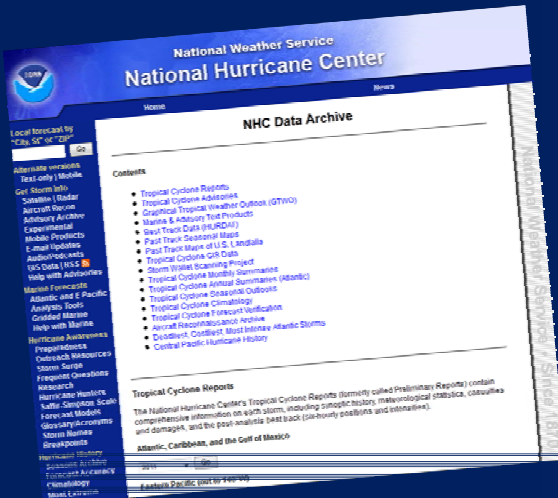


# National Hurricane Center and Weather Forecast Office Products

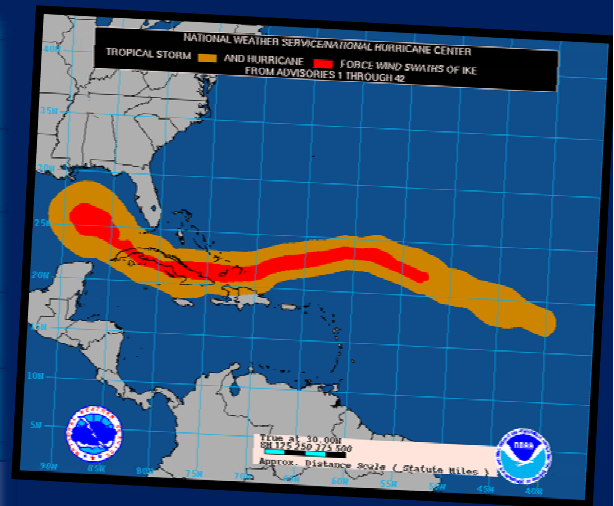


**Tropical Storm Earl**  
Sunday August 29, 2010  
AM EDT Intermediate Advisory 16A  
NWS IPC National Hurricane Center

**Current Information:**  
Center Location 17.1 N 57.6 W  
Max Sustained Wind 70 mph  
Movement W at 18 mph

**Forecast Positions:**  
● Tropical Cyclone ○ Post-Tropical  
Sustained Winds: D < 39 mph  
S 39-73 mph H 74-110 mph M > 110mph

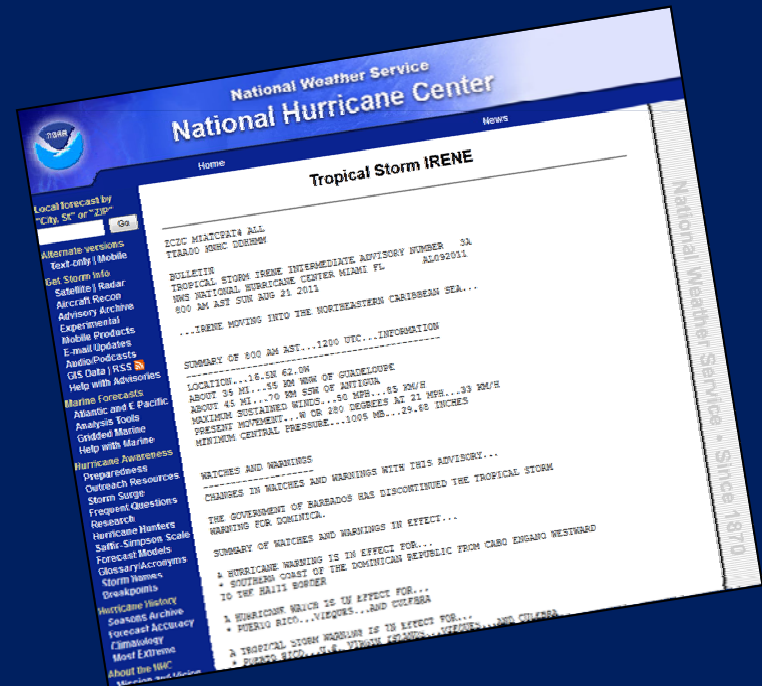
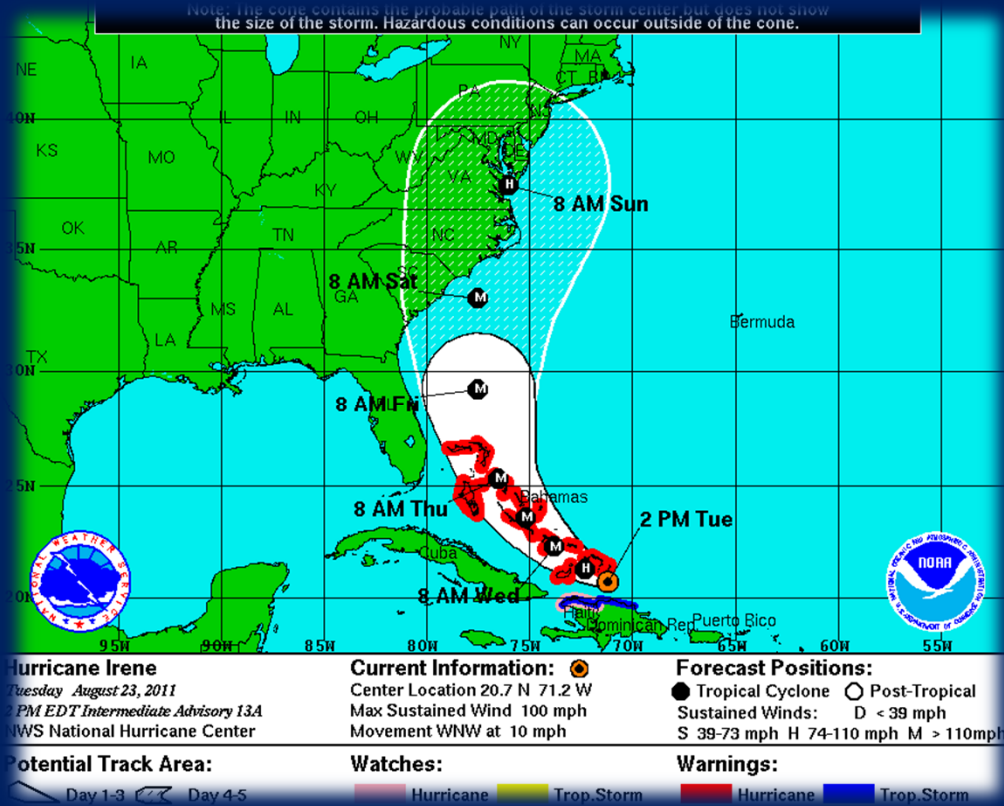
**Potential Track Area:** Day 1-3 Day 4-5  
**Watches:** Hurricane Trop Storm  
**Warnings:** Hurricane Trop Storm



John Cangialosi  
National Hurricane Center  
National Hurricane Conference  
26 March 2012

# NHC Tropical Cyclone Products

NHC provides the “big picture” that complements and guides local NWS forecast office products, and provides guidance for international partners



# NHC Text Products

- **Public Advisory**
- **Forecast Advisory**
- **Forecast Discussion**
- **Wind Speed Probabilities**
- **Maximum 1-min Wind Speed Probability**
- **Update**
- **Position Estimate**
- **Tropical Weather Outlook**
- **Tropical Cyclone Reports**
- **Seasonal Forecast (as co-author)**
- **Monthly Tropical Weather Summary**

# NHC Graphical Products

- **Track Forecast Cone**
- **Surface Wind Field**
- **Surface Wind Speed Probabilities**
- **Cumulative Wind History**
- **Graphical Tropical Weather Outlook**
- **Storm Surge Probabilities**
- **Podcasts (Audio)**

# Tropical Weather Outlook

000  
ABNT20 KNHC 111736  
TWOAT  
TROPICAL WEATHER OUTLOOK  
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL  
200 PM EDT SAT SEP 11 2010

FOR THE NORTH ATLANTIC...CARIBBEAN SEA AND THE GULF OF MEXICO...

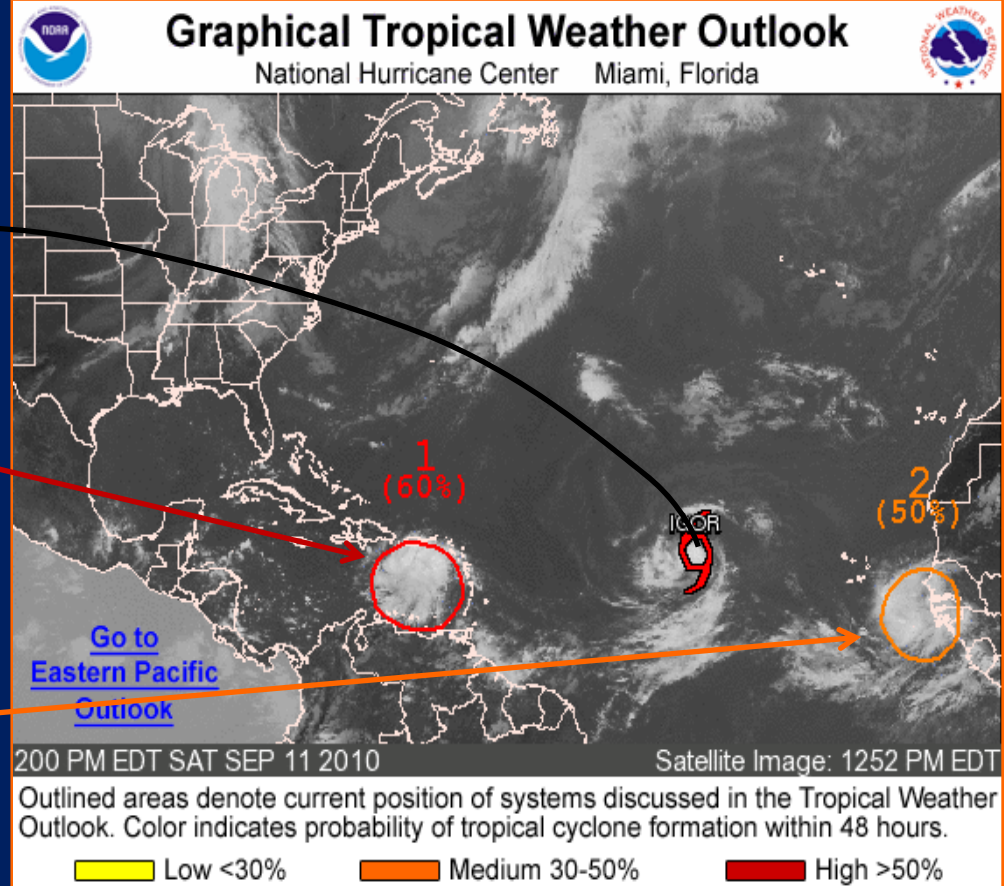
THE NATIONAL HURRICANE CENTER IS ISSUING ADVISORIES ON TROPICAL STORM IGOR...LOCATED ABOUT 1030 MILES WEST OF THE CAPE VERDE ISLANDS.

SHOWERS AND THUNDERSTORMS HAVE CHANGED LITTLE IN ASSOCIATION WITH A BROAD AREA OF LOW PRESSURE LOCATED OVER THE EASTERN CARIBBEAN SEA. ENVIRONMENTAL CONDITIONS APPEAR FAVORABLE FOR DEVELOPMENT...AND A TROPICAL DEPRESSION COULD FORM AS THE SYSTEM MOVES WESTWARD INTO THE CENTRAL AND WESTERN CARIBBEAN SEA. THERE IS A HIGH CHANCE...60 PERCENT...OF THIS SYSTEM BECOMING A TROPICAL CYCLONE DURING THE NEXT 48 HOURS. REGARDLESS OF DEVELOPMENT...LOCALLY HEAVY RAINFALL IS POSSIBLE IN THE NORTHERN LEEWARD ISLANDS...PUERTO RICO...THE VIRGIN ISLANDS...AND HISPANIOLA DURING THE NEXT DAY OR SO. THESE RAINS COULD CAUSE LIFE-THREATENING FLASH FLOODS AND MUD SLIDES... ESPECIALLY IN MOUNTAINOUS TERRAIN.

SATELLITE IMAGERY AND UPPER-AIR OBSERVATIONS INDICATE THAT THE VIGOROUS TROPICAL WAVE AND ASSOCIATED LOW PRESSURE AREA NEAR THE WEST COAST OF AFRICA HAVE BECOME BETTER ORGANIZED DURING THE PAST SEVERAL HOURS. SURFACE PRESSURES ARE QUITE LOW...AND A TROPICAL DEPRESSION COULD FORM OVER THE NEXT COUPLE OF DAYS AS THIS SYSTEM MOVES TOWARD THE WEST OR WEST-NORTHWEST AT 10 TO 15 MPH. THERE IS A MEDIUM CHANCE...50 PERCENT...OF THIS SYSTEM BECOMING A TROPICAL CYCLONE DURING THE NEXT 48 HOURS.

ELSEWHERE...TROPICAL CYCLONE FORMATION IS NOT EXPECTED DURING THE NEXT 48 HOURS.

\$\$  
FORECASTER BLAKE/BRENNAN



Text

Graphic

# Tropical Weather Outlook

- General assessment of activity in the tropics, pertaining to tropical cyclone formation
- Discusses areas of disturbed weather and their potential for formation (into a tropical cyclone) during the next 48 hours

Issued at 2 AM, 8 AM, 2 PM, 8 PM EDT  
During EST issuance times become-  
1 AM, 7 AM, 1 PM, 7 PM

000  
ABNT20 KNHC 111736  
TWOAT  
TROPICAL WEATHER OUTLOOK  
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL  
200 PM EDT SAT SEP 11 2010

FOR THE NORTH ATLANTIC...CARIBBEAN SEA AND THE GULF OF MEXICO...

THE NATIONAL HURRICANE CENTER IS ISSUING ADVISORIES ON TROPICAL STORM IGOR...LOCATED ABOUT 1030 MILES WEST OF THE CAPE VERDE ISLANDS.

SHOWERS AND THUNDERSTORMS HAVE CHANGED LITTLE IN ASSOCIATION WITH A BROAD AREA OF LOW PRESSURE LOCATED OVER THE EASTERN CARIBBEAN SEA. ENVIRONMENTAL CONDITIONS APPEAR FAVORABLE FOR DEVELOPMENT...AND A TROPICAL DEPRESSION COULD FORM AS THE SYSTEM MOVES WESTWARD INTO THE CENTRAL AND WESTERN CARIBBEAN SEA. THERE IS A HIGH CHANCE...60 PERCENT...OF THIS SYSTEM BECOMING A TROPICAL CYCLONE DURING THE NEXT 48 HOURS. REGARDLESS OF DEVELOPMENT...LOCALLY HEAVY RAINFALL IS POSSIBLE IN THE NORTHERN LEEWARD ISLANDS...PUERTO RICO...THE VIRGIN ISLANDS...AND HISPANIOLA DURING THE NEXT DAY OR SO. THESE RAINS COULD CAUSE LIFE-THREATENING FLASH FLOODS AND MUD SLIDES... ESPECIALLY IN MOUNTAINOUS TERRAIN.

