



Lower Mississippi River Forecast Center

2nd Annual Hypoxia Workshop
March 31, 2011

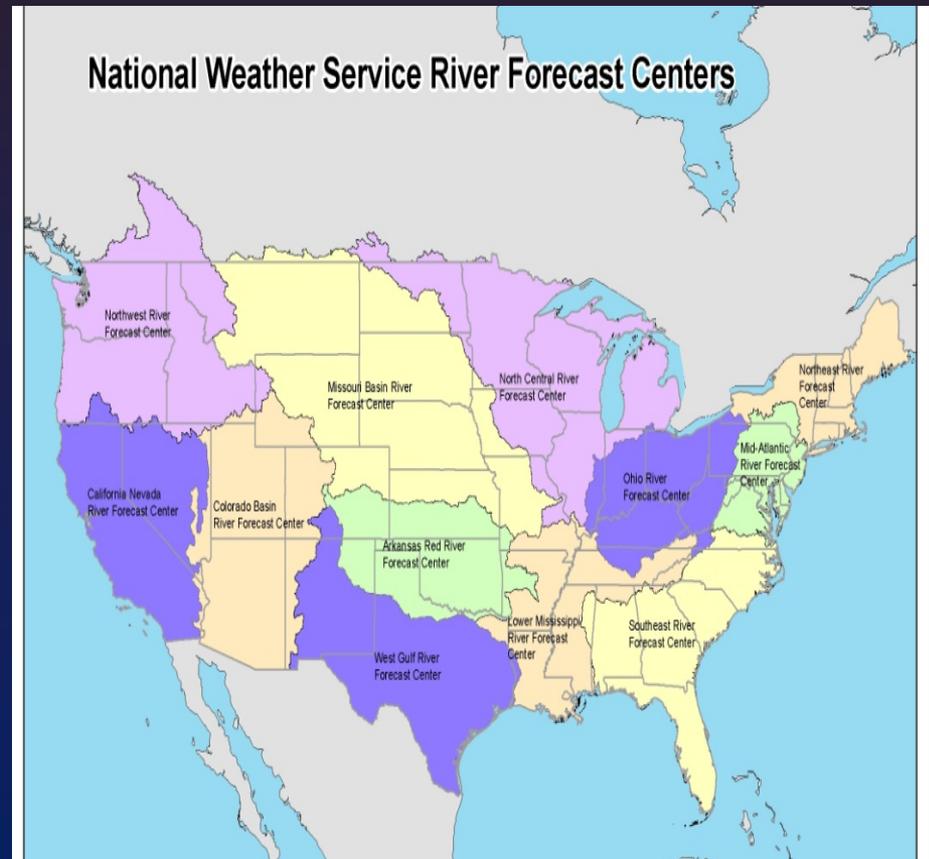
Jeff Grascchel



Who are we?



- 13 River Forecast Centers (12 CONUS + 1 Alaska/Pacific)
- Hydro-geologic boundaries
- Daily Operations
 - ◆ Data collection and quality control
 - ◆ Precipitation and Hydrologic Forecasts

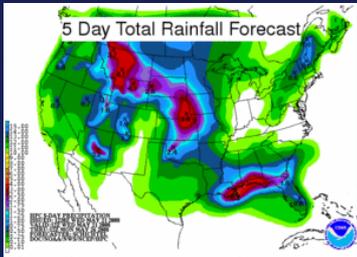
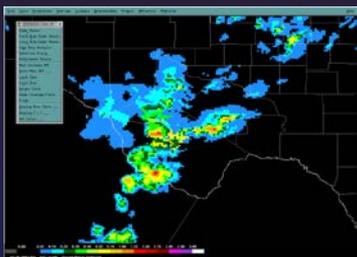




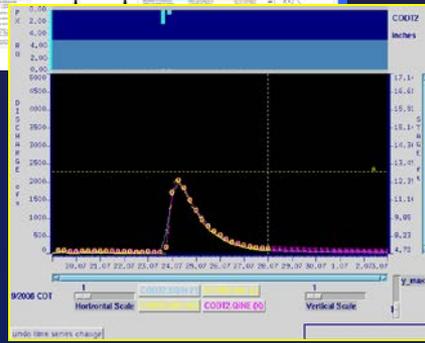
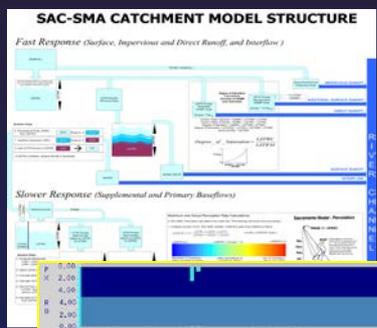
Forecast Process



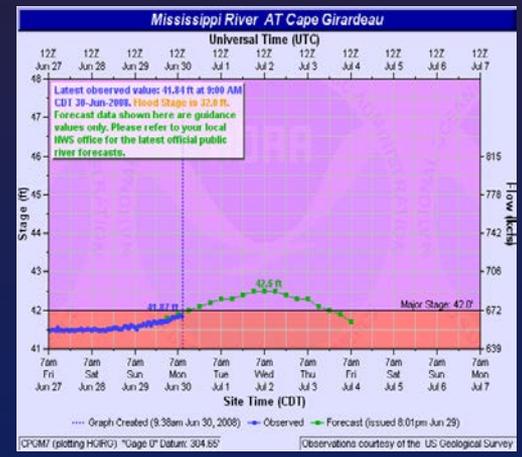
- Hydrometeorology Operations – Rainfall Data & Forecasts
- Hydrologic Operations – River Data & Forecasts



Precipitation estimates and future rainfall merged into continuous dataset



Precipitation dataset ingested into hydrologic/hydraulic models. Forecasters adjust model parameters in real time



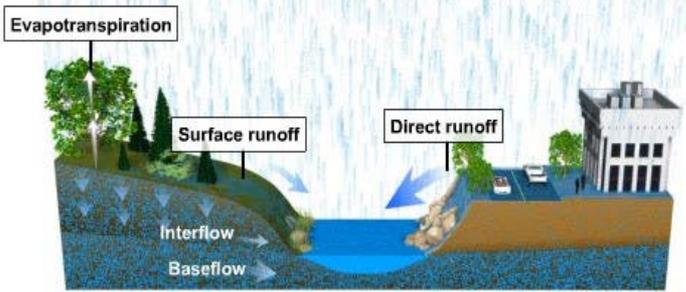
River forecast issued to public



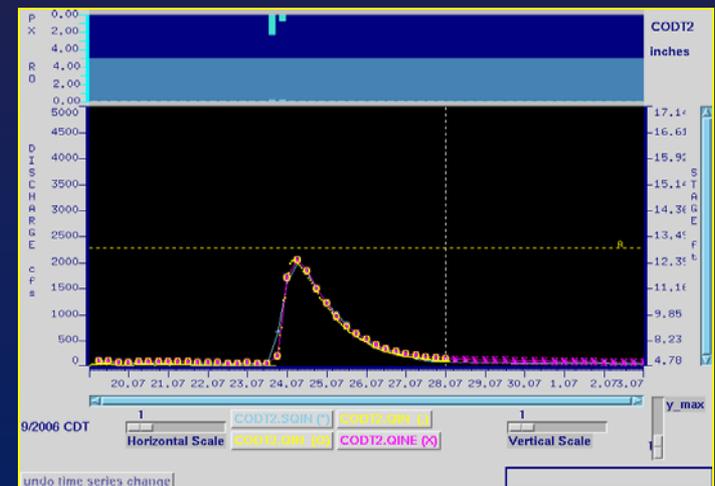
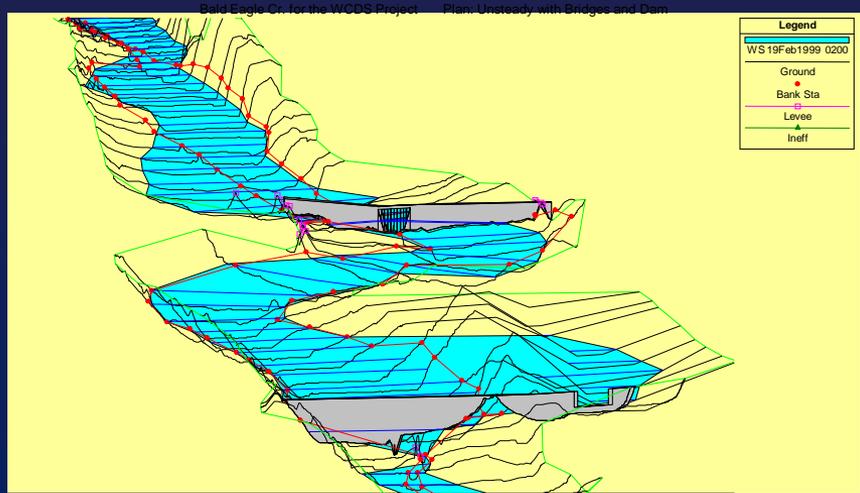
River Models



