

# NOAA's National Weather Service

## Serving the Nation's Environmental Forecasting Needs

**Brig. Gen. David L. Johnson, USAF (Ret.)**  
*NOAA Assistant Administrator for Weather Services and  
Director, National Weather Service*

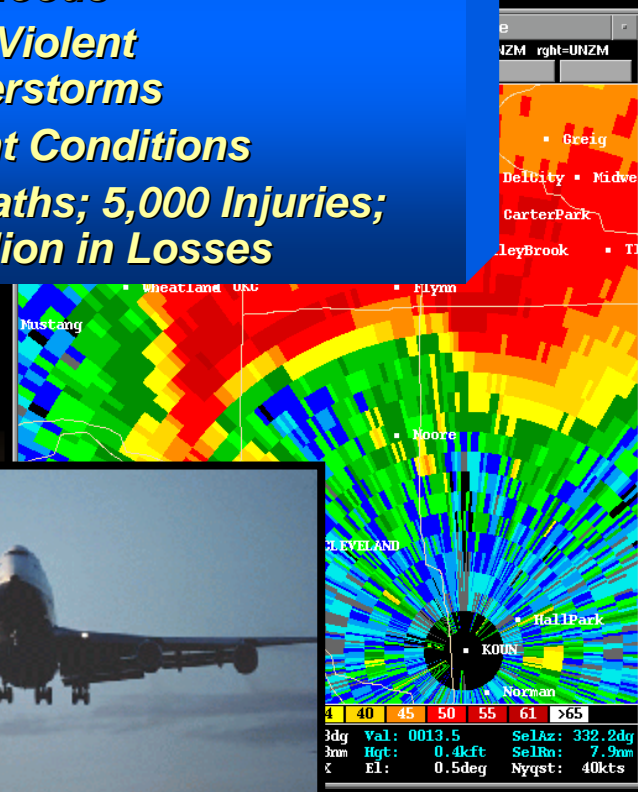
*"America's Weather Enterprise: Protecting Lives, Livelihoods, and Your Way of Life"*

# NOAA's National Weather Service

- Provide climate, water, weather forecasts and warnings to protect **life** and **property** and enhance the economy
- 76 billion observations
- 1.5 million forecasts
- 50,000 warnings

## A Typical Year Brings:

- 6 Hurricanes
- 1,000 Tornadoes
- 5,000 Floods
- 10,000 Violent Thunderstorms
- Drought Conditions
- 500 Deaths; 5,000 Injuries; \$14 Billion in Losses



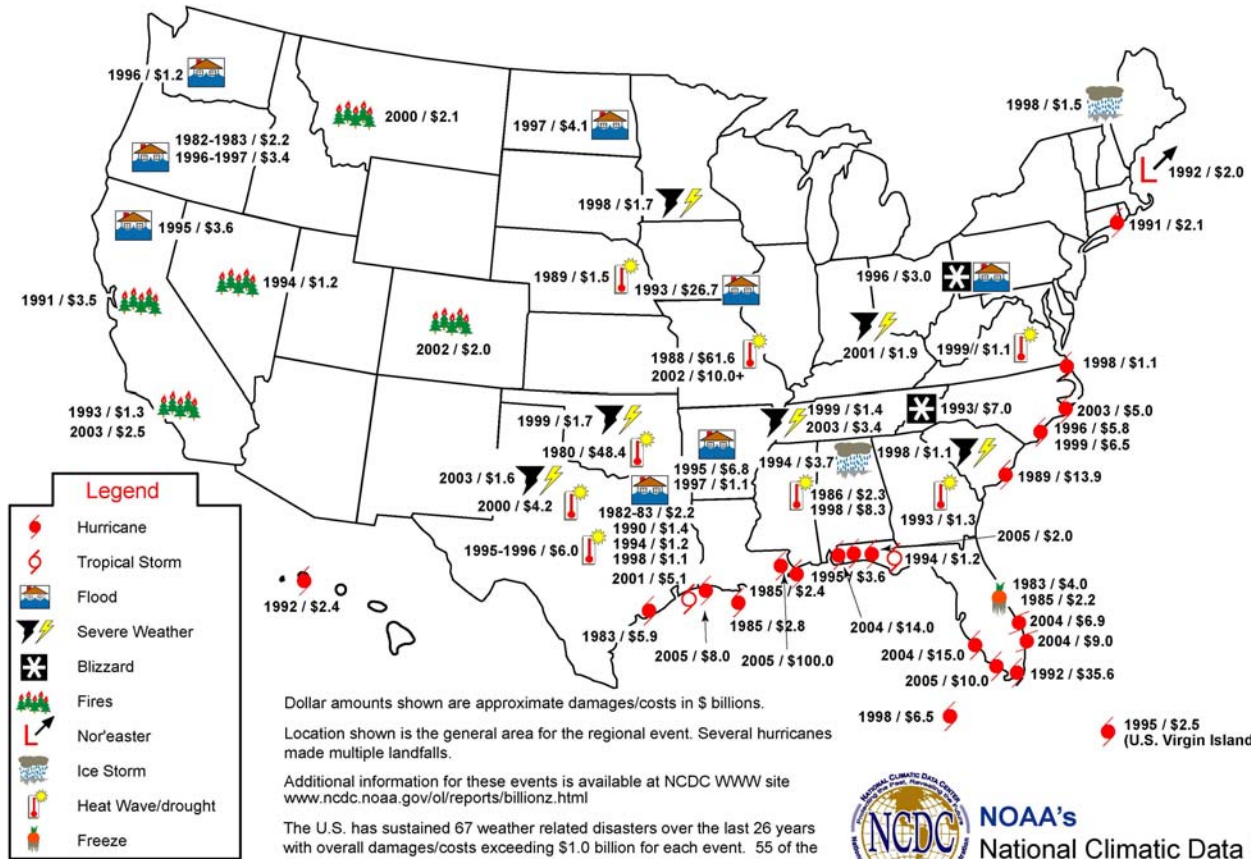
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# NOAA's National Weather Service



