

GUIDANCE AND CHARGE TO REVIEWERS

Review Panel

Members of the Review Panel include technical experts in different fields, program directors, and users of information. We have tried to balance the composition of the Review Panel, considering affiliation (Federal and non-Federal), scientific expertise, and stakeholders. We do not expect each panel member to have command over the entire spectrum of the NCCOS Marine Spatial Ecology (MSE) portfolio. We will provide adequate time each day for the panel members to discuss and deliberate on the information provided and come up with their own judgement and conclusions.

Purpose of the Review

NOAA requires external, peer-reviews of its research and development programs on a periodic basis. Such reviews can play a key role in program planning, management and oversight by providing feedback on both program design and execution. NCCOS is further interested in evaluation of its information products and their delivery to users, and engagement with stakeholders. For the MSE portfolio review, we anticipate the review panel to:

1. Assess NCCOS' role as a federal entity to analyze and improve ecological and biogeographic assessments, apply new mapping and modeling technologies, and develop information products for prudent and time-sensitive decision making.
2. Evaluate NCCOS' role in delivering practicable research products, data and information, and engaging stakeholders.
3. Appraise NCCOS management for funding pre-eminent research and fostering interagency partnerships that produce actionable results, engaging stakeholders and transitioning its products and services for the management of coastal and marine resources.
4. Offer observations and make recommendations to better position NCCOS for improving its habitat mapping and biogeographic assessments, including modeling.

Program Evaluation Criteria

Following enactment of the Government Performance and Results Act (GPRA) in 1993, the National Academies' Committee on Science, Engineering, and Public Policy produced a report on the unique purpose of federal research programs and inherent challenges in their evaluation. The committee concluded that federal research programs could be evaluated using three criteria: quality, relevance, and leadership, and noted that such evaluations should consider factors beyond peer review of research publications by scholars in the field (National Academy of Sciences, 2001).

In its 2008 Guide to the Program Assessment Rating Tool (PART) and citing the National Academies report, the US Office of Management and Budget (OMB) identified relevance, performance, and quality as criteria that can be used to assess the effectiveness of federal research and development (R&D) programs. This approach was further endorsed in a 2008 NRC report, which stated that research program efficiency must be evaluated in the context of relevance, effectiveness, and quality.

NOAA, through an Administrative Order (NAO 216-115A, dated October 3, 2016, and its previous editions), has adopted Quality, Relevance and Performance as core evaluation criteria. The NAO also calls for a periodic evaluation of research, development and transition activities as well as outreach efforts and stakeholder engagement.

In the context of this review, these criteria may be described in the following terms:

Quality is a measure of soundness, accuracy, and reproducibility of a specific body of research. It is the most widely and traditionally used criterion evaluated by peer review committees. In general, it refers to the merits of research and development (R&D) within the scientific community – research publications, awards, innovations, and patents – and implies adherence to values of objectivity, fairness, and accountability. It also requires evidence of established procedures for competitive, merit-based research funding and assuring scientific integrity.

Relevance refers to the value and significance of the NCCOS / MSE portfolio to NOAA's mission, and the benefits of related products and services to stakeholders and broader society. OMB refers to relevance as "impact" of a program, i.e., measurable analysis of how NCCOS products and services accrued societal benefits, and who uses the products and how. In essence, relevance asks, "What would not have happened if NCCOS did not exist, and how much would society have missed?" During a review, program personnel identify public benefits of the program, including added benefits beyond those of any similar effort that has been by others. Benefits include increasingly more skillful and reliable program output, technology, or methodology that satisfies legal mandates and user needs, and provides effective expert counsel and technology transfer, as well as new options for the future.

Performance refers to an ability to manage in a manner that produces identifiable results effectively (achieving desired results) and efficiently (with maximum productivity and minimum wasted effort or money). This is evaluated by program management structures that produce the desired results, guidance, or framework for tracking progress toward agency's strategic goals and objectives, flexibility to address events or changing priorities, interaction with stakeholders, and extramural collaboration.

Reviewers' Responsibility

NCCOS will present information relevant to its MSE portfolio during the course of the review, primarily as lecture presentations and in the Briefing Book. Each member of the Review Panel will use that information and any ensuing discussion to come up with independent observations, evaluation, and recommendations on different aspects of the portfolio. We have formulated the following questions to guide your review and to conform to the three core evaluation criteria:

Quality

1. How effective are NCCOS studies in developing (a) new and validated analytical methods and technologies in wide use, and (b) advanced tools and techniques to map, validate, deploy and distribute geospatial products (e.g., predictive models, new sensors and acquisition vehicles, and map services)?
2. How well are NCCOS scientists recognized as leaders in their scientific disciplines for the quality of their contributions (e.g., authors of peer-reviewed publications; external requests for assistance; invited lectures; awards and recognition; and national and international leadership positions in the scientific community)?

Relevance

1. How well has the portfolio supported noteworthy achievements in improving coastal and ocean mapping and/or conservation?
2. How effective have NCCOS products been in informing Federal guidance and decision making?
3. Is there evidence of the application of NCCOS-produced scientific knowledge for improving preparedness, management and/or response to events and issues handled by other federal, local, state, tribal, and regional governments?
4. How effective is the NCCOS biogeographic portfolio in assisting federal partners meet statutory requirements (e.g., Essential Fish Habitat, Endangered Species Act, the National Marine Sanctuaries Act, Coral Reef Conservation Act, Federal Partners' mandates, etc.)?

