

Nutrients Research Meeting

Tuesday, September 9th – 1:00 to 5:00 PM

Central Valley Regional Water Quality Control Board

11020 Sun Center Drive #200

Rancho Cordova, CA 95670

presented by:

Chris Foe – Central Valley Water Board staff

facilitated by:

Brock Bernstein*

Delta Nutrient Research Meeting Agenda

- Item 1 – Introductions & Announcements
- Item 2 – Background
- Item 3 – Review draft Charter and Governance
- Item 4 – Break
- Item 5 – List of Potential Nutrient Related Problems
- Item 6 – Science Work Groups
- Item 7 – Wrap Up

<http://www.waterboards.ca.gov/centralvalley/>

6 Easy Steps to Subscribe to the *Delta Water Quality Issues* Lyris List

Step 1: Go to the Central Valley Regional
Water Quality Control Board homepage.
<http://www.waterboards.ca.gov/centralvalley/>

Step 2: Look under *Resources*;
click on *Email Subscriptions*



6 Easy Steps to Subscribe to the Delta Water Quality Issues Lyris List

Step 3: On the *Email Subscription Form* fill in your contact information

Step 4: Check the box for *Delta Water Quality Issues*

- Dairy Program
- Delta Diazinon/Chlorpyrifos
- Delta Mercury TMDL
- Delta Water Quality Issues
- Drinking Water System Discharges, NPDES Permit
- Delta TMDL & Basin Plan Amendment
- Grassland Bypass Project / SJR Selenium Control Program

Step 5: Click subscribe

Step 6: Reply to email confirmation

You're done!

Now you'll receive emails from the List.

CA.GOV CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

Central Valley Region 5 – Email List Subscription Form

Email Address: (required)

Your Full Name: (required) (e.g. John Smith)

Please check the boxes below to subscribe to our email lists. You may select as many lists as you wish. Our objective is to periodically email information about these topics to the members of these lists.

After making your selection(s), please click on the subscribe button located at the upper right hand corner of this web page.

An email confirmation notice will be sent to you. Please reply to this message in order to be added to the email list.

- Regional Board Agenda
- Agriculturally Dominated Water Bodies - Beneficial Uses
- Alamo Creek Basin Plan Amendments
- American River Watershed Methylmercury TMDL
- Basin Plan Triennial Review for the Sacramento & San Joaquin River Basins
- Basin Plan Triennial Review for the Tulare Lake Basin
- Cache Creek Watershed Mercury TMDL
- Central Valley Drinking Water Policy
- Central Valley Organochlorine TMDL & Basin Plan Amendment
- Central Valley Pesticide TMDL & Basin Plan Amendment
- Central Valley Pyrethroids TMDL & Basin Plan Amendment
- Clear Lake Nutrient TMDL
- Dairy Program
- Delta Diazinon/Chlorpyrifos
- Delta Mercury TMDL
- Delta Water Quality Issues
- Drinking Water System Discharges, NPDES Permit
- Delta TMDL & Basin Plan Amendment
- Grassland Bypass Project / SJR Selenium Control Program

http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/index.shtml

Delta Water Quality webpage

http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/index.shtml

Coming Soon! - New webpage for the Delta Nutrient Research Study Plan

Webpage will contain:

- Meeting Schedules
- Meeting Materials
- Technical Reports
- Useful Links

The screenshot shows the website for the California Environmental Protection Agency (CalEPA) Central Valley Regional Water Quality Control Board. The page is titled "Delta Water Quality" and features a navigation menu with "Water Issues" highlighted. The main content area includes a "Coming Soon!" announcement for the "Nutrient Study Plan" and a list of "Central Valley Region Bay-Delta Strategic Workplan Activities".

Navigation Menu: Home, About Us, Public Notices, Board Info, Board Decisions, **Water Issues**, Publications/Forms, Press Room

Programs | Available Documents | Hot Topics |

Office of Governor **Edmund G. Brown Jr.**
Visit his Website

Home → Water Issues → Delta Water Quality

Delta Water Quality

Receive notifications, updates and other correspondence by e-mail.
Subscribe on-line to our [Delta Water Quality Issues](#) electronic mailing list.

Staff from the State Water Board and the Central Valley and San Francisco Bay Regional Water Boards (collectively Water Boards) formed the Bay-Delta Team to improve coordination of the Water Boards' activities in the San Francisco Bay and Sacramento-San Joaquin River Delta (Bay-Delta). The Bay-Delta Team is charged with developing a short and long-term program for addressing impacts to beneficial uses of water in the Bay-Delta. In response to this charge, the Water Boards developed a 2008 Draft Strategic Work Plan for Activities in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Strategic Work Plan). The [2008 Strategic Workplan](#) had a project timeline of five years.

