



# Ocean Prediction Center Ensembles

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[NOAA National Weather Service](#)

[National Centers for Environmental Prediction](#)

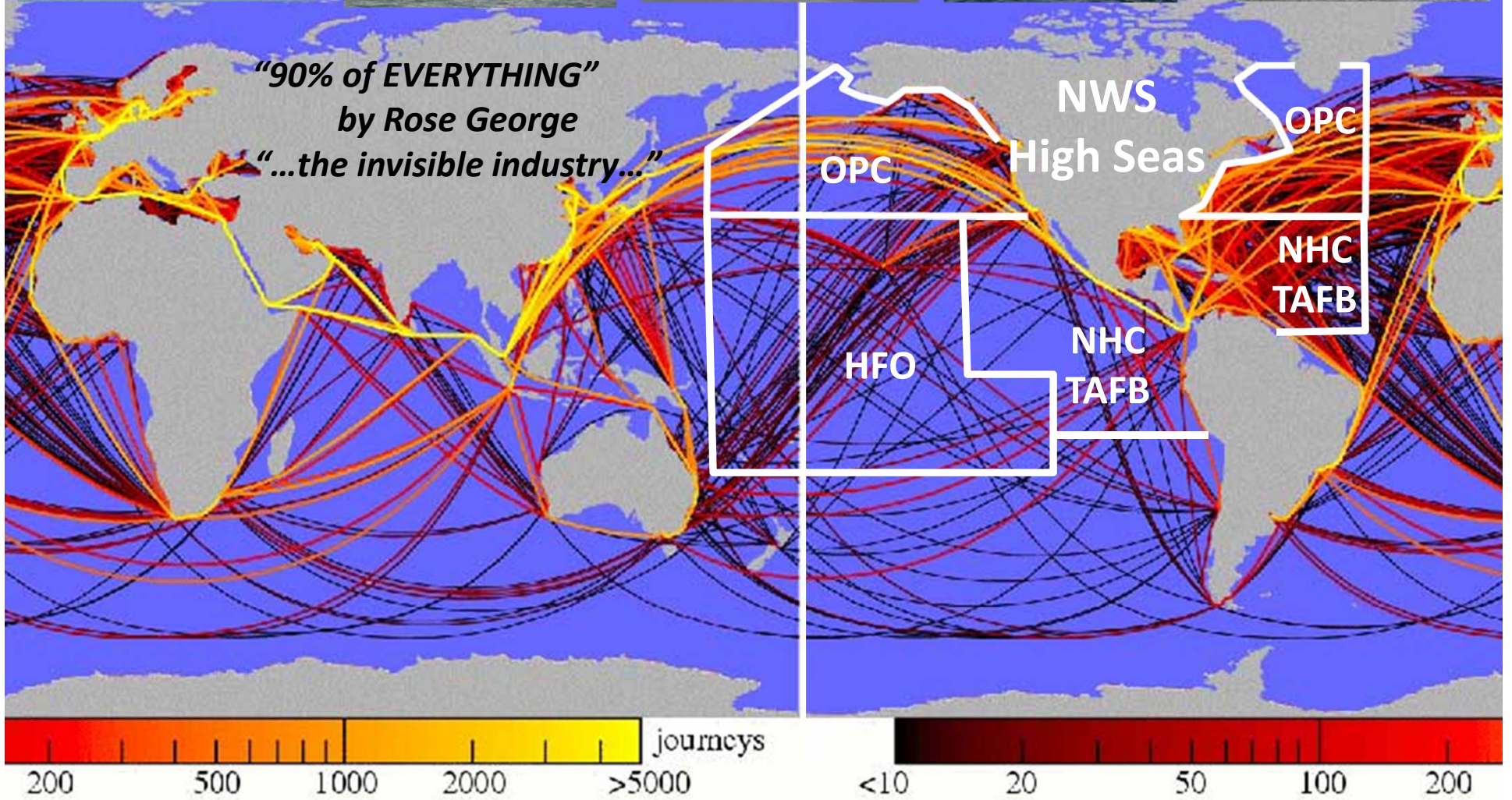
[Ocean Prediction Center](#)

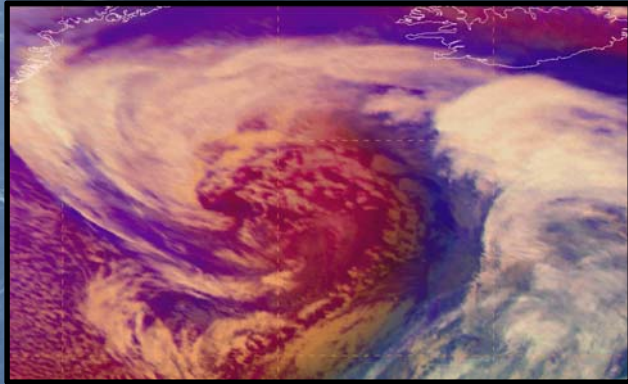
College Park, MD

**Outline**

OPC overview

The Ensemble Challenge





## Focus

0-5 days

Beyond 5 days service gap

## Products

Text

Graphical

Grids

## Elements

Wind

Waves

Visibility

Freezing Spray

Ice

Thunderstorms

Storm surge

**High Impact – Major cyclone with extreme winds and waves impacting shipping lanes, fishing grounds, coastal areas, and ports**

An aerial photograph of a large dam and reservoir. The reservoir is a deep blue color, and the dam is a long, light-colored structure. The surrounding landscape is covered in snow and dense evergreen forests. The text "Information" is overlaid in white, "The Ensemble Challenge" in blue, and "Forecast Products And Services" in white at the bottom left.

