Science Advisory Committee

January 2018

Monitoring Conditions

Communicating Conditions

Predict Conditions; Inform Future EST 1&2 Actions

Goals/Objectives/Suggested Activities			Y 1	Y 2	Y 3	Y 4	Y 5	Perfomance Measure	Outcomes	Indicators	Lead
EST-1: Increase data related to how the estuarine ecosystem responds to anthropogenic stressors.											
EST-1.1		Maintain/improve existing level of coastal monitoring.						Establishment of data repository for coastal AL environmental conditions Establishment of baselines of locations and extent of SAV and other coastal habitats	Improved continuous monitoring of environmental conditions	Consistent data on habitat change trends Consistent data accessible for coastal resource study and management	Science Advisory Committee
	a	Facilitate access to data by encouraging registration of metadata with an agreed-upon data management portal.		x	x	x	x				
	b	Identify funding and organization to query various agencies on a regular basis for background estuarine data.		x							
	c	Identify data gaps and needs and facilitate increased monitoring by appropriate groups.			x	x					
	d	Conduct high resolution mapping of habitats within the estuary to establish present-day baseline of distribution and coverage, and continue to monitor.	x	x							
	e	Develop remote sensing strategy to inform coastal monitoring efforts.			x						
	f	Monitor acres and species of SAV and wetlands.		x		x					
EST-2: Establish Process for measuring change in estuarine condition.											
EST-2.1		Build a Biological Condition Gradient Framework for coastal Alabama.						Publication of State of the Bay within 5 year period using BCG	Improved knowledge of community about status of Alabama's estuaries and coastal habitats and emerging trends in their health	Trends in coastal resource management Improvements in reporting on state of resources	Science Advisory Committee
	a	Define/refine indicators of ecosystem health.	x								
	b	Calibrate Landscape Disturbance Index to estuarine conditions (as alternative to impervious cover if seems necessary).	x								
	c	Develop/adopt indices of biological integrity for streams and rivers (and riparian buffers), freshwater wetlands, and intertidal marshes and flats		x							
	d	Determine numeric criteria for habitat condition for streams and rivers (and riparian buffers), freshwater wetlands, and intertidal marshes and flats.		x							
	e	Construct BCG framework and report on estuary condition.		x	x	x	x				
EST-3: Improve understanding of relationship between biological condition and provision of ecosystem services resulting from improvements in resources.											
EST-3.1		Manage system for multiple services.						Demonstration of how reductions of stressors improve ability of ecosystem to provide services	Improved understanding of benefits and value of ecosystem services	Improvements in ecosystem services measured	Science Advisory Committee
	a	Develop and test conceptual model that measures levels of ecosystem services related to changes in stressors utilizing D'Olive watershed restoration.			x	x					
	b	Predict changes in fish biomass related to changes in habitat quantity and condition.			x	x	x				
	c	Predict changes in water quality related to management of ecosystem services.			x	x	x				
	d	Predict impacts of water quantity and withdrawal on the biological condition and ecosystem services provided by the Mobile Bay estuary.		x	x	x	x				

EST-1: Increase data related to how the estuarine ecosystem responds to anthropogenic stressors

Perfomance Measure	Outcomes	Indicator	Lead
ssors.			
Establishment of data repository for coastal AL environmental conditions Establishment of baselines of locations and extent of SAV and other coastal habitats	Improved continuous monitoring of environmental conditions	Consistent data on habitat change trends Consistent data accessible for coastal resource study and management	Science Advisory Committee

EST-1.1 Maintain/improve existing level of coastal monitoring

a) Facilitate access to data by encouraging registration of metadata with an agreed-upon data management portal.

Accomplishments:

- NCEI through DISL selected ✓
- MBNEP datasets available through DISL and NCEI ongoing.
- 2017 - hosted a metadata webinar with DISL. Currently available online. ✓

Things to Consider:

- Are we capturing all data?
- Is a "dashboard" or other data portal coordination needed?
- What are next steps?

EST-1.1 Maintain/improve existing level of coastal monitoring

b) ID funding and organization to query various agencies on a regular basis for background estuarine data

Accomplishments:

- TNC partly ✓

Things to Consider:

- What additional background data do we want?
- What are the next steps or needs?
- Need for monitoring coordination.

EST-1.1 Maintain/improve existing level of coastal monitoring

c) ID data gaps and needs and facilitate increased monitoring by appropriate groups.

Accomplishments:

- Inventory of ongoing monitoring was updated 2015 + TNC

Things to Consider:

- Need for more coordination.
- Where should it live so people can access (white paper?)?
- Gap analysis?
- What are the next steps?

EST-1.1 Maintain/improve existing level of coastal monitoring

d) Conduct high resolution mapping of habitats within the estuary to establish present-day baseline distribution and coverage, and continue to monitor.

Accomplishments:

- Addressed through Habitat Planning effort – standardizing habitat classification and methodologies for mapping.

Things to Consider:

- What are the next steps?
- Anything missing?

EST-1.1 Maintain/improve existing level of coastal monitoring

e) Develop remote sensing strategy to inform coastal monitoring efforts.

Accomplishments:

Things to Consider:

- How can this data be utilized for monitoring or integrated into existing monitoring efforts.
- Need for coordination.

