

Communication and Collaboration with a Volunteer Monitoring Program
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Texas Watch Program: Communication and Collaboration with a Volunteer Monitoring Program

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Generating scientifically sound data, building positive relationships with stakeholders, and communicating understandable information are all integral factors involved in collaborative efforts to prevent and mitigate water quality degradation.

With Texas' 191,228 miles of streams and 3.1 million reservoir acres, investigating the integrity of the State's waters is a challenging task. Assessing and communicating the conditions of our environment by means of a volunteer monitoring network is necessary and must utilize concerted collaborative efforts to create positive results. The size of the state, in combination with the fact that stakeholder agency assessment resources (which typically more available in urban areas) are focused on the most impaired water bodies creates more difficulties. The Texas Watch program has an important role and has proven most affective in smaller communities where professional resources are lacking to evaluate environmental conditions.

The Texas Watch water quality monitoring program includes a Core Program in which volunteers collect data on six ambient water quality variables: dissolved oxygen, pH, conductivity, temperature, flow severity, and field observations and Secchi depth. Additional variables for special monitoring projects, such as nitrate nitrogen, ammonia nitrogen, orthophosphate phosphorus, and *E.coli*, are sampled according to local need and available resources.

Texas Watch Overview

Texas Watch facilitates environmental stewardship by empowering a statewide network of concerned volunteers, partners, and institutions in a collaborative effort to promote a healthy and safe environment through watershed education, data collection, and community action. Texas Watch is funded through the Federal 319 Program and supported through a joint partnership between the United States Environmental

Protection Agency (USEPA), Texas Natural Resource Conservation Commission (TNRCC), and Southwest Texas State University (SWT) Department of Geography.

Texas Watch formed in 1991 at the Texas Water Commission (predecessor agency to the TNRCC) with an emphasis on the collection of volunteer water quality data. The TNRCC in recent years has expanded this focus to influence individuals to adopt activities and behaviors which contribute to the improvement of water quality and prevention of NPS pollution. In pursuit of its goals, Texas Watch coordinates its activities through a statewide network of state and local environmental agencies, river authorities, regional councils, industries and nonprofit organizations. These activities include statewide and regional meetings, workshops, training, field activities, and outreach media including presentations, a quarterly newsletter, and comprehensive web site.

Water Quality Sampling Programs

The Texas Watch water quality monitoring program includes a Core Program in which volunteers collect data on five ambient water quality variables: dissolved oxygen, pH, conductivity, temperature, and secchi depth. Additional variable, such as nutrients and bacteria, are sampled according to local need and available resources. Volunteers are certified through a 3 phase training program which includes a site visit by a certified project representative. Various quality control and data validation procedures are implemented depending on the projects quality control requirements. Information about NPS pollution, its relationship to the variables tested, and prevention strategies are presented to volunteers during training as well as follow up meetings. Texas Watch coordinates sampling through two quality assurance project plans (QAPP). The Project Specific QAPP (PSQAPP) covers up to 25 sites and includes Core Program sampling, quality control, and data validation procedures which satisfy TNRCC acceptance criteria for assessment data. The PSQAPP is implemented by the Texas Watch Quality Assurance Officer (QAO) who certifies and audits designated volunteer and partner QAOs. These supporting quality control resources assist with local implementation of the PSQAPP by conducting site visits, troubleshooting problems in the field, and performing safety and sample collection checks. Data, along with training and quality control records, are submitted to the Texas Watch Data Manager who performs the prescribed data validation checks and transfers the data to TNRCC following the necessary data submittal procedures. The Integrative QAPP (IQAPP) covers all other sites statewide. Although the parameters collected and training procedures are the same as the PSQAPP, sampling quality control and data validation are less comprehensive. As in the PSQAPP, volunteers complete a 3 phase training and begin submitting data. Site visits to validate sample collection is representative and that the monitoring procedures are implemented properly are schedules as time and resources are available. Data are submitted to Texas Watch, entered into the Texas Watch data base and are uploaded to the Texas Watch data viewer as this capability allows.

Water Quality Monitoring Challenges

Development of local resources to support quality control remains a key challenge. Limiting the number of sites in which a high level of oversight is required ensures Texas

Watch staff resources are not overextended. The number of sites in the PSQAPP can be expanded as local QA resources are identified and trained. This can happen under the auspices of the IQAPP. Data analysis and reporting are critical to any monitoring project. Texas Watch devotes the most data reporting resources to groups that have either invested the most time or have been the most vocal in expressing a local concern. The Texas Watch data viewer is designed to provide volunteers the ability to graph and analyze their data. This tool has been difficult to update recently and will require a complete rebuild. Until then, the program is routinely producing data reports for active groups. Texas Watch develops additional resources to help volunteers participate in meaningful NPS education activities. These resources include a companion curriculum for the Texas Watch Water Quality Monitoring Manual and a web based bulletin board.

Public Outreach Activities

Texas Watch publishes a quarterly newsletter, hosts a web site, and conducts statewide and regional meetings. These activities provide a forum for volunteers, partners and Texas Watch to communicate information about NPS pollution, Texas Watch activities, and issues of interest to volunteers. The statewide and regional meetings have been particularly successful in consolidating local concerns into an educational forum which addresses local water quality conditions, state and federal laws for address these conditions and local programs which are active in solutions. Panel discussions with local and state lawmakers, activists and government representatives are particularly effective in building cooperative bridges to address NPS pollution issues.

Conclusion

Implementing a statewide NPS pollution education program through watershed education and water quality monitoring can be challenging in a state as large as Texas. Keeping quality control requirements in line with available resources is the primary concern for data collection programs. Modifying the data use to match quality control capabilities provides flexibility in how limited staff resources are allocated. A web based presentation of all data, quality controlled or not, helps volunteers get the feedback they need and allows the volunteers and even professionals to use the data for screening and planning purposes. Finally, regional and statewide meetings are essential in engaging technical, governmental and political expertise in a dialogue with the most concerned and action-oriented citizens. More resources are needed, however, to follow these meetings with targeted, locally tailored NPS pollution education and prevention projects.

Helpful sites

<http://www.texaswatch.geo.swt.edu/>

<http://www.epa.gov/owow/monitoring/volunteer/issues.htm>

<http://www.green.org/>

