



The Oregon DEQ Volunteer Monitoring Program: Working at a Statewide Scale to Manage and Apply Water Quality Data Generated by Volunteer Organizations

- **Background Program**
- **Managing Data**
- **Applying Data at a Larger Scale**



ODEQ Program Description

History



- Born from the Governor's efforts to engage all stakeholders to solve problems
- Designed to provide technical support to local organizations

Goal: Involve Oregonians in identifying and solving the state's water quality problems.

Objectives:

- Expand and support volunteer monitoring efforts across the state
- Encourage consistent data collection techniques
- Document and improve the quality of volunteer data
- Support the transformation of data into information



ODEQ Program Description

Program Overview

Program Oversight

- Budgeting
- Administration
- Outreach

Equipment & Methods

- Sample & analysis method development
- Purchasing/Inventory equipment & supplies
- Maintenance and troubleshooting
- Annual calibrations
- Shipping and tracking

Group Support

- Sampling plan review and approval
- Trainings
- Technical support
- Split sampling

Data & Information Management

- Receive, track and review data
- Load data into DEQ database
- Analyze data and prepare reports



ODEQ Program Description

Equipment Loan Program

Equipment loaned to groups meeting QAPP requirements and completing an SAP

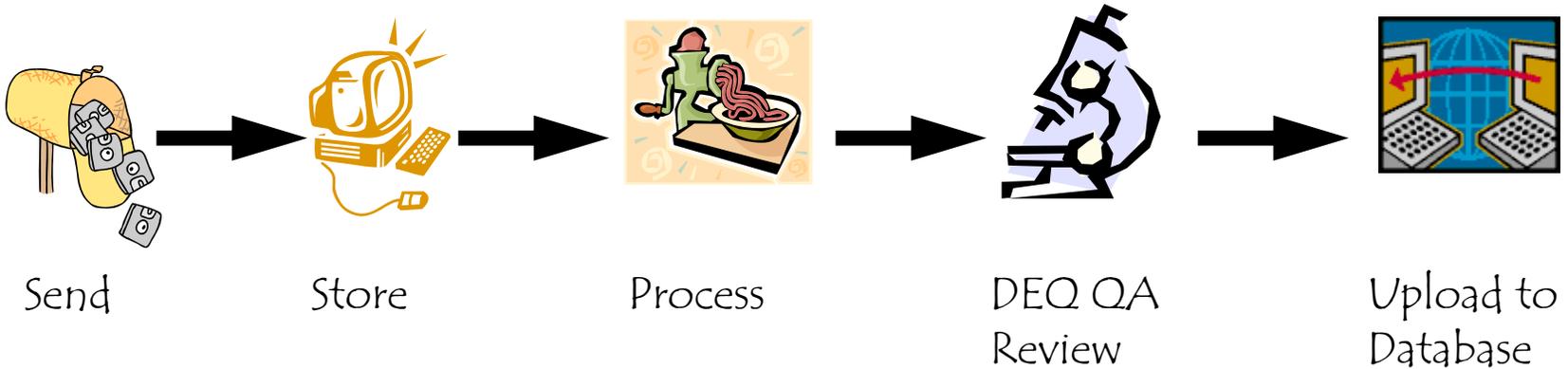
- Continuous temperature data loggers and interface
- NIST traceable digital thermometers
- Salinity/Conductivity meters
- Nephelometers/Turbidity meters
- pH meters
- Dissolved oxygen Winkler kits
- Stream discharge kits (mechanical or electrometric meters)
- Fecal bacteria analysis kits (defined substrate technique)
- Physical habitat and macro invertebrate collection supplies
- Relevant reagents and standards



