

**California Water Quality Monitoring Council**  
**Data Management Workgroup Meeting Notes**

**November 22, 2011—10:15 AM to 3:00 PM**

Training Room 1, East/West – First Floor  
 Joe Serna Jr. Cal/EPA Headquarters Building  
 1001 I Street, Sacramento, CA



**Attendees** (in person or on WebEx):

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|---|----------------------------------|
| Leo Anguiano, SWRCB   | Jeff Kapellas, SWRCB             |
| Michael Dangermond, Esri  | Kevin Long, SWRCB                |
| Shawna Dark, CSU Northridge,<br>Center for Geographic Studies   | Tom Lupo, CDFG                   |
| Bill Ehorn, DWR   | Jon Marshack, Monitoring Council |
| Mark Emmerson, CDPH   | David Osti, 34 North             |
| Cristina Grosso, SFEI   | Jodi Pontureri, SWRCB            |
| Tony Hale, CA Ocean Science Trust,<br>MPA Monitoring Enterprise | Greg Smith, DWR                  |
| David Harris, California Natural Resources Agency               | Steve Steinberg, SCCWRP          |
| Quinn Hart, UC Davis, CERES                                     | Meredith Williams, SFEI          |
|   | Peter Williams, IBM              |
|   | Adam Wolfe, CDFG                 |

<b>ITEM:</b>	<b>1</b>
<b>Title of Topic:</b>	<b>Introductions &amp; Announcements</b>
<b>Contact Person:</b>	Steve Steinberg      steves@sccwrp.org, (714) 755-3260

<b>ITEM:</b>	<b>2</b>
<b>Title of Topic:</b>	<b>Data Management Technologies and Approaches - IBM</b>
<b>Purpose:</b>	Information
<b>Contact Person:</b>	Peter Williams      peter.r.williams@us.ibm.com, (925) 648 7975
<b>Attachments:</b>	<ul style="list-style-type: none"> <li>• <a href="#">Data Integration Approaches and Technologies</a> - presentation by Peter Williams</li> <li>• <a href="#">Toward an Integrative Software Infrastructure for Water Management in the Smarter Planet</a> - referenced paper by Barbara Eckman, <i>et al</i></li> </ul>
<b>Notes:</b>	<ul style="list-style-type: none"> <li>• Stage data integration based on the need to respond to questions</li> <li>• Prioritize based on value of answers</li> <li>• Distributed data federation is potentially more powerful than data warehouse approach, though potentially more complex</li> <li>• Append unstructured data, such as photos and newspaper articles, to increase search potential</li> </ul>

	<ul style="list-style-type: none"> <li>• Think of water quality as a product brand. What factors impact the quality of the brand?</li> <li>• Model integration allows more predictive querying and more rapid responses</li> </ul>
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<b>ITEM:</b>	<b>3</b>	
<b>Title of Topic:</b>	<b>Data Management Technologies and Approaches - Lawrence Berkeley National Lab</b>	
<b>Purpose:</b>	Information	
<b>Contact Person:</b>	Keith Jackson	KRJackson@lbl.gov, 510-486-4401
<b>Notes:</b>	Item postponed to a later meeting	

<b>ITEM:</b>	<b>4</b>	
<b>Title of Topic:</b>	<b>MPA Monitoring Enterprise – An Ocean Data Perspective</b>	
<b>Purpose:</b>	Information	
<b>Contact Person:</b>	Tony Hale	tony.hale@calost.org, (510) 251-8330
<b>Attachment:</b>	<a href="#">Evolving MPA Monitoring: Technology Solutions to Inform Decisions</a> - presentation by Tony Hale	
<b>Notes:</b>	<ul style="list-style-type: none"> <li>• The scale of ocean monitoring differs from other water quality monitoring</li> <li>• Pursuant to the Marine Life Protection Act, Marine Protected Areas (MPAs) collect data over a five year period before reporting out. The Central Coast MPA will be assessed first.</li> <li>• OceanSpaces.org <ul style="list-style-type: none"> <li>○ Objective is to connect science with policy and management, to develop expert judgments on the data</li> <li>○ Develop new on-line community of decision makers, fishermen, scientists, etc. beginning with scientists and organizational partners</li> <li>○ Interests / places / users / organizations</li> <li>○ Dashboard may be customized by the user</li> <li>○ Allow organizations to offer specialized filtering of information to viewers</li> <li>○ Users may subscribe to different content</li> <li>○ Will McClintock's team at UC Santa Barbara developing visualization tools</li> </ul> </li> </ul>	

	<ul style="list-style-type: none"> <li>○ Upload data tool plus meta-data standards</li> <li>○ Expect alpha-testing with a few selected partners in near future</li> <li>○ Allow users to help guide development</li> <li>○ May be able to integrate question-driven content to create Ocean Health portal appended to OceanSpaces.org</li> </ul>
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<b>ITEM:</b>	<b>5</b>	
<b>Title of Topic:</b>	<b>SFEI – Portal Development and Data Management</b>	
<b>Purpose:</b>	Present examples of current portal development and data management approaches and/or issues that affect their progress.	
<b>Background:</b>	SFEI has been integral to the development of the Wetland portal (currently available) and is leading development of the Streams portal.	
<b>Contact Person:</b>	Cristina Grosso	cristina@sfei.org, (510) 746-7371
<b>Attachment:</b>	<a href="#">SFEI's Portal Development and Data Management</a> - presentation by Cristina Grosso	
<b>Notes:</b>	<ul style="list-style-type: none"> <li>• Automate processing where possible</li> <li>• Difficulty standardizing on location names</li> <li>• Move WetlandTracker toward Aquatic Atlas that would support multiple data hosting platforms</li> <li>• Currently funded through grants. Stable funding source needed.</li> <li>• Map viewers of data have difficulty displaying data from the same lat/long</li> <li>• Kriging and interpolation – How to differentiate between measured values and modeled ones? Different uncertainties exist. How can this be communicated through maps?</li> </ul>	

