



The Graphical Hurricane Local Statement

www.srh.noaa.gov/mlb/hlsfiles/hlsmain.html



Hurricane Local Statement

**GRAPHICAL
HLS**

LOCAL WIND ●

LOCAL SURGE ●

MARINE ●

FLOODING ●

TORNADOES ●

GRAPHICS ISSUED:
1130 PM FRI
OCT 15 1999 DD

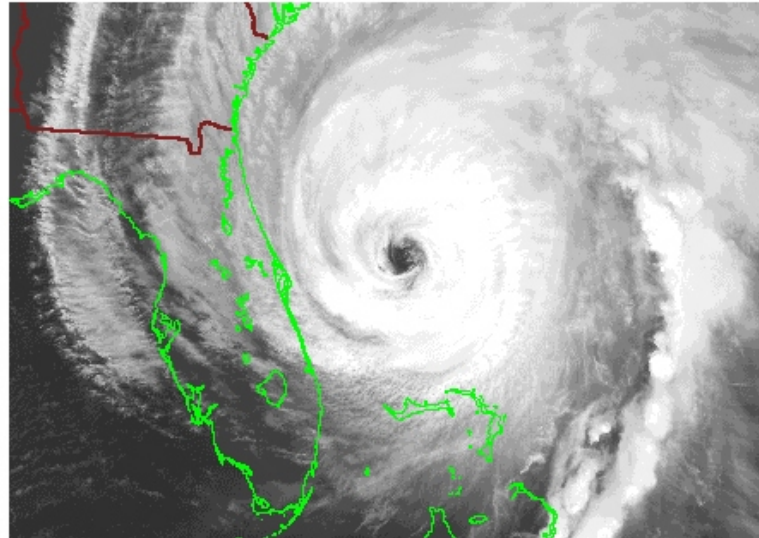
TEXT VERSION

Tropical
Prediction
Center

EMERGENCY
PREPAREDNESS

SITUATION ROOM

Scott M. Spratt & David W. Sharp



National Weather Service Melbourne, FL

FL Tropical WX Workshop - 16 April 2001

HLS - The Official Text Version

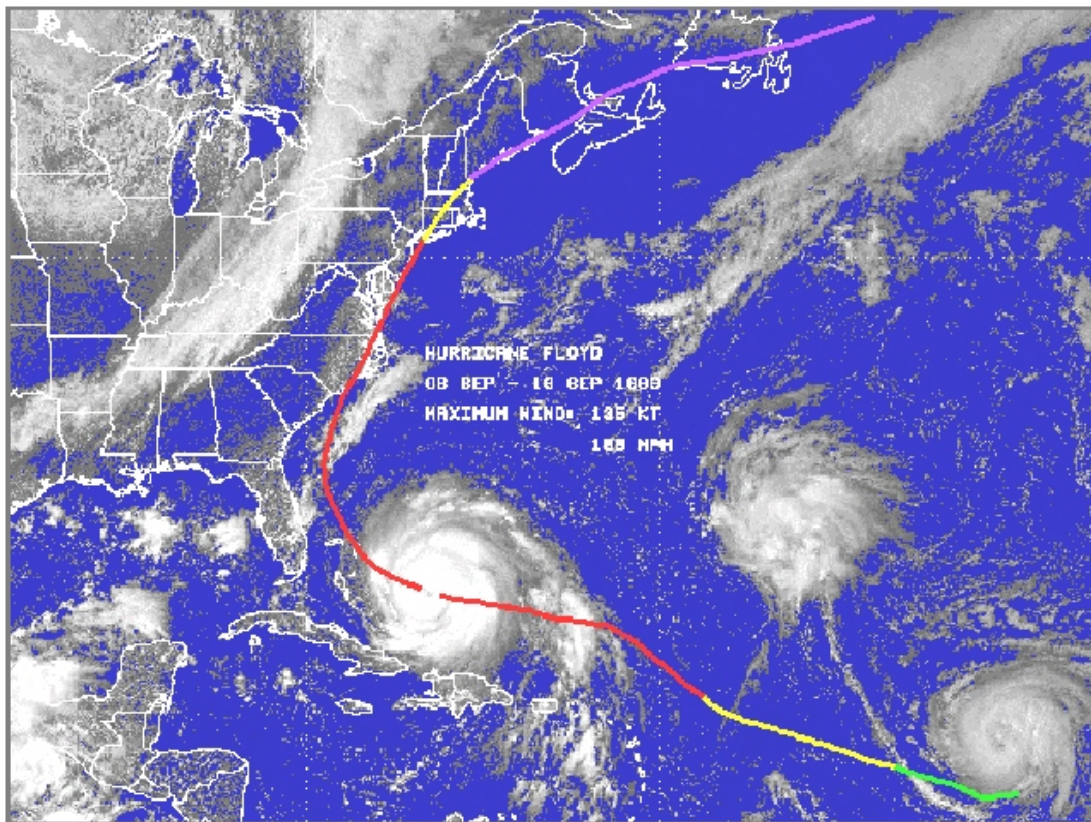
- Issued by the local WFO whenever tropical cyclone Watch and/or Warning is in effect.
- Information based on latest TPC forecast.
- To address the threat of expected tropical cyclone hazards, locally.
- To include all related hazards:
 - Local Winds
 - Local Surge
 - Local Flooding (rain)
 - Local Tornadoes
 - Local Marine



