

Biological Objectives Stakeholder Advisory Committee

Meeting Summary

May 26, 2010

Note: The list of attendees and the meeting agenda follow the meeting minutes. Additional materials from the meeting (PowerPoint presentations) have been sent to each Committee member and interested party along with this meeting summary.

Another note: 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. Where it contributes to the readability of the summary, discussion of the same issue that occurred at more than one place during the meeting is summarized together. Items on which the Committee expressed general agreement are indicated **in bold**, although it is important to emphasize that the Committee did not vote on these items and achieving consensus is not a goal of the Committee. General agreement was assessed by the facilitator through the nodding of multiple heads, the absence of any objection, and more nodding of heads when he summarized the apparent agreement. Specific commitments by State Board staff, SCCWRP, the facilitator, or Committee members are also indicated **in bold**.

Meeting objectives

The two primary objectives of the meeting were to present and discuss the technical workplan and the potential candidates for membership on the Scientific Advisory Committee.

Project introduction

(see presentation “Adv mtng bio-objectives 05-26-10 Intro.ppt” distributed with this meeting summary and also posted on the project website (http://www.waterboards.ca.gov/plans_policies/biological_objective.shtml).

Karen Larsen of the State Water Resources Control Board welcomed participants and provided a brief overview of the project’s goals, approach, and timeline. The project reflects the State Board’s recognition that chemical criteria provide only indirect answers to questions about the biological and ecosystem health of streams. In contrast, biological objectives will be based on direct assessment of biological conditions as represented by aquatic life indicators (bioassessment). As a result, there will be greater confidence that actions are in fact protective. The State Board staff recognize that aquatic life is a generic term that covers several Basin Plan beneficial uses (e.g., warm water habitat, cold water habitat, spawning) and that the policy will need to be clear on how it applies to the water bodies that are assigned the different types of aquatic beneficial uses.

A key feature of the policy will be its balance between statewide consistency and regional flexibility. The policy is envisioned to include a narrative objective that will apply statewide, with an implementation plan that includes by numeric endpoints (where possible) that would apply regionally.

Technical workplan

(see presentation “Adv mtng bio-objectives 05-26-10 Technical Workplan present.pdf” distributed with this meeting summary and also posted on the project website

(http://www.waterboards.ca.gov/plans_policies/biological_objective.shtml). The following notes focus primarily on the discussion between participants and the presenter (Ken Schiff); see the presentation itself for additional detail.

Ken Schiff began by describing the basic philosophy underlying the project (slide 3). The State Board and the technical team understand the bioassessment on Wadeable Streams will not address all aspects of stream condition. However, this is where the most data and knowledge is available and therefore is a reasonable starting point.

Reference condition(s)

In terms of establishing reference condition (slides 5 – 12), Ken referred participants to the report on reference conditions on the SWAMP website (http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qamp/wadestreams_rcmpfinal.pdf). The report laid out a framework (Reference Condition Management Plan, or RCMP) for defining reference conditions at both the landscape and reach scales. It identified gaps in existing information for the Central Valley and along the southern California urban fringe (slide 11). While this framework will be helpful, there are important elements of reference condition that have yet to be defined (slide 12). While many ecoregions, such as those shown in slide 8, are based on terrestrial data, Ken stated that this project will use aquatic data to define ecoregions, the first time this has been done in California. While Regional Boards have clear jurisdictional boundaries, the Basin Plans are watershed based and biogeographic regions are usually larger than watersheds and may overlap several Basin Plans. The project will therefore let the biological analyses drive the definition of biogeographic regions, independent of jurisdictional boundaries, an issue to be addressed in the waterbody classification portion of the project (beginning slide 19). Karen Larsen also stated that this is an issue the regulatory committee will address. This is an example of the kind of issue that may require some tradeoff or integration between biological and management perspectives as the implementation of the policy is considered.

