Visualizing Upper Trophic and Ecosystem Modeling Outputs with EverVIEW to Inform the Decision Process in Coastal Louisiana

2012 Master Plan

Craig Conzelmann | Carol Parsons Richards | Kevin Suir
• Loss of nearly 2,000 sq mi of wetland since the 1930s
• 2007 Master Plan – ecological restoration and risk reduction
• 5-yr updates, Coastal Protection and Restoration Authority
• 2012 Master Plan – Approved by LA Legislature

Land change in coastal Louisiana (USGS 2011)
**Master Plan Objectives**

**Flood Protection**
Reduce economic losses from storm-based flooding

**Natural Processes**
Promote a sustainable coastal ecosystem by harnessing the processes of the natural system

**Coastal Habitats**
Provide habitats suitable to support an array of commercial and recreational activities coast wide

**Cultural Heritage**
Sustain Louisiana’s unique heritage and culture

**Working Coast**
Provide a viable working coast to support industry
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MODELING IN A SYSTEMS CONTEXT

1. Eco-hydrology
2. Wetland Morphology
3. Vegetation
4. Ecosystem Services
5. Barrier Shoreline Morphology
6. Storm Surge/Waves
7. Risk Assessment
• Coast-wide scale
• 50-year planning horizon
• Scenarios
  “Moderate Future Scenario”
  “Less Optimistic Future Scenario”
  “Moderate Future Scenario w/ High SLR”
• Future Without Action (FWOA)

• 23 Upper Trophic Level and Ecosystem Service models
  425 Individual projects (3700 individual runs)
  185 Uncertainty Analysis Model Runs
~50,000 files
~2 Terabytes of data
All within 18 months

How do you really SEE all the data?
- Joint Ecosystem Modeling (JEM)
  - Standards compliant modeling outputs

- EverVIEW: standards compliant data viewer
  - Increased data value across agencies
  - Interchangeable toolsets
EVERVIEW CAPABILITIES

- Map viewer
- Table viewer
- Multi map mode
- Thematic Data (HSI)
- Location tracking
- Animation
- Extensions
  - EverCalc
  - EverChart

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**Extensions**
- EverCalc
- EverChart
EverVIEW helps you SEE the data...

Enables isolation and inspection of ONE element in a multi-dimensional environment.

Future Scenarios
Time
Project Effects
Comparing Across Scenarios – Less Optimistic vs Moderate Futures

- Large Mouth Bass HSI

South West Louisiana
Calcasieu Lake
Comparing Across Scenarios – Large Mouth Bass HSI

Less Optimistic Future

Moderate Future
Comparing Across Scenarios – Large Mouth Bass HSI

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Less Optimistic Future

Moderate Future
Comparing Across Time Periods – Year 1 vs Year 50

- Brown Shrimp HSI

South Central Louisiana Atchafalaya River
Comparing Across Time Periods – Year 1 vs Year 50

- Brown Shrimp HSI (Moderate Future Scenario – Future Without Action)
Comparing Across Time Periods – Year 1 vs Year 50

- Brown Shrimp HSI (Moderate Future Scenario – Future Without Action)
Comparing between FWOA and Project

South Eastern Louisiana
Upper Breton Sediment Diversion
250,000 Cubic Feet per Second
Comparing between FWOA and Project - Percent Land
Comparing between FWOA and Project - Percent Land
Comparing between FWOA and Project - Percent Land

52% Change
EverVIEW lets the user **SEE** the data.
If you’d like to SEE EverVIEW for yourself....

USGS JEM Booth