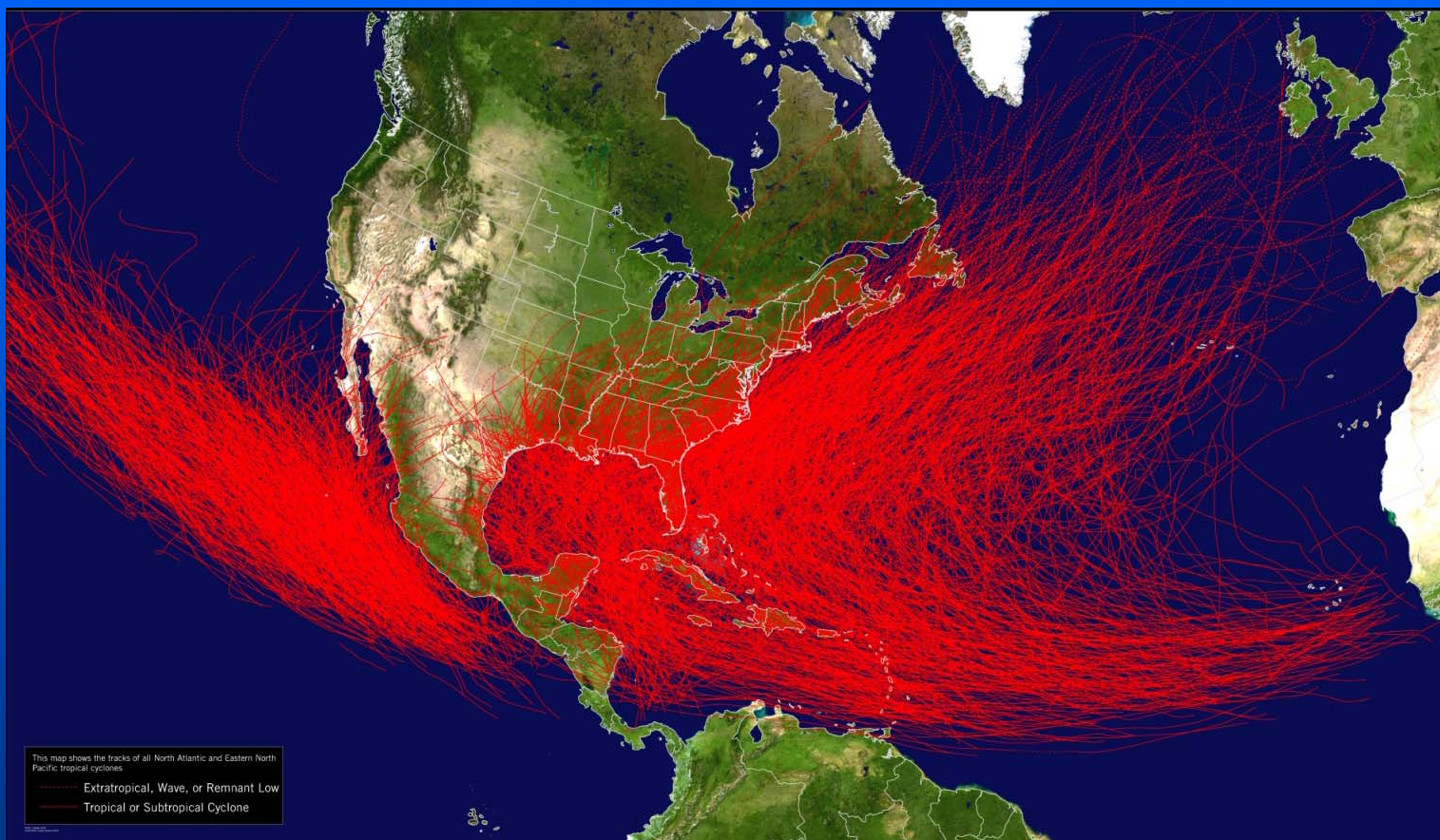
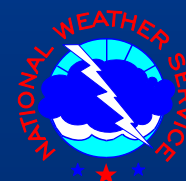


