Oregon DEQ’s 2012 Monitoring Summits: Why did we do it and what did we learn?

Presented by Aaron Borisenko
NWQMC November 14th, 2012
Why did we do it?

• As an environmental laboratory and data provider, we wanted to understand the data and information needs of our stakeholders.
• We wanted to emphasize the important role of environmental data in an adaptive management process.
• We wanted to make sure stakeholders knew about our specific monitoring programs and capabilities.
• We wanted information to update our monitoring strategy.
• We wanted to lay a foundation for a future monitoring collaboration and data sharing.
• We wanted participants to share their perspectives with each other.
We stressed values of clean water

“Beneficial use” is a bureaucratic term for the values we share around clean water. It is these values people really care about and calling out our shared values fostered a more collaborative atmosphere for both our summits.
Clean water is important to all of us
We still have work to do
We can succeed by working together!
Clean Water!

- Monitoring
- Standards
- Compliance and Enforcement
- Permit limits/NPS Controls
- TMDL’s
- Assisting Environmental Conditions
- Defining Pollution Control Strategies
- Implementing Pollution Control Strategies
- Permitting
- Determining Compliance
- Enforcing Environmental Laws

The water wheel
Direct work on Water Quality Monitoring at DEQ

If future WQ monitoring reductions are taken

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<tr>
<th>Biennium</th>
<th>Direct</th>
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<td>2011-Dec</td>
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<td>Potential 2012 reductions</td>
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A monitoring program that meets the Clean Water Act objectives should be able to answer the following five questions:

1. What is the overall quality of waters in the State?

2. To what extent is water quality changing over time?

3. What are the problem areas and areas needing protection?

4. What level of protection is needed?

5. How effective are clean water projects and programs?
### Water Quality Monitoring Summit

**Subject:** Water Quality Monitoring Summit  
**Run Dates:** November 1-2, 2011

<table>
<thead>
<tr>
<th>Facilitator</th>
<th>Aaron Borisenko</th>
<th>Time: Start</th>
<th>11:00 AM Tuesday</th>
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</thead>
<tbody>
<tr>
<td>Location</td>
<td>Laboratory Environmental Assessment Division</td>
<td>Time: End</td>
<td>3:00 PM Wednesday</td>
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</table>

- **Attendees:** Required
  - Representative Water Quality staff from Divisions and Headquarters
- **Attendees:** Optional
  - Water Quality Managers

### Tuesday, November 1

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Session Lead</th>
<th>Duration</th>
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<tbody>
<tr>
<td>11-1-11</td>
<td>Welcome, Introductions, Objectives, Agenda Overview, Plenary: Aaron Borisenko &amp; Greg Pettit</td>
<td>John Taylor</td>
<td>11 - 12 AM</td>
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<tr>
<td></td>
<td>Lunch (bring your own)</td>
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<tr>
<td>Session #1</td>
<td>What data do you need to support your work?</td>
<td>Jim Coyle</td>
<td>1:00 - 2:00 PM</td>
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<tr>
<td>Session #2</td>
<td>What is the overall quality of waters in the State and to what extent is water quality changing over time?</td>
<td>Shannon Hubler</td>
<td>2:00 - 3:15 PM</td>
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<td>Break</td>
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<tr>
<td>Session #3</td>
<td>What are the problem areas and areas needing protection?</td>
<td>Doug Drake</td>
<td>3:15 - 3:30 PM</td>
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<td>Recap/parking lot issues</td>
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### Wednesday, November 2

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<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Session Lead</th>
<th>Duration</th>
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<tbody>
<tr>
<td>11-2-11</td>
<td>Recap/Questions</td>
<td>John Taylor</td>
<td>8:00 - 8:30 AM</td>
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<tr>
<td>Session #4</td>
<td>How effective are clean water projects and programs?</td>
<td>Steve Hanson</td>
<td>8:30 - 10:00 AM</td>
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<td>Break</td>
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<td>10:00 - 10:15 AM</td>
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<tr>
<td>Session #5</td>
<td>Toxic Monitoring Presentation/Data needs for toxics</td>
<td>Lori Pillsbury</td>
<td>10:15 - 12:00 PM</td>
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<td>Working Lunch (at laboratory provided)</td>
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<td>12:00 - 1:00 PM</td>
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<tr>
<td>Session #6</td>
<td>Assessment and Collaboration</td>
<td>Lori Pillsbury &amp; Aaron Borisenko</td>
<td>1:00 - 2:15 PM</td>
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<td>Recap, next steps, adjourn</td>
<td>John Taylor</td>
<td>2:15 - 3:00 PM</td>
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<td>Optional: Lab Tour/Individual discussions</td>
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<td>3:00 - 5:00 PM</td>
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DEQ Water Quality Monitoring Summit Results

DEQ Water Quality Monitoring Summit, November 2011
Who participated?

