

A background image of a sunset over a body of water. The sun is low on the horizon, casting a golden glow across the sky and reflecting on the water. There are some clouds in the sky, and a dark silhouette of a forest or trees is visible along the horizon line.

**COMMENTS AND RECOMMENDATIONS
ON THE NOAA RESTORE ACT SCIENCE PROGRAM'S
*PERFORMANCE METRICS AND COORDINATION PLANS***

Draft report submitted to:

Science Advisory Board National Oceanic and Atmospheric Administration

Draft report submitted by:

Gulf Coast Ecosystem Restoration Science Program Advisory Working Group (RSPA WG)

**Dr. Robert Dickey
SAB Meeting
Washington D.C.
October 30, 2015**

Background

Charge to RSPAWG: Review RESTORE Science Program (RSP) draft *Performance Metrics* and *Coordination Plans* and provide comments and recommendations to NOAA Science Advisory Board (SAB).

Process:

- RSPAWG convened a 2.5-day workshop on June 10-12 at the NOAA Southeast Regional Office in St. Petersburg, FL with representation by NOAA SAB and RSP leadership and staff.
- Day one was devoted to reviewing the draft RSP *Performance Metrics Plan* and day two reviewing the RSP *Coordination Plan*. *The morning of day three was devoted to consolidating assessments* and planning the report.
- Numerous metric models were explored, including the Logic Model framework proposed in the NOAA RSP draft plan.
- RSPAWG Co-chairs reviewed all comments and recommendations from the meeting and drafted the initial report for working group review.
- The final report summarizes all comments and recommendations related to the *Performance Metrics Plan* and the *Coordination Plan*.

Summary Comments

It is critical to define how NOAA will measure performance of the RESTORE Science Program activities to meet the RESTORE Act's vision and mission in the Gulf of Mexico, and inform coordination and collaboration within NOAA and with external partners.

The *Performance Metrics Plan* should incorporate quantitative and qualitative measures to assess the magnitude, quality and impact of long-term outcomes (e.g. restoration of healthy ecosystems).

The *Coordination Plan* should address integration efforts both within NOAA and among NOAA's external RESTORE Act partners.

The two plans must be strongly and clearly integrated to ensure that performance assessment and coordination promote the best available science and development of decision-support tools for a broad range of end users to support the RESTORE Act's vision and mission in the Gulf of Mexico

Performance Metrics

Purpose: The Program's draft performance metrics will assess progress toward the integrative, holistic understanding and management of, and restoration activities within the Gulf of Mexico (GoM) ecosystem.

The Program's draft *Performance Metric Plan* proposed quantitative measures for ten long-term research priorities.

Example from the draft *Performance Metric Plan*:

Priority - Develop, identify, and validate system-wide indicators of environmental and socioeconomic conditions.

Metrics

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of decision support tools/information products that translate research outputs into ready-to-use information for resource managers
- number of peer reviewed publications
- performance review rating of “satisfactory” or higher

Performance Metrics

RSPA WG recognized that the number and breadth of activities, outputs and outcomes called for in the RSP plan presents a challenge for developing clear, concise and integrated performance measures. However, the membership concluded that the proposed quantitative metrics alone would be insufficient to measure progress toward integrative, holistic understanding and management of, and restoration activities within the Gulf of Mexico (GoM) ecosystem.

Quantitative measures are attractive indicators, however, measuring change in complex socio-ecological systems also calls for qualitative descriptive indices of performance.

Qualitative indices will better inform the iterative nature of program objectives in future funding opportunities and provide flexibility to include outputs that are as yet unknown.

The RSPA WG recommends that the final *Performance Metric Plan* should **Integrate quantitative and qualitative performance measures** to assess progress toward Restore Act goals and outcomes.

Performance Metrics

The RSPAWG recommends consideration of the U.S. National Science and Technology Council (mandated?) Research Performance Progress Report (RPPR) framework and developed a draft set of metrics that are consistent with RPPR elements.

The draft metrics are:

- Uniformly applicable to the ten long-term research priorities;
- A balance of qualitative and quantitative questions;
- Distributed across the research workflow needed to address long-term priorities;
- Hierarchical in structure;
- Suitable for broad audiences;
- Amenable to socio-economic and behavioral sciences.

