

Nutrients STAG (Stakeholder Technical and Advisory Group)

September 23, 2015

Meeting Summary

	<p>Note: The list of attendees follows the meeting summary. The Central Valley Water Board has developed a webpage for the Nutrient Research Plan project, which can be found at: http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/delta_nutrient_research_plan/index.shtml Additional materials from the STAG meeting (e.g., agenda, presentations, background documents) have been posted to the project website at: http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/public_involvement_stag_meetings/index.shtml. The summary captures the major issues presented and discussed during the meeting, though they are not intended as an exhaustive record of all comments made. Rather the summary is intended to provide participants and other interested parties with a general description of topics addressed and different perspectives on those topics, as well as to record commitments and decisions made by the Group and its members.</p>
	<p>Meeting Objectives</p> <ul style="list-style-type: none">• Update STAG on the status of the Modeling and Drinking Water Work Groups' progress and products• Finalize the Governance and Ground Rules document• Solicit comments on the draft Cyanobacteria Knowledge Gaps Document• Decide on whether to create a subcommittee to design a ranking process for research topics• Decide on whether to form a joint subcommittee with the Bay Area Nutrient Management Steering Committee to organize the "forms and ratios" workshop• Discuss schedule and decide next steps
1	<p>Introduction and Announcements</p> <p>There were no substantive announcements. A quorum was established (see list of attendees at end of meeting summary for STAG participants attending).</p> <p>The STAG agreed to reverse the order of agenda items 5 and 6, in order to ensure Dr. Boyer had sufficient time to complete her presentation on the Macrophyte White Paper and the Science Work Group's efforts.</p>
2	<p>Administrative Subcommittee Report Out</p> <p>The Administrative Subcommittee had email exchanges to discuss additional comments and proposed edits to the Governance and Ground Rules document and agreed to present a final version to the STAG for approval.</p>
3	<p>Update on Modeling Science Work Group</p> <p>The Modeling Science Work Group is continuing its efforts and held its 2nd in-person</p>

	<p>meeting on September 10th to discuss the 1st white paper draft and recommendations. The next meeting is scheduled for October 14th and a draft of the white paper will be presented at the next STAG meeting. See Slide #7 of the meeting presentation for additional information.</p> <p>Commitments:</p> <ul style="list-style-type: none"> ✓ Phil Trowbridge (white paper author) will present the draft white paper at the next STAG meeting.
<p>4</p>	<p>Update on Drinking Water Science Work Group</p> <p>The Drinking Water Science Work Group met on August 24th and has produced an outline of the white paper and draft sections of this product.</p> <p>Commitments:</p> <ul style="list-style-type: none"> ✓ The group will schedule additional meetings and work toward delivering a white paper in the fall.
<p>5</p>	<p>Macrophyte White Paper Presentation</p> <p>Dr. Kathy Boyer presented a summary of the findings and recommendations contained in the Macrophyte Science Work Group's white paper (see slides # 9 – 30 in the meeting presentation).</p> <p>Discussion:</p> <p>Key points, questions, and other issues raised included:</p> <ul style="list-style-type: none"> • Stuckenia is increasing in the Delta (Slide #14) because of the drought • Native submerged aquatic vegetation (SAV) can be beneficial to native fish (Slides 16 – 17) but this hypothesis has yet to be formally tested • There are many drivers of SAV and floating aquatic vegetation (FAV), and all, including nutrients, are important and can vary with location in the Delta (Slides #18 – 20) • Examination of trends in water column nutrients does not show any clear relationships with macrophytes (Slides # 21 – 27) • Limitations in monitoring data limit ability to examine and identify relationships • The presentation does not include all species considered in the report; analysis concentrated on species with Delta-wide abundance • There is a substantial amount of work in other areas, but this review concentrated on data and information from the Delta • While water column nutrients alone show no correlation with macrophyte trends, decomposition and recycling are also important and need to be considered • The high water temperatures in 2008 and 2014 along with the delay in early spraying probably contributed to the problem of increased acreage. • Ideally, we would be able to identify a target range for macrophytes and then develop and implement control measures to achieve that; a variety of control measures, including biological controls, could be useful <p>Commitments:</p> <ul style="list-style-type: none"> ✓ Bring the white paper to the STAG for acceptance as final at the next meeting ✓ Complete the knowledge gaps document ✓ Macrophyte Science Work Group will review the knowledge gaps document