• We invited DEQ water quality staff from all of our programs and regions to discuss water quality data and information needs.
  – TMDL, Permitting, Non-point source, Standards, Groundwater, Communications, Stormwater, Basin Coordinators
• We also conducted an online survey to collect more information from staff that could not attend.
Selected survey results

What water sub-program(s) do you work in? (select all that apply)

- NPDES Permitting/Pretreatment/Industrial
- TMDL
- Nonpoint & 319
- 401 Hydro or Dredge and Fill
- Monitoring
- Biosolids/Water Reuse
- Other
- Stormwater (MS4)
- Groundwater
- Standards and Assessment
- All Other Responses
Monitoring objectives

Which of the following Clean Water Act monitoring program objectives are the most relevant to your work?

- What is the overall quality of waters in the State? 2.97
- To what extent is water quality changing over time? 3.03
- What are the problem areas and areas needing protection? 3.51
- What level of protection is needed? 3.26
- How effective are clean water projects and programs? 3.28
Which of the following EPA aquatic life/wildlife indicators in your geographic area are most important for the DEQ laboratory to monitor over time?
Effectiveness Monitoring

Rank the work you want the lab to do in supporting effectiveness monitoring for the agency.

- Design and implement large scale (sub basin or larger) effectiveness monitoring: 2.57
- Design and implement small scale (6th field watershed or smaller) specific monitoring: 3.12
- Provide technical assistance to regulated communities and 3rd party data: 3.21
- Manage and analyze external data sources: 2.79
How important is trend monitoring data to my specific work at DEQ?

- **Very important**: I use trend data all the time. It is essential to my work. (16)
- **Somewhat important**: I use trend data frequently in my work but it is occasionally nice for me. (12)
- **Relatively unimportant**: Trend information is occasionally nice for me. (12)
- **Irrelevant**: I don’t use any water quality trend information in my work.
Biological communities, bugs, fish and periphyton can be used as screening tools for identifying water quality and watershed problems. Should trend monitoring include periodic assessments of biological conditions?

- Definitely yes. Evaluating the biological condition should be done... (27)
- Yes. But we should be targeted about where, when and what. (28)
- No. Assessing the biological condition is not needed. (1)
Do you think the Oregon Water Quality Index is a useful tool for describing general water quality?

- Yes. It is sensitive to water quality changes and that helps me understand... 5
- Yes. But only for communicating at a high level. 30
- No. It is too coarse a measure for my needs. 14
What themes emerged at our internal water quality summit?

• **Capacity Building**
  • Provide Technical assistance.

• Leverage other data sources.

• Work with other partners to help build their monitoring capacity.
continued

• Improve **communication** of findings and delivery of information.

• Work with Basin coordinators to **target** regional monitoring efforts.

• Provide easier **access** to the data we collect.

• **Maintain** or enhance the Ambient WQ Monitoring Network. (toxics)

• Biological monitoring is valuable.
External Water Quality Monitoring Survey Results

DEQ Water Quality Monitoring Summit, February 8, 2012
Who participated?

• We tried for a balance of stakeholder groups
  – State and Federal agencies, Tribes, Environmental organizations, Business organizations, Watershed Councils
  – We had 30 participants + about 15 DEQ presenters/guests.

• We conducted a pre-meeting online survey followed by a post meeting online survey.
How was it organized?

• We provided informational presentations that were relevant to the breakout session discussions?