## Billion Dollar Weather Disasters 1980 - 2005

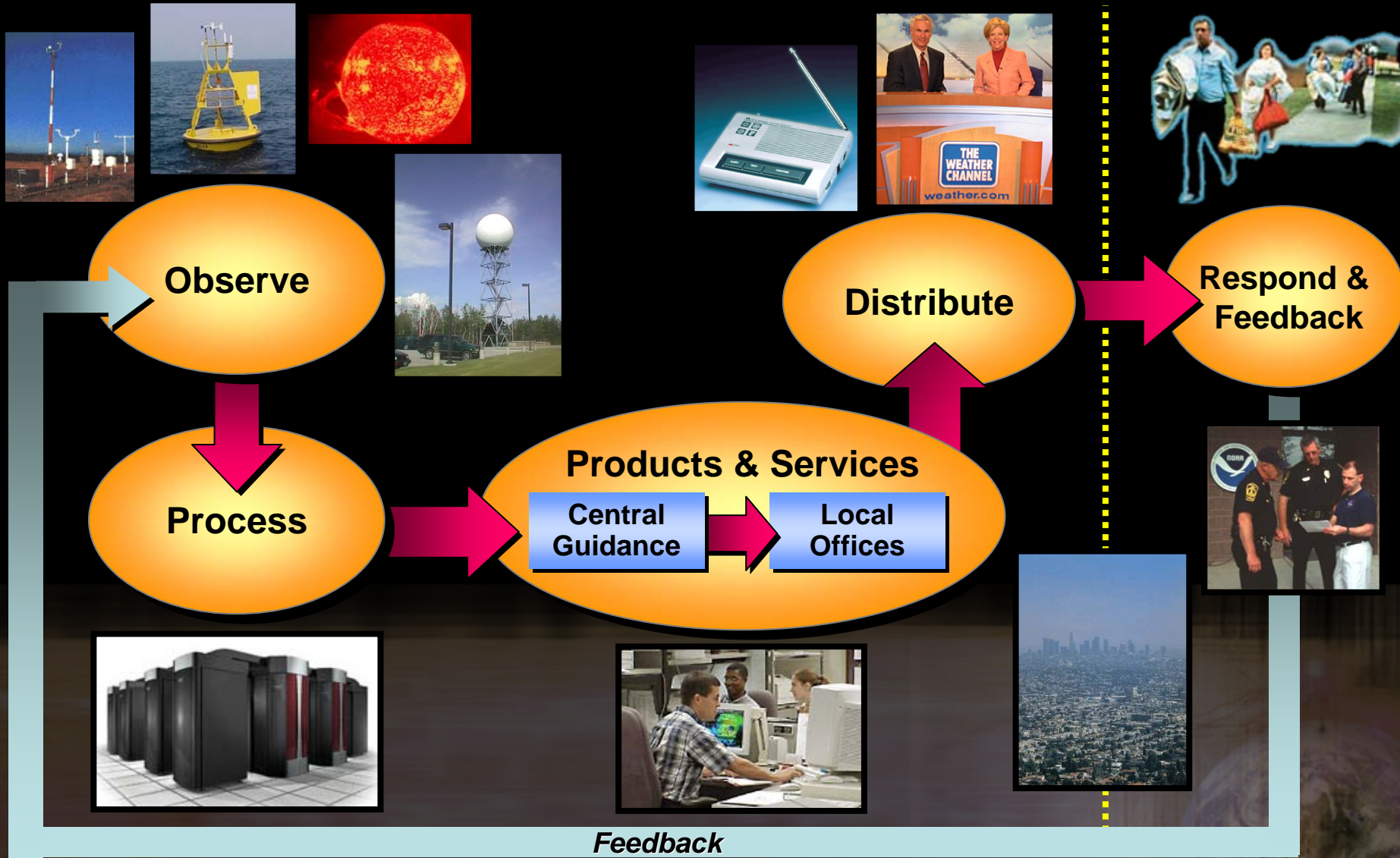


NOAA's National Climatic Data Center

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# NOAA's NWS Overview



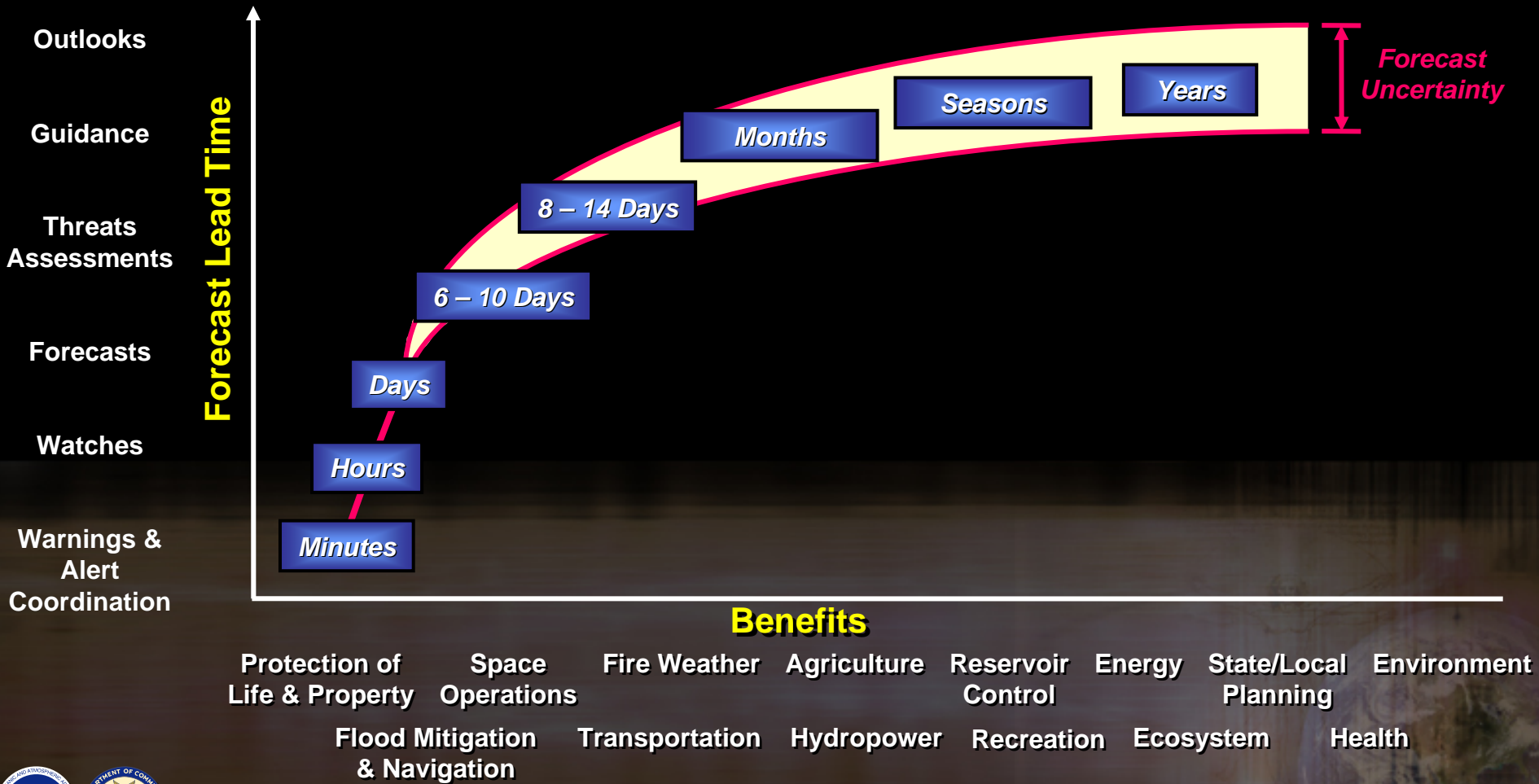
*Feedback*

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# NOAA's NWS Overview

## Seamless Suite of Products

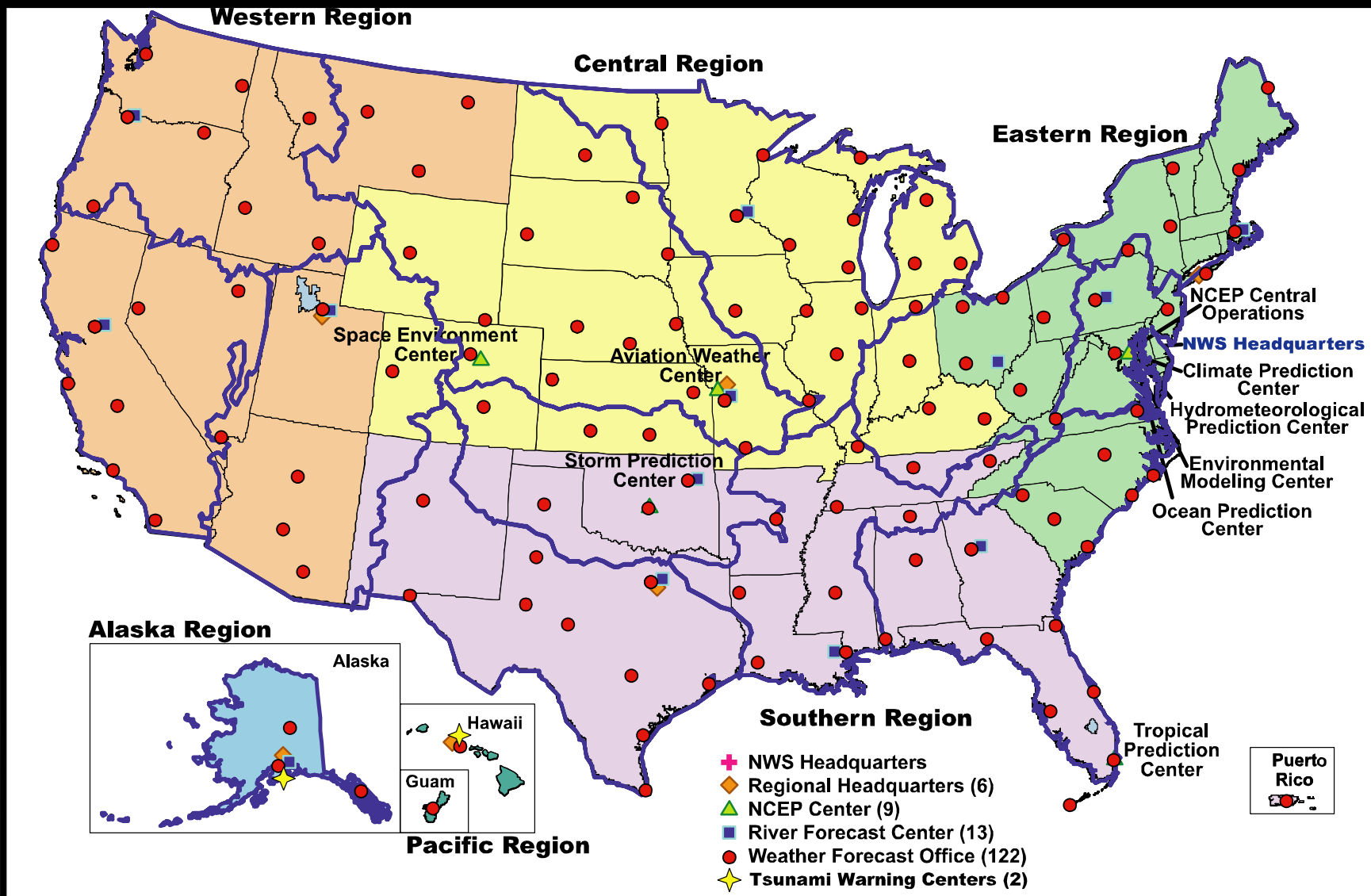


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# NOAA's NWS in Your Neighborhood