	<ul style="list-style-type: none"> ✓ Bring the knowledge gaps document to the STAG for acceptance as final
<p>6</p>	<p>Finalize and Adopt the Governance Document</p> <p>Brock Bernstein reviewed edits made to the Governance Document (Slide # 32) to clarify the different STAG roles with regard to draft and final products.</p> <p>Discussion:</p> <p>There was no further discussion related to the proposed language on Slide # 32, however, Andria Ventura raised concerns about potentially problematic interpretations of the language related to consensus in the 1st paragraph under Governance Principles (p. 1).</p> <p>Commitments:</p> <ul style="list-style-type: none"> ✓ The STAG accepted the revised language as shown on Slide # 32 ✓ Brock Bernstein will prepare a track changes version of the revised paragraph on p. 1 and it will be emailed to the STAG for review and decision at the next STAG meeting.
<p>8</p>	<p>Cyanobacteria Knowledge Gap Document</p> <p>Chris Foe summarized the process for finalizing the Knowledge Gaps Document (Slides # 34 – 40). The Cyanobacteria Science Work Group members all participated in developing the draft document and donated a considerable amount of time to the effort. Chris’s presentation focused on the three management questions the STAG addressed directly (Slides # 37 – 38).</p> <p>Discussion:</p> <p>Discussion emphasized the importance of linking research to fill the knowledge gaps with the modeling efforts (see Recommendation for Topic 3 on Slide # 38), as well as on an improved monitoring program to fill data gaps, for example, in back sloughs and wetlands. In addition, there is at present no established framework for assessing risk due to cyanobacteria toxins. Remote sensing is only partially useful in tracking blooms, with limitations in smaller waterbodies and channels. In addition, remote sensing data will need to be ground-truthed to some extent and supplemented with additional biological and chemical data needed for modeling.</p> <p>Commitments:</p> <ul style="list-style-type: none"> ✓ STAG members will submit comments on the draft data gaps document by October 7 ✓ Bring the knowledge gaps document to the STAG for acceptance as final at the next meeting
<p>9</p>	<p>Nutrient Research Ranking Process</p> <p>Chris Foe summarized the need for a process to rank the research recommendations being generated by the various science work groups. He proposed a process for consideration (Slides # 42 – 45). Chris emphasized the value of a written document that presents the STAG’s priorities, as opposed to an undifferentiated list of recommendations. The STAG’s priorities will have more weight if they are developed through an explicit and transparent process. Chris also said that the money to fund research has not yet been identified.</p> <p>Discussion:</p>

