



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
RESEARCH AND DEVELOPMENT

Dr. James H. Johnson, Jr.
Chair, Board of Scientific Counselors
College of Engineering, Architecture, and
Computer Sciences
Howard University
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Dear Dr. Johnson:

The Office of Research and Development would like to take this opportunity to thank you and the rest of the members of the Board of Scientific Counselors (BOSC) Work Group for your May 2005 review of the EPA ORD National Coastal Condition Report II. Enclosed with this letter is our response to the comments raised in your letter of May 3, 2005. Please feel free to contact me if further information is needed.

We are pleased that the BOSC is supportive of this important multi-agency report and the direction in which the program and report series is moving. Again, thank you for your advice to ORD.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "William H. Farland".

William H. Farland, Ph.D.
Acting Deputy Assistant Administrator for
Science



Office of Research and Development's (ORD) Response to the
Board of Scientific Counselors (BOSC) May 2005 Final Letter
Report that Reviews the Second National Coastal Condition Report

BOSC WorkGroup:

Dr. James Clark, Chair

Dr. Herb Windom

Dr. Clifford Duke

Submitted:

Dr. Kevin Summers

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Ecological Research Program

Office of Research and Development

General Comments:

1. *The writing style and level of detail in the EPA Coastal Condition Report raise questions regarding intended audience.*

The National Coastal Condition Report II is intended for several audiences as the BOSC review suggests. At the request of the Office of Water, a partner in the report, the report was constructed to have an Executive Summary intended for multiple audiences – Congress, environmental managers, and the informed public – while the body of the report is designed with environmental managers and the informed public as its audience.

2. *Nevertheless, the second Coastal Condition Report as a whole is a useful compendium of information on the condition of the nation's coastal environment with respect to human uses and to some extent with respect to ecological condition.*

No comment necessary.

3. *The Coastal Condition Report is very effective in communicating the factual findings of coastal monitoring nationally.*

No comment necessary.

4. *With regard to PART, the Report provides a clear example of the outcome of monitoring efforts.*

No comment necessary.

5. *The figures, tables, and text boxes clearly and concisely report summary data and complement the text.*

No comment necessary.

6. *Future reports, however, could go a step further by indicating how the information provided can be incorporated in planning and strategies for continued efforts.*

Clearly, many additional questions or assessments could be addressed with the provided information. However, the intent of the report is simply to provide the assessment of estuarine condition, not to prioritize research needs or regulatory needs. In addition, the length of the report (over 200 pages) is already long and adding additional topics would make the report make too long. The authors do not see any presently included topics that

could be eliminated to create additional space (allowing the incorporation of new topics). One option could be the development of a companion report that addresses these prioritization needs including the gaps in our understanding of the links between monitoring programs and the quality of the ecosystem services revealed by the data.

7. *(1) How might more extensive or complete data affect the conclusions?*

There is a section in the introduction that addresses the shortcomings of the data presented in the report. This section presents the argument of whether additional data would improve or alter the report's conclusions. The authors will, in future reports, address this question more completely.

8. *Future reports will be more useful, and better address PART, if the authors tailor the report to their intended clients (audiences), and address how to use the research outputs to affect outcomes and environmental results.*

The National Coastal Condition Report is tailored for its intended audience(s) – those intended to use condition assessments to develop policy, funding decisions, and implement programs; namely, Congress, environmental managers, and the informed public. If a report is needed to address how to use the results reported in the NCCR2, it should be developed as a secondary companion document.

9. *This report is a good example of successful cooperation and coordination among environmental agencies to develop a dataset where information can be pooled to meet common objectives.*

No comment necessary.

10. *It would be useful to provide a paragraph introducing the eight other monitoring programs, explaining the overlaps or leverage points, but also why they exist outside of the data input for the Second National Coastal Condition Report, rather than being integrated.*

A paragraph, such as is described above, will be included in the next National Coastal Condition Report in 2007.

11. *The relatively general conclusions of the report are probably robust to the uncertainty that exists, but future reports should have, at the least, an appendix that explains limitations of the data, uncertainty contributed by natural variability, and uncertainty contributed by sampling protocols.*

An appendix that describes the limitations of the data was included in the First National Coastal Condition Report and in various earlier documents and the authors believed that repetition of that material was unnecessary.

The need for such an appendix will be re-assessed for the next report. The uncertainty contributed by sampling protocols was directly assessed in Appendix 1. The breadth of this Appendix will be re-assessed for the next report.

