



Louisiana's 2012 Coastal Master Plan



committed to **our coast**

INTECOL
Orlando, FL
June 3 – 8, 2012



This is What We HAVE LOST

Historic Land-Water Change from 1932-2010



1,900 square miles lost since the 1930s

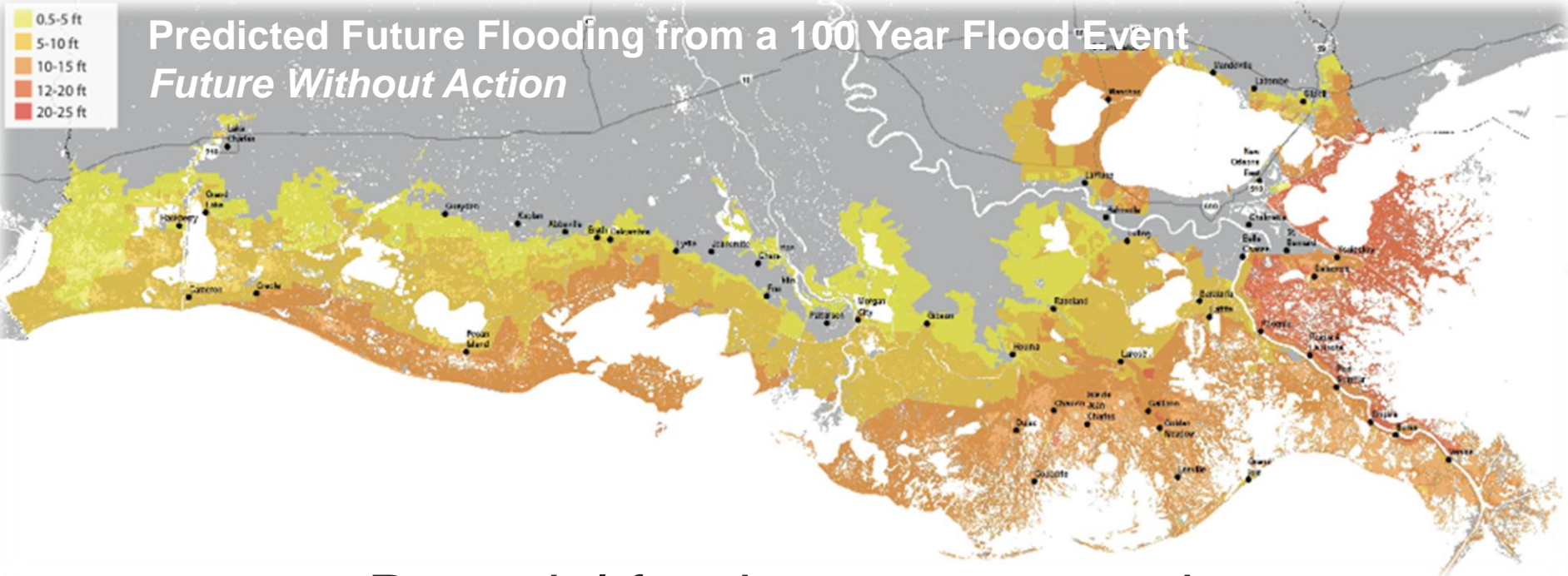
This is What We Could Lose

Predicted Land-Water Change Over Next 50 Years



Potential to lose up to an additional 1,750 square miles of land over the next 50 years

