

Colorado River Watch: Volunteer Based River Monitoring

Sarah Reynolds
Volunteer/Outreach Coordinator
River Watch





Outline

- River Watch's mission
- Goals and history
- Who is involved
- River Watch Data
- Creating measurable results
- Questions





River Watch Goals

Two Goals:

- 1.) To provide a hands-on experience for individuals to understand the value and function of the river ecosystem
 - 2.) To collect quality aquatic ecosystem data over space and time to be used for the Clean Water Act and other water quality decision-making processes.
- Baseline data on rivers for decision making processes





Why was River Watch created?

- There was a void in data (only WQCD collecting this type of baseline data)
- Decisions being made on one data point or no data
- Data gap and need for restoration of watersheds
- No other entity collecting baseline data – statewide, routinely (WQCD/USGS)
- Barb Horn heard her calling!



River Watching Since 1989: Modest Beginnings

- 6 Schools
- Limited Focus
- One Staff
- A lot of Drive and Determination





River Watch Today

- Over 70,000 People Reached
- 900 Stations, 400 water bodies on Record
- Chemical, Biological and Physical Monitoring
- Over 4,000 samples per year
- Second Largest WQ Database in Colorado
- Largest Statewide Volunteer Monitoring Program in USA





Volunteers

- Primarily Middle and High School students, but also include citizen groups, individuals, colleges, youth programs, government agencies, and non-profits.
- Volunteers receive the training, support and supplies needed to monitor their respective rivers and provide consistent and accurate data.
- New volunteers must attend a River Watch training prior to participating in the program.





Sample Collection and Analysis

- Field Parameters (monthly)
 - hardness, alkalinity, dissolved oxygen, pH and temperature
- Metals (monthly)
 - Al, As, Ca, Cd, Cu, Fe, Mg, Mn, Pb, Se and Zn
- Nutrients (twice a year)
 - ammonia, chloride, sulfate, total suspended solids, total phosphorous, nitrate and nitrite
- Physical Habitat (annually)
 - Qualitative Assessment
- Macroinvertebrates (annually)
 - Analyzed by a consultant

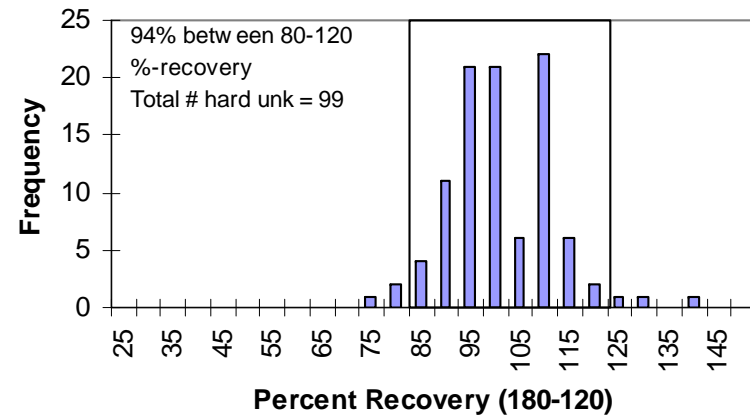




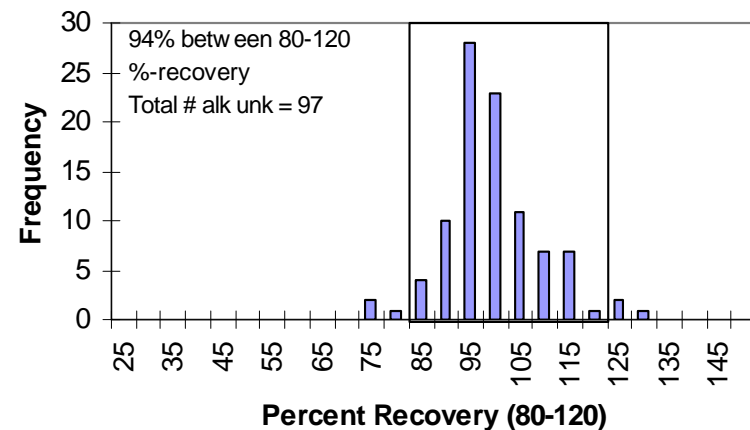
QA/QC

- Training
- 20% field blanks and dupes
- Site Visits
- Unknowns

Hardness Unknowns (2003-2004)



