



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

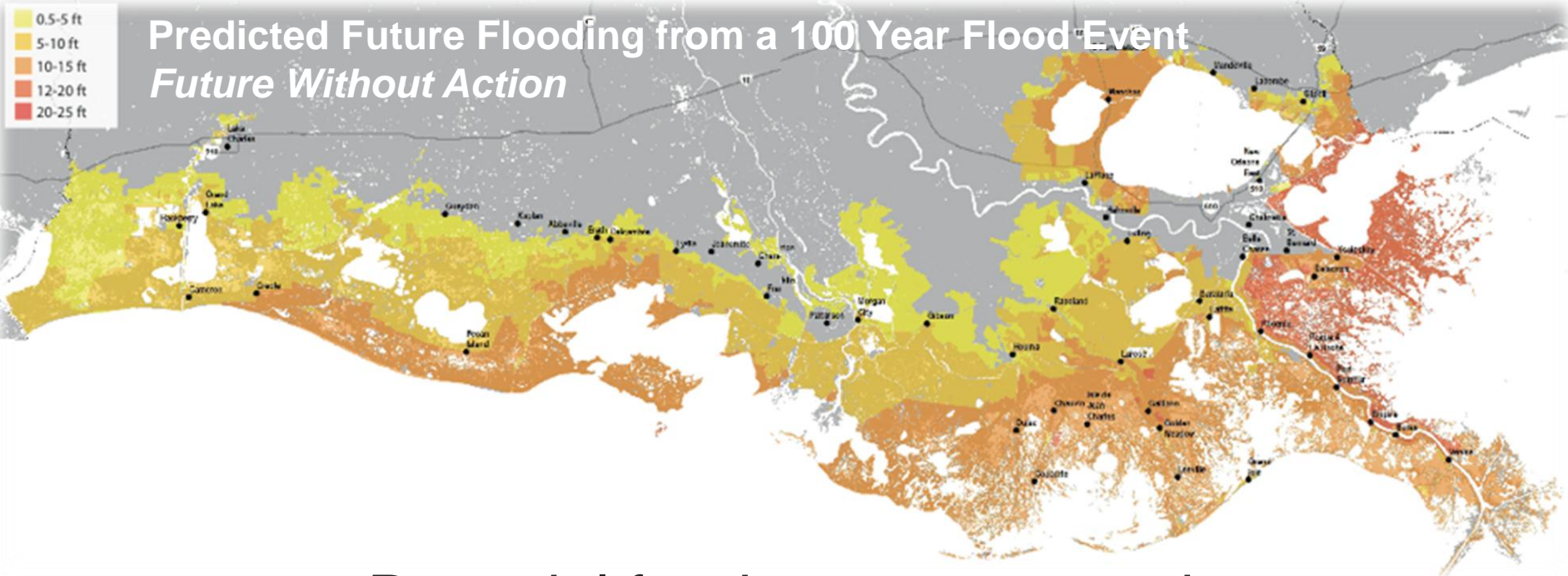
This is What We Could Lose

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

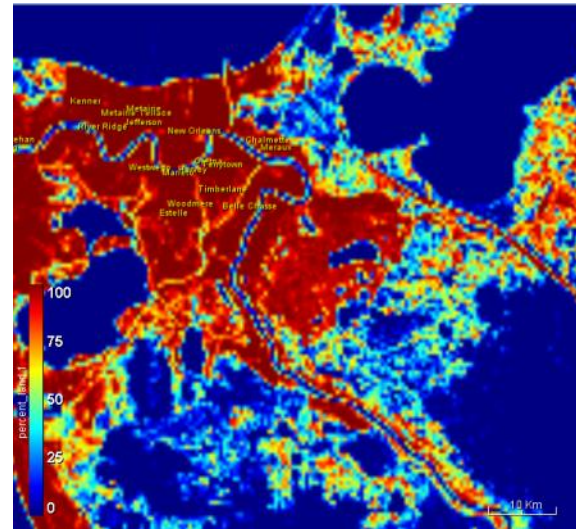
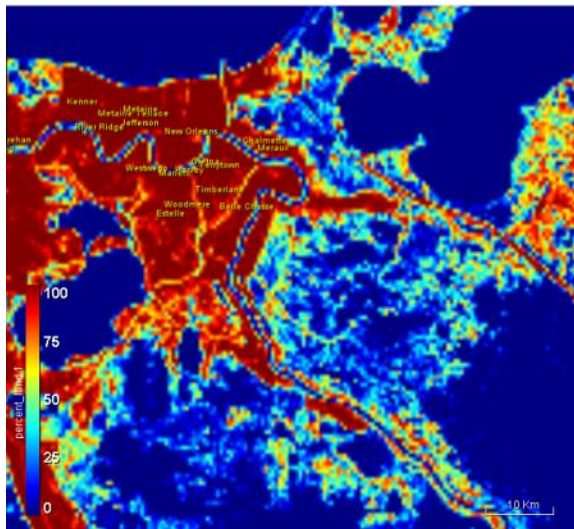
Increasing threats to lives, jobs,
communities and the economy