Our Communities and Livelihoods at Risk



Potential for damages to reach
\$7.7 to \$23.4 billion annually

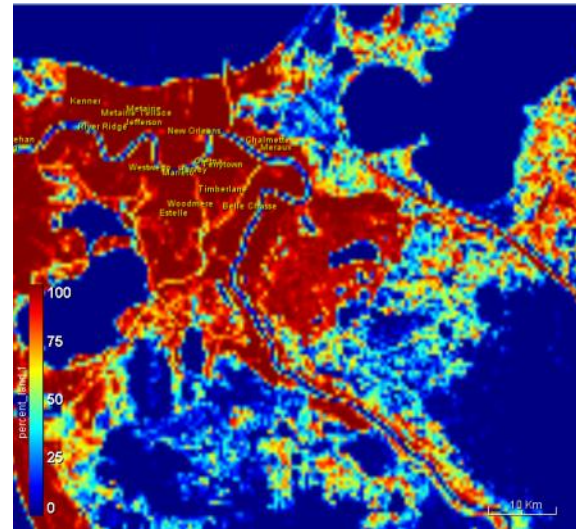
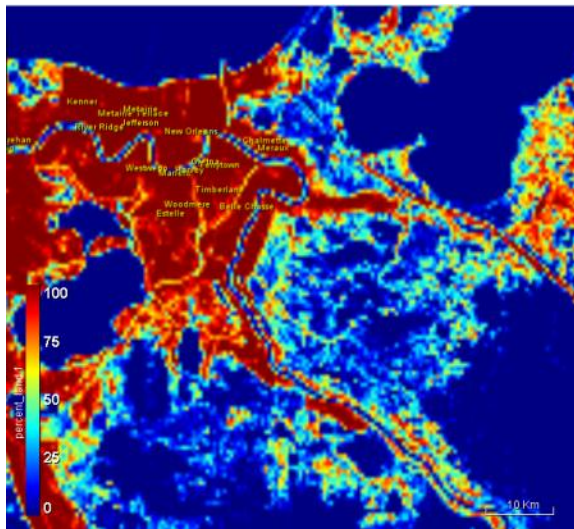
Increasing threats to lives, jobs,
communities and the economy

The Analytical Challenge

- Complex coastal environment
 - Wetlands, bays, barriers
 - Rural, urban, industry
- Planning horizon
 - 50 years – need to consider change over time
- Multiple future scenarios
- Projects
 - 210 restoration projects
 - 10 different types
 - 34 Structural protection projects
 - 156 Non-structural protection projects
- About 18 months

