Audubon International

Fact Sheet

Resources for Stream Quality Monitoring

Stream quality monitoring is an important component of an environmental management program, especially on sites where maintenance activities may impact water quality. Monitoring not only provides valuable information about the local water quality, it can also prove to be a rewarding educational experience. Water quality monitoring can be done in-house, using staff or volunteers, or you can make it a valuable outreach project, inviting local watershed organizations, schools, or other community members to participate.

Though it may seem daunting at first, there are many excellent resources to help you with stream monitoring. Very little training is needed to conduct most tests.

There are several types of monitoring from which to choose:

- **Visual surveys** use indicators such as color, odor, surface coatings, and shoreline characteristics to assess water quality. They are simple to conduct and require no equipment other than a form for noting observations. Visual surveys may indicate the presence of problems and help you narrow down where to conduct more accurate testing.

- **Macroinvertebrate surveys** assess water quality based on the presence of aquatic organisms, such as insect larvae and worms. The overall abundance and diversity of macroinvertebrates observed are good indicators of local water quality. These tests are highly accurate and inexpensive. The non-scientist can conduct them with minimal training.

- **Testing for physical characteristics,** such as dissolved oxygen, pH, and conductivity, are good indicators of water quality, and can be performed using a lab test kit that can be purchased for this purpose. Samples must be carefully collected, but results can be interpreted by the layperson.

- **Specific chemical testing** must be performed to find the level of nitrogen, phosphorus, or pesticides in water. Samples are collected and sent to a lab for analysis, which is often expensive and requires professional knowledge to interpret results.

The results of stream water monitoring can provide valuable feedback about whether current management practices are effective. Results can also provide invaluable data to watershed organizations and local and state water quality agencies, if tests are conducted with scientific accuracy.

Stream Monitoring Resources

There are a variety of excellent educational resources provided by non-profit and governmental organizations that specialize in water quality monitoring. This fact sheet suggests several; should you have questions or need additional assistance please contact us.

EPA's Volunteer Stream Monitoring Manual

http://www.epa.gov/volunteer/stream/

The U.S. Environmental Protection Agency (EPA) has developed an excellent and comprehensive manual to assist volunteers with stream monitoring projects. The 227-page manual includes background information, instructions, and survey forms, and covers these main topics:

- Elements of a stream study
- Watershed survey methods
- Macroinvertebrate biosurveys and habitat assessments
- Water quality conditions
- Managing and presenting monitoring data

The manual can be downloaded for free from the website and is also available in PDF format.

Minnesota Pollution Control Agency, Citizen Stream-Monitoring Program

http://www.pca.state.mn.us/water/csmp.html

Although developed for use in the state of Minnesota, the Citizen Stream-Monitoring Program can be adapted to your area, and used as guidelines for your own stream monitoring program. The website contains background information, examples of how monitoring data can be used, and has a 40-page instruction manual that can be downloaded.

Georgia Adopt-A-Stream

http://www.georgiaadoptastream.com/db/

Although developed for use in the state of Georgia, the materials on this website can be adapted to your local area and used as part of your stream monitoring program. Manuals available on the site for download include "Getting to Know Your Watershed", "Visual Stream Survey", "Biological and Chemical Stream Monitoring" and "Adopt-A-Wetland." Drawing from a variety of sources, these comprehensive manuals can help supplement any stream monitoring program.

Healthy Water, Healthy People

http://www.healthywater.org

Healthy Water, Healthy People is an innovative water quality education program for students, sponsored by Project WET and the Hach Scientific Foundation. It offers hands-on activity guides, testing kits, training, and more. A variety of publications and test kits can be purchased from the website. The *Water Quality Educators Guide* is available for $30; a set of 30 activity guides for kids (4th-7th grades) is also $30. For more information or assistance, you can e-mail *Healthy Water, Healthy People* at: healthywater@montana.edu.

Hands-on Save Our Streams

http://www.iwla.org/sos/

Hands-on Save Our Streams is a teacher's manual for stream monitoring available for purchase ($15) from the Izaak Walton League. The 215-page curriculum is written for use in the first through 12th grades with sections divided into primary, middle, and high school. It includes lessons about watershed dynamics, water monitoring, and land-use planning. The manual contains all background needed to teach lessons and lead field trips.

Stewardship Centre for British Columbia: Streamkeepers Handbook

http://www.stewardshipcentrebc.ca/portfolio/the-streamkeepers-handbook/
The *Streamkeepers Handbook* is a comprehensive, 330-page guide to protecting, restoring, and monitoring streams. Although designed for use in the Province of British Columbia, Canada, the information can be adapted easily to other locations. It contains a wealth of information related to stream quality and monitoring. Learning modules include: Ssream habitat surveys, water quality surveys, stream invertebrate surveys, storm drain marking, stream clean up, stream planting, and community awareness. Individual modules or the entire manual can be downloaded (PDF format using Adobe Acrobat) for free from the Web site, or you can purchase a printed copy.

Stream Monitoring Equipment

Listed below are several companies that have stream monitoring supplies and equipment available for purchase. While not a complete list, you should be able to find a variety of products from these companies that will help to make your stream monitoring project a success.

Ben Meadows Company **(800) 241-6401**	http://www.benmeadows.com/
Carolina Biological Supply Co. **(800)334-5551**	http://www.carolina.com
Fisher **(800) 955-1177**	http://www.fishersci.com
HACH Co **(800) 227-4224**	http://www.hach.com
Izaak Walton League of America **(800) BUG-IWLA**	http://www.iwla.org
LaMotte Co **(800) 344-3100**	http://www.lamotte.com/
WARD'S Natural Science **(800) 962-2660**	http://www.wardsci.com/