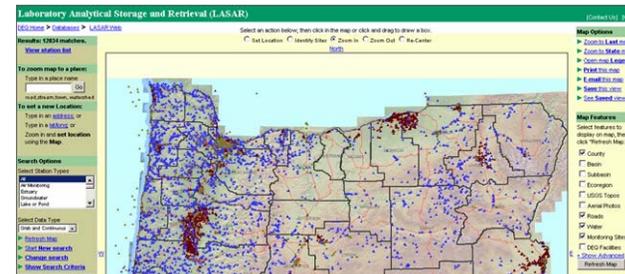
ODEQ Volunteer Program

Data Management

Volunteer Data Path at DEQ



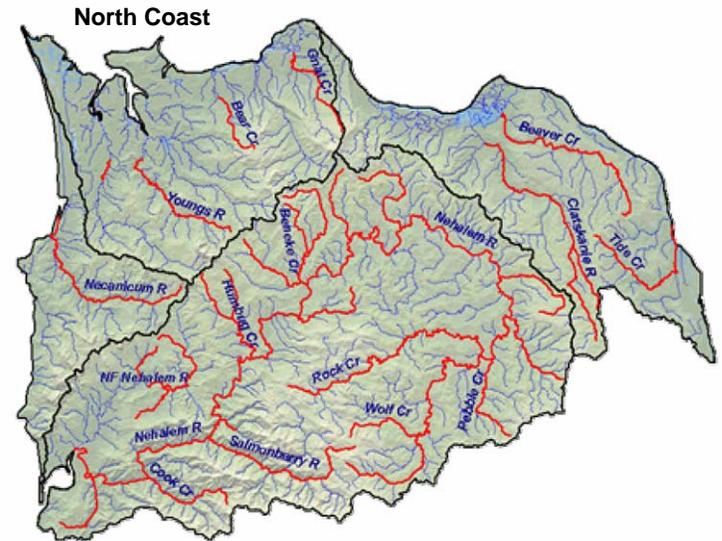
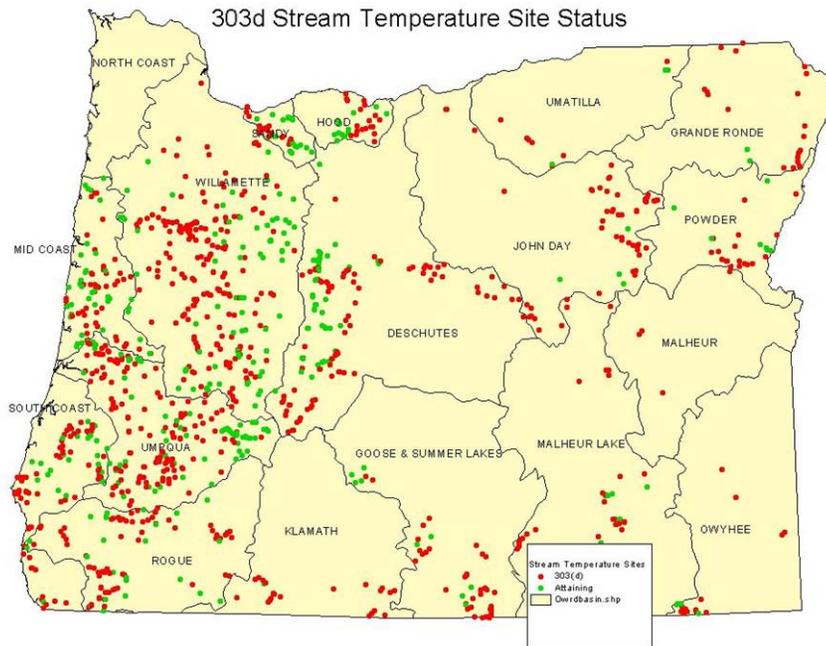
ODEQ LASAR Database
<http://deq12.deq.state.or.us/lasar2/default.aspx>





ODEQ Data Use

303 (d) List



Temperature limited waterbodies (Red Lines) on the 303(d) list (DEQ 2003)

