



# Weather Ready Nation and NextGen

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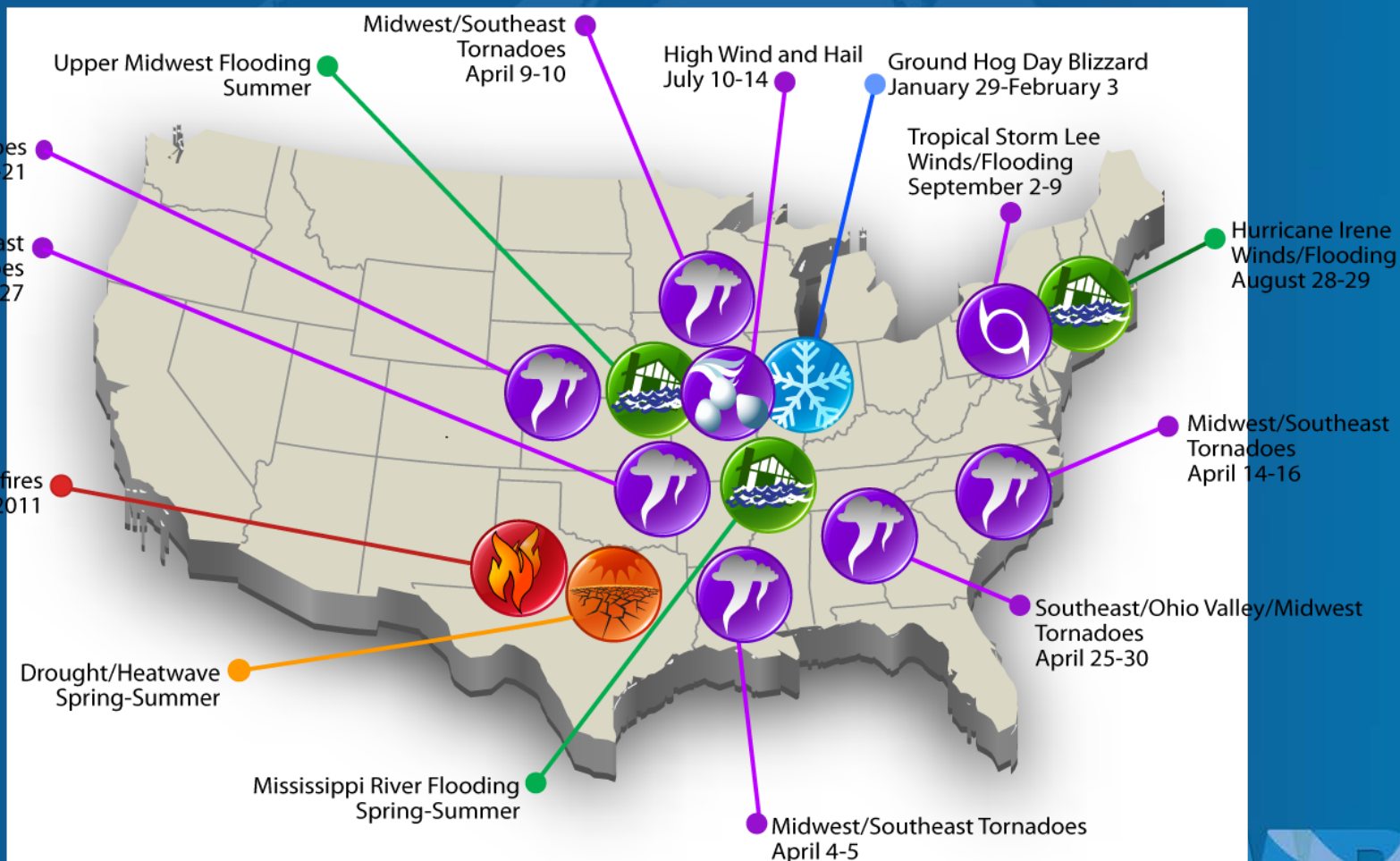
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# 2011: A Year of Extremes