RSMC Miami Coordination Activities

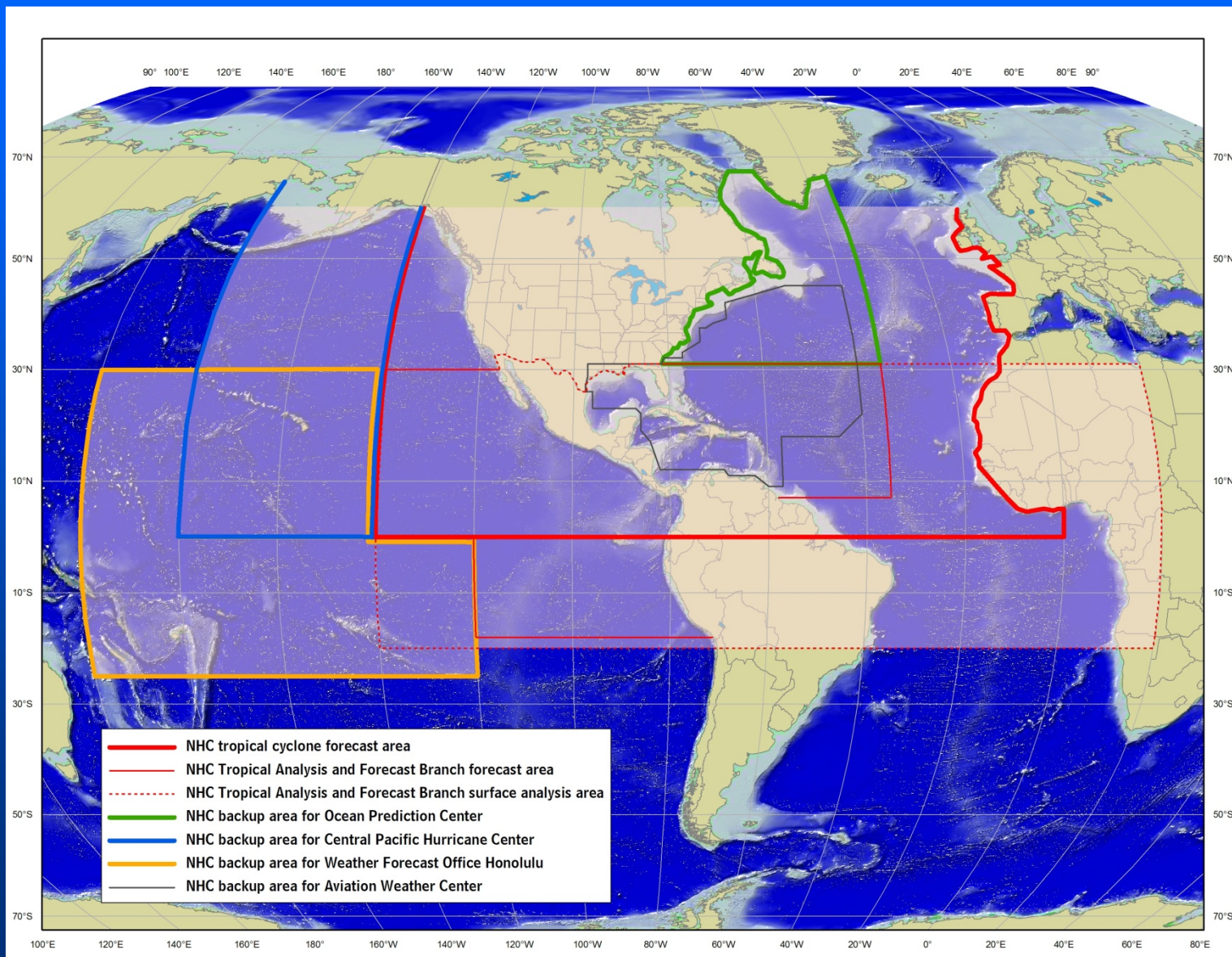
Bill Read, Director



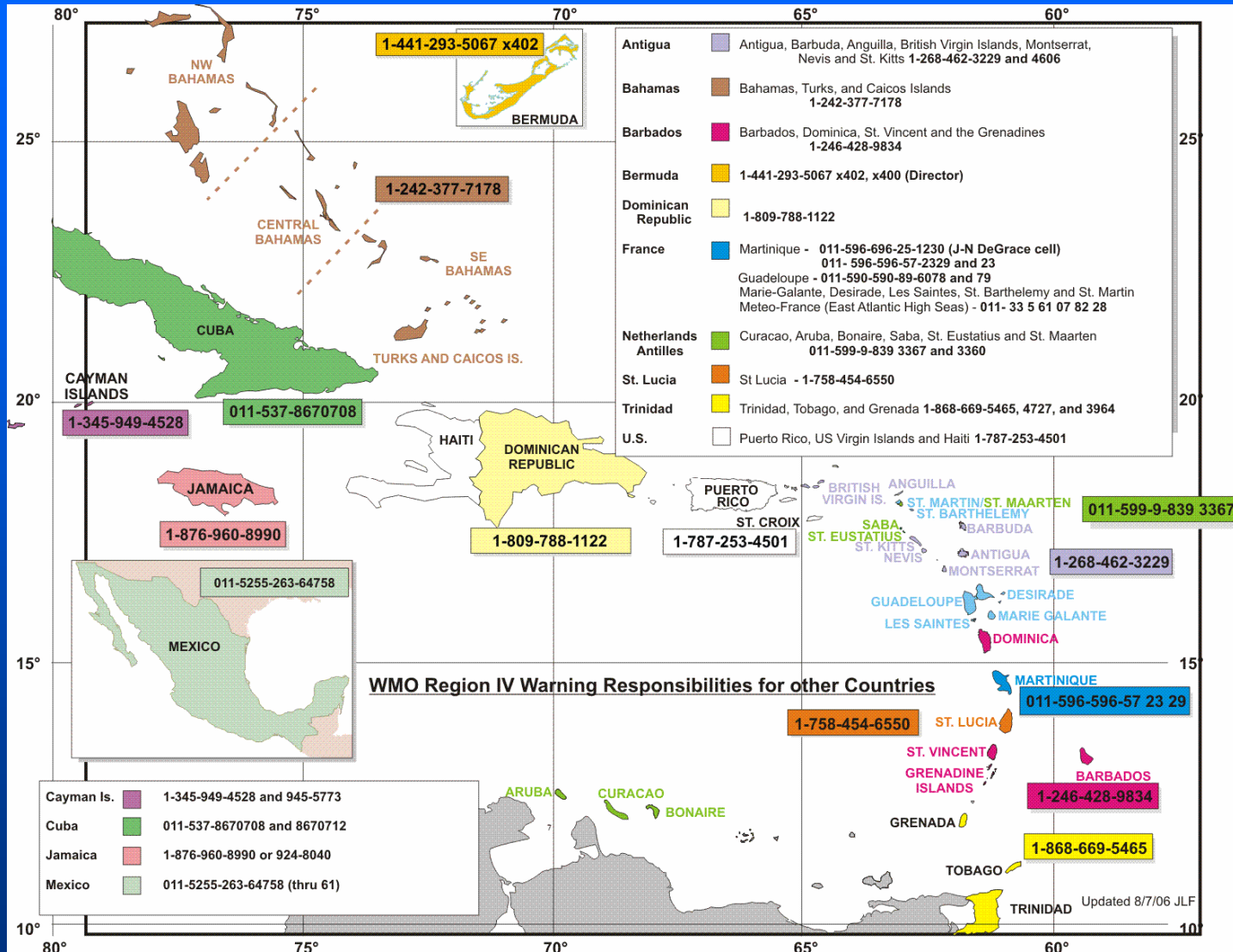
Grand Cayman, March 2011



NHC AREAS OF RESPONSIBILITY



Warning Coordination



Improving Watch/Warning Coordination



- Increase efficiencies during watch and warning coordination
 - Multiple coordination calls during advisory preparation can delay NHC products
 - NHC will attempt to pre-coordinate when possible
- Experimental use of internet “NWS Chat”
 - Creates an additional (redundant) communication method
 - Allows for coordination with multiple countries at the same time
 - More efficient communication method in some cases
 - Makes pre-coordination easier (e.g., discuss possibility of watch or warning earlier in the forecast process)
- Additional coastal watch/warning breakpoints
 - Some large gaps exist between breakpoints along the coast of Central and South America
 - Allows for reduction in watch/warning areas



Coastal Watch/Warning Breakpoints



Tropical Cyclone Breakpoints - Middle Americas

 Existing breakpoint
 Area in need of additional breakpoint

NHC Role in preparing Society Outreach and Education

“Battle is won (or lost) during the offseason...”

Highlights of annual NHC involvement:

- ❖ **National Hurricane Preparedness Week**
- ❖ **FEMA/NWS week-long Introduction to Hurricane Preparedness course for emergency managers (three courses)**
- ❖ **Hurricane Awareness Tour (week-long, alternating each year between U.S. Gulf and East Coast)**
- ❖ **National Hurricane Conference**
- ❖ **Caribbean Hurricane Awareness Tour**
- ❖ **World Meteorological Organization workshop for international meteorologists (2 weeks)**
- ❖ **National media conference**
- ❖ **State/”Governor’s” conferences**
- ❖ **U.S. Interdepartmental Hurricane Conference**

Transfer of new science from research into operations is also an off-season activity

Products and Services

- * Legacy - Forecast Advisory, Public Advisory, TC Discussion , TWO
- * Probabilistic (genesis, wind speed, max intensity. Storm surge)
- * Rapid move to graphics – web based
- * GIS
- * Decision support – what does our forecast mean to a variety of customers from high level officials to general public

"Products"