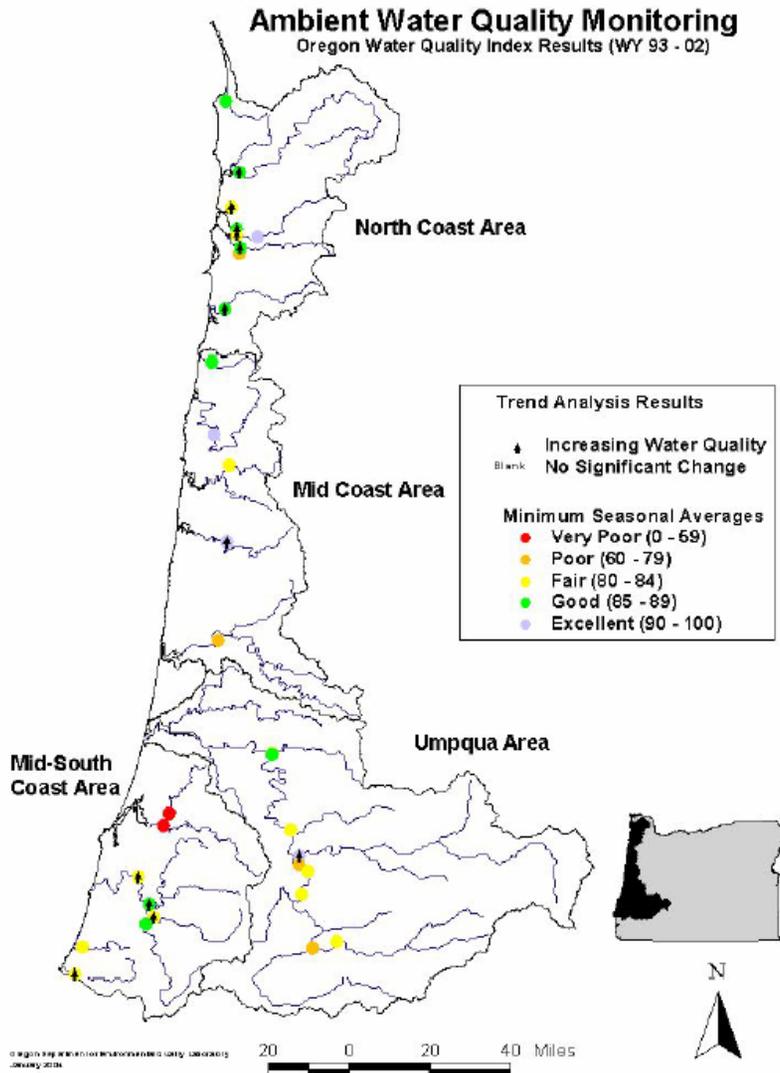
- All data of sufficient quality used for determining listing status regardless of collecting organization
- Not dependent on study design
- Data compared to various standards: temperature, pH, DO, *E. coli*, etc.



ODEQ Reporting

Regional Reports

ODEQ Long Term Trending



- Collected by DEQ Laboratory staff
- Targeted sites selected to integrate generalized upstream uses
- 151 sites statewide, 31 in Coastal Coho ESU
- Sites visited every two months
- Standard water quality parameters
- Oregon Water Quality Index (OWQI) score summarizes quality of each site
- Trends in water quality tracked