There are few if any unaltered streams in the Central Valley, which will complicate the process of defining reference in this region. The same problem exists for portions of southern California. The RCMP suggested several approaches for such areas, such as using historical data or restoration sites, that have never been tried before. The challenge for the project will be to apply these and evaluate their effectiveness. On the policy side of the reference condition issue, it will be important to define “perennial,” which can be difficult. Participants asked the project team to develop very clear definitions of Wadeable, Stream, Unaltered, and Perennial because the application of the policy will depend heavily on these definitions. Participants also suggested that such definitions, wherever possible, apply terminology from the Clean Water Act and associated regulatory frameworks. While such detailed definitions have not in all cases been developed, **the project team agreed this was important and terms to be defined include: perennial, pristine, reference range, stream, stressor, unalterable, unaltered, Wadeable, water bodies, and water segments.**

There are many highly managed waterways throughout the state and different approaches to defining reference (e.g., theoretical expectation, historical condition) can have very different implications for assessment and management. This issue was addressed in more detail during the discussion of stressor response models (see below). Similarly, issues related to the potential use of not-quite-pristine sites to help define reference, along with the possible need to define riparian habitat conditions as part of reference, were addressed during the discussion of stressor response modeling (see below). While resolving such issues will be an important task for the project, the RCMP does have a strong emphasis on the relationship between biological condition and habitat.

While the workplan is very thin on the specific statistical methods that would be used to define geographic boundaries between regions with different reference conditions, this is because the specific

methods have not yet been chosen, though a multivariate approach will probably be used. A challenging issue will be to define criteria for setting boundaries, as opposed to viewing a range of conditions as simply a gradient within a single overall bioregion. This is an area where the Scientific Advisory Committee will have a lot to say and also where the Stakeholder Advisory Committee will have input.

Stressor response models

Slides 13 – 18.

The word “unalterable” on slide 13 (an issue for many participants) was meant to refer to habitat features that are not likely to be remediated and that there is a limited ability to address. This could include dense development up to the edge of a stream, concrete channelization for flood control purposes, or extensive impervious surface in a watershed. While such features may be improved or moderated at some point in the future, it is likely that they will remain in place for the foreseeable future and should therefore be accounted for in the definition of realistic biological expectations for each waterbody type. Thus, the State Board does not assume that streams in highly urbanized regions should achieve biological conditions seen in pristine streams. The stressor response models and waterbody classification are intended to develop realistic expectations for different categories of streams. The method for accomplishing this is of great concern to participants, since “unalterable” has not yet been defined. For example, while global climate change is certainly beyond the scope of local managers to address at the scale of individual streams, it has the potential to change the background and therefore the definition of reference.

The figure on slide 14 prompted discussion about whether sites with some degree of reduced condition (e.g., some of the sites in Group 1) should be included in the reference range. Some participants suggested that only pristine streams should contribute to the reference definition, because the bar should be set as high as possible, although available scientific information demonstrates that “pristine” does not exist and that even the most pristine seeming streams have some degree of alteration. The approach being developed for this project has defined reference as some range of the least disturbed conditions and this definition will be developed more explicitly as work proceeds. If, as the conceptual example in slide 14 shows, reference includes conditions with some low amount of development, then such sites would be expected to meet the reference condition. There was additional discussion about whether such a strategy would increase or decrease expectations for sites with only minimal levels of development. Some participants emphasized the need for high expectations so that disturbed sites not receive a free pass and others stressed the need to have realistic expectations that would help set management priorities for corrective action. This discussion is essentially about the horizontal width of the Group 1 box in the figure on slide 14.

In addition, if biological objectives are applied to water segments, this will be consistent with language in the Clean Water Act, although both the State and Regional Water Boards have in the past applied impairment definitions at times to entire watersheds or waterbodies. This is an issue that will be addressed with input from the regulatory committee.