## Facilities



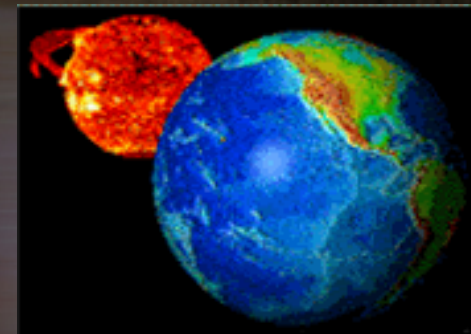
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# NOAA's NWS in Your Neighborhood

## NCEP

- NCEP spanning “Sun to the Sea”; many new programmatic areas (oceans, air quality, space weather...)
- Many science-service opportunities/challenges exist
- NCEP is uniquely positioned to handle transition issues from research to operations – Test beds
- NCEP is actively pursuing opportunities for collaboration in research, transition to operations and operational production and delivery of services



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# NOAA's NWS in Your Neighborhood

## *NCEP Computing Capacity*



Primary Weather	\$13.9 M
Primary Climate	\$5.3 M
Backup	\$7.2 M
Total:	\$26.4 M

***Commissioned/Operational IBM Supercomputer in Gaithersburg, MD (June 6, 2003)***

- **Receives Over 210 Million Global Observations Daily**
- **Sustained Computational Speed: 1.485 Trillion Calculations/Sec**
- **Generates More Than 5.7 Million Model Fields Each Day**
- **3.2x upgrade operational on January 25, 2005**
- **Backup in Fairmont, WV operational January 25, 2005**
- **3x upgrade scheduled for 2006 4<sup>th</sup> Q delivery**

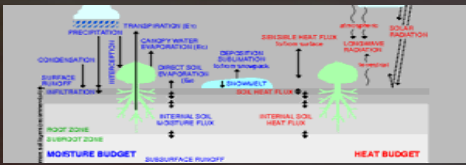
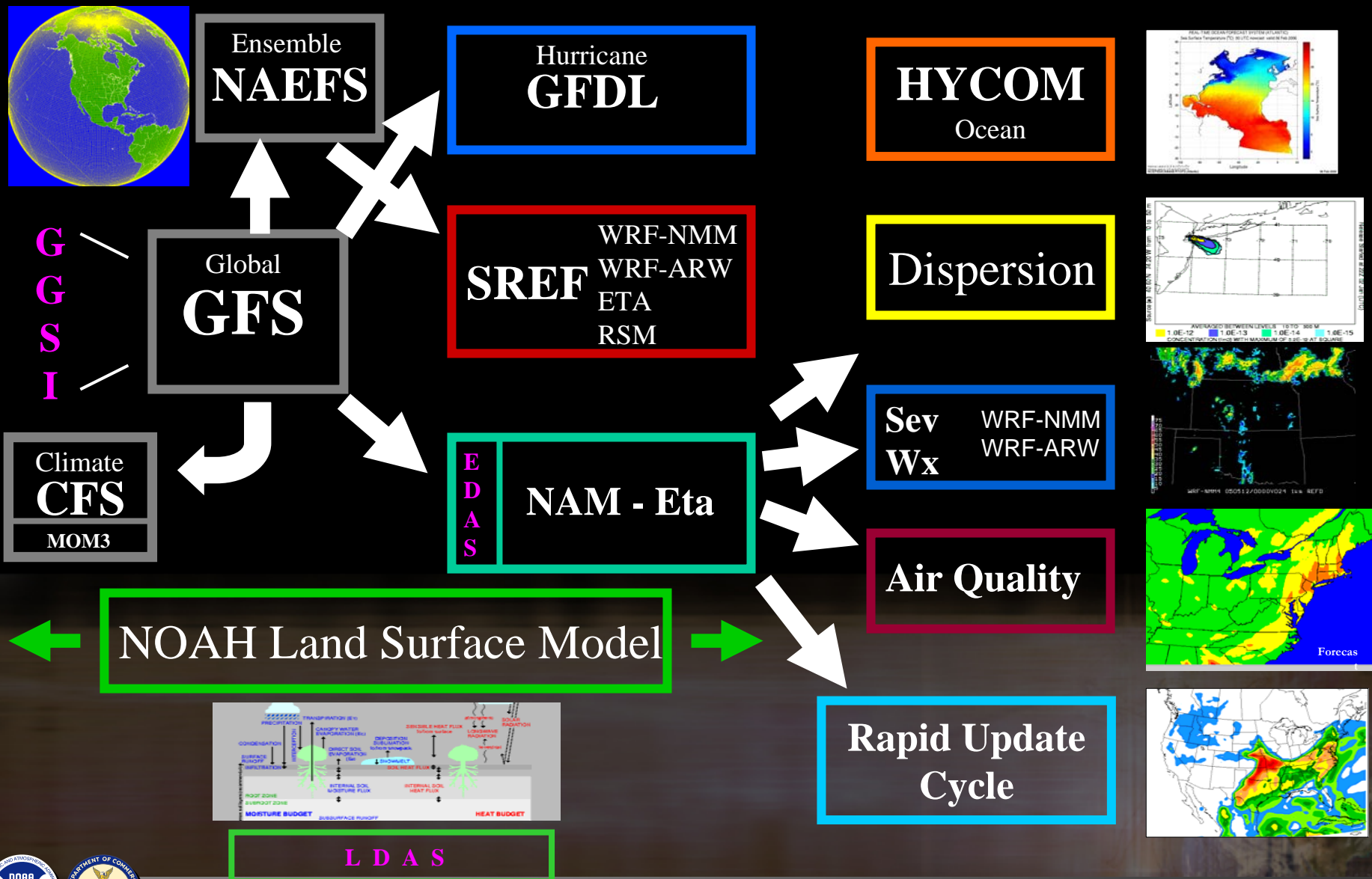


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# NOAA's NWS in Your Neighborhood

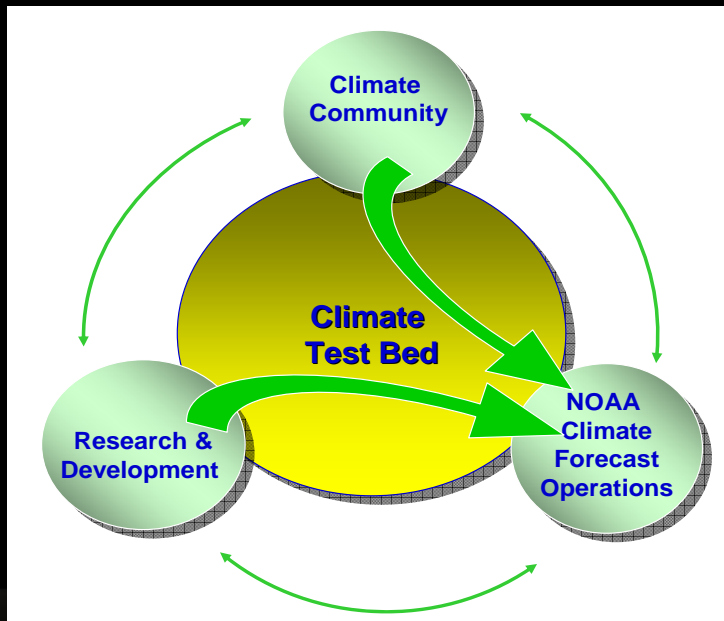
## NCEP Production Suite



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# NOAA's NWS in Your Neighborhood

## *NCEP Research to Operations*



### Priorities:

- Improve Climate Forecast System
- Assess Multi-Model Ensemble Prediction System
- Fully Utilize Climate Reanalysis – An Ongoing Analysis of the Climate System
- Develop Climate Forecast Products for Decision Support

**Mission:** *To accelerate the transition of scientific advances from the climate research community to improved NOAA climate forecast products and services.*

