Getting Started in Volunteer Water Quality Monitoring

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This Webcast is sponsored by EPA's Watershed Academy

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Does anyone have anything specific they were hoping I would cover today?

Overview

- **Characteristics of Successful Programs**
- **Program Development**
- **Training Tips**
- **Funding Ideas and Issues**
- **Equipment and Resources**
- **New Jersey's Tiered Approach**

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Successful Volunteer Water Quality Monitoring Programs. . .

- Well-organized
- Sound scientific basis
- Report results
- Strong institutional support
- Make a difference

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Well Organized …

- **Clear purpose**
- **Develop strong partnerships**
  - ✓ steering committee
- **Good relations with decision-makers**
- **Strong leadership and coordination**
- **Clear staff, board, and volunteer roles**

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Turnover of staff makes it difficult (often related to funding). Ext. might be more stable than a non-profit? Or offer more opportunity to advance (rather than being an entry-level position).

A Sound Scientific Basis means …

- **Clear monitoring goals and questions**
- **Written study design**
- **Clear documentation of instructions for all monitoring activities**
  - ✓ **Based on established methods!**
- **Monitoring scope and complexity appropriate to group's capabilities**
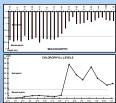- **QA appropriate to data use**

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For complexity: Many programs initiate small and grow over time. WAV began with 5 parameters monitored and added a 6th two years ago (6 years into program). One thing to watch out for is complexity though….stream flow requires people to do more mathematics than some want, so sometimes people avoid it because not comfortable with it.

QA- This is ESSENTIAL. Program 'failure' could be attributed to people having expectations they should not have – due to lack of communication between coordinators and volunteers or due to poor planning. The TOUGH questions must be answered from the start (in program planning)!

**Successful Programs
Report and Use Their Results**

- **Data are turned into a story**
- **Results and the story are reviewed by data users and resource people**
- **Results are reported in various ways tailored to the audience**
- **Information is turned into action**
- **Monitoring is used to assess progress in meeting goals**

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Show IOWATER status report to group.

Mention how groups share their results: news articles (like WA WET program shown here), brochures (see samples at WAV website), annual reports, etc. Their ideas?

Successful Programs
Make A Difference

- Involve people in real science
- Raise awareness
- Create an informed constituency
- Promote individual actions for water quality protection
- Provide information on places where no one else is looking
- Identify & solve problems locally

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Again, need to answer those tough questions first – to ensure you're using people' time wisely (good science piece)

Most people have the belief that their data will be used by gov't. This is usually not the case. (Found that only 9 states seems to show use of data for 303d or regulation in Volunteer Directory fall 2003– not sure of accuracy of source). Ways to overcome expectations of gov't data use: teach people and help them to use the data locally. Present results in a story form to gov't, rather than raw data. Use partnerships to link with specific identified uses of the data. Self help /Adopt a Lake monitoring in WI and new rusty monitoring program – ties to UW research.

Main Uses of Volunteer Data

- Water Quality or Watershed Education
- Document Existing Conditions
- Problem Identification
- Local Decisions

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In general these are the main uses of volunteer data, whether Extension related or not. How you plan your program depends in great deal on what your ultimate aim is.

Why are you getting started in volunteer monitoring?

Getting Started, *first* Compile Information

- **About the resource**
- **About the goals of the organization/community**
- **About current & past monitoring or research efforts**
- **About volunteer monitoring**

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Compiling Information
Important Questions to Consider

- What environment? – lake, stream, wetland
- Why do you want to monitor it?
- Who will use the data?
- How will the data be used?
- How good do the data need to be?
- What variables will you monitor?
- What resources are available?
- Who can help you with your program?
- Has this monitoring ever been done before?

Modified from EPA Volunteer Stream Monitoring Methods

Ask participants to take 5 minutes to consider the first three questions. If possible write answers on an overhead (along with their –who to include in brainstorming- suggestions.

Hand out Pam's and Laura's planning guide. Also refer to Guide for Growing pieces.

Assessing What is Possible

Consider
- Skills and knowledge
- Potential data uses and users
- Level of commitment
- Financial resources

Monitoring or Study Design

This documents the *What, How, When, Where* and *Who* for your monitoring program. It describes the rationale for, and specific approaches of your monitoring efforts.

✓ Should flow out of the vision, goals and objectives

✓ Should objectively reflect resources

✓ Good design is critical for success!

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Remember successful program slides

Have them locate matrix in their handouts.

