Ecosystem Services & NOAA's RESTORE ACT Science Plan



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Guiding Questions

- How do ecosystem health indicators feed into the development of ecosystem services science?
- What are the specific management contexts where ecosystem services valuation information can help to fill existing information gaps?
- Which approaches to stakeholder engagement should we pursue, and which partners should we collaborate with to accomplish this?
- What ecosystem services projects, in the Gulf or elsewhere, are considered most successful, and what were the keys to their success?

RESTORE Act

- RESTORE Act: 80% of penalties paid by responsible parties goes to Gulf Coast Restoration Trust Fund
- Funded federal programs to spearhead restoration efforts
- Section 1604 of the RESTORE Act authorizes NOAA to establish a Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology Program (NOAA RESTORE Act Science Program)

RESTORE Act Science Program

- Mission: *"…to carry out research, observation, and monitoring to support….the long-term sustainability of the ecosystem, fish stocks, fish habitat, and the recreational, commercial, and charter fishing industry in the Gulf of Mexico."*
- NOAA must coordinate with the United States Fish and Wildlife Service and consult with the Gulf States Marine Fisheries Commission and Gulf of Mexico Fishery Management Council
- Priority shall be given to integrated, long-term projects that address management needs
- Science plan builds on prior Gulf science and research needs assessments and stakeholder engagement

Science Plan Overview

- Released for public comment from Oct 30 to Dec 15
- 10 long-term priorities for the Program
- Plan covers program implementation, partnerships, coordination

Other Components of Plan:

- Legislative requirements
- Vision and mission
- Geographic scope
- Approach to engagement
- Program management

Science Plan Research Priorities

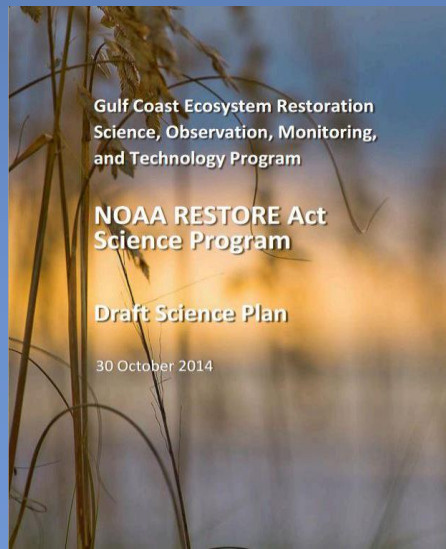
- **Increase comprehensive understanding of Gulf ecosystem services**
- Management-ready ecosystem models
- Improved climate change and weather effects on Gulf ecosystems
- Watershed, sediment, and nutrient impacts on coastal habitats/ecology
- LMR, food webs, habitats, protected areas, and carbon flow
- Long-term trends on status and health of ecosystem
- **Indicators of Gulf Coast environmental and socioeconomic conditions**
- Decision support tools to monitor and manage habitat, LMR, wildlife
- Integrated existing and planned Gulf monitoring programs
- Advanced engineering, physical, chemical, biological, and socioeconomic technologies to improve monitoring

Ecosystem Services Priority:

Increase comprehensive understanding of Gulf ecosystem services, resilience, and vulnerabilities of coupled social and ecological systems

- Outputs
  - Comprehensive inventory of habitats and the ecosystem services they provide
  - Quality and quantity assessment of Gulf of Mexico habitats
  - Rating system to define the quality of ecosystem services
  - Report on the socioeconomic and cultural linkages with ecological processes
  - Tools for assigning values to ecosystem

