

**SUMMARY OF THE TRIENNIAL AUDIT OF THE CALIFORNIA WATER QUALITY MONITORING COUNCIL WORKGROUPS**

MONITORING COUNCIL WORKGROUPS	PERFORMANCE MEASURES						Explicit Workgroup Needs	Who else should participate?
	Program Strategy, Objectives, Design	Indicators and Methods	Data Management	Consistency of Assessment Endpoints	Reporting	Program Sustainability		
<b>Safe to Drink</b>	<b>Low</b> - General public audience, local data and compliance with drinking water standards perspective. Little or no regional or statewide focus.	<b>Low to Medium</b> - Monitoring of public water systems clearly dictated by CDPH drinking water regulations. Difficult to provide clear picture of water quality as delivered to customer. Raw source water monitoring not currently coordinated among agencies.	<b>Medium</b> - DRINC Data management system for CDPH data being developed at UC Davis. Planned integration of DRINC with Water Quality Exchange will provide connectivity with CEDEN data. Migration of drinking water program to Water Boards creates perceived uncertainty. Current integration with GeoTracker GAMA not automated at present. No connectivity with DWR data systems.	<b>Medium</b> - Evaluation of CDPH data governed by drinking water MCLs and PHGs. Differences between MCL and PHG assessment endpoints not clearly explained. CDPH use of term "safe" could confuse interpretations. No consistent endpoints for raw source water assessment statewide.	<b>Low</b> - Data reporting in portal not fully vetted by workgroup. Dynamic reporting by public water system is envisioned. No integration of surface water data at present. Interactive groundwater data reporting on a well-by-well basis plus summary queries by area through GeoTracker GAMA.	<b>Low</b> - Migration of drinking water program to Water Boards adds funding and data management uncertainty. No current funding or program for surface water data integration. Groundwater data integration through GeoTracker GAMA has stable funding, but is not automated.	<ul style="list-style-type: none"> <li>● Integration of water data systems between agencies.</li> <li>● Expanded number of workgroup members.</li> <li>● Secure funding for data management and integration and for portal development.</li> <li>● Commitment of drinking water program to data and information transparency.</li> </ul>	<ul style="list-style-type: none"> <li>● American Water Works Association (AWWA)</li> <li>● Dept. of Pesticide Regulation</li> <li>● Surface water staff from SWRCB</li> <li>● Additional staff from CDPH Drinking Water Program &amp; Dept. of Water Resources</li> </ul>
<b>Safe to Swim</b>	<b>Medium</b> - Portal focus on ocean beaches. Freshwater swimming information missing. Data management problems cause information to be out of date.	<b>Medium</b> - Indicators adopted in state water quality standards. But inconsistent use of indicators from region to region and even within regions. Plan exists to create statewide indicators through new water quality standards based on EPA criteria. QA consistency addressed through SWAMP and AB 411. Rapid indicator methods in development.	<b>Low to Medium</b> - Uneven data quality in BeachWatch with some data duplication and mis-labeling of data. Connectivity poor between BeachWatch and CEDEN. Portal data limited to coastal waters due to data feed from BeachWatch. Recent data currently unavailable in portal. Contract in place to correct the above and move portal feed from CEDEN, enabling freshwater data display. Developing mechanism to obtain coastal data in a more timely manner. General lack of access to data generated by citizen monitoring groups.	<b>Low to Medium</b> - Some inappropriate use of endpoints in SwimGuide. Inconsistent bacterial indicator objectives between regions and within regions. Plan to correct problem with statewide indicator standards through new rulemaking. Score card approaches in Heal the Bay's Ocean Beach Report Card and SwimGuide need to be extended to freshwater data.	<b>Medium</b> - Portal has not been updated since it was launched in 2009. Delay in receiving lab results due to methods; new rapid methods may improve timing. Delay in getting data into data structure and portals; improvements in data structure will help to correct this. Inability to obtain freshwater data in a timely manner. Delays cause NGOs to request data separately from county health officers, increasing inefficiency. Portal links to coastal county websites present most timely data.	<b>Medium</b> - Inconsistent workgroup leadership and commitment from member organizations. Coastal monitoring more sustainable due to continued funding. Freshwater monitoring, relies on individual regional water board priorities and citizen monitoring efforts, for which there is no statewide coordination nor consistent funding.	