



THINKING ABOUT THE FUTURE ...TAKING ACTION TODAY

Denise Reed

Chief Scientists, The Water Institute of the Gulf



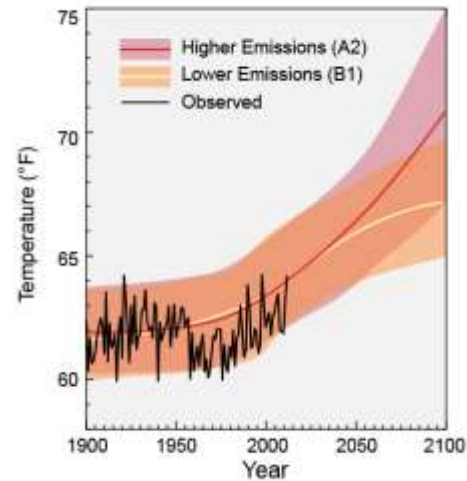
**THE WATER INSTITUTE
OF THE GULF®**



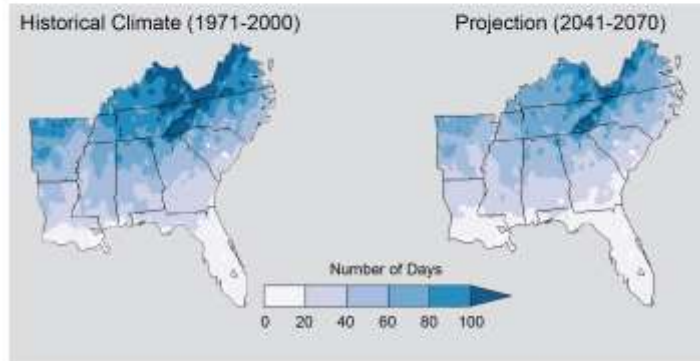
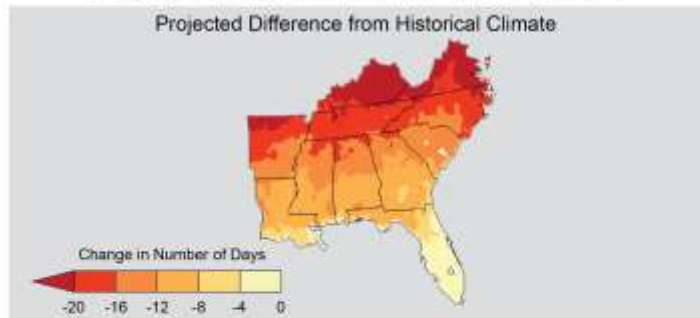
THE 21ST CENTURY

Warmer

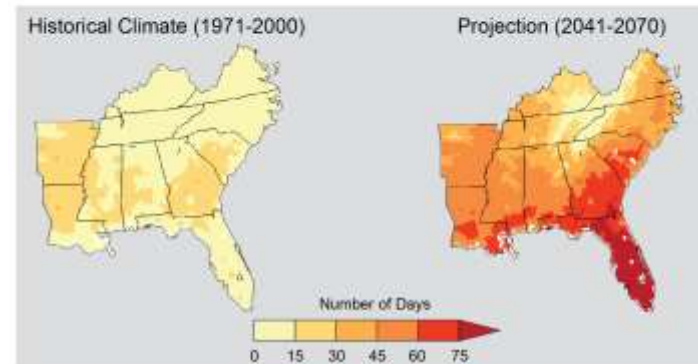
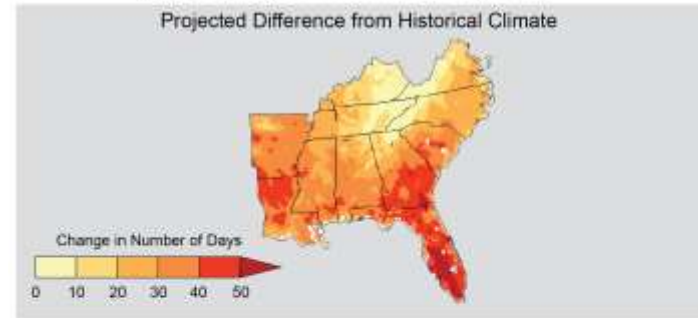
Southeast Temperature: Observed and Projected