	<p>Key points, questions, and other issues raised included:</p> <ul style="list-style-type: none"> · Although the STAG could consider collaborating with other groups to develop an overall list of research priorities, the STAG may have a broader and unique view on problems. A single list of priorities developed with other groups could dilute the STAG's message and it could be difficult to develop a single list of priorities that would satisfy all groups · The timeline for the ranking process would depend on when the white papers and data gap documents are finalized, and on whether the STAG decides to rank research recommendations separately by issue or overall · All groups (STAG and others) submitting research priorities to the Regional Water Board would need to explain the process used to develop priorities · A ranking from top to bottom would be a minimum outcome, but additional information about how research projects would fit into an overall program plan or sequence would be very useful to the Regional Water Board · Prioritization will need to find a balance between learning everything about a problem and what is needed to control or manage the problem. The Regional Water Board is interested in research that will contribute to effective management and any information Board staff could provide about the Board's needs would be helpful · It might be useful to rank recommended research separately for each issue and then bring that back to the STAG for creation of an overall set of recommendations · Chris Foe solicited volunteers for a subcommittee to prepare a draft prioritization process and said that he had already received agreement from some parties to participate <p>Commitments:</p> <ul style="list-style-type: none"> ✓ Form a subcommittee to develop a ranking process. Subcommittee members include Terrie Mitchell, Debbie Webster, Linda Dorn, Tom Grovhaug (one or two from this set of four), Elaine Archibald, Jon Rosenfield or Andria Ventura, Stephanie Fong, Lynda Smith, and Leandro Ramos ✓ The subcommittee will develop examples of prioritization process and how these could lead to a program plan
<p>10</p>	<p>Proposal for Ammonia Paradox and Ecological Stoichiometry Workshop</p> <p>Chris Foe discussed the ammonium paradox and ecological stoichiometry hypotheses and summarized the status of the science work group. Unlike the previous work groups, Chris proposed that a workshop be held to identify the areas of agreement, disagreement and studies needed to resolve the uncertainty surrounding conflicting results. The workshop would be developed in collaboration with the San Francisco Bay Nutrient Management Steering Committee (Slides # 46 – 56). Chris asked the STAG for approval of a joint planning subcommittee to help plan the workshop.</p> <p>Discussion:</p> <p>Key points, questions, and other issues raised included:</p> <ul style="list-style-type: none"> · Several stakeholders expressed concern that the workshop not perpetuate past combat science and suggested that a different format might have a better chance of achieving a better result. Specifically, they suggested a format similar to that used by other science work groups rather than one structured around presentations by competing points of view. Chris Foe responded that this issue is

	<p>different because there are two sets of valid science that disagree with each other. Brock Bernstein commented that both formats could work, depending on the process, the participants, and the moderator. Stephanie Fong said that she has observed several other efforts to bring the involved scientists together that have not succeeded at resolving the conflict and suggested that a different approach is called for. Chris Foe said that this workshop is intended to differ from past efforts because its focus will not be on making a convincing argument but rather on identifying studies needed to resolve the conflicting results.</p> <ul style="list-style-type: none">• Tim Mussen expressed concerns about using a panel of outside experts who would not understand local specifics and also suggested that the workshop chair should have the ability to provide input into the white paper. Others suggested that local experts should include scientists knowledgeable about the system but who are not a direct party to the conflict (e.g., not a phycologist).• Keys to the workshop's success include carefully crafted management questions, a subset of participants with a management/policy perspective, a clear charge to the workshop participants and chair, effective moderation, and a balanced and concise white paper. <p>Commitments</p> <ul style="list-style-type: none">✓ The STAG agreed to form a subcommittee with the Bay Area Nutrient Management Steering Committee to plan a workshop✓ STAG members and other interested parties volunteering for the subcommittee included: Linda Dorn, Lisa Thompson, Stephanie Fong, and Stephen Louie. Participants from the Bay include: David Senn (SFEI), Ian Wren (Baykeeper), and Jim Ervin (BACWA representative). In addition, Chris Foe suggested that Cliff Dahm (Delta Stewardship Council) would be a useful addition to the subcommittee and would inquire if he would be interested in participating✓ The subcommittee will meet to develop a draft workshop plan, including participant and panel selection, management questions and a charge, that will be submitted to the STAG for approval
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Record of Decision for the Delta Nutrient Research Plan STAG

Number	Date	Decision	Type	Yes	No	Abstain
2015-1	07/13/15	The STAG adopted the Charter Document – <i>Process to Develop a Delta Nutrient Management Strategy</i> as final.	Consensus			
2015-2	07/13/15	The STAG adopted the <i>Governance Principles and Ground Rules</i> document as final.	Consensus			
2015-3	07/13/15	The STAG accepted the Cyanobacteria White Paper “ <i>Factors affecting Growth of Cyanobacteria With Special Emphasis on the Sacramento-San Joaquin Delta</i> ” as a final work product from the Cyanobacteria Science Work Group.	Consensus			
2015-4	09/23/2015	The STAG agreed to form a ranking subcommittee that would develop a written evaluation process. The STAG agreed that this evaluation process would be used to rank the research recommendations.	Consensus			
2015-5	09/23/2015	The STAG approved the formation of a joint planning subcommittee with the Bay Area Nutrient Management Steering Committee to assist in organizing the “nutrient forms and ratio” workshop.	Consensus			

