CHAPTER 1
INTRODUCTION

Purpose

This publication, *Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data*, replaces the *Receiving Water Assessment Procedures Manual*, GI-253. It is intended to be used with a companion publication *Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue*, RG-415 (TCEQ 2003).

This publication provides a comprehensive source of information on conducting biological and habitat assessments including proper documentation, standardized methods, and data collection and assessment requirements. The Surface Water Quality Monitoring (SWQM) Program of the Texas Commission on Environmental Quality (TCEQ) generated these procedures in coordination with other water programs of the TCEQ and the Texas Parks and Wildlife Department (TPWD) through an established biological workgroup process.

The procedures in this manual are used by the TCEQ as well as by other monitoring personnel who collect data on behalf of the TCEQ's various water monitoring programs such as the Total Maximum Daily Load (TMDL) Program and the Texas Clean Rivers Program (CRP). Monitoring entities, such as the CRP planning agencies and other state and federal agencies submitting water quality data to the TCEQ, are required to follow these procedures.

Working together, these programs gather the data our state needs to develop water quality standards and perform assessments to ensure the quality of surface water in Texas.

Biological Assessments

There are four categories for biological monitoring in freshwater. Each is designed to serve a specific regulatory purpose.

Use attainability analyses (UAAs). UAAs are assessments of the physical, chemical, biological, and economic factors affecting attainment of a use. UAAs are used to determine if existing criteria and uses described in the Texas Surface Water Quality Standards (TSWQS) are appropriate, if the uses and criteria are being maintained, or to determine causes of the use or criteria not being attained (30 TAC 2000).

Receiving water assessments (RWAs). RWAs are used to assess characteristics on *unclassified* streams, primarily to obtain data so that the appropriate aquatic life uses (ALUs) can be assigned.

Aquatic life monitoring (ALM). ALM is applicable for routine monitoring sites and is conducted to provide baseline data on environmental conditions and/or to determine if ALU/dissolved oxygen (DO) criteria are being attained. This category also includes reference condition, or ecoregion monitoring.

Aquatic life assessments (ALAs). ALAs are conducted on *unclassified* water bodies that are not included in Appendix D of the TSWQS and have been previously assessed and found not to support the presumed ALU.

How SWQM Procedures Are Used

The guidelines outlined in the *SWQM Procedures* are important because they document the quality assurance (QA) procedures that must be used to demonstrate that SWQM data collected by monitoring personnel are of known and comparable quality across the state.

The statewide SWQM Program is responsible for the collection of data that accurately describes the physical, chemical, and biological characteristics of state waters. Data collected as part of the statewide monitoring program and for special projects are used to achieve the following goals:

- Characterize existing water quality and emerging problems;
- Define long-term trends;
- Determine water quality standards compliance;
- Describe seasonal variation and frequency of occurrence of selected water quality constituents;
- Produce the *State of Texas Water Quality Inventory*, required by Section 305(b) of the Clean Water Act (CWA). This assessment enables the public, local governments, state agencies, the Texas Legislature, the United States Environmental Protection Agency (USEPA), and Congress to make water quality management decisions; and
- Establish water quality standards.

Legal Authority

Texas law requires all monitoring personnel, including partners and contractors, who collect and analyze biological samples for the TCEQ SWQM Program to follow procedures outlined in a TCEQ manual. The rule is in Title 30 of the Texas Administrative Code, Section 307.9.

Contact Information

For questions or comments about this manual or surface water quality monitoring, you can contact the SWQM Team at the TCEQ. A list of substantive changes to this manual will be proposed and discussed, as needed, at the TCEQ's annual SWQM Workshop.

You can reach the SWQM Team in the following ways:

By phone: 512/239-1716

By mail: SWQM Team, MC 165
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

By fax: 512/239-1605

Online: Go to <www.tceq.state.tx.us/goto/swqm/links>, click on "Contacts," and then click on "TCEQ Surface Water Quality Monitoring Program Contacts."

Getting Resources

Volumes 1 and 2 of the *SWQM Procedures* are available in print and electronically. To order a print copy, call TCEQ Publications at 512/239-0028, or fax your request to 512/239-4488. You can also find the manuals on the TCEQ Web site at <www.tceq.state.tx.us/goto/publications>. Also check the Web page of the SWQM Program for other publications and resources, including those that are referenced later in this publication.