Goals and Objectives

- **Goal (Outcomes) – what do you want to happen?**
    - I want residents swimming safely in Deep Reservoir
- **Objectives – Specific and measurable**
    - To be able to see the bottom from my dock
    - To reduce the # of algal blooms in Deep Reservoir
    - "Reduce phosphorus concentrations in runoff to the pond by 35%"
- **Revise as needed**

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Top Parameters Monitored by Volunteers

Lakes	River/Streams
Secchi trans.	Water Temp.
Water Temp.	pH
Phosphorus	Macroinvertebrates
Dissolved Oxygen	Dissolved Oxygen
Chlorophyll	Nitrogen
pH	Flow/water level

at that time bacteria monitoring ranked #11 overall

Nat'l Directory. of Environmental Mon. Progs. - 5th Ed., 1998

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Useful Sources to Locate Methods

- **EPA Guidance Manuals**
- *The Volunteer Monitor* **newsletter**
- **LaMotte/Hach kits and catalogs**
- **Secchi Dip-In website (http://dipin.kent.edu/)**
- **Standard Methods for the Examination of Water and Wastewater**
- **Conferences/workshops**
- **Listservs**
- **NEMI (http://www.nemi.gov/)**

Education/ Awareness → **Problem ID, Assess Impairment, Local Decisions** → **Legal & Regulatory**

Increasing Time - Rigor - QA - Expense $$

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Geoff Dates, River Network

There is a continuum of of monitoring data use, going from education to regulatory involves increasing time, rigor, quality assurance, and costs, as well as the expertise of the trainer and program coordinator!

Good design is critical for program success

Must define data goals and data uses

Program Management Design

Should evolve from your study design and vision – although often developed concurrently. Implements the study design.

- Training and monitoring program development
- Technical and logistical support
- Data management, interpretation and reporting
- Budget management
- Staff and volunteer management
- Relationships with partners, sponsors and data users

Now that you know the why, what and where, it's time to address some hows.

Again, most programs start small and grow over time. Think of that in relation to these items as well.

Also, remember that partnerships add a tremendous amount to volunteer programs. Use these for technical support, etc.

Program Management Design Considerations

- **Staff - all volunteer, all paid staff or combo**
  - Dedicated staff is critical to success

- **Home organization**
  - ✓High School
  - ✓University
  - ✓ Agency
  - ✓ County Extension
  - ✓ Non Governmental Organization

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Use WI vs. IOWATER – show status report as example.

Program Design:
In house vs. contract lab

In house – program has own equipment and analysts

- Resource intensive - requires physical space, equipment and expertise
- Convenient – especially for re-sampling
- Allows the program full control of QA/QC
- Can be limited by what you already have available or can afford

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Can use URI and WI as examples of each. E. coli project in Midwest is also a good example.

Program Design:
In house vs. contract lab

Contract – samples sent to an established lab

- Less resource intensive – but can be expensive on a per sample basis
- Easier – little technical knowledge needed
- Depend upon the lab for QA/QC
- Appropriate detection limits?
- Sometimes viewed as more credible

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Can use URI and WI as examples of each. E. coli project in Midwest is also a good example.

World Water Monitoring Day
October 18, 2006

www.worldwatermonitoringday.org

The Great North American
Secchi Dip-In

June 23 - July 15, 2007
Thanks for a Great Dip-In in 2006
Over 1,000 Records have been submitted

www.dipin.kent.edu

See Also:
World Water
Monitoring Day
http://www.worldwater
monitoringday.org/

Clearwater Lake, MN

the Secchi Dip-In?

pating Programs
om Past Dip-In (1994-2005)
ry of Dip-In Results
s from Past Dip-Ins

ers in non-
icipating programs
rograms

our Data
tions and Data Entry Form for
our Dip-In Data Here
now enter data from any date
e year)

Coordinators: Participated in

r 2006 Dip-In
your Information

oad
2006 Questionnaire
Release

Sugar Branch Lake, PA

Temperature in
Philadelphia:
July 4, 1776
76 degrees at 1
P.M.

Data courtesy of a
volunteer monitor, Thomas Jefferson

Questions?

Recruiting & Training Volunteers

Recruiting Volunteers

- Articles in newspapers/newsletters
- Community organizations - churches
- Schools/Youth groups
- Shoreline residents
- Sporting/environ. organizations
- Fairs, festivals, community events
- Inserts in utility bills
- Word of mouth

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Training is a Process that Flows Throughout the Program

- ♦ Orientation (classroom)
- ♦ Monitoring Skills (class & field)
- ♦ Field visits by staff (field)
- ♦ QA/QC testing (lab or field)
- ♦ Annual refresher/re-certification
- ♦ Advanced training

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Hoosier Riverwatch, IOWATER, and VSMP have a variety of training types, including advanced levels of training. Blue Thumb has ongoing QA/QC, so provides training through such assurance procedures.

Off-water Training Topics

- Purpose, goals and objectives of program
- Basic ecosystem ecology
- Condition of the waterbody(ies) being monitored
- Parameters to monitor the condition
- Procedures to measure the parameters
- Role of volunteers
- Data use – how and by whom
- Reporting Results

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I'd also add site identification at this session.