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Attendees

Staff	Agency
Chris Foe	Central Valley Regional Water Board
Christine Joab	Central Valley Regional Water Board
Brock Bernstein	Facilitator

Stakeholder and Technical Advisory Group (STAG) - Interest Group Members:

Attendance	STAG members	Agency	Representing	Position
Present	Terrie Mitchell	Sacramento Regional County Sanitation District	Large POTWs	Primary
	TBD		Large POTWs	Alternate
Present	Debbie Webster	Central Valley Clean Water Ass.	Small POTWs	Primary
	TBD		Small POTWs	Alternate
Present	Dalia Fadl (P)	City of Sacramento	MS4	Primary
	Kyle Ericson	City of Sacramento	MS4	Alternate
	Renee Pinel	Western Plant Health Assoc.	Irrigated Agriculture	Primary
	TBD			Alternate
	Amrith Gunasekara	CA Dept. Food and Agriculture	Agriculture Agencies	Primary
Present	Mark Cady	CA Dept. Food and Agriculture	Agriculture Agencies	Alternate
	Kirk Wilbur	California Cattlemen	CAFOs	Primary
	TBD		CAFOs	Alternate
Present	Lynda Smith	Metropolitan Water District S. CA	Water Supply	Primary
Present	Rachel Pisor	CA Dept. Water Resources	Water Supply	Alternate
Present	Elaine Archibald (P)	CA Urban Water Agencies	Drinking Water	Primary
Present	Laura Young (P)	Santa Clara Valley Water District	Drinking Water	Alternate
Present	Paul Bedore (P)	Port of Stockton	Waterways	Primary
Present	Leandro Ramos	CA State Parks – Boating & Waterways	Waterways	Alternate
Present	Stephen Louie	CA Dept. Fish and Wildlife	Resource Mgmt	Primary
	TBD		Resource Mgmt	Alternate
	Eddie Lucchesi	Mosquito & Vector Control Ass.	Mosquito Abatement	Primary
	David Smith	Mosquito & Vector Control Ass.	Mosquito Abatement	Alternate
	Jon Rosenfield	The Bay Institute	Environmental NGOs	Primary
Present	Andria Ventura	Clean Water Action	Environmental NGOs	Alternate

A blank under Attendance category indicates individual was absent from the meeting.

(P) indicates participated remotely via WebEx / phone

Other Interested Parties:

<i>Other participants</i>	<i>Agency</i>
Mindy Boele (P)	City of Vacaville
Akram Botrous (P)	Stantec
Kathy Boyer (P)	San Francisco State University
Tania Brenes	MLJ-LLC
Steve Camacho (P)	State Water Resources Control Board
Jeanne Chilcott	Central Valley Regional Water Board
Geoff Doodles (P)	
Linda Dorn	Sacramento Regional County Sanitation District
Diana Engle (P)	Larry Walker Associates
Stephanie Fong	State and Federal Contractors Water Agency
Yumiko Henneberry	Delta Stewardship Council - Delta Science Program
Brian Laurenson (P)	Larry Walker Associates
Anne Lee (P)	G. Fred Lee & Associates
G. Fred Lee (P)	G. Fred Lee & Associates
Otome Lindsey (P)	Department of Water Resources
Robin McGinnis	Department of Water Resources
Tim Mussen	Sacramento Regional County Sanitation District
Martha Sutula (P)	Southern California Coastal Water Research Project
Others (P)	Several other unidentified participants who attended remotely

(P) indicates participated remotely via Webex / phone