Model simulates physical processes



- Conceptual models used to simulate physical processes on soil column
- Extensive initial calibration of model parameters
- Forecasters use interactive program to adjust model parameters in real time

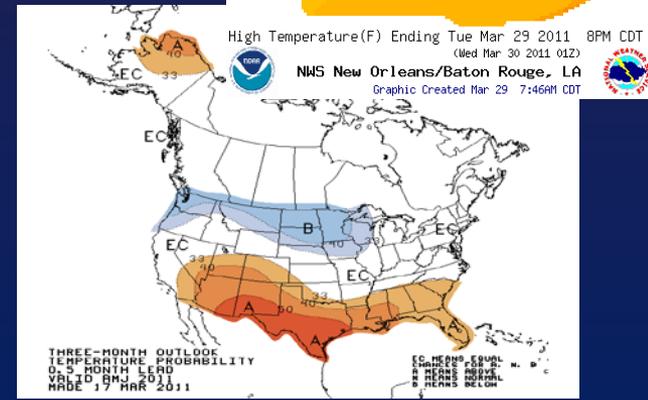
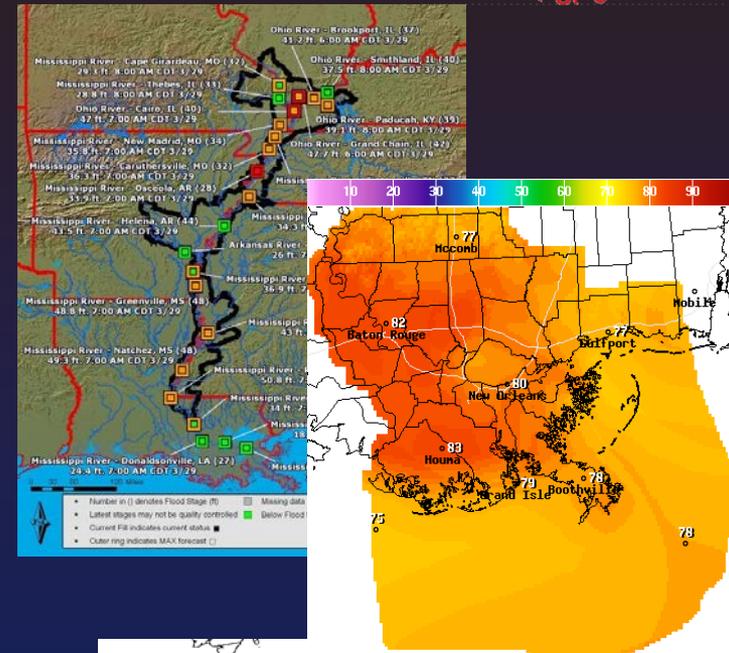




Forecast Time Scales & Products



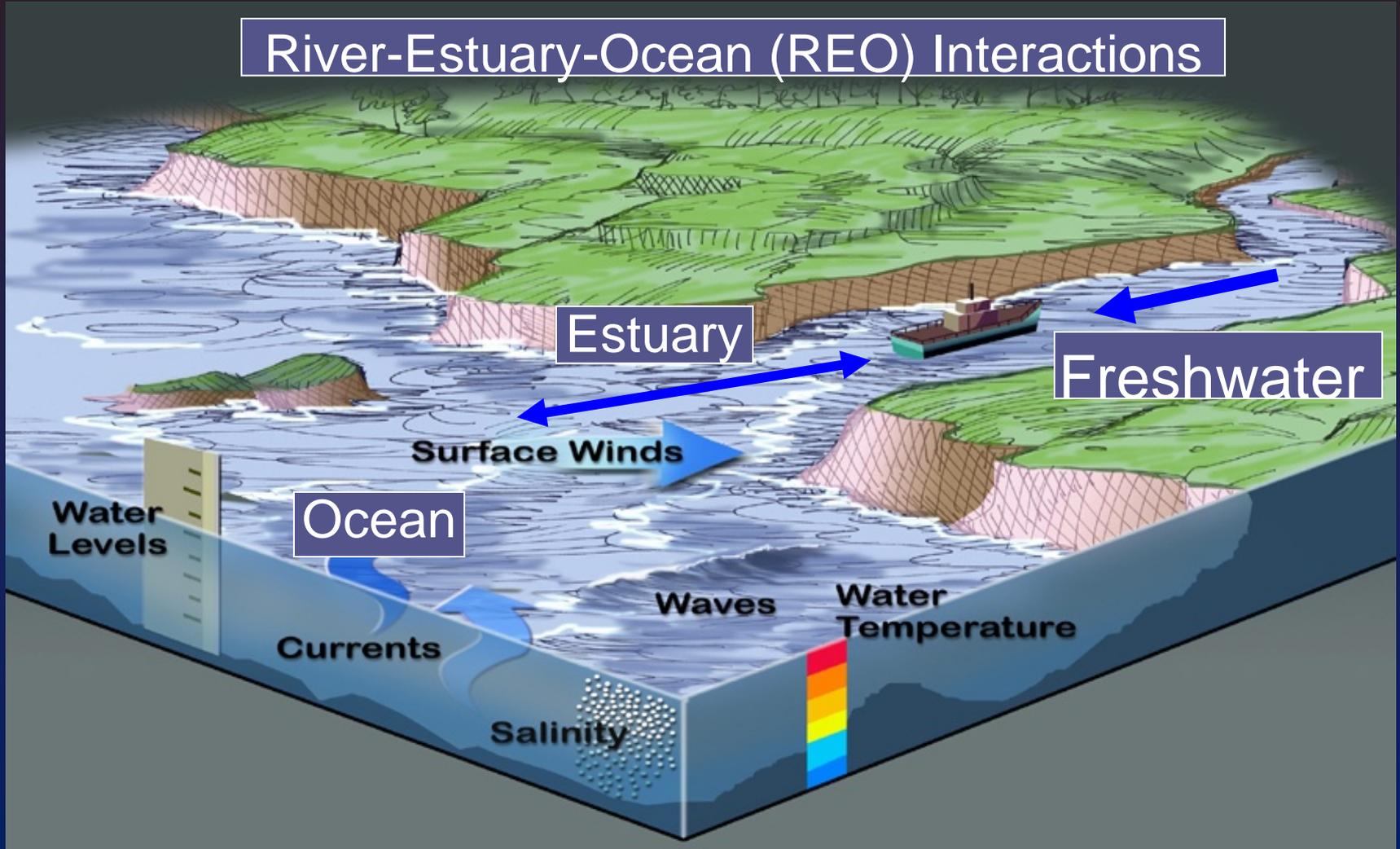
- River Forecasts (days)
 - ◆ Deterministic river level and flow forecasts
 - ◆ Gridded Future/Past Rainfall
- Weather Forecasts (days)
 - ◆ Temperature
 - ◆ Wind (Speed/Direction)
 - ◆ Waves?
- Seasonal Forecasts (months)
 - ◆ Rainfall/Temperatures





Future Plans

River-Estuary-Ocean (REO) Interactions





What do we need to model the REO?



Riverine

T R A N S I T I O N

Estuarine

Beyond

- Generally speaking...
 - ◆ Current river products and services include height and flow
 - ◆ Estuary products and services include water level, flow, temperature, salinity
 - ◆ Estuary model also ties to ecosystem and coastal ocean models
 - ◆ Transition zone has a combination of the above
 - ◆ Very location dependent
- We need better specification
 - ◆ What are the user needs? What are their uses for the information? What priorities?
 - ◆ What products, locations, spatial and temporal resolution, accuracy, forecast horizon, uncertainty information, event regimes (high vs. low flow, summer vs. winter, etc.)



Future Approach/Deliverables



Riverine

T R A N S I T I O N

Estuarine

Beyond

■ Approach

- ◆ Compile existing requirements
- ◆ Compile and/or develop “potential products”
- ◆ Present “potential products” at stakeholder focus group meetings to focus user requirements and product specification

■ Deliverables

- ◆ List of prioritized user requirements.
- ◆ Gap analysis comparing requirements to existing capabilities.
- ◆ First draft user operations concept.



Coffee Break?