This can be lengthy (condition of waterbody), but is key to volunteer education and interest.

Recommend to bring in local expertise for this.

Field Training

- Safety Issues – when *NOT* to monitor
- Briefly review what the parameters tell about the resource
- Review the procedures
- Demonstrate the procedures
- Volunteers practice the procedures until they are comfortable
- Discuss how to report their data
- Send equipment home so volunteers can start monitoring immediately

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Key to this is that it is HANDS-ON!

Group versus One-on-One

Group:

- Saves time and money
- Volunteers can learn from others
- Can not address unique problems or characteristics of individual waterbodies

One-on-One:

- Time consuming and expensive
- Procedures learned under actual conditions the volunteer will encounter
- Can account for unique situations

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One on One would work well with a small program. WI does both.

Training Tips

♦ **Offer Training more than once**

♦ **Avoid learning overload**
  - ✓ Break topics into manageable chunks
  - ✓ Repeat information through multiple sessions

♦ **Make use of experts/practitioners**
  - ✓ Provides new perspective
  - ✓ Change in style and voice

♦ **Offer on-site assistance**
  - ✓ Builds confidence
  - ✓ Assures technical proficiency

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Entering data ASAP– this is VERY IMPORTANT! Can catch errors and still have those volunteers either around (actively monitoring) and/or remember what they wrote/did that day.

More Helpful Hints

- ♦ **Keep class size small**
- ♦ **Provide food and beverages**
- ♦ **Provide plenty of networking time**
- ♦ **Utilizing experts and field experiences stimulates interest**
- ♦ **Repeat, repeat, repeat** (& repeat again)

"Well-run volunteer programs recruit automatically. Build a better program and the volunteers will beat a path to your door."

101 Ways to Recruit Volunteers, S. McCurley and
     S. Vineyard, Heritage Arts Publishing Co., 1986

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Questions?

Resources Available for Monitoring Programs:

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Program Support-Nationwide

- **EPA (http://www.epa.gov/owow/)**
  - ✓ **Volunteer Monitoring Factsheets**
  - ✓ **Volunteer Monitoring Methods Manuals**
  - ✓ **National Directory of Volunteer Monitoring Programs**
  - ✓ *Volunteer Monitor* **Newsletter**
  - ✓ **QAPP Guidance**
- **EPA regions – volunteer monitoring equipment loans**

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Program Support-Nationwide

⬥ **USDA-CSREES Volunteer Water Quality Monitoring Project**

   ✓ **www.usawaterquality.org/volunteer**

- Links to Programs' Monitoring Manuals
- Quality Assurance Project Plans
- Education and Outreach Materials
- Examples of Data Reporting
- Program Contact Information
- Current Research with/about Volunteers

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Guidebook Modules

- ⬥ Designing your monitoring strategy
- ⬥ Effective training techniques
- ⬥ Quality assurance issues
- ⬥ Databases and data management
- ⬥ Volunteer management and support ideas
- ⬥ Outreach tools
- ⬥ Fundraising

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Most popular topics and regional and national VM conferences

Other suggestions from assessment of programs

Volunteer Monitoring List Servs

- **volmonlists@epa.gov**

- **csreesvolmon@lists.uwex.edu**

- **Post queries see who responds**
  - ✓ **Exchanges archived at**
    www.usawaterquality.org/volunteer

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Program Support-State and Local

- **Cooperative Extension**
- **University & High School Departments**
- **State Natural Resources Departments**
- **Tribal, County or Municipal Departments**
- **Soil and Water Conservation Districts**
- **Non-profit Organizations**
- **Interest Groups**
- **Other volunteer monitoring programs**

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Equipment:
Determining What You Need

🔹 **Equipment selected must allow for collected data to meet your previously defined data quality standards**

   ✓ Use other programs' written methods to help determine your equipment needs
   ✓ Waterwatch Tasmania Equipment Guide
   ✓ Other resources mentioned

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Equipment: Borrowing/Sharing

- ✓ **Local municipal water districts**
- ✓ **Sewage treatment plants**
- ✓ **Schools**
- ✓ **Tribal, Federal, State agencies**
- ✓ **Soil and Water Conservation Districts**
- ✓ **Irrigation Districts**
- ✓ **Watershed councils**
- ✓ **Other volunteer monitoring programs**
- ✓ **EPA Regional Offices**

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Equipment: Purchasing

- ✓ Acorn Naturalists
- ✓ Ben Meadows
- ✓ BioQuip
- ✓ CHEMetrics
- ✓ Cole-Palmer Instruments
- ✓ Fisher Scientific
- ✓ Forestry Suppliers
- ✓ GREEN / Earth Force
- ✓ Hach
- ✓ LaMotte
- ✓ NASCO
- ✓ Thomas Scientific
- ✓ Wards Natural Science Establishment
- ✓ Water Monitoring Equipment & Supply

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Questions?