<b>ITEM:</b>	<b>6</b>	
<b>Title of Topic:</b>	<b>Data Management Needs of the Theme Based Workgroups</b>	
<b>Purpose:</b>	Each workgroup was asked to provide feedback regarding data management needs and how the DMWG can help support their work. A summary of these responses will be presented for discussion.	
<b>Desired Outcome:</b>	Identify opportunities for the DMWG to support the needs and objectives of the theme-based workgroups as we develop our strategy going forward.	
<b>Contact Person:</b>	Jon Marshack	jmarshack@waterboards.ca.gov, (916) 341-5514

<b>Attachments:</b>	<p>Theme-Specific Workgroup Data Issues:</p> <ul style="list-style-type: none"> <li>• <a href="#">Wetland Monitoring Workgroup</a></li> <li>• <a href="#">Bioaccumulation Oversight Group</a></li> <li>• <a href="#">Safe to Swim Workgroup</a></li> </ul>
<b>Notes:</b>	<p>See the above input from theme-specific workgroups.</p> <ul style="list-style-type: none"> <li>• National Hydrography Dataset (NHD) <ul style="list-style-type: none"> <li>○ Department of Water Resources sees no problem with taking stewardship of California's portion of NHD. Level of effort and funding are issues that need to be resolved.</li> <li>○ Esri is working to be more cartographic – “hydro base map” based on NHD+ with added tools for searching and data aggregation</li> <li>○ Need to capture changes and refinements made by local and regional stewards and make them generally available.</li> </ul> </li> <li>• Data Access – Data Management Workgroup may need to weigh in <ul style="list-style-type: none"> <li>○ Department of Fish &amp; Game policy on public data availability being reviewed/revised. Data on permits to collect organisms must go into DFG database – see BIOS website.</li> <li>○ Department of Water Resources grant data must go into a “statewide database” which is not currently specified in grant agreements</li> <li>○ Water Board require grant data to be entered into CEDEN</li> <li>○ Intellectual property rights dispute may lead to contract moratorium – University of California disagrees with state agencies</li> </ul> </li> <li>• Smart phone apps – Suggested teaming with high schools and universities to develop through competition – advertise data availability</li> <li>• May need common data management systems behind multiple portals</li> </ul>
<b>Decisions:</b>	<ol style="list-style-type: none"> <li>1) Three topics needing resolution and decisions by Monitoring Council: <ol style="list-style-type: none"> <li>a) Linkages between databases (e.g. between CEDEN and CIWQS)</li> <li>b) Minimum format standards needed for data submittal</li> <li>c) Standardized mapping protocols</li> </ol> </li> <li>2) Questions for all theme-specific workgroups <ol style="list-style-type: none"> <li>a) What specific data elements are needed in each desired data set? <ul style="list-style-type: none"> <li>– elements/sets common to multiple portals will receive higher priority for integration</li> </ul> </li> <li>b) What tools are currently being used or are needed? <ul style="list-style-type: none"> <li>– share with others</li> </ul> </li> <li>c) What current data elements of which data sets are currently integrated in each portal?</li> </ol> </li> </ol>

<b>ITEM:</b>	<b>7</b>	
<b>Title of Topic:</b>	<b>Workgroup Strategy</b>	
<b>Purpose:</b>	Begin to develop an understanding of the charge to this workgroup as a basis for developing a charter and work plan at our next meeting.	
<b>Contact Person:</b>	Steve Steinberg Jon Marshack	steves@sccwrp.org, (714) 755-3260 jmarshack@waterboards.ca.gov, (916) 341-5514
<b>Attachments:</b>	<ul style="list-style-type: none"> <li>• <a href="#">Data Management Workgroup Strategy: Our Charge from the Monitoring Council</a> - presentation by Steve Steinberg</li> <li>• <a href="#">Monitoring Council Comprehensive Monitoring Program Strategy Excerpt</a> See Section 2.2.5 "Improved data management" beginning on page 26 of the Monitoring Council's comprehensive monitoring program strategy report. Data Management subsections also are found on pages 40 and 41</li> </ul>	
<b>Notes:</b>	<ul style="list-style-type: none"> <li>• Standardized data attribution needed for downloaded and displayed data</li> <li>• Can newly generated data be fed into existing systems instead of creating new databases?</li> <li>• CEDEN is a hybrid between a data warehouse and a federated system</li> <li>• It is important to document what has been done to aid development of a rational system of data design tools</li> </ul>	

<b>ITEM:</b>	<b>8</b>	
<b>Title of Topic:</b>	<b>Meeting Wrap-Up</b>	
<b>Purpose:</b>	<ol style="list-style-type: none"> <li>1) Summarize meeting</li> <li>2) Review action items</li> <li>3) Develop agenda items for next meeting</li> </ol>	
<b>Contact Person:</b>	Steve Steinberg	steves@sccwrp.org, (714) 755-3260
<b>Notes:</b>	<ul style="list-style-type: none"> <li>• Leveraging federated data sources is a realistic solution for meeting the needs of the workgroup portals</li> <li>• Specific data requirements and sources required by the workgroups need to be clearly articulated. DMWG will then assess data sources and technology options for data management/data exchange.</li> <li>• Need for a means to track and communicate data lineage and metadata with data provided to portals</li> <li>• There is need for a common and centrally managed hydrologic base map</li> <li>• Next meeting: begin to articulate a strategy.</li> </ul>	