

CHAPTER 1

INTRODUCTION

Purpose

This publication is intended for use with its companion volume *Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods*, RG-415 (TCEQ 2012).

This publication contains comprehensive 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 TCEQ generated these procedures in coordination with other water programs of the TCEQ and the Texas Parks and Wildlife Department through an established biological work group.

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 programs such as the Water Quality Standards Group (WQSG), the Standards Implementation Team (SIT), the Total Maximum Daily Load Program, and the Texas Clean Rivers Program. Monitoring authorities, such as the Clean Rivers Program 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.

Aquatic-Life Use-Attainability Analyses. 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 2010).

Receiving-Water Assessments. 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 is applicable for routine monitoring sites and is conducted to provide baseline data on environmental conditions and to determine if criteria for ALU and dissolved oxygen criteria are being attained. This category also includes reference condition and ecoregion monitoring.

Aquatic-Life Assessments. 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 *SWQM Procedures* are important because they document the quality-assurance procedures that must be used to demonstrate that SWQM data collected by monitoring personnel are of known and comparable quality across the state.

The SWQM Program and the CRP are the programs primarily responsible for the collection of data that accurately describe 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 compliance with water quality standards.
- Describe seasonal variation and frequency of occurrence of selected water quality constituents.
- Produce the *State of Texas Integrated Report*, which is required by Sections 305(b) and 303(d) of the federal Clean Water Act (CWA). This assessment enables the public, local governments, state agencies, the Texas Legislature, the U.S. Environmental Protection Agency (EPA), and Congress to make water quality management decisions.

Legal Authority

Texas law requires monitoring personnel who collect and analyze water samples for the SWQM Program to follow procedures outlined in a TCEQ manual on SWQM. The rule is in Title 30 of the Texas Administrative Code (30 TAC), Section 307.9.

This revision of the manual is to be used with the companion publication, *Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods* (RG-415).

Contact Information

For questions or comments about this manual or SWQM, you can contact the SWQM Program 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—

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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. These manuals and other SWQM publications and resources can be found at the TCEQ website. See Appendix A in SWQM Procedures, Volume 1.