The screenshot shows the National Weather Service National Hurricane Center website. The header includes the NOAA logo, the text "National Weather Service National Hurricane Center", and the "weather.gov" logo. A navigation bar contains links for Home, News, Organization, Search, and Go. A search box is present next to the "Go" button. Below the navigation bar, the main heading is "Tropical Storm IDA". The page content includes a "Local forecast by 'City, St' or 'ZIP'" search box, a "Go" button, and a list of "Alternate versions" such as Text-only, PDA, Cell, Get Storm Info, Satellite, Radar, Aircraft Recon, Advisory Archive, Experimental, Mobile Products, E-mail Advisories, AudioPodcasts, GIS Data, RSS, and Help with Advisories. The main text of the advisory includes: "ZCZC MIATCPAT1 ALL TTA000 KNHC DDHMM BULLETIN TROPICAL STORM IDA ADVISORY NUMBER 24 NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL112009 300 PM CST MON NOV 09 2009 ...IDA TURNS NORTHWARD...SHOULD MAKE LANDFALL OVERNIGHT...". It also contains sections for "A TROPICAL STORM WARNING REMAINS IN EFFECT...", "FOR STORM INFORMATION SPECIFIC TO YOUR AREA...", "AT 300 PM CST...2100 UTC...", "IDA IS MOVING TOWARD THE NORTH...", "MAXIMUM SUSTAINED WINDS ARE NEAR 70 MPH...", "TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 200 MILES...", "THE LATEST MINIMUM CENTRAL PRESSURE REPORTED BY AN AIR FORCE RESERVE HURRICANE HUNTER AIRCRAFT WAS 991 MB...", "RAINS FROM IDA ARE ALREADY MOVING ACROSS THE COAST...", and "A DANGEROUS STORM TIDE WILL RAISE WATER LEVELS BY AS MUCH AS 3 TO 5 FEET ABOVE GROUND LEVEL...".

000
WTUS84 KLIX 092204
HLSLIX

URGENT - IMMEDIATE BROADCAST REQUESTED
TROPICAL STORM IDA LOCAL STATEMENT
NATIONAL WEATHER SERVICE NEW ORLEANS LA
404 PM CST MON NOV 9 2009

...IDA TURNS NORTHWARD...SHOULD MAKE LANDFALL OVERNIGHT...

.AREAS AFFECTED...
THIS LOCAL STATEMENT PROVIDES IMPORTANT INFORMATION AND
RECOMMENDED ACTIONS FOR PEOPLE IN SELECT LOCATIONS AND COASTAL
WATERS OF SOUTHEAST LOUISIANA SOUTH MISSISSIPPI.

.WATCHES/WARNINGS...
A TROPICAL STORM WARNING CONTINUES FOR ALL OF SOUTHEAST LOUISIANA
AND MISSISSIPPI COASTAL WATERS.

A TROPICAL STORM WIND WARNING CONTINUES FOR PORTIONS OF INLAND
SOUTHEAST LOUISIANA AND SOUTH MISSISSIPPI.

A FLOOD WATCH IS IN EFFECT FOR PART OF SOUTHEAST LOUISIANA AND
SOUTH MISSISSIPPI.

PLEASE CHECK THE LATEST PUBLIC AND MARINE FORECASTS FOR DETAILED
INFORMATION ABOUT ADDITIONAL HAZARDS.

.STORM INFORMATION...
AT 3 PM CST...THE CENTER OF TROPICAL STORM IDA WAS LOCATED NEAR
LATITUDE 28.4 NORTH...LONGITUDE 88.5 WEST...OR ABOUT 60 MILES
SOUTHEAST OF THE MOUTH OF THE MISSISSIPPI RIVER. THIS IS ABOUT
150 MILES SOUTHEAST OF NEW ORLEANS LA...OR ABOUT 140 MILES
SOUTH-SOUTHEAST OF GULFPORT MS. STORM MOTION WAS NORTH OR 355
DEGREES AT 18 MPH. STORM INTENSITY WAS 70 MPH.

.SITUATION OVERVIEW...
WHEN MAKING DECISIONS...DO NOT FOCUS ON THE EXACT FORECAST TRACK.
THE TROPICAL STORM IS CURRENTLY MOVING NEAR THE SOUTHWEST PASS OF
THE MISSISSIPPI RIVER. THE TROPICAL STORM IS THEN EXPECTED TO
MAKE LANDFALL TONIGHT NEAR MOBILE, ALABAMA. THE MAIN THREATS FROM
TROPICAL STORM IDA WILL INCLUDE HEAVY RAINFALL...STRONG
WINDS...AND STORM SURGE ALONG THE COAST AND TIDAL LAKES.

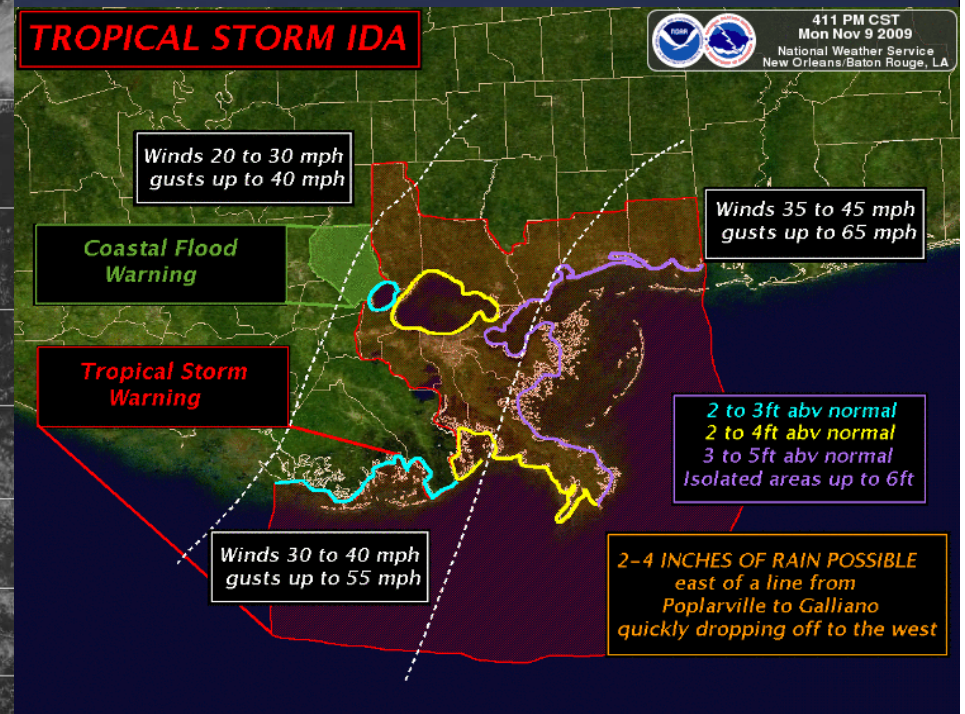
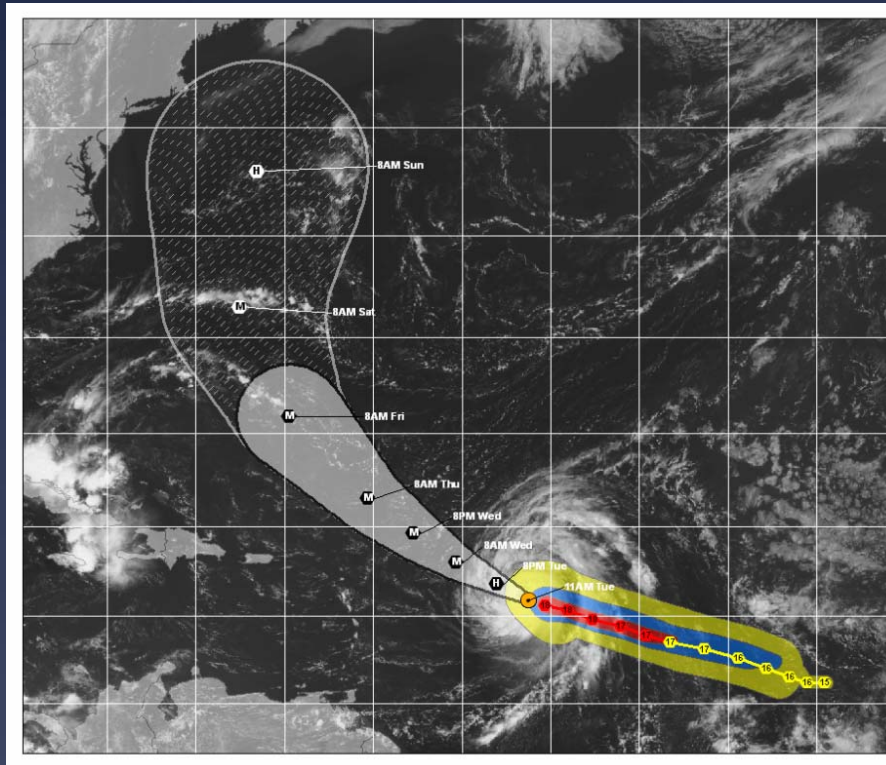
.PRECAUTIONARY/PREPAREDNESS ACTIONS...
DURING THE STORM...STAY INSIDE AND AWAY FROM WINDOWS. DO NOT
VENTURE OUTSIDE WHEN HIGH WINDS ARE OCCURRING OR DURING TEMPORARY
LULLS AS FLYING DEBRIS CAN EASILY...AND SUDDENLY...CAUSE SERIOUS
INJURY.