# Information

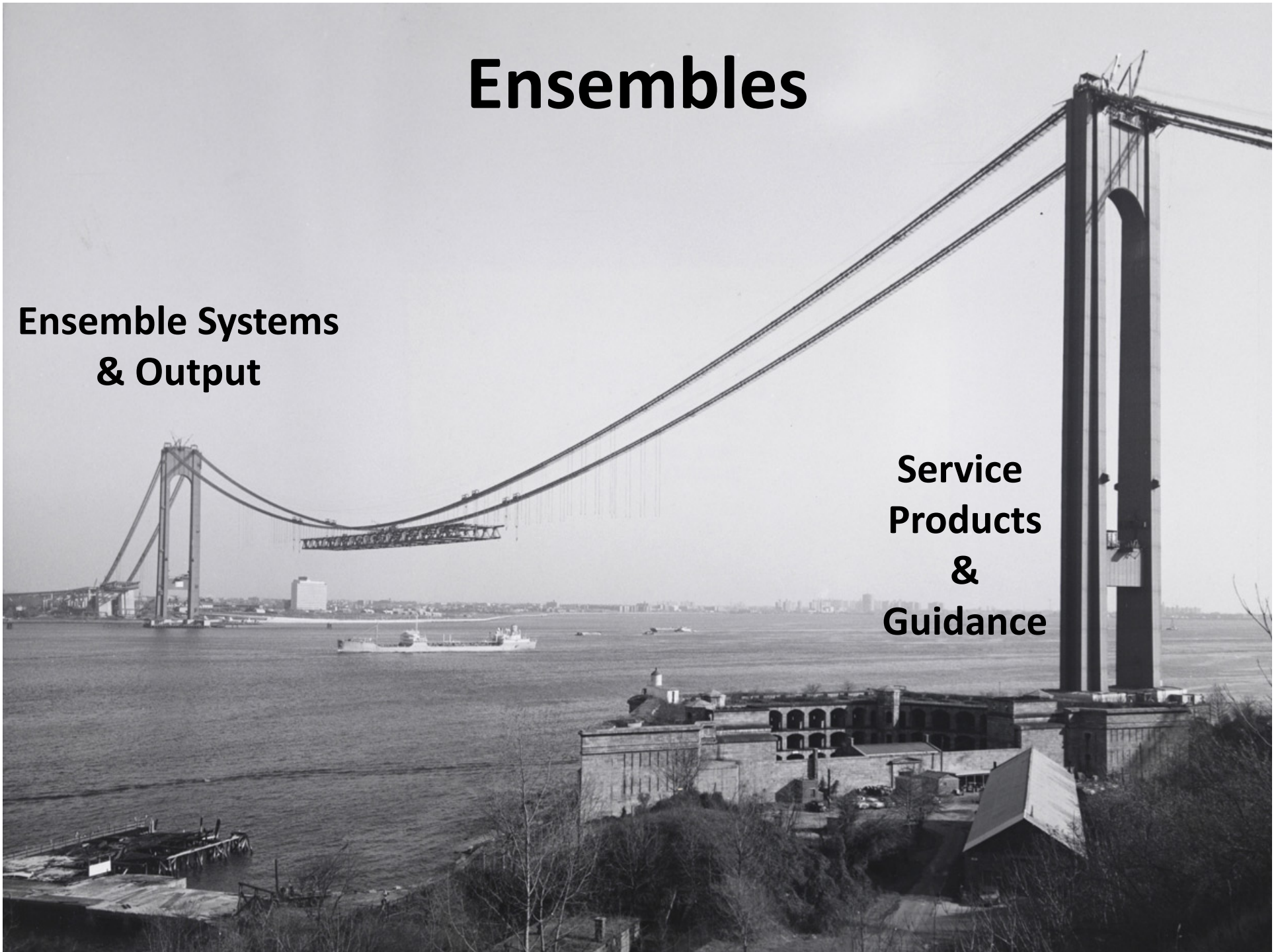
## The Ensemble Challenge

Forecast  
Products  
And Services

# Ensembles

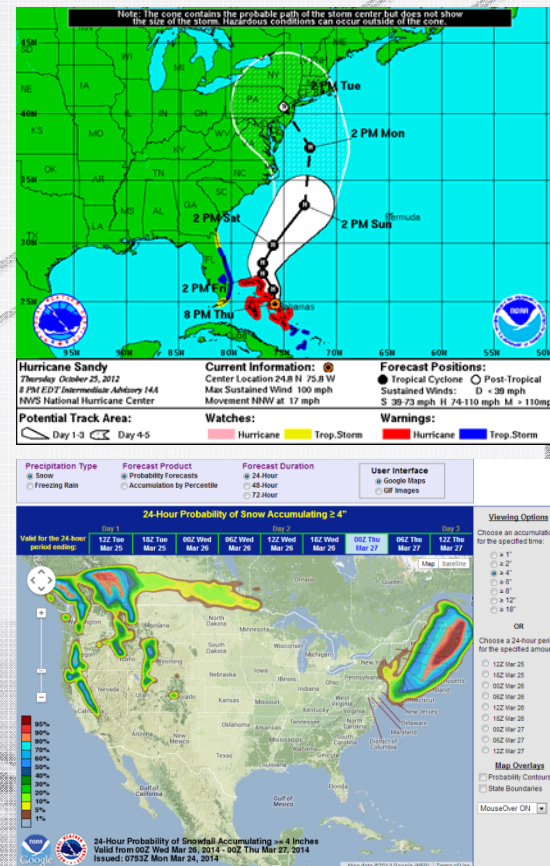
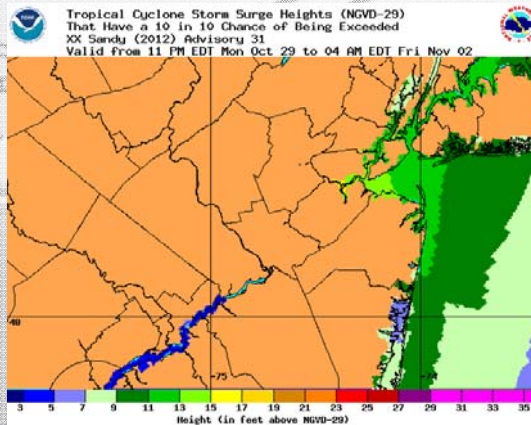
**Ensemble Systems  
& Output**

**Service  
Products  
&  
Guidance**



# Ensembles

- Service Products – primarily deterministic