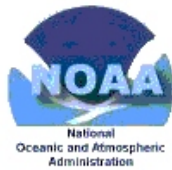
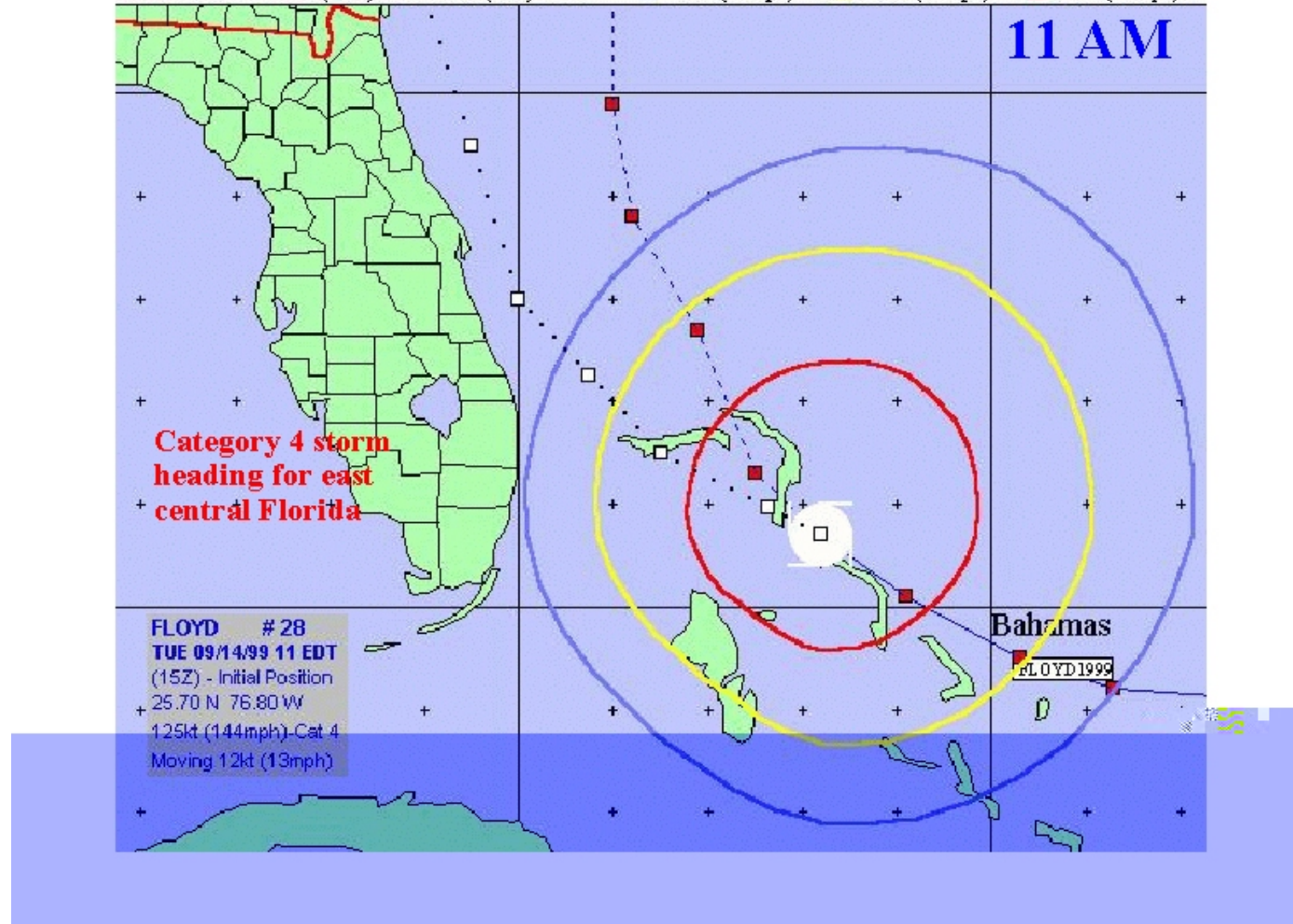
HLS - The Dilemma

Due to the diversity of threats, and the potential occurrence of multiple coincident threats, the text version (alone) is often insufficient to properly express all related weather concerns...

- The HLS (text) may become overwhelmingly large in order to accommodate detail.
- The HLS (text) may become overgeneralized in order to manage product length.



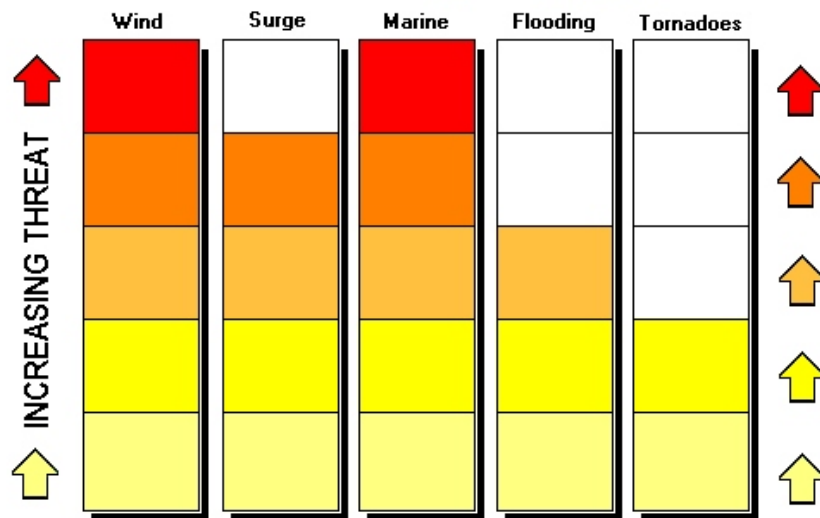
The catalyst for the graphical HLS project was the changing of the *local threat situation* to east central Florida (local area) during Hurricane Floyd and our (in)ability to effectively communicate that information to the public.