• Breakout session were organized by stakeholder group.
  – We wanted candid conversations and we wanted people in their comfort zones.
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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>800-830</td>
<td>Coffee and snacks 1940's Willamette WQ</td>
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<tr>
<td>830-845</td>
<td>Welcome &amp; Logistics, Why we are gathered, Outcomes for our time together, Water Quality Monitoring Strategy Revision Input</td>
<td>John Taylor, Aaron Borisenko, Greg Pettit</td>
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<td>845-930</td>
<td>Group introduction: Name, affiliation and briefly how do you/your group interact with DEQ, do you use data/information generated by DEQ?</td>
<td>John Taylor</td>
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<td>930-1000</td>
<td>Overview of EPA Monitoring Strategy Requirements</td>
<td>Aaron Borisenko</td>
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<td>Introduction of the 2005 Monitoring Strategy</td>
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<td>What the DEQ Lab does/does not do:</td>
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<td></td>
<td>- DO: sample collection and analyzing samples, generating and analyzing data, writing reports</td>
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<td>- NOT DO: initiate enforcements, set policy etc</td>
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<td>1000-1015</td>
<td>Morning Break</td>
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<td>1015-1045</td>
<td>Overview of Water Quality Monitoring at DEQ: Past, Present and Future</td>
<td>Mike Mulvey,</td>
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<td>- Assessing the status and trend of Oregon’s water: The Ambient Network, Groundwater monitoring, Volunteer monitoring, Beach monitoring, probabilistic monitoring (Oregon Plan)</td>
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<td>- Targeted monitoring: Identifying pollution sources to implement pollution control: 303d list, TMDLs, point source evaluations: Mixing zone surveys</td>
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<tr>
<td>1045-1100</td>
<td>Your Water Quality Monitoring Survey Results</td>
<td>Aaron Borisenko</td>
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<td>1100-12</td>
<td>Break-out Session 1: What type of information would be most useful to your organization? - includes 5 minutes for session introduction, 30 minutes for break-out, &amp; 25 minutes for report to group &amp; discussion</td>
<td>All</td>
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<td>1200-100</td>
<td>Working Lunch with special guests (The Turbo Turtles)</td>
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<td>100-145</td>
<td>Overview of Water Quality Monitoring at DEQ: Past, Present and Future</td>
<td>Jim Coyle, Steve Hanson</td>
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<td>- Improve protection of public health and environmental health: Toxics monitoring</td>
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<td>- Effectiveness monitoring</td>
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<td>- The Watershed Approach</td>
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<td>145-215</td>
<td>Information approaches for conveying water quality data: Indexes, Report Cards, Watershed Assessments</td>
<td>Lori Pillsbury, Shannon Kubler</td>
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<td>215-230</td>
<td>Water Quality Monitoring Survey Results (DEQ results)</td>
<td>Aaron Borisenko</td>
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<td>230-245</td>
<td>Afternoon Break</td>
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<td>245-345</td>
<td>Break-out Session 2: Prioritizing monitoring and assessment: with a limited budget, what is most important? - includes 5 minutes for session introduction, 30 minutes for break-out &amp; 25 minutes for report to group &amp; discussion</td>
<td>All</td>
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<td>345-400</td>
<td>Data sharing and collaboration</td>
<td>Aaron Borisenko</td>
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<td>Capacity Building: Involving other agencies and community partners: volunteer monitoring, watershed councils, municipalities, business Sharing and Collaboration.</td>
<td>John Taylor, Aaron Borisenko Group</td>
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<td>400-430</td>
<td>Closing Thoughts &amp; Wrap-up</td>
<td>John Taylor, Aaron Borisenko Group</td>
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<td>430-500</td>
<td>Lab Tour/Individual discussions</td>
<td>Lab Managers</td>
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Ranking Water Monitoring Issues
Which of the following EPA water monitoring program questions are most relevant to your organization?

- What is the overall quality of water in the State? 44.0% (11) 40.0% (10) 12.0% (3)
- To what extent is water quality changing over time? 60.9% (14) 34.8% (8) 4.3% (1)
- What are the problem areas and areas needing protection? 80.0% (20) 20.0% (5)
- What level of protection is needed? 20.8% (5) 50.0% (12) 29.2% (7)
- How effective are clean water projects and programs? 45.8% (11) 45.8% (11) 8.3% (2)

Other responses:
1. How to define reference condition & develop credible sampling methods
2. Clean water projects and programs should be evaluated separately
3. Effective & timely reporting of data in hand very important
4. Are we meeting water quality standards?
5. Which contaminants pose the greatest threat to human health and aquatic life in Oregon? What are their sources.
Other responses:
1. The State Board plans to adopt quantitative biocriteria during 2012 for macroinvertebrates and during 2013 for soft-bodied algae and diatoms.
2. Answers depend on type of water body and scale.
3. Highest priority is contaminants that harm human health.
Other responses:

1. Activities are less relevant when resources are lacking to monitor at the appropriate scale (for example, pollution sources). Biological monitoring to develop stressor tools and reference conditions are more relevant than broad-scale monitoring. I’m unaware if any program monitoring or evaluation has been done.