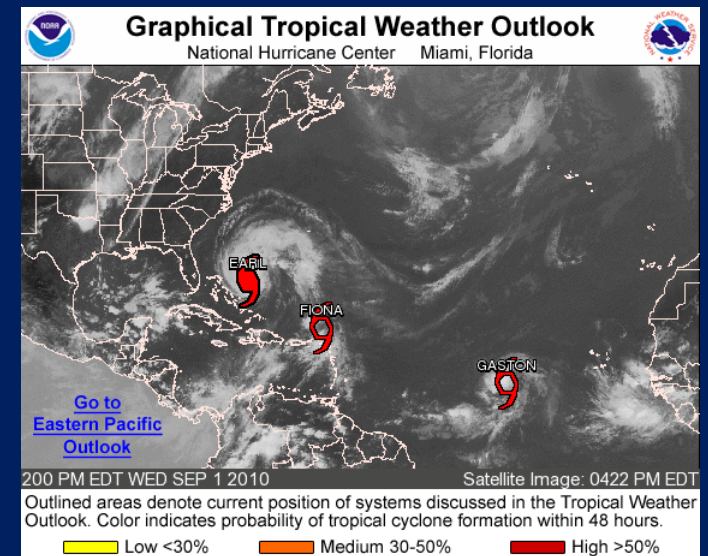
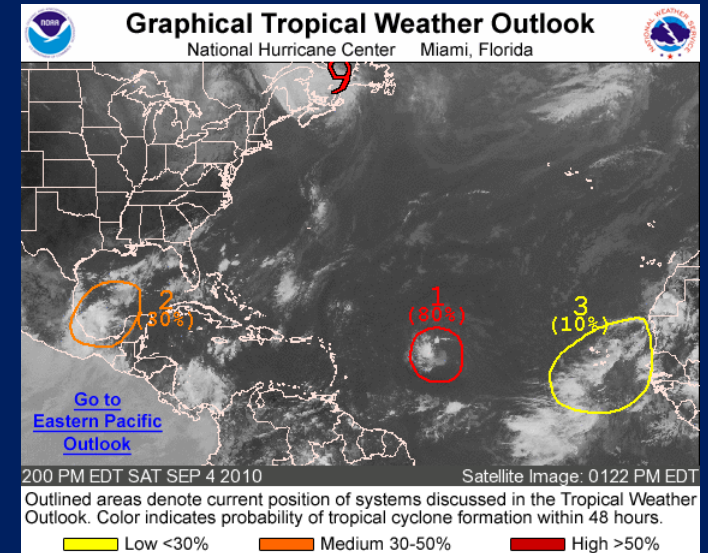
SATELLITE IMAGERY AND UPPER-AIR OBSERVATIONS INDICATE THAT THE VIGOROUS TROPICAL WAVE AND ASSOCIATED LOW PRESSURE AREA NEAR THE WEST COAST OF AFRICA HAVE BECOME BETTER ORGANIZED DURING THE PAST SEVERAL HOURS. SURFACE PRESSURES ARE QUITE LOW...AND A TROPICAL DEPRESSION COULD FORM OVER THE NEXT COUPLE OF DAYS AS THIS SYSTEM MOVES TOWARD THE WEST OR WEST-NORTHWEST AT 10 TO 15 MPH. THERE IS A MEDIUM CHANCE...50 PERCENT...OF THIS SYSTEM BECOMING A TROPICAL CYCLONE DURING THE NEXT 48 HOURS.

ELSEWHERE...TROPICAL CYCLONE FORMATION IS NOT EXPECTED DURING THE NEXT 48 HOURS.

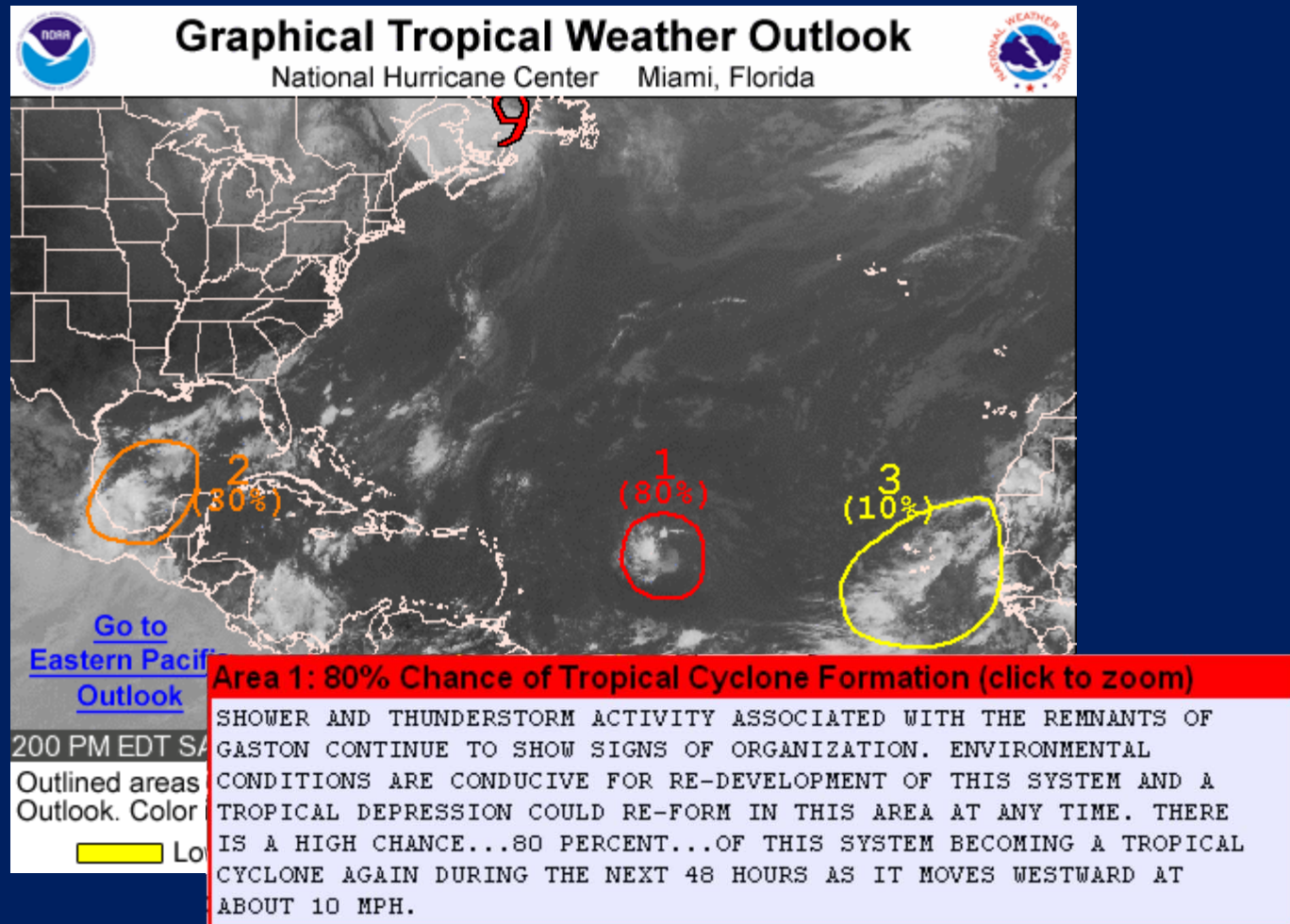
\$\$  
FORECASTER BLAKE/BRENNAN

# Graphical Tropical Weather Outlook

- A visual companion to the text TWO
- A web-based graphic superimposed on the most recently available geostationary satellite mosaic.
- Indicates the current locations of areas of disturbed weather discussed in the TWO by encircling them.
- Provides categorical (**low**, **medium**, and **high**) and explicit probability of formation during the next 48 hours
- Active tropical cyclones are also shown on the Graphical TWO with a cyclone symbol

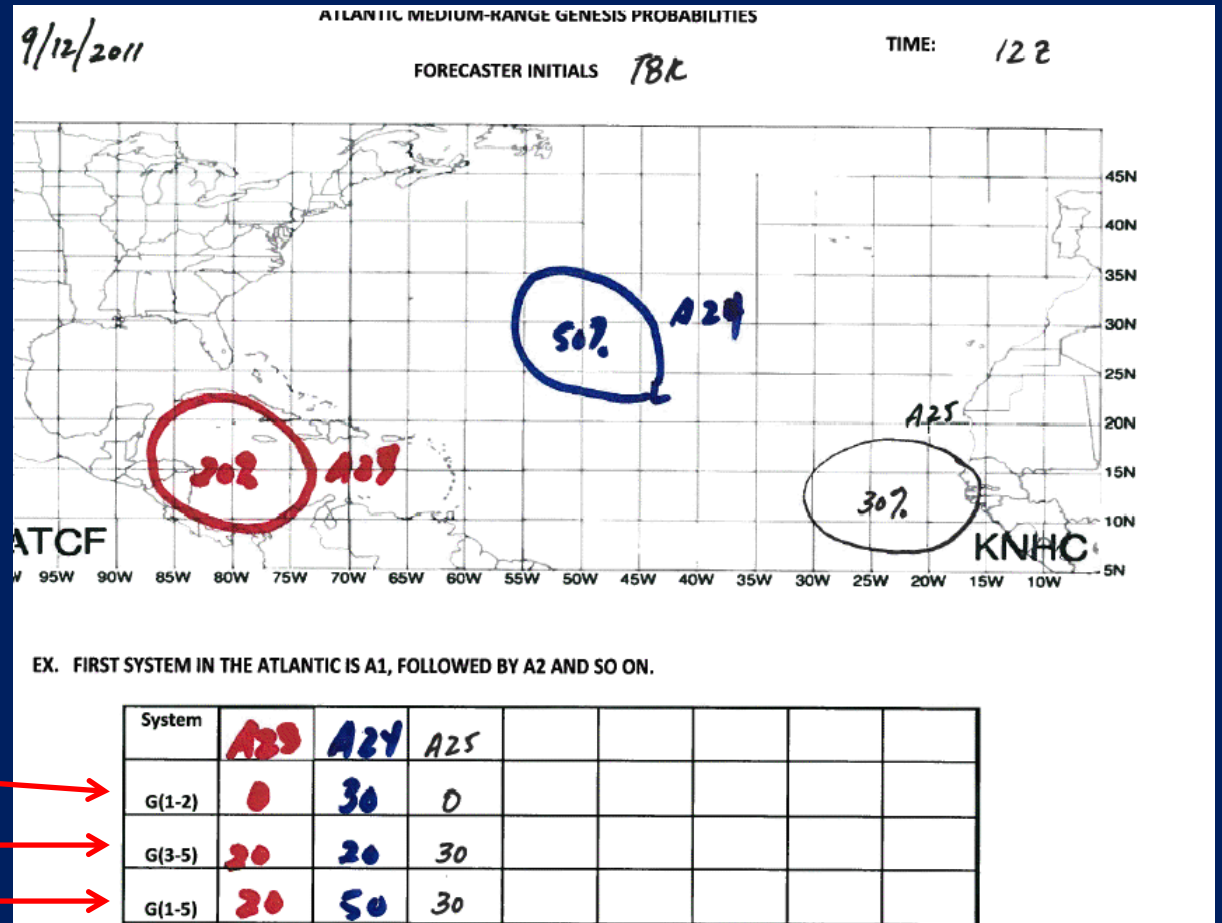


# Graphical Tropical Weather Outlook





# Experimental Medium Range Genesis Forecasts

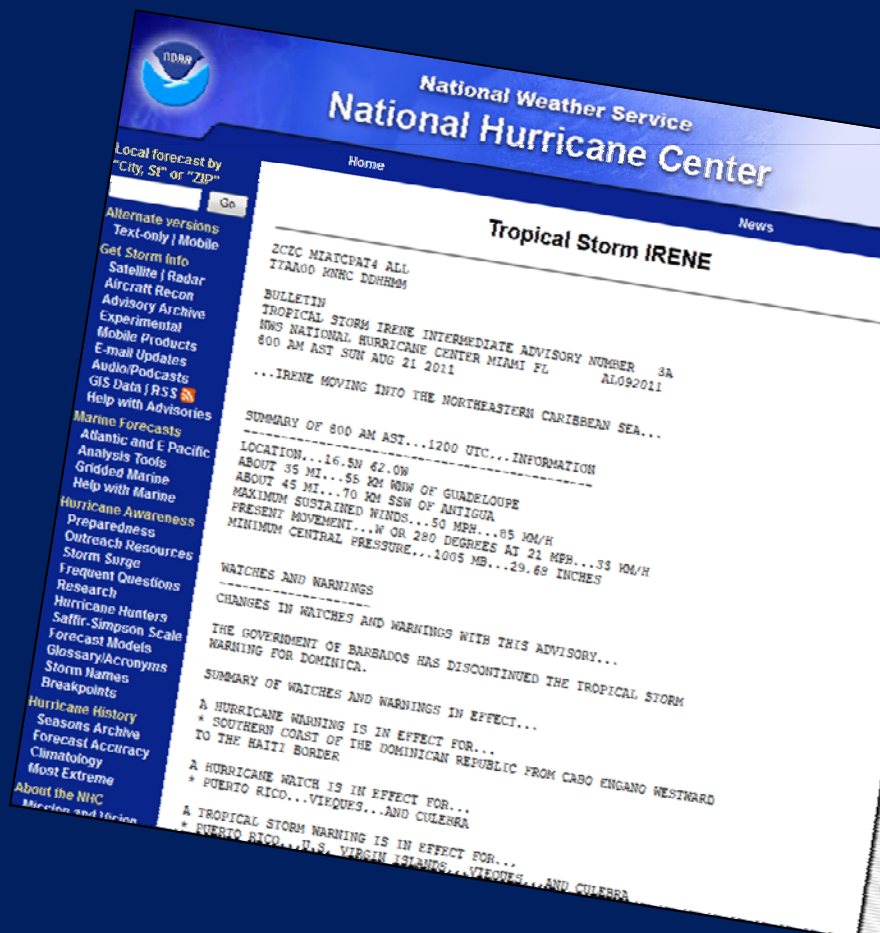


TWO

Extended outlook

Total

# NHC Tropical Cyclone Advisory Products



## HAZARDS AFFECTING LAND

WIND...TROPICAL-STORM-FORCE WINDS WILL CONTINUE TO SPREAD INLAND OVER THE SOUTHERN PORTION OF THE WARNING AREA TONIGHT. HURRICANE-FORCE WINDS ARE EXPECTED TO FIRST REACH THE HURRICANE WARNING AREA LATE TONIGHT. TROPICAL-STORM-FORCE WINDS ARE EXPECTED TO BEGIN ALONG THE MID-ATLANTIC COAST LATE TONIGHT WITH HURRICANE CONDITIONS EXPECTED BY SATURDAY AFTERNOON. TROPICAL STORM CONDITIONS ARE EXPECTED TO REACH SOUTHERN NEW ENGLAND SATURDAY NIGHT WITH HURRICANE CONDITIONS EXPECTED ON SUNDAY.

