

**Wadeable Streams Nutrient Objectives  
Science Panel Draft Charge Questions  
April 19-20, 2017**

Meeting Location: SCCWRP Offices, Large Conference Room,  
3535 Harbor Blvd., Suite 110, Costa Mesa CA 92626

**CONTEXT:** The State Water Resources Control Board (State Water Board) is proposing to adopt a statewide water quality objective for Biostimulatory Substances (including nutrients) and a program to implement it as an amendment to the Water Quality Control Plan for Inland Surface Water, Enclosed Bays and Estuaries of California (ISWEBE Plan). As a part of this policy, the State Water Board intends to establish a Biointegrity Assessment Implementation Plan. Collectively, these components are hereto referred to as the “Biostimulatory-Biointegrity Project.” During the first phase, State Water Board staff intends to establish the policy specifically for wadeable streams. A Science Plan has been developed that articulates the conceptual approach and technical activities that will support the SWRCB’s Biostimulatory-Biointegrity Project.

The first Science Panel meeting in the Spring of 2017 will focus on reviewing the overarching Science Plan to support the SWRCB staff’s preferred regulatory approach. The second meeting (summer) will review interim products and discuss the science implications of SWRCB staff preliminary strategies for implementation. The third meeting will focus on the final technical products of the Science Plan and continue the discussion of science needs and implications of strategies for implementation of the combined policy.

**MEETING GOAL:** Review and provide feedback on the Wadeable Streams Science Plan to support the State Water Board’s Biostimulatory-Biointegrity Project.

**SCIENCE PANEL CHARGE QUESTIONS:**

***Appropriateness and suggested refinements to the Biostimulatory-Biointegrity Science Plan (Sutula et al., 2017, Appendix 1)***

1. The Science Plan focuses on work needed to support policy decisions on a statewide set of “default” ASCI and CSCI assessment endpoints and numeric targets for nutrients et al. causal eutrophication indicators.
  - a. Are refinements or additional elements to the Science Plan needed to improve scientific support for the Biostimulatory-Biointegrity Project and if so, what refinements?
  - b. What specific refinements or elements would aid in directly addressing stakeholder concerns or issues?

***Appropriateness and suggested refinements to the ASCI Work Plan (Theroux et al., 2016, Appendix 2)***

2. The approach to develop the California algal stream condition index (ASCI; Theroux et al. 2016 ASCI work plan) follows that used for the California Stream Condition Index (CSCI; Mazor et al. 2016) for benthic macroinvertebrates.
  - a. Is this approach described in Theroux et al. (2016; Appendix 2) appropriate for the ASCI? Are there additional refinements that you suggest that will improve on the proposed approach?
  - b. Can biological indices or metrics be developed that distinguish between chemical, physical, hydrological and habitat impacts to biological integrity from altered water quality versus altered hydrological regime or physical habitat (substrate, cover, flow, etc.)?
  - c. What are the tradeoffs in designing an index to be tuned to a generalized stressor gradient versus a specific gradient (e.g. water quality)?
  - d. What are the tradeoffs in design of an index for statewide applicability versus application at a regional scale?

***Statistical Models to Link CSCI and ASCI assessment endpoints to numeric targets for nutrients and organic matter abundance.***

3. The Science Plan details a work element intended to support Water Board staff decisions on numeric targets for nutrients and organic matter by developing statistical stress-response models of the relationship between bioassessment indices (CSCI, ASCI) and concentrations of nutrients and organic matter abundance (benthic chl-a, ash-free dry mass).
  - a. Given the exploratory analyses showing relationships between CSCI, ASCI and the eutrophication indicators of interest, what concerns should the technical team keep in mind when developing statistical stress-response models, and how might they be addressed?