<ul style="list-style-type: none"> <li>● Funding for workgroup efforts and portal development.</li> <li>● Continued funding for monitoring, especially for freshwaters.</li> <li>● Consistent and sustained workgroup leadership and commitment of effort from Water Boards and others.</li> <li>● Coordinated statewide freshwater swimming safety monitoring program.</li> <li>● Improved data management system that includes timely data entry from multiple sources and transfer of data to portal.</li> <li>● Development of smartphone apps to reach public more effectively.</li> </ul>	<ul style="list-style-type: none"> <li>● Citizen monitoring organizations</li> <li>● Department of Public Health</li> </ul>
<b>Safe to Eat Fish and Shellfish</b>	<b>Medium</b> - Survey level sampling permits determination of statewide and regional patterns of contamination, but does not allow definitive answers regarding fish eating safety in many locations. Intensive sampling allowed development of safe eating guidelines for a much smaller number of waterbodies. Developed strategy document generally guides program, but does not guide future sampling and assessment efforts.	<b>High</b> - SWAMP methods for sampling and analysis, well-documented QA program. Extending these tools to non-SWAMP monitoring programs still needed.	<b>Medium to High</b> - Data management in CEDEN. Safe-to-Eat portal presents data with multiple perspectives. Little coordination of non-SWAMP data.	<b>High</b> - OEHHA statewide data analysis and assessment process consists of multiple thresholds used to develop variable consumption advisories, all well developed and documented. Different thresholds used for determining fishing beneficial use impairment by Water Boards. Disagreement exists on use of OEHHA thresholds for evaluating survey-level data, as used in the portal.	<b>High</b> - Static reports and fact sheets developed yearly to reflect monitoring and assessment. Simultaneous publication of data through CEDEN and portal. Cross referencing of reports, fact sheets, and portal content. Successful media outreach on multiple occasions. Report card style reporting would improve understanding by general public.	<b>Low</b> - SWAMP budget allocation continuing to be reduced while costs continue to rise. No additional funding added for collaboration functions. BOG strategic plan outlines goals and priorities, but does not identify resources.	<ul style="list-style-type: none"> <li>● Consistent reliable funding for monitoring, assessment, reporting, data management, communication, and fostering collaboration.</li> <li>● Development of report card scoring of data to improve utility to general public.</li> <li>● Integration of shellfish safety and biotoxin evaluation into program.</li> </ul>	<ul style="list-style-type: none"> <li>● Department of Public Health, Shellfish Protection and Marine Biotoxin Programs</li> <li>● Non-SWAMP bioaccumulation projects and programs</li> </ul>

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<b>Aquatic Ecosystem Health:</b>								
<b>Wetlands</b>	<p><b>Medium</b> - Wetland and Riparian Area Monitoring Plan (WRAMP) monitoring and assessment framework developed and endorsed by Monitoring Council. Developed standardized tool set for monitoring, assessment, data management, visualization, and analysis. Need greater emphasis on implementation through existing agency programs.</p>	<p><b>High</b> - Monitoring Council endorsed WRAMP framework includes a number of standardized tools to improve consistency of mapping, monitoring, assessment, and reporting, which help coordination and collaboration between wetland-, stream-, and riparian area-related programs. California Rapid Assessment Method (CRAM) includes a set of standardized indicators. Regular training on CRAM increases consistent usage. CRAM endorsement obtained from SWAMP.</p>	<p><b>High</b> - CARI, eCRAM, and EcoAtlas managed at SF Bay Area CEDEN Regional Data Center. EcoAtlas uses web services to share information with other systems and to deliver data to the Wetlands Portal. All data delivered to CEDEN and readily available online. EcoAtlas currently wetlands-centric and needs to expand content to serve additional agency programs.</p>	<p><b>Medium</b> - Consistent endpoints included in WRAMP framework (e.g., no-net-loss of wetlands). Further refinement needed, including scoring of CRAM results.