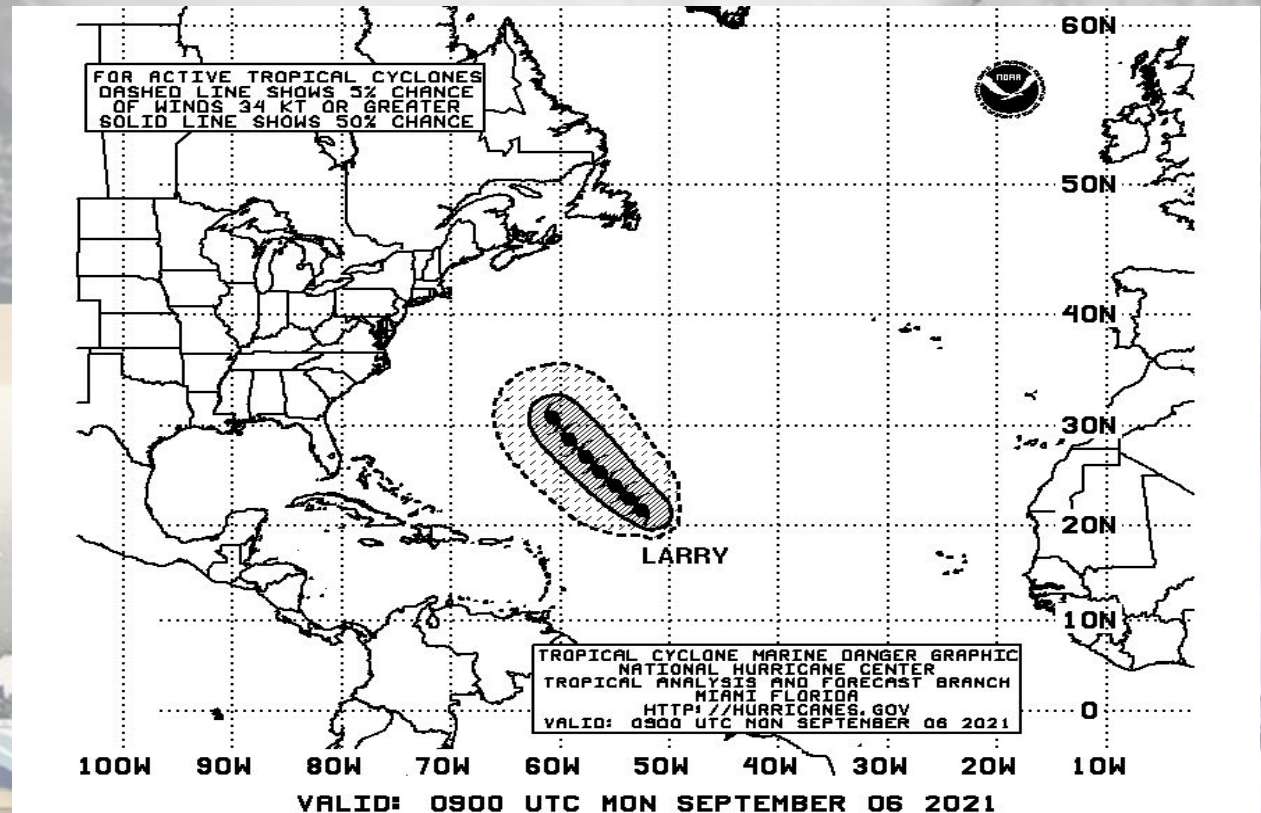
https://www.nhc.noaa.gov/tafb_latest/hiwind_pac_lates tBW.gif



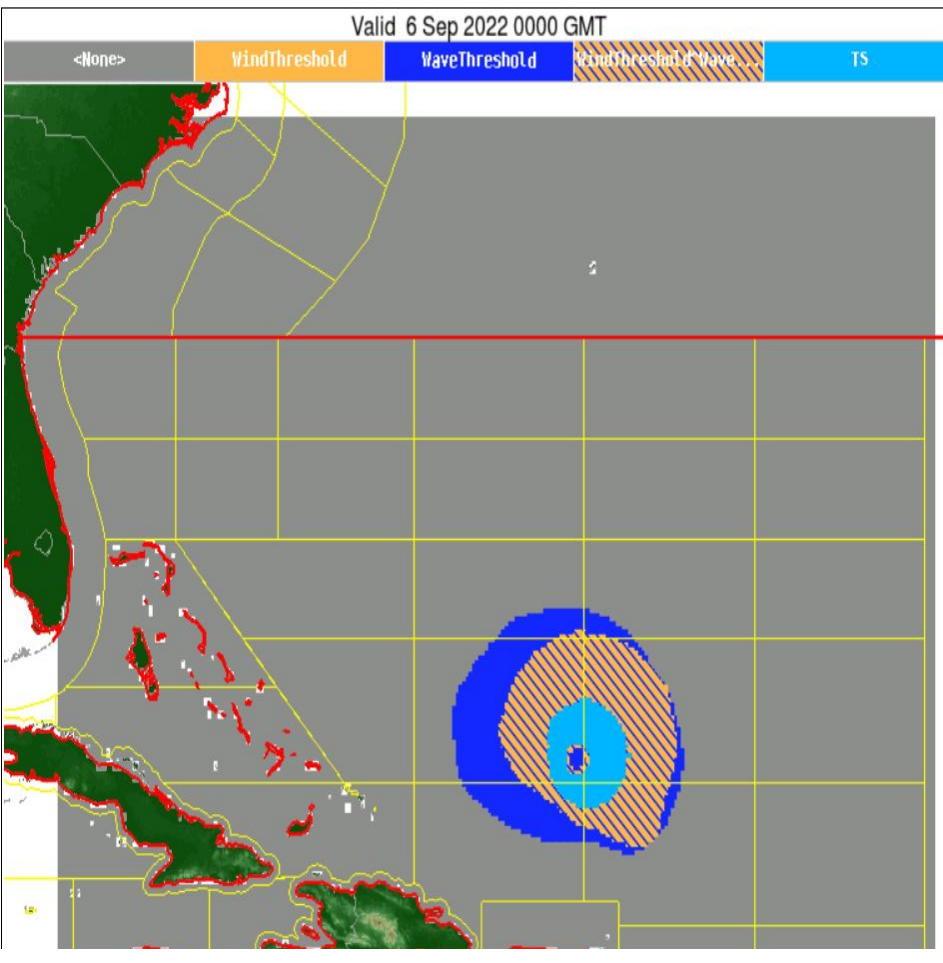
Tropical Cyclone Danger Graphic

- Wind Speed Probabilities-Based – Uses 5% and 50% chance of 34 kt (tropical storm force winds)
- 3 Day Forecasts
- W. Atlantic, Caribbean, Gulf of Mexico, and E. Pacific
- Issued four times daily during hurricane season

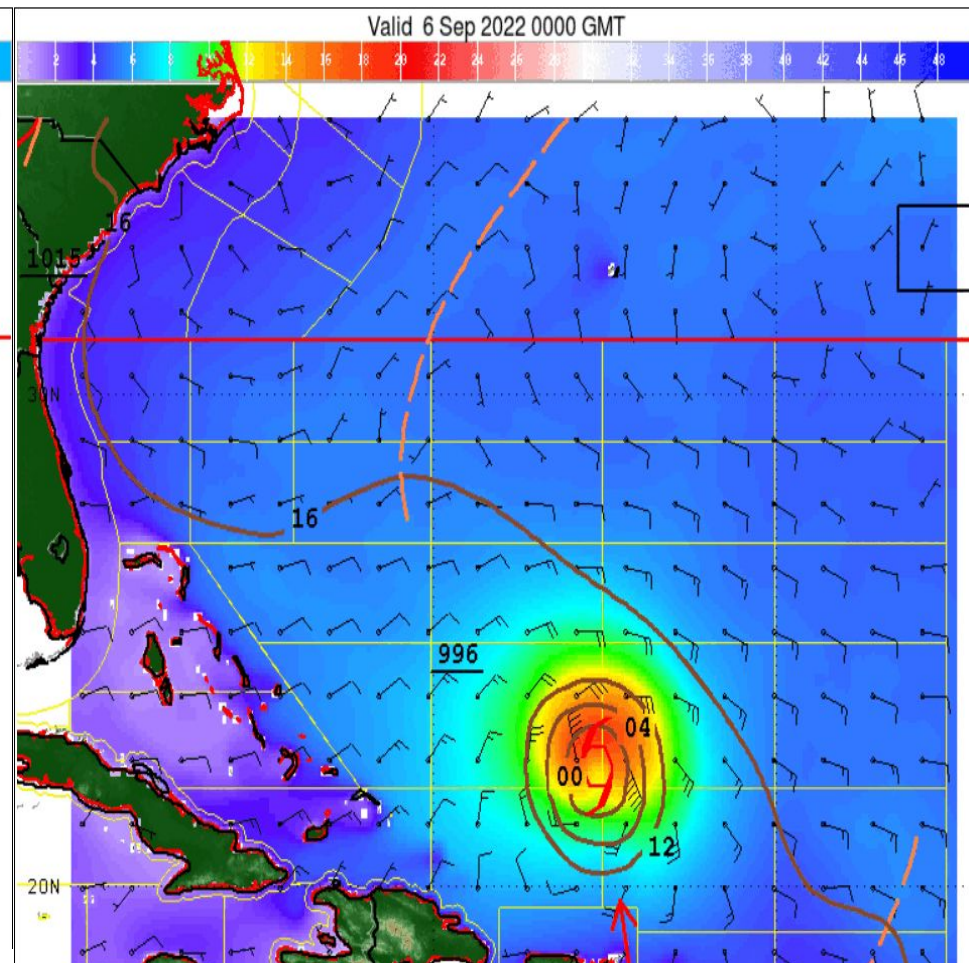
https://www.nhc.noaa.gov/tafb_latest/danger_atl_latestBW.gif