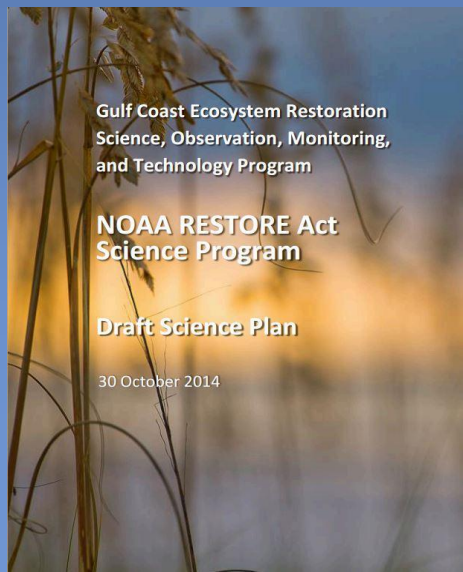
- Outcomes:
  - managers understand the linkages among habitats, services, and human well-being
  - management/decision-making includes consideration of ecosystem services.



Indicators Priority:

Develop, identify, and validate system-wide indicators of Gulf Coast environmental and socioeconomic conditions

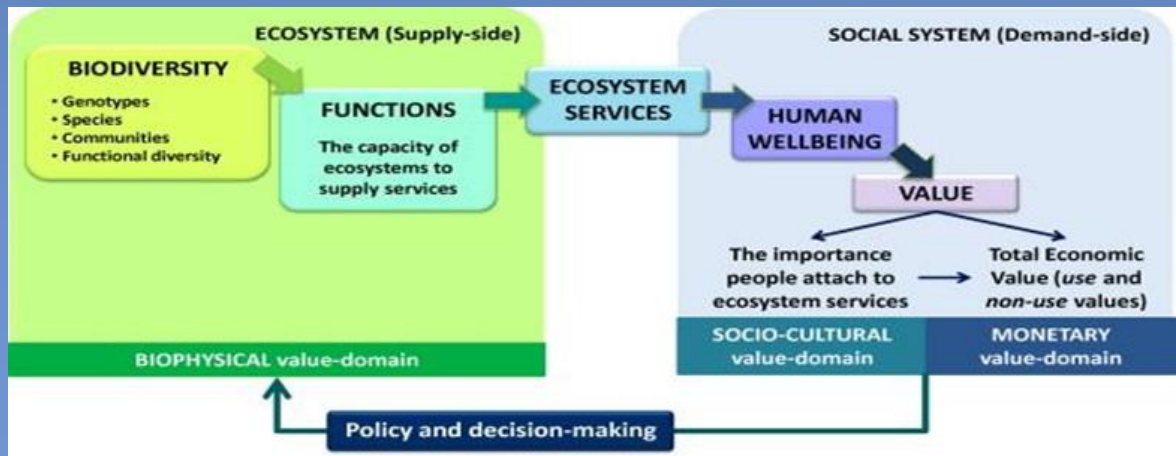
- Outputs
  - Analysis of indicator utility to represent state of ecosystem and human health
  - Standardized set of indicators for use in State of Health reports
  - Guidance manual that defines protocols for use and design of indicators
- Outcomes:
  - managers consider indicators in decision-making
  - coastal communities use State of Health reports to improve ecosystem/human health



Ecosystem Services & Indicators

- Need to understand both how restoration actions promote ecosystem function AND how society impacts and benefits from those functions

- Socio-economics is integrated throughout the whole plan and is key to understanding:
  - what restoration gets us (locally, regionally, as a nation)
  - how stakeholders interests are well-balanced and what trade-offs to grapple with
  - with limited restoration dollars, what services are most important to restore and where should we concentrate our efforts?
  - how to monitor the societal outcomes of our restoration efforts?



Ecosystem Services at NOAA

- Policy work:
  - Interagency
    - FRMES
    - CGIES
  - NOAA:
    - NHCT
    - ES Strategic Approach
- LEAPing Ahead
  - NERRS projects
  - Business Roundtables

NOAA Best Practices for ESV

- Explicitly connect the biophysical and socio-economic components of ESV
- Ensure that ESV work has clear management/policy context
- Clarify as to whether ESV is directed towards a communications or management goal
- Measure changes in ES rather than static values
- Consider the full ecosystem services spectrum rather than isolated values

Thank You

Guiding Questions (Repeated)

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