The RPPR metrics should enable a more thorough assessment of progress across the RESTORE Science Program toward integrative, holistic understanding and management of the Gulf of Mexico ecosystem.

Draft RPPR Framework Metrics

ACCOMPLISHMENTS: What was done? What was learned?

What are the major goals and objectives?

- *List major goals and objectives as approved by the agency;*
- *Identify milestones or target dates and show actual completion or percentage of completion.*

What *activities, outputs and outcomes* were accomplished under these goals and objectives?

- *List publications, data bases, models, new technologies or methods, and other products;*
- *Explain significant results, key outcomes or other achievements resulting from the research;*
- *Link key findings to specific publications and products;*
- *Identify stated goals not met and adaptive management strategy to correct trajectory.*

What collaborating individuals and organizations worked on the project?

- *Identify individuals and organizations that collaborated or coordinated on the project;*
- *Describe how partner organizations collaborated or coordinated.*

Draft RPPR Framework Metrics

(continued)

How were results disseminated to communities of interest?

- *List and enumerate the entities to which results were disseminated;*
- *Describe results communicated and methods of communication other than scientific publication (e.g., presentations, print news media, web sites, public meetings, etc.).*

What is the impact?

Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the program relative to:

- *Increasing the body of scientific knowledge and technology;*
- *Improving public knowledge, attitudes, skills, and abilities;*
- *Changing behavior, management practices, decision making, policies (including regulatory policies), or social actions;*
- *Altering social, economic, civic, or environmental conditions;*
- *Enlarging the pool of people trained to develop knowledge and technology or put it to use;*
- *Improving the physical, institutional, and information resources available to stakeholders.*

What do you plan for the next reporting period to complete remaining goals and objectives?

- *List activities, objectives and timelines for accomplishment*

Coordination Plan

The RSPAWG identified three critical reasons why effective coordination efforts and a *Coordination Plan (CP)* are integral to the RESTORE Act Science Program:

- 1) The authorizing language of the RESTORE Act that the Program must
 - establish and carry out the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology program
 - avoid duplication of other research and monitoring activities
 - coordinate projects and activities between the program and other Federal and State science and technology programs, as well as with the centers of excellence.
- 2) Help ensure that coordinated activities
 - minimize the duplication of effort
 - identify and fill gaps in needed science
 - facilitate sharing and integrative analyses of science findings and their application to management.
- 3) The goal of effective intermediate-term management outcomes and long-term restoration outcomes require that the GoM ecosystem and connected ecosystems are understood in an integrative, holistic manner and that understanding results from coordinated efforts.

Coordination Plan

The RSPA WG supports the assertion of the NOAA Draft *CP* that efforts must:

- Be more comprehensive and active than a simple awareness of RESTORE Act activities.
- Be inclusive of:
 - Internal NOAA programs, needs and activities;
 - RESTORE Act established monitoring, science and management activities;
 - External entities with existing and/or planned monitoring, science and management activities in the GoM;
 - Entities with a need for science and decision-support tools for management or restoration of the GoM ecosystem.



Coordination Plan

Challenges To Coordination Efforts:

- No singular entity has authority to coordinate across all initiatives;
- Individual program restrictions on funded activities and eligibility;
- Logistical limitations, time and resources available to support coordination efforts;
- The need for transparency and potential conflicts of interest.

RSPAWG identified additional challenges:

- The need to include all “players” within NOAA, other established RESTORE Act activities, and end-users of science and decision-support tools for management and restoration;
- Many players are federal, state or local agencies, institutions or universities located in the GoM region, while others reside outside of the GoM region;
- The *CP* must tie all of the individual components, i.e. “little project pieces” together;
- It is as important to keep track of the smaller activities as it is the largest of activities, because all the activities, science and management needs are important.

Coordination Plan - RSPA WG Recommendations

RSPA WG supports coordination activities as identified in the NOAA Draft Program *Coordination Plan*:

- *Ad hoc Coordination Forum* led by the Program.
- Regional Funders Forum
- Restore Science Program Advisory Working Group
- Workshops, conferences and symposia to support broad to specialized topical science, management, and science-to-management needs.