  - Successes as products
    - Tropical Cyclones
    - Precipitation
    - Storm Surge

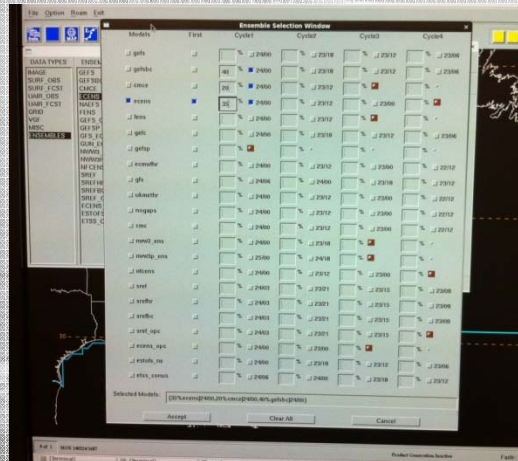
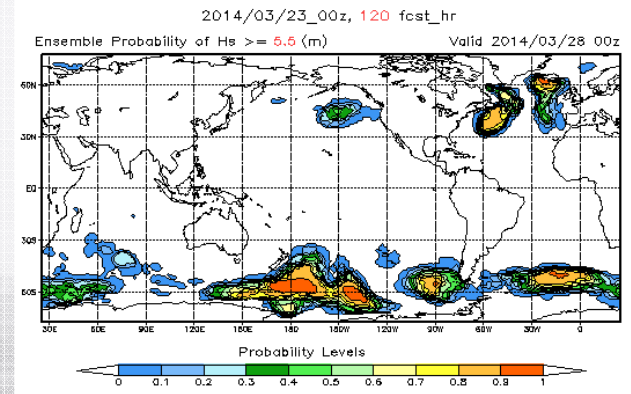
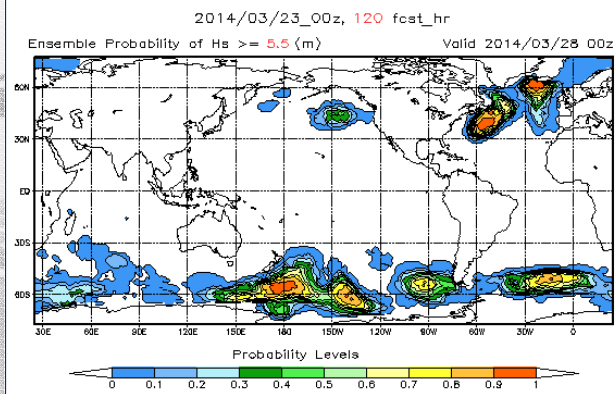
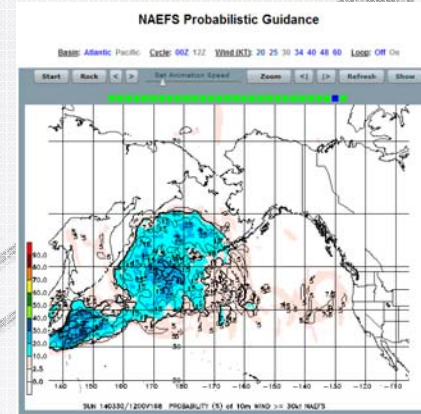
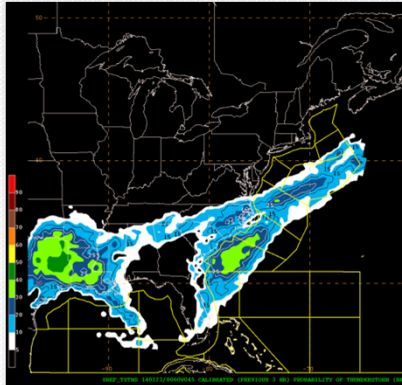


