Things to Consider When Starting a Volunteer Water Monitoring Program

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Many watershed groups in Ohio and throughout the nation use the talent of community members to observe local natural resources and collect water quality data. Research has shown that well-trained volunteers can contribute valuable data that is necessary for making good watershed management decisions (April 2003, Angie Becker Kudelka, Rivers Council of Minnesota, Geoff Dates, River Network, *An Evaluation of Citizen Volunteer Water Quality Monitoring In Minnesota*, p 4. *web reference at* **http://www.usawaterquality.org/volunteer/RelatedResearch/MNriversEval.pdf**). Volunteers can enhance agency programs by monitoring more frequently and at crucial times, such as high water conditions following a rain event.

Volunteer monitoring is a great asset to watershed groups. In addition to collecting local water quality data it provides an excellent educational opportunity. However, to be successful, dedication and time on the part of the coordinator is needed for volunteer recruitment, retention, training and recognition. Additional time will be required for project oversight, data management and quality assurance / quality control measures. Coordinators should keep in mind that volunteer monitors come in all ages with a variety of science backgrounds and skill sets.

This fact sheet is for groups that have little or no experience with volunteer monitoring. It offers items to consider before starting a volunteer monitoring program.

How do we want to use the data?

In Ohio, watershed groups need to decide if and how they want their volunteer data to be used. Effective training programs are crucial in order for volunteer collected data to be considered credible and used by state agencies.

Ohio has recently adopted credible data laws stating that volunteers with certain training, experience, and educational background can have their data viewed as "credible" by state agencies such as the Ohio Environmental Protection Agency (OEPA) and the Ohio Department of Natural Resources (ODNR). Legislation was passed and signed by the Governor in 2003 that allowed the adoption of administrative rules for the Ohio Credible Data program's operation. Visit **http://www.epa.state.oh.us/dsw/volunteermonitoring/index.html** for more information on Ohio EPA's program.

Ohio volunteers can be approved as "Qualified Data Collectors" (QDC) ranging from level one (least stringent methods) to level three (most stringent

methods). Level one is for educational purposes, level two data can be used for project evaluation and trend information, while a level three QDC is considered equivalent to an expert such as professional monitors from Ohio EPA and some higher educational institutions and laboratories. In general, the higher the level certification that is obtained, the more detailed the data management and protocol development. Additional information regarding Ohio's volunteer monitoring program can be found on Ohio EPA's website at **http://www.epa. state.oh.us/dsw/volunteermonitoring/index.html**.

Many groups wish to monitor as a means to engage the community and to raise awareness of their local water resource. Level one monitors and level two monitors can be very effective at identifying problem areas known as "hot spots" which may prompt further agency-level investigation. Whatever the reason for monitoring, it can provide a valuable and interesting activity for citizens.

Several agencies work together to train volunteer monitors such as Ohio EPA, ODNR, Ohio State University Extension, universities, community colleges, federal agencies, etc. Trainings these groups offer are organized around various parameters, for instance:

1. Biology—Identifying such things as fish and macroinvertebrates and conducting microbiological monitoring of bacteria including *E. coli,* fecal coliform, etc.
2. Water chemistry—Monitoring such parameters as pH, dissolved oxygen, acidity, alkalinity, nutrients, and suspended solids.
3. Physical—Conducting a stream habitat evaluation such as the Qualitative Habitat Evaluation Index.
4. Hydrology—Monitoring the flow/discharge rate of rivers and streams. This information is crucial if water chemistry monitoring is conducted.

Who will organize and store data collected by volunteers?

Volunteers will come and go but the data they collect can be valuable if accessible for future use. Some watersheds in Ohio have 30 or more years of data that has been collected by volunteers. This is crucial information and may demonstrate long-term trends which are important for good watershed management decisions.

It is important to have a stable entity serve as a repository for data. In Ohio, this may be the local watershed group. It could also be a partner, such as a university or state or federal agency, or local or county municipality. Ohio EPA is required by the Credible Data law to create a computerized database and share the data with other state agencies and interested parties. While the decisions about where and in what format to house the data are specific to local groups, it is perhaps the most critical element and needs to be decided before data collection begins.

