



THE MAUREEN AND
MIKE MANSFIELD FOUNDATION



ICHARM

International Centre for Water Hazard and Risk Management
under the auspices of UNESCO

“How are the weather agencies of Japan and the United States evolving in the face of increasing natural disasters”

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Connecting People and Ideas to Advance Mutual Interests in U.S.-Asia Relations

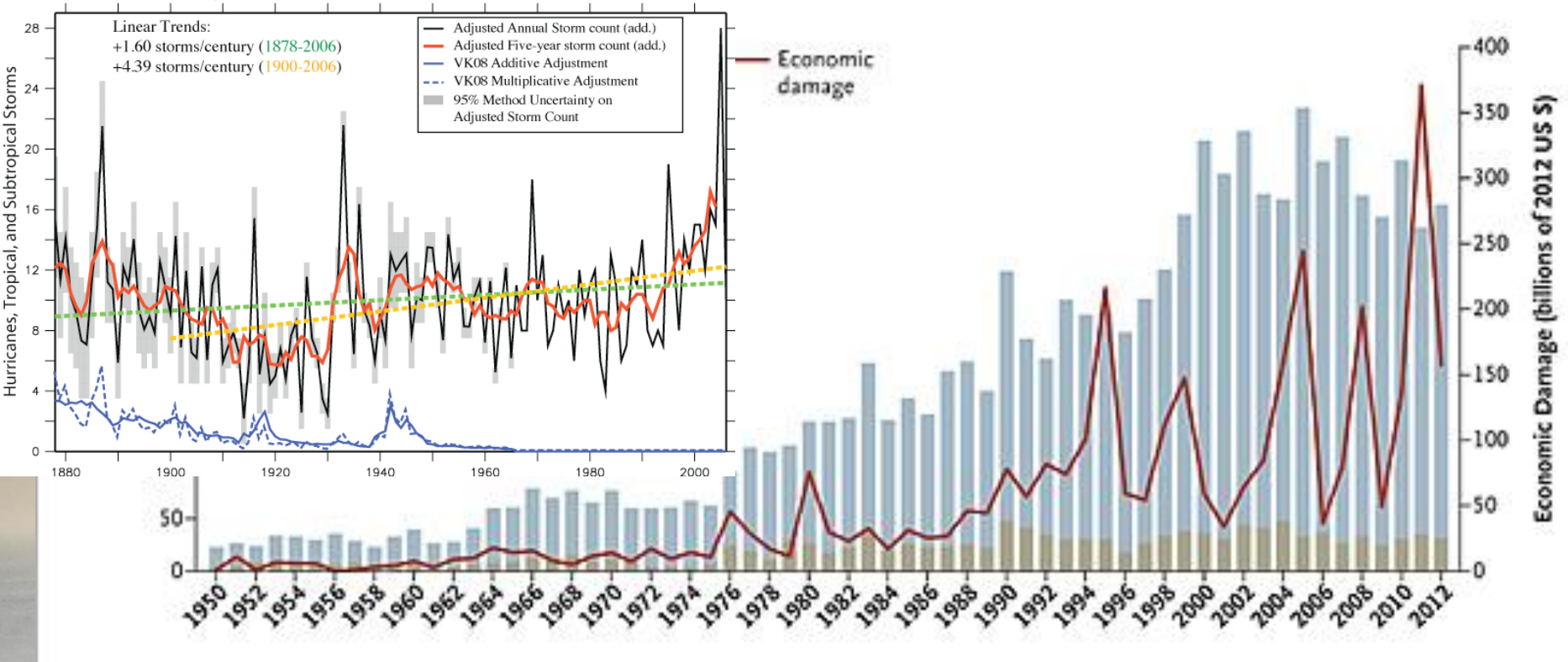
23rd Class of Mansfield Fellows

- 9 US Federal Government Employees
- One year in Japan. July 2018 - June 2019
- Working with Japanese Gov Agencies, Private Industry and a National Diet Member
- After the year, Fellows are resources for both the U.S. and Japan.
- Bridging the language and cultural gap between nations to understand differences, overcome challenges, and resolve issues.



Increasing National Disasters due to increasing Flooding

Atlantic HURDAT Storms (Adjusted for Estimated Missing Storms) 1878-2006



*“The number of instances of **heavy rain has increased**, as well as the amount of precipitation. The frequency of short-period strong rain in which over 50 milliliters falls in the space of an hour has **increased by 1.4 times** since 30 years ago. Global warming lies behind it.” - Toshihiko Hashida, head of the Japan Meteorological Agency*

What are the Weather and Hydrological Agencies doing to Combat Increasing Natural Disasters?

Common Goals:

- Education & Preparation
- Communication
- Improve the Science



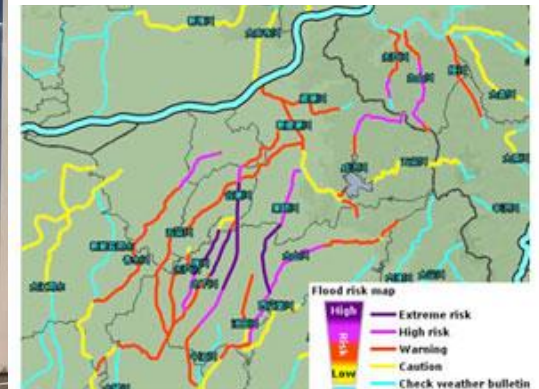
Communication System for Early Warning and Evacuation Order to the People at Risk



What are the Weather and Hydrological Agencies doing to Combat Increasing Natural Disasters?