Volunteer Monitoring:
Cost Effective – Not Cost Free

- Staff (incredibly hard-working, usually underpaid)
- Field and lab equipment and supplies
- Laboratory space or analytical services
- Office supplies
- Communication and mailing
- Publications
- Conferences/workshops
- Transportation (personnel or samples)
- Insurance
- Special events/volunteer recognition

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Consider Charging for Services

- **Greater value often placed on things with a cost**
- **Supports the program**
- **Provides stability – which can attract additional funds**
- **Can be used for match**
- **Can enhance perception of credibility**

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Charging also promotes responsibility for equipment, etc. by volunteers.

Volunteer Effort As Match

Volunteer time can often be used as match

- **Document effort**
  - ✓ **Start/end time on data sheets**
  - ✓ **Survey average time per sampling event**
- **Identify acceptable 'hourly rate' equivalent**
  - ✓ **Independent Sector (www.IndependentSector.org)**

    Currently $18.04 (2005)
  - ✓ **Minimum wage**

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Partnerships

- **Share resources**
  - ✓ **Office space**
  - ✓ **Staff**
  - ✓ **Equipment**
- **Provide in-kind services**
- **Provide linkages to additional funding sources**

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Get the Most for Your Money

- **Shop around**
  - ✓ Vendor prices vary
  - ✓ Non-profit discounts
  - ✓ Purchase through university (partnerships...)
  - ✓ Quantity discounts (partnerships...)
- **Used equipment – reconditioned**
- **Donated/Borrowed equipment**
  - ✓ Universities
  - ✓ Laboratories
  - ✓ Corporate research divisions

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Or Borrow equipment

Keys to Funding Success

- **The more different funding sources you tap into, the more secure your financial base will be.**

- **Ongoing support is harder to find than start-up funding. But monitoring by nature is long-term, so funding needs to be long-term – keep focused.**

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More Keys to Funding Success

- Whoever is using the monitoring data – whether it's a government agency, university or community – should be helping pay for it.

- In-kind support, such as donations of technical expertise, equipment or laboratory analysis can really help keep a program going!
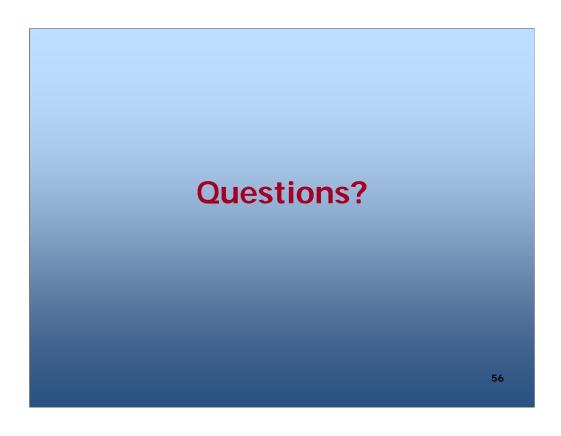
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Summary

- **Start by addressing the tough questions**
  - ✓ **Determine objectives**
  - ✓ **Develop a written plan**
- **Form partnerships/involve partners**
- **Use classroom and field training sessions, repeat if possible**
- **Seek varied sources of funding**
- **Use all available resources**
- **Applaud your volunteers!**

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Questions?

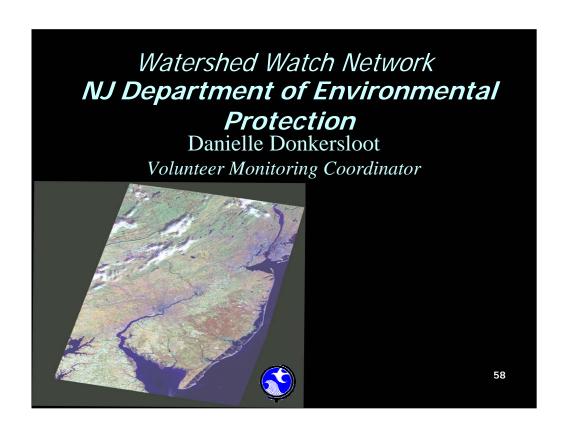Be Sure to Check Out Our **November 29th** Webcast**:**

Protecting Drinking Water Sources -- Assessments and Opportunities

NOW IT COMES WITH A LIST OF INGREDIENTS.