Marine Composite Page – Winds, Waves, Warnings, and Features



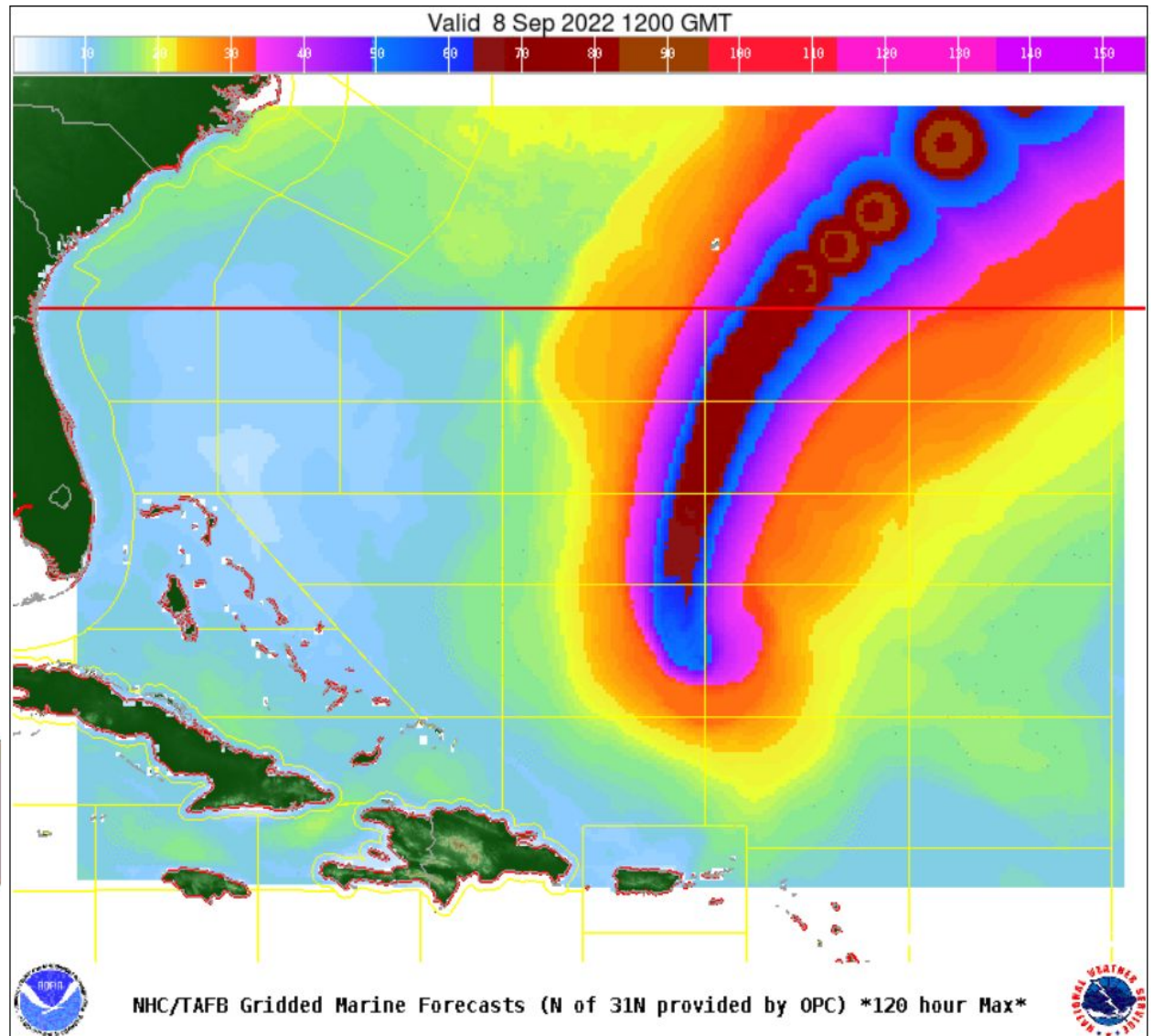
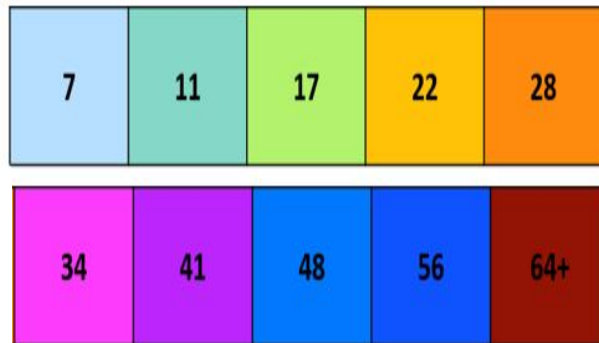
Gray: Hurricane Warning
Light Blue: Tropical Storm Warning
Orange: Winds > 23 kt Dark Blue: Seas ≥ 8 ft



Colors: Seas (in feet)
Flags: Wind barbs (in knots)

Marine Composite Page – Winds, Waves, Warnings, and Features

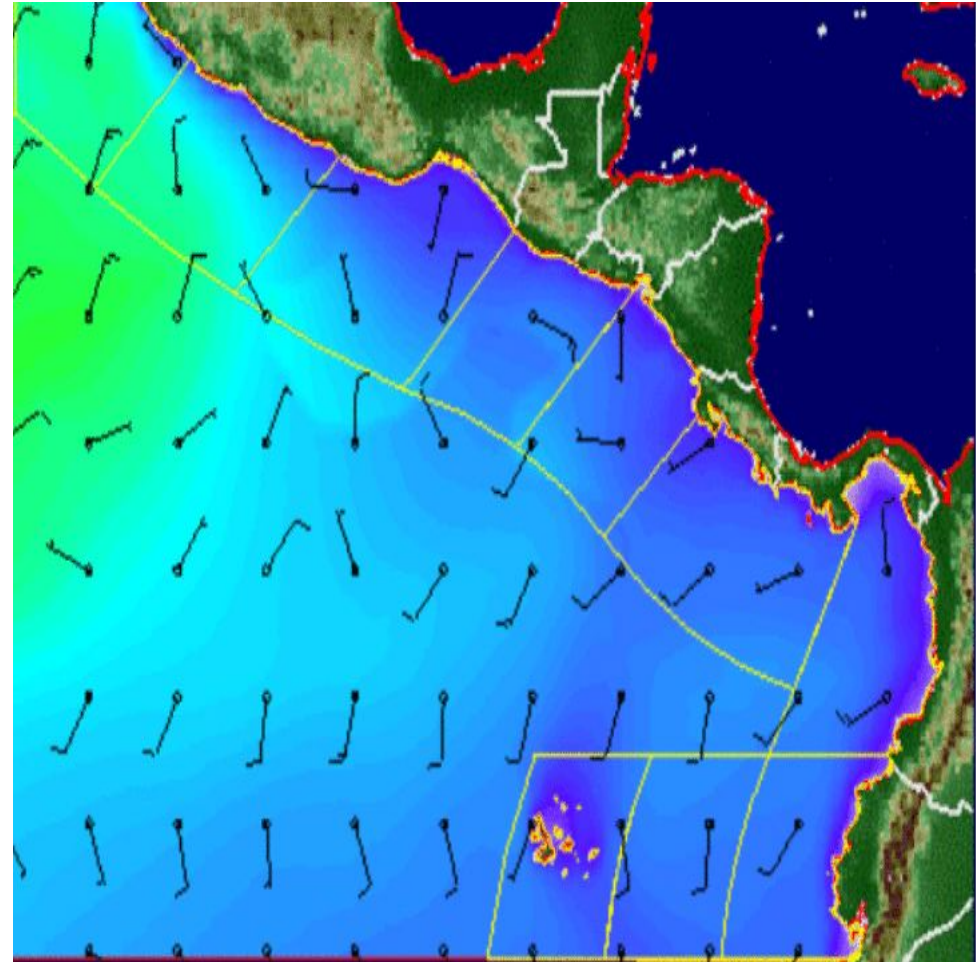
**Maximum
Winds
Forecast
(in knots,
over 5 days)**



Marine Composite Page – Winds, Waves, Warnings, and Features



Red: Gale Warning Green: Storm Warning
Orange: Winds > 23 kt Blue: Seas \geq 8 ft



Colors: Seas (in feet)
Flags: Wind barbs (in knots)

EL FARO

33 fatalities when it sank in Hurricane Joaquin (2015)



BOURBON RHODE

11 fatalities when it sank in Hurricane Lorenzo (2019)

BOUNTY

2 fatalities when it sank in Hurricane Sandy (2012)