HAVE A WELL CHARGED CELL PHONE NEARBY...KEEPING NETWORK
COMMUNICATIONS AS OPEN AS POSSIBLE FOR EMERGENCIES. CLOSELY
MONITOR NOAA WEATHER RADIO OR OTHER LOCAL NEWS OUTLETS FOR
OFFICIAL STORM INFORMATION. LISTEN FOR POSSIBLE CHANGES TO THE
FORECAST. FOR SMALL CRAFT WHO FAILED TO MAKE IT TO SAFE HARBOR OR
PORT... AND ARE NOW IN DISTRESS...RADIO YOUR SITUATION ACCORDING

Plus one more page...

Plus 8 more pages...

...or "information"?



Most viewed text product

Hurricane RICK Forecast Discussion

[Home](#) [Public Adv](#) [Fcst/Adv](#) [Discussion](#) [Wind Probs](#) [Maps/Charts](#) [Archive](#) [UPDATE](#)

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WTPZ45 KNHC 172035
TCDEP5
HURRICANE RICK DISCUSSION NUMBER 10
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL EP202009
200 PM PDT SAT OCT 17 2009

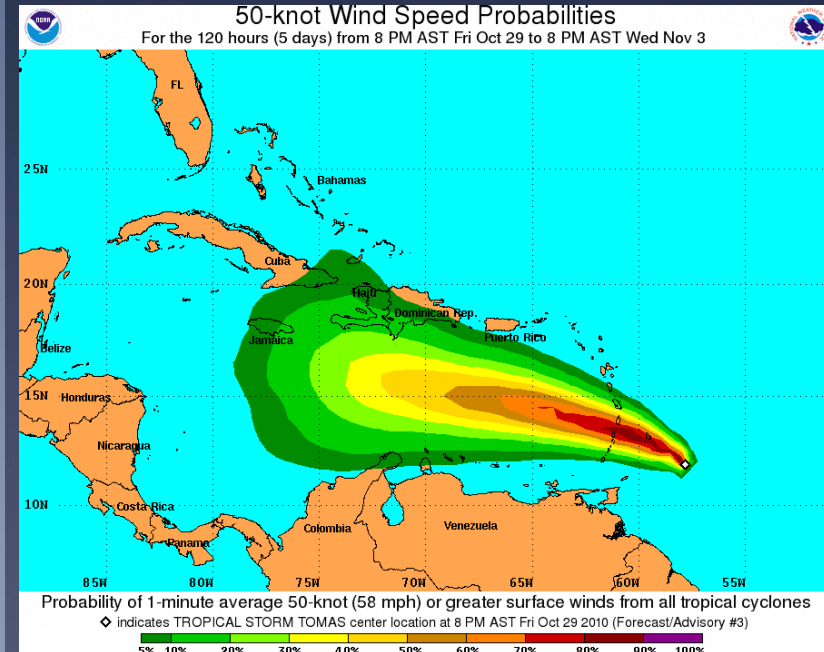
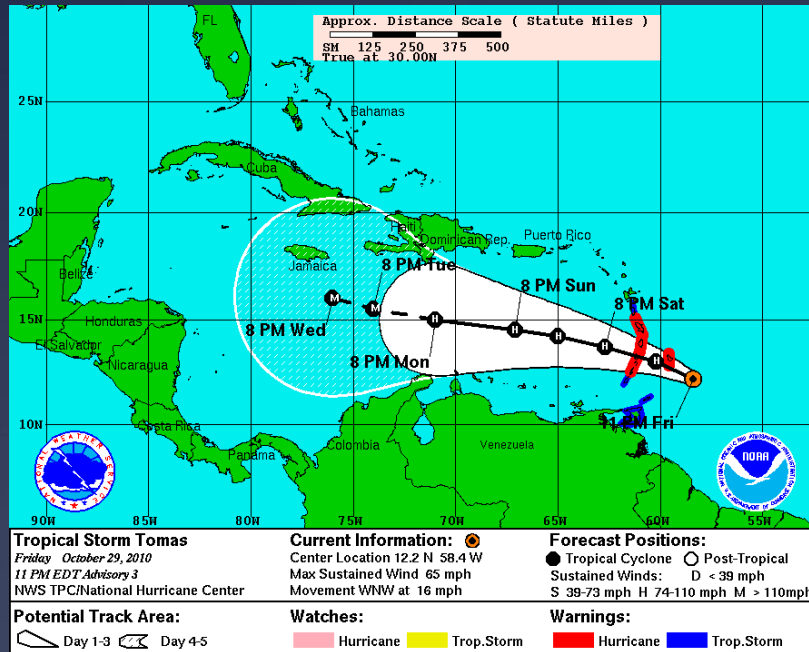
RICK IS STILL INTENSIFYING...WITH THE 10 NM WIDE EYE BECOMING BETTER DEFINED AND THE EYEWALL CLOUD TOPS COOLING DURING THE PAST FEW HOURS. SATELLITE INTENSITY ESTIMATES FROM TAFB AND SAB WERE 127 KT AT 18Z...SO THE INITIAL INTENSITY IS INCREASED TO 130 KT BASED ON THIS AND THE SUBSEQUENT INCREASE IN ORGANIZATION. THE CIRRUS OUTFLOW IS GOOD TO EXCELLENT IN ALL DIRECTIONS. QUIKSCAT DATA NEAR 14Z INDICATED THAT RICK IS GROWING LARGER IN SIZE...AND THE WIND RADII HAVE BEEN EXPANDED ACCORDINGLY.