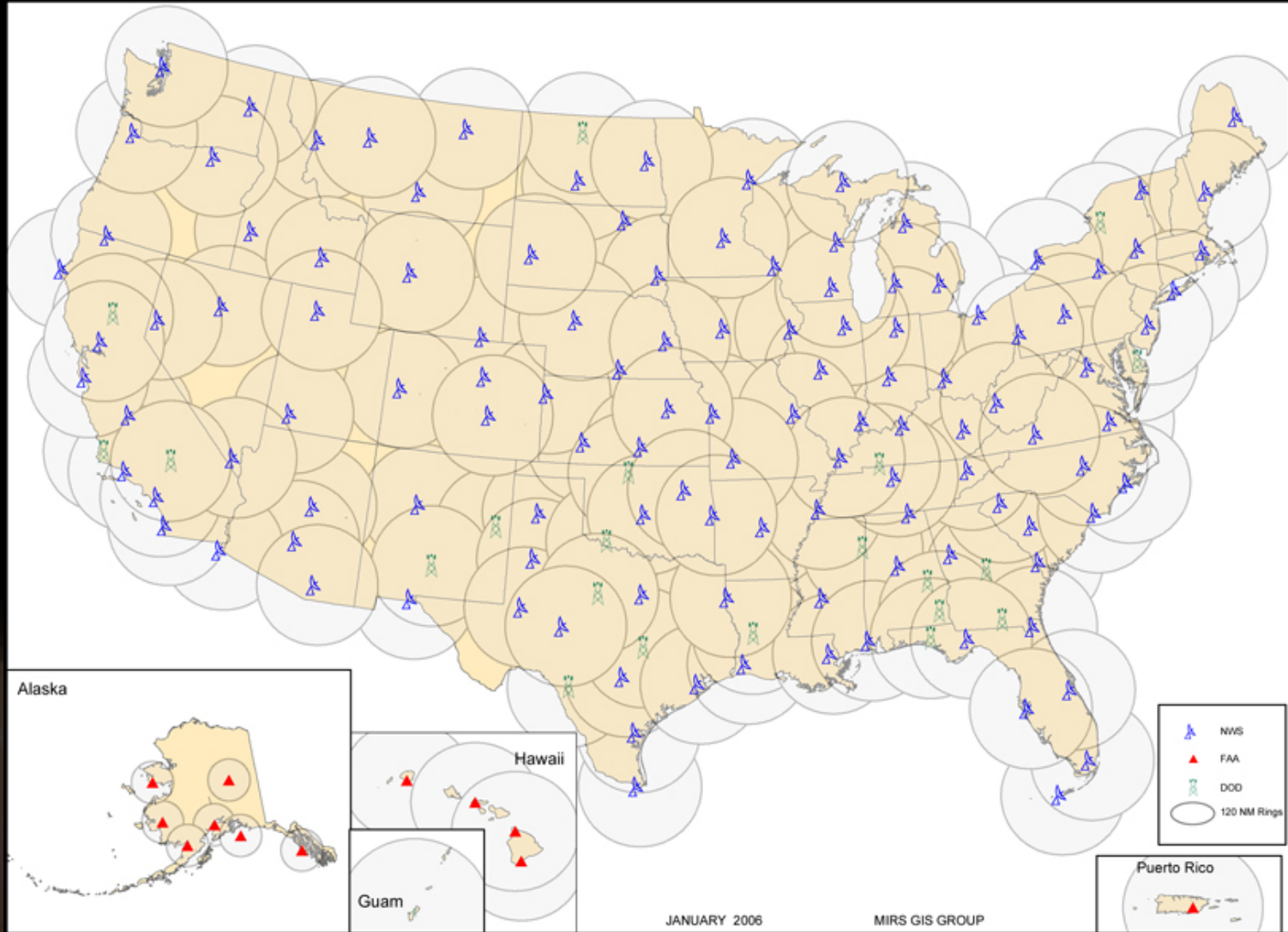
<http://www.cpc.ncep.noaa.gov/products/ctb/>



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# NOAA's NWS in Your Neighborhood

