

**CHARGE TO REVIEW THE TECHNICAL SUPPORT DOCUMENT
“CORAL REEF BIOLOGICAL CRITERIA: USING THE
CLEAN WATER ACT TO PROTECT A NATIONAL TREASURE”**

Background: Coral reef ecosystems are valuable economic, ecological, and aesthetic resources that have been declining worldwide from interactive effects of climate change and human activities, particularly land-based pollution. By Presidential Executive Order (13089) the multi-Agency U.S. Coral Reef Task Force was established to lead, coordinate, and strengthen U.S. actions to better preserve and protect coral reef ecosystems. EPA’s responsibility as a member of the Task Force is to protect coral reefs from adverse effects of anthropogenic activities under authority of the Clean Water Act (CWA).

Water quality standards for biological condition provide an opportunity to reverse the decline of coral reef condition. Although chemical and physical standards are intended to protect biota, they are not always sufficient. Biological standards, by tracking the condition of reef organisms, establish a direct process to determine whether a waterbody is achieving its biological goals. Biocriteria are complementary--they do not supersede or replace physical and chemical criteria. Biocriteria may be particularly important for coral reefs because bioassessments reflect the integrated effects of multiple and cumulative stressors, detect impairment that might be missed by physical and chemical criteria (e.g., overfishing or habitat loss), resonate with managers and stakeholders, and have been found (at least in freshwater systems) to be cost effective.

EPA has produced a series of reports about coral reef biocriteria, but to date, states and territories have yet to implement them. The coral reef managers generally function in the natural resource manager model (e.g., National Parks, National Marine Sanctuaries, etc.) and their authority extends primarily to in-the-water management approaches such as marine protected areas, mooring buoys, fishing restrictions, etc. The Clean Water Act, and the history of biocriteria in freshwater and estuarine systems, holds promise to overcome this limitation. In addition, EPA’s Notice of Data Availability (NODA) - [EPA-HQ-OW-2009-0224; FRL-8892-5] Ocean Acidification and Marine pH Water Quality Criteria and EPA’s agreement with the Center for Biological Diversity on ocean acidification, committed to the release of this document “to aid States and Territories in their development, adoption, and implementation of coral reef biocriteria in their respective water quality standards”. The Technical Support Document “Coral Reef Biological Criteria: Using the Clean Water Act to Protect a National Treasure” will provide a framework for coral reef managers to develop coral reef biocriteria as water quality standards under the CWA.

The purpose of this review is to obtain expert feedback and comments on the draft Technical Support Document “Coral Reef Biological Criteria: Using the Clean Water Act to Protect a National Treasure”. We would like to know whether the document provides a useful framework for coral reef managers to develop coral reef biocriteria.

Please provide written comments to EPA’s Peer Review Coordinator, Virginia Houk, **by June 7, 2010**. Your review may be sent by regular mail to the address below, by e-mail to houk.virginia@epa.gov or by fax to 919-685-3250.

The document for review will be provided as an Acrobat .pdf file.

Charge Questions:

- 1) Does the report accurately convey the potential of the Clean Water Act to protect coral reefs? If not, why?
The report communicates fully the ability of the CWA in protecting coral reefs. This is stated and reiterated throughout the report.
- 2) Does the report provide a useful framework for coral reef managers to develop biocriteria? Please identify any deficiencies.
In chapter 5 the probabilistic sampling design is clear. The open source software available to managers to calculate summary statistics makes it simple and easy for those with limited statistical background. The document clearly explains the use of the BCG to rank sites along the pristine to severely degraded gradient. We have also found that most factors follow a continuous gradient. They don't all fall into distinct ranges.
This is a constructive framework but details will have to be worked out by managers. These details such as indicator selection and reference site criteria which will be different in different areas may affect the overall efficacy of the program.
- 3) Are the steps necessary for biocriteria development clearly explained and logical? Please recommend improvements.
Table P-2 the top ten steps for establishing a coral reef biocriteria program summarizes the necessary steps in developing biocriteria. The details are then included in the body and appendices. The sections on responsible parties and the reference to chapters where additional information can be found are critical in development.
- 4) Is the presentation, including tables and graphs, clear, relevant and concise? Please recommend improvements.
Tables and graphs are appropriate in summarizing the more detailed text. Use of color to separate sections within a table makes it more comprehensible. Boxes defining key terms, important concepts and legislative citations simplify contents and allow for greater understanding.
- 5) Has the appropriate literature been cited? Are there publically available, peer-reviewed papers that have not been included, but that should be? Please provide copies of any papers or reports for consideration.
The works cited and additional resources that may be of interest are comprehensive and cover the subject of biocriteria thoroughly.

If you have questions concerning the document or the charge, please contact Virginia Houk at the address listed below.

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