## 14 Weather And Climate Billion Dollar Disasters





# A Changing World

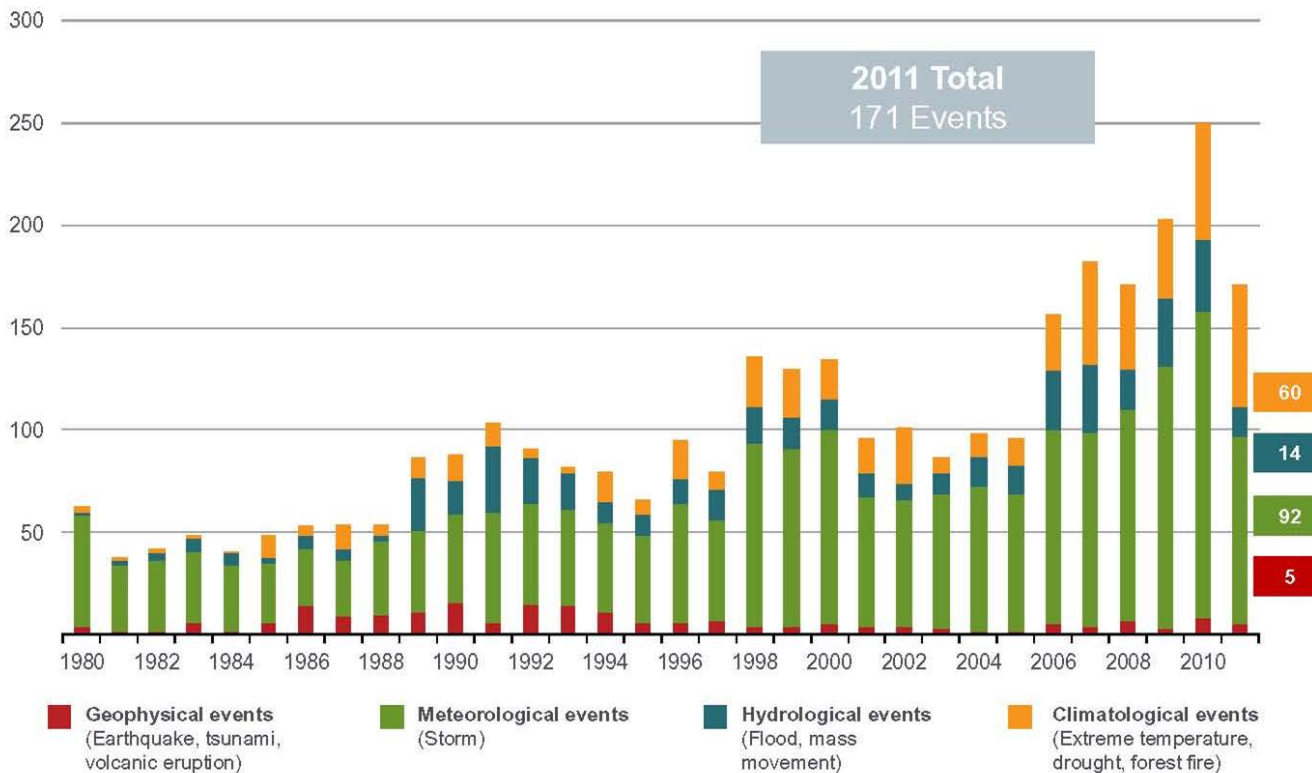
## Increased Vulnerability to High-Impact Weather

U.S. Natural Catastrophe Update

### Natural Disasters in the United States, 1980 – 2011



Number of Events, Annual Totals





# NOAA's Response to the Challenge



**COMPUTATION  
& MODELING**



**RESEARCH**

Environmental Response Management Application (ERMA) 



**CRITICAL ENVIRONMENTAL INTELLIGENCE**



**OBSERVATIONS**



**PEOPLE**





# NOAA's Response

## *Build a Weather-Ready Nation*

- What is a Weather-Ready Nation (WRN)?
  - Society prepared for and effectively responds to weather events
- How does NextGen fit into this?
  - Basic tenets of NextGen are cornerstones to WRN
    - Common Operating Picture from the latest observation platforms and models, risk assessments
    - Integration of Weather, Water, Climate into Decision Support Services
  - NextGen improvements result in reduction of impact of weather
    - Benefit not only aviation but other services as well
      - Improvements in modeling
      - Improvements in forecast tools
      - Focusing support on high-impact events





# WRN and Aviation

- WRN is a combination of improved business, science and technology, workforce, and service improvements needed for impact-based decision support services
  - 4-D Weather Cube drive infrastructure improvements
  - SAS drives Common Operating Picture concept
  - Build on our decision support services
    - CWSUs, Meteorologists at the ATCSCC
- Continue working with partners and stakeholders to understand impacts and needs
  - Traffic Flow Management Weather Requirements Working Group/Aviation Weather Requirements Working Group
    - Determine user needs to reduce impact of weather
    - Develop user-relevant performance measures for meaningful
  - Transition from generating scheduled products to providing impact-based services
- Aviation Services already embraces WRN





# WRN and NextGen Weather

## *What is needed*

- Nationally consistent weather information
- Weather data readily available and in proper format
- Interoperable weather information through common data formats and net-centric operations
- Weather information distributed to decision makers in seconds
- Higher resolution and higher refresh rate
- Integrated weather information into aviation decision-making processes





# Building a WRN/NextGen Partnership

## NOAA NextGen Weather Program

### IT Services Project

- Aviation weather data discoverability, translation and dissemination services
- Discoverable single access point for weather information in common formats

### Single Authoritative Source Project

- Primary source of "Official" weather information for aviation decisions
- Dynamically determined set of most accurate weather information sources

### Verification Project

- Network-Enabled system for determination of quality of weather information

### Forecast Applications Project

- Forecaster Applications allowing manipulation of high res, rapidly updated data sources
- Enables forecaster intervention to correct for poor performance of automated forecasts

### Model Project

- High resolution, rapidly updated models
- Probabilistic models for forecasting uncertainty

### Aviation Weather Elements Projects

- Scientific improvements to weather information critical to aviation operations







# NOAA/NWS Evolves Service Operations

*Build a little, Test a little, Field a little*

- NWS Pilot Projects
  - Impact-based Decision Support Services (IDSS)
    - Urban Region – Sterling, VA
    - Coastal Region – New Orleans
    - Regional Level – Fort Worth
    - National Level – Silver Spring
    - Aviation – San Francisco (unfunded)
  - Integrated environmental services – Tampa, FL
  - Mesoscale Science – Charleston, WV





# Continue a National Conversation



- Improve understanding of increasing vulnerability to extreme weather
- Stimulate discussion with public, partners, and stakeholders on solutions for reducing impacts
- Evaluate opportunities for improving:
  - User-driven impact-based forecasts/warnings
  - Integration of social and natural sciences into services
  - Service delivery across the weather enterprise
  - Community planning and impacts mitigation