ODEQ Reporting

Regional Reports

ODEQ Probabilistic Sampling



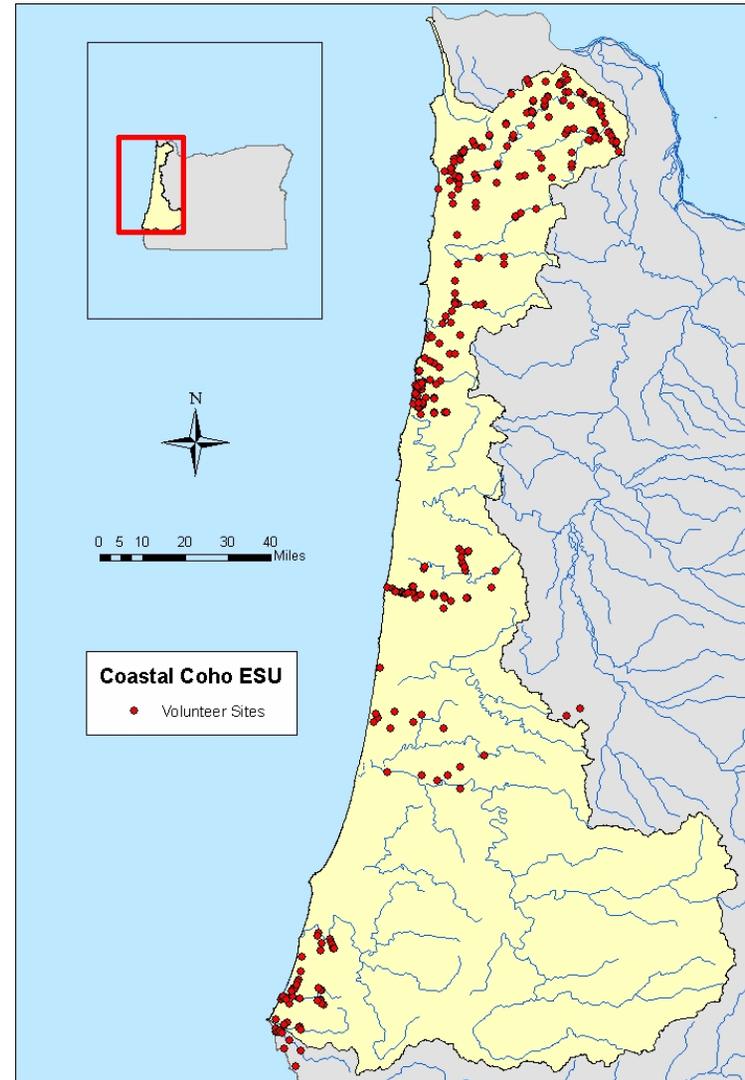
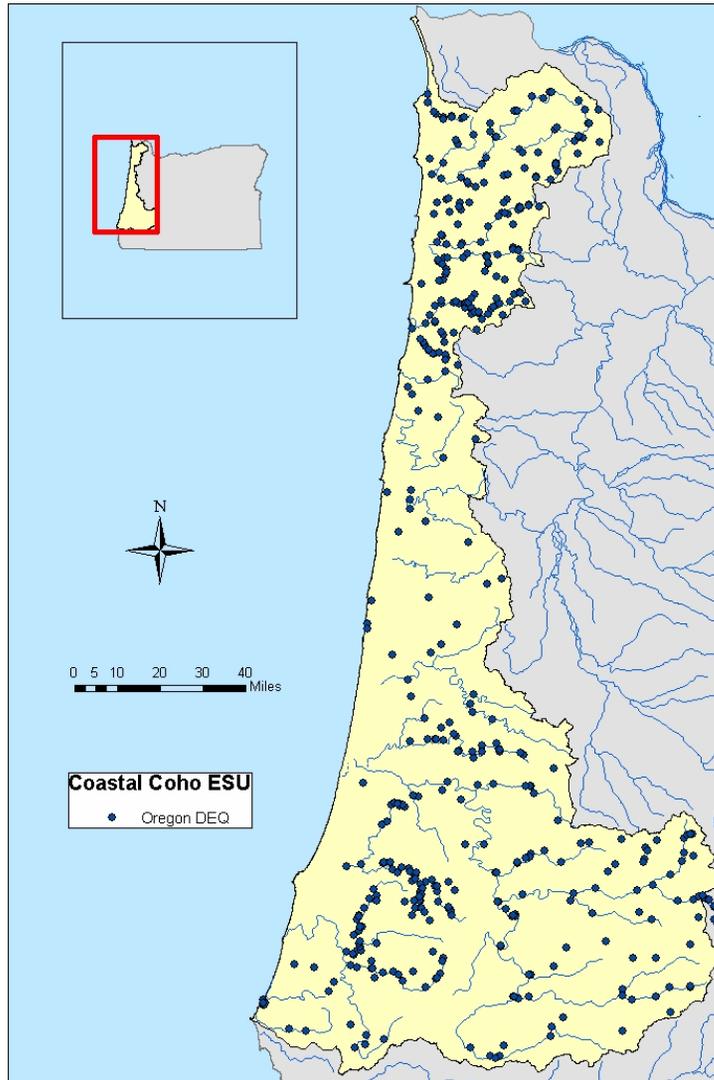
- Collected by DEQ Laboratory staff and summer temps
- Randomly selected poll of wadeable streams
- 129 in Coastal Coho ESU
- Generally visited once
- EMAP protocols
- Reference conditions, water quality standards and predictive models used to assess impairment
- Analysis gives a statistically valid description of % stream miles impaired