Common Goals:

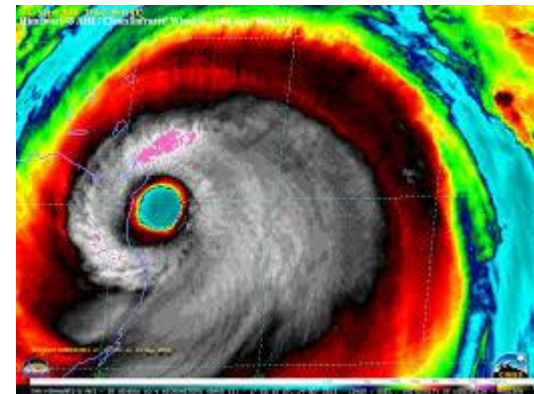
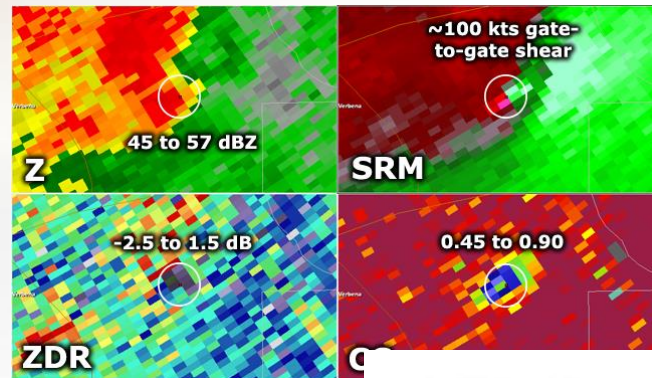
- Education & Preparation - readying communities for extreme weather, water, and climate events. The devastating impacts of extreme events can be reduced by taking advanced action.



What are the Weather and Hydrological Agencies doing to Combat Increasing Natural Disasters?

Common Goals:

- Improve the Science - New observation platforms from Satellite, radar, automated radiosonde launchers, weather model improvements - all combine to make more accurate forecasts of extreme events and more lead time for evac.

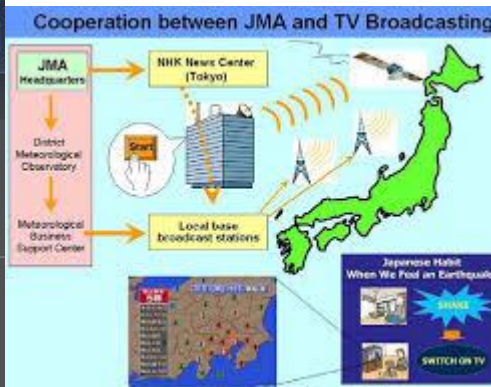


The Deepening
Disaster of Science

What are the Weather and Hydrological Agencies doing to Combat Increasing Natural Disasters?

Common Goals:

- Evolving Communication - provide forecast information in a way that better supports emergency managers, first responders, government officials, businesses and the public. Help to make fast, smart decisions to save lives and property and enhance livelihoods.



What are the Weather and Hydrological Agencies doing to Combat Increasing Natural Disasters?

Common Goals:

- Social Research
 - How do we get people to evacuate when a threat is imminent?

“There’s a recognition that what’s going on in people’s minds is as important as us getting the models right.” - Jennifer Marlon, environmental scientist, Yale University

“At least 200 people have been killed and millions have been evacuated from areas affected by landslides in western Japan.”



What have been the results so far?

Impact-Based Decision Support Services (IDSS) at work

2013 Snowstorm



2016 Snowstorm



2017 Louisiana Tornado Outbreak

*Accurate Warnings
Strong Relationships with EM's
Years of training*

Results: 0 Deaths!!

What have been the results so far?

Realizing the Full Value of Forecasts: Connecting Forecasts to Critical Decisions

Generating
forecasts
and warnings



Forecast advice within a
decision environment
"Impact-based Decision Support Services"



Realizing Intrinsic
Value and
Mission Success



Develop
relationships and
know partner
needs



Provide the best
hydrological and
meteorological
forecasting

Explain
uncertainty



Embed
when
needed



Support partner
decision making
before, during, and
after events



Build trust

NWS Incident Meteorologist

- National Weather Service Incident Meteorologists (IMETs) are typically sent to remote locations in support of wildfires, national public events, and hazardous material incidents.
- During wildfire season, or when other incidents require localized weather information, IMETs can in a moment's notice, pack their bags, and quickly deploy to an incident command site.
- Once onsite, IMETs are key members of the incident command team and provide continuous meteorological support for the duration of the incident.
- IMETs help fire control specialists from federal, state and local agencies by interpreting weather information, assessing its impact on the fire, and helping develop strategies to best fight the fires, while keeping both firefighters and the general public safe.



The job no longer ends with forecasts and warnings



“First, it should be understood that forecasts possess no intrinsic value. They acquire value through their ability to influence the decisions made by users of the forecasts.”

Education, Preparation, Communication, Science

Questions?

Arigatougozaimasu!