RICK SHOULD REMAIN IN A NEARLY-IDEAL ENVIRONMENT OF LIGHT VERTICAL WIND SHEAR AND OVER WARM SEA SURFACE TEMPERATURES FOR THE NEXT 18 HRS OR SO. THUS...IT SHOULD CONTINUE TO INTENSIFY UNTIL AN EYEWALL REPLACEMENT CYCLE OCCURS OR IT REACHES THE MAXIMUM POTENTIAL INTENSITY FOR THAT AREA. BASED ON THIS...THE INTENSITY FORECAST CALLS FOR THE HURRICANE TO REACH CATEGORY FIVE STATUS IN ABOUT 12 HRS IN AGREEMENT WITH THE SHIPS MODEL. AFTER THAT...GRADUALLY COOLING SSTS AND GRADUALLY INCREASING SHEAR SHOULD START A STEADY WEAKENING TREND FOR THE REMAINDER OF THE FORECAST PERIOD...WITH LAND INTERACTION ALSO BECOMING A FACTOR DURING THE 96-120 HR PERIOD. EYEWALL REPLACEMENT CYCLES COULD CAUSE FLUCTUATIONS IN INTENSITY SUPERIMPOSED ON THE GENERAL TREND INDICATED IN THE FORECAST.

Watches and Warnings collaborated with member nations

Forecast track + W/W

50kt wind speed %

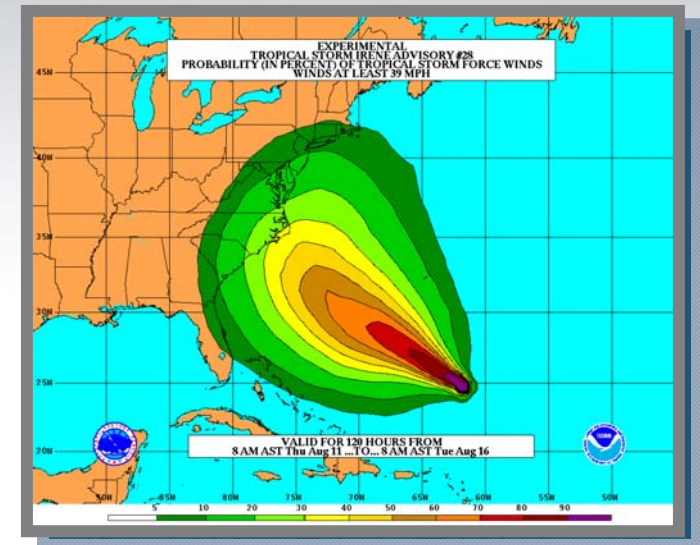


National Hurricane Forecast System - 2020



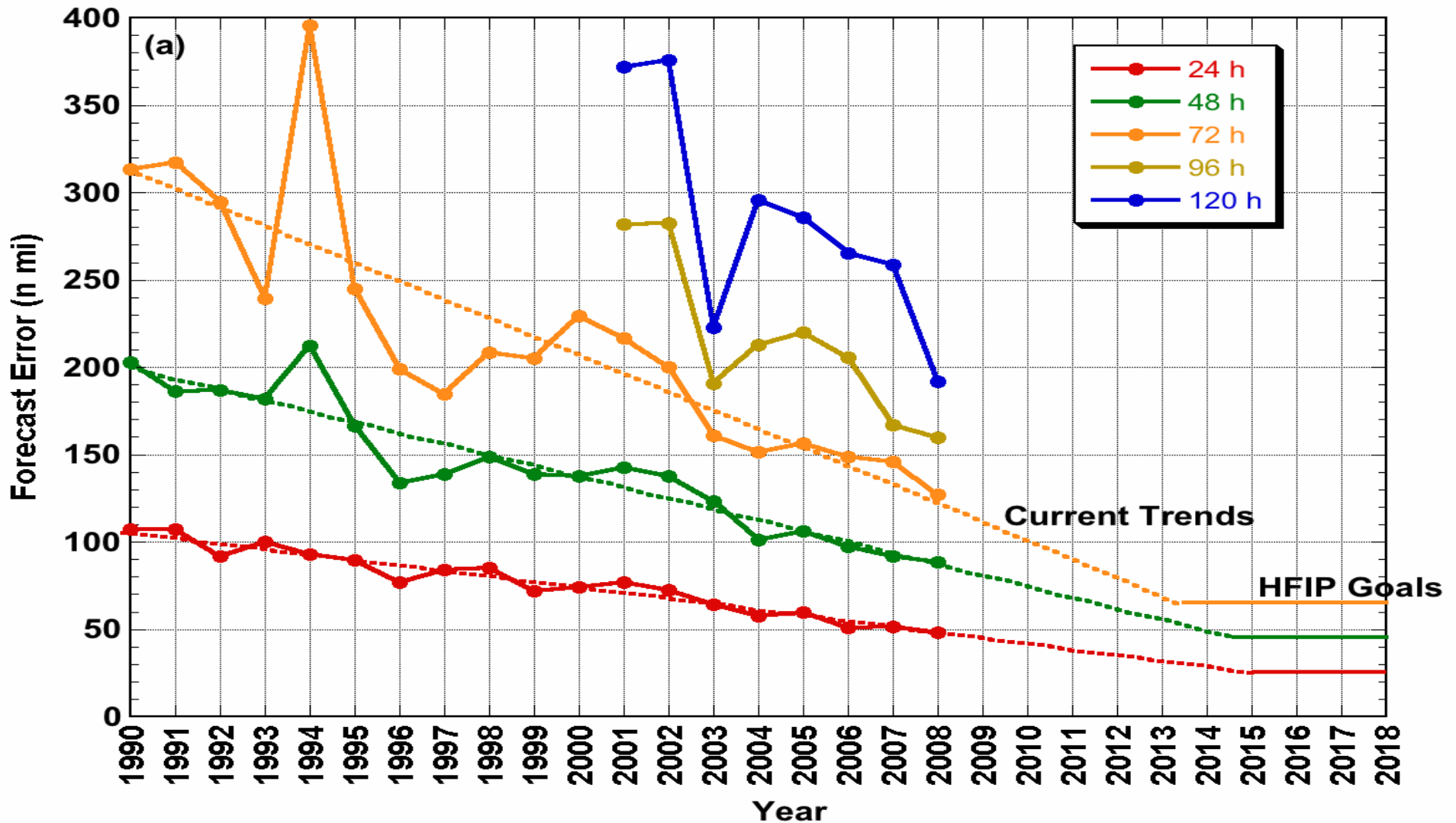
Goals

- **Improve** Forecast Accuracy
 - Hurricane impact areas (track) – 50% in 10 years
 - Severity (intensity) – 50% in 10 years
 - Storm surge impact locations and severity
- **Extend** forecast reliability out to 7 days
- **Quantify, bound and reduce** forecast uncertainty to enable risk management decisions