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Overview

- NJ Watershed Watch Network
- Changing the Stereotypes of Using Volunteer Collected Data
- Advisory Council
- NJ Tiered Approach to Volunteer Collected Data
- Data Users/Data Uses
- Lessons Learned
- Name That TIER

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• Population NJ (2003) 8,638,396

• 7,417 square miles

• 1,134.4 persons per square mile

7,840 miles of rivers

DEP's latest evaluation, of the *2,308 assessed river miles, 1,913 (83%)river miles did not meet surface water quality standards*

Watershed Watch Network

- **Internal Advisory Council**
  - ✓ Water Monitoring & Standards
  - ✓ Water Assessment Team
  - ✓ Division of Watershed Mgt.
  - ✓ Office of Quality Assurance
- **External Advisory Council**
  - ✓ Riverkeepers
  - ✓ Watershed Associations
  - ✓ Volunteer Coordinators

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Myths of Using Volunteer Collected Data

- Quality Assurance & Quality Control

- Volunteers have "hidden agendas"

- Volunteers are not scientists

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Reality of Using Volunteer Collected Data

- We need more data at a higher frequency of collection

- EPA has been encouraging the use of volunteer collected data since 1988

- Volunteers want to do it right

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Potential Data Uses

- Education

- Identifying potential sources of pollution

- Local decision making

- Research

- NPS assessment

- Regulatory response

- Watershed planning/open space acquisition

- Identification of "action now" projects

- Monitoring the success/failure of restoration projects

- 303d & 305b Integrated Report

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The 4 Tiered Approach

- Allows for volunteers to choose level of monitoring involvement based on:
  - ✓ *Intended purpose for monitoring*
  - ✓ *Intended data use*
  - ✓ *Intended data users*

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Options for Involvement

- ⬥ **Tier A: Environmental Education**
- ⬥ **Tier B: Stewardship**
- ⬥ **Tier C: Community Assessment**
- ⬥ **Tier D: Indicators/Regulatory Response**

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Problem ID,
Assess
Impairment,
Local
Decisions

Education/
Awareness

Legal &
Regulatory

Increasing Time - Rigor - QA - Expense $$

Geoff Dates, River Network   67

There is a continuum of of monitoring data use, going from education to regulatory involves increasing time, rigor, quality assurance, and costs, as well as the expertise of the trainer and program coordinator!

Good design is critical for program success

Must define data goals and data uses

Tier A: Environmental Education

Data Users

- Participants
- Students
- Watershed residents

Data Use

- Promote stewardship
- Raise their level of understanding of watershed ecology

Quality Needed

- Low level of rigor, but use sound science
- Wide variety of study designs are acceptable
- Quality assurance (QA) optional

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Tier B: Stewardship

Data User	Data Use	Quality Needed
•Participants •Watershed residents •Landowners •Local decision makers (optional)	•Understanding of existing conditions and how any changes over time •Screen for and identify problems and positive attributes	•Low to medium rigor •Variety of study designs is acceptable •Training •QAPP recommended

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Tier C: Community &/or Watershed Assessment

Data Users	Data Use	Quality Needed
•Local decision-makers •Watershed association •Environmental organizations •Possibly DEP	•Assess current conditions •Track trends •Source track down of Nonpoint source pollution	•Medium/high level of rigor •Data needs to reliably detect changes over time & space •QAPP approved & on file w/ intended data user. •Training required

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Tier D: Indicators & Regulatory Response

Data Users

- NJDEP
- Local decision-makers
- Watershed associations
- Environmental organizations

Data Use

- Assess current conditions and impairments
- Supplement agency data collection
- Research
- Evaluate best management practices (BMP) measures
- Regulatory Response

Quality Needed

- High level of rigor
- Study design & methods need to be equivalent & recognized by agencies using data
- Training required
- QAPP approved by Office of Quality Assurance & data user, annual recertification
- Possible audit

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Who Uses the Data in NJDEP?

•Watershed Area Managers *(TIERS B,C,D)*

•Water Assessment Team *(TIER D)*

•NPS Program *(TIER C, D)*

•319 Program *(TIER B, C, D)*

•TMDL Program *(TIER B, C, D)*

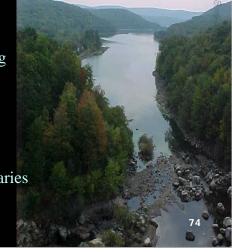•Other Programs or Divisions

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Addressing Data Quality Issues

• Quality Assurance Criteria for each Tier has been defined

• QAPP or Study Design should be reviewed by Coordinator & Data Users

• Program Specific Training & Support

• Individual Evaluation of each Monitoring Program

• Volunteer Coordinator needs to be the *"translator"* between volunteer community & regulatory agency

• Communication, Communication, Communication

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THE STATE'S MONITORING MATRIX

NJ Water Monitoring & Assessment Strategy 2005-2014

Volunteer collected data is now integrated into the NJDEP Monitoring Matrix:

•Stream Monitoring

•Lake Monitoring

•Monitoring of Tidal Rivers & Estuaries

•Wetland Monitoring

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Lessons Learned

- **Make it Easier for the Volunteers**

- **Unintended Data Use & Data Users**

- **Design of New Programs should not be Designed for a Tier**

- **Clear Quality Assurance Guidelines**

- **NJDEP should not be the only Group using the Data**

- **"Volunteer Monitoring is Cost Effective *NOT* Cost Free"-L.Green**

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1. Lessons Learned

Make it Easier for the Volunteers

You've gotten approvals,

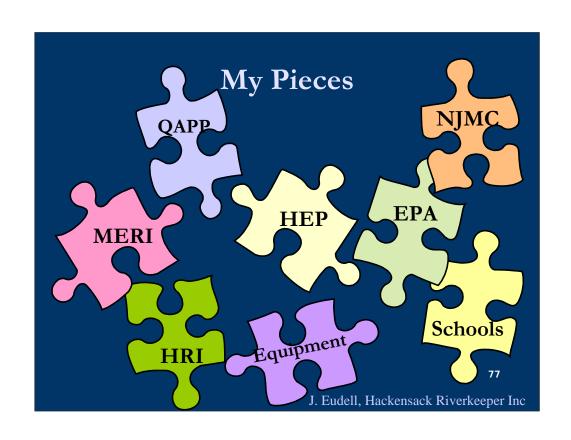chosen certain environmental parameters,

selected monitoring sites,

and maybe you even have funding,

and some potential volunteers…

SO NOW WHAT?????

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J. Eudell, Hackensack Riverkeeper Inc

My Pieces

QAPP

NJMC

MERI

HEP

EPA

HRI

Equipment

Schools

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J. Eudell, Hackensack Riverkeeper Inc

2002   IDEA !

Nov	Recruit and train schools for 2002-2003
Dec	Apply for & received NY-NJ HEP Mini-Grant

2003   REVISION

Feb	Begin monitoring
Feb	Told of QAPP necessity
Feb	Begin QAPP process
Mar	Receive HEP grant extension
Sept	MERI proposes partnership; Put QAPP on hold
Oct	Recruit and train schools for 2003-2004 (data doesn't count)
Dec	Awarded NJMC/MERI grant; Revise QAPP

2004   IMPLEMENT??

Jan-Aug	Detail HRI/MERI partnership; Revise QAPP
Sept	Recruit and train schools for 2004-2005
Oct	Still working on QAPP (when will data count?)

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Jared Eudell, Hackensack Riverkeeper Inc

2. Lessons Learned
Unintended Data Use & Data Users

One example is…volunteer data was rejected by 303d & 305b Integrated Report because of the sampling frequency…YET the TMDL group found the data to be very valuable….

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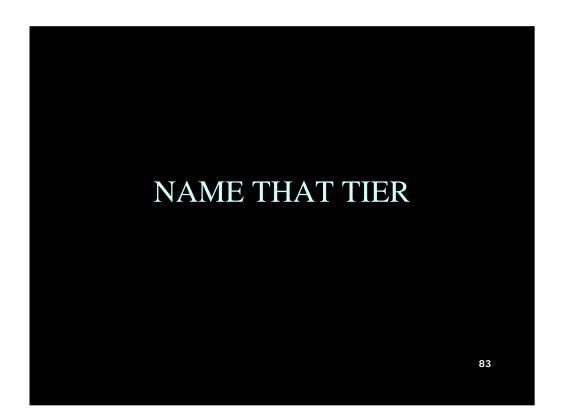# 3. Lessons Learned

DO NOT Design a Program for a Tier

*Organizations should design the program
to meet their OWN GOALS
first…otherwise frustration will follow*

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4. Lessons Learned
Clear Quality Assurance Guidelines

- *Spell out* who the Data Users are

- Offer Training in Methodologies & Procedures that are currently Acceptable to the Agency

- Review all available Resources/Guidance & then develop *Specific Guidance for your State*

- Ask the Groups What They Need Help with, then *HELP THEM*

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Data Use

- Organizations need to *Take Ownership* of their Information

- Organizations need Guidance on Different Types of Data Use

    - share success and failures stories

    - get the word out-articles, press releases

    - find examples of data uses at all levels, local, state, & national

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NAME THAT TIER

Pequannock River Coalition

Why did *we* choose temperature monitoring?

Trout!

Much of the of the Pequannock River mainstem and many river tributaries are classified as "trout production" where temperature can be a major limiting factor.

First documented fish kill caused by high river temperatures in the West Milford area in 1994 .

River temperature reached 82F.

A second fish kill occurred in the same area in 2002.
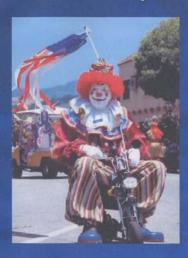
River temperature reached 83F.

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- **Electronic "data loggers" are placed in the river at known monitoring locations in early summer for the entire growing season**

- **Fixed Monitoring Locations**

- **Stations are located where data loggers can be checked frequently**

- **Loggers record Temp every 30 minutes**

- **Early Fall data loggers are removed & data is downloaded**

Ross Kushner, Pequannock River Coalition **85**

Are You Certifiable?
Probably!