## Doppler Radars

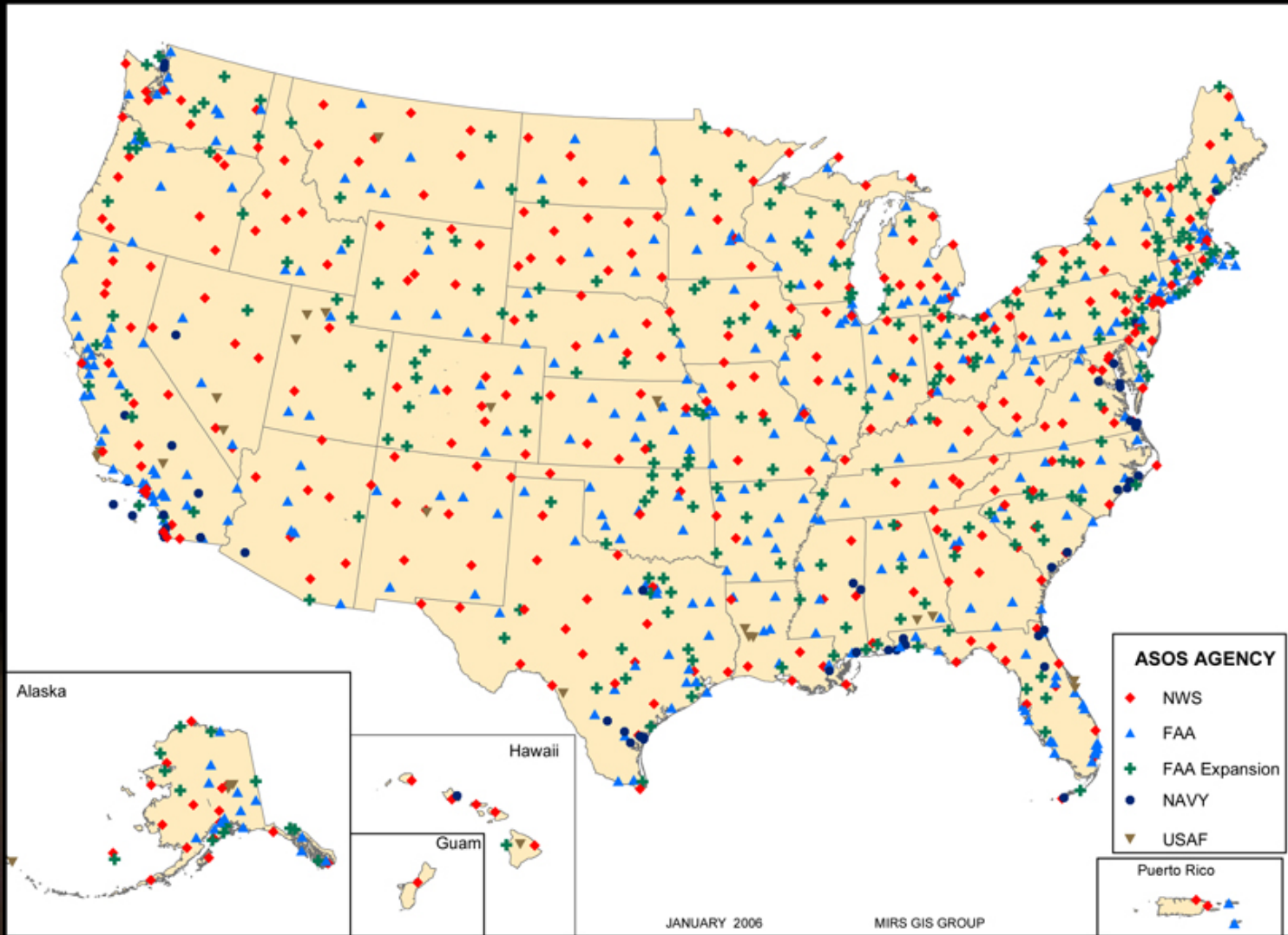


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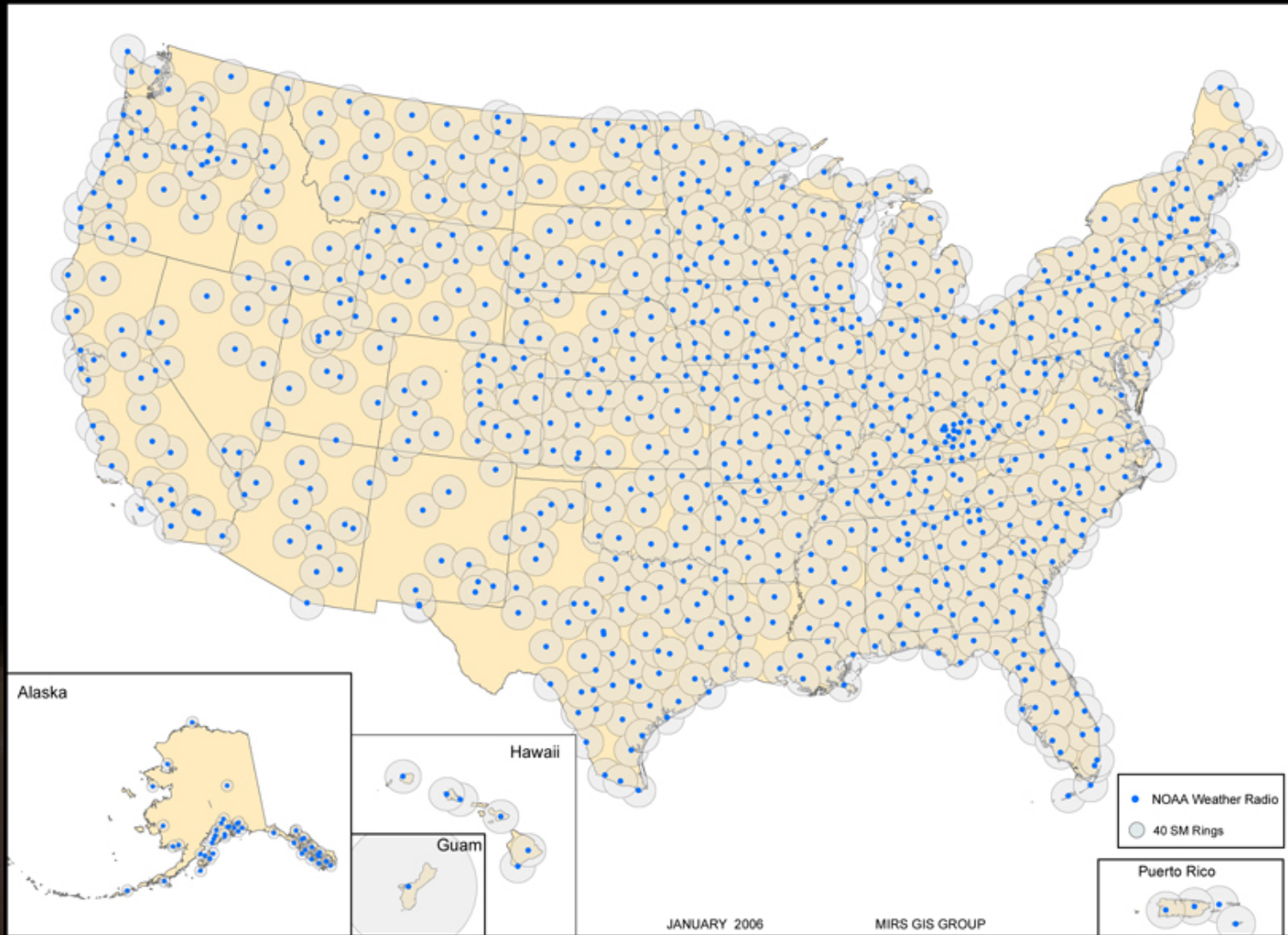
## ASOS Sites



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# NOAA's NWS in Your Neighborhood

## *NOAA Weather Radio All Hazards*

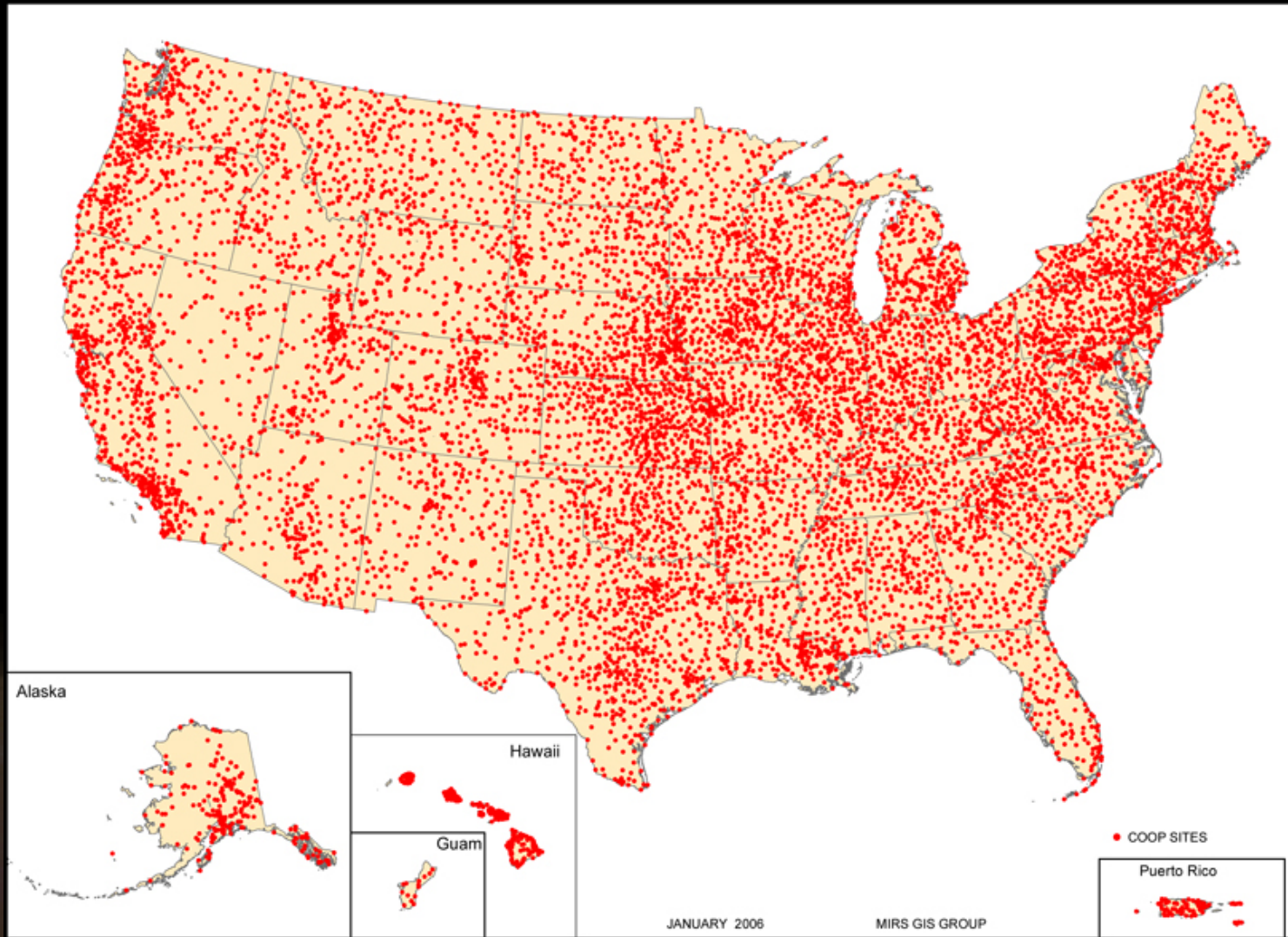


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## *Cooperative Observer Sites*