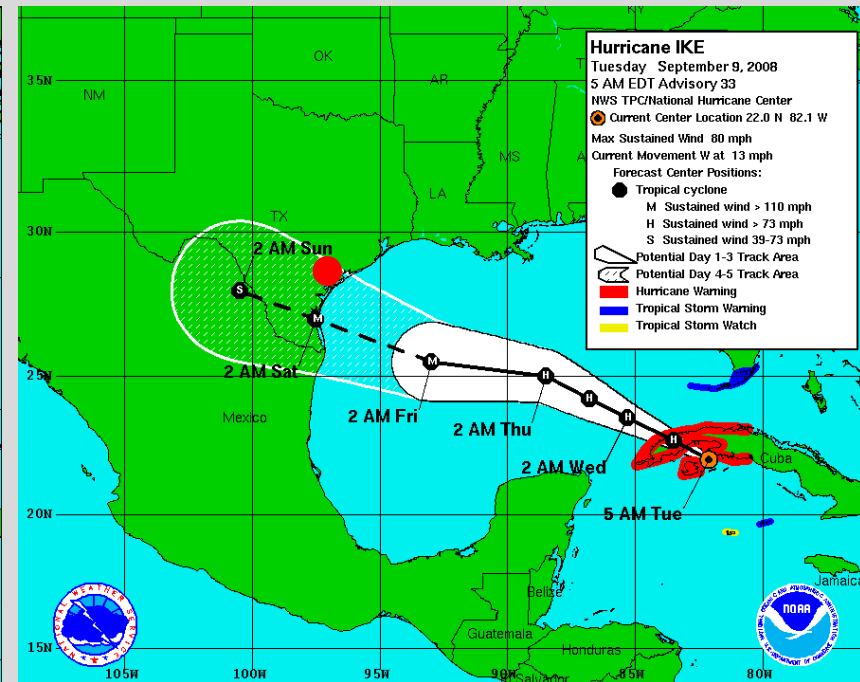
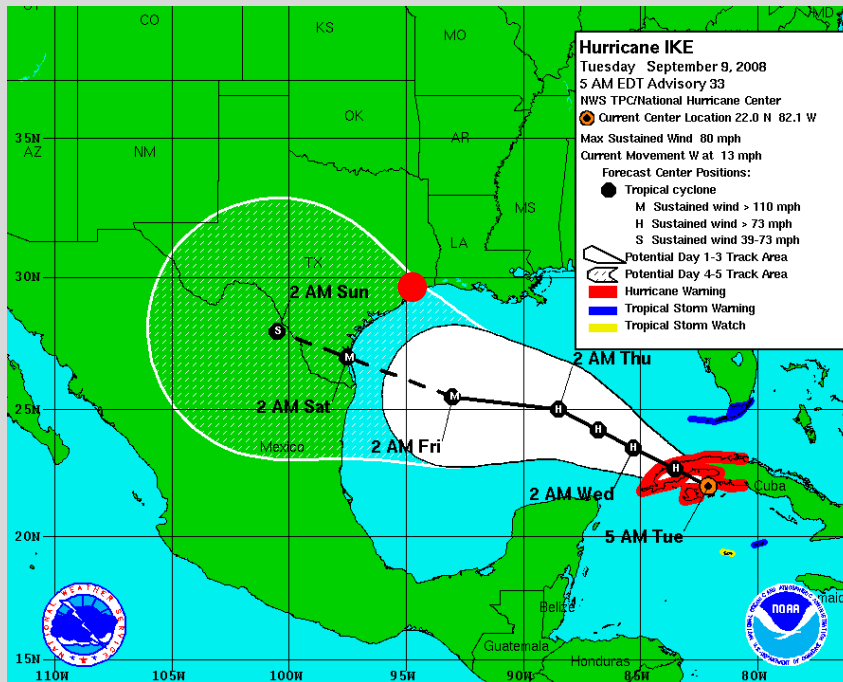


Track improvement trend and HFIP

Goals – Limit to predictability?