Performance

1. How does NCCOS assure – and does it have procedures for – funding preeminent research and impactful science?
2. How well does NCCOS execute its research and related studies in an efficient and effective manner given appropriated resources?
3. How effectively does NCCOS utilize collaboration and partnerships to achieve desired outcomes?

You may propose additional questions to NCCOS. At the review, you will be free to ask these and any additional questions, as appropriate. Given the scope of planned presentations as well

as anticipated use of the panel's recommendations, the "Relevance" criterion is the more important one.

Panel Chair's Responsibility

The chair serves as the primary point of contact for the review panel and communicates with other members of the panel to articulate the three core evaluation criteria (quality, relevance, and performance); examines, in consultation with the panel and prior to the review, a set of scientific questions with sufficient breadth and depth that cover the purpose and objectives of the review; introduces the panel members to the audience at the start of the review; facilitates the question / answer at the end of each presentation; leads the panel discussion on the day's proceedings at the end of each day and suggests any changes or modifications; determines a schedule for producing review products; and provides his / her report detailing observations and recommendations of the review topics.

The panel chair may also prepare a separate report on the program review proceedings (e.g., what happened, salient issues) and outlining recurring themes or notable exceptions during presentations or in panel members' reports.

Panel members, including the chair, will present their preliminary findings to NCCOS and NOS leadership on the last day of the review.

Teleconferences with the Review Panel before the Review

Two teleconferences will be scheduled to discuss the review process and answer any questions from the review panel members. The first of these teleconferences will occur in June 2019, and include review and discussion of the charge to the review panel and the draft agenda for the review. This will also be an opportunity to discuss any questions the reviewers may have on the review process or to review any logistics or preparatory material. The teleconference attendees will include members of the review panel, NCCOS Director, and primary points of contact for the review.

The second teleconference will take place approximately two weeks before the review. It will cover information provided in the Briefing Book, materials referenced on the website, the final review agenda, the review reports, and resolution of last-minute details.

Format

The review will be structured with presentations by NCCOS management and scientists, as well as external partners, who will provide background information on ongoing studies, research results, applications and value of information products and expert counsel to partners and stakeholders. These presentations will address aspects of the three core evaluation criteria: quality, relevance and performance. Note that each presentation will not necessarily address all three core evaluation criteria. Copies of all presentations will be provided in the Briefing Book

to each reviewer well in advance of the review. Each presentation will be followed by a question and answer session.

The Review Panel will have a minimum of one hour for deliberations each day in a “closed session.” In addition, the panel members will have independent time to articulate their respective observations and findings.

Products

As a member of the review panel, you will use your scientific expertise and professional judgement to provide independent observations, evaluation, and recommendations on different aspects of habitat mapping, biogeographic assessments, and modeling carried out by NCCOS. You will also consider product value and utilization, and use of emerging mapping technologies. Each member of the Review Panel will also prepare notes on his/her observations, comments and recommendations that, at a minimum, address the three core evaluation criteria: Quality, Relevance, and Performance. Panel members will present their preliminary finds to NCCOS and NOS leadership (Day 3 of the review). Individual written reports will be due within 60 days after the review.

No consensus report is required. The panel chair may also prepare a separate report on the program review proceedings (e.g., what happened, salient issues) and outlining recurring themes or notable exceptions during presentations or in panel members’ reports. Preliminary findings from that report may be made in the Review Panel’s presentation to NCCOS and NOS leadership (Day 3 of the review) and in a written report (due within 60 days after the review). NOAA procedures allow for “evaluation ratings” with a unipolar construct for program components, e.g., Exceeds Highest Expectations, Exceeds Expectations, etc. However, we are not requiring the panel members to do that. Also, note that answering the question merely by “yes” or “no” will not be sufficient in conveying your observations, assessment and recommendations and should be avoided.

Materials for the panel

NCCOS will provide presentations made by staff and background materials in order to facilitate the review. All materials (e.g. power point presentation, word files, pdfs) will be titled such that the file names indicate the main topic of review or agenda item. Whenever appropriate, materials will be linked to specific agenda items. In addition, NCCOS will provide a Briefing Book to each member of the Review Panel in digital format and as a hardcopy document at least two weeks prior to the review.

Points of Contact

Jawed Hameedi (Jawed.Hameedi@noaa.gov) and John Christensen (John.Christensen@noaa.gov) are your primary contacts for this review. Their respective telephone numbers are 240-533-0313, and 240-533-0378.

References

- i. National Academies of Sciences, Engineering, and Medicine (2017) *Fostering Integrity in Research*. Washington, DC: The National Academies Press. Washington, DC, 284 pp.
- ii. National Academy of Sciences (2001). *Implementing the Government Performance and Results Act for Research*. National Academies Press, Washington, DC, 208 pp.
- iii. NRC (2008) *Evaluating Research Efficiency in the U.S. Environmental Protection Agency*. The National Academies Press, Washington DC, 152 pp.
- iv. OMB (2008) *Guide to the Program Assessment Rating Tool*, Guidance No. 2008-01, Office of Management and Budget, Washington, DC, 89 pp.