Alkalinity Unknowns (2003-2004)





Data Utilization

- Data can be found at <http://wildlife.state.co.us/LandWater/Riverwatch/Data/>
- Data is available to anyone who is interested and has been used by local planning entities, cities, consultants, individuals, watershed groups, students, universities, and other state/federal agencies.
- River Watch data is routinely presented to the Water Quality Control Commission to be utilized in setting stream standards.



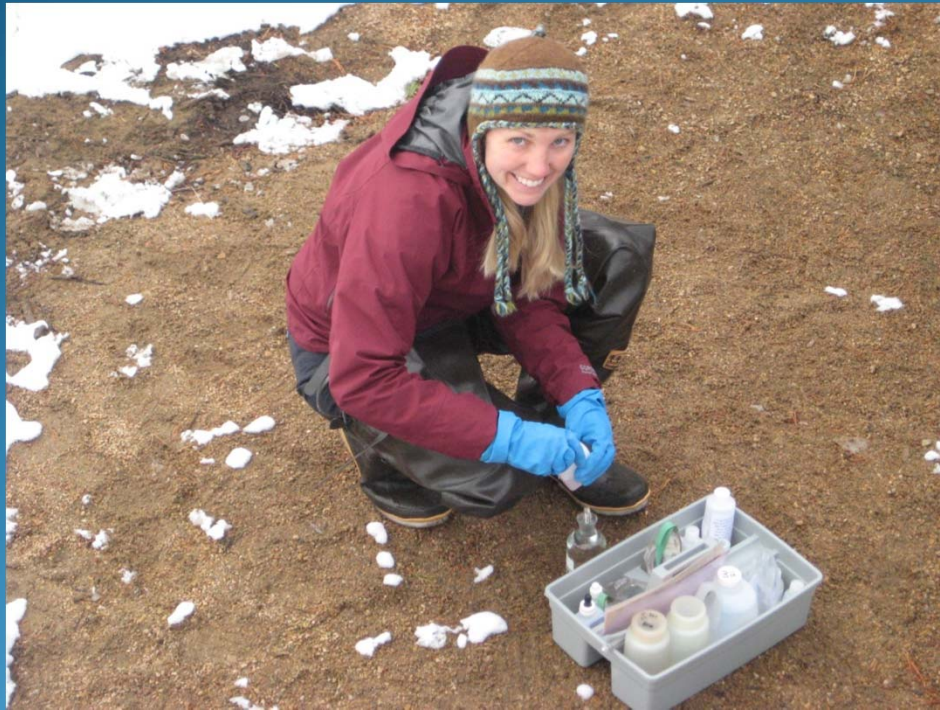


Measurable Results

- Groups have used RW as match in 319 NPS projects and other grant sources
- Data used in watershed planning, source water protection plans
- In some areas RW is only data monitoring pre/post reclamation efforts or data necessary to document a problem
- Help groups evolve to more sophisticated monitoring programs with USGS, EPA and others



Measurable Results



- Data dumps to WQCD and WQCC (CWA implementers in state) to determine impairment.
- Many students receive college credit, service learning credit or other benefits for participating
- Go on to study and work in water related fields
- Teacher experiences

Teacher Experiences

“[River Watch] is a perfect outlet for students who are interested in the environment. It's all about caring for our watershed.” – Darlene Halvorsen, Loveland HS Science Teacher

“I can't think of another program that combines so many valuable learning possibilities. [River Watch] gives practical applications to real world problems.” – Tom Kammer, Fort Morgan HS Science Teacher



Questions?