RSPAWG recommendations for successful coordination:

- The *Performance Metrics Plan* must include both quantitative and qualitative metrics to assess the quality and impact of coordination efforts;
- A crosswalk between RESTORE Act and other programs (e.g. GoMRI) is critical, because there are many programs involved in GoM research and recovery;
- Implement a mechanism for RESTORE Act funding partners to coordinate activities and share draft Federal Funding Opportunity (FFO) announcements.
 - The development and release of a joint 18 to 24 month schedule of FFO announcements would facilitate planning and collaborations among researchers;
- Develop and maintain an information portal containing metadata on all RESTORE Act funded projects regardless of the funding source.
 - Evaluate the utility of the Deepwater Horizon Project Tracker;
- Encourage all RESTORE Act funded activities to use consistent protocols for monitoring / observing activities and data management efforts;
- Utilize existing and well-respected avenues for outreach including NOAA's National Estuarine Research Reserve System , Sea Grant, and EPA's National Estuary Programs.

Summary

The RSPA WG commends the efforts of the NOAA RESTORE Act Science Program to develop a comprehensive set of performance metrics and promote coordination of activities.

The RSPA WG recommends that:

- The Performance Metrics Plan be revised to include both quantitative and qualitative metrics assessing the magnitude, quality and impact of long-term outcomes (e.g. restoration of healthy ecosystems).
- The Coordination Plan address integration efforts both within NOAA and among NOAA's external partners.

Comments and Questions



Supporting Slides



The plan establishes ten long-term research priorities, which will guide how the Program invests its funds. Long-term research priorities and the integrated metrics suggested by the NOAA Restore Science Program Office are:

Priorities and metrics #1-4

Comprehensive understanding of ecosystem services, resilience, and vulnerabilities of coupled social and ecological systems

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of Gulf of Mexico habitats with completed inventory of ecosystem services the habitat provides
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Construct management--ready and accessible ecosystem models

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of decision support tools/information products that translate research outputs into ready--to--use information for resource managers
- number of Gulf of Mexico modeling advancements
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Improve monitoring, modeling, and forecasting of climate change and weather effects on the sustainability and resiliency of the ecosystem

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of decision support tools/information products that translate research outputs into ready--to--use information for resource managers
- number of improvements to the characterization of living coastal and marine resource distribution and habitat use
- number of Gulf of Mexico modeling advancements
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Comprehensive understanding of freshwater, sediment, and nutrient flows and impacts on coastal ecology and habitats

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of Gulf of Mexico modeling advancements
- number of improvements in our understanding of the distribution, movement and impact of freshwater, sediment and nutrients in the Gulf of Mexico
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Continued long-term research priorities and the integrated metrics suggested by the NOAA Restore Science Program Office

Priorities and metrics # 5-10

Comprehensive understanding of living coastal and marine resources, food web dynamics, habitat utilization, protected areas, and carbon flow

- number of improvements to the characterization of living coastal and marine resource distribution and habitat use
- number of synthesis studies focused on the Gulf of Mexico
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Develop long--term trend and variability information on the status and health of the ecosystem, including humans

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of improvements to observing and monitoring in the Gulf of Mexico, including management of observing and monitoring data
- number of synthesis studies focused on the Gulf of Mexico
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

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

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of decision support tools/information products that translate research outputs into ready--to--use information for resource managers
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Develop decision--support tools to assist resource managers with management decisions planned to sustain habitats, living coastal and marine resources, and wildlife

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of decision support tools/information products that translate research outputs into ready--to--use information for resource managers
- number of improvements to the characterization of living coastal and marine resource distribution and habitat use
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Network and integrate existing and planned data and information from monitoring programs

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of improvements to observing and monitoring in the Gulf of Mexico, including management of observing and monitoring data
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher

Develop and implement advanced technologies to improve monitoring

- number of resource management or restoration decisions that consider results from Program sponsored research
- number of improvements to observing and monitoring in the Gulf of Mexico, including management of observing and monitoring data
- number of peer--reviewed publications
- performance review rating of “satisfactory” or higher