Projected Change in Number of Nights Below 32°F

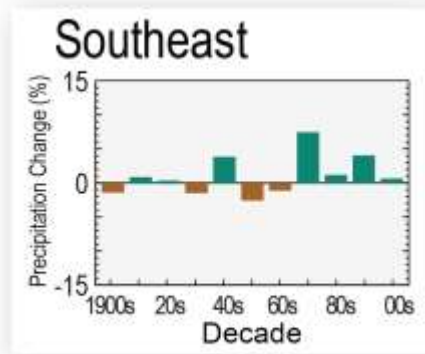


Projected Change in Number of Days Over 95°F



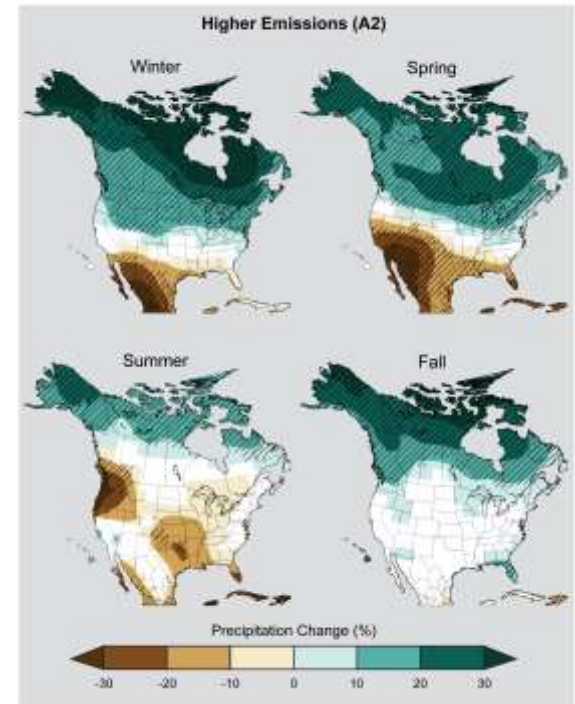
THE 21ST CENTURY

Drier?

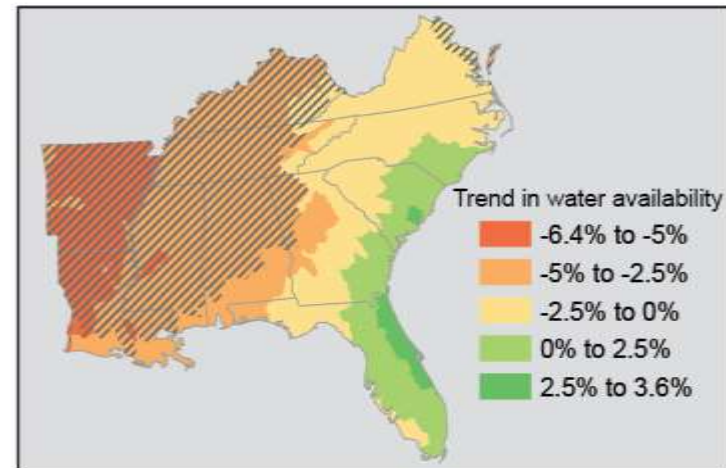
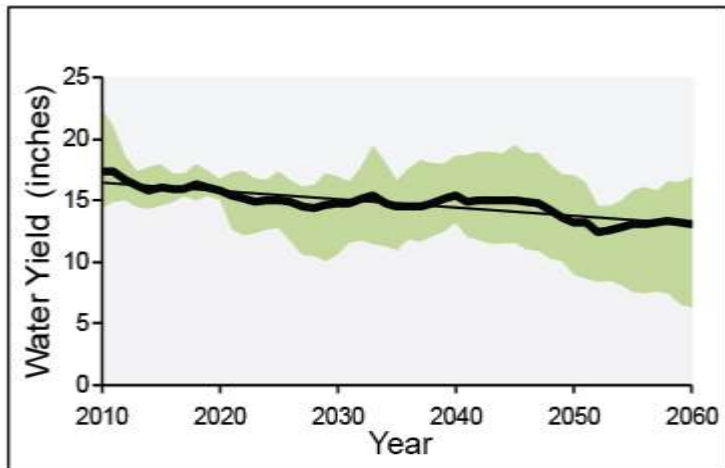


Trends in Water Availability

Projected Precipitation Change by Season

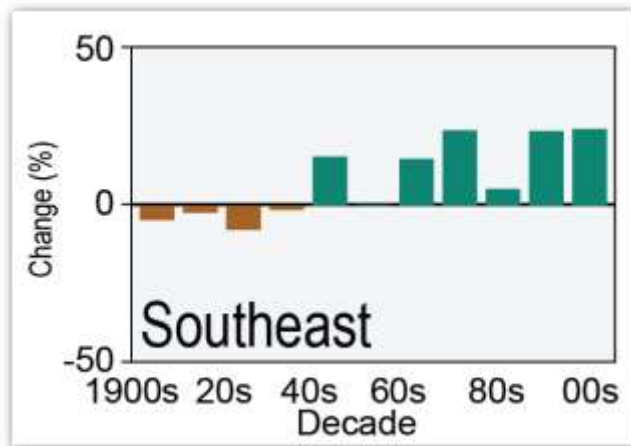


2071-2099 (compared to 1970-1999)