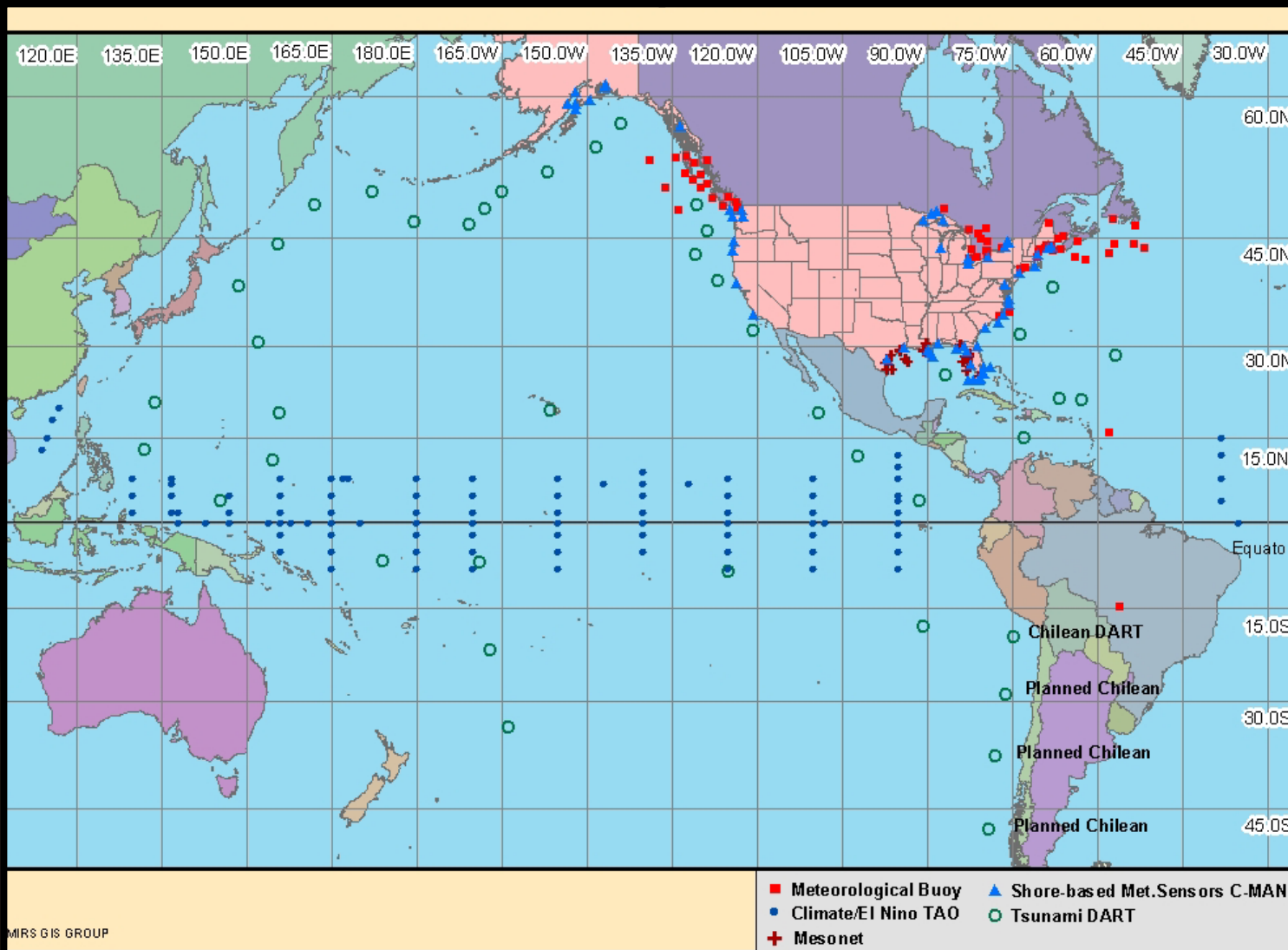


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## *Ocean Observing Systems*



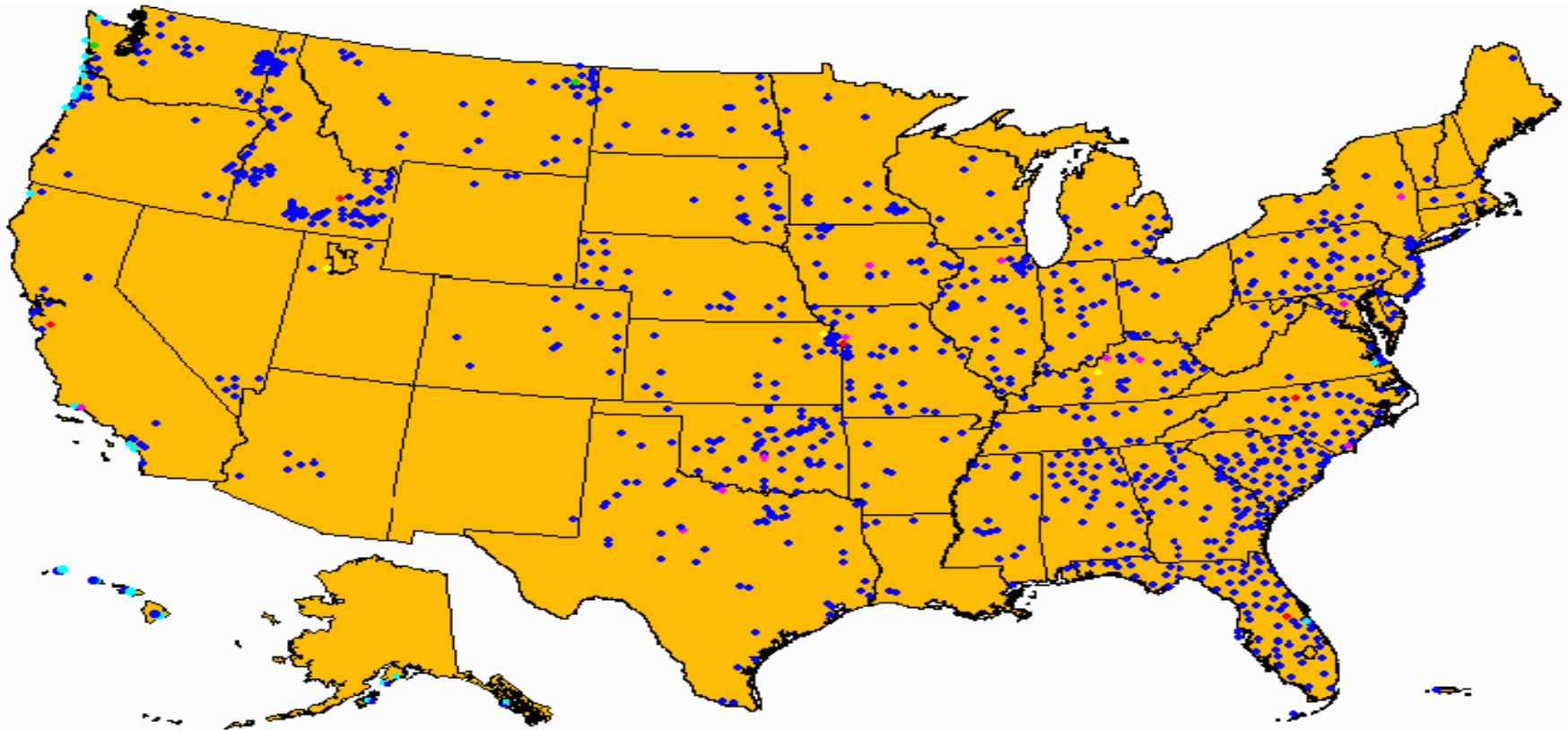
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# NOAA's NWS in Your Neighborhood

## Community Preparedness Programs

*~1,041 StormReady Communities in 50 States  
28 TsunamiReady Communities in 7 States*



### Legend

**Gold** states have StormReady® communities or counties  
**Light Blue** dots are TsunamiReady communities  
**Blue** dots are StormReady® Communities  
**Red** dots are StormReady® Commercial Sites

**Green** dots are StormReady® Indian Nations  
**Purple** dots are StormReady® Universities  
**Yellow** dots are StormReady® Military sites



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# NOAA's NWS in Your Neighborhood

## *Bringing it All Together to Save Lives*

- **Van Wert, Ohio is StormReady**
  - *Preparedness in Place*
  - *Threat Detected*
  - *Warning Issued*
  - *Warning Understood*
  - *Action Taken*
  - *LIVES SAVED*



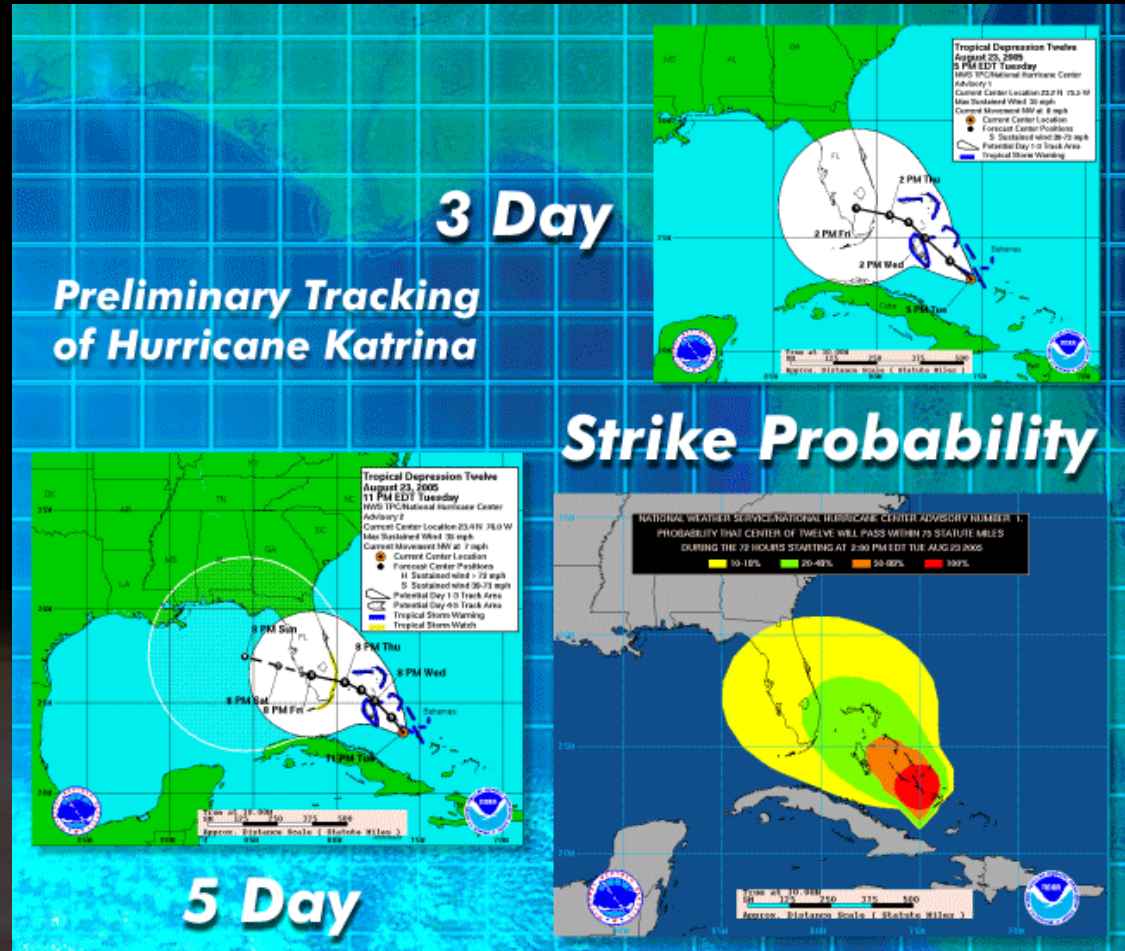
Photo credit: Todd Campbell

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# The Nation's Risks: Extreme Climate, Weather, and Water