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

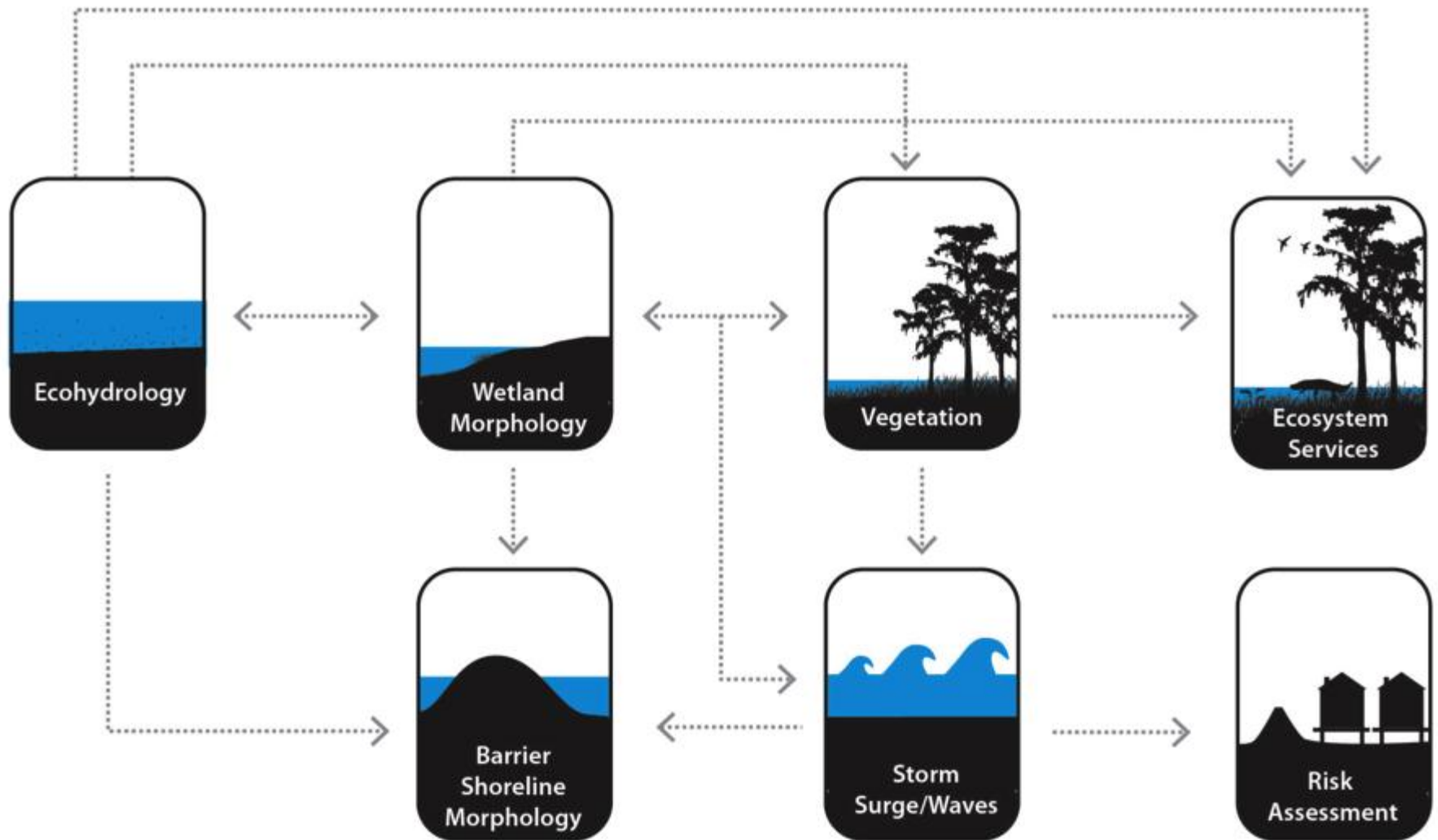
- Steve Ashby, Mississippi State University
- John Callaway, University of San Francisco
- Fred Sklar, South Florida Water Management District
- Si Simenstad, University of Washington