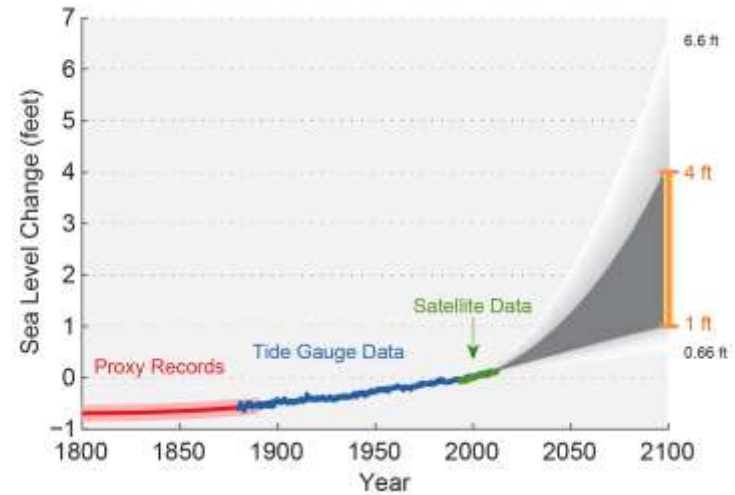
THE 21ST CENTURY

Or wetter?

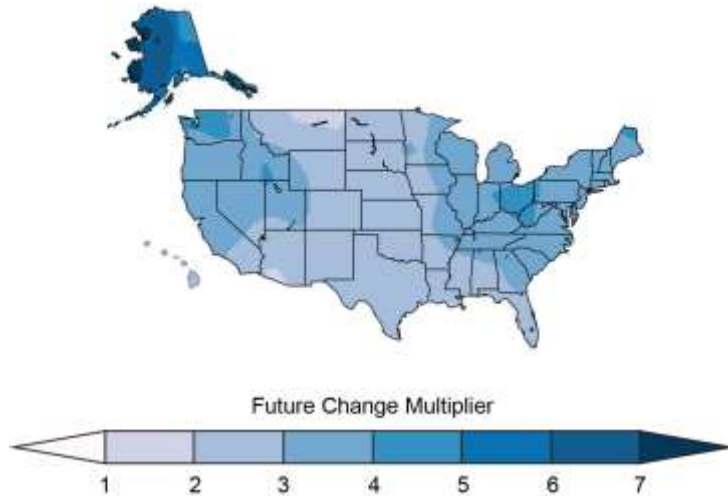


Change in very heavy precipitation

Past and Projected Changes in Global Sea Level



Continued Emissions Increases (RCP 8.5)