2. In addition to monitoring toxics and pollutants that threaten human health, we are interested in monitoring that can help determine whether programs are working or not, particularly for nonpoint sources like agriculture and urban runoff.
Other responses:
1. Frequency depends partly on availability. What do you mean by "uses" - is reviewing a report that contains data included?
2. Our uses are not necessarily regular, but are more tied to specific studies or projects and their timelines. Mostly we use our own data but often use DEQ and other organizations depending on the questions.
Other responses:

1. Watershed scale is between sub-basin and project/site specific. It is the scale more likely to change in response to our actions, because our watersheds drain to the ocean and have estuaries.

2. Again, our use depends on specific project and objectives. Uses can vary considerably over time.

3. Columbia River Basin
Other responses:
1. Doesn’t this depend on the toxin, and on whether the goal is to remediate or set intake limits?
2. All are critical.
3. Passive Samplers -- Important
Other responses:
1. The index is potentially driven by modeling parameters that are less influenced by human activities compared to annual conditions. Could it be modified to be less dependant on annual conditions?
2. But it has limitations - diurnal and storm variability are poorly captured.
3. It would be more useful if it included some toxics.
4. I think it is useful but shouldn't be the only tool used. I rarely use it except as an indicator.
5. Maybe--it has strengths and weaknesses
Are you aware that DEQ has an index (PREDATOR) for assessing aquatic health using macroinvertebrates communities (aquatic insects and other invertebrates)?

- Yes: 45.8%
- I know it exists but I never use it: 25.0%
- No. But I would be interested to learn more: 16.7%
- I don't need that type of information: 4.2%
- I've never heard of it: 8.3%

Other responses:
1. Like IBI? Good stuff, but not high priority for my organization.
2. Others in my organization may be using it.
3. I have done surveys using this index.
Do you think a toxics index would be a useful tool for communicating status and trends statewide?

- **Yes. It would help me understand toxics issues.** 37.5%
- **Maybe. But the details of the index need to be carefully examined.** 37.5%
- **No. We need specific toxics data for complex toxics issues.** 16.7%
- **I really don't know.** 8.3%

**Other responses:**
1. Needs to be integrated with biological index
2. Yes, and the devil is in the details (since use of one chemical may replace another over time). Would be very useful for some chemical classes
Other responses:

1. In doing so it would be beneficial to correlate other aspects of watershed health including the above listed PREDATOR tool and potentially any fish or other biologically related data.


3. I think it would be more useful to DEQ or other agencies than to my agency
What general themes emerged at our external water quality summit?

• Provide technical assistance.
• Develop partnerships and coordination of monitoring effort.
• Get the information out.
• Biomonitoring is valuable.
• Focus on areas of monitoring expertise. Ambient program, toxics.
• Scale (geographically focused)
Overlapping themes

• Technical assistance and expertise.
• Data and information sharing and delivery.
• Partnerships and collaboration.
• Issues of scale. (geographic focus)
• Interest in toxics monitoring.
• Value in biomonitoring.
Did you understand the objectives of the Water Quality Monitoring Summit?
Do you feel the objectives of the Water Quality Monitoring Summit were met?

- All of them: 4
- Most of them: 5
- About half of them: 2
- Some of them: 0
- None of them: 0
Was the Water Quality Monitoring Summit useful to your organization?

- Extremely useful: 2
- Very useful: 6
- Moderately useful: 2
- Slightly useful: 0
- Not at all useful: 0
How comfortable did you feel providing input at the event?

- Extremely comfortable
- Very comfortable
- Moderately comfortable
- Slightly comfortable
- Not at all comfortable
Would you or your organization be willing to participate in future events promoting the sharing of water quality monitoring efforts and information?
Would you like to see similar events done in different regions of Oregon?
Do you think DEQ should coordinate Water Quality Monitoring Statewide?

- Strongly agree: 8
- Agree: 2
- Neutral: 1
Was there enough time allotted for discussion at the summit?
Would you be willing to contribute information at a future Water Quality Monitoring Summit?
A note about my staff

• They were amazing and really engaged the participants in both summits.
• The participants took away a real appreciation for the work we do at the lab.
Next steps

• Do it again but with others contributing water quality information. i.e. share the ownership.
• Take a geographic approach to the summit.
• Develop a monitoring map to share monitoring locations, indicators and contacts.
• Update Monitoring Strategy to incorporate major themes.
I’m going to look for some bugs!