STORM SURGE...AN EXTREMELY DANGEROUS STORM SURGE WILL RAISE WATER LEVELS BY AS MUCH AS 6 TO 11 FEET ABOVE GROUND LEVEL IN THE HURRICANE WARNING AREA IN NORTH CAROLINA...INCLUDING THE ALBEMARLE AND PAMLICO SOUNDS. STORM SURGE WILL RAISE WATER LEVELS BY AS MUCH AS 4 TO 8 FEET ABOVE GROUND LEVEL WITHIN THE HURRICANE WARNING AREA FROM THE NORTH CAROLINA/VIRGINIA BORDER NORTHWARD TO CAPE COD INCLUDING SOUTHERN PORTIONS OF THE CHESAPEAKE BAY AND ITS TRIBUTARIES. NEAR THE COAST...THE SURGE WILL BE ACCOMPANIED BY LARGE...DESTRUCTIVE...AND LIFE-THREATENING WAVES. STORM SURGE VALUES ARE VERY LOCATION-SPECIFIC...AND USERS ARE URGED TO CONSULT PRODUCTS ISSUED BY THEIR LOCAL NATIONAL WEATHER SERVICE OFFICES.

RAINFALL...IRENE IS EXPECTED TO PRODUCE RAINFALL ACCUMULATIONS OF 6 TO 10 INCHES...WITH ISOLATED MAXIMUM AMOUNTS OF 15 INCHES...FROM EASTERN NORTH CAROLINA NORTHWARD THROUGH THE MID-ATLANTIC STATES INTO NEW ENGLAND THROUGH MONDAY MORNING. THESE RAINS COULD CAUSE WIDESPREAD FLOODING AND LIFE-THREATENING FLASH FLOODS.

SURF...LARGE SWELLS GENERATED BY IRENE ARE AFFECTING PORTIONS OF THE COAST OF THE SOUTHEASTERN UNITED STATES. THESE SWELLS WILL CAUSE LIFE-THREATENING SURF AND RIP CURRENT CONDITIONS.

TORNADOES...ISOLATED TORNADOES ARE POSSIBLE OVER EXTREME EASTERN NORTH CAROLINA LATE TONIGHT AND SATURDAY.

# NHC Tropical Cyclone Advisory Products

## Intermediate Public Advisory

- Provides continuous flow of information.
- Issued when watches or warnings are in effect.
- Issued 3-hourly or 2-hourly if well-defined center within NWS radar range.
- Not used to issue watches or warnings.
- Content similar to routine public advisories.

The screenshot displays the National Weather Service National Hurricane Center website. The main content area shows a 'Tropical Storm IRENE' advisory. The advisory text includes:

TCFC MIAFCPAT4 ALL  
JTAR00 KNHC DDHDDM

BULLETIN  
TROPICAL STORM IRENE INTERMEDIATE ADVISORY NUMBER 3A  
NWS NATIONAL HURRICANE CENTER MIAMI FL AL092011  
800 AM AST SUN AUG 21 2011

...IRENE MOVING INTO THE NORTHEASTERN CARIBBEAN SEA...

SUMMARY OF 800 AM AST...1200 UTC...INFORMATION

LOCATION...16.5N 62.0W  
ABOUT 35 MI...55 KM NNE OF GUADELOUPE  
ABOUT 45 MI...70 KM SSW OF ANTIGUA  
MAXIMUM SUSTAINED WINDS...50 MPH...85 KM/H  
PRESENT MOVEMENT...W OR 280 DEGREES AT 21 MPH...33 KM/H  
MINIMUM CENTRAL PRESSURE...1005 MB...29.68 INCHES

WATCHES AND WARNINGS

CHANGES IN WATCHES AND WARNINGS WITH THIS ADVISORY...

THE GOVERNMENT OF BARBADOS HAS DISCONTINUED THE TROPICAL STORM WARNING FOR DOMINICA.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT...

A HURRICANE WARNING IS IN EFFECT FOR...  
\* SOUTHERN COAST OF THE DOMINICAN REPUBLIC FROM CABO ENGANO WESTWARD TO THE HAITI BORDER

A HURRICANE WATCH IS IN EFFECT FOR...  
\* PUERTO RICO...VIEQUES...AND CULEBRA

A TROPICAL STORM WARNING IS IN EFFECT FOR...  
\* PUERTO RICO...U.S. VIRGIN ISLANDS...VIEQUES...AND CULEBRA

The left sidebar contains various navigation links such as 'Local forecast by City, St or ZIP', 'Alternate versions', 'Get Storm Info', 'Marine forecasts', 'Hurricane Awareness', and 'About the NHC'. The right sidebar shows 'National Weather Service - Since 1870'.

# NHC Tropical Cyclone Advisory Products

## Forecast Advisory

- Only source of all the forecast data
- Data is used in HURREVAC and other commercial tracking software
- Watches and warnings
- Center location, motion, minimum pressure and eye diameter
- Forecast positions, intensity and wind radii

The screenshot displays the National Weather Service National Hurricane Center website. The main content area is titled "Hurricane IRENE" and contains the following text:

ECZC MIATCHAT4 ALL  
FTAA00 KNHC DDHDD04

HURRICANE IRENE FORECAST/ADVISORY NUMBER 20  
NWS NATIONAL HURRICANE CENTER MIAMI FL ALOP2011  
0900 UTC SAT AUG 27 2011

CHANGES IN WATCHES AND WARNINGS WITH THIS ADVISORY...

THE TROPICAL STORM WARNING HAS BEEN DISCONTINUED FOR THE SOUTH CAROLINA COAST SOUTH OF THE SOUTH SANTEE RIVER.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT...

A HURRICANE WARNING IS IN EFFECT FOR...

- \* LITTLE RIVER INLET NORTH CAROLINA NORTHWARD TO SAGAMORE BEACH MASSACHUSETTS...INCLUDING THE PAMUNCE...ALBEMARLE...AND CURRITUCK SOUNDS...DELAWARE BAY...CHESAPEAKE BAY SOUTH OF DRUM POINT...NEW YORK CITY...LONG ISLAND...LONG ISLAND SOUND...COASTAL CONNECTICUT AND RHODE ISLAND...BLOCK ISLAND...HARTNAS VINEYARD AND NANTUCKET

A TROPICAL STORM WARNING IS IN EFFECT FOR...

- \* SOUTH SANTEE RIVER SOUTH CAROLINA TO LITTLE RIVER INLET
- \* CHESAPEAKE BAY FROM DRUM POINT NORTHWARD AND THE TIDAL POTOMAC
- \* NORTH OF SAGAMORE BEACH TO MERRIMACK RIVER

A TROPICAL STORM WATCH IS IN EFFECT FOR...

- \* MERRIMACK RIVER TO EASTPORT MAINE

INTERESTS IN SOUTHEASTERN CANADA SHOULD MONITOR THE PROGRESS OF IRENE.

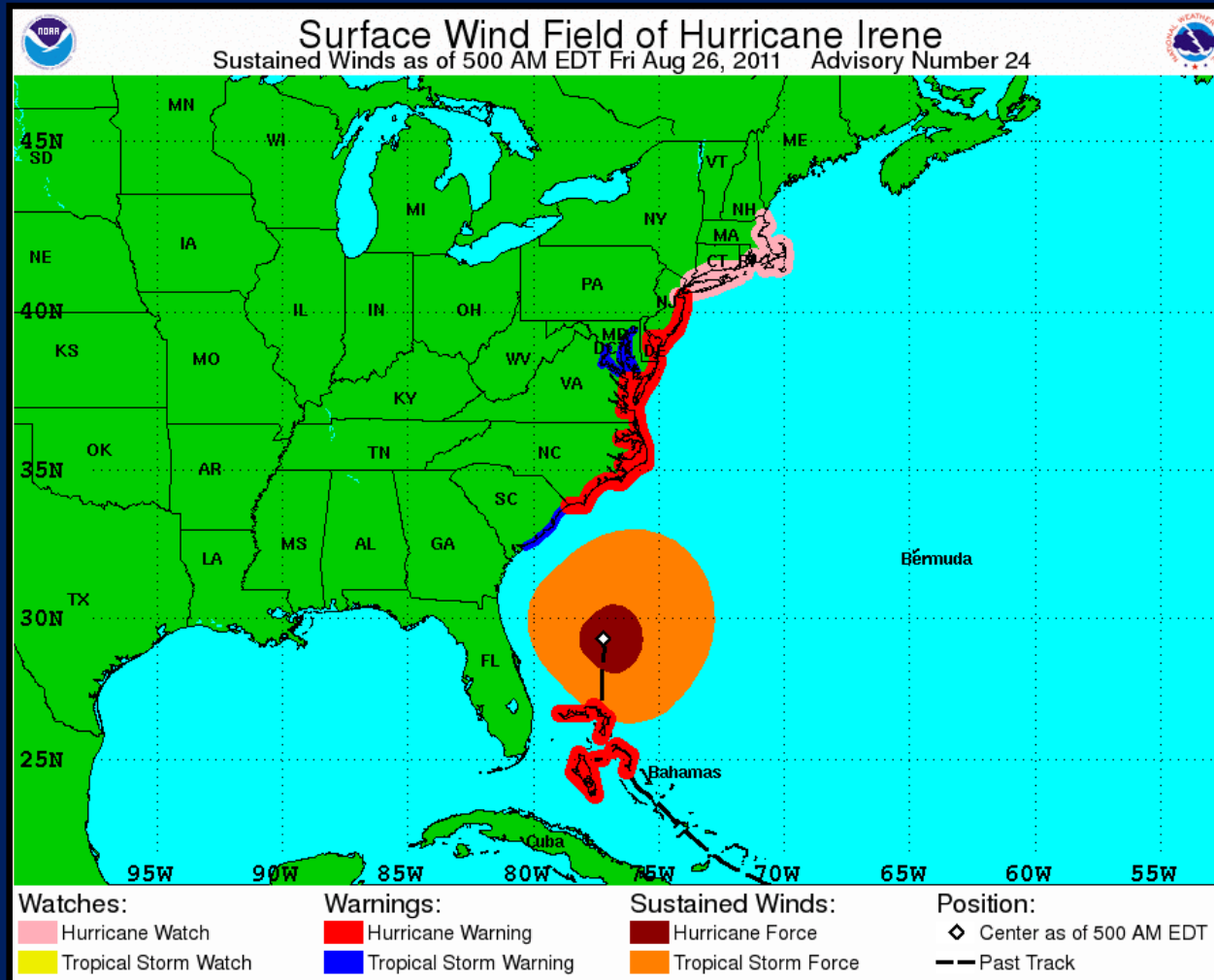
HURRICANE CENTER LOCATED NEAR 34.1N 76.5W AT 27/0900Z  
POSITION ACCURATE WITHIN 15 NM

PRESENT MOVEMENT TOWARD THE NORTH-NORTHEAST OR 20 DEGREES AT 12 KT

ESTIMATED MINIMUM CENTRAL PRESSURE 952 MB  
MAX SUSTAINED WINDS 30 KT WITH GUSTS TO 100 KT.

The left sidebar contains various navigation links such as "Local forecast by City, ST or ZIP", "Alternate versions", "Get Storm Info", "Satellite | Radar", "Aircraft Recon", "Advisory Archive", "Experimental", "Mobile Products", "E-mail Updates", "AudioPodcasts", "GIS Data | RSS", "Help with Advisories", "Marine Forecasts", "Atlantic and E Pacific", "Analysis Tools", "Gridded Marine", "Help with Marine", "Hurricane Awareness", "Preparedness", "Outreach Resources", "Storm Surge", "Frequent Questions", "Research", "Hurricane Hunters", "Saffir-Simpson Scale", "Forecast Models", "Glossary/Acronyms", "Storm Names", "Breakpoints", "Hurricane History", "Seasons Archive", "Forecast Accuracy", "Climatology", "Most Extreme", and "About the NHC".

# Surface Wind Field



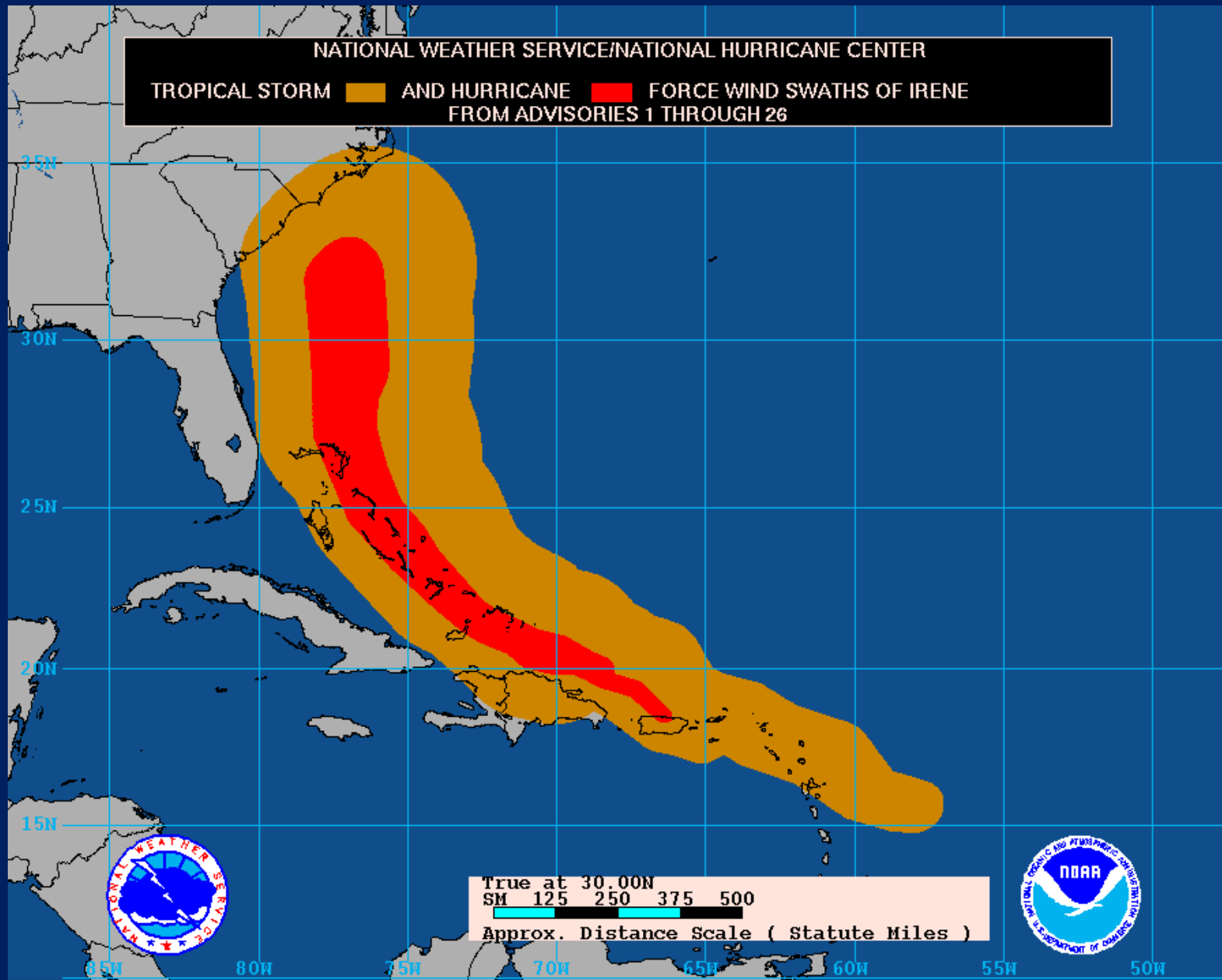
Shows:

Wind field

Past track

Current  
watches/  
warnings

# Cumulative Wind History



# NHC Tropical Cyclone Advisory Products

## Forecast Discussion

- Free-form text product
- Provides the reasoning behind forecasts and warnings
- Discussion of relevant observations, model guidance, and the forecast uncertainties
- Includes table of track and intensity forecasts

The screenshot displays the National Weather Service National Hurricane Center website. The main content area is titled "Hurricane DEAN" and contains a forecast discussion. The discussion text includes:

2007 MFLAT0014 ALL  
TTL001 K00C Q00000  
HURRICANE DEAN DISCUSSION NUMBER 27  
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL042007  
1100 AM EDT SAT 2007 12 0007

AN AIR FORCE PLANE ENTERED THE EYE OF DEAN THIS MORNING AND FOUND THAT THE HURRICANE HAD NOT WEAKENED AND THE INITIAL INTENSITY REMAINS AT 100 KNOTS. IN FACT...THE MINIMUM PRESSURE DROPPED TO 924 MB AT AROUND 1200 UTC AND THEN UP TO 928 MB JUST RECENTLY. DEAN WILL LIKELY GO THROUGH SEVERAL CYCLES DURING THE NEXT FEW DAYS RESULTING IN FLUCTUATIONS IN INTENSITY. HOWEVER...THE PEAK INTENSITY IS EXPECTED TO OCCUR IN THE NORTHWESTERN CARIBBEAN BETWEEN THE CAYMAN ISLANDS AND YUCATAN MORN. THE OCEAN HEAT CONTENT IS VERY HIGH. DEAN COULD BECOME A CATEGORY FIVE AT ANY TIME BEFORE IT REACHES YUCATAN.