12. *The BOSC members are pleased to see that quality assurance (QA) was considered important enough by the Agency to merit its own chapter, even if it was an appendix. This appendix is a great overview of how QA is handled in the program.*

No comment necessary.

13. *Based on the discussions in the Coastal Condition Report, the BOSC encourages EPA to work with the states to have the key EMAP monitoring strategies adopted by the states on a national scale.*

ORD is working with the Office of Water and the 23 coastal states to ensure the adoption of the EMAP monitoring strategies and indicator sets. All coastal states have continued to use these indicators and monitoring strategies through 2005 and will be used in 2006. Office of Water is developing, with assistance from ORD, a continuation of the state-participatory program post-2006.

14. *The Report also highlights the need for expanded monitoring programs, particularly in Alaska (page 1-6).*

Alaska Department of Environmental Conservation joined the National Coastal Assessment in 2002 and, to date, monitoring of ecological condition of Alaska's estuarine waters in southern and south-central Alaska has been completed. Monitoring of the coastal waters of the Aleutian Islands will be completed in 2006. Condition in south-central Alaska will be reported in the next report.

15. *On the top half of page ES-14 of the report, limitations and shortfalls are discussed and the case is made for cooperative interaction of key agencies if the effort is to be successful. What assurances or examples offer hope that the next effort will be more successful?*

The reports lag data collection by several years so the likelihood that the next report will reflect significant addition cooperation, beyond that which presently exists, is small. However, one element of the Ocean Action Plan addresses the development of a national design strategy for monitoring coastal resources. The approach used in the National Coastal Condition Report II has been adopted by the multi-agency group developing the national design.

16. *In conclusion, the members of the BOSC believe that EPA's National Coastal Condition Report provides useful information on the condition of the nation's coastal environment and ORD appears to be on the right track for improving future reports.*

No comment necessary.

Specific Comments:

1. *Future reports would benefit by providing a context for addressing degradation causes/remedial action to rectify the condition, or leading the reader to such discussions in other reports.*

It is unlikely within the page constraints of the National Coastal Condition Report series that additional topics such as cause of degradation or remediation will be addressed. However, the Ecological Research Program will examine the development of a companion report that can address these topics. It is unclear whether the next report (2006 draft) will include a companion report; however, a companion report will be seriously evaluated for the next report in 2009 or a companion report for the NCCR III that would be developed post-2006.

2. *A continued effort to make comparisons with past reports is worthwhile. ... The discussion in Appendix B surrounding the changes made in the indices and monitoring approaches demonstrated the responsiveness of ORD to comments and its commitment to get sound, scientific data that meet stakeholders' expectations. The BOSC would have preferred a bit more analysis and explanation of how those changes (e.g., going from fillet data to whole fish residue data) impacted the indices.*

Comparisons will continue and the National Coastal Condition Report III will include trend information. Trend information can only be compiled through cross-survey comparisons that have been normalized for differences. Text boxes, appendices, and references will be used to clarify these normalizing analyses.

3. *Although what is written in Chapter 1 on selection and shortcomings of monitoring data (pages 1-6 and 1-7) provides a sufficient overview of what was done, the discussion could be enhanced to describe the cost or logistical constraints that limited the use of other more sophisticated, intensive, or emerging sampling or analytical approaches.*

In the next report, these discussions will be expanded to “develop a pre-emptive defense of current approaches against a continuing expectation that the monitoring program might adopt the latest, most sophisticated, more technologically advanced approaches”. Consistency of collection

and analysis (or at least reasonable translation analyses) is extremely important for the examination of long-term trends and an evaluation of the accountability of the Agency's policies and programs.

4. *The chapters summarizing regional data and ongoing activities are very informative. Chapters 3 through 9 ... The text also comes closer to identifying causative agents where indicators show poor conditions, but lacks the specificity of leading resource managers to key remedial considerations.*

While the authors agree with this BOSC observation, the next report will be unlikely to include great specificity or remedial recommendations due to a restriction in the size of the report. However, ORD and OW will assess the need for a companion report (or a series of manuscripts) that can more specifically address these needs for more specific causal analyses and remedial recommendations.

5. *The consolidation of turbidity into a more general water quality criterion is a great improvement from the first National Coastal Condition Report.*

No comment necessary.

6. *The report could do a better job explaining, particularly to the general public, why the criteria for assessing dissolved inorganic nitrogen (DIN), dissolved inorganic phosphorus (DIP), and chlorophyll (pages 1-10 to 1-11), differ across regions.*

In the next report, a greater emphasis will be directed to describing and explaining these differences through expanded text and the use of text boxes. Also inclusion of references to other sources of support for these differences will be made.

