Update on the Data Management Workgroup

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Workgroup Purpose

The Data Management Workgroup provides expertise to help establish an overall approach to make use of existing data management systems including databases, data indexes, and analytical tools.

Participation

State

- California Department of Fish and Wildlife
- California Department of Public Health
- California Department of Water Resources
- California Natural Resources Agency
- California Ocean Science Trust (OST), MPA Monitoring Enterprise
- California State Water Resources Control Board (SWRCB)
- California Technology Agency
- Central Valley Regional Water Quality Control Board

Participation

Research and Academic Organizations

- California State University (CSU), Council on Ocean Affairs, Science and Technology (COAST)
- California State University, Northridge (CSUN), Center for Geographic Studies
- Humboldt State University
- Klamath Basin Monitoring Program
- Lawrence Berkeley National Laboratory
- San Francisco Estuary Institute (SFEI) / Aquatic Science Center (ASC)
- San Francisco State University
- Southern California Coastal Ocean Observing System (SCCOOS)
- Southern California Coastal Water Research Project (SCCWRP)

Participation

Non-Governmental Organizations (NGOs)

- Council for Watershed Health
- Ecolayers
- Heal the Bay

Participation

Private Industry and Consultants

- 34 North
- Esri
- IBM
- RimuDB

Responsibilities

- Assess and ***recommend best practices*** for development of structured data formats and data management strategies complying with appropriate national and state guidelines
- Identify methods to ***increase accessibility*** of water quality and related ecosystem data and opportunities to coordinate and share these data among workgroups, governmental agencies, and non-governmental organizations
- Assess and ***recommend IT tools and standards*** facilitating development of portals meeting Monitoring Council web development guidelines
- Serve as a resource to assist other workgroups to ***evaluate technologies*** in the areas of data management, web applications and geospatial information management
- Serve as a resource to workgroups for communicating, and where necessary, ***translate technical issues*** into clear, non-technical language

Approach

- Assessment
- Best Practices Support
- Recommendations for Council

Key Accomplishments

- Adopted a workgroup charter
- Established two subcommittees: (1) Portals/Tools and (2) Data Standards
- Inventoried and assessed data and technologies in use by existing and coming theme specific workgroups
- Developed recommendations regarding mapping technologies for portals
- Held a joint meeting between the DMWG and the three Ecosystem Health workgroups to assess opportunities to develop a common/shared water data layer
- Developed issue paper recommending a framework to replace Google Maps API v.2 used on a number of My Water Quality portal pages
- Developed an outline for the data management best practices guide and vetted the outline with several of the workgroups

Recommendations

- Improve portal workgroup representation in the Data Workgroup or find an equivalent mechanism to increase information exchange
- Complete the data management practices guide and determine which practices should be formalized by the WQMC
- Enhance the inventory of data and technologies used by the portals
- Develop interoperability standards
- Develop an approach to dedicating a portion of technical staff time to this effort

Data Management Framework

- **Sustainable Business Models**
  - Setting Priorities
  - Collaboration
  - Fiscal Sustainability
  - Open Source Software
  - Open Data Initiatives
  - Facilitating Data Sharing and other enterprise Business Practices

Data Management Framework

- **Data Library Development**
  - Priority Datasets
  - Legacy Datasets
  - Data Gaps (What are the biggest unknowns that can/must be addressed?)
  - Metadata Standards
  - Data Repository Federation Standards

Data Management Framework

- **Data Integration**
  - QA/QC and Data Processing
  - Data Standards
  - Data Interoperability
  - Web Services
  - Extract, Transform and Load (ETL)

Data Management Framework

- **Data Analysis and Presentation Tools**
  - Visualization
  - Mapping and Geospatial Analysis
  - Retrospective and Predictive Modeling
  - Analytical Data Mashups and Dashboards
  - Reporting Innovations
  - Mobile Computing