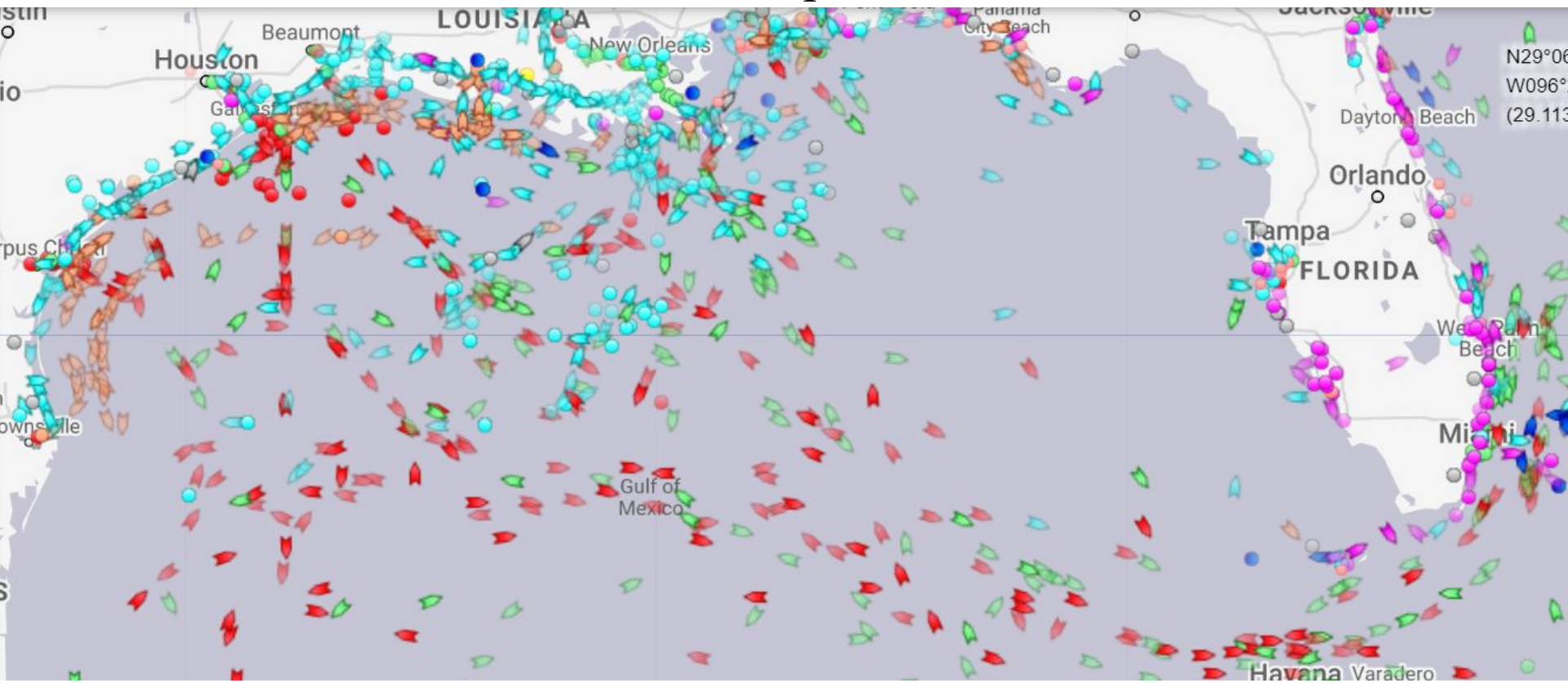
FANTOME

31 fatalities when it sank in Hurricane Mitch (1998)