# Ensembles

- **Guidance**

- **Successes**

- SREF
- NAEFS
- WW3
- N-AWIPS functionality



# Ensembles

- **Guidance – ensembles**

- **Challenges**

- Data access
    - Tools for Data Assessment
    - Probabilistic suite of products
    - Quantification of probability (what does 10% mean, 60, 120, 180 hrs)
    - Under dispersion and under representative (high impact events)
    - Tools or techniques for production (Extreme Forecast Index)
    - Bias correction validity with event driven parameters (ocean winds)

- **Roles of Service Centers, EMC, Regions, MDL, WFOs**

- Post processing
    - Bias correction
    - Visualization and production tools
    - Downscaling
    - Requirements



# Ensembles

How do we finish the bridge by  
optimizing use of ensemble information?

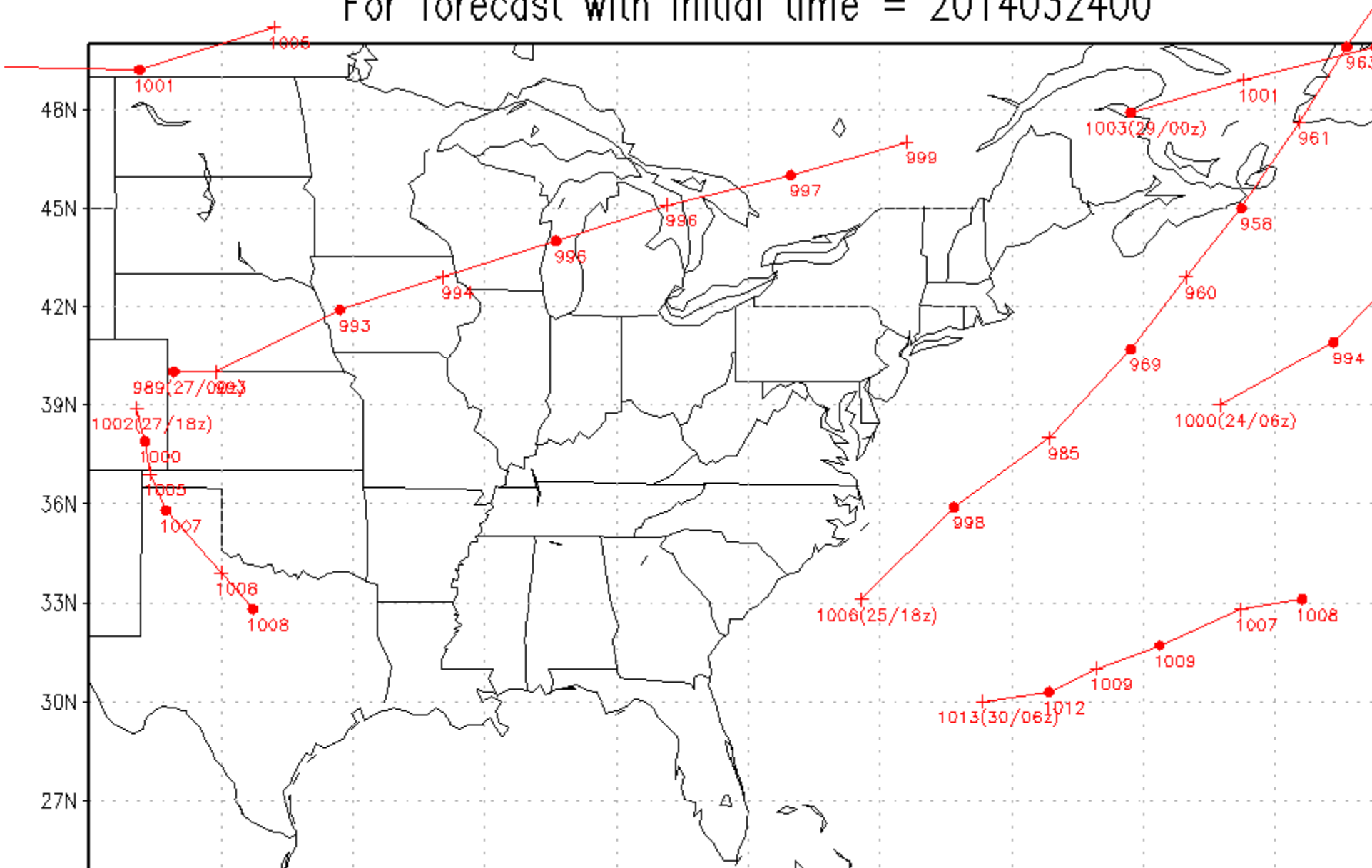
Ensemble Systems  
& Output

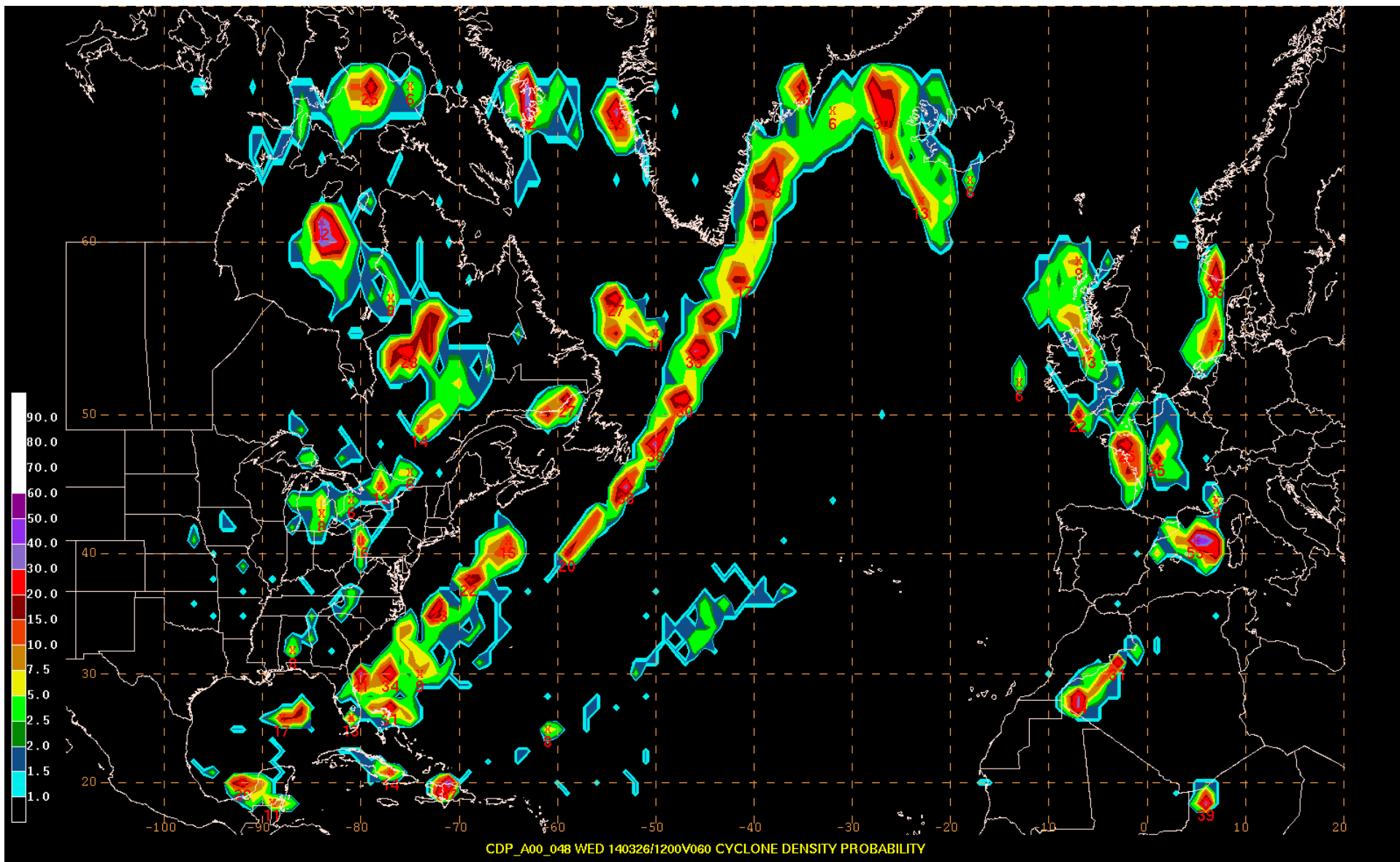
Service  
Products  
&  
Guidance



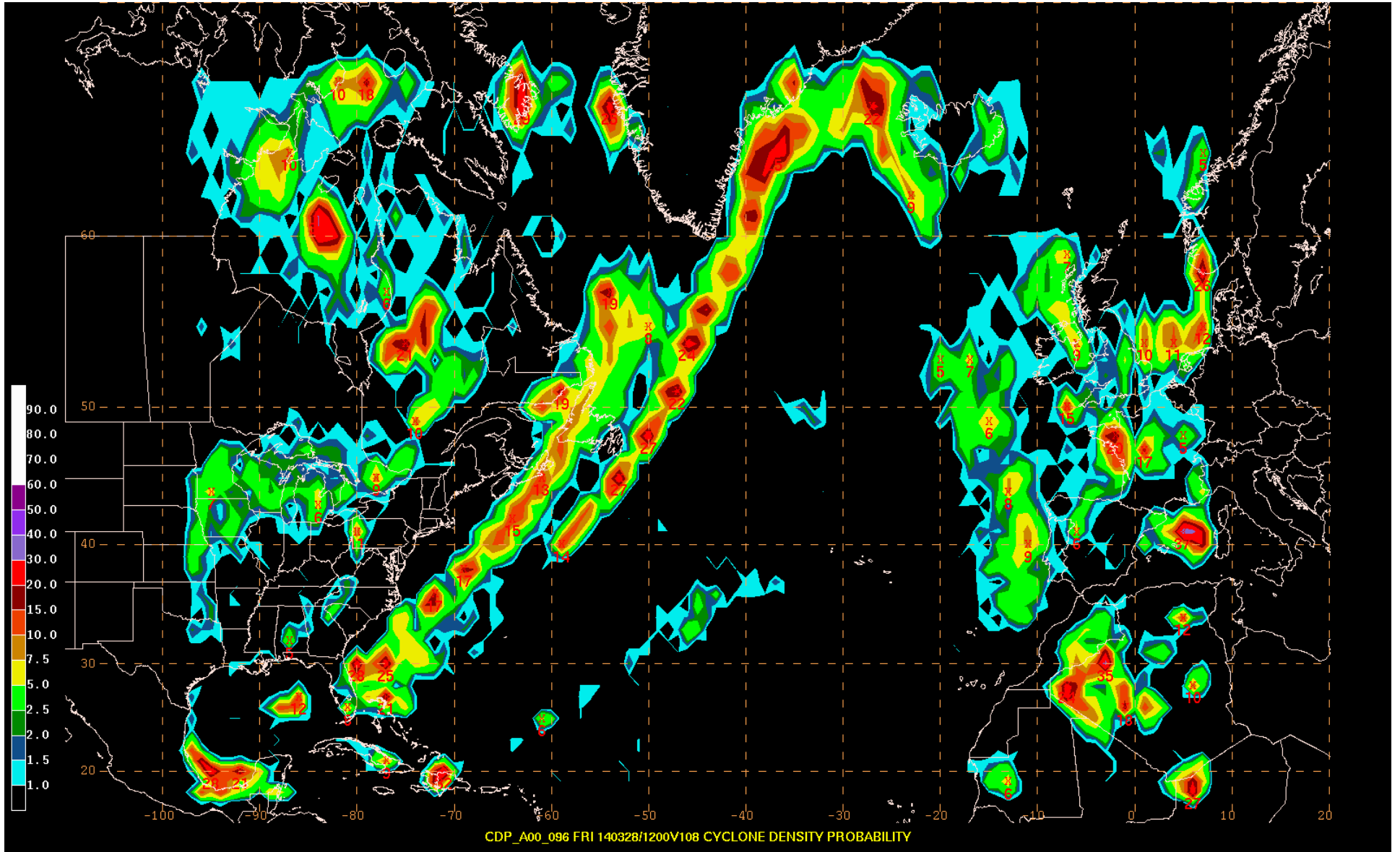
# Model Forecast Storm Tracks

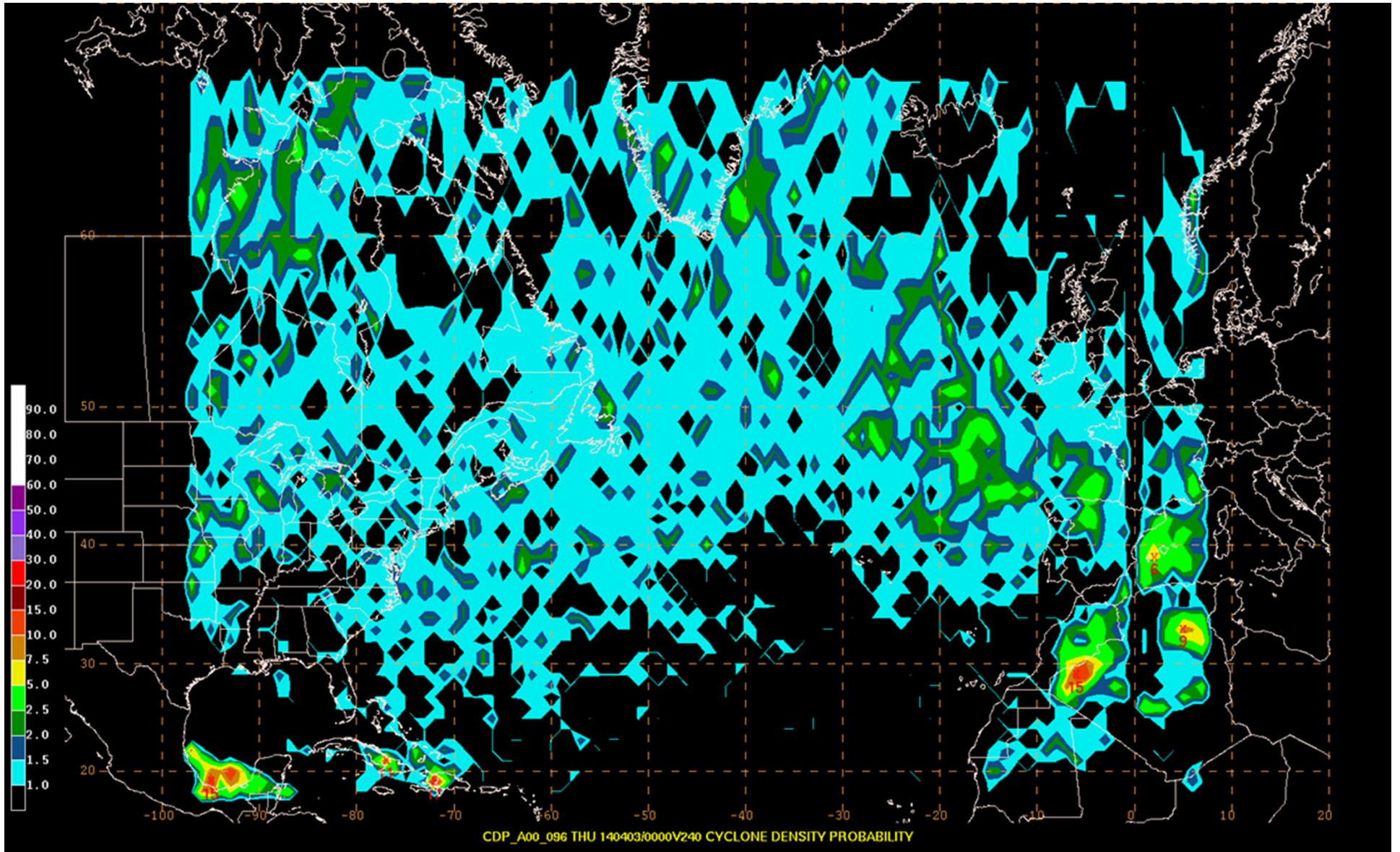
For forecast with initial time = 2014032400