THE SIKERING PATTERN HAS BEEN VERY STABLE. DEAN IS MOVING TOWARD THE WEST OR 290 DEGREES AT 15 KNOTS SUSTAINED BY A HIGH OVER THE WESTERN ATLANTIC AND A LOW OVER FLORIDA. THE LOW IS FORECAST TO MOVE WESTWARD AND BE REPLACED BY A STRONG RIDGE BY ALL GLOBAL MODELS. THIS PATTERN WILL KEEP DEAN ON A GENERAL WEST-NORTHWEST TO WEST TRACK ACROSS THE CARIBBEAN SEA IN THE DIRECTION OF JAMAICA...THE CAYMAN ISLANDS AND YUCATAN. THIS IS CONSISTENT WITH TRACK MODELS WITH THE EXCEPTION OF THE CFSR WHICH INSISTS ON A TRACK FARTHER TO THE NORTH AND JUST CLIPPING THE NORTHEASTERN YUCATAN PENINSULA.

FORECAST POSITIONS AND MAX WINDS

INITIAL	18/1500Z	15.7N	60.6W	230 KT
12HR VT	19/0000Z	16.4N	71.0W	130 KT
24HR VT	19/1200Z	17.3N	74.5W	130 KT
36HR VT	20/0000Z	18.3N	77.5W	130 KT
48HR VT	20/1200Z	19.5N	81.4N	140 KT
72HR VT	21/1200Z	21.5N	84.0W	100 KT...INLAND
96HR VT	22/1200Z	23.4N	100.0W	50 KT...INLAND

66  
FORECASTER AVILA  
NNNN

Quick Navigation Links:  
NHC Active Storms - Atlantic and E Pacific Marine - Storm Archive

# Tropical Cyclone Update

**TROPICAL STORM CLAUDETTE TROPICAL CYCLONE UPDATE  
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL042009  
1215 PM EDT SUN AUG 16 2009**

**...DEPRESSION BECOMES TROPICAL STORM CLAUDETTE...**

**DATA FROM THE NOAA DOPPLER RADAR IN TALLAHASSEE FLORIDA INDICATE THAT SURFACE WINDS ASSOCIATED WITH THE DEPRESSION HAVE INCREASED TO 40 MPH...65 KM/HR...MAKING THE DEPRESSION TROPICAL STORM CLAUDETTE.**

**....SUMMARY OF 1215 PM AST INFORMATION...**

**LOCATION...28.7N 84.6W**

**MAXIMUM SUSTAINED WINDS...40 MPH**

**PRESENT MOVEMENT...NORTHWEST OR 320 DEGREES AT 14 MPH**

**MINIMUM CENTRAL PRESSURE...1011 MB**

**\$\$**

**FORECASTER ROBERTS/BRENNAN**

**This product is issued when:**  
**(1) the cyclone makes landfall**  
**(2) unexpected changes occur in the cyclone**  
**(3) to issue international watches and warnings**



# Tropical Cyclone Position Estimate

**HURRICANE IRENE TROPICAL CYCLONE POSITION ESTIMATE**

**NWS NATIONAL HURRICANE CENTER MIAMI FL AL092011**

**1000 PM EDT SAT AUG 27 2011**

**AT 1000 PM EDT...0200 UTC...THE CENTER OF HURRICANE IRENE WAS ESTIMATED BY AN AIR FORCE RESERVE HURRICANE HUNTER AIRCRAFT AND NOAA DOPPLER WEATHER RADAR TO BE NEAR LATITUDE 37.1 NORTH... LONGITUDE 75.5 WEST.**

**...SUMMARY OF 1000 PM EDT INFORMATION...**

**LOCATION...37.1N 75.5W**

**ABOUT 270 MI...435 KM...SSW OF NEW YORK CITY**

**MAXIMUM SUSTAINED WINDS...80 MPH.**

**PRESENT MOVEMENT...NNE OR 20 DEGREES AT 16 MPH**

**MINIMUM CENTRAL PRESSURE...952 MB**

**\$\$**

**FORECASTER BRENNAN**

**This product is issued between 2-hourly intermediate public advisories**

# Timeline (EDT) for Advisories/Updates - No Watches/Warnings

- 11 am - **Advisory**
- 5 pm - **Advisory**
- 11 pm - **Advisory**
- 5 am - **Advisory**

# Timeline (EDT) for Advisories/Updates - Watches/Warnings in Place

- **11 am – Advisory**
  - **2 pm – Intermediate Advisory**
- **5 pm – Advisory**
  - **8 pm – Intermediate Advisory**
- **11 pm – Advisory**
  - **2 am – Intermediate Advisory**
- **5 am – Advisory**
  - **8 am – Intermediate Advisory**

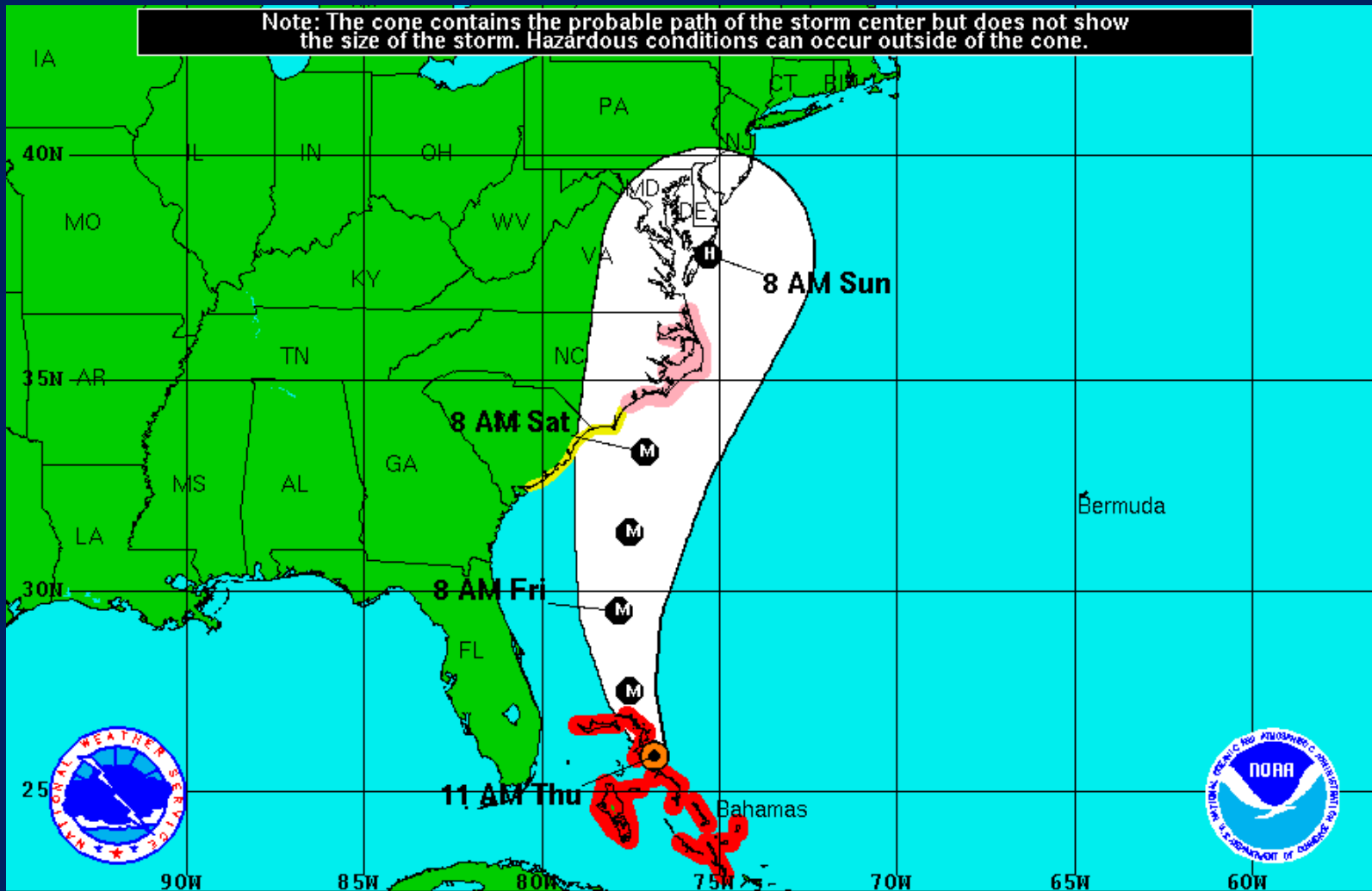
## Timeline (EDT) for Advisories/Updates

- Watches/Warnings in Place AND Center can be tracked by Radar

- 11 am – **Advisory**
  - 12 pm – **Position Estimate**
  - 1 pm – **Intermediate Advisory**
  - 2 pm – **Position Estimate**
  - 3 pm – **Intermediate Advisory**
  - 4 pm – **Position Estimate**
- 5 pm – **Repeat ...**

# Track Forecast/Cone Graphic – Three Day

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



## Hurricane Irene

Thursday August 25, 2011

11 AM EDT Advisory 21

NWS National Hurricane Center

## Current Information:

Center Location 25.9 N 76.8 W

Max Sustained Wind 115 mph

Movement NNW at 13 mph

## Forecast Positions:

● Tropical Cyclone ○ Post-Tropical

Sustained Winds: D < 39 mph

S 39-73 mph H 74-110 mph M > 110mph

## Potential Track Area:

 Day 1-3

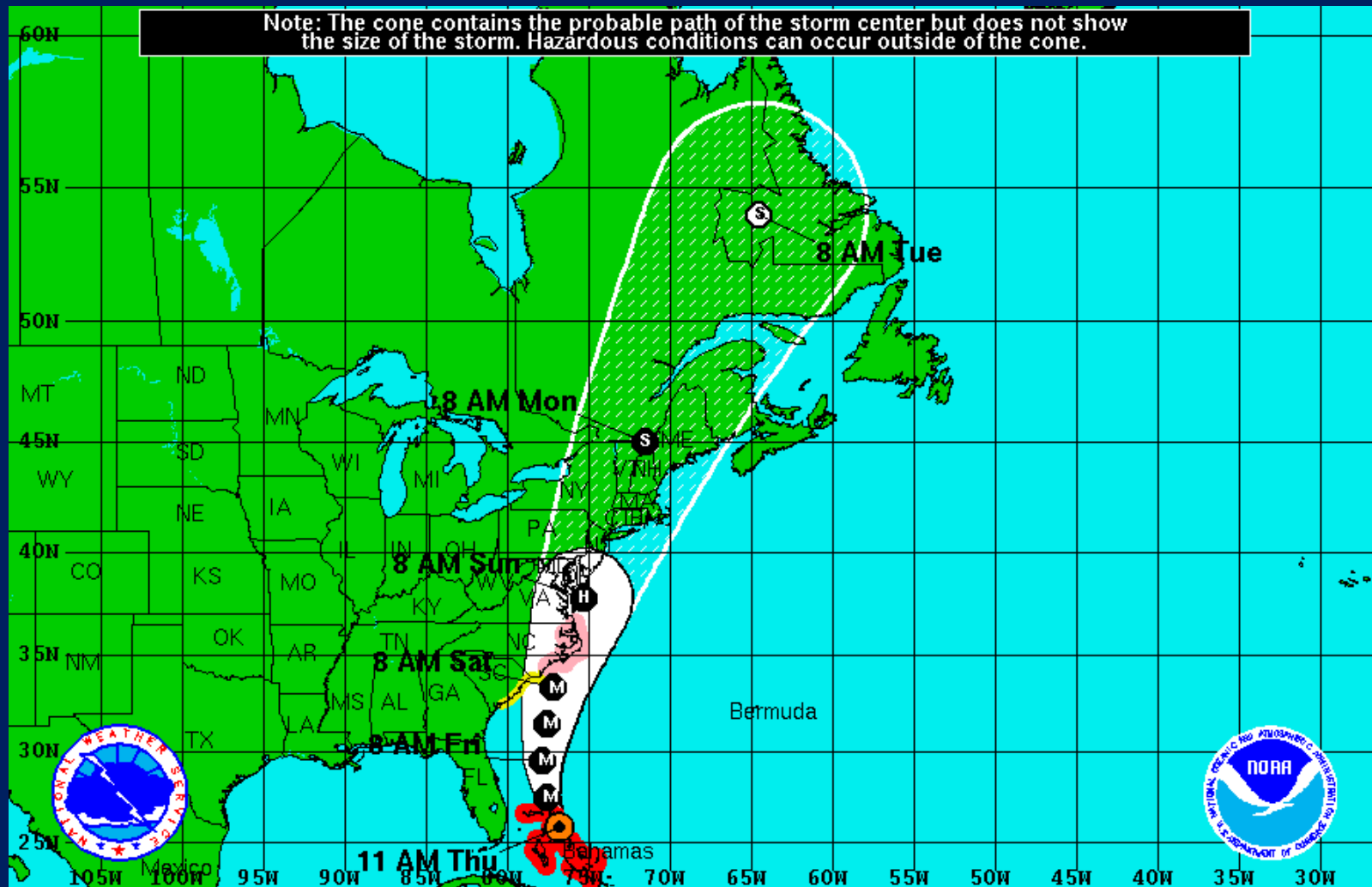
## Watches:

 Hurricane  Trop.Storm


## Warnings:



 Hurricane  Trop.Storm



# Track Forecast/Cone Graphic – Five Day



**Hurricane Irene**  
 Thursday August 25, 2011  
 11 AM EDT Advisory 21  
 NWS National Hurricane Center

**Current Information:**   
 Center Location 25.9 N 76.8 W  
 Max Sustained Wind 115 mph  
 Movement NNW at 13 mph

**Forecast Positions:**  
 Tropical Cyclone  Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

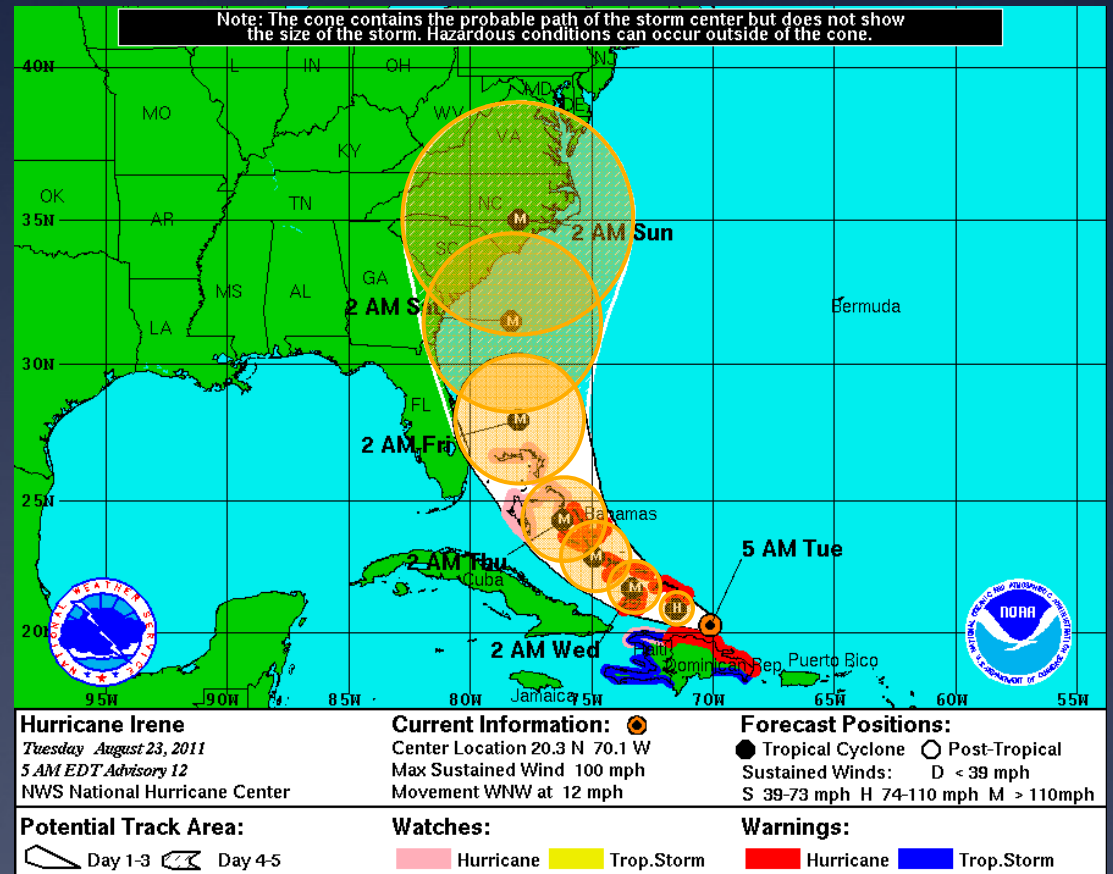
**Potential Track Area:**  
 Day 1-3  Day 4-5

**Watches:**  
 Hurricane  Trop.Storm

**Warnings:**  
 Hurricane  Trop.Storm

# NHC Forecast Cone

- Represents probable track of tropical cyclone center
- Formed by connecting circles centered on each forecast point (at 12, 24, 36 h, etc.)
- Size of the circles determined so that, for example, the actual storm position at 48 h will be within the 48-h circle 67% of the time