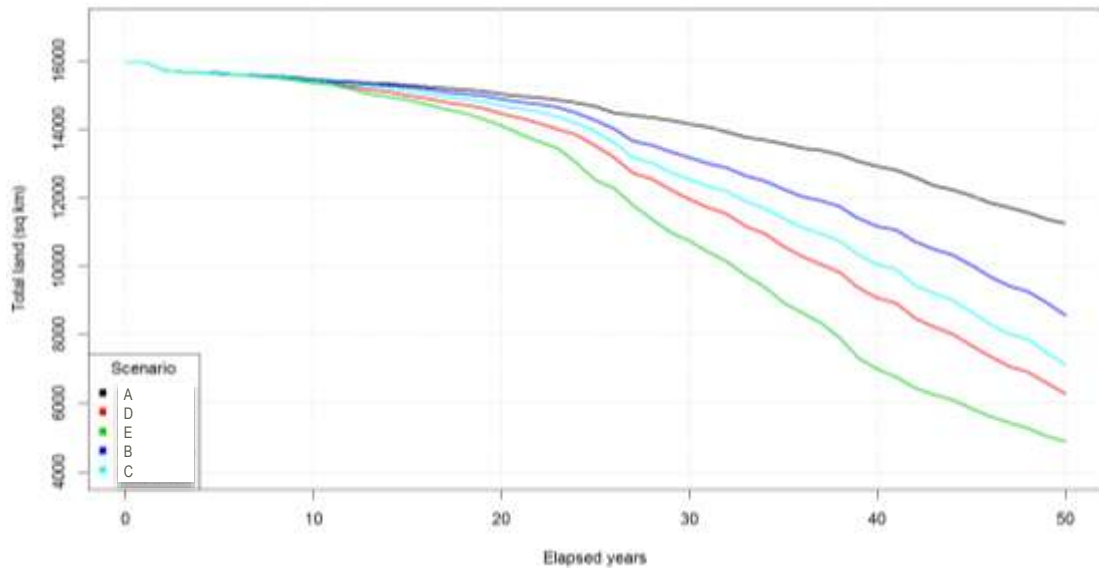


ENVIRONMENTAL SCENARIOS

SCENARIO	 PRECIP	 ET	 SEA LEVEL RISE	 SUBSIDENCE	 STORM FREQUENCY	 AVG. STORM INTENSITY
2017 COASTAL MASTER PLAN						
LOW	>HISTORICAL	<HISTORICAL	1.41'	20% OF RANGE	-28%	+10.0%
MEDIUM	>HISTORICAL	HISTORICAL	2.07'	20% OF RANGE	-14%	+12.5%
HIGH	HISTORICAL	HISTORICAL	2.72'	50% OF RANGE	0%	+15.0%
COMPARED TO 2012 COASTAL MASTER PLAN						
MODERATE	>HISTORICAL	HISTORICAL	0.89'	20% OF RANGE	0%	+10.0%
LESS OPTIMISTIC	HISTORICAL	>HISTORICAL	1.48'	50% OF RANGE	+2.5%	+20.0%

(FEET/50 YEARS)

SUBSIDENCE AND SEA LEVEL RISE ASSUMPTIONS



Scenario	ESLR (ft/50yr)	Subsidence
A	1.4104	Low
B	2.0664	Low
C	2.0664	Medium
D	2.0664	High
E	2.7224	High