## 2005 in Review



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# The Nation's Risks: *Extreme Climate, Weather, and Water*

*2005 in Review*

- *[WFO] Slidell's service was spectacular...they issued products that were clear...they were there when we needed them."*

**–Walter Maestri, Director, Emergency  
Management Agency, Jefferson Parish, LA**



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# The Nation's Risks: *Extreme Climate, Weather, and Water*

## *2005 in Review*



Photos by AP

**Hurricane Katrina  
Costly Human and Societal Effects**

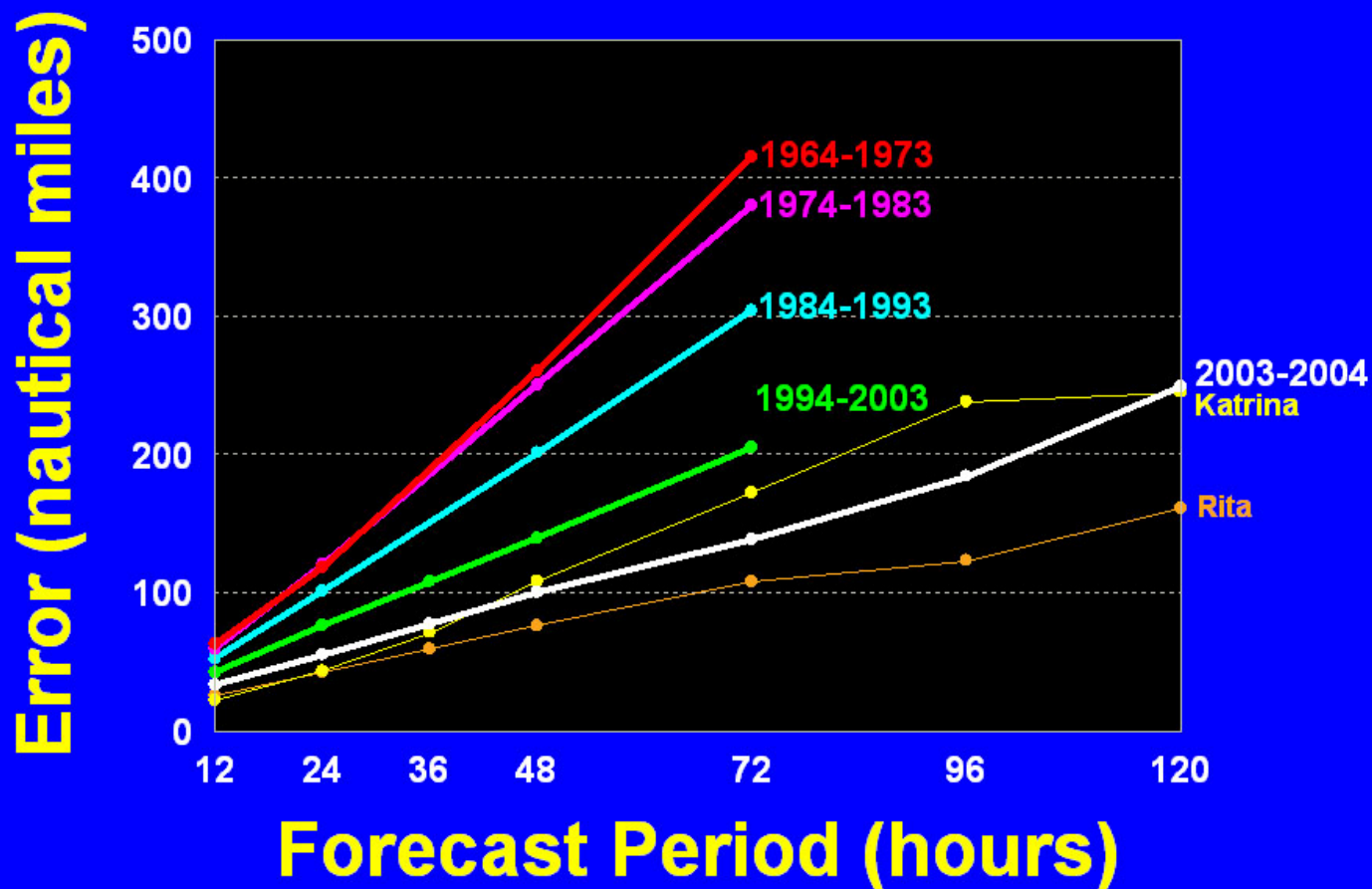


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# The Nation's Risks:

## *Extreme Climate, Weather, and Water*

### NATIONAL HURRICANE CENTER ATLANTIC TRACK FORECAST ERRORS



# The Nation's Risks: *Extreme Climate, Weather, and Water*

*2005 in Review*

## Indiana & Kentucky Tornadoes (Nov. 6)



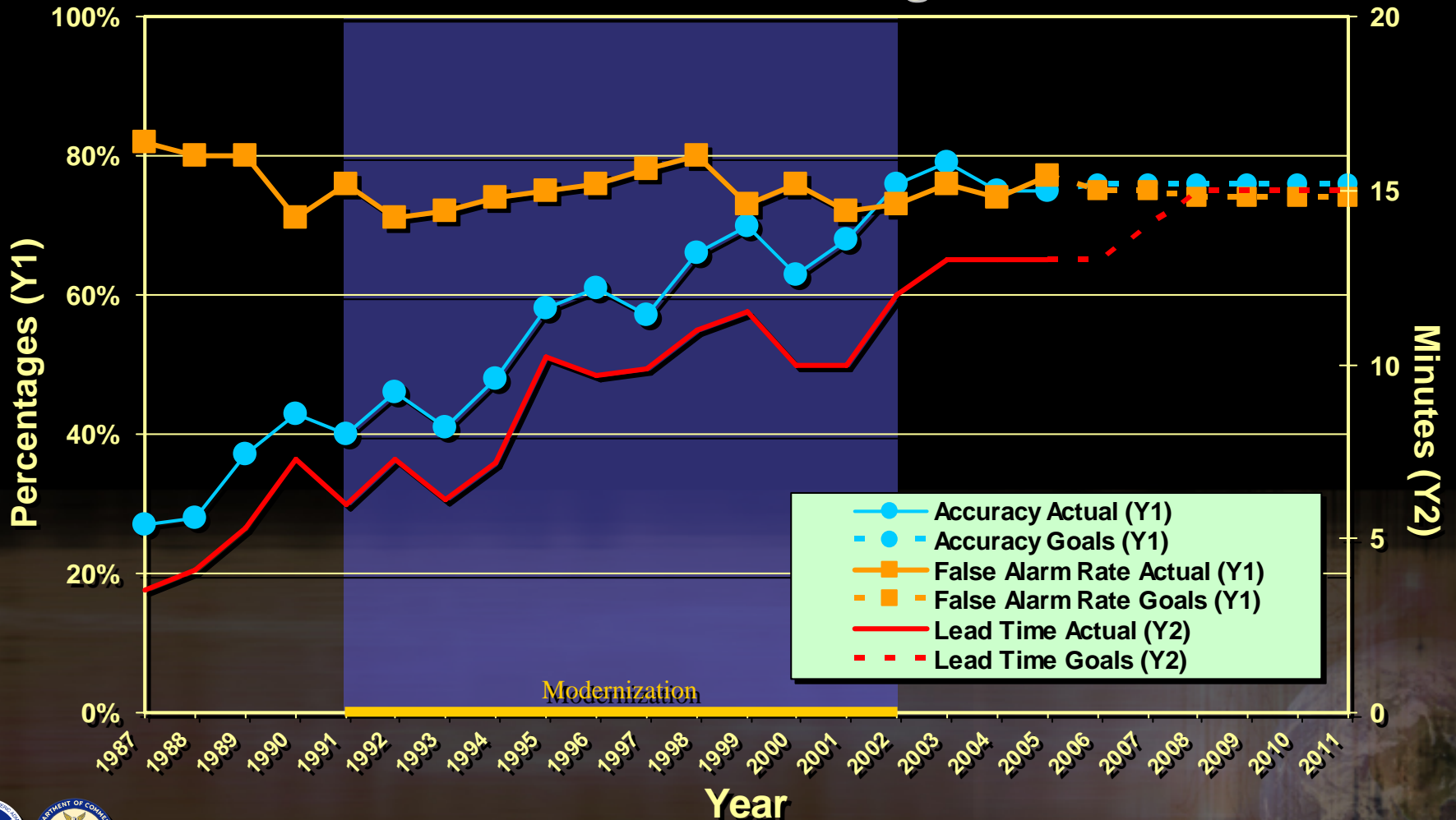
AP Photos

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# The Nation's Risks: Extreme Climate, Weather, and Water