</p>	<p><b>Medium</b> - Monitoring results regularly reported in scientific and other forums including the <i>State of the State's Wetlands Report</i> published by CNRA. Data displayed interactively to the public through the Wetland Portal and EcoAtlas. Landscape Profile Tool in EcoAtlas permits user-defined reporting. However, consistent funding for both is a challenge. Status &amp; Trends Project will improve future reporting.</p>	<p><b>Medium</b> - Funding obtained from multiple federal sources. Diligent outreach efforts by workgroup members has created several partnerships with responsible agencies, generally moving toward broader use of WRAMP tools and increased public access to data and information. Proposed Water Board monitoring surcharge could help support some elements of WRAMP implementation.</p>	<ul style="list-style-type: none"> <li>● Foster partnerships with additional agencies to integrate WRAMP framework, methods, and tools into existing programs.</li> <li>● Continued funding for development of WRAMP toolset, implementation by responsible agencies, and outreach functions of workgroup.</li> <li>● Coordination with other Monitoring Council workgroups, especially estuaries and streams.</li> <li>● Workgroup "Level 1" committee to coordinate water resource mapping.</li> <li>● Metrics of workgroup performance.</li> <li>● Expand EcoAtlas to incorporate wildlife habitat information to support NCCP planning and compliance monitoring.</li> <li>● Better maintenance of workgroup web page.</li> </ul>	<ul style="list-style-type: none"> <li>● Dept. of Fish &amp; Wildlife - Lake and Streambed Alteration Program, Aquatic Bioassessment Laboratory, Resource Assessment Program, and Biogeographic Data Branch</li> <li>● Department of Water Resources</li> <li>● State Water Board, Division of Water Rights</li> <li>● California Coastal Commission</li> <li>● State Coastal Conservancy</li> </ul>
<b>Estuaries</b>	<p><b>Medium</b> - Current portal focus on SF Estuary as a template, with intention to expand statewide. Core questions identified and organized by five key estuary attributes. Multiple levels of detail to satisfy variety of audiences. Much documentation still lacking.</p>	<p><b>Low</b> - Indicators and methods vetted by contributing organizations. Lack participation from other estuaries.</p>	<p><b>Medium</b> - Using data from existing systems. Much data is not web-enabled, offering static figures in the portal. Focus on SF Estuary, not other estuaries. Data can be downloaded from portal for offline use. Differing reporting requirements and data formats pose a challenge.</p>	<p><b>Low to Medium</b> - Portal currently presenting trends with little analysis. Little coordination between widely varying data types.</p>	<p><b>Medium</b> - Not all data fully automated in portal. Many data graphs are live presentations with automatic updating from data sources via web services. Data can be downloaded for use offline. Original sources cited.</p>	<p><b>Low</b> - Relatively young workgroup. Developing first internal review toward a strategic workplan. No reliable funding base for portal development and IT support. Coordination with the Interagency Ecological Program and Delta Science Program.</p>	<ul style="list-style-type: none"> <li>● Bring in new partners from other estuaries.</li> <li>● Access to data from a wide variety of agencies and organizations.</li> <li>● Improved communication and accountability of participants.</li> <li>● Guidelines for assessments and conflict resolution.</li> <li>● Better preparation and vetting of content and data issues prior to developing portal pages.</li> <li>● Agency management recognition that workgroup activities are a priority to ensure staff availability and time.</li> </ul>	<ul style="list-style-type: none"> <li>● Partners from other estuaries</li> </ul>

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<b>Streams, Rivers &amp; Lakes</b>	<b>Medium</b> - Based on established SWAMP programs under the SWAMP Monitoring and Assessment Strategy, updated in 2010. But not all components included and those are only partially integrated to address core ecosystem health question. Not all stream and river types addressed. Lakes not yet addressed.	<b>Medium to High</b> - Indicators, methods, and QA scientifically validated through SWAMP for data displayed in portal. Multimetric indices of ecological condition not addressed. Healthy Watersheds Integrated Assessment could form basis for integration. Causality not yet addressed.	<b>Medium</b> - CEDEN forms basis of data displayed in portal and is updated automatically. Additional data sources needed to increase comprehensiveness. Consistent base map needed. Healthy Watersheds Integrated Assessment and component data sets to be made available through portal.	