Effect of scenarios on background land loss



PREDICTED LAND CHANGE FUTURE WITHOUT ACTION YEAR 50

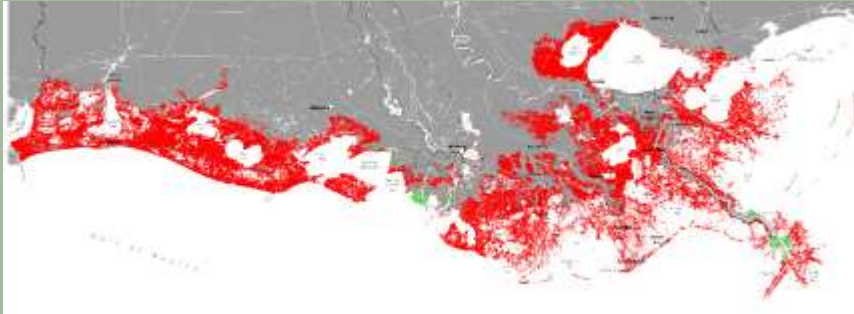
LOW



MEDIUM



HIGH

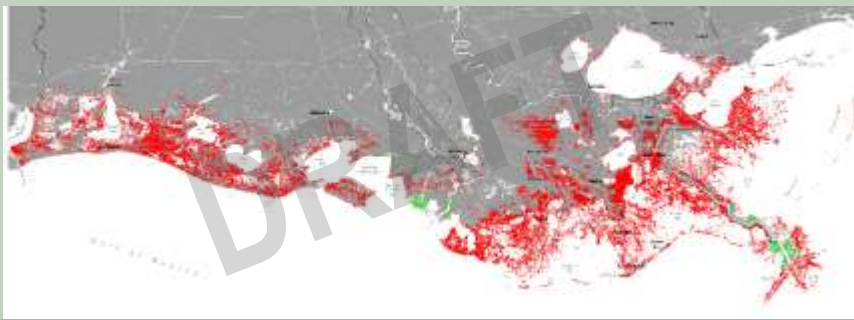


PREDICTED LAND CHANGE FUTURE WITHOUT ACTION YEAR 50

LOW

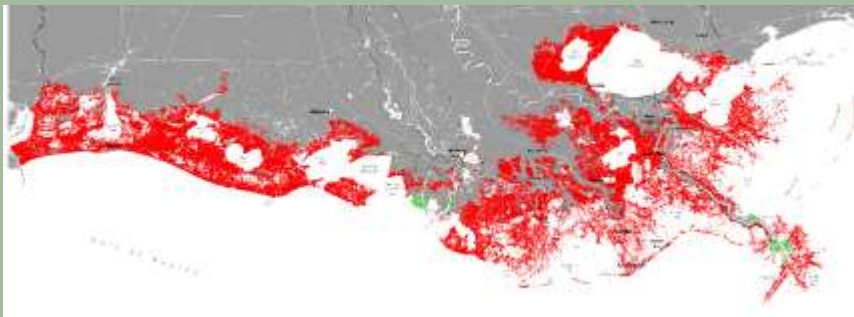


MEDIUM



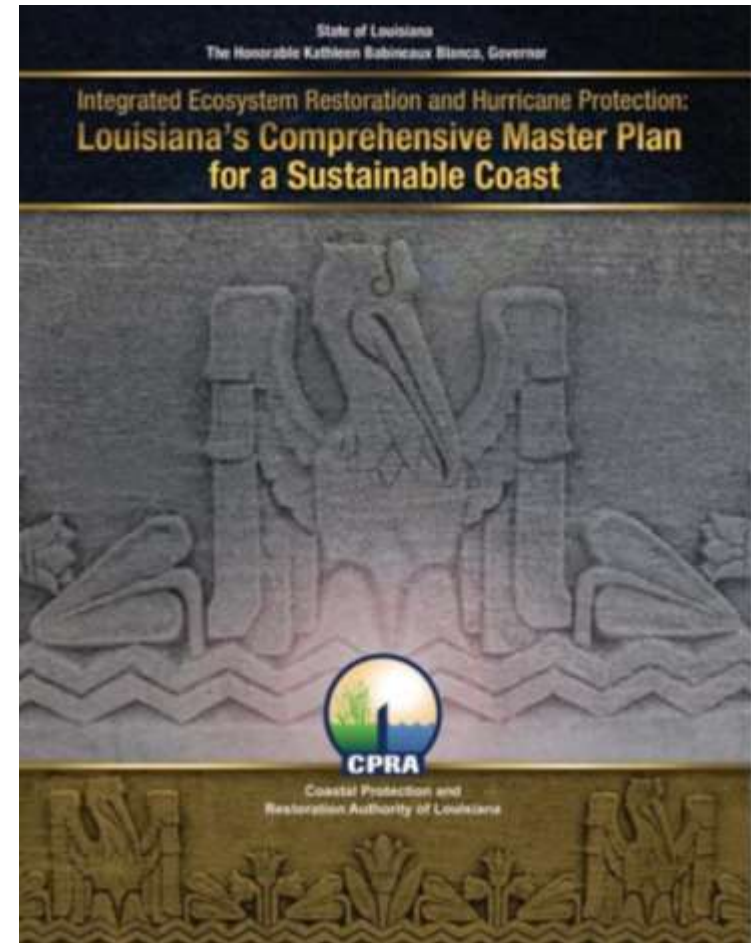
Hope for the best,
plan for the worst....

HIGH



LOUISIANA STATE MASTER PLAN – AN INTEGRATED APPROACH

- First real attempt at integration - 2007
- Post Katrina merger of governmental responsibilities
- Recognized the challenges and trade-offs
- Looks 50 years into the future