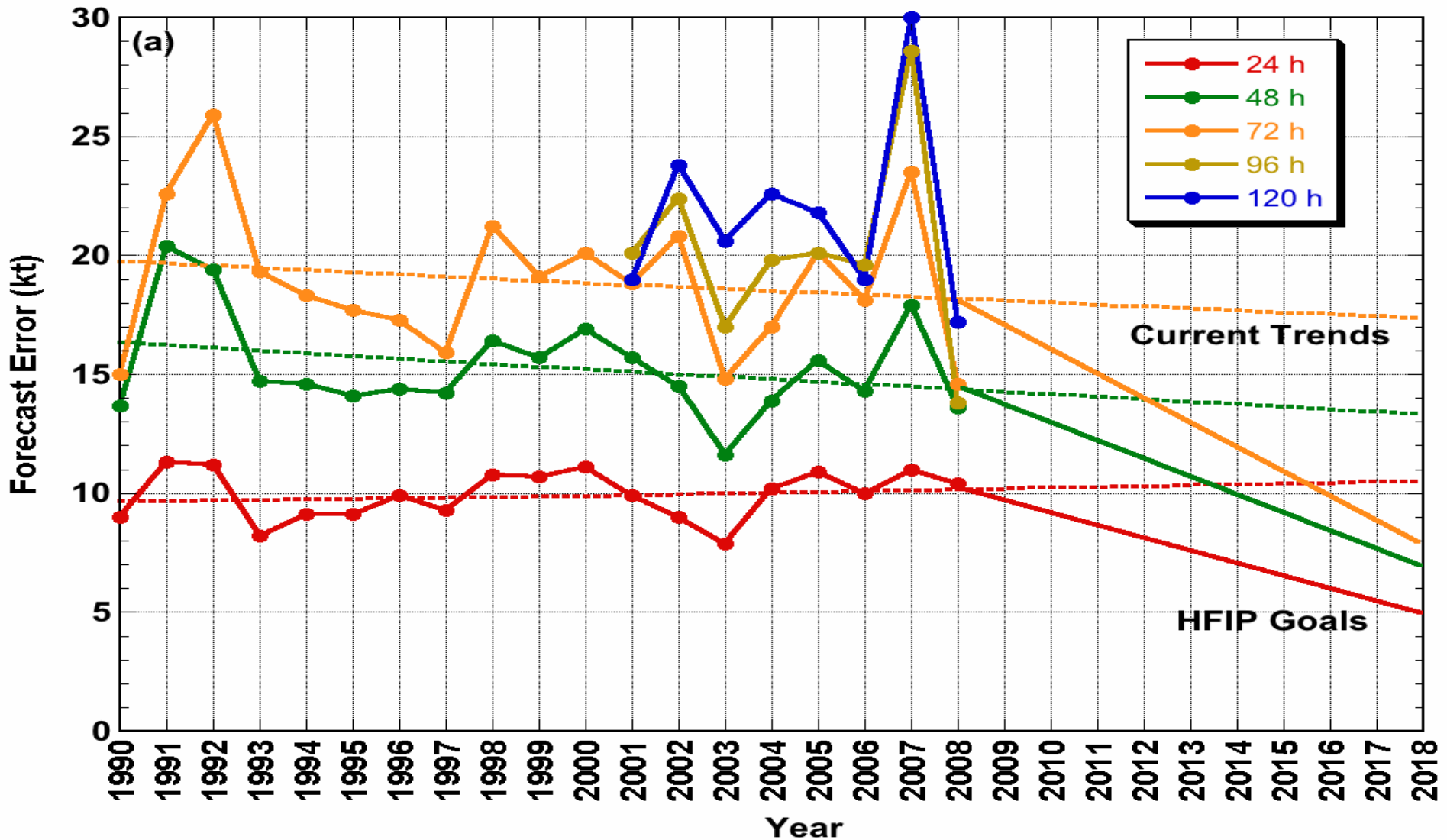


Ike example with current and future cone (HFIP Goal)



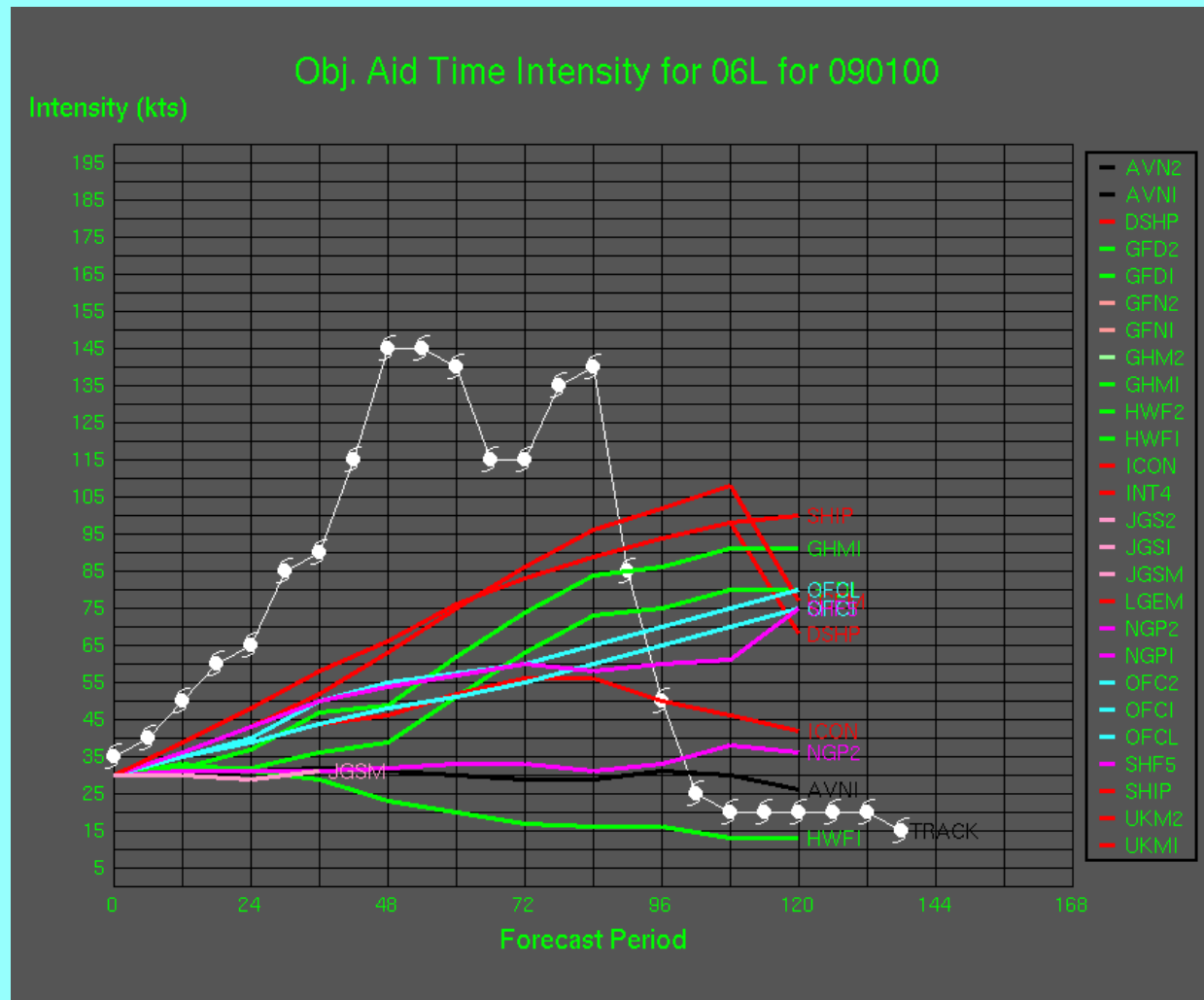
- Red dot is landfall - Same relative error to cone – note much smaller threat area

Intensity Goals for HFIP much more of a challenge than Track



Rapid intensity change

Current models have little or no skill

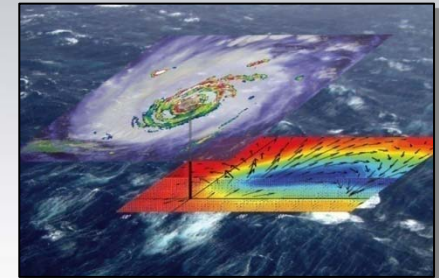


How to get there...