It might require substantial additional monitoring effort to determine which of the bins, or groups on slide 14, sites fit into and the NHD dataset on streams contains errors and gaps in terms of classifying streams as perennial. The stressor modeling work begin to address these issues with some preliminary range-finding analyses with lots of stressors and some biological information, followed by more detailed analysis on those relationships that appear to be informative. There is a long list of stressors the project will examine. This will involve examining a large number of gradients, both natural and anthropogenic, evaluating which ones appear to have the strongest relationship with biological condition, and focusing more attention on those. This may be complicated by the challenge of accounting for cyclical (e.g., seasonal) or infrequent but important factors (e.g., drought) factors, and the fact that relationships between biological indicators and stressors, such as those illustrated in slide 17, can be very noisy and

dominated by a few points at the extremes of the gradient. This requires care in the development of the stressor – response models and the statistical analysis will include an examination of the extent to which apparent relationships are driven by a small number of data point. Examining points that do not fit the overall pattern (e.g., points in the lower left corner of the middle graph on slide 17) can also provide additional insight.

Waterbody classification

Slides 19 – 23.

The number of different classifications to be developed has not yet been determined. The optimal number from a biological perspective will most probably be different than the optimal number from a policy perspective, and the team has not yet discussed how to trade off these different perspectives. However , other states that have developed biological objectives for streams use about four or five waterbody classifications; three to five categories seems reasonable as a starting point for California.

There are important implementation issues, particularly for 303d listing, associated with how waterbodies are classified. For example, some 303d listings will list an entire stream, even though that stream, and its associated listing, crosses several ecological regions. The specific classification and associated stressor response model will define what the expectation is for that stream, and, within a given stream, the predictive model can help to address other sources of variability (e.g., elevation, temperature). Not all sources of variation, especially those acting at smaller spatial scales, will be included in the classification system. Nor does the project team know what spatial scale the classification system will operate on, since this will be a function of how the models work. Karen Larsen stated that the 303d listing / delisting policy will have to be revised to incorporate the biological objectives policy and implementation plan.

After the initial classification, streams can be reconfigured by natural events, a source of variability with implications for the policy’s implementation procedure. Another issue is whether and how site-specific habitat factors would come into play in terms of defining dose-response relationships in the stressor response models. The stakeholder committee will have opportunities to define such issues and help validate the models and their extrapolation to their sites, as well as to refine the implementation process. There may be portions of the state where there are narrative objectives but no numeric benchmarks (as was the case for the Sediment Quality Objectives (SQO) policy); the State Water Board’s intent is that the policy and its implementation procedures will be improved over time as the amount of data, and experience implementing the policy, both increase.

There are potential legal / regulatory issues related to the use of terms such as “water body” and “water segment” in this policy and in the California Water Code and the federal Clean Water Act. Act refers to “water segments.”

Stressor identification

Slides 23 – 27

The project will select three case studies and the procedure for selecting these has not yet been decided. USEPA’s CADDIS group wants at least three case studies spread over three stressor types. One criterion for selecting case studies is that stakeholders in the region be supportive, have a certain amount of historical data, and the resources to collect some additional data specifically for the case study if needed. Case studies suggested by stakeholders included the San Diego Regional Water Board region, the area managed by the Big Valley Ranch Band of Indians, the Santa Clara River watershed, and portions of the Central Valley where there is ten years of bioassessment and other monitoring data and combinations of agricultural and urban landuses. Studies of aerial deposition, sediment dynamics, habitat modification,

and other factors were also suggested, with the caution that it may be difficult to distinguish between disturbances like changes in hydrology and changes in habitat, especially in urbanized areas where peak flow has been affected by the increase in impervious surface. Such studies will be useful and there are similar studies from outside California to draw on. Case studies and other studies suggested by stakeholders will be useful in helping to direct USEPA to issues and areas where adequate work has not yet been done, although three case studies will not be enough to completely resolve the issue of stressor identification and stressor response modeling.