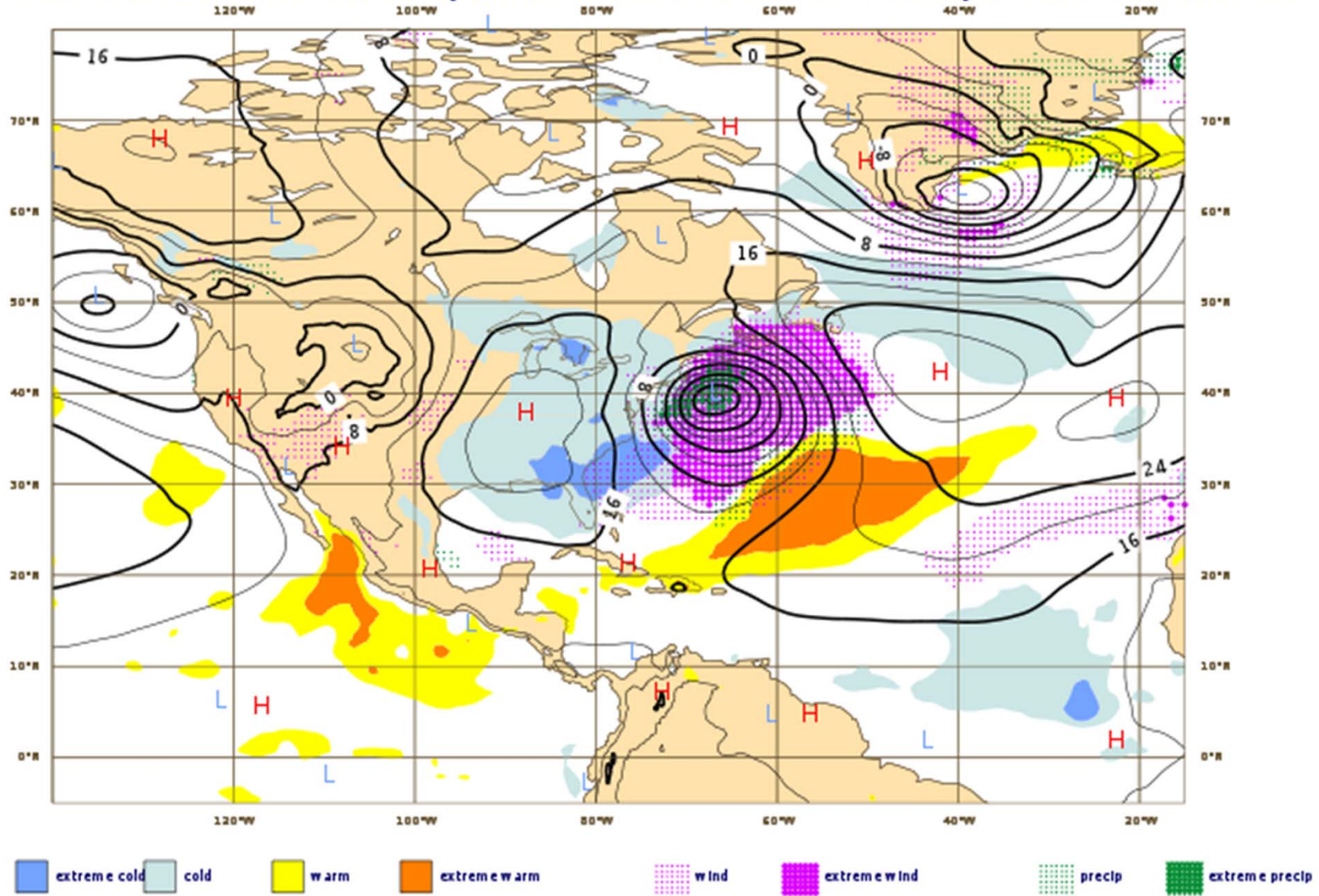


CDP\_A00\_048 WED 140326/1200V060 CYCLONE DENSITY PROBABILITY





Anomalous weather predicted by EPS: Monday 24 March 2014 at 00 UTC  
 1000 hPa Z ensemble mean ( Wednesday 26 March 2014 at 12 UTC )  
 and EFI values for Total precipitation, maximum 10m wind gust and mean 2m temperature (all 24h)  
 valid for 24hours from Wednesday 26 March 2014 at 00 UTC to Thursday 27 March 2014 at 00 UTC