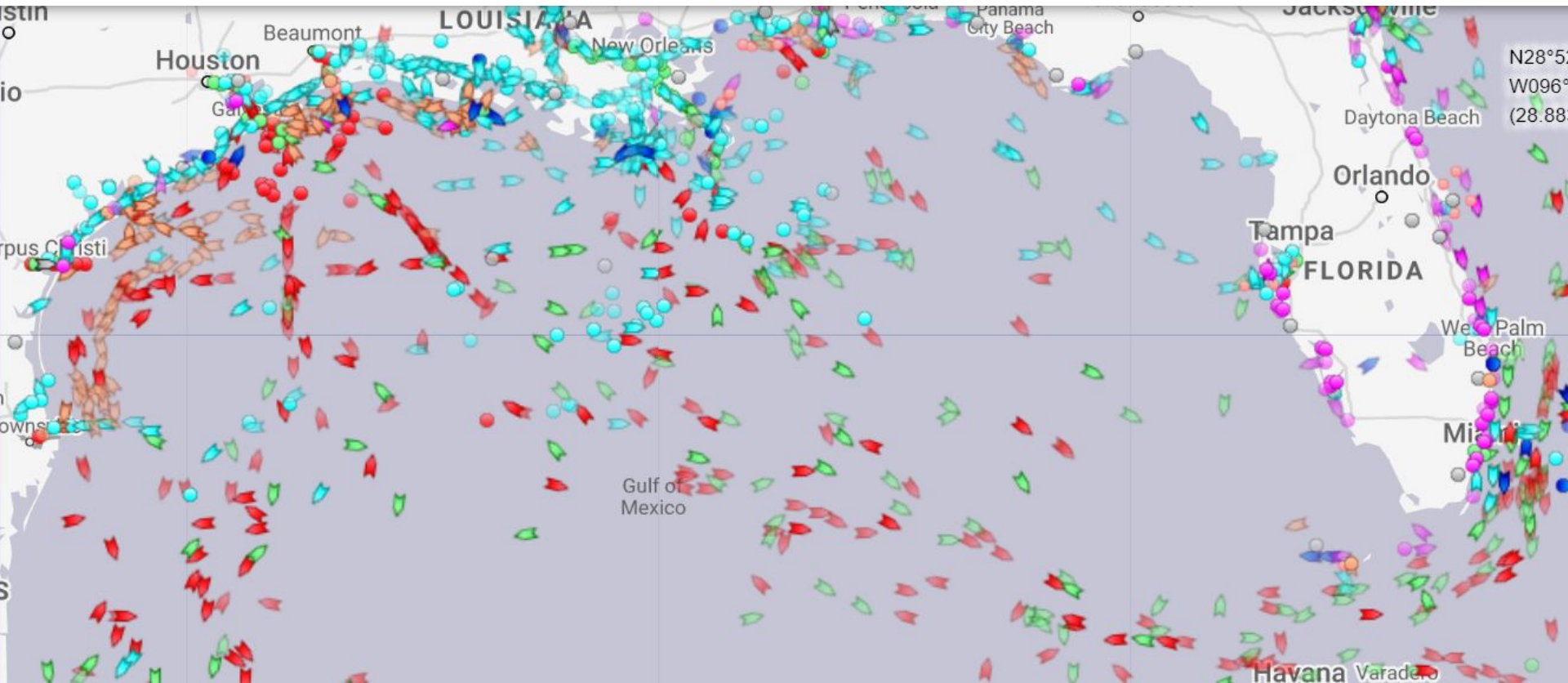
Hurricane Delta - 2020

October 6th, 2pm EDT

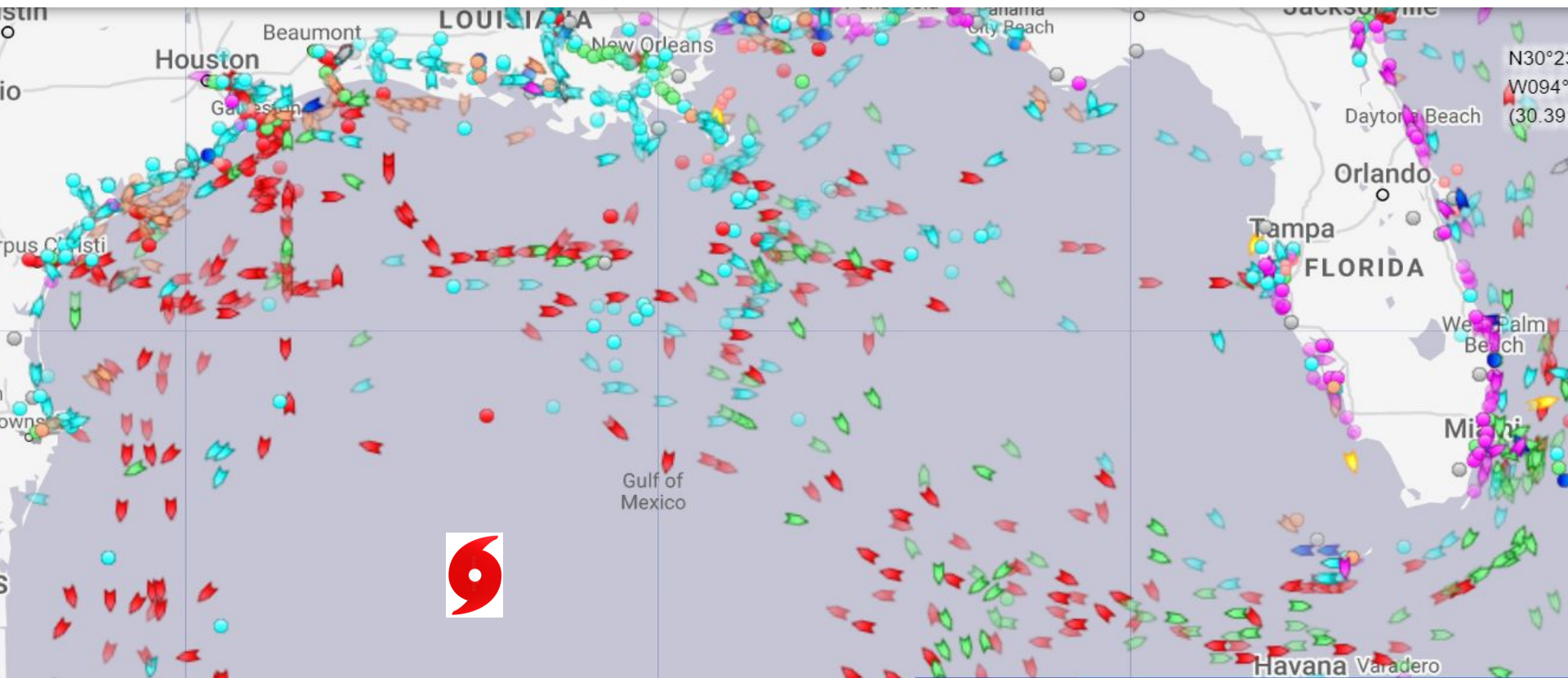
Weather Avoidance by Ships



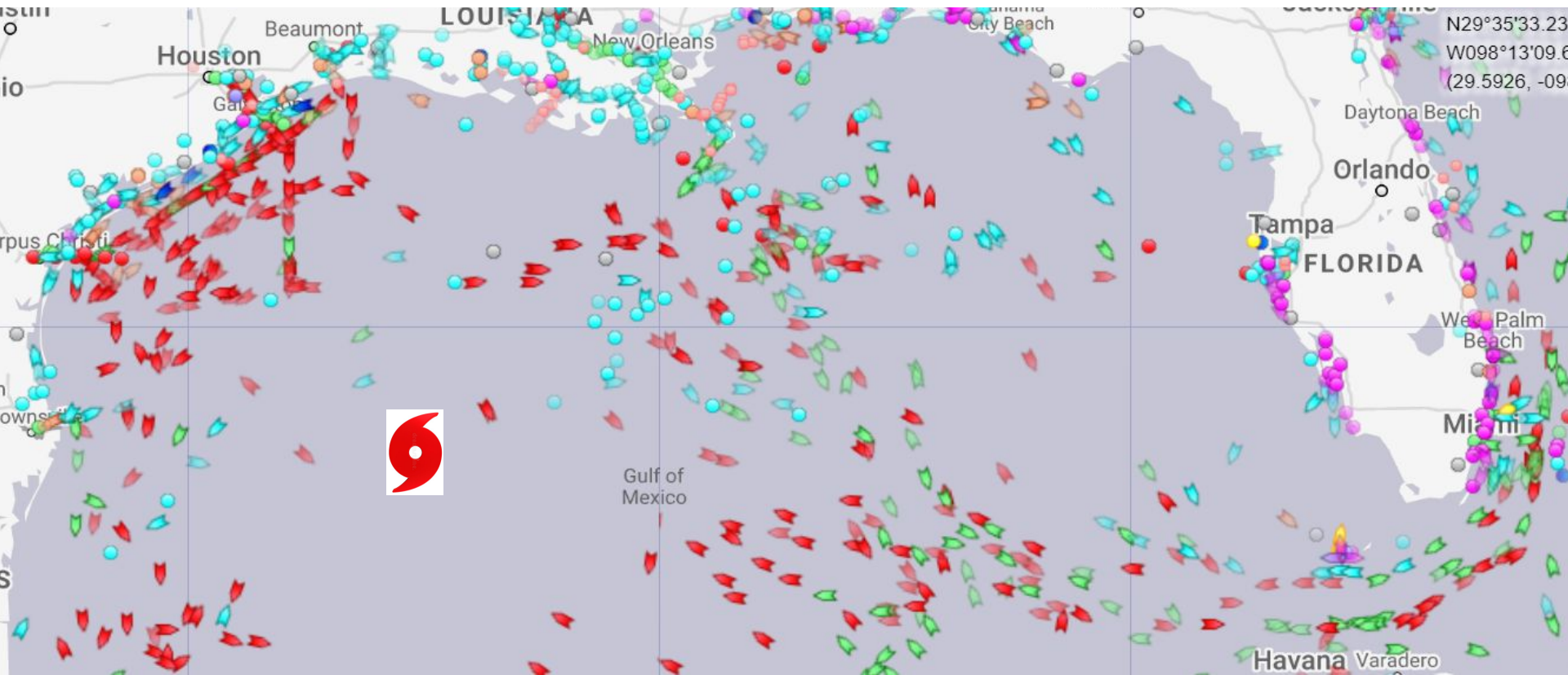
Hurricane Delta - 2020 October 7th, 9am EDT Weather Avoidance by Ships



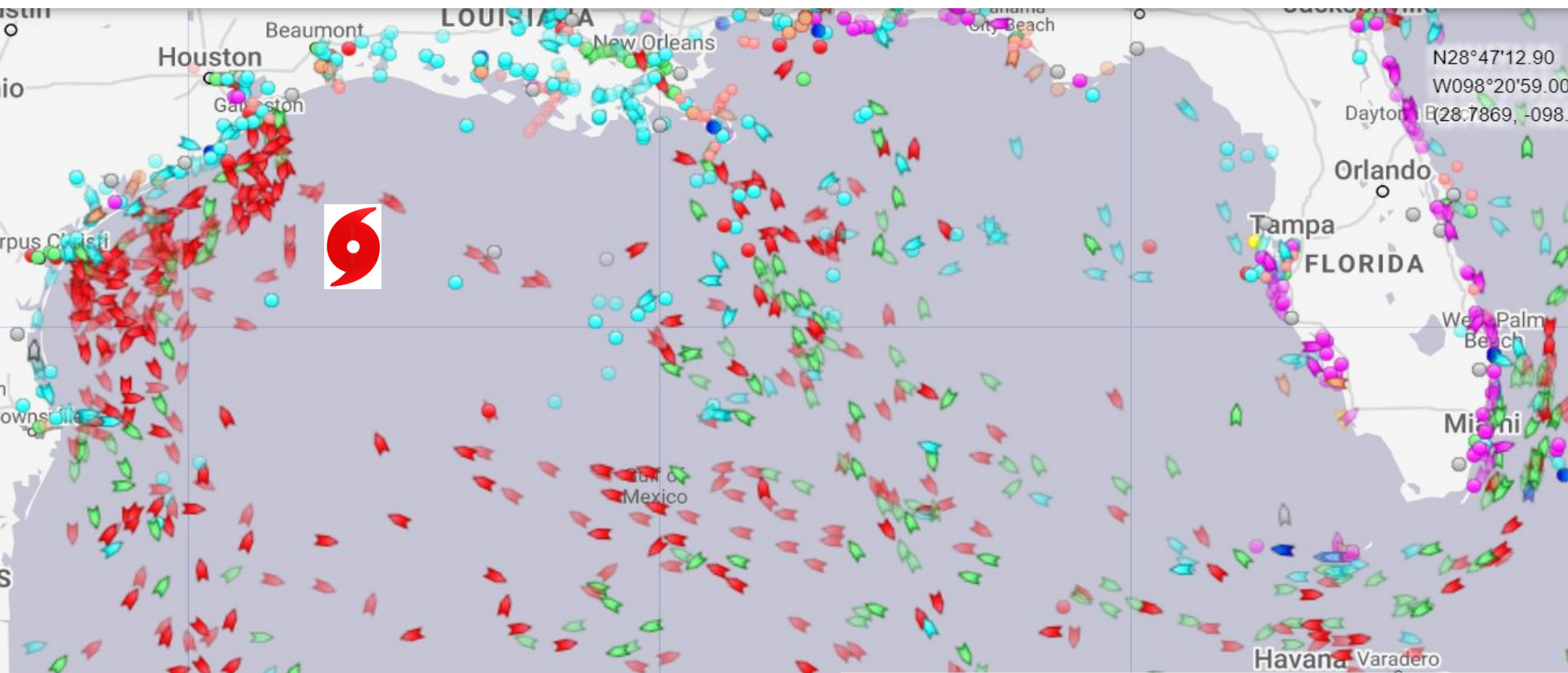
Hurricane Delta - 2020 October 8th, 9am EDT Weather Avoidance by Ships