**Hurricane Isabel**  
**September 13, 2003**  
**5 PM EDT Saturday**


Advisory 31


Current Center Location 22.6 N 62.6 W

Max Sustained Wind 160 mph

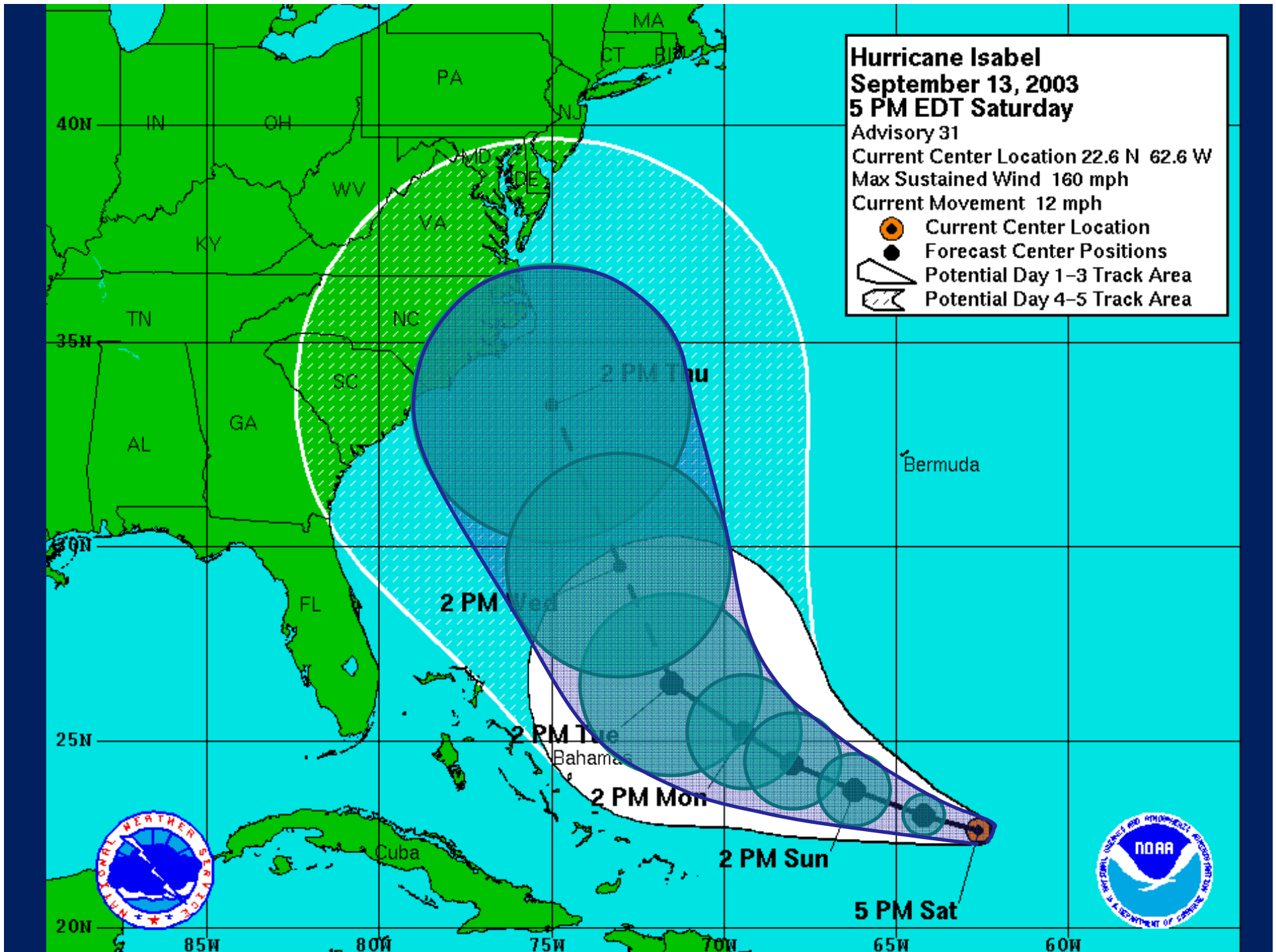
Current Movement 12 mph

 Current Center Location

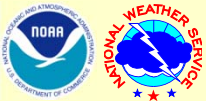
 Forecast Center Positions

 Potential Day 1-3 Track Area

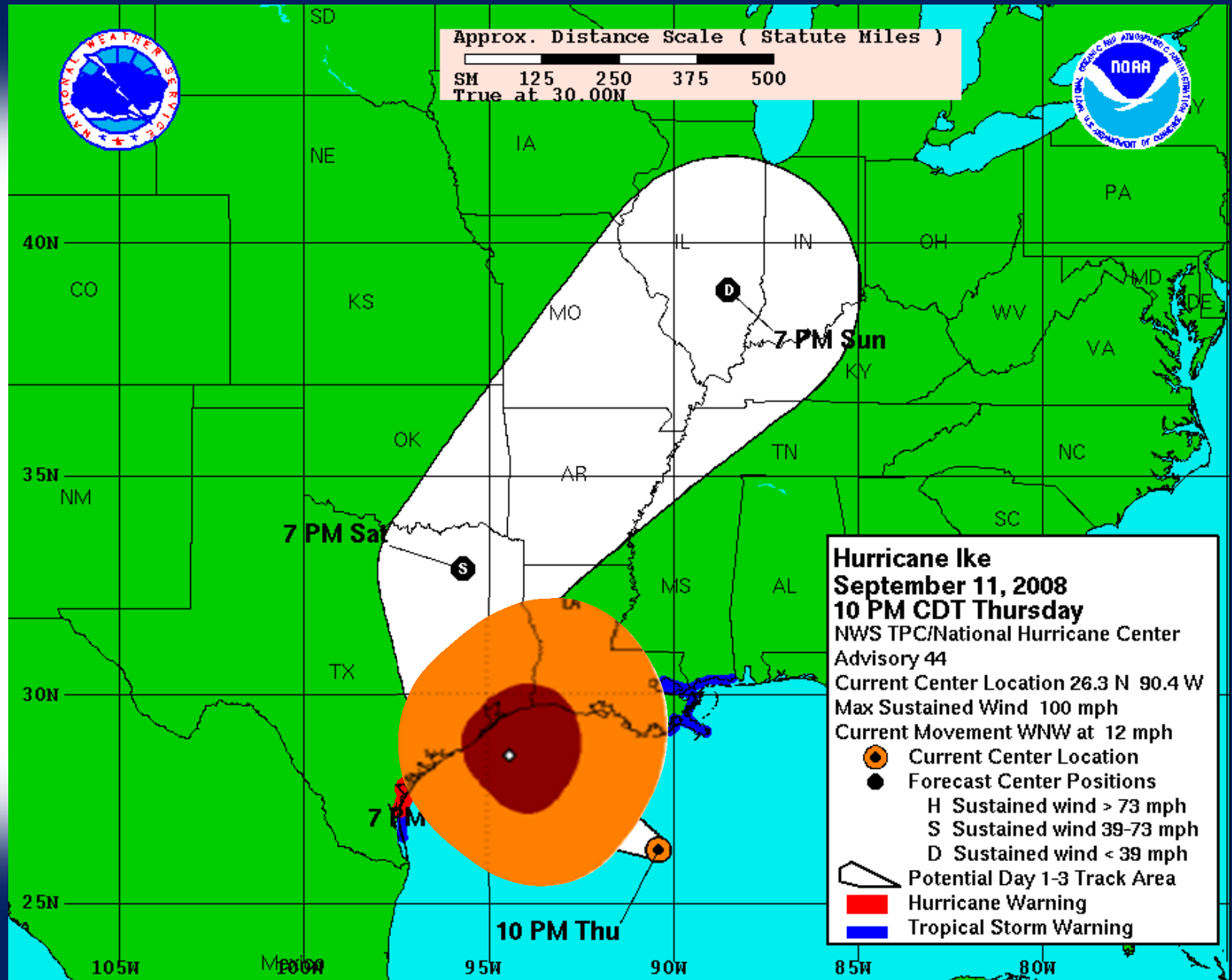
 Potential Day 4-5 Track Area

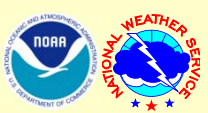




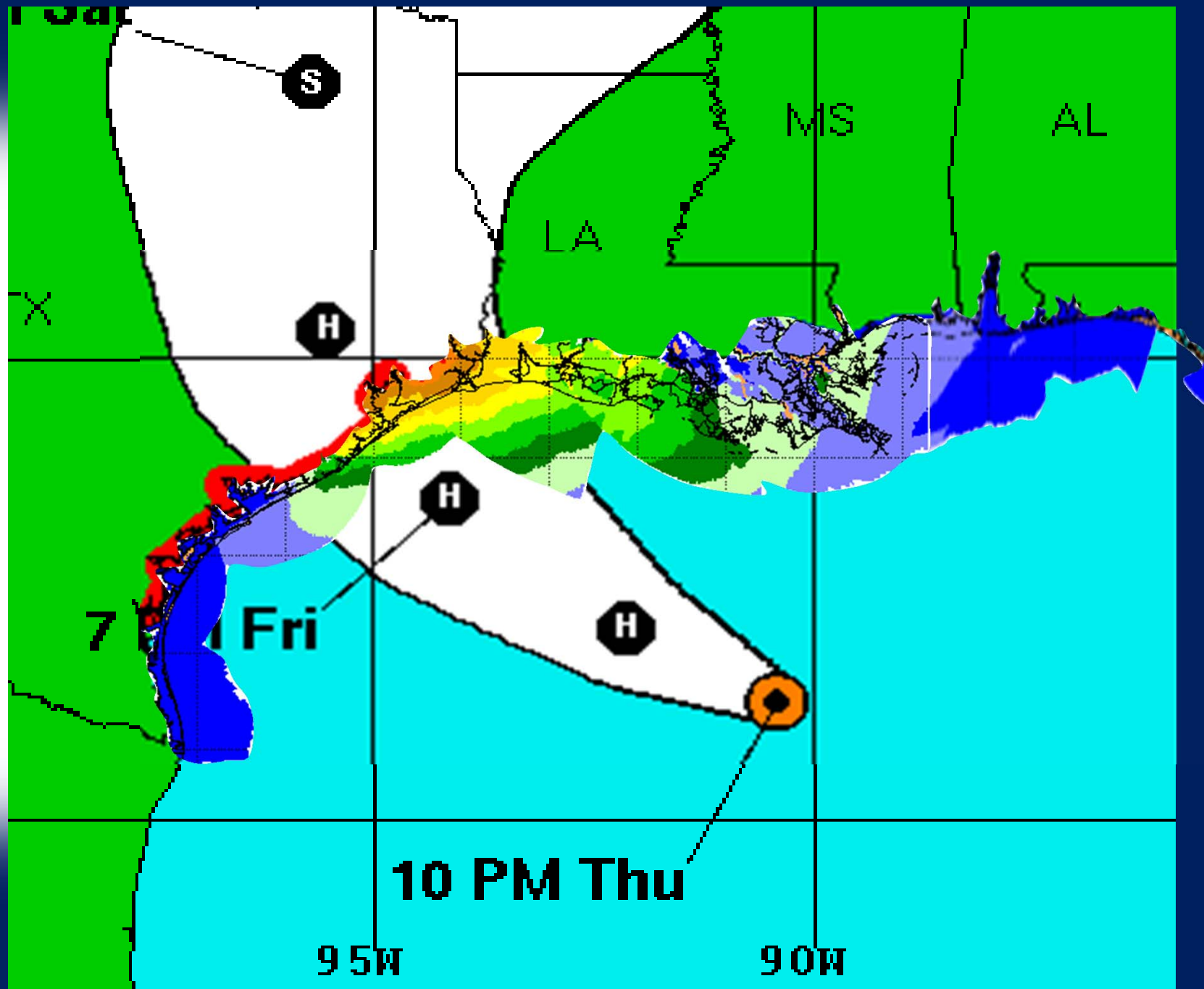


# Wind



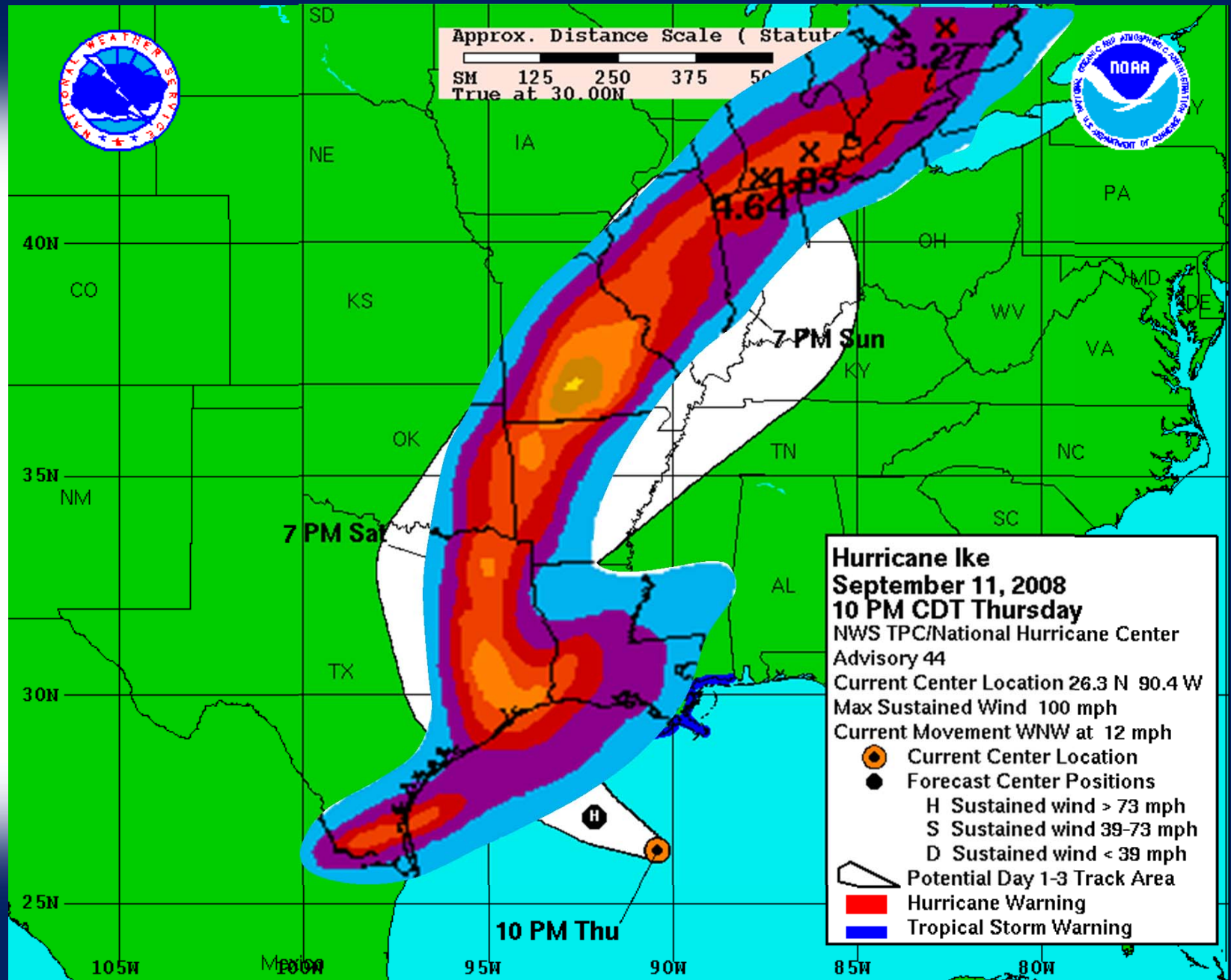


# Storm Surge



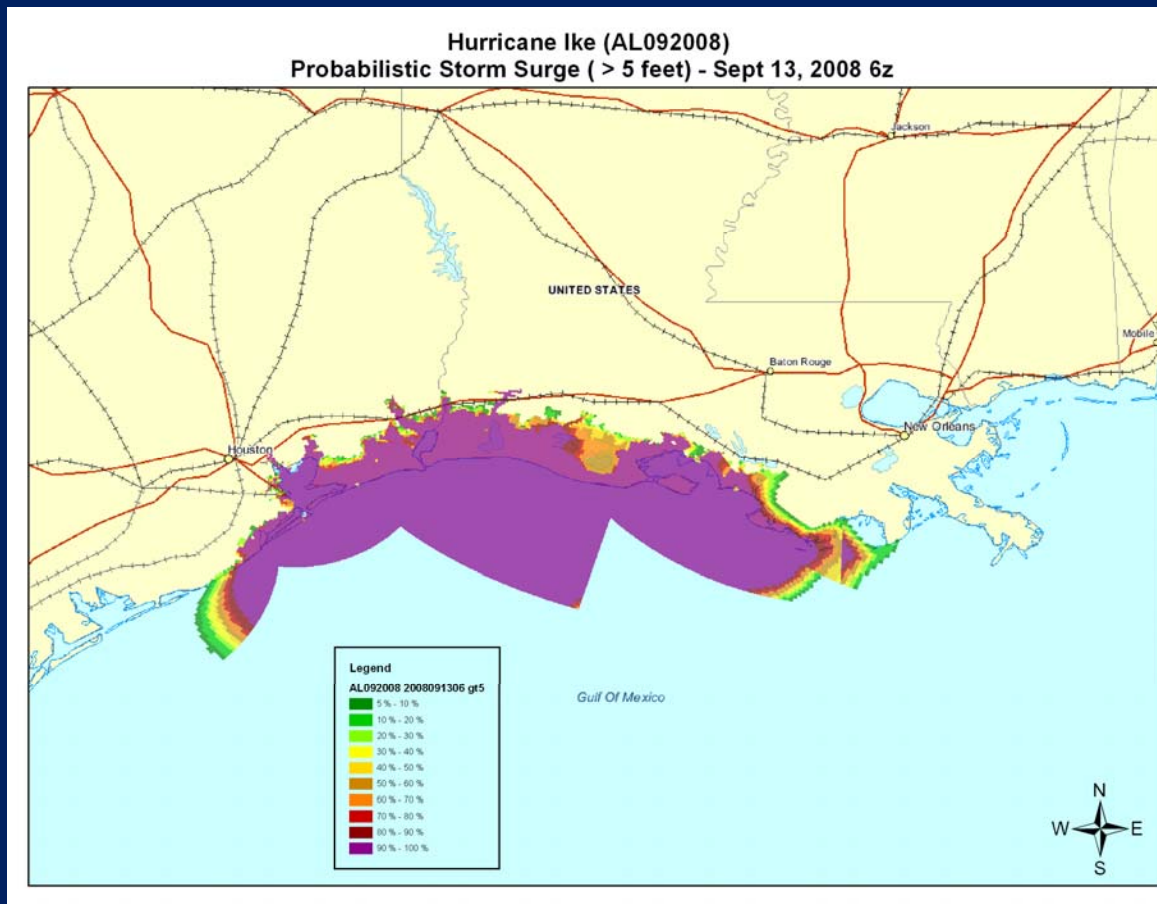


# Rainfall



# GIS Products

<http://www.nhc.noaa.gov/gis/>



Forecast Cone/Track/Points/  
Watches and Warnings

Surface Wind Field

Working Best Track Wind Swath

Forecast Wind Radii

Breakpoints

Wind Speed Probability

Probabilistic Storm Surge

# NHC Tropical Cyclone Advisory Products

## Tropical Weather Summary

- Monthly summary of tropical cyclones
- Statistics of season thus far
- Operational dates/winds only

The screenshot shows the National Weather Service National Hurricane Center website. The main heading is "Hurricane DEAN". Below the heading, there is a table of forecast positions and maximum winds. The table includes columns for time, latitude, longitude, wind speed in mph, and wind speed in kt. The text below the table discusses the storm's intensity and track.

FORECAST POSITIONS AND MAX WINDS					
INITIAL	18/1800Z	19/0000Z	19/0600Z	19/1200Z	20/0000Z
12HR VT	18/0000Z	16.4N	71.0W	130 KT	
24HR VT	19/1200Z	17.3N	74.5W	130 KT	
36HR VT	20/0000Z	18.3N	77.5W	125 KT	...NEAR OR OVER JAMAICA
48HR VT	20/1200Z	19.5N	81.4W	140 KT	
72HR VT	21/1200Z	21.5N	88.5W	100 KT	...INLAND
96HR VT	22/1200Z	23.0N	94.0W	110 KT	
120HR VT	23/1200Z	25.4N	100.0W	90 KT	...INLAND

66  
FORECASTER AVILA  
NNNN

Quick Navigation Links:  
NHC Active Storms - Atlantic and E Pacific Marine - Storm Archive

EIGHT TROPICAL STORMS FORMED IN THE ATLANTIC BASIN DURING THE MONTH OF SEPTEMBER. THREE OF THESE STORMS...IGOR...JULIA...AND KARL... BECAME MAJOR HURRICANES...AND LISA REACHED HURRICANE STATUS. THESE NUMBERS ARE WELL ABOVE THE LONG-TERM (1944-2009) AVERAGES OF 4 TROPICAL STORMS...2 HURRICANES...AND ABOUT 1 MAJOR HURRICANE FOR THE MONTH OF SEPTEMBER. ALSO...THE FORMATION OF EIGHT NAMED STORMS TIES 2002 FOR THE RECORD NUMBER OF NAMED STORMS FORMING IN THE MONTH OF SEPTEMBER. IN TERMS OF ACCUMULATED CYCLONE ENERGY... ACE...WHICH MEASURES THE COMBINED STRENGTH AND DURATION OF TROPICAL STORMS AND HURRICANES...TROPICAL CYCLONE ACTIVITY IN SEPTEMBER WAS ABOUT 78 PERCENT ABOVE AVERAGE.

SO FAR THIS SEASON...OVERALL TROPICAL CYCLONE ACTIVITY TO DATE IS ABOUT 53 PERCENT ABOVE THE LONG-TERM MEDIAN.

REPORTS ON INDIVIDUAL CYCLONES...WHEN COMPLETED...ARE AT THE WEB SITE OF THE NATIONAL HURRICANE CENTER...USE LOWER-CASE LETTERS...[HTTP://WWW.NHC.NOAA.GOV/2010ATLAN.SHTML](http://www.nhc.noaa.gov/2010atlan.shtml)

#### SUMMARY TABLE

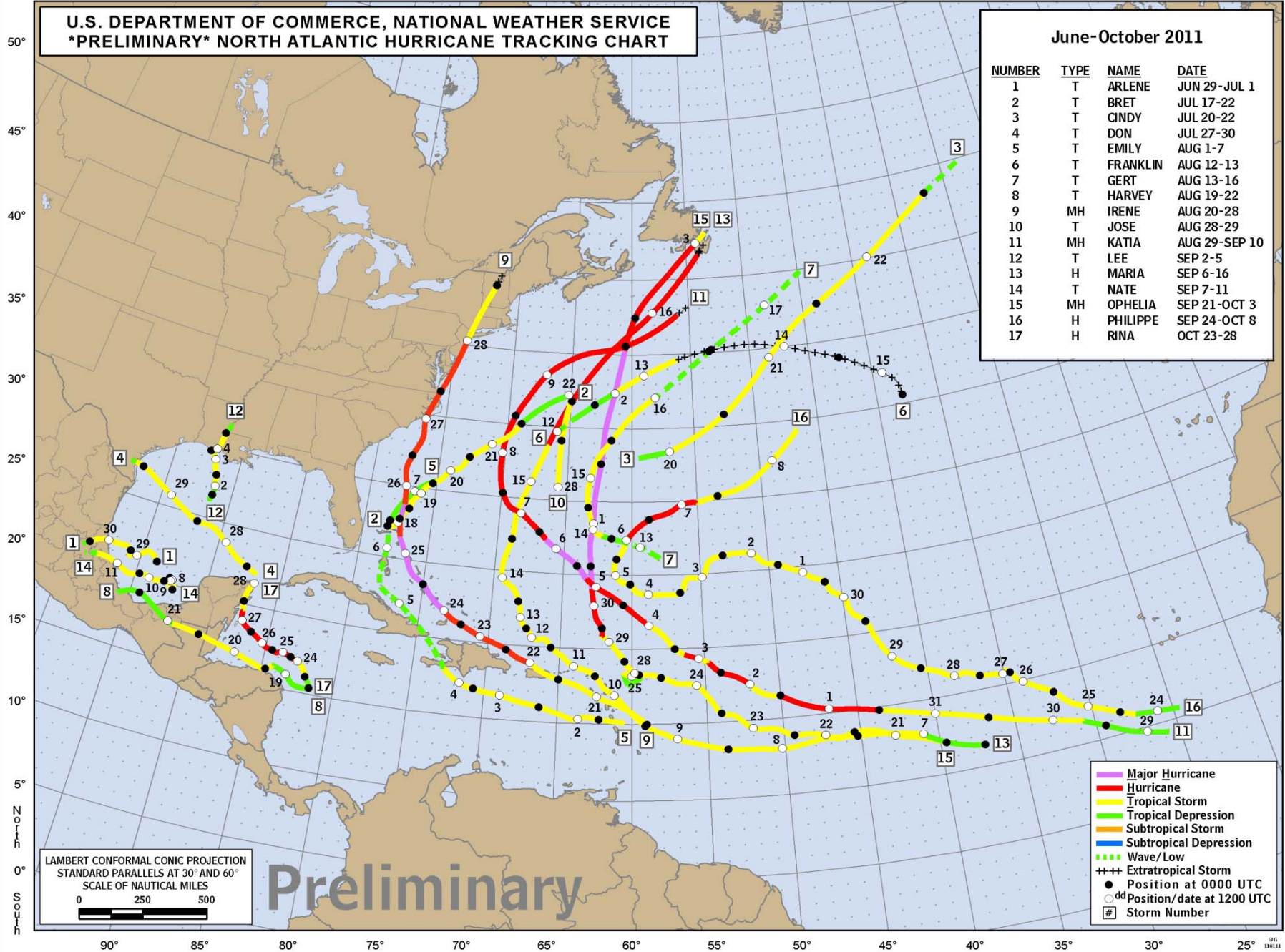
NAME	DATES	MAX WIND (MPH)
-----		
H ALEX	25 JUN-2 JUL	105
TD TWO	7-8 JUL	35
TS BONNIE	22-24 JUL	40
TS COLIN	2-8 AUG	60
TD FIVE	10-11 AUG	35
MH DANIELLE	21-31 AUG	135
MH EARL	25 AUG-5 SEP	145
TS FIONA	30 AUG-4 SEP	60
TS GASTON	1-2 SEP	40
TS HERMINE	6-8 SEP	65
MH IGOR	8-21 SEP	155
MH JULIA	12-20 SEP	135
MH KARL	14-18 SEP	120
H LISA	21-26 SEP	80
	-- --	--

120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

**U.S. DEPARTMENT OF COMMERCE, NATIONAL WEATHER SERVICE**  
**\*PRELIMINARY\* NORTH ATLANTIC HURRICANE TRACKING CHART**

**June-October 2011**

NUMBER	TYPE	NAME	DATE
1	T	ARLENE	JUN 29-JUL 1
2	T	BRET	JUL 17-22
3	T	CINDY	JUL 20-22
4	T	DON	JUL 27-30
5	T	EMILY	AUG 1-7
6	T	FRANKLIN	AUG 12-13
7	T	GERT	AUG 13-16
8	T	HARVEY	AUG 19-22
9	MH	IRENE	AUG 20-28
10	T	JOSE	AUG 28-29
11	MH	KATIA	AUG 29-SEP 10
12	T	LEE	SEP 2-5
13	H	MARIA	SEP 6-16
14	T	NATE	SEP 7-11
15	MH	OPHELIA	SEP 21-OCT 3
16	H	PHILIPPE	SEP 24-OCT 8
17	H	RINA	OCT 23-28