ODEQ Reporting

Regional Reports Volunteer Data

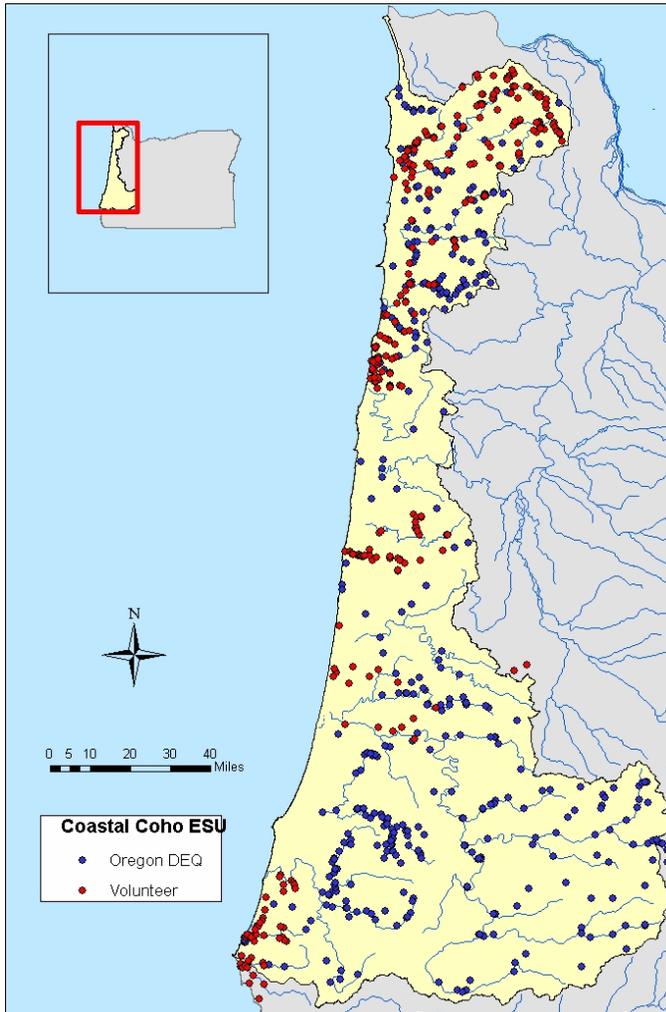
Can we get there from here?





ODEQ Reporting

Regional Reports Volunteer Data



Plusses

- + Locally dense sites
- + Small spatial scale
- + Generally more data on private lands

Minuses

- Statistically limited
- Spatially & temporally heterogeneous

How we are proceeding

- Keep it simple and understand caveats
- Use generic summaries like maps and % of sites meeting standard
- Roll data into larger assessments where appropriate
- Compare to random datasets and explore site attributes



Volunteer data...



perseverance pays.



ODEQ Volunteer Monitoring Program

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ODEQ Volunteer Program

Volunteer Monitoring Program References

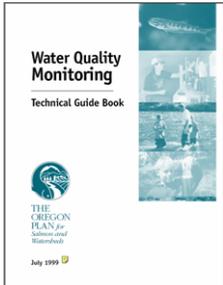
ODEQ Volunteer Monitoring Program Quality Assurance Project Plan

<http://www.deq.state.or.us/lab/wqm/DEQ04-LAB-0047-QAPP.pdf>



OWEB Water Quality Monitoring Guidebook

http://oregon.gov/OWEB/docs/pubs/wq_mon_guide.pdf



ODEQ LASAR Database

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