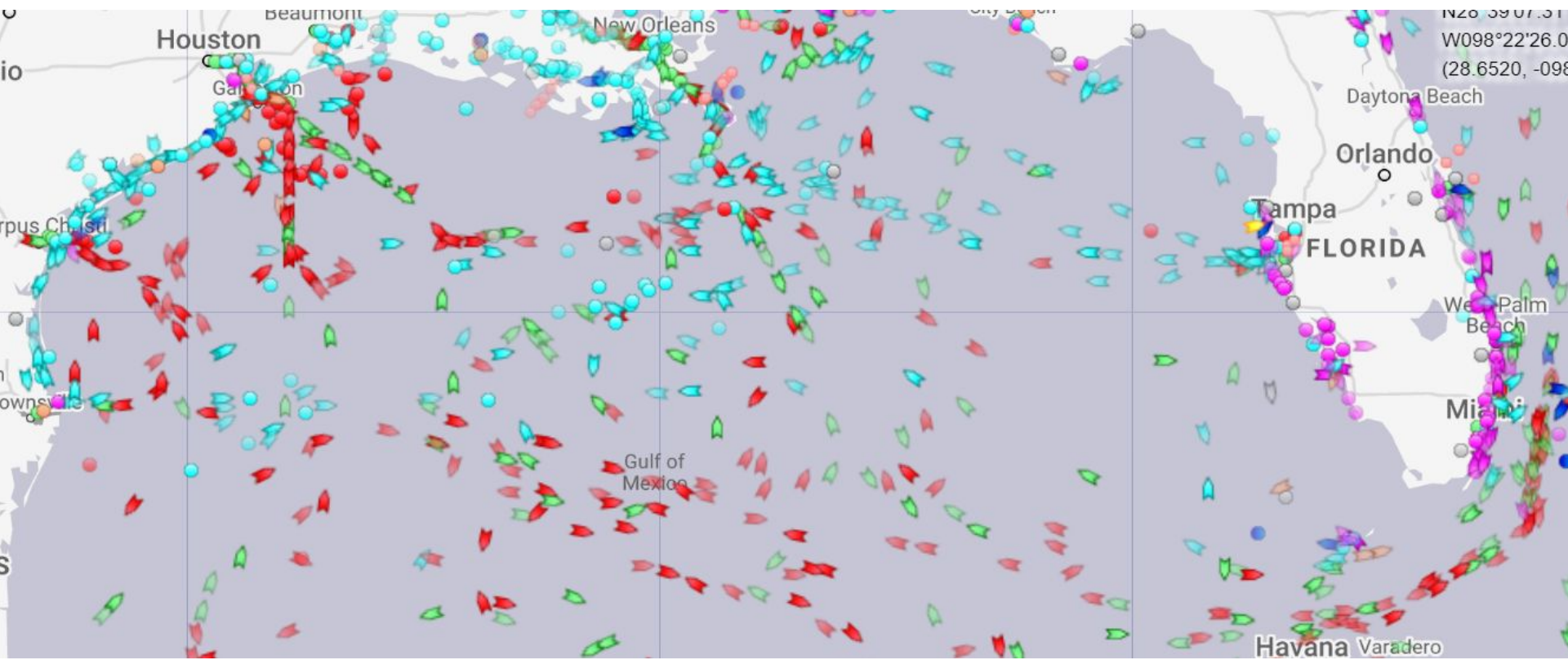
Hurricane Delta - 2020 October 8th, 5pm EDT Weather Avoidance by Ships



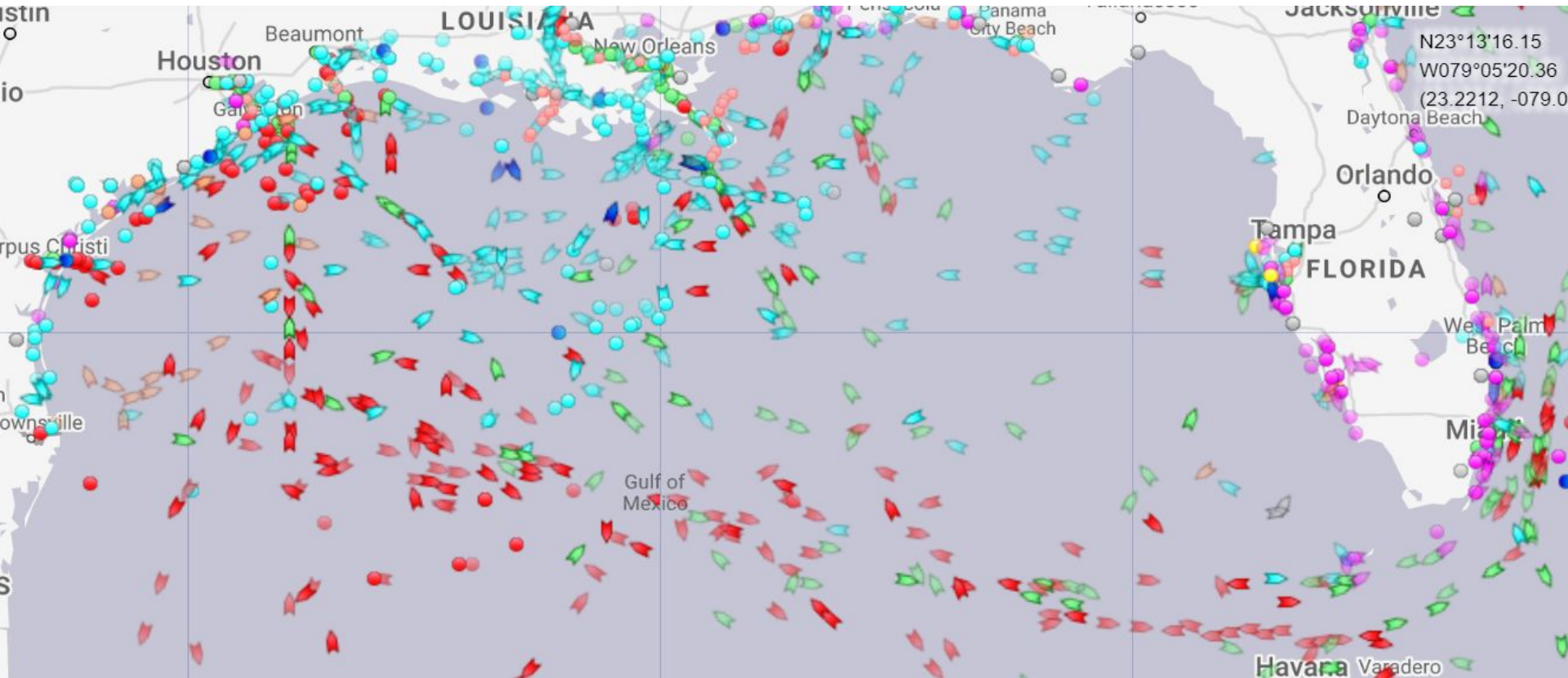
Hurricane Delta - 2020 October 9th, 9am EDT Weather Avoidance by Ships



Hurricane Delta - 2020 **6** October 10th, 1pm EDT Weather Avoidance by Ships



Hurricane Delta - 2020 October 11th, 7am EDT Weather Avoidance by Ships





**MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES COAST GUARD
AND
THE NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE
REGARDING
THE MANAGEMENT OF MARINE
WEATHER INFORMATION**

APPROVED: 03/30/2020

Louis W. Uccellini

Louis W. Uccellini
NOAA Assistant Administrator
for Weather Services

APPROVED: 3/31/20

RV Timme

Richard V. Timme
Rear Admiral, USCG
Assistant Commandant for
Prevention Policy

USCG Weather Support

Webpage
<https://www.nhc.noaa.gov/uscg/>



Tropical Analysis and Forecast Branch
NWS National Hurricane Center

National Hurricane
Center Tropical
Cyclone Status
Updates

USCG Weather Support
NOAA/NWS/National Hurricane Center
District 7 – Miami, FL
District 8 – New Orleans, LA

National Hurricane Center Tropical Cyclone Status Updates
All IC issuing advisories for the Atlantic on TD Cristobal
There are no tropical cyclones in the Eastern North Pacific at this time.
www.nhc.noaa.gov
Add this widget to your page

District 7 Briefing **Submit NWS Spot Forecast Request** **District 8 Briefing**

Tropical Update Current Conditions Marine Forecast Wave Models Weather Forecasts River Forecasts Other Links

Tropical Update

Atlantic Tropical Cyclones/Disturbances **Atlantic Tropical Weather Outlook**

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

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

NWS Watch, Warning, and Advisory Map
Hover over map to enlarge.
Click on map for full map and product legend.

- Hurricane Warning
- Tropical Storm Warning
- Hurricane Watch
- Tropical Storm Watch
- Gale Warning
- Storm Warning
- Hurricane Force Wind Warning
- Gale Watch
- Storm Watch
- Hurricane Force Wind Watch
- Small Craft Advisory

Offshore Waters Forecast Text Products Marine Graphical Forecast Map

Latest
Hurricane
Briefings
Available to
Download

Submit National
Weather Service
Spot Forecast
Request

Spot Forecast Example for USCG District 11

13 April 2022

SPOT FORECAST FOR SAR - RCC ALAMEDA...USCG
NWS NATIONAL HURRICANE CENTER MIAMI FL
537 AM PDT Wed Apr 13 2022

Forecast is based on forecast start time of 0900 PDT on April 13.
If conditions become unrepresentative...contact the NWS
National Hurricane Center/Tropical Analysis and Forecast
Branch at (305)229-4425.

.DISCUSSION...

Latitude = 0.5N Longitude = 104.25W

Gentle S winds with southerly swell are expected in the short term. The southerly swell will cause significant wave heights to be near 7 ft. No significant showers or thunderstorms are expected.

.REST OF TODAY...

Sky/weather.....Mostly cloudy (75-85 percent).

Max temperature.....Around 78.

Surface winds (kts).Southeast winds around 5 knots late in the morning becoming light, then becoming south 5 to 7 knots late in the afternoon.

Swell height.....South swell 6 feet.

Wave height.....7 feet.

Wave period.....14 SECONDS.

