Texas Natural Resource Conservation Commission
Nutrient Criteria Development Plan
DRAFT 11/9/01

Purpose

This plan is intended to provide an initial framework for developing nutrient water quality standards for the state of Texas. The staff of the Texas Natural Resource