<b>Medium</b> - Assessment endpoints for BMI bioassessment and toxicity vetted through SWAMP. Portal displays raw data and bins data into logical categories (e.g., good, degraded, very degraded) to add meaning for public audience. No current integration of metrics.	<b>Medium</b> - Data are presented in regular SWAMP reports and interactively in the portal. Toxicity data automatically updated from CEDEN as new data generated. BMI bioassessment data are static at present.	<b>Low</b> - Current level of activity based on voluntary efforts of participants. No dedicated funding for workgroup and portal development. SWAMP funding being reduced as costs for monitoring and assessment rise.	<ul style="list-style-type: none"> <li>● Improved integration and analysis of additional datasets from other programs.</li> <li>● Commitment of resources.</li> <li>● Improved base map for water resources (e.g., CARI).</li> <li>● Build on Healthy Watersheds Integrated Assessment to present multi-metric assessments.</li> </ul>	<ul style="list-style-type: none"> <li>● Department of Fish and Wildlife, Lake and Streambed Alteration Program</li> <li>● Department of Water Resources</li> </ul>
<b>Ocean &amp; Coastal</b>	Workgroup in formative stage. Portal plans not yet developed. Questions yet to be decided upon. Monitoring, assessment, reporting, and data management processes not yet evaluated. Funding for workgroup and portal planning effort secured.						To be determined	To be determined
<b>Data Management</b>	Workgroup charter developed. Two subcommittees address tools for portal development and data standards.		<b>Low</b> - Most relevant data currently housed in silos within individual departments. Lack of commitment to data sharing and data quality documentation. A few data systems are made available through web services or exchange networks.		<b>Low</b> - No current mechanism for publicizing workgroup recommendations.	<b>Low</b> - Lack of agency management support for workgroup participation and consistent workgroup leadership hamper progress. Need for better coordination with theme-specific workgroups.	<ul style="list-style-type: none"> <li>● Document recommendations for data formats and data transfer protocols to the theme-specific workgroups.</li> <li>● Greater coordination with theme-specific workgroups.</li> <li>● Develop shared common GIS layer of aquatic resources.</li> <li>● Commitment of departmental managers to importance of workgroup participation and value of workgroup recommendations.</li> <li>● Increased commitment to sharing of data between agencies and organizations.</li> <li>● Consistent and engaged workgroup leadership.</li> <li>● Workgroup members willing and able to make recommendations on needed departmental actions.</li> <li>● Method(s) to publicize workgroup recommendations.</li> <li>● Improved ability to bridge gap between scientists and IT professionals.</li> </ul>	<ul style="list-style-type: none"> <li>● All departments listed in SB1070.</li> </ul>

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<b>Collaboration Network</b>	<b>High</b> - Planning for improvement and future webinar topics provided via regular post-webinar participant surveys. Feedback from surveys and other comments suggest the CWQMCN is meeting its goals. Outreach to increase participation through conferences and social media (Linked In).	<b>High</b> - Webinars have been providing current information regarding Indicators and Methods, including QA, with the goal of improving monitoring performance statewide.	<b>High</b> - Webinars are continually being offered regarding data management, and sharing, with the goal of improving monitoring performance statewide.	<b>Medium</b> - Although webinars have not been presented directly on assessment endpoints, they have been presented and discussed within many webinars.	<b>High</b> - The webinar series has provided reporting guidance and has been a forum for water quality monitoring programs and projects to share their reports. Recorded webinars and presentation materials made available for later viewing via the Collaboration Network web page and YouTube.	<b>High</b> - At present the CWQMCN webinar series is sustainable. Improvements could be made by adding an additional facilitator(s) and seeing greater coordination with other Work Groups. Currently WebEx cannot support all of the CWQMCN's video conversion needs and additional software is needed.	<ul style="list-style-type: none"> <li>● Additional webinar facilitator(s).</li> <li>● Greater coordination with other workgroups.</li> <li>● Additional software for video conversion of recorded webinars.</li> <li>● Methods to gauge whether webinars result in improvements to monitoring, assessment, and reporting programs.</li> </ul>	