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 |

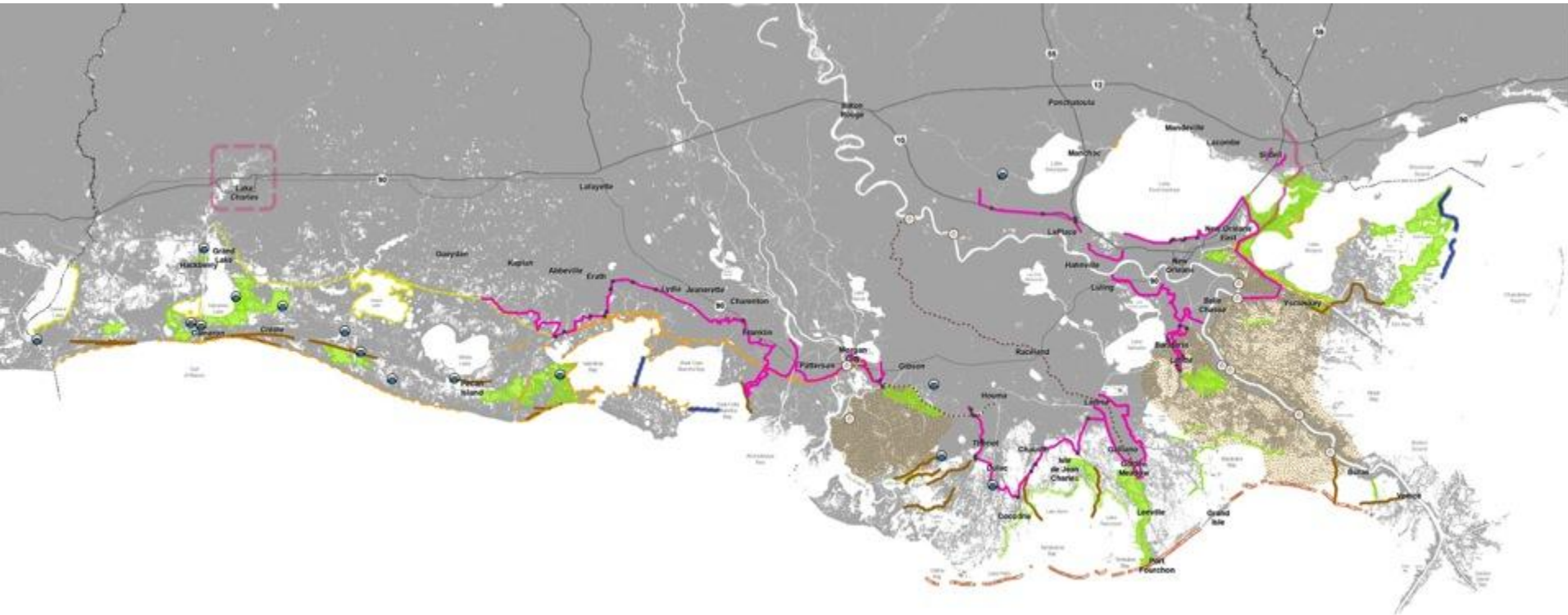
Using New Tools, Breaking New Ground



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



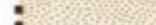
Barrier Island Restoration



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