Technical Advisory Committee

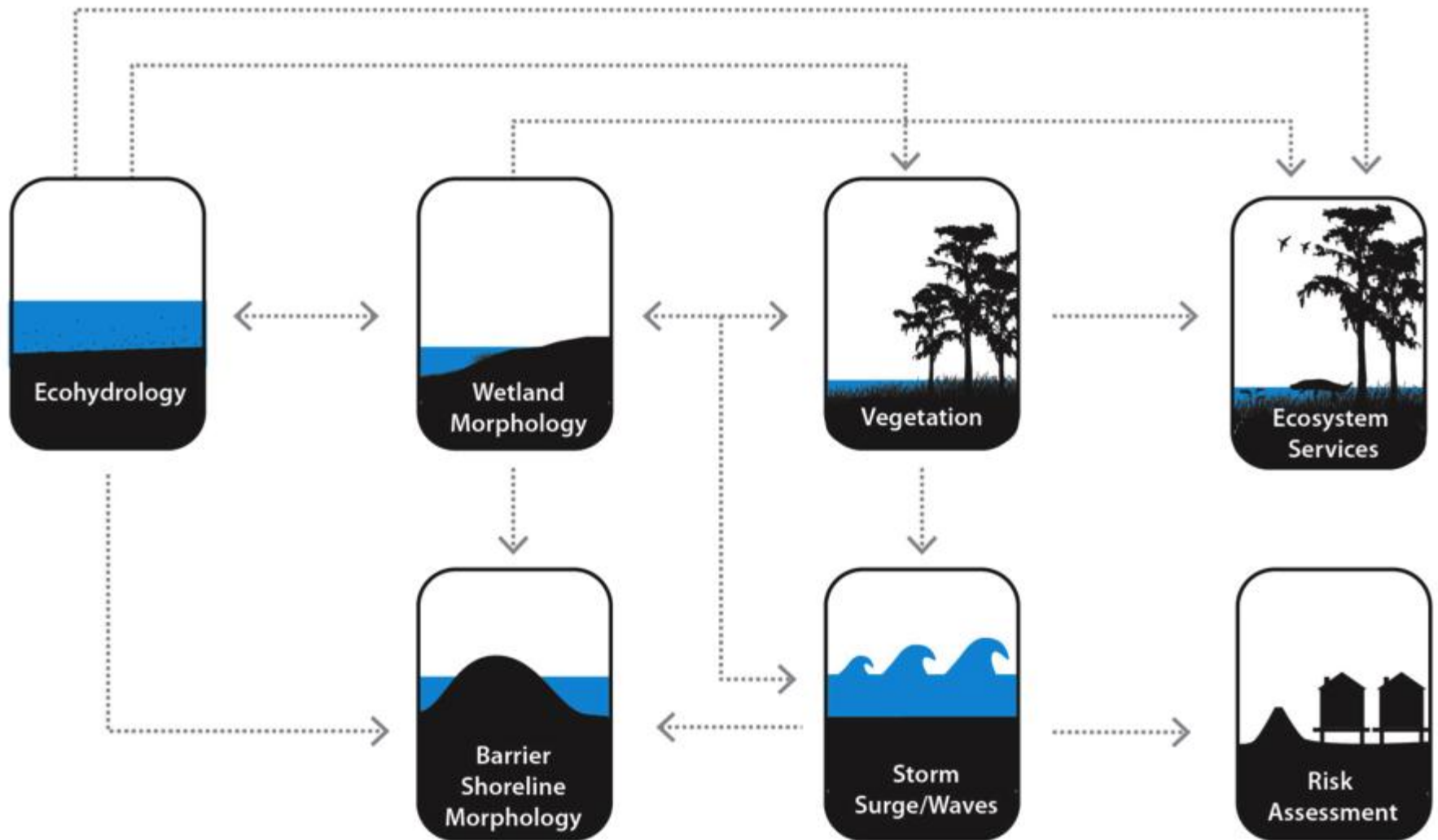
- Steve Ashby, Mississippi State University
- John Callaway, University of San Francisco
- Fred Sklar, South Florida Water Management District
- Si Simenstad, University of Washington



Predictive Models Team

Predictive Model	Lead
Eco-Hydrology	Ehab Meselhe, PhD, PE, ULL
Vegetation	Jenneke Visser, PhD, ULL
Wetland Morphology	Greg Steyer, PhD, USGS
Barrier Island Morphology	Mark Kulp, PhD, UNO
Ecosystem Services	Andy Nyman, PhD, LSU
Storm Surge & Wave	Hugh Roberts, PE, Arcadis
Storm Damage / Risk	Jordan Fischbach, PhD, RAND
Data Integration	Craig Conzelmann, MS, USGS
Uncertainty Analysis	Emad Habib, PhD, ULL
Technical Advisor	Denise Reed, PhD, UNO