7. *The discussions of sediment quality (pages 1-14) are confusing. The third paragraph indicates that some researchers prefer to use a sediment triad, which includes sediment toxicity, to assess sediment condition (i.e., condition is a complex variable that includes toxicity). The fourth paragraph states that the Coastal Condition Report's sediment quality index focuses on sediment condition, not just sediment toxicity, as if one were not a component of the other.*

Obviously the text created some confusion to the readers. An effort will be made in the next report to "clean up" the language. Clearly, sediment toxicity is a critical element of the NCCR's Sediment Quality Index. It is one of three elements used to assess sediment condition – sediment chemistry, sediment toxicity, and sediment TOC. The report's statement, referred to above, was meant to convey that some researchers would prefer to exclusively use sediment toxicity to assess sediment condition and the NCCR does not use this approach.

8. *The discussion of total organic carbon (TOC) (pages 1-18) speaks to the question of intended audience. The oversimplification of the statement “Sediment toxicity from organic matter is assessed by measuring TOC” seems to imply that TOC is by definition toxic. High TOC may be associated with poor water quality, and TOC can alter the availability of toxins, but that is not the same thing.*

Unfortunately, the text in the report did not successfully convey the reasoning for the inclusion of TOC. The use of the word “toxic” was used differently than in reference to toxic compounds. The intent was to refer to high levels of TOC resulting in benthic mortality or modifications in benthic community structure – a common interaction in regions receiving high levels of raw sewage and/or high level of organic effluents that do not include toxins (e.g., sugar processing, fish processing, distilleries). The authors will address this concern more completely in the next report.

9. *The difficulty in determining the audience for this report on the pages 2-5, particularly in the first full paragraph with the simplification of the statement regarding lower nutrient concentrations expected in summer due to phytoplankton uptake. Nutrient concentrations are dependent on rainfall and on temperature-limited nutrient regeneration rates, and the “expectation” of lower summer concentrations is highly dependent on local conditions and weather. The discussion in this paragraph may be difficult for a nonscientist to follow, while at the same time raising questions on the part of a knowledgeable reader.*

This concept is a difficult one to portray in a direct and concise manner. The intended audience is the informed public as well as environmental managers and Congress. Greater effort will be made in the next report to clarify these differences and the reasons for the differences.

10. *It is not at all clear what assessment or policy purpose is served by combining Great Lakes and coastal estuary data (pages 2-31) to arrive at an improved estuarine condition (increasing the “national ranking” from poor to fair). The utility of these assessments would seem to be in what they tell us about conditions in local places, so that we can set priorities for research (to fill data gaps) and to improve conditions (so that we can concentrate resources on locations with poor conditions). A “national” ranking, based on combining data from disparate locations is simply not useful.*

This comment represents the only major difference in opinion between ORD/OW and the BOSC in this review. OW finds the combination of regional assessments into a national assessment addressing 305(b) issues is important. By definition, OW and the President’s Ocean Action Plan identify the Great Lakes as part of the coastal environment in the United States (the “North” coast). The inclusion of the Great Lakes in the NCCR II national assessment does not modify the national ranking from poor to

fair as indicated. Without the Great Lakes data, the national assessment would still remain as “fair”.

The NCCR II is not focused on addressing “local places”. The primary purpose of the report is to address regional and national condition as well as the differences observed through time. The intent is to provide regional and national environmental managers, as well as Congress, with sufficient information regarding ecological condition to establish priorities and evaluate whether broad-scale efforts should be regional or national in scope. The NCCR II reports on “local” of site conditions (i.e., red, yellow or green dots) because EMAP’s site data is good as long as it is interpreted within the proper constraints. Site data is a single observation in space and time and does not represent condition at that site, necessarily, at any time other than the time of sample collection. An observed “poor” condition at any site is an indicator of the potential for poor condition but it rarely used in management contexts for the development of remedial actions without further sampling and investigations.

The primary purpose of the site data is that it is collected in a manner that permits state-wide assessments within reasonable uncertainty levels (10%), regional assessments (roughly with uncertainty levels of 5-7%), and national assessments (at 3-5%). By comparing nation-wide assessments (both by index and overall) with regional assessments, managers can determine whether observed poor conditions are broadly national or specifically regional. It is in this manner that environmental managers can then set priorities in order to concentrate resources nationally, if necessary, or to regions or sub-regions with specific types of poor condition.