LAMBERT CONFORMAL CONIC PROJECTION  
 STANDARD PARALLELS AT 30° AND 60°  
 SCALE OF NAUTICAL MILES  
 0 250 500

— Major Hurricane  
— Hurricane  
— Tropical Storm  
— Tropical Depression  
— Subtropical Storm  
— Subtropical Depression  
- - - Wave/ Low  
++ Extratropical Storm  
● Position at 0000 UTC  
○ Position/date at 1200 UTC  
# Storm Number

Preliminary

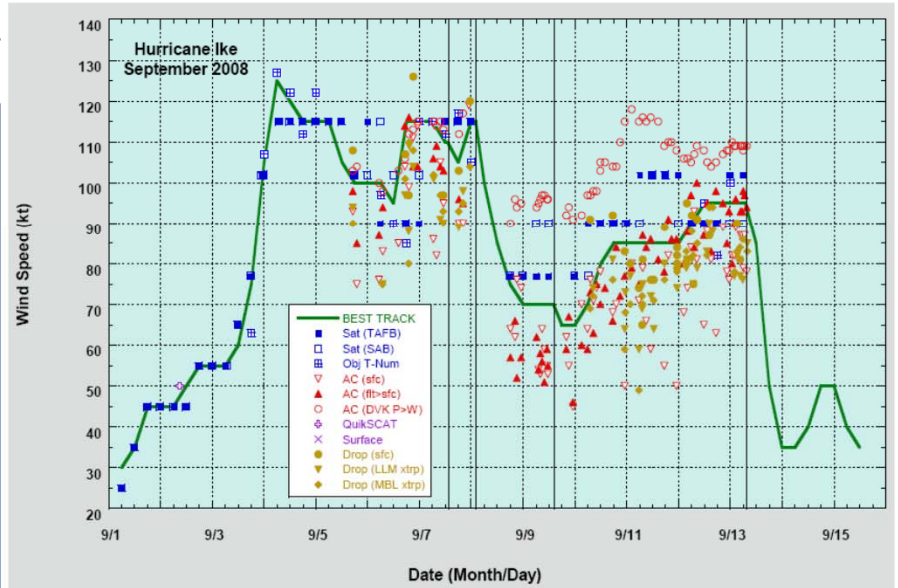
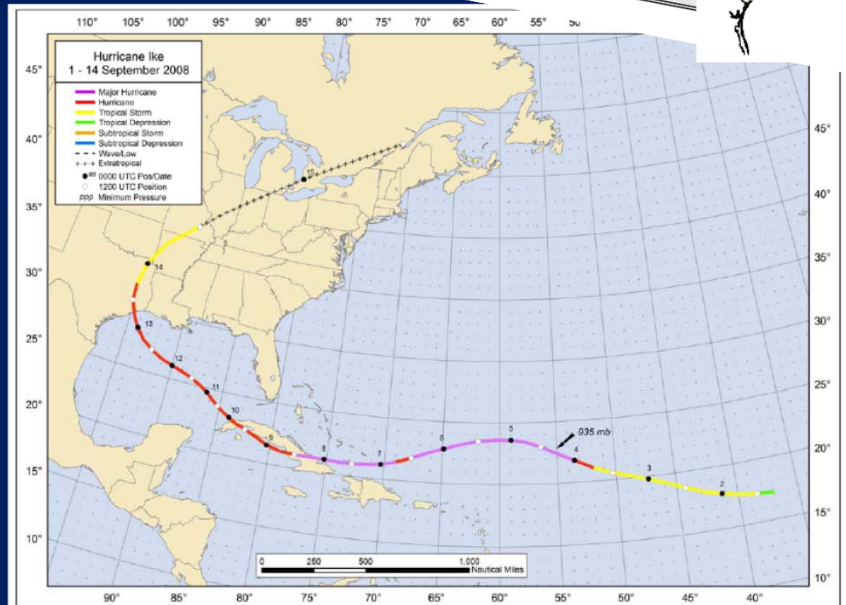
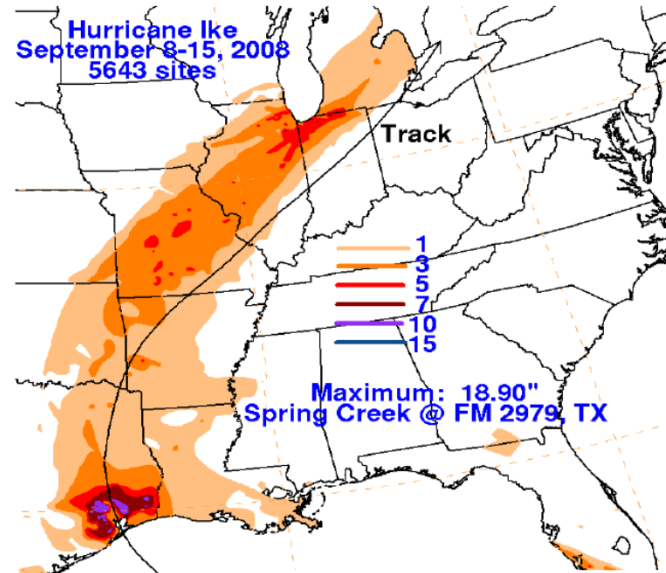
LEG

Tropical Cyclone Report  
Hurricane Ike  
(AL092008)  
1 - 14 September 2008

Robbie Berg  
National Hurricane Center  
23 January 2009

# Tropical Cyclone Reports

Texas				
ICAO Sites				
Angleton / Brazoria (KLBX) <sup>1</sup>				
Bay City (KBYY)	13/0753	974.6	12/2353	
Beaumont (KBPT)	13/0625	985.8	13/0625	32
Brenham (K11R)	13/0905	982.4	13/0814	33
College Station (KCLL)	13/1148	987.5	13/1212	61
	13/1338	985.8	13/1153	33
				43



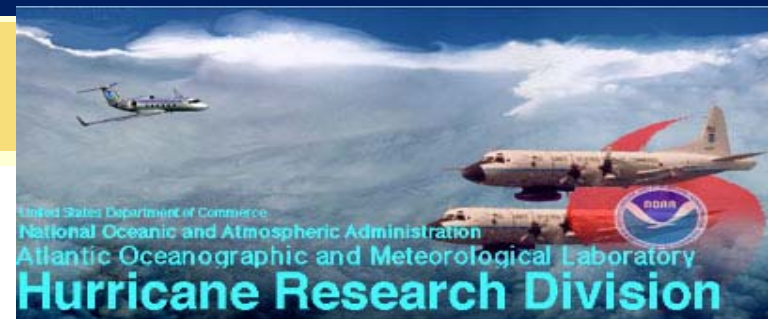


# NOAA's 2011 Atlantic Hurricane Outlook

<u>Season and Activity Type</u>	<u>May 2011 Outlook</u>	<u>Aug 2011 Outlook</u>	<u>Observed Activity</u>	<u>Climatology</u>
<b>Chance Above Normal</b>	<b>65%</b>	<b>85%</b>	<b>Active</b>	<b>33%</b>
<b>Chance Near Normal</b>	<b>25%</b>	<b>15%</b>		<b>33%</b>
<b>Chance Below Normal</b>	<b>10%</b>	<b>0%</b>		<b>33%</b>
<b>Named Storms</b>	<b>12-18</b>	<b>14-19</b>	<b>19</b>	<b>13</b>
<b>Hurricanes</b>	<b>6-10</b>	<b>7-10</b>	<b>7</b>	<b>6</b>
<b>Major Hurricanes</b>	<b>3-6</b>	<b>3-5</b>	<b>4</b>	<b>2</b>
<b>ACE % of Median</b>	<b>105-200%</b>	<b>135-215%</b>	<b>135%</b>	<b>100%</b>