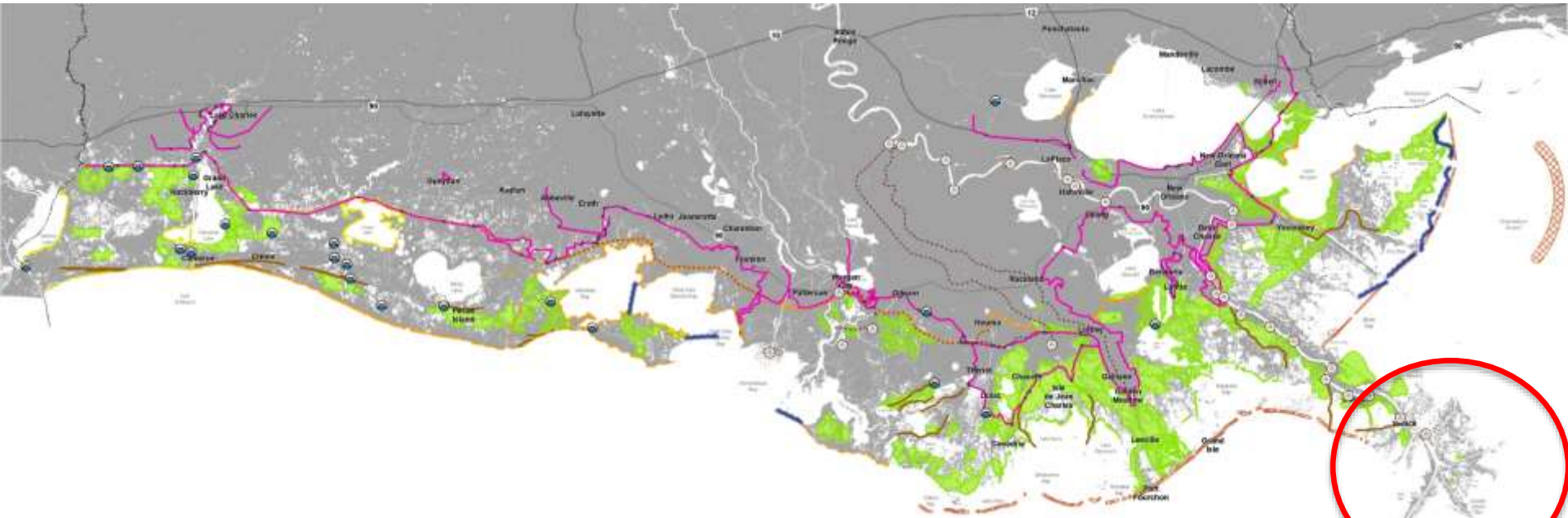


MASTER PLAN OBJECTIVES

- 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

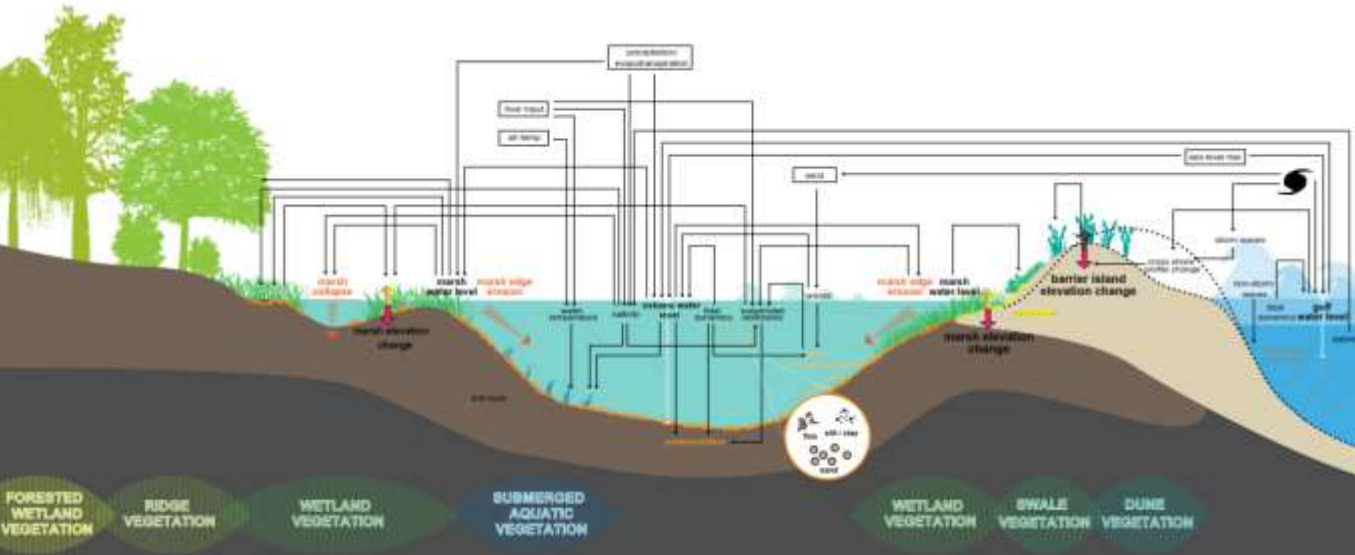


EVALUATION OF HUNDREDS OF EXISTING PROJECTS

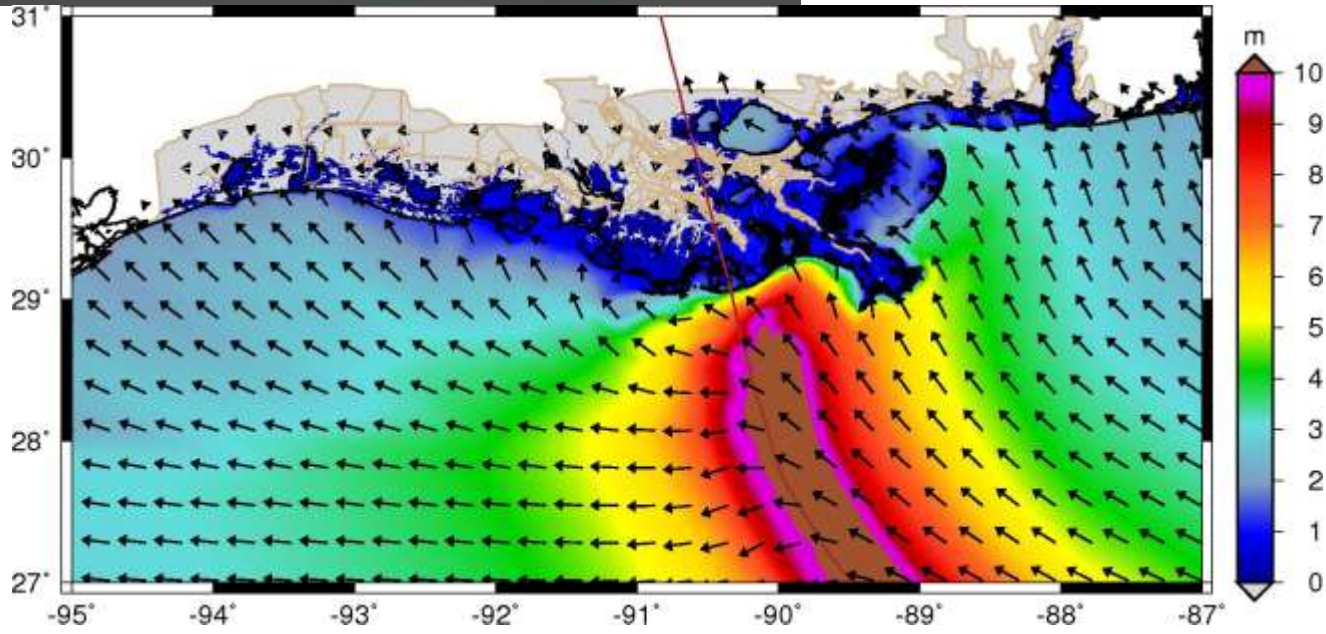


2012 Plan - Nearly 400 Projects Evaluated Across the Coast

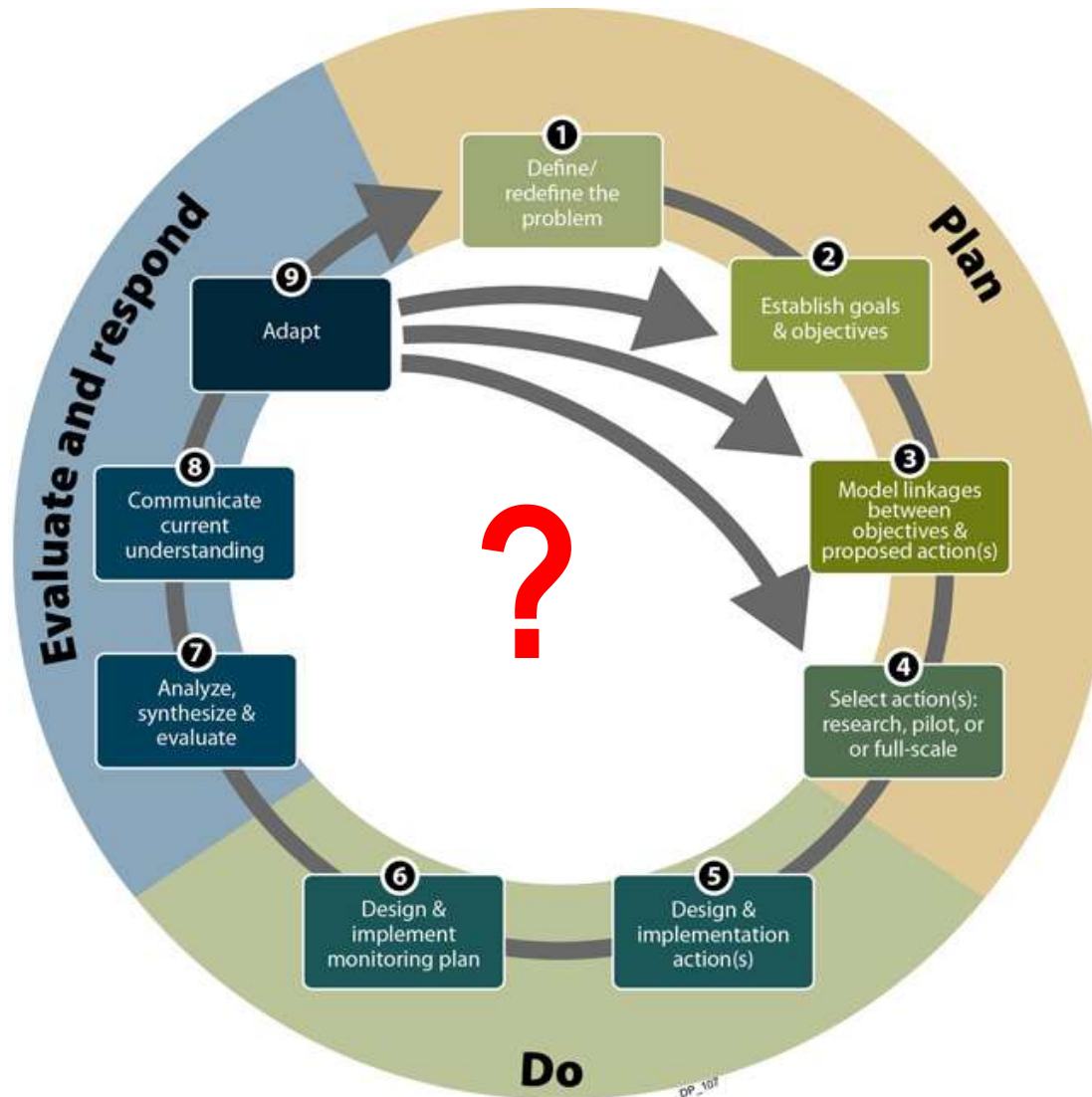
INTEGRATED LANDSCAPE MODEL

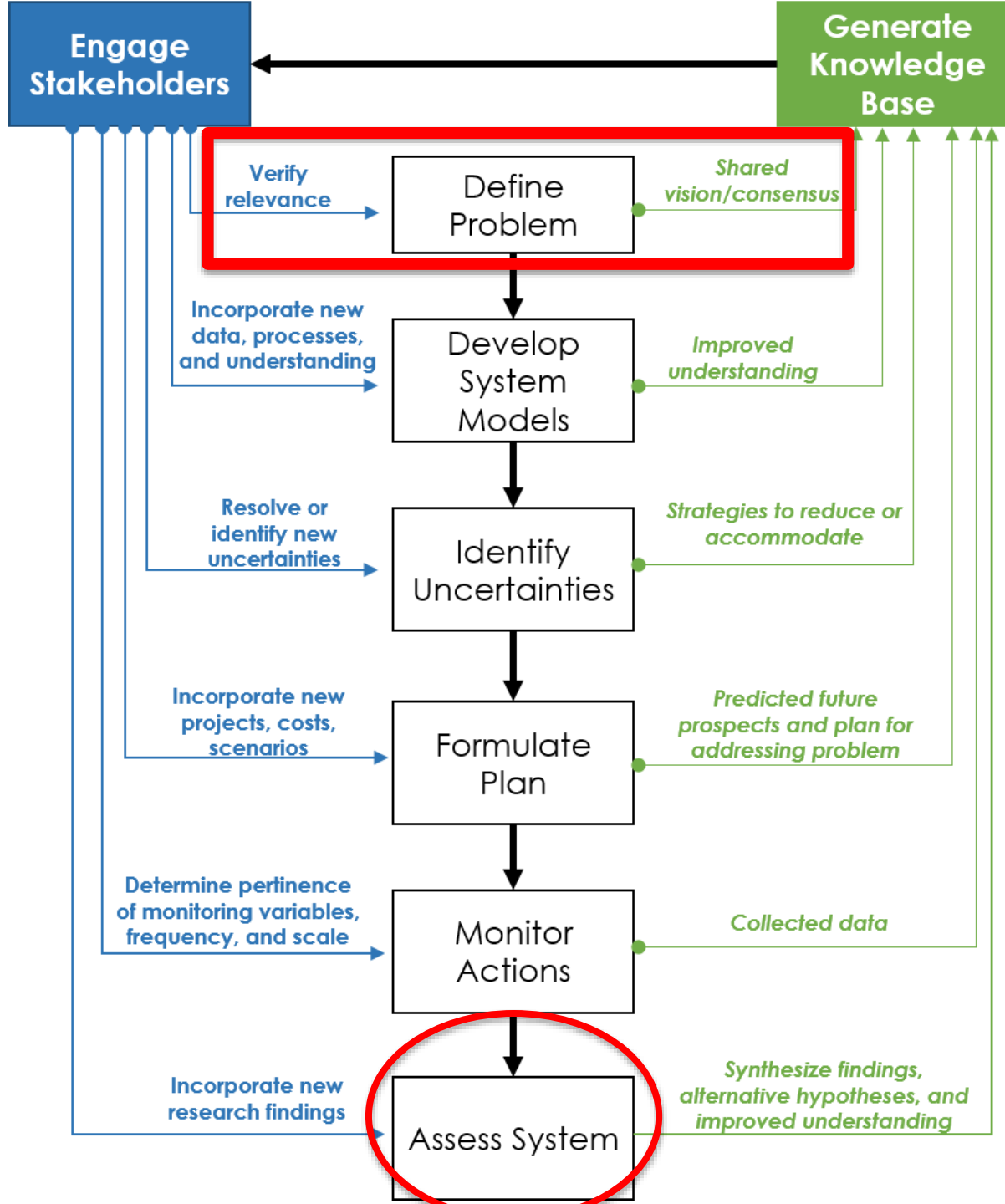


STORM SURGE/WAVES & DAMAGES



ACT AND ADAPT







MANY FUTURE USES



WHERE TO INVEST?

- Focus on a better future, not recreating the past
- Options that can transform as coastal conditions change
- Leverage other uses
 - With multiple benefits they may not all be realized at once
 - Narrow focus leads to vulnerability



CONCLUDING THOUGHTS

- Think forward
 - Where could restoration be sustainable?
 - How could we design to provide enduring results?
- Prepare for a variety of conditions
 - Look for robustness
 - Acknowledge potential for success vs. failure
- Change is happening now
 - Uncertainty is no reason not to act





THE WATER INSTITUTE
OF THE GULF®

THANK YOU

Denise Reed

dreed@thewaterinstitute.com



@THEH2OINSTITUTE

301 NORTH MAIN STREET, SUITE 2000
BATON ROUGE, LA 70825

(225) 448-2813

WWW.THEWATERINSTITUTE.ORG