There are many software packages designed to manage and analyze different kinds of data. Some are more detailed and complex than others. Consider reviewing database guidance references from USDA–Cooperative State Research, Education, and Extension Service (CSREES) at **http://www.usawaterquality. org/volunteer/Outreach/Databases.pdf**, to learn about some capabilities of various data storing software and other key questions to consider when planning a data management system.

What about site suitability, safety, and quality assurance?

Before starting any volunteer monitoring, decide what and where monitoring needs to take place and what the objectives are of the project. Hold classroom sessions with detailed maps and decide on the most appropriate monitoring sites. Use expert agency advice on this matter. For more information about local resources, visit The Ohio Watershed Network (OWN) at **http://ohiowatersheds.osu.edu**.

After this decision, it is important to visit the sites and consider the safety issues associated with monitoring. Consider traffic patterns, steep banks, high flowing water, etc. In many cases, at remote sites, it is imperative that volunteers visit the site with another person. In general, volunteer monitoring is better done in pairs. This allows for more safety and contingency considerations. At some sites, depending on the monitoring project goals and chosen parameters, specialized equipment might be needed to help reach the water, such as telescopic poles and collection buckets on long ropes.

No matter what level of monitoring will be conducted, a Project Study Plan and a Quality Assurance Project Plan (QAPP) should be developed. When project goals require, be sure that proper protocol for sampling, handling, and shipping are followed at all times. More guidance information on this subject can be found at **http://www.epa.state.oh.us/dsw/volunteermonitoring/study_plans.html**.

Have you considered the human dimensions of volunteer monitoring?

Volunteers will only dedicate time if they can relate to the value of the project and are engaged in the project objectives. Involve them in the planning stages and assign tasks based on their interest. Be clear about the expectations of their involvement. A signed volunteer agreement will clarify these expectations and assist in establishing a good working relationship. To view an example of a volunteer agreement, visit **http://www.usawaterquality.org/volunteer/Outreach/VolunteerManagementVIII.pdf**.

In order to retain volunteers, be aware of how much is being asked of them and if necessary, find a way to assist with their duties. For example, consider how far the volunteer must travel and the time involved to monitor each site. Volunteers that drive 20 or 30 miles to a collection site may not be willing to remain with the project for long. Some watershed groups even reimburse volunteers for travel. If volunteers are required to take a flow sample, this may require an additional 30 to 45 minutes at each site, so a convenient monitoring location would be best. Try to make their job as easy as possible.

Retention of volunteers also requires a well-functioning program. Look for ways to stay organized in tracking the volunteers. A database that includes contact information, status, and even a "comments" section will help to connect the facts to the individuals.

Communicate with the volunteers clearly and regularly through letters, phone, e-mail, reports, and in person. Be sure to be easily reached by the volunteers if they have questions or concerns. You may want to set up a system for after hours or weekend contact, if you feel your program warrants it.

Most importantly, make participation in the project exciting and worthwhile. It should be fun! Set realistic program goals and provide for a result, such as an end of the season report on project findings. Some groups hold an annual recognition banquet or other event that matches the needs and interests of the volunteers in the program. Handwritten thank-you notes are always a nice touch. Celebrate the successes and recognize volunteer contributions often. Include volunteer information in any agency newsletters and news releases for local newspapers.

Whatever you decide to do for volunteer retention, be aware that volunteers will leave for various reasons. There is a constant need for recruiting and training new volunteers, as well as continual training for existing monitors, to maintain a quality volunteer monitoring program. Other things to be aware of are the cost of managing a volunteer program, including staff time, purchasing, maintaining, and storing equipment.

Volunteer Water Monitoring Resources

USDA–CSREES
http://www.usawaterquality.org/
http://www.usawaterquality.org/volunteer/

Ohio EPA
http://www.epa.state.oh.us/dsw/volunteermonitoring/index.html

US EPA
http://www.epa.gov/owow/monitoring/volunteer/

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