TIME (PDT)	9 AM	NOON	3 PM
Sky (%).....	80	84	84
Weather cov.....			
Weather type....	NONE	NONE	NONE
Tstm cov.....			
Temp.....	78	78	78
SFC wind (kts)..	SE 5G10	S 4G8	S 5G10
Swell hgt (ft)..	S 6	S 6	S 6
Wave period (s).	14	14	14
Wave height (ft)	7	7	7
SST (F).....	81	81	81

SAR - RCC ALAMEDA

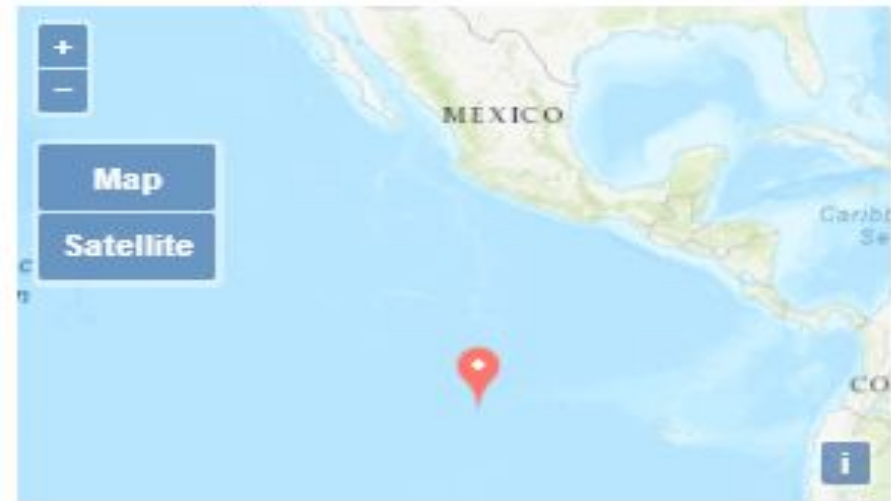
Marine Incident

Forecast Start Time: 2022-04-13 9:00 AM PDT

Request Time: 2022-04-13 5:23 AM PDT

Deliver Time: 2022-04-13 5:23 AM PDT

Forecast Complete At: 2022-04-13 5:38 AM PDT





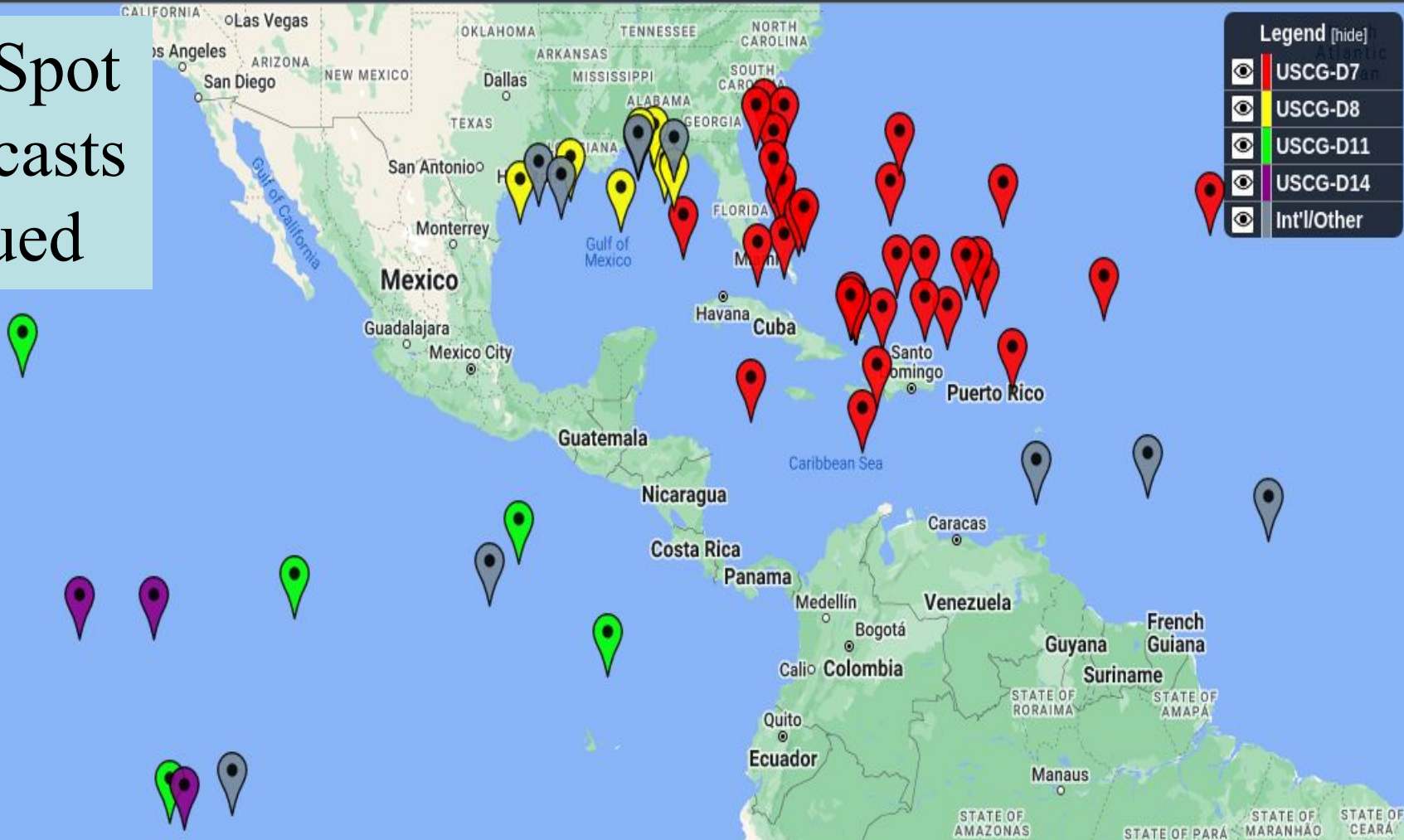
2023 Impact-based Decision Support Services to U.S. Coast Guard Districts by Tropical Analysis and Forecast Branch (TAFB), National Hurricane Center (NHC)



2023 TAFB Spot Forecast Request Incidents

Points labelled Other were from NOAA fleet and California Air National Guard

157 Spot
Forecasts
Issued



Legend [hide]	
	USCG-D7
	USCG-D8
	USCG-D11
	USCG-D14
	Int'l/Other



2023 Impact-based Decision Support Services to U.S. Coast Guard Districts by Tropical Analysis and Forecast Branch (TAFB)/ National Hurricane Center (NHC)



USCG District 7 Hurricane Tabletop Exercise July 13-20, 2023

Planning

- Stephen Konarik led the TAFB team with Dylan Flynn, Andrew Hagen, Aidan Mahoney, Nelsie Ramos, and Amanda Reinhart
- Began planning with USCG District 7 in January 2023
- Three separate, simultaneous tropical cyclones impacting District 7/Caribbean and SE United States
- Cassie Mora and Cara Geiger (Storm Surge Unit) provided the Storm Surge forecasts

Exercise

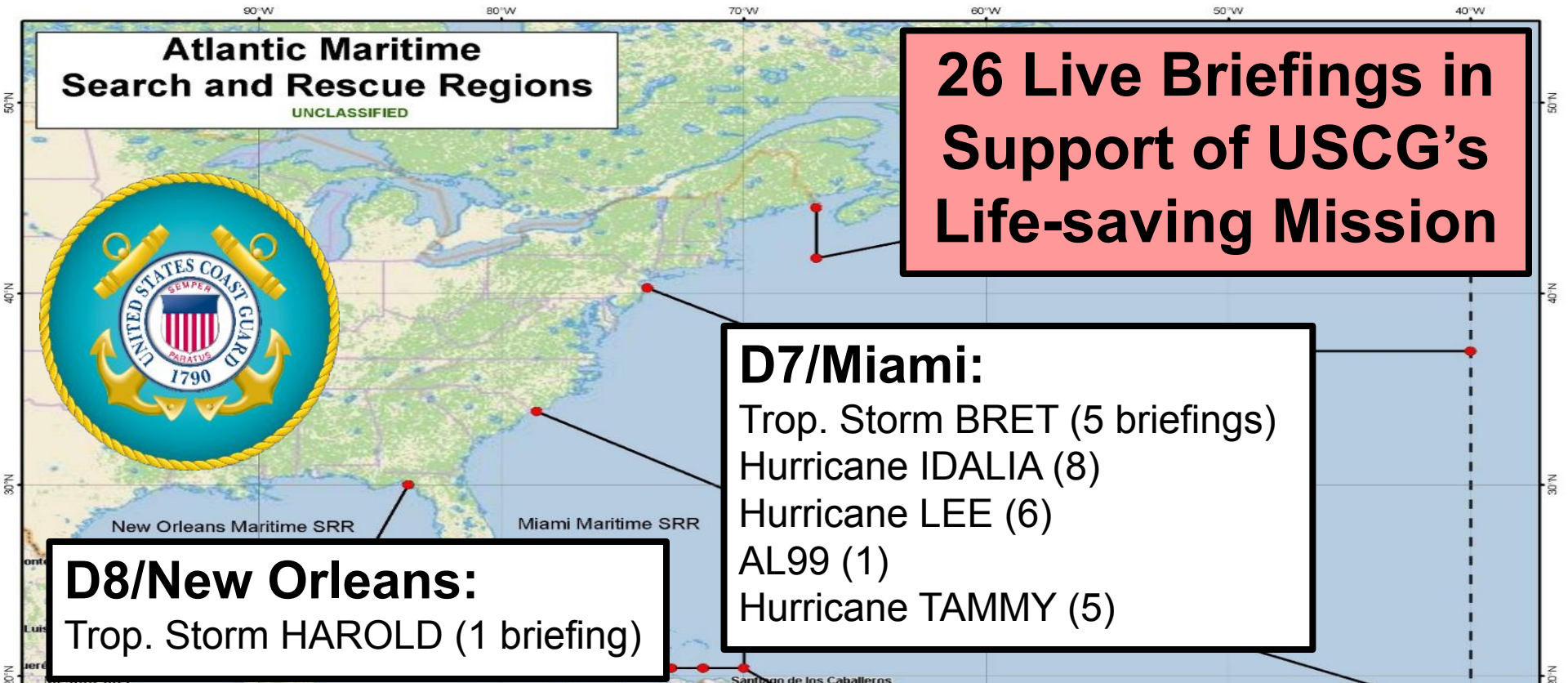
- Organized 17 live briefings over an 8 day period. (Organizers also pre-recorded the briefings in case TAFB was busy operationally.)
- On July 19th, TAFB forecasters gave the live briefings in person and then toured the USCG Miami Air Station facility.