➤ Science

- Higher resolution coupled models – critical to storm evolution forecasts – especially intensity changes
- Forecast techniques to understand, reduce and communicate forecast uncertainty



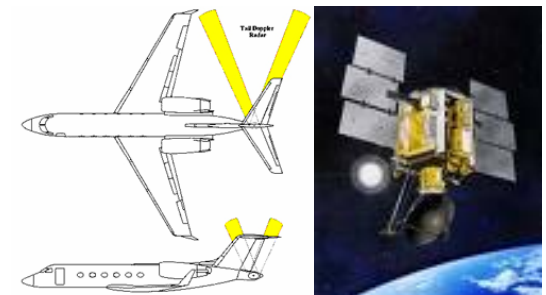
➤ Information Technology

- Increased computing power - to run advanced hurricane/global models and reduce uncertainty
- Services oriented IT architecture for inter-agency data exchange



➤ Observations

- Improved use of existing and planned systems
- New observations



Improved Models: Dynamical Models



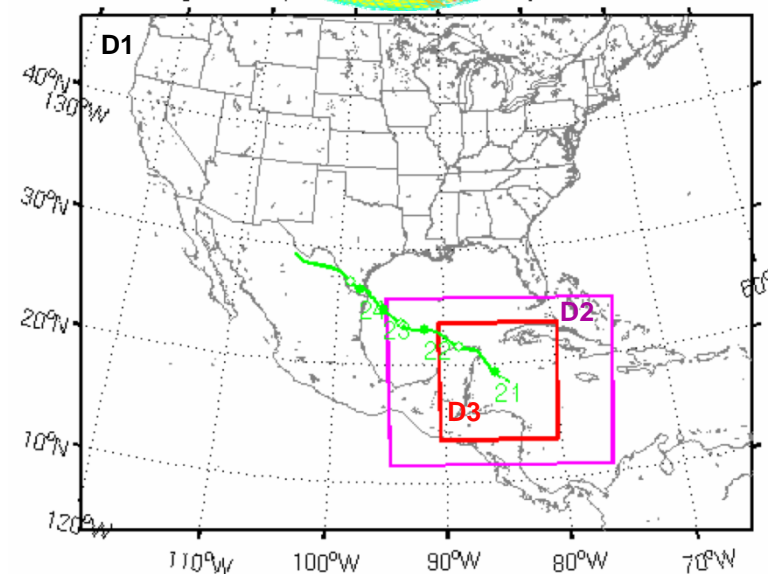
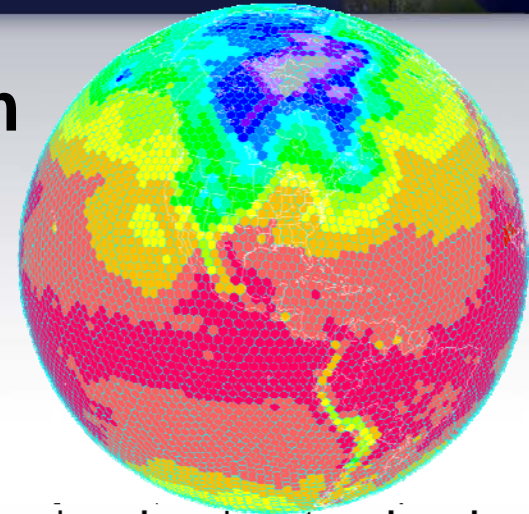
National Hurricane Forecast System

Global:

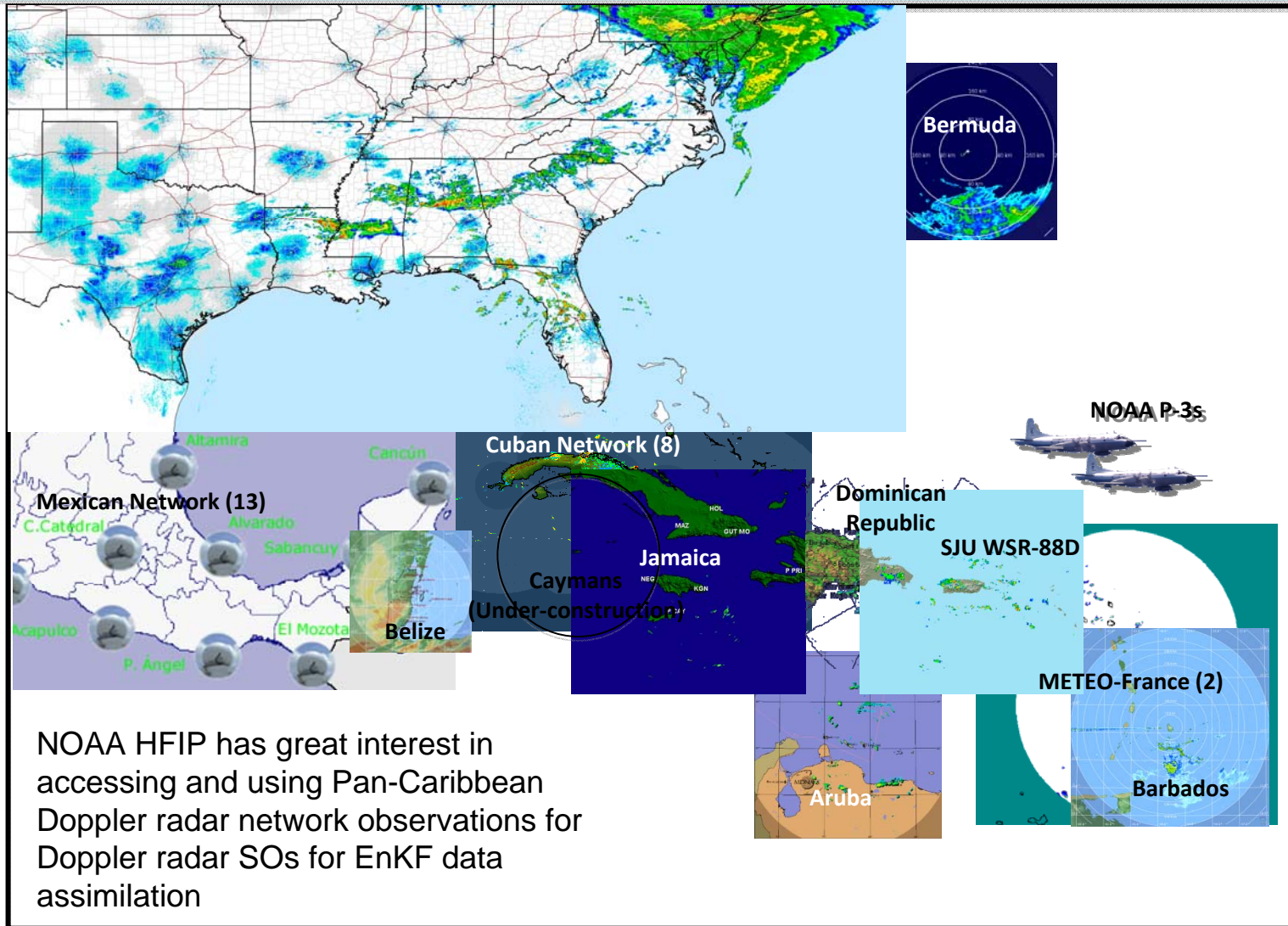
- FIM global model developed at ESRL with help from NCEP
- Uses unique global grid (soccer-ball-like horizontal, adaptive vertical coordinate)

Regional:

- Experimental HWRF developed at AOML & ESRL based on NCEP HWRF
- Triply-nested regional model down to 1-km horizontal resolution



Improved Use of Data: Pan-Caribbean Radar Network



**“Forecasting can be very
difficult --- particularly
when it involves the
future.”**

Yogi Berra