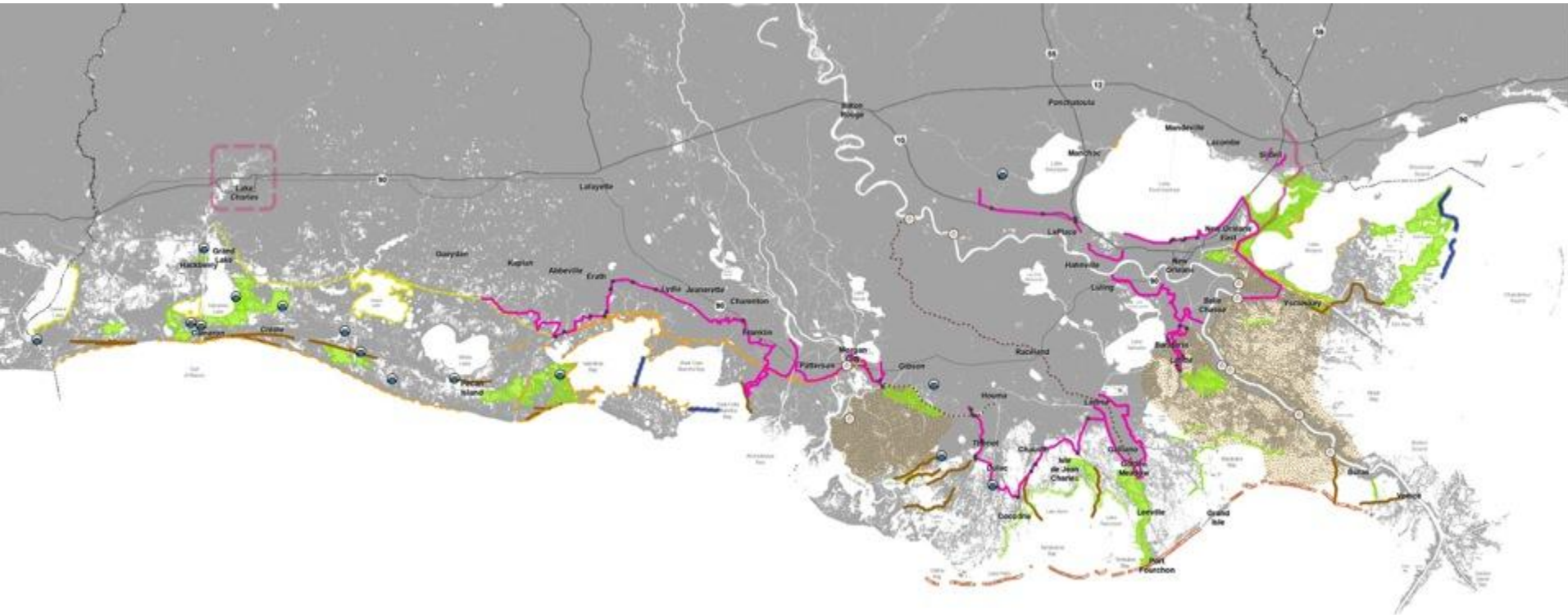
Using New Tools, Breaking New Ground



Future Scenarios

<u>Uncertainty</u>	<u>Moderate</u>	<u>Moderate with High Sea Level Rise</u>	<u>Less Optimistic</u>
Sea Level Rise	0.3m over 50 yrs	0.8m over 50 yrs	0.5m over 50 yrs
Subsidence	Spatially Variable	Same as moderate	Spatially Variable
Storm Intensity	+10% of current	Same as moderate	+20% of current
Storm Frequency	Current	Same as moderate	+3% of current
River Discharge / Sediment Load	Current	Same as moderate	-5% of current
River Nutrient Concentration	-12% of current	Same as moderate	Current
Rainfall	Current	Same as moderate	Variable
Evapotranspiration	Current	Same as moderate	Variable
Marsh Collapse Threshold	Mid-range of salinity/inundation values	Same as moderate	Lower 0.25 end of salinity/inundation values

2012 Coastal Master Plan



Structural Protection



Bank Stabilization



Oyster Barrier Reef



Ridge Restoration



Shoreline Protection



Barrier Island Restoration



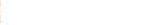
Marsh Creation



Sediment Diversion



Hydrologic Restoration



Today's Sessions

Predicting the Future of Coastal Louisiana I: Effects of Tides & Storms

- *MODERATOR - Denise Reed*
- Ehab Meselhe – Eco-Hydrology
- Dallon Weathers – Barrier Island Morphology
- Hugh Roberts – Storm Surge and Wave
- Jordan Fischbach – Damage and Risk

Predicting the Future of Coastal Louisiana II: Biological Response

- *MODERATOR - Carol Parsons Richards*
- Greg Steyer – Wetland Morphology
- Jenneke Visser – Vegetation
- Andy Nyman – Fish and Wildlife
- Denise Reed – Master Plan Formulation