In-person Pre-season Meetings/Training: District 7 (Miami), District 8 (New Orleans), District 11 (Alameda), and District 14 (Honolulu)



2023 Impact-based Decision Support Services to U.S. Coast Guard Districts by Tropical Analysis and Forecast Branch (TAFB), National Hurricane Center (NHC)



“Thanks and appreciation to you and your staff for outstanding support over the last 5 days [during hurricane Idalia]. The detailed products and analysis that NHC provides enabled the USCG to anticipate where to focus efforts and resources. Once again, the NHC has exceeded all expectations. Thanks again.” - **CAPT Aaron Ortenzio - USCG District Seven Chief of Incident Management**

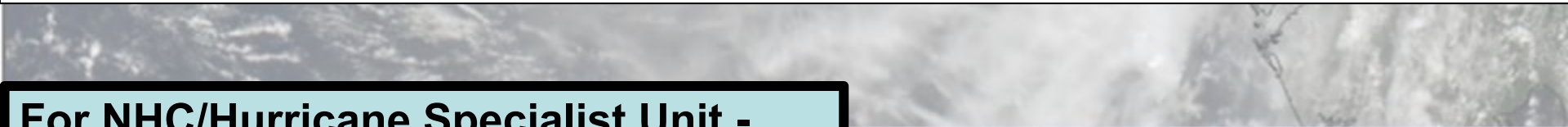


**2023 Impact-based Decision Support Services
to U.S. Coast Guard Districts
by Tropical Analysis and Forecast Branch (TAFB),
National Hurricane Center (NHC)**



NHC/TAFB's 2023 International IDSS

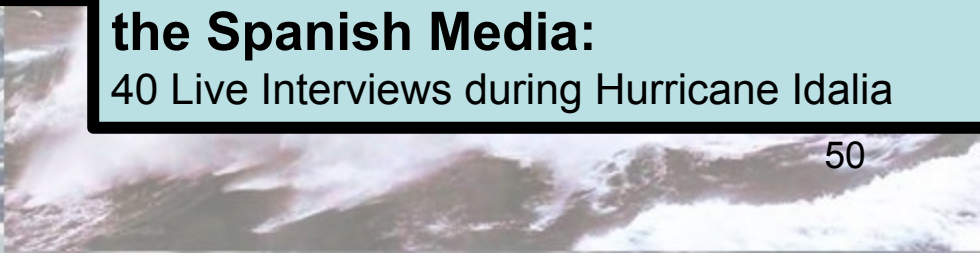
TAFB's Spanish-speaking forecasters (Aguirre-Echevarria, Delgado, Ramos, Rivera-Acevedo, Rosado-Vazquez, Rubio, Stripling, Tichacek) provided critical Impact-based Decision Support Services:



**For NHC/Hurricane Specialist Unit -
Coordinating Watches/ Warnings:**
Cuba – 4 times Dominican Republic – 3
El Salvador – 2 Honduras – 2
Mexico – 55 Nicaragua – 2

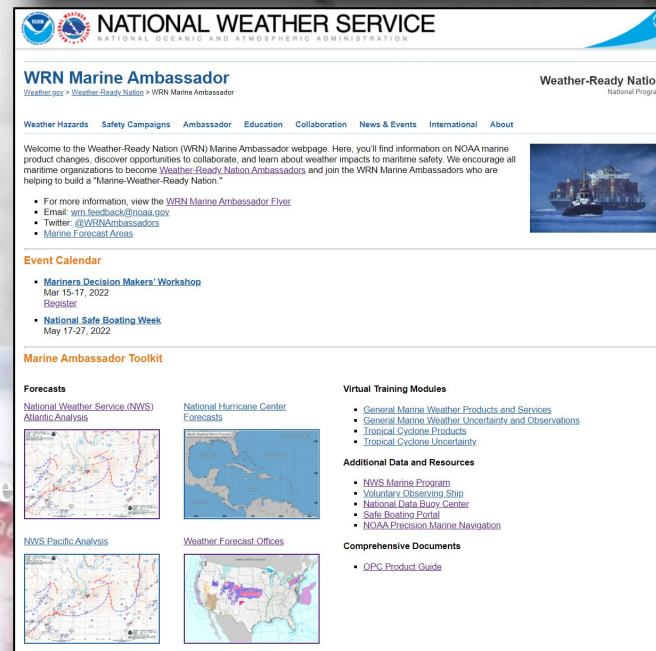


**For NOAA Public Affairs –
Conveying Forecasts/ Impacts to
the Spanish Media:**
40 Live Interviews during Hurricane Idalia



Weather-Ready Nation Ambassador

- From People to Ports to Communities, we are working to build a Weather-Ready Nation
 - Ready, Responsive and Resilient to extreme weather and other hazards



Weather-Ready Nation Marine Ambassador Network

- Comprehensive toolkit/**marine weather hazard training**
- Promotes **weather safety messaging** to their stakeholders
- Engages with NOAA personnel on **collaboration opportunities**
- Sharing **Success Stories** of Preparedness and Resiliency
- Virtual **WRN recognition** and share the **WRN logo** for your use
- **Direct line of feedback** for NWS product improvements
- **Quarterly newsletter** from the NWS about marine weather

<https://www.weather.gov/wrn/>

<https://www.weather.gov/wrn/wrna-marine>

Mariners Weather Hazards Workshop



- Workshop at National Hurricane Center (NHC) every March
- Purpose: Increase awareness and understanding among mariners of the various forecast products and services available from the National Weather Service
- Attendees:
 - Cruise Lines
 - Cargo Ships
 - Oil Tankers/Oil Platforms
 - Commercial Fisheries
 - U.S. Coast Guard/U.S. Navy
 - Large Recreational Vessels
 - Maritime Academies
- Organizers:
 - NHC/Tropical Analysis and Forecast Branch
 - Ocean Prediction Center
 - Weather Forecast Offices
 - Port Meteorologists



2023 TAFB

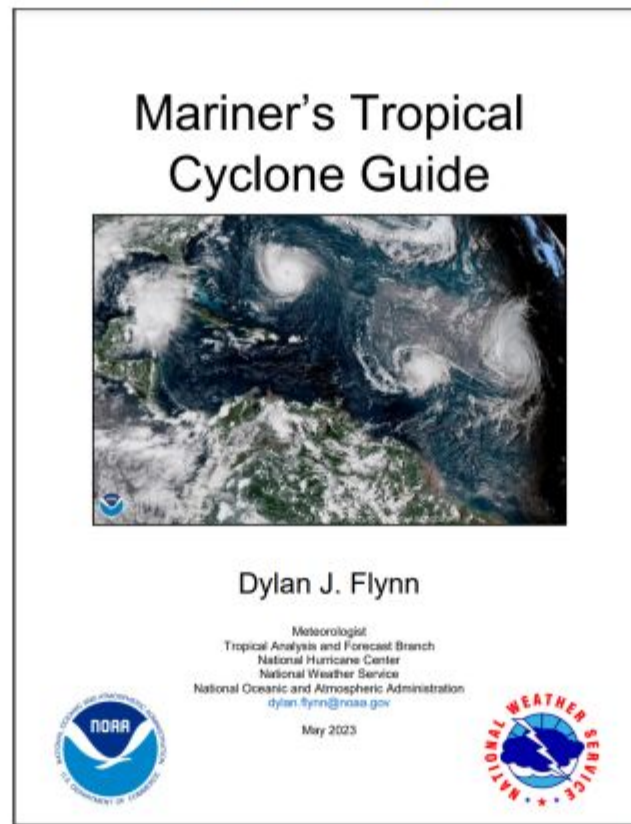
X Social Media Highlights

- ▶ Impressions – 6M (17K per day)
 - ▶ Likes – 24K (65 per day)
 - ▶ Retweets – 9K
 - ▶ Followers – 38,098
- [Tropical Atlantic Marine Weather Briefing](#)
 - 5-day briefing posted each Sunday and Thursday
 - Available publicly on NHC YouTube channel, link posted on Twitter
 - Began Jan 2023

Automated warning tweets began Jan 2020



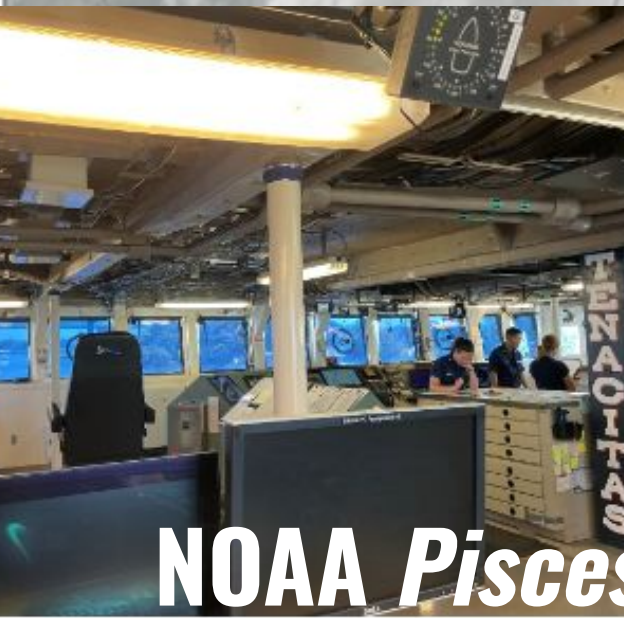
The National Hurricane Center Publishes the *Mariner's Tropical Cyclone Guide*



This new guide replaces the old *Mariner's Guide for Hurricane Awareness in the North Atlantic Basin*, which was published in 2000.