Requirements:

1 - Dedicated laboratory "manager" with experience or training.

2 - High-grade, approved QA/QC Plan and Procedures.

3 – Quarterly calibration checks of data loggers.

4 – Annual recalibration of NIST thermometer.

5 – Solid documentation of calibration tests, deployment sites, collected data, etc.

6 – Annual license fee ($900).

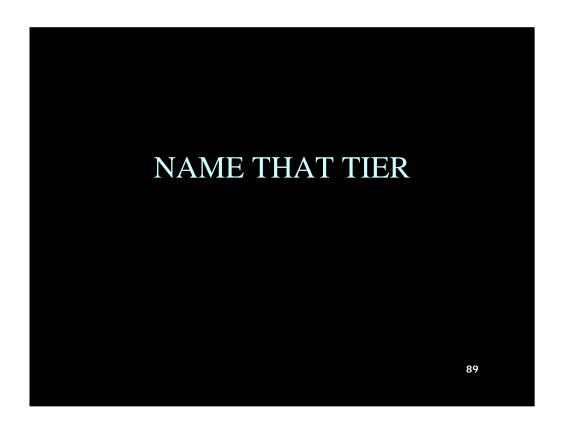Ross Kushner, Pequannock River Coalition

TIER D

Regulatory Response

Was this monitoring worthwhile?
YES!!
Pequannock Watershed Achievements:

- Identification of high-grade tributaries/land tracts.
- "Impairment" listing of Pequannock River segments and tributaries.
- Expedited TMDL development.
- Modification of existing Water Allocation Diversion permit with temperature/flow requirements.
- Higher level of stormwater management.
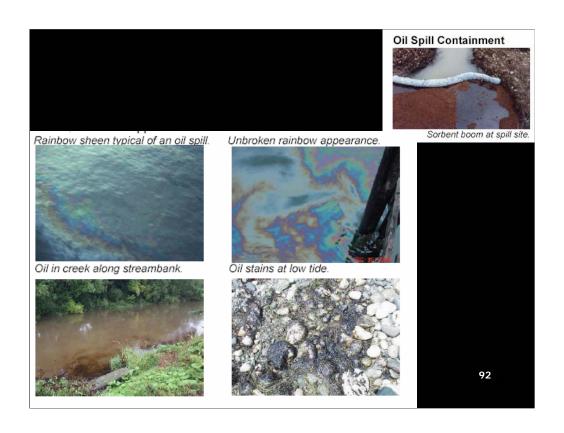- Better protection of stream/river buffers.
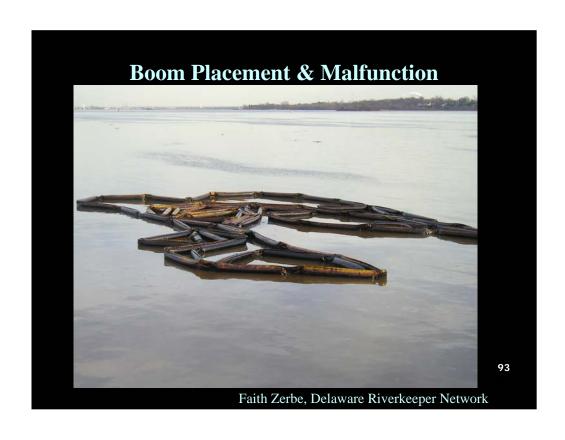
Ross Kushner, Pequannock River Coalition

NAME THAT TIER

Delaware River Oil Spill Volunteer Emergency Response

•**Basic Study Design**

•**Assigned Segments**

•**Assessment Tip Sheets**

•**Data Sheets** *standardized* **w/ State Protocol**

•*No* **Fixed monitoring locations**

•*No* **QAPP**

•*No* **Training**

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Standardized Data Sheet

Delaware Riverkeeper Network   ***Quick Oil Spill Site Assessment***

Please complete a copy of this datasheet at each station you visit in order to describe surrounding shoreline conditions and the degree of oiling along the shoreline. If you can safely walk the shoreline for a closer inspection, please do so. Record information as accurately and with as much detail as possible.

Please respect private property rights when conducting your assessment and do not put your self in harms way. Remember your safety and welfare take precedence over data collection.

