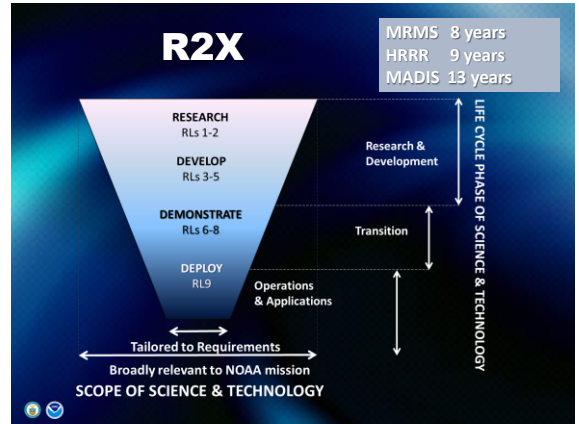


NOAA's RESEARCH & DEVELOPMENT ENTERPRISE

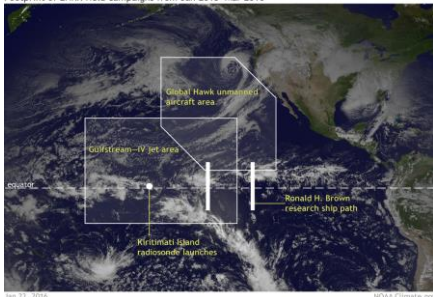
Rick Spinrad, Ph.D., CMarSci
 NOAA Chief Scientist
 National Oceanic and Atmospheric Administration | NOAA

AMS DC Forum
 April 14, 2016



EL NIÑO RAPID RESPONSE CAMPAIGN

Footprint of ENRR field campaigns from Jan 2015 - Mar 2016



Jan 22, 2016

NOAA Climate.gov



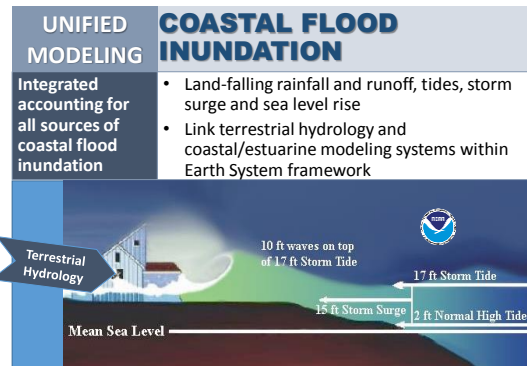
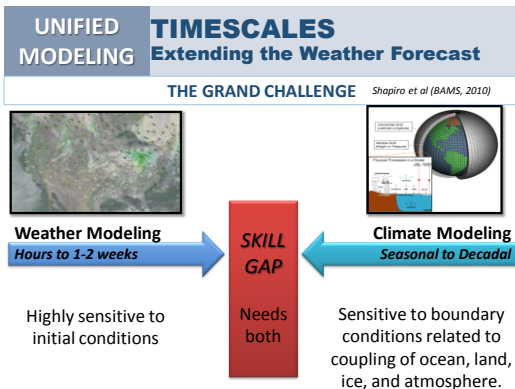
UNIFIED MODELING

CONCEPT

- One architecture unifying physics, ecology, biogeography, human factors models across hydrosphere, atmosphere, & cryosphere
- Scaling continuity (time & spatial)
- Must have R2X value

EXAMPLES

- Coastal flooding x river forecasts
- Warnings x decision science
- Biogeography x changing climate
- Full carbon cycle x Earth system modeling
- Arctic sea ice x ecosystems



UNIFIED MODELING

Arctic Coupled Ensembles-based (ACE) Modeling System Marine Component

Important issues:

- Impact of Ice on Air-Sea Fluxes
- Ice Thermodynamics & Ice Drift
- Validation of Ice Edge Locations
- Use of Existing Model Components (NMIMB, HYCOM & KISS)

Gaps addressed:

- First coupled Regional Arctic Model at NWS/NCEP.
- Ensembles based system which accounts for air-sea flux uncertainty.
- Focused on Short-term forecast products, i.e. days 0-16.

UNIFIED MODELING

Arctic Coupled Ensembles-based (ACE) Modeling System Terrestrial Component

Important issues:

- Cloud (Stratus)-Radiation Interaction
- Very Stable Boundary Layers
- Seasonal Snowpack & Frozen Soils (including Permafrost)
- Surface Fluxes from Tundra & Boreal Forest Biomes
- Seasonal Hydrology/Runoff/Freshwater Discharge

Gaps addressed:

- First coupled Regional Arctic Model at NWS/NCEP
- Ensembles based system which accounts for surface flux uncertainty.
- Focused on Short-term forecast products, i.e. days 0-16.

UNIFIED MODELING

WARNINGS X DECISION SCIENCE

FACTETS (Forecasting a Continuum of Environmental Threats)

NOAA Commercial Space Policy

Key points:

- Broad framework for use of commercial space-based approaches
- Open and transparent marketplace
- Guiding principles for commercial data buys
 - Service quality
 - Mission
 - Access
 - Standards
 - Research enterprise
 - New partnerships
- Demonstration projects

Open for public comment
Closing date: May 9, 2016

<http://www.regulations.gov/#!docketDetail;D=NOAA-NESDIS-2015-0132>

THANK YOU

www.noaa.gov