<https://www.nhc.noaa.gov/marinersguide.pdf>

Familiarization Floats



NOAA *Pisces* – Stephen Konarik – August 2023



US Coast Guard *Eagle* – Eric Christensen – May 2023

How do I get weather forecasts over the open ocean?

NOAA Weather Radio - Reliable weather broadcasts out to 25nm from shore

HF radio - Long distance broadcast range with coastal and offshore weather information

VHF radio - Marine radio on channels 16 and 22A - Primarily broadcasts for coastal areas

NAVTEX - Medium Frequency weather broadcasts on 518 khz with a range up to 200 nm - Low cost and automated

InMarsat C SafetyNET - Satellite transmission of High Seas forecasts and warnings – Part of Global Marine Distress and Safety System

Iridium SafetyCast – Satellite transmission of High Seas forecasts and warnings - Part of Global Marine Distress and Safety System (Becoming operational now)

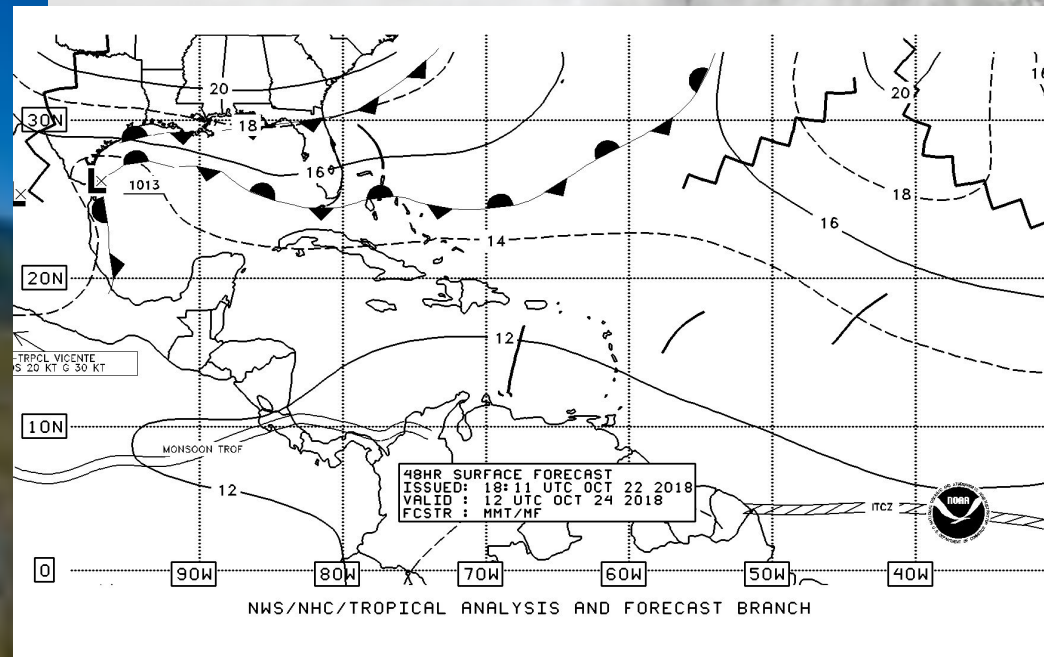
FTP Mail - User can request and receive NWS text and graphic products via email using ftp commands - Low bandwidth email

Marine Composite Page – Winds/Waves/Warnings in graphical form via low bandwidth internet -

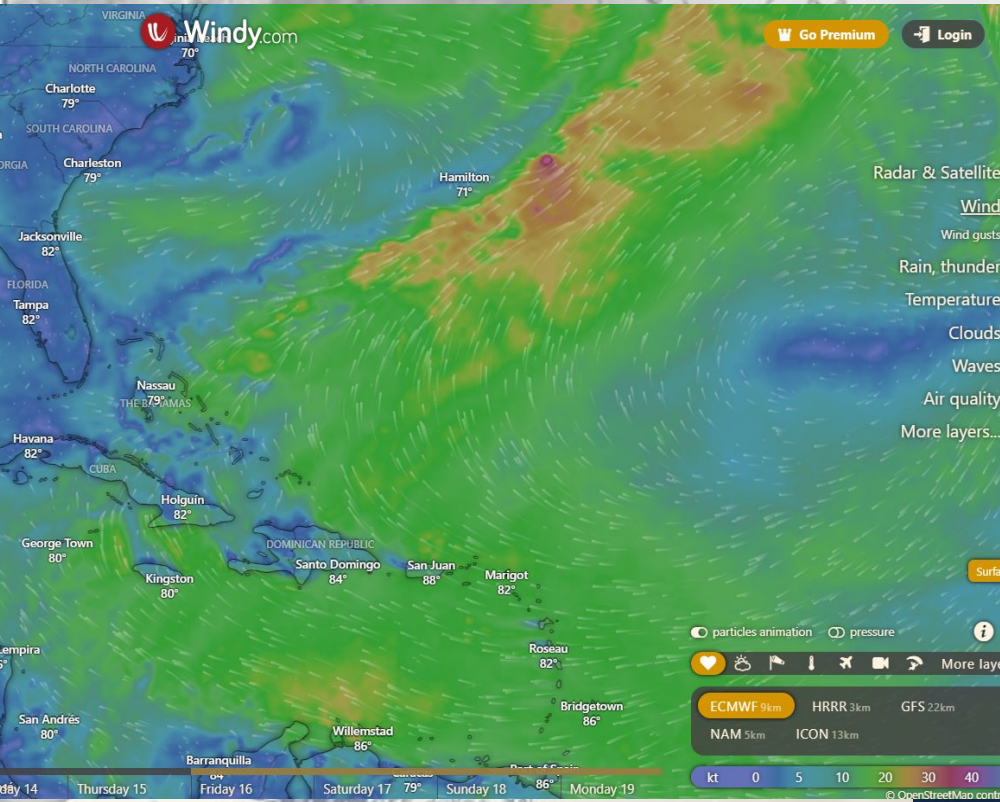
For more information: <https://weather.gov/marine> (Dissemination menu)

Communications over the High Seas is changing...

**MARINE
RADIOFAX
TAFB provides
graphical products
from three U.S.
Coast Guard
transmitters**



Communications over the High Seas is changing...



STARLINK MARITIME

Global maritime coverage for boats of all sizes with up to 220 Mbps download while at sea.
Starting at \$250/mo with a one-time hardware cost of \$2,500.



S-100 Rollout

- In 2022, the International Maritime Organization (IMO), amended its Electronic Chart Display and Information System (ECDIS) standard to leverage S-100 based ENC's beginning in 2026.
- S-100 ECDIS will be voluntary starting **1 January 2026**
- From **1 January 2029** new systems must comply with the new IMO Resolution on ECDIS Performance Standards (MSC.530(106))



S - 412

Weather and
Wave
Warnings

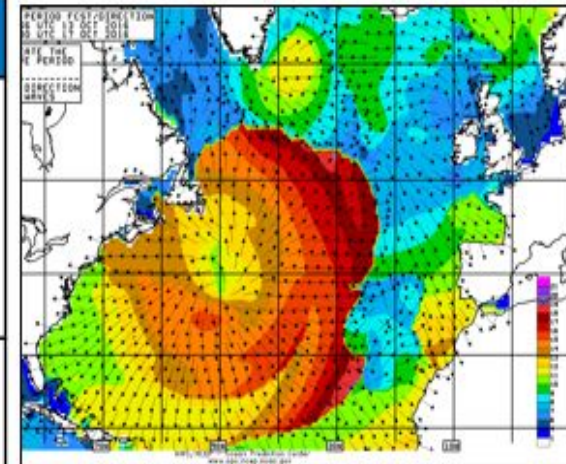
Polygons



S - 413

Weather and
Wave
Conditions

Graphics &
Gridded Data



TAFB Products and Services in Development

- NWS Marine Full Basin Oceanic Gridded data
- Spanish language Offshore Waters Forecasts
- Individual Warning Polygons
- Severe Thunderstorm Warnings / Special Marine Warnings
- Point and Click Marine Forecasts
- User Specified Ship Transit Forecasts
- Wave Height Probabilities
- Day 4 and 5 surface progs

National Hurricane Center/Tropical Analysis and Forecast Branch

<https://www.nhc.noaa.gov/marine/?atlc>

1-305-229-4424 –Atlantic/Gulf/Caribbean 1-305-229-4425 –Pacific Twitter: @NHC_TAFB

