

2024 NCCOS Habitat Mapping Program Review Charge to Reviewers

Review Panel

You have been invited to be a part of the review panel for the NCCOS 2024 Annual Science Review. 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 habitat mapping & characterization 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 judgment and conclusions.

Scope: NCCOS will focus the 2024 Annual Science Review on the internally- and externally-funded science activities within the habitat mapping portfolio. NCCOS has instituted a multi-faceted approach to habitat mapping which incorporates key, inter-connected mapping activities and product development steps. This approach positions NCCOS as a unique, experienced, and technically advanced provider of science-based products to support resource managers and fill information gaps within coastal and marine ecosystems. The habitat mapping portfolio concentrates on six cutting-edge focal areas which include: 1) mapping coordination and spatial prioritizations, 2) remote sensing and signal processing, 3) uncrewed systems for mapping, 4) image analysis, artificial intelligence, and deep learning, 5) predictive habitat mapping, and 6) data management, visualizations and applications.

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 informational products and their delivery to users, and engagement with stakeholders. For the habitat mapping portfolio review, we anticipate the review panel to:

1. Appraise the size and direction of the portfolio, including the mix of projects, funding, staffing, and infrastructure.
2. Assess NCCOS' role as a federal entity to provide applied habitat mapping and characterization products. Are we leveraging the appropriate scope and quantity of external capabilities to enhance and support the portfolio?
3. Evaluate NCCOS' role in delivering relevant and usable research products, data and information, and engaging stakeholders.
4. Offer observations and make recommendations to better position NCCOS for improving its habitat mapping and characterizations.

Program Evaluation Criteria

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.

Questions to consider:

1. How well are NCCOS scientists and program managers recognized as leaders in their scientific disciplines for the quality of their contributions (e.g., authors of peer-reviewed publications; congressional briefings; invited lectures; awards and recognition; and national and international leadership positions in the scientific community)?
2. 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)?

Relevance refers to the value and significance of the NCCOS habitat mapping 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.

Questions to consider:

1. How well has the portfolio supported noteworthy achievements in improving coastal and ocean mapping?
2. How effective have NCCOS mapping products been in informing Federal guidance and decision making?

3. Have NCCOS tools, services, or research been effectively used by federal, local, state, tribal, and regional governments to improve their preparedness, management and/or response to various events and issues?
4. How effective is the NCCOS habitat mapping 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 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.

Questions to consider:

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?
4. How effective are NCCOS roles in working with end-users and partners to ensure that data outputs and tools align with external priorities and applications?

Given the scope of planned presentations as well as anticipated use of the panel's recommendations, the "Relevance" criterion is the most important one. Prior to the review, the reviewers may suggest additional criteria, and at the review, each reviewer will be free to ask additional questions as appropriate.

Anticipated Products

Each member of the review panel will use her / his scientific expertise and professional judgment to provide independent observations, evaluation, and recommendations on different aspects of the NCCOS habitat mapping portfolio, including product value and utilization.

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. For convenience, a tabular format is provided for recording comments on different aspects of the review ([see attached](#)).

Panel members will present their preliminary finds to NCCOS and NOS leadership (Day 2 of the review). Individual written reports, following the format of the 2019 Report ([see attached](#)), will be

due within 60 days after the review. ***While no consensus report is required***, the review panel chair may choose to summarize important or common findings from the review in a written report (due within 60 days after the review).

NOAA procedures allow for “evaluation ratings” with a bipolar 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.

Review Report

Individual reviewer reports will be compiled in a document for use by the NCCOS director and/or program managers. The document will be used for planning of future science and related activities and improving the performance of current and near-term projects. Individual review reports will not be made public, and will only be used by NCCOS as background for the final report. Internal distribution of the individual reports will be limited.