## Tornado Warnings



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# The Nation's Risks: *Extreme Climate, Weather, and Water*

## **Floods and Flash Floods**

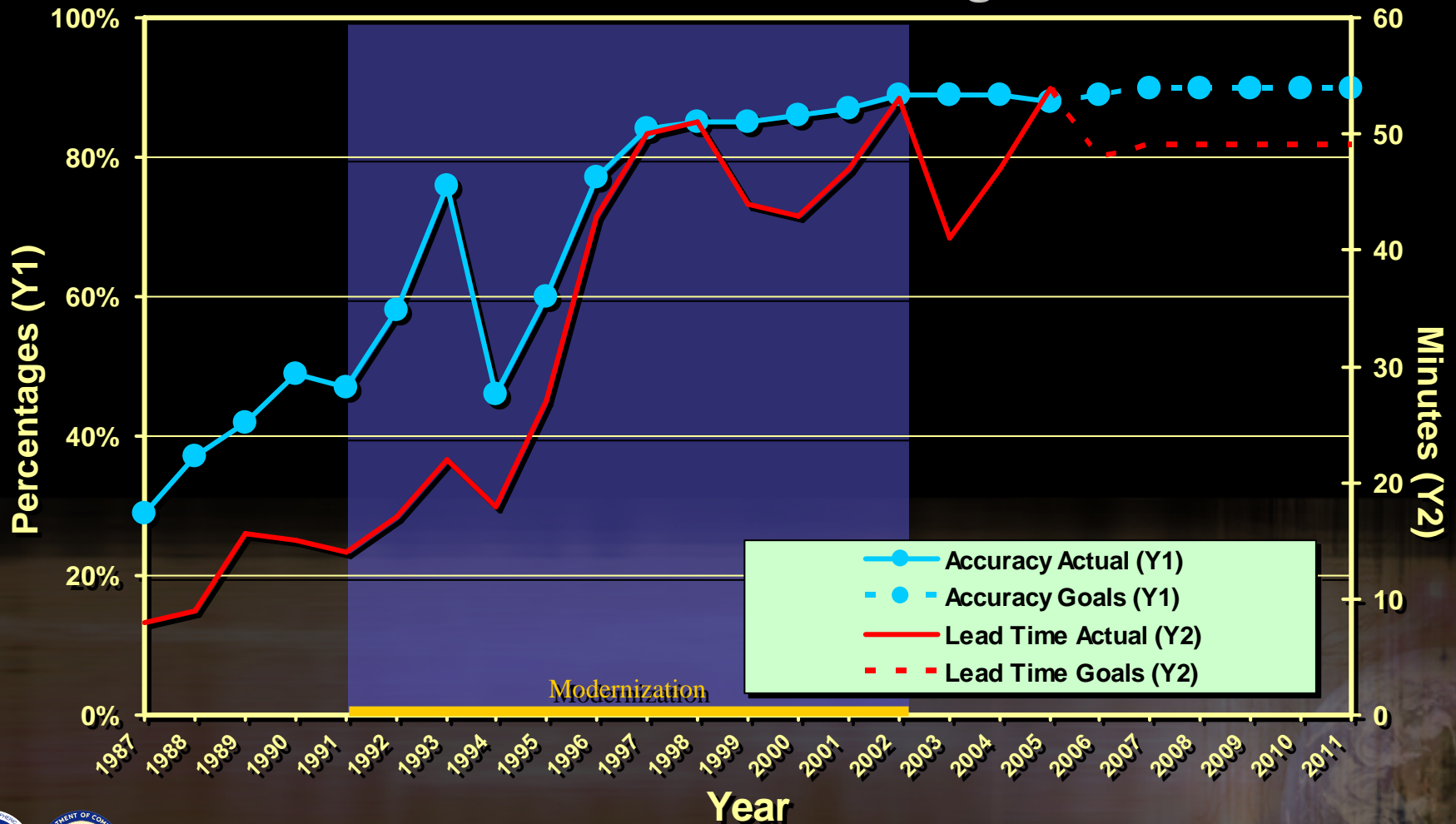


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# The Nation's Risks: Extreme Climate, Weather, and Water

## Flash Flood Warnings



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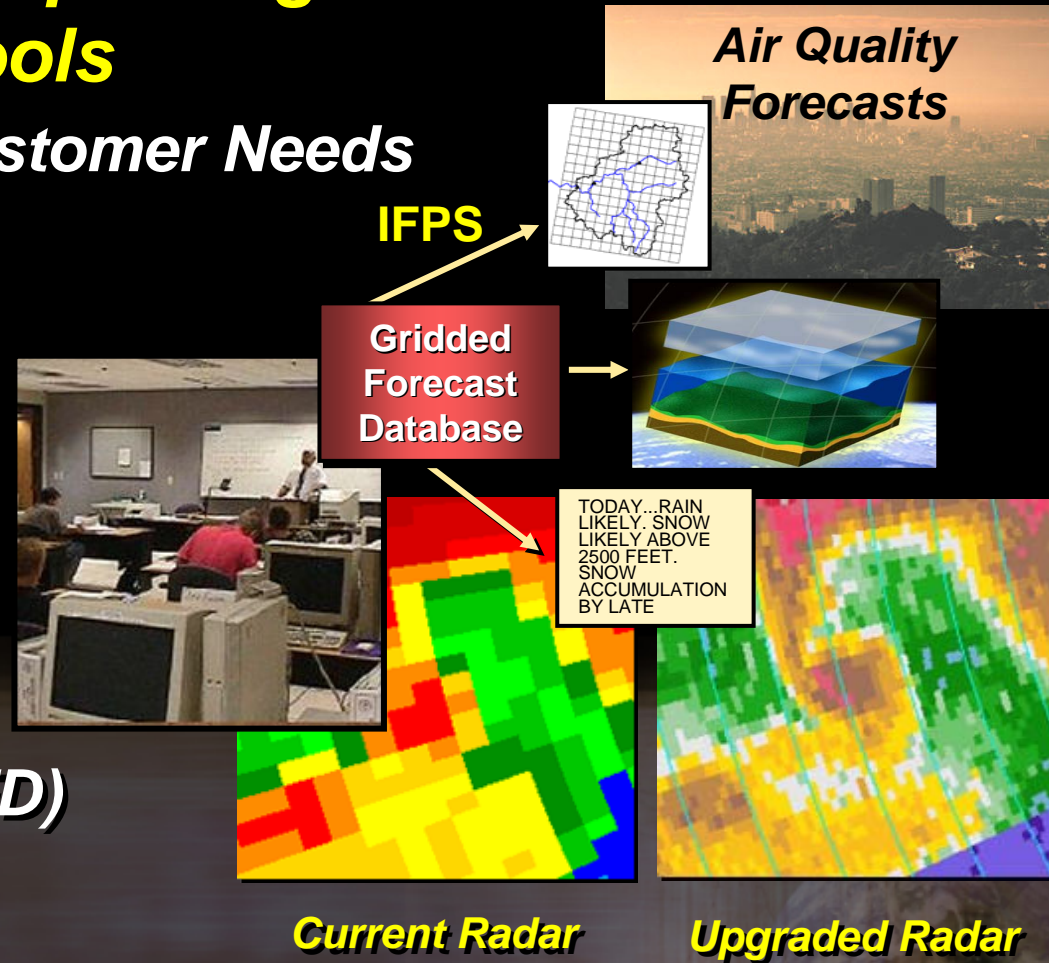


# The Future

## *Integrated Environmental Awareness*

### **Integrating and Improving Skills & Tools**

- **Know and Anticipate Customer Needs**
- **Research to Operations**
- **Balanced Skill Mix**
- **Infuse Proven Science and Technology**
- **Grow National Digital Forecast Database (NDFD)**
- **Better Radar**



# The Future

## *Integrated Environmental Awareness*

**NOAA Research Integration** 

Research      Information Technology      Data Assimilation      Dissemination



Observations      Modeling      Predictions      **Action**

 **Feedback**



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# The Future

## *Integrated Environmental Awareness*

### *Saving Lives Through Partnerships*

**NOAA TEAM**

**PARTNERS**

**END USERS**



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