**Climate Prediction Center**

National Hurricane Center

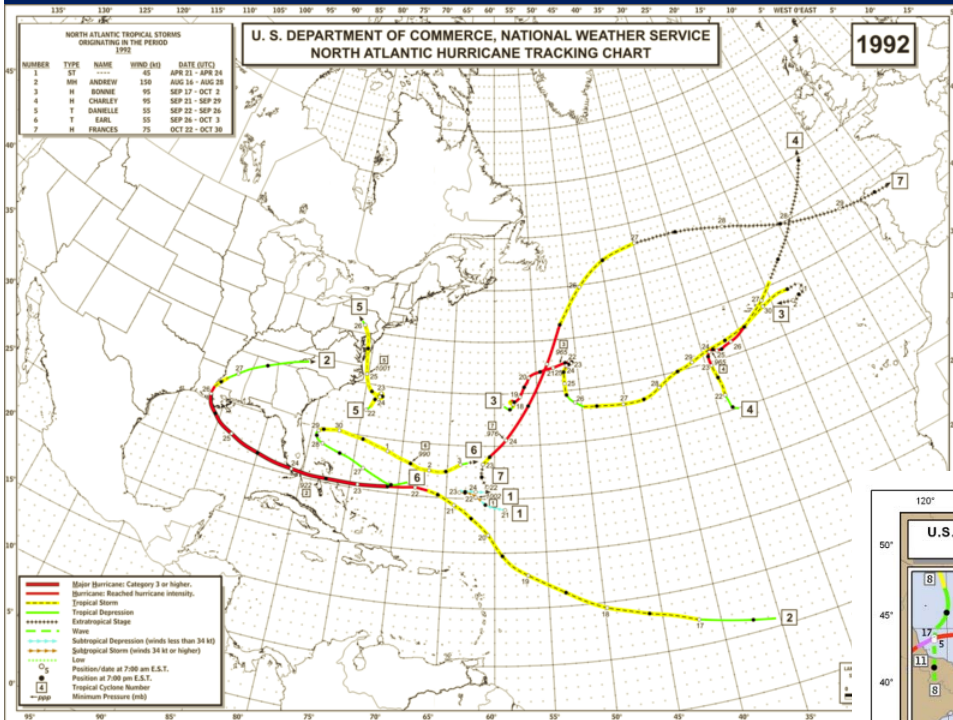


# **NOAA Seasonal Outlook**

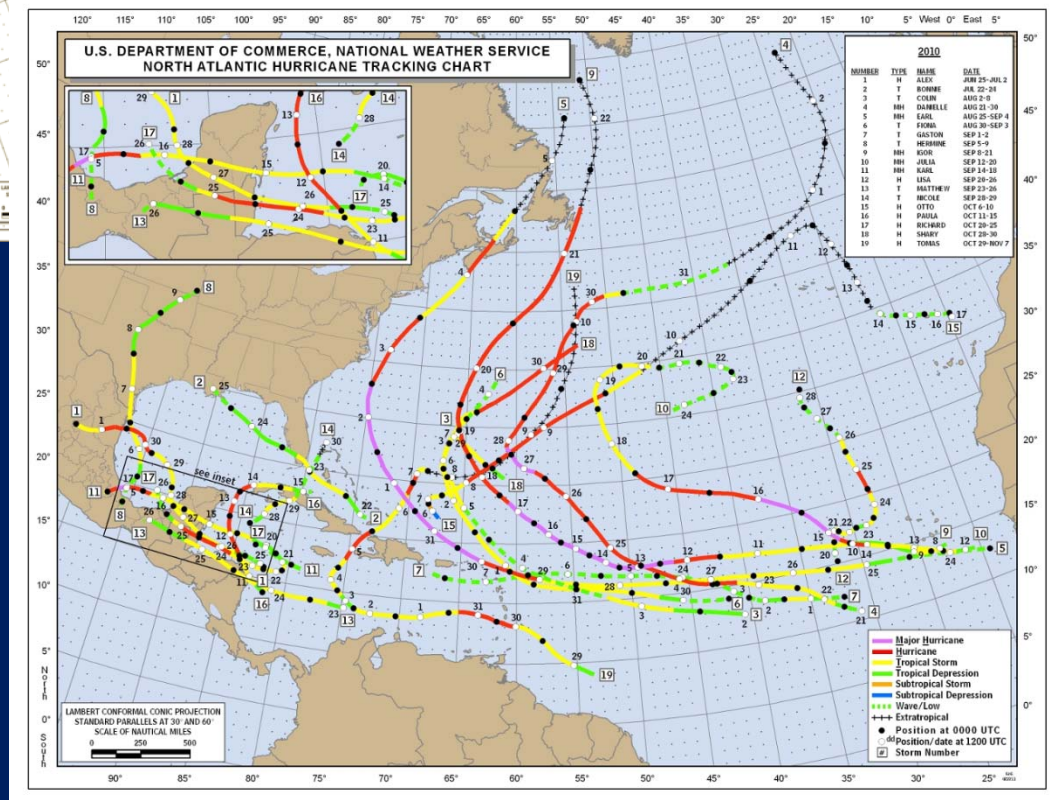
## **Caveats**

- 1) Forecasts only modestly skillful**
- 2) Says nothing about US landfalls**

# 1992

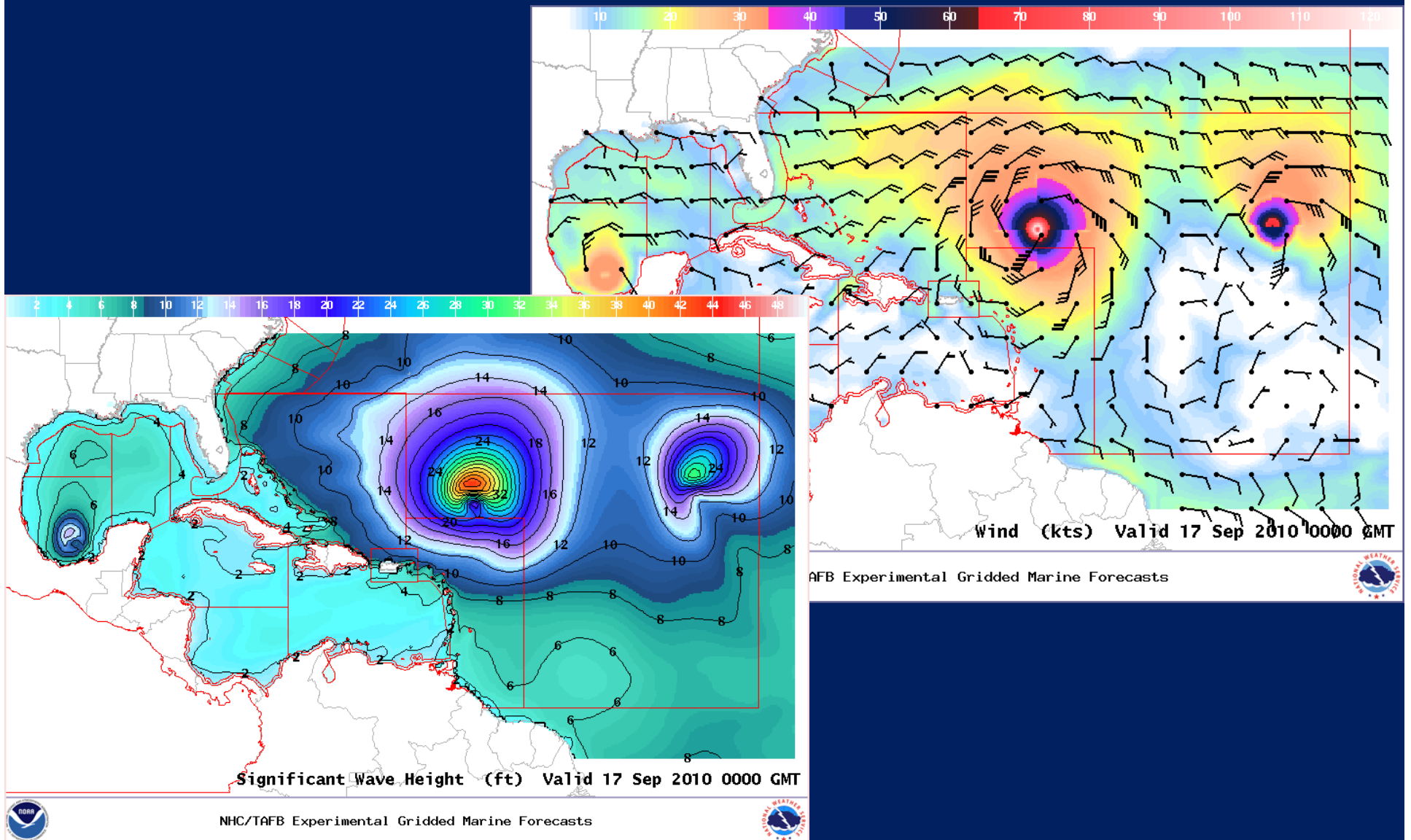


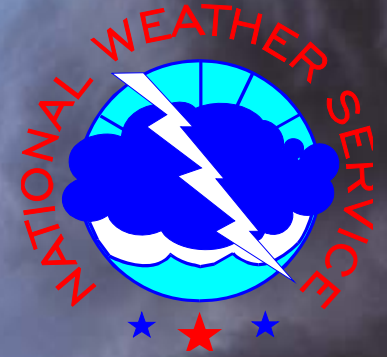
# 2010



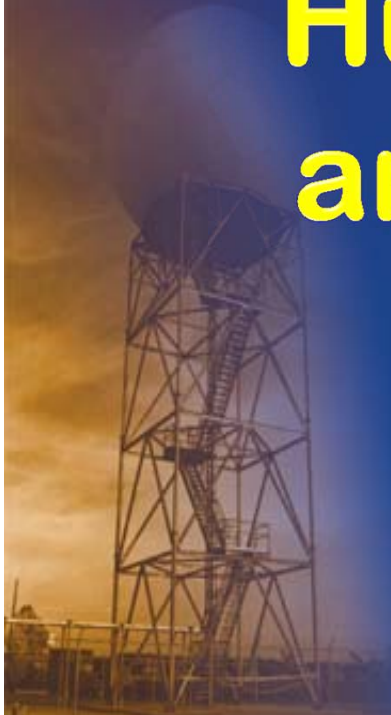
# Gridded Marine Forecasts

- Winds and waves - [http://www.nhc.noaa.gov/tafb/gridded\\_marine/](http://www.nhc.noaa.gov/tafb/gridded_marine/)

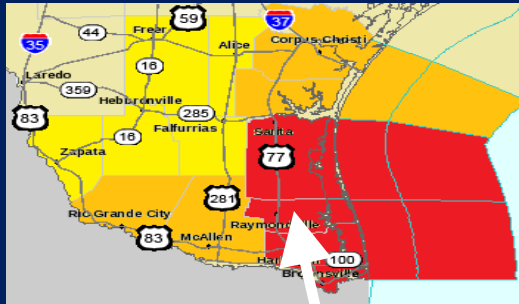




# Weather Forecast Office Hurricane Information and Decision Support



# Hurricane Local Statement Segment Example - Winds



TXZ251-256-257-300400- /O.CON.KBRO.HU.W.1001.000000T0000Z-000000T0000Z/  
KENEDY-COASTAL WILLACY-COASTAL CAMERON-  
1132 AM CDT TUE JUN 29 2010

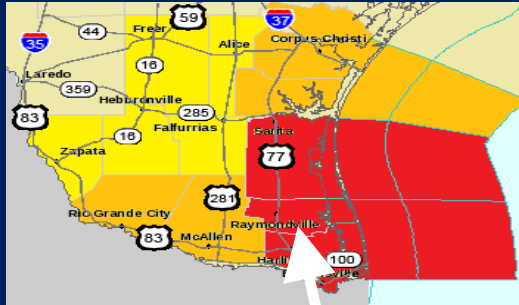
**...HURRICANE WARNING REMAINS IN EFFECT...**

**...WINDS...**

SUSTAINED NORTHEAST WINDS WILL REMAIN AT 10 TO 20 MPH THIS AFTERNOON...WITH GUSTS TO 30 MPH IN RAIN BANDS. WINDS WILL INCREASE TO 15 TO 25 MPH OVERNIGHT...WITH GUSTS TO 35 MPH IN RAIN BANDS. TROPICAL STORM FORCE WINDS WILL ARRIVE AROUND MIDDAY WEDNESDAY...WITH HURRICANE FORCE WINDS ARRIVING AS EARLY AS SUNSET AND CONTINUING THROUGH MIDNIGHT OR LATER BEFORE SLOWLY DIMINISHING THURSDAY. WIND SPEEDS COULD BE HIGHER DEPENDING ON WHETHER ALEX STRENGTHENS RAPIDLY OVERNIGHT TONIGHT IN THE OPEN WATERS OF THE GULF.

IMPACT STATEMENT: DAMAGING WINDS EXPECTED. MOST MOBILE HOMES WILL EXPERIENCE MODERATE TO SUBSTANTIAL DAMAGE. SOME OF POOR CONSTRUCTION WILL BE UNINHABITABLE UNTIL REPAIRED. HOUSES OF POOR TO AVERAGE CONSTRUCTION WILL HAVE DAMAGE TO SHINGLES...SIDING...AND GUTTERS. SOME WINDOWS WILL BE BLOWN OUT. UNFASTENED HOME ITEMS OF LIGHT TO MODERATE WEIGHT WILL BECOME AIRBORNE...CAUSING ADDITIONAL DAMAGE AND POSSIBLE INJURY. DOZENS OF WIRES WILL BE BLOWN DOWN. LOCAL POWER OUTAGES WILL AFFECT ENTIRE NEIGHBORHOODS. MANY LARGE BRANCHES OF HEALTHY TREES WILL BE SNAPPED...AND ROTTING SMALL TO MEDIUM SIZED TREES WILL BE UPROOTED. DOZENS OF PALM FRONDS WILL BE BLOWN DOWN...AND MINOR DAMAGE WILL OCCUR TO CITRUS ORCHARDS AND NEWLY PLANTED LOWLAND CROPS.

# Hurricane Local Statement Segment (Continued)



TXZ251-256-257-300400- /O.CON.KBRO.HU.W.1001.000000T0000Z-000000T0000Z/  
KENEDY-COASTAL WILLACY-COASTAL CAMERON-  
1132 AM CDT TUE JUN 29 2010

## ...INLAND FLOODING...

OUTER RAIN BANDS WILL PRODUCE ONE HALF TO ONE AND ONE HALF INCHES OF RAIN THROUGH MIDNIGHT TONIGHT. HEAVIER BANDS WILL ARRIVE AFTER MIDNIGHT INTO MIDDAY WEDNESDAY WITH ANOTHER HALF TO ONE AND ONE HALF INCHES OF RAIN. SQUALLS WILL FOLLOW WEDNESDAY AFTERNOON AND CONTINUE THROUGH WEDNESDAY NIGHT BEFORE TAPERING OFF BY NOON THURSDAY. STORM TOTAL RAINFALL WILL RANGE FROM 6 TO 12 INCHES BUT COULD BE AS HIGH AS 15 INCHES WHERE LOCALLY HEAVY RAINS FALL.

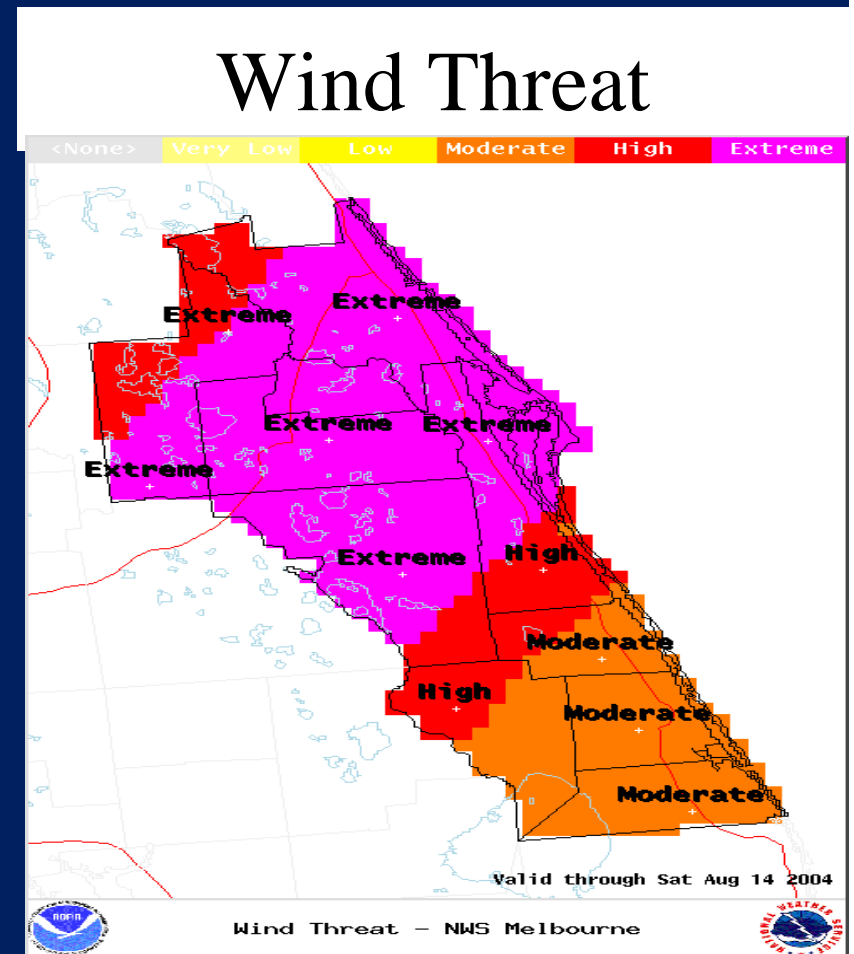
A FLOOD WATCH IS IN EFFECT FOR THE ENTIRE AREA. RESIDENTS CAN PLAN ON THE FOLLOWING IMPACTS: THIS MAY BECOME A DANGEROUS FLOOD SITUATION! PERSONS LIVING IN OR NEAR POOR DRAINAGE AREAS SHOULD CONSIDER EVACUATION IMMEDIATELY. SIGNIFICANT PROPERTY DAMAGE WILL OCCUR IN THESE LOCATIONS. MINOR PROPERTY DAMAGE IS POSSIBLE IN OTHER AREAS. SOME POWER OUTAGES ARE EXPECTED. WATER LEVELS IN VERY POOR DRAINAGE AREAS WILL APPROACH 7 FEET. OTHER POOR DRAINAGE LOCATIONS WILL HAVE RISES BETWEEN 3 AND 5 FEET. ELSEWHERE...EXPECT WATER RISES TO NEAR 2 FEET. NUMEROUS MAIN ROADS WILL BE CLOSED. DRIVING IS HIGHLY DISCOURAGED UNTIL WELL AFTER FLOOD WATERS RECEDE.

## ...STORM SURGE AND STORM TIDE...

IT REMAINS DIFFICULT TO DETERMINE THE EXACT HEIGHT OF THE STORM TIDE FOR SPECIFIC LOCATIONS ALONG THE DEEP SOUTH TEXAS COAST GIVEN REMAINING UNCERTAINTY IN SIZE AND INTENSITY...AND TO A LESSER DEGREE TRACK OF ALEX. THE LATEST FORECAST SUGGESTS A STORM TIDE WHICH COULD RANGE UP TO 7 FEET...RESULTING IN 2 TO 5 FEET OF INUNDATION ABOVE GROUND LEVEL. HIGHEST INUNDATION WOULD FAVOR AREAS WHERE WATER POOLS...INCLUDING THE

# Graphical Tropical Cyclone Hazards

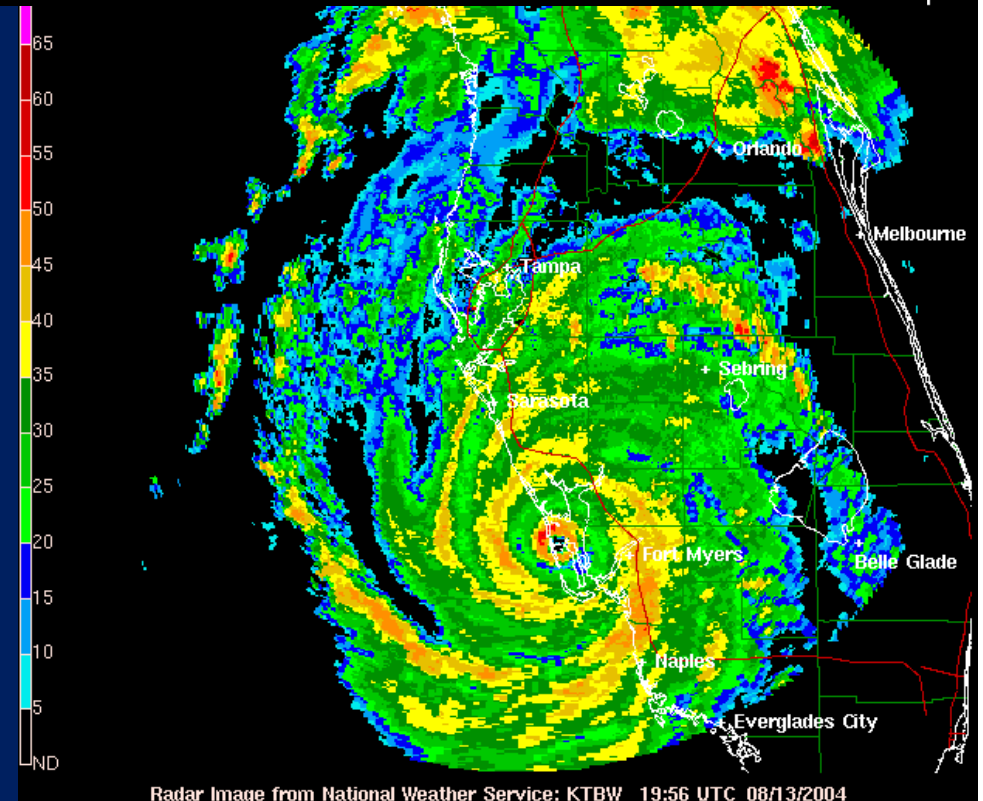
- Five parameters available
  - Wind
  - Storm Surge Flooding
  - Inland Flooding
  - Tornadoes
  - Marine Hazards
- Color-coded for risk, threat, and impact
  - Standard scheme applied :
    - **Yellow (low)** to **Magenta (extreme)**





# Extreme Wind Warning (EWW)

Inform the public of the need to take immediate shelter in an interior portion of a well-built structure due to the onset of extreme tropical cyclone winds.



**Issuance Criteria** - An EWW issued:

- Tropical cyclone is a **CAT 3 or greater** (115 mph or greater).
- Valid time 2 hours or less

Questions?