One purpose of the case studies is to test the application of CADDIS to California, but the case studies are also seen by some project participants as useful in testing the broader range of tools being developed by the project. The case studies and associated stressor identification work are also very important in giving managers the ability to improve situations if the assessments shows streams are impacted. Without knowing what stressors are most important, it is difficult if not impossible to target actions to improve conditions.

Information management

Slides 27 – 30

CEDEN is an exchange network, not a data warehouse to which all data will be submitted.

Schedule (and other issues)

Slides 31 – 32

There may be dangers in going too far down the technical path before key policy issues are resolved, such as, for example, the definitions of unaltered and unalterable, decisions about how biological expectations will be set, what constitutes a stressor, and how uncertainty will be handled, among others. The project team was urged to develop an assessment framework as soon as possible (the SQO assessment framework was mentioned as one example); while the numeric thresholds will not be available immediately, the framework will highlight issues involved with integrating different lines of evidence, setting an impact threshold, dealing with uncertainty, and decision making. In these areas, the project will build on other states' experience with establishing biological objectives similar to those being considered for California.

As the assessment tools are developed, the stakeholder committee will be used as a sounding board; the committee will therefore have opportunities for input before decisions are finalized.

Scientific advisory committee

Slides 34 – 44

Participants suggested a number of additional areas of expertise, including an aquatic toxicology, GIS expertise, fish biology, physiology, and geomorphology and also suggested that the listed categories of expertise are too confining. Participants also commented that tribes are an equivalent management entity to states and the federal government (slide 36) and have direct experience with developing biological objectives, and that they thus deserve distinct representation on the scientific committee. The way these categories were described was somewhat inaccurate and the project team's intent was really to identify scientists with experience in developing biological objectives programs at the state and federal level. Some concerns were also expressed at the number of candidates with close ties to USEPA.

Participants suggested a number of additional candidates who, in addition to other names submitted subsequent to the meeting, were distributed to the stakeholders via email for final review and comment. The project team emphasized that members of the scientific advisory committee will be limited to scientists

from outside the state in order to remove potential for conflicts of interest in the committee's advisory role. The State Water Board will make the final decision on membership in the scientific advisory committee.

Next meeting and next steps

The next meeting date for the Advisory Committee has not been set.

Next steps will include selection of the scientific advisory committee and scheduling the first meeting of this committee. A meeting of the stakeholder advisory committee will be scheduled prior to the meeting of the scientific advisory committee. In addition, the members of the stakeholder advisory committee will be confirmed and this information distributed to all interested parties.

Attendees

Name	Organization
<i>Staff</i>	
Brock Bernstein	Facilitator, Committee Chair
Karen Larsen	State Water Board
Toni Marshall (P)	State Water Board
Peter Ode	CA Dept. Fish and Game
Ken Schiff	SCCWRP
<i>Participants</i>	
Karen Ashby (P)	Larry Walker Associates
Geremew Amenu	LA County Flood Control District
Zora Baharians	City of LA Public Works
Chris Beegan (P)	State Water Board
Bernadette Bezy (P)	Aquatic biologist
Shirley Birosik (P)	LA Regional Water Board
Brody (P)	Impact Sciences
Lilian Busse (P)	San Diego Regional Water Quality Control Board
Beckie Challeder (P)	CA Dept. of Agriculture
Ian Chan (P)	Garcia and Associates
Ed Cheslak (P)	PG&E
Kevin Coyne	Larry Walker Associates
Mark Daniel	Greater LA County Vector Control District
Tess Dunham	Somach, Simmons, and Dunn
Betty Fetscher	SCCWRP
Joe Furnish (P)	US Forest Service
Linda Garcia (P)	
Greg Giannonatti (P)	City of Roseville
David Gillett	SCCWRP
Bobby Gustafson	City of San Bernardino Water
Will Hagan (P)	Moss Landing Marine Labs
Lisa Haney	Orange County Sanitation Districts
Adam Harper (P)	CalCIMA
Jim Harrington	CA Dept. Fish and Game
Joanne Hild (P)	Friends of Deer Creek
Richard Hill	Caltrans
Valerie Housel (P)	City of Santa Barbara
Jeff Humble (P)	CA Dept. Fish and Game
Emiko Innes	LA County Flood Control District
Al Javier	Eastern Municipal Water District
Aaron Johnston-Karas (P)	Graniterock
Kevin Jontz	Heal the Bay
Gita Kapahi (P)	State Water Board
Chuck Katz	US Navy
Nardy Khan	Orange County Public Works
Parry Klassen	East San Joaquin Water Quality Coalition
Jennifer Kovecses (P)	San Diego Coastkeeper
Clifton Lollar (P)	
Noel Ludwig	Bureau of Land Management
Kathy Mannion (P)	Regional Council of Rural Counties
Phil Markle	LA County Sanitation Districts / Tri-Tac
Raphael Mazor	SCCWRP