Date (mm/dd/yy): _____   Start Time (e.g. 14:20): _____   End Time: _____
Observer: _____   Station ID # (from *Oil Spill Assessment Summary*): _____
Location Description: _____
Weather Conditions: _____
Wind Direction: ❑ N; ❑ NE; ❑ E; ❑ SE; ❑ S ; ❑ SW; ❑ W; ❑ NW; ❑ None   Percent Clouds: ❑ Clear; ❑ Partly Cloudy ❑ Overcast
(Note: a wind blowing from the west, toward the east, is called a west wind)
Tide Stage: ❑ Outgoing; ❑ Incoming; ❑ Low/Slack; ❑ High (Refer to tide charts and water levels)
Water Surface Conditions: ❑ Calm; ❑ Light Chop; ❑ Heavy Chop; ❑ Swells
Oil spill impacts observed? ❑ Y; ❑ N; If yes, approximate length & width of impact. Length _____ Width _____

Impacted Habitat Types and Materials: Check all habitat types or materials present	No Impact or Trace (<1%)	Sporadic 1-10%	Patchy 11- 50%	Broken 51 - 90%	Continuous 91- 100%
Water					
Marsh/Swamp					
Tidal Flat					
Sand or Shell Beach					
Dune					
Rip-Rap (large rock used as to prevent erosion)					
Bulkhead, Manmade Structures					
Other Vegetation					
Other (describe)					

Resources on Scene: ❑ Laborers; ❑Booms; ❑Small Boats; ❑Vehicles; ❑ Other (describe) _____
If present, are containment booms sagging and not blocking/stopping/containing oil? ❑ Y; ❑ N
If present, are absorbent booms saturated and leaking oil? ❑ Y; ❑ N   **91**
Is there any collected waste oil that needs to be removed? ❑ Debris; ❑ Oil Bags; ❑ Sorbent Boom; ❑ Sorbent Pads

Oil Spill Containment

Sorbent boom at spill site.

Rainbow sheen typical of an oil spill.

Unbroken rainbow appearance.

Oil in creek along streambank.

Oil stains at low tide.

Boom Placement & Malfunction

Faith Zerbe, Delaware Riverkeeper Network

What did Volunteers Document?

♦ **15 New Jersey tributaries suffered oiling**

♦ **One Delaware tributary suffered oiling**

♦ **4 New Jersey Beaches suffered oiling**

♦ **Three wildlife preserves suffered oiling**

♦ **Various main stem Delaware River locations**

♦ **13 streams monitored had no signs of oiling at time of monitoring (PA and DE mostly)**
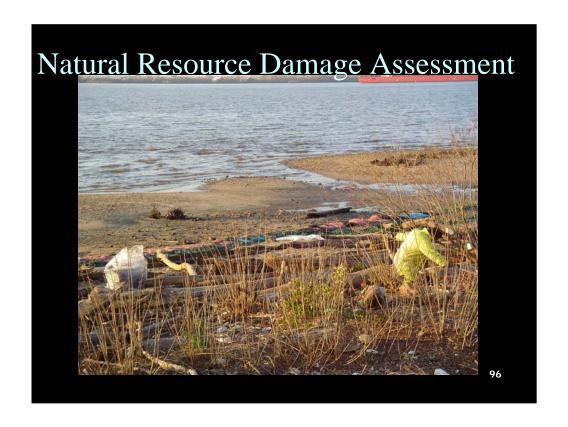
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Faith Zerbe, Delaware Riverkeeper Network

Riverkeeper Data Use

- Emergency response/clean up vigilance
- Talks with Coast Guard and NRDA officials – checks on scope of oiling, reports
- Press
- Increased citizen base for advocacy issues

Faith Zerbe, Delaware Riverkeeper Network

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Natural Resource Damage Assessment

TIER B

Stewardship/Screening

Van Saun Brook

- 2000-the Bergen County Environmental Council trained by NJDEP in Save Our Stream's protocol

- 2001-Environmental Council notified the NJDEP volunteer coordinator of a potential restoration project
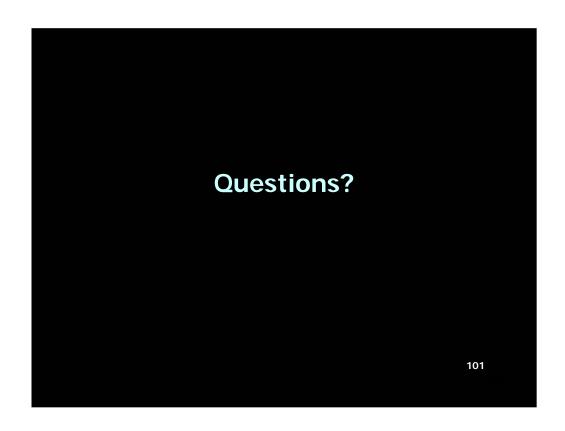
- 2002-NJDEP, 319 (H) Program awarded $100,000

The Outcome

•250 ft of Restoration at site 1, in-kind match

•Dredging of the Pond, in-kind match

•Sewer the zoo on site, in-kind match

•$100,000 towards the Buffer Restoration at site 2

•Site monitoring, post restoration

TIER B

Stewardship/Screening

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Questions?

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Check out some additional resources at:

http://www.clu-in.org/conf/tio/owvolwq/resource.cfm

Have comments on this Webcast? Please fill out our evaluation form at:

http://www.clu-in.org/conf/tio/owvolwq/feedback.cfm

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