EST-1.1 Maintain/improve existing level of coastal monitoring

f) Monitor acres and species of SAV and wetlands. ✓

Accomplishments:

- 2015 assessment

Things to Consider:

- ongoing

EST-1: Increase data related to how the estuarine ecosystem responds to anthropogenic stressors

EST-1.1		Maintain/improve existing level of coastal					CMP
	a	Fac reg dat					ed for
	b	Ide age est					ation
	c	Ide inc					
	d	Cor wit bas cor					anning gies for
	e	Dev mo					ation
	f	Mo					

Perfomance Measure	Outcomes	Indicator	Lead
ssors.			
Establishment of data repository for coastal AL environmental conditions Establishment of baselines of locations and extent of SAV and other coastal habitats	Improved continuous monitoring of environmental conditions	Consistent data on habitat change trends Consistent data accessible for coastal resource study and management	Science Advisory Committee

EST-2: Establish Process for measuring change in estuarine condition

Perfomance Measure	Outcomes	Indicator	Lead
Publication of State of the Bay within 5-year period using BCG	Improved knowledge of community about status of Alabama's estuaries and coastal habitats and emerging trends in their health	Trends in coastal resource management Improvements in reporting on state of resources	Science Advisory Committee

EST-2.1 Build a Biological Condition Gradient Framework for coastal Alabama

a) Define/refine indicators of ecosystem health.

Accomplishments:

- Developed several indicators currently being tested in D'Olive ✓

Things to Consider:

- Analysis of indicator success… Year three data collection
- Any researchers using data collected so far?
- How do we communicate indicators, established ranges? (i.e. excellent, above average, etc.)

EST-2.1 Build a Biological Condition Gradient Framework for coastal Alabama

b) Calibrate Landscape Disturbance Index to estuarine conditions (as alternative to impervious cover if deemed necessary).

Accomplishments:

- June 2015, presentation and discussion to SAC but no decision made. LDI not great for communicating but everyone agreed catchment vs. HUC 12 was better.

Things to Consider:

- Major activity of the SAC in next five years.
- Next steps?
- What is missing?

EST-2.1 Build a Biological Condition Gradient Framework for coastal Alabama

c) Develop/adopt indices of biological integrity for streams and rivers (and riparian buffers), freshwater wetlands and intertidal marshes and flats.

Accomplishments:

- Wetlands – WRAP, FQI, 3 years completed – HGM?
- Streams and Buffers – UWF work entering final year, habitat metrics and stability indexes, numeric criteria for condition needs revisit.
- What are next steps "e"? Ready for calibration? BCG needs revisit.

Things to Consider:

- Major activity of the SAC in next five years.
- Will we be able to calibrate this year?
- What is missing?

EST-2.1 Build a Biological Condition Gradient Framework for coastal Alabama

d) Determine numeric criteria for habitat condition for streams and rivers (and riparian buffers), freshwater wetlands, and intertidal marshes and flats.

Accomplishments:

- Wetlands – WRAP & FQI have criteria
- Streams and Buffers – Metrics developed, numeric criteria discussed. Calibration completed?

Things to Consider:

- Major activity of the SAC in next five years.
- What is missing?

EST-2.1 Build a Biological Condition Gradient Framework for coastal Alabama

e) Construct BCG framework and report on estuary condition.

Accomplishments:

Things to Consider:

- Major activity of the SAC in next five years.
- Still satisfied with framework?

EST-2: Establish a process for measuring change in estuarine condition

EST -2.1		Bu cc					MP
	a	De					efine ellent, e, Poor)
	b	Ca co ne					
	c	De an int					e a major s.
	d	De stu we					
	e	Construct BCG framework and report on estuary condition.					

Perfomance Measure	Outcomes	Indicator	Lead
Publication of State of the Bay within 5-year period using BCG	Improved knowledge of community about status of Alabama's estuaries and coastal habitats and emerging trends in their health	Trends in coastal resource management Improvements in reporting on state of resources	Science Advisory Committee

EST-3: Improve understanding of relationship between biological condition and provision of ecosystem services resulting from improvements in resources.

Perfomance Measure	Outcomes	Indicator	Lead
Demonstration of how reductions of stressors improve ability of ecosystem to provide service	Improved understanding of benefits and value of ecosystem restoration	Improvements in ecosystem services measured	Science Advisory Committee

EST-3.1 Manage system for multiple services.

a) Develop and test conceptual model that measures levels of ecosystem services related to changes in stressors utilizing D'Olive watershed restoration.

Accomplishments:

- Developed Monitoring Framework for best metrics of ecosystem function improvement. ✓
- Implemented monitoring in D'Olive. ✓

Things to Consider:

- Need analysis of D'Olive data as it is completed.
- Metrics for ecosystem services for D'Olive needs evaluation.
- What are next steps for "conceptual model" and is the data being collected currently useful for this exercise?

EST-3.1 Manage system for multiple services.

b) Predict changes in fish biomass related to changes in habitat quantity and condition.

Accomplishments:

Things to Consider:

- Would we see results yet from HECK SAC study?
- Do we have baseline conditions of fish biomass for D'Olive?
- Next steps?

EST-3.1 Manage system for multiple services.

c) Predict changes in water quality related to management of ecosystem services.
d) Predict impacts of water quantity and withdrawal on the biological condition and ecosystem services provided by the Mobile Bay estuary.

Accomplishments:

- USACE 3D WQ model suggested.

Things to Consider:

- What tools place valuation on ecosystem services, and how can they and the BCG guide coastal Alabama monitoring, restoration, and protection needs?
- Next steps?

EST-3: Improve understanding of relationship between biological condition and provision of ecosystem services resulting from improvements in resources.

Perfomance Measure	Outcomes	Indicator	Lead
Demonstration of how reductions of stressors improve ability of ecosystem to provide service	Improved understanding of benefits and value of ecosystem restoration	Improvements in ecosystem services measured	Science Advisory Committee

- Access to Water and Open Spaces
- Coastlines (Beaches and Other Shorelines)
- Fish
- Heritage and Culture
- Environmental Health and Resilience
- Water Quality