Tools for Integrated Water Quality Management (IWQM): the San Diego Experience

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EcoLayers
• Overview: Integrated Water Quality Management (IWQM)

• Implementing IWQM

• The San Diego Experience
Integration: Why it Matters

- Policy, regulatory, and grant requirements driving integrated water management

- Integrated strategies result in lower costs and more sustainable outcomes

- Common integration challenges for organizations
  - Highly fragmented information, organizations, decisions, and regulations.
  - Lack of appropriate tools to integrate processes and data
Regional Collaboration and Integrated Water Management

EcoLayers platform – Data Portal

Permissions-based access to data and functionality
The San Diego experience, background

- rooted in an informal, growing partnership between key stakeholders
  - San Diego Regional Water Quality Control Board
  - river NGO: San Diego River Park Foundation
  - state agency: San Diego River Conservancy
  - university: San Diego State University
  - regional agencies

- started out as separate data portals
  - single applications, e.g., bioassessment
  - watershed-level portals - San Diego River Watershed
  - regional water quality data portal

- evolving into watershed and regionally integrated platform
Portfolio of San Diego regional data portals

A. San Diego River watershed portal

San Diego River Park Foundation
• RiverWatch – volunteer water quality monitoring data
• RiverBlitz - volunteer trash removal/ management

San Diego River Conservancy
• Land Conservation projects
• Water Quality and Flood Control projects
• Recreation
• Natural & Cultural Resources
• Real time water quality data (San Diego State University project)

USGS – real time stream flow and gauge height
Stream Team – bio-assessment data

B. Buena Vista watershed portal, 30 + data sets

C. Golf Course (private)

D. Ramona Municipal Water District – groundwater well data

E. San Diego Regional Water Quality data portal
• 10,000 sites
• 11 watersheds
• 22 jurisdictions
• 35 water quality data sets
Land Conservation projects
San Diego River Conservancy

San Diego River Watershed Data Portal
San Diego River Conservancy Projects Information

SDRC Project Information: Hanson Pond Acquisition
- View project summary
- View project documents

Project Name: Hanson Pond Acquisition
Project Type: Land Conservation
Project Description: Proposed acquisition of 143.5 acre Hanson Property for habitat restoration and public access to the river

Project Summary Information
Project Maps, Images & Photos
San Diego Regional Water Quality Portal
Water Resources Control Board (Regulatory Agency)
Partial List of Programs & Data sets in San Diego Regional Water Quality Data Portal

1. Surface Water Ambient Monitoring Program (SWAMP)
   - Monitoring sites
   - Field monitoring
   - Laboratory
   - Toxicity
   - Habitat
   - Benthic

2. Stormwater (MS4 Municipal) data
   - Dry Weather Field Screening and Analytical
     - Monitoring sites
     - Field monitoring
     - Laboratory
     - Visual observations
     - Trash
   - Outfall monitoring
     - Monitoring Sites
     - Dry weather
     - Wet weather
   - Receiving Waters
     - Monitoring sites
     - Chemical
     - Biological (IBI)
     - Bio-assessment taxa
     - Toxicity
     - Bacteria
   - Coastal Storm Drains
     - Monitoring sites
     - Coastal storm drain outfall and adjacent receiving water data

3. 401 Projects and Mitigation
   - Project and mitigation sites
   - Project location, description, post review impacts and documents
   - 401 impacts and compensatory mitigation

4. 303(d) lists
   - Streams and water bodies
   - Extent of impairment
   - Pollutants and sources
   - TMDL status

5. NPDES facilities/ CIQWS
   - Facility inventory by type
   - Discharge
   - Regulations
   - Inspection, violation and compliance history
   - Enforcement reports

6. USGS National Water Information Survey
   - Streams, lakes, groundwater
   - Stream flow, reservoir depth, depth to groundwater

Potential Uses:
- MS4 Online Reporting
- Integrated monitoring
- Watershed report cards
- Improve public involvement
- 401 Projects: Cumulative impacts, mitigation priorities
- Prioritize 303 (d) list
Watershed Management
Buena Vista Watershed Data Portal
Evolution: Regional Integrated Water Quality Management in San Diego

LEGEND:
- Portal Delivered or under contract
- Portal Proposed or Under Discussion
- Google Map/Earth user interface
- Permission-based data sharing

Water Resources Portal
- Public

Wastewater Portal
- Public

SDRWQCB Water Quality Portal
- Public

WaterWiki
- Google Public Access
- SDRWQCB Constituency

Permission-based Data Sharing

HÚ 9xx Watershed
- Customized for HÚ 9xx Constituency

Buena Vista Watershed
- Customized for BV Constituency

Ramona Municipal Water Dist
- Customized for RMWD

SD River (SDR) Watershed Portal
- User Experience Customized for SDR Constituency

SDRF & SDRC centric Data & Features

SDRF Portal
- Internal Data

SDRC Portal
- Internal Data

Stream Team Bioassessment Portal
- User Experience Customized for SDST Constituency

Golf Course (Private Use Only)
- Customized for Private Use

Bioassessment Program-centric Data & Features
IWQM: intended uses

- easy access to wide range of information set in local context
- sharing and collaboration
- simple and advanced online analytical tools
- integrated monitoring strategies
- watershed report cards
- online reporting
- improved 401 permitting and mitigation strategies
- assess regulatory program effectiveness
Thank You!