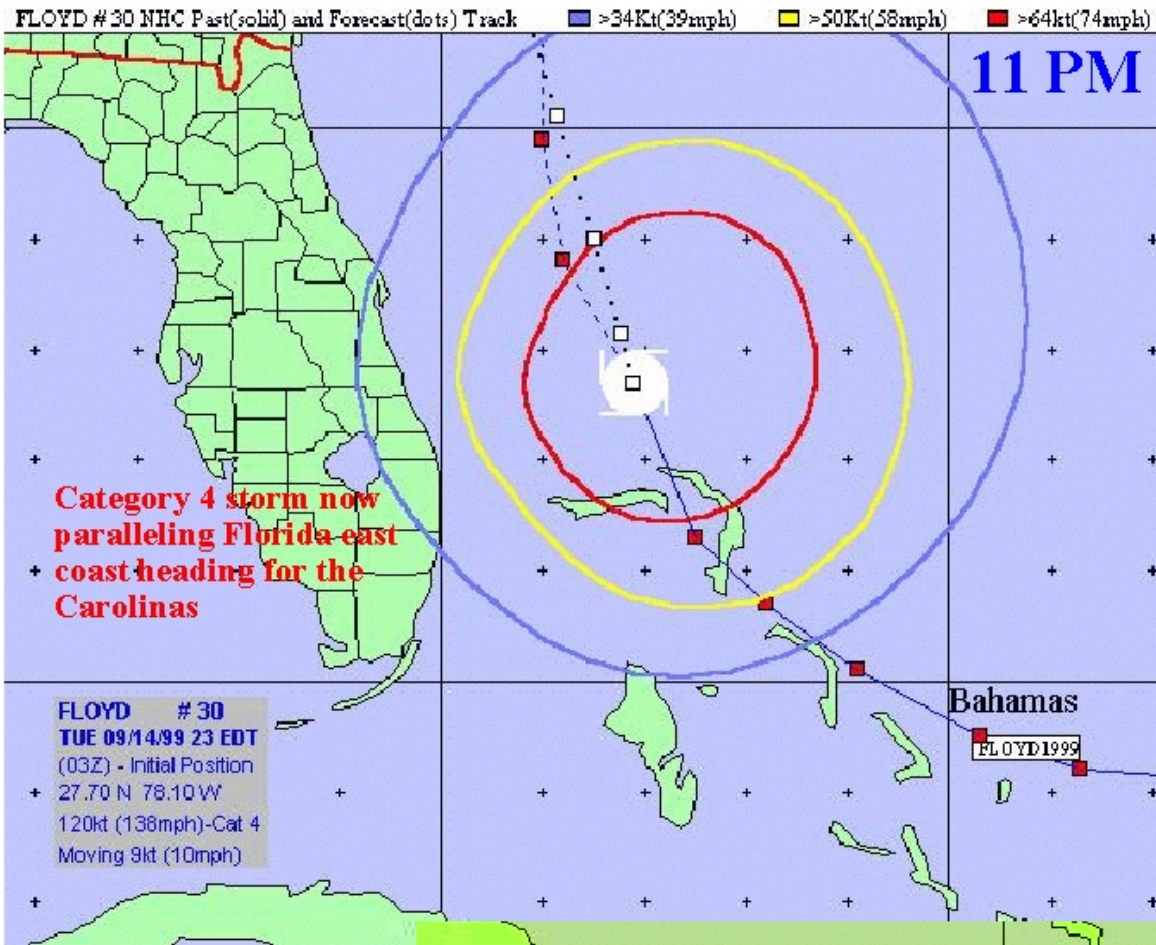
National Weather Service - Melbourne, Florida
 Hurricane & Tropical Storm Hazards
Degree of Threat (DOT)
 Specific to East Central Florida



Hurricane Floyd - 11 AM



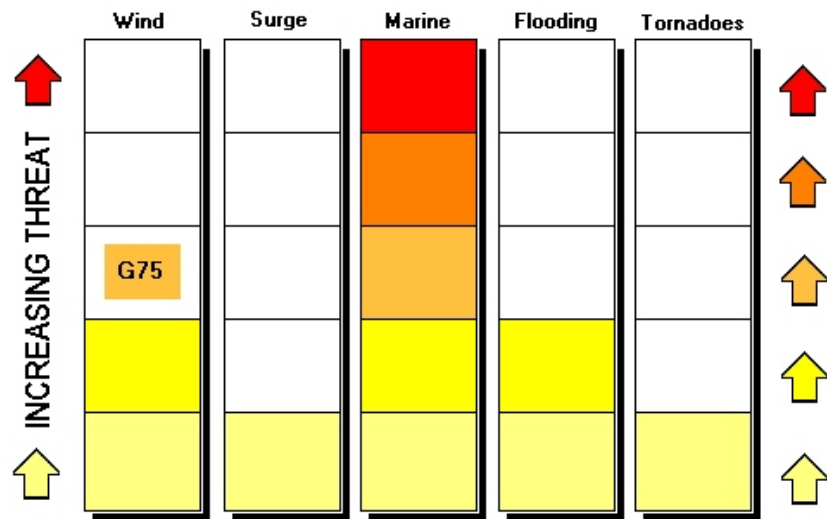
Local Threat Situation: Glancing landfall of an (Atlantic) major hurricane whose west side will overspread the local forecast area but whose east side will generally stay over the local marine area. (The situation would, of course, be of varying difference for MIA, JAX, as well as other coastal offices.)



National Weather Service - Melbourne, Florida
 Hurricane & Tropical Storm Hazards
Degree of Threat (DOT)
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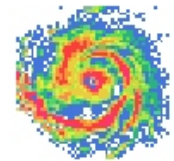
Hurricane Floyd - 11 PM



Local Threat Situation: (Atlantic) major hurricane whose west side will brush the local forecast area (gusts to hurricane strength near the coast) as its track parallels the Florida east coast.

Graphical HLS - The Premise

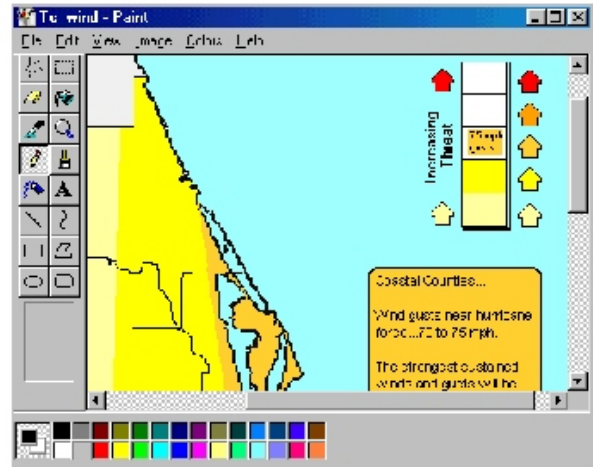
- To provide a set of “experimental hazard graphics” to complement the official textual HLS. (all related weather hazards)
- To provide a suite of products that is desirable by the users. (useful; easy to understand; customer feedback mechanism)
- To exploit the display and communications capabilities of the Internet. (usual disclaimers)
- To support the NWS Strategic Plan. (deliver better products & services, graphic-oriented products)



Experimental

Graphical HLS - Layout & Design

- “One-stop” web page concept.
- “Easy to use” & “interactive” graphics package.
- “Consistency” forecaster to forecaster and issuance to issuance.



Threat Graphic - DoT & TAM

- Degree of Threat (DoT)
 - Depicts the greatest level of threat of a particular hazard within east central Florida.
 - **Winds, Surge, Marine** - Long-fused hazards.
 - **Flooding Rain, Tornadoes** - Short-fused hazards.
- Threat Area Map (TAM)
 - Depicts geographic areas at higher risk and /or delineates timing of particular hazard(s).





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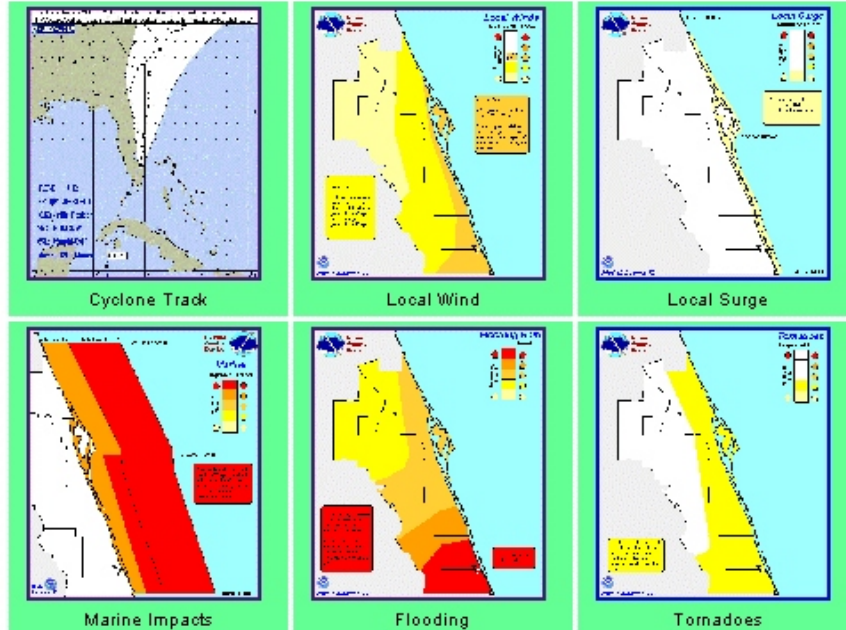
EMERGENCY PREPAREDNESS

SITUATION ROOM



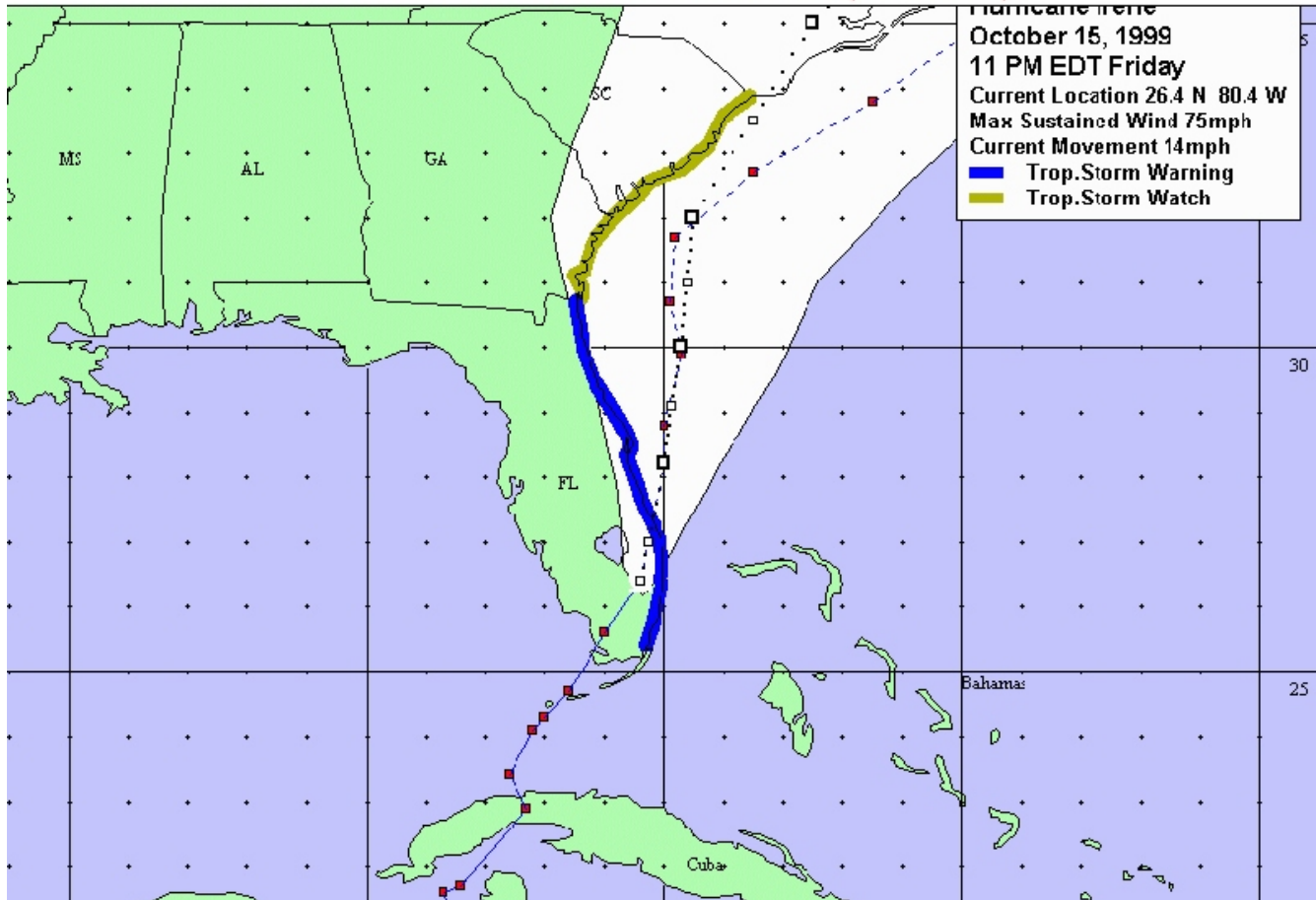
Graphical Hurricane Local Statement

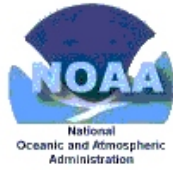
(test) Hurricane Irene (test)



Click thumbnail images above for full-sized individual hazard graphic.