### 10 days wave for 37.75 and -69.29 (Selected/clicked point)

#### Wave Epsgram

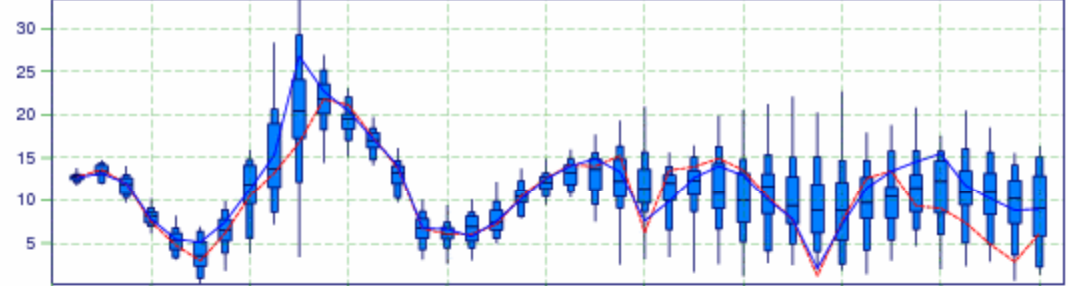
37.8° N 69.33° W (EPS sea point)  
 Deterministic Forecast and EPS Distribution Monday 24 March 2014 00 UTC

#### Distribution of 10m Wind Direction

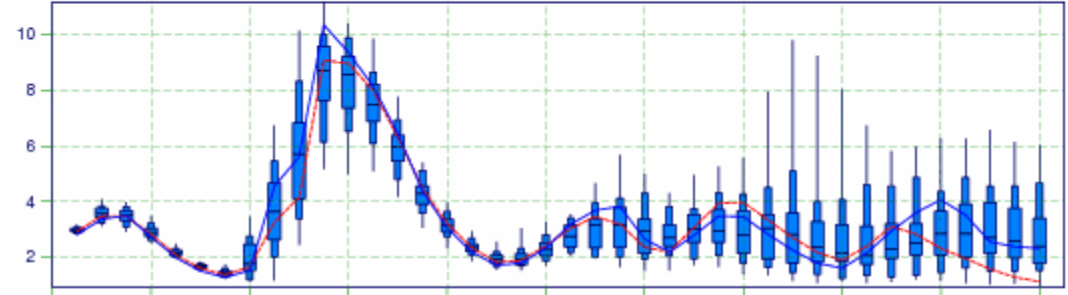
0% 25% 50% 75% 100%



#### 10m Wind Speed (m/s)

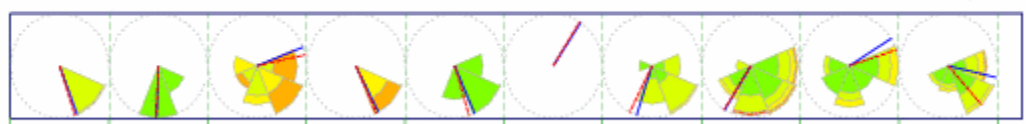


#### Significant wave height (m)



#### Mean wave direction ( oceanographic convention )

1 2.5 4 6 8 m



#### Mean wave period (s)



This chart is ...  
 Clickable

- Day
- 1
  - 2
  - 3
  - 4
  - 5

- Area
- Global
  - Europe
  - North America
  - South America
  - Asia
  - Africa
  - Australia

- Interactive point
- 10 days
  - 15 days
  - 10 days wave
  - 15 days with clim
  - efi distribution

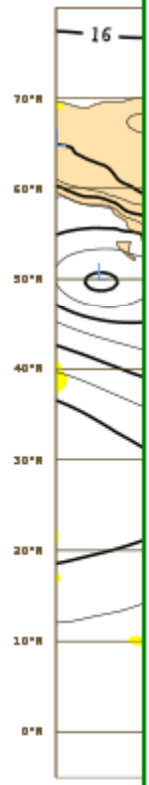
Your Room  
[Add this product](#)

Download ...

- PDF
- Postscript

Forecast base time  
 Mon 24 Mar 2014 00U

Anomalous  
 1000 hPa  
 and EFI v  
 valid for 2



#### Coordinates ...

Latitude:

Longitude:

Download ...  
[PDF](#)  
[Postscript](#)

Recent clicks ...  
[37.75/-69.29 \(10w\)](#)  
[41.07/-67.3 \(10w\)](#)  
[41.07/-67.3 \(10\)](#)