Kris McFadden	City of San Diego
Amy Mecklenborg (P)	Water Board
Soapy Mulholland (P)	Sequoia Riverlands Trust
John Netherwood	Boeing
George Nichol (P)	State Water Board
Sherri Norris (P)	CA Indian Environmental Alliance
John Norton (P)	
Geoff Rabone	San Joaquin River Group
Elke Rank (P)	
Mark Rentz	Association of CA Water Agencies
David Roberts (P)	Nautilus Environmental
Robert Rodarte (P)	Orange County Public Works
Sarah Ryan (P)	Big Valley Rancheria
Susan Santilena	Heal the Bay
Amber Semrow	Orange County Vector Control District
Marco Sigala (P)	Moss Landing Marine Labs
Fraser Sime (P)	CA Dept. Water Resources
Chris Sommers	SCVURPPP
Glen Spain (P)	PCFFA
Tom Suk (P)	Lahontan Regional Water Board
Dave Thomas (P)	Robertson-Bryan
Anthony VanRuiten (P)	Best Best and Krieger
Pavlova Vitale (P)	Santa Ana Regional Water Board
Jennifer Voccola	City of Malibu
Laurel Warddrip (P)	Water Board
Barbara Washburn (P)	OEHHA
Jo Ann Weber	County of San Diego
Brenda Whited (P)	
Melinda Woodard (P)	Moss Landing Marine Labs

(P) indicates participation by phone and Webex

Agenda – Bio-objectives Stakeholder Advisory Committee

SCCWRP

3535 Harbor Blvd.

Suite 110

Costa Mesa, California 92626

May 26, 2010

9:30 – 9:45	Welcome, introductions, meeting objectives – B. Bernstein
9:45 – 11:15	Technical workplan and approach – K. Schiff, P. Ode
11:15 – 12:00	Potential members for Scientific Advisory Committee – K. Schiff
12:00 – 12:45	Lunch
12:45 – 1:30	Advisory committee membership update – B. Bernstein
1:30 – 3:15	Advisory committee concerns and suggestions – B. Bernstein
3:15 – 3:30	Public forum and discussion of next steps – B. Bernstein

For directions to SCCWRP, hotels, etc., go to www.sccwrp.org

Meeting will be in the large conference room.

The meeting will be available remotely via Webex, with instructions for logging in and joining by teleconference below.

Topic: Biological Objectives Stakeholder Committee

Date: Wednesday, May 26, 2010

Time: 9:00 am, Pacific Daylight Time (San Jose, GMT-07:00) Meeting Number: 746 652 999 Meeting

Password: swamp

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1. Go to

<https://waterboards.webex.com/waterboards/j.php?ED=135541762&UID=0&PW=NYjk4N2I4MTRk&RT=MIM0>

2. Enter your name and email address.

3. Enter the meeting password: swamp

4. Click "Join Now".

To join the teleconference only

Call-in toll-free number (Verizon): 1-888-920-4390 (US) Attendee access code: 776 292 5