Hurricane Irene (1999)

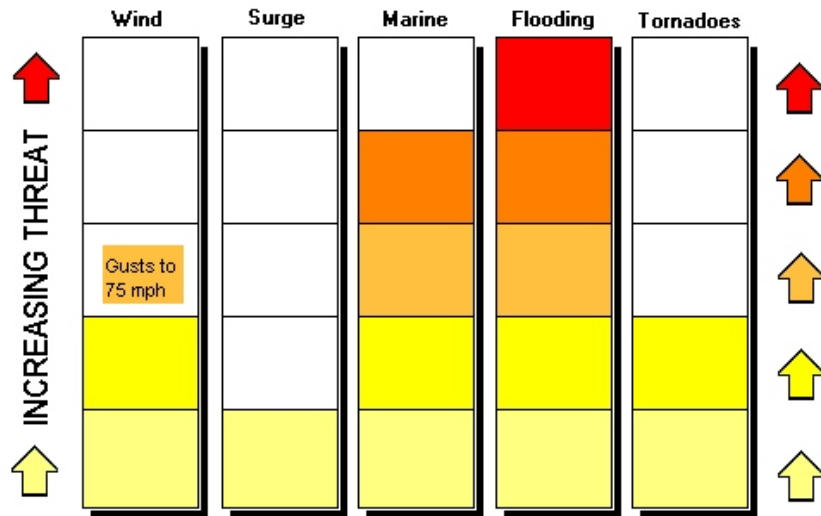




National Weather Service - Melbourne, Florida
Hurricane & Tropical Storm Hazards
Maximum Degree of Threat (DoT)
Specific to East Central Florida



TEST Hurricane Irene *TEST*



While TPC speaks to the specifics of the cyclone (storm-centered), the field office speaks to the **“local threat situation”** based on the official track/intensity forecast (location-centered).

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Tropical Prediction Center

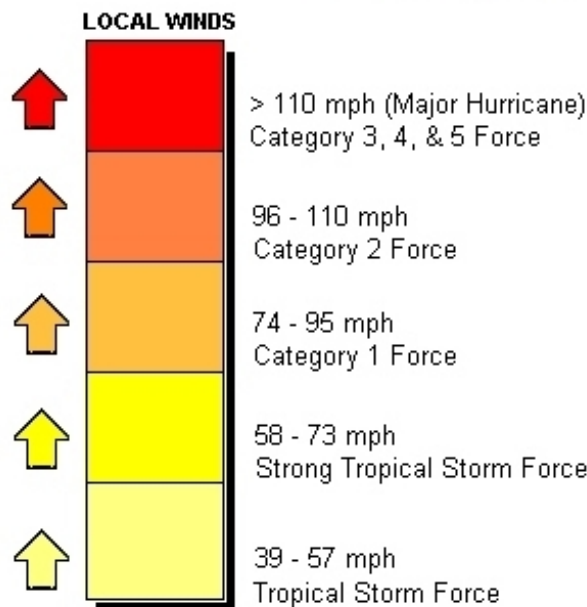
EMERGENCY PREPAREDNESS

SITUATION ROOM

Degree of Threat & Threat Area Map

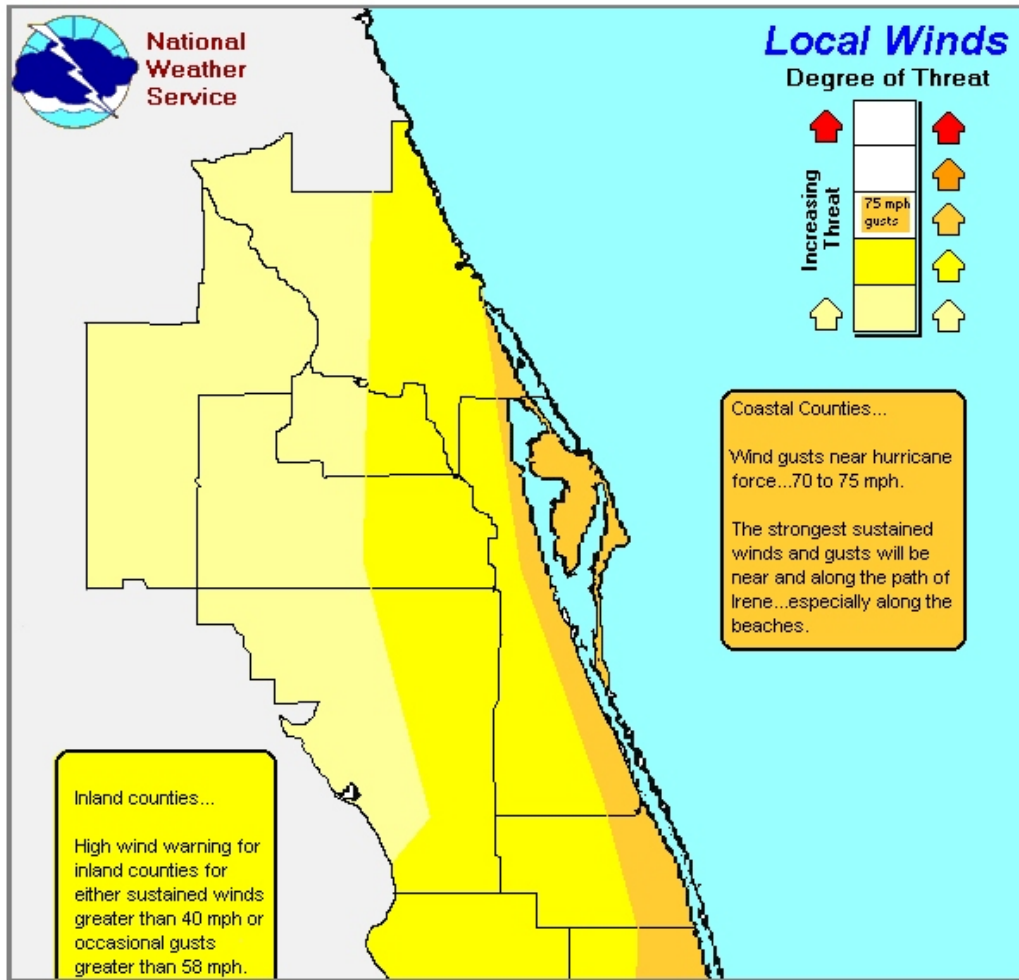
Tropical Cyclone Hazards - Local Winds

Click thumbnail image or scroll down for full-sized graphic.



Winds = Winds associated with a tropical cyclone (highest expected anywhere within east central Florida...coastal or inland)

Threat Graphic



Ability to more clearly depict the inland wind threat.

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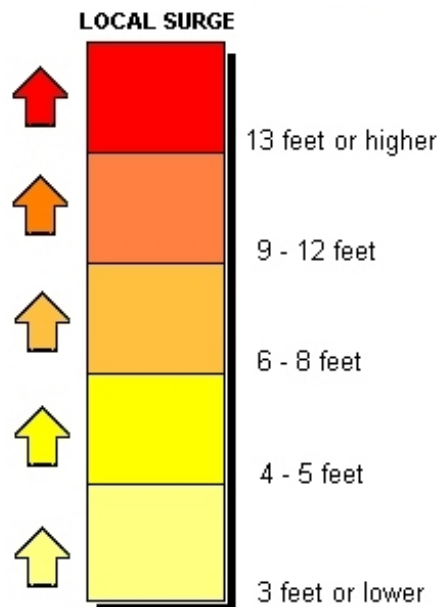
EMERGENCY PREPAREDNESS

SITUATION ROOM

Degree of Threat & Threat Area Map

Tropical Cyclone Hazards - Local Surge

Click thumbnail image or scroll down for full-sized graphic.



Local = Storm Surge + Astronomical Tide Surge (highest expected anywhere along the east central Florida coast)

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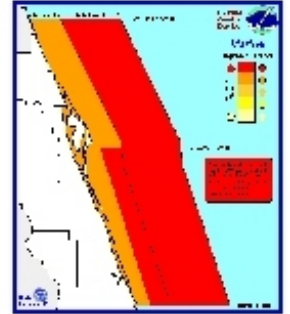
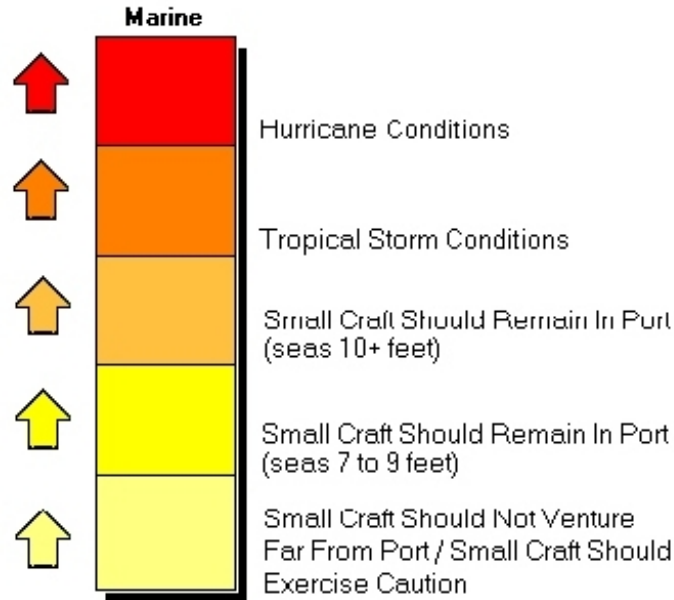
EMERGENCY PREPAREDNESS

SITUATION ROOM

Degree of Threat & Threat Area Map

Tropical Cyclone Hazards - Marine Impacts

Click thumbnail image or scroll down for full-sized graphic.



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LOCAL SURGE ●

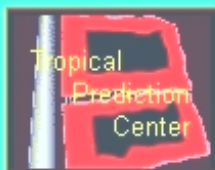
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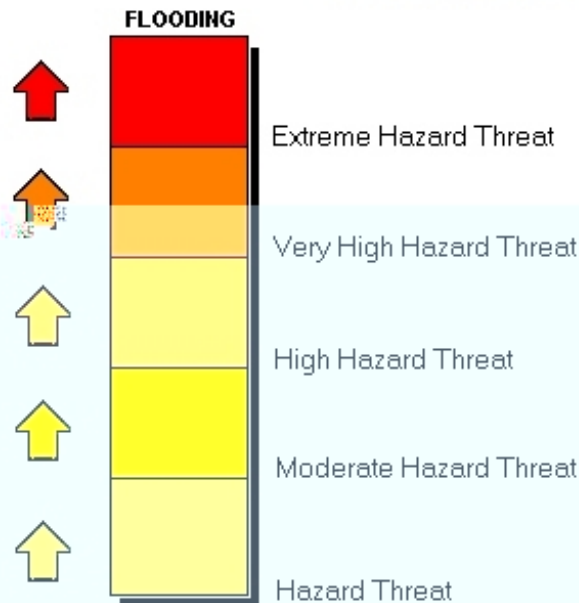
EMERGENCY PREPAREDNESS

SITUATION ROOM

Degree of Threat & Threat Area Map

Tropical Cyclone Hazards - Flooding Rain

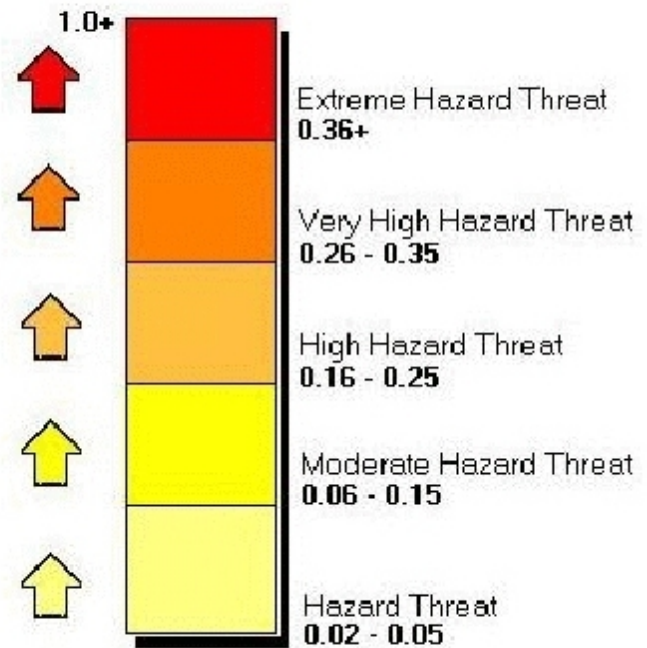
Click thumbnail image or scroll down for full-sized graphic.



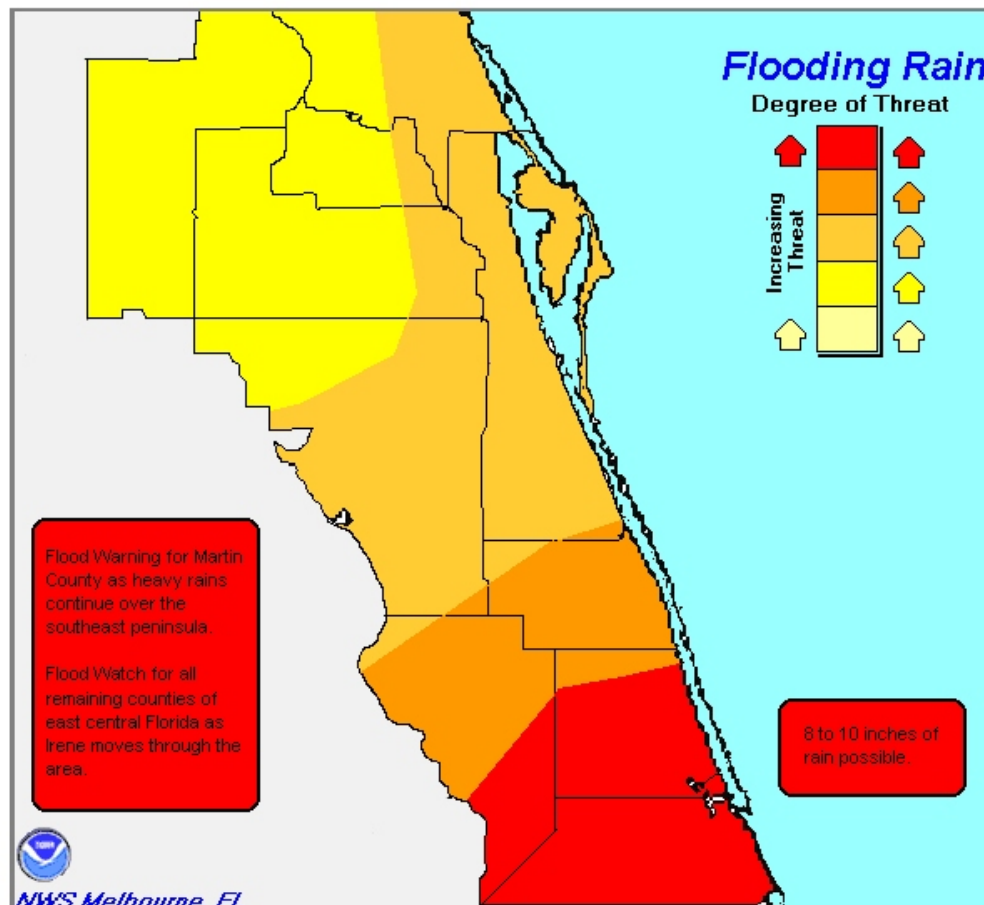
Forecaster computation of short-fused threat levels... “flooding”

(Flash) Flooding DoT = C (A x B)

Confidence Factor	Event Occurrence	A-Value
Minimal Chance	10% confidence	.1
Slight Chance	20% confidence	.2
Chance	30-50% confidence	.3, or .4, or .5
Likely	60-70% confidence	.6, or .7
Categorical	80-100% confidence	.8, or .9, or 1.0
Coverage Factor	ECFL Counties	B-Value
1 County (isolated)	10% county coverage	.1
2 - 5 Counties (scattered)	20-50% county coverage	.2, or .3, or .4, or .5
6 - 10 Counties (numerous)	60 -100% county coverage	.6, or .7, or .8, or .9, or 1.0
Impact Coefficient	Event Thresholds	C-Value
Some Threat to Life & Property	around Flash Flood Guidance	1
Greater Threat to Life & Property	roughly 2x Flash Flood Guidance	1.25
Greatest Threat to Life & Property	roughly 3x Flash Flood Guidance	1.5



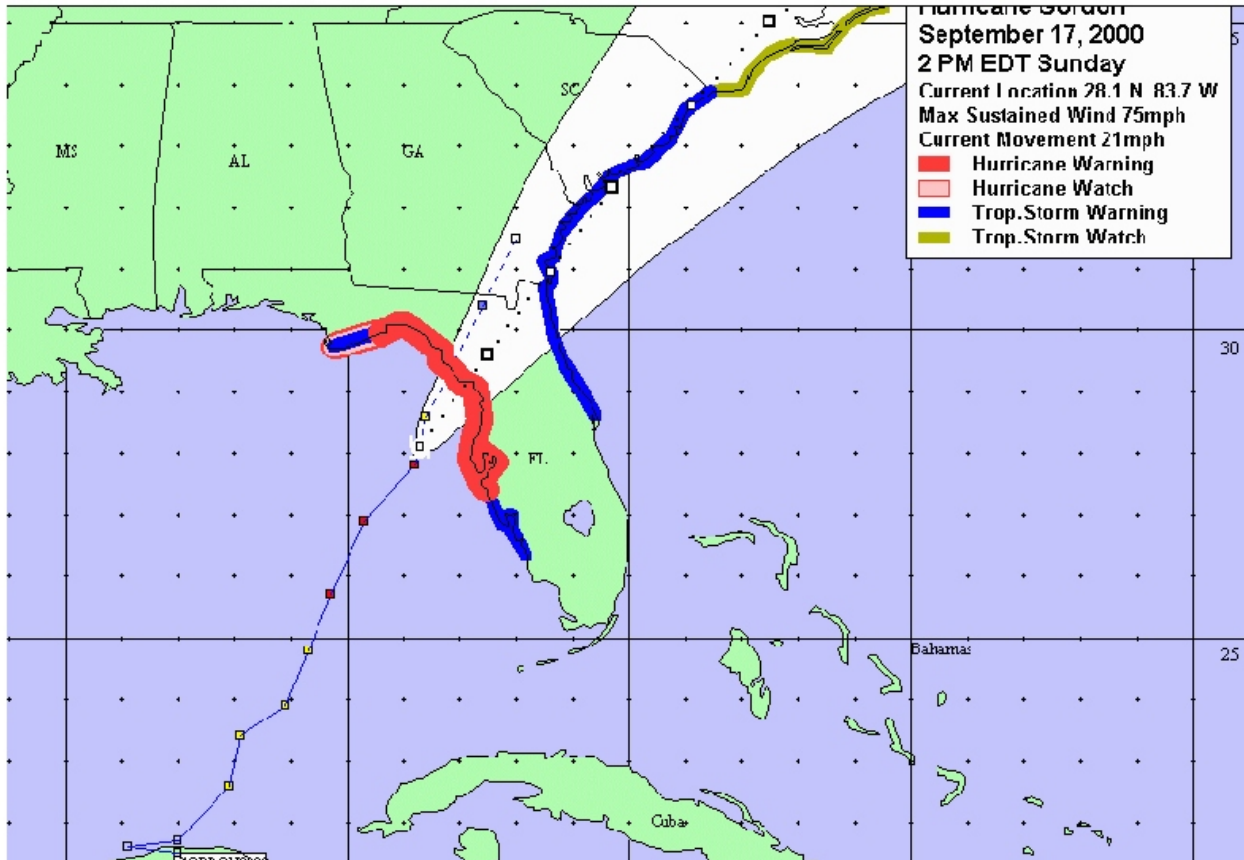
Threat Graphic



Not a direct “QPF”

Not necessary to change to Saffir-Simpson Scale to include flooding rain.

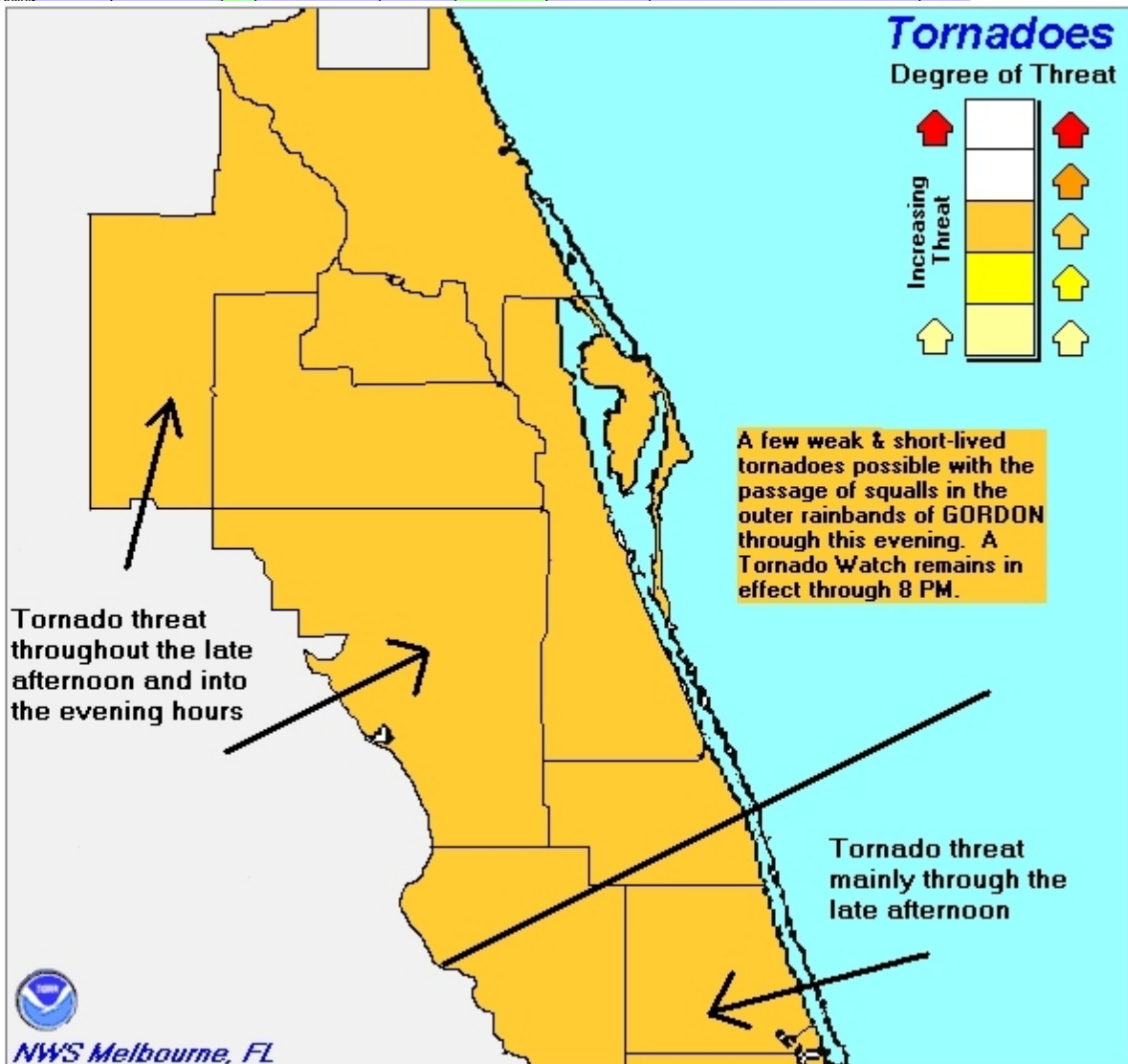
Hurricane Gordon (2000)



Tornado Watch for all ECFL.

Equal threat for the entire forecast area as rainbands rotate from south to north through ECFL.

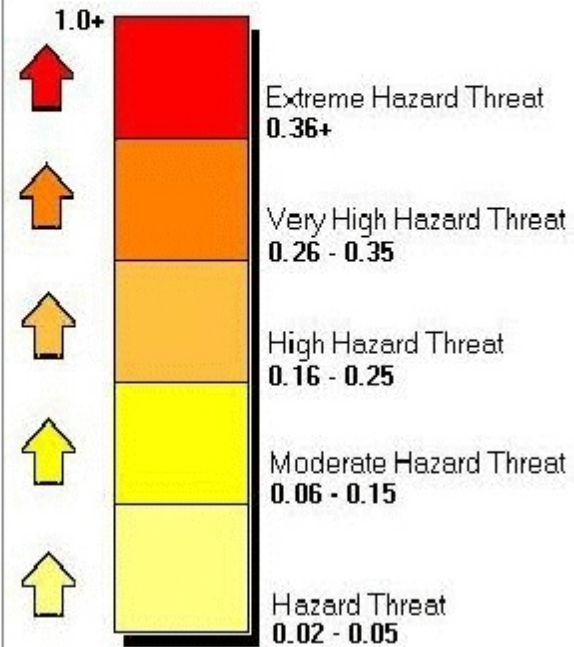
Timing of the threat...for south area during the late afternoon but continuing into the evening for the north area.



Forecaster computation of short-fused threat levels... “tornadoes”

Tornadoes DoT = C (A x B)

Confidence Factor	Event Occurrence	A-Value
Minimal Chance	10% confidence	.1
Slight Chance	20% confidence	.2
Chance	30-50% confidence	.3, or .4, or .5
Likely	60-70% confidence	.6, or .7
Categorical	80-100% confidence	.8, or .9, or 1.0
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Impact Coefficient	Event Thresholds	C-Value
Some Threat to Life & Property	one or more F0/ F1 tornado	1.25
Greater Threat to Life & Property	one or more F2+ tornado or an outbreak F0/F1	1.5



...The Future of the Graphical HLS...

- **Product Standardization**

WFO MLB (SR) &
WFO AKQ (ER)

“test bed”

- **Transition to AWIPS Platform**
simplify production & dissemination

- **Forecaster Training**
methodology & mechanics