In 2013 the Strategic Workplan moved to a web-based format and in 2014 the Central Valley Region updated their Strategic Work Plan. Links to activities in the [2014 Central Valley Strategic Workplan](#) are provided below:

Central Valley Region Bay-Delta Strategic Workplan Activities

- [Low Dissolved Oxygen in the Stockton Ship Channel](#)
- [Implemental Mercury Control Program](#)
- [Old and Middle River Dissolved Oxygen - Coming Soon!](#)
- [Delta Regional Monitoring Program](#)
- [Nutrient Study Plan - Coming Soon!](#)
- [Pyrethroid Insecticide Plan Amendment](#)
- [Recycling and Reuse of Wastewater - Coming Soon!](#)
- [Diuron Basin Plan Amendment](#)
- [Fungicides and Herbicides - Coming Soon!](#)

[Click here](#) to learn about Bay-Delta Strategic Workplan projects at the San Francisco Regional Water Quality Control Board.

[Click here](#) to learn about Bay-Delta Strategic Workplan projects at the State Water Board.

For more information on the Bay-Delta Team, contact Chris Foe at (916) 464-4713 or by email at chris.foe@waterboards.ca.gov.

RESOURCES

- Email Subscriptions
- Data & Databases
- Business Help
- Public Records Center
- Grants & Loans
- Fees
- Customer Service Survey
- File an Environmental Complaint
- Employment
- Useful Links
- Website Index

Background

Chris Foe



Delta Stewardship Council

Recommendation WQ R8

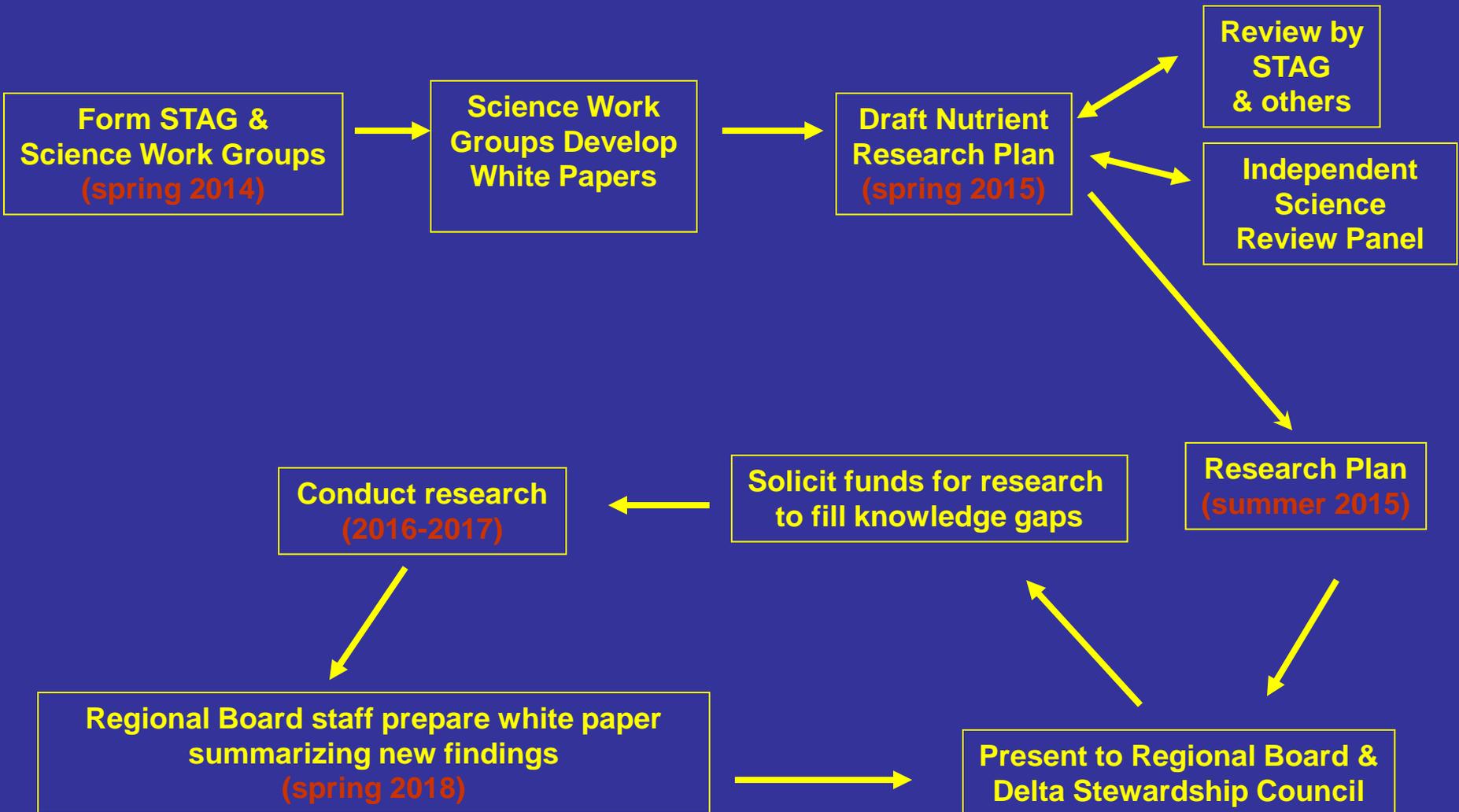
...the Central Valley Regional Water Quality Control Board should prepare and begin implementation of a study plan for the development of objectives for nutrients in the Delta ... by January 1, 2014. Studies needed for development of ... nutrient objectives should be completed by January 1, 2016. The Water Boards should adopt and begin implementation of nutrient objectives, either narrative or numeric, where appropriate... by January 1, 2018

Potential Nutrient Related problems

- **Increase in the abundance & distribution of macrophytes.**
- **Increase in the frequency & magnitude of cyanobacteria blooms.**
- **Decrease in abundance and shifts in algal species composition**
- **Low dissolved oxygen in back sloughs**

2014 Delta Strategic Plan

Steps & Schedule for Developing & Implementing the Nutrient Research Plan



Questions??

Charter and Governance

- Establish goals, objectives, guiding principles
- Describe stakeholder-based process
- Identify nutrient-related concerns in Delta
- Describe technical work elements

Goals and Objectives

- Implement transparent stakeholder process
- Define scientifically defensible nutrient management strategy
- Fulfill CA Water Code requirements
- Address State and Federal anti-deg policies

Guiding Principles

- Use an open, transparent, efficient process
 - Use ground rules and governance framework
- Focus on Delta surface waters
 - Capitalize on ongoing efforts
 - Leverage and coordinate with other efforts
- Support development of nutrient management plans
 - Attainable outcomes
 - Defined concerns, hypotheses
 - Based on understanding of capabilities

Principles (cont.)

- Credible, feasible scientific recommendations
- Appropriate and effective modeling tools essential
- STAG may form technical subcommittees
- Seek independent peer review
- Remain adaptable and flexible
- Participants commit to allocate needed time and help secure funding

Process Description

Five key elements

- Central Valley Water Board staff
- Stakeholder and Technical Advisory Group (STAG)
- Science Work Groups
- Facilitator
- Independent Science Review Panel

Organizational Relationships



STAG Governance

- Designated representatives for main interest groups
- Consensus with accountability
 - Attempt to reach consensus
 - If reject proposal, then provide counter proposal that bridges interests
 - Work toward consensus within defined roles and responsibilities
- Voice opinions along way; don't wait until end
- Discussion open to all participants
- Decision making (if needed) by designated representatives

Potential STAG Membership

- POTW_s
- MS₄ (stormwater)
- Water supply (agencies and contractors)
- Environmental protection (NGOs)
- Marine operators
- Ports
- Boating and Waterways
- Mosquito abatement
- Drinking water
- Wildlife management

List of Potential Nutrient Related Problems in Delta

Chris Foe

Potential Nutrient Related Problems in Delta

- Increase in the Abundance & Distribution of Macrophytes.
- Increase in Frequency & Magnitude of Cyanobacteria Blooms.
- Changes in Phytoplankton Community.
- Low Dissolved Oxygen in Back Sloughs.
- Negative impacts to Drinking Water Quality.

Increase in the Abundance & distribution of Macrophytes.



Increase in the Frequency & Magnitude of Cyanobacteria Blooms.



Changes in Phytoplankton Community

- **Decrease in Algal Abundance**
- **Shifts in Composition of Algal Community.**
- **Contribute to Pelagic Organism Decline.**

Low Dissolved Oxygen in Delta Creeks & Sloughs and River Channels

Creeks and Sloughs

5-Mile Slough
Smith Canal
14-Mile Slough
Kellogg Creek
Mormon Slough
Mosher Slough
Tom Paine Slough