**Second National Coastal Condition Report
Summary of BOSC Comments From May 2005 Final Letter Report and Proposed
ORD Actions**

Recommendation	Action Items	Timeline
Charge Question 1, <i>Evaluate consistency/leverage of ideas, recommendations, and contracts among the reports</i>		
<i>The Coastal Condition Report, as a whole, is a useful compendium of information on the condition of the nation's coastal environment with respect to human uses and to some extent with respect to ecological condition. Nevertheless, future report should state clearly the intended audience(s) and strive to develop communications commensurate with audience desire for amplification.</i>	The next National Coastal Condition Report III will address the concerns and include language to specifically identify the intended audience. Sections in the next report will include language to address the areas of amplification stated in the review and detailed in the response to comments.	September, 2007 September, 2007
Charge Question 2, Assess the EPA report as a communication tool in light the Office of Management and Budget's Performance Assessment Rating Tool (PART) expectations and evaluate conclusions, recommendations, and ideas presented in terms of a research and development (R&D) output with potential to impact environmental outcomes.		
<i>The relatively general conclusions of the report are probably robust to the uncertainty that exists, but future reports should have, at the least, an appendix that explains limitations of the data, uncertainty contributed by natural variability, and uncertainty contributed by sampling protocols. The discussion of shortcomings of available data in the Executive Summary and Chapter 1 offers explanations of the challenges EPA has addressed and is still working to overcome.</i>	Such an appendix will be added to the upcoming National Coastal Condition Report III.	September, 2007
<i>The Coastal Condition Report is very effective in communicating the factual findings of coastal monitoring efforts nationally. With regard to PART, the Report provides a clear example of the outcome of monitoring efforts.</i>	The NCCR series will continue to strive to communicate effectively and address PART needs.	On-going

Recommendation	Action Items	Timeline
Charge Question 3, Assess the appropriateness of integration/utilization of other state and federal data on coastal conditions, and the rationale for the approaches taken by EPA in the report.		
<p><i>This report is a good example of successful cooperation and coordination among environmental agencies to develop a dataset where information can be pooled to meet common objectives. The discussions of the eight regional monitoring programs in text boxes at the end of Chapter 2 provide good examples of both EPA's ;leveraging with other monitoring activities, and the differences in what can be done with a fixed budget on a national scale versus a smaller scale.</i></p>	<p>EPA and its partners (NOAA, USGS, DOI and now NPS) will continue to strive to develop cooperative and collaborative efforts to assess the condition of the nation's coastal ecosystems.</p>	<p>On-going</p>
Charge Question 4, Assess whether the report provides a perspective on the future of the monitoring program (e.g., Are goals for the future stated? How will the program address advances in technology and science as the monitoring efforts continue?)		
<p><i>In its use of 305(b) information, the report implicitly highlights the added value that national standards for collecting and reporting of the data would provide with respect to national assessments of water quality. Based on the discussions in the Coastal Condition Report, the BOSC encourages EPA to work with the states to have the key EMAP monitoring strategies adopted and implemented on a national scale.</i></p>	<p>ORD is working with EPA's Office of Water to transition the National Coastal Assessment program into an implementation program managed by OW. In this program, all coastal states would adopt and execute the EMAP monitoring strategies on a consistent state-scale that can be easily scaled up to the national scale (providing both scales and allowing maximal application).</p>	<p>Ongoing with a target for the transition of summer 2007.</p>
<p><i>Future Coastal Condition Reports, however, could go a step further by indicating how the information provided can be incorporated in planning and strategies for continued efforts. This could be accomplished through the use of text boxes or citations of other</i></p>	<p>With the exception of a generous use of text boxes and citations, this type of modification is outside the scope of the present NCCR series. However, the NCA team (EPA, NOAA, USGS, DOI and NPS) will discuss and examine the potential for the development of a companion</p>	<p>Ongoing with changes in next report in September, 2007 and possible</p>

Recommendation	Action Items	Timeline
<i>reports or publications.</i>	report to specific address these issues.	companion report in 2008.
<i>A similar use of citations or text boxes could be used in future reports to provide other discussions of data interpretations or significant topics that are outside of ORD's intended scope of the Coastal Condition Report, but are germane to data interpretations or to the environmental and regulatory implications of the report findings.</i>	The next version of the NCCR will utilize text boxes and citations in this fashion to the maximum extent possible when necessary to address alternative interpretations or environmental or regulatory implications.	September, 2007