River Channels

Lower Calaveras River
Middle River
Mokelumne River
Old River

Negative Impacts to Drinking Water Quality

- Nuisance Algal Blooms
- Aquatic Weed Growth

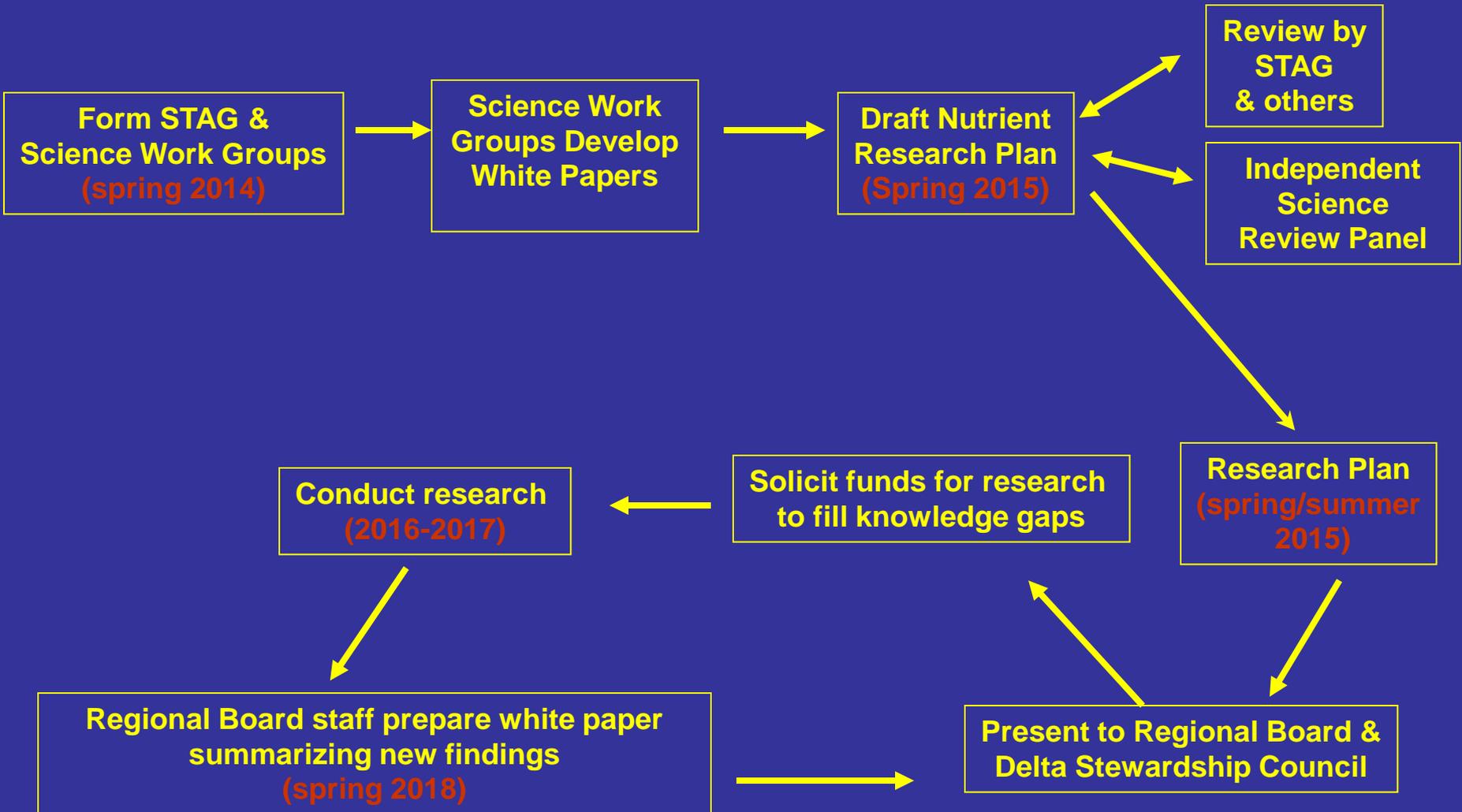
Question

- **Do nutrients cause or contribute to these problems?**
- **Could the problems be reduced or eliminated by nutrient controls?**

Science Work Groups

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Steps & Schedule for Developing & Implementing the Nutrient Research Plan



Potential Science Work Group Members

Individual	Work Groups			
	Modelling	Macrophytes	Cyanobacteria	Nutrient Forms & Ratios
David Senn, SFEI	X		X	X
Joe Domagalski, USGS	X			
Thomas Jabusch, SFEI			?	
Chris Enright, DSC	X			
Lisa Thompson, SRCSD				?
Alex Parker, SCUM			?	?
Stephanie Fong, SFCWA			X	X
Francis Brewster, SCVWD				?
Peggy Lehman, DWR			?	?
Bill Fleenor, UCD	?			
Louise Conrad, DWR		?		
Shruti Khanna, UCD		?		
Raymond Carruthers, USDA_ARS		?		
John Madsen, UCD		?		
Mine Berg, AMS			X	
Kathy Boyer, SFSU		X		
Randy Dahlgren, UCD				?

Schedule For White Papers & Nutrient Research plan

Tasks	Fall 2014	Winter 2014	Spring 2015	Summer 2015
White Papers	XXXXX	XXXXXXXX	X	
Research Plan			XX	
STAG Updates STAG Review	X		X XXXX	
Independent Science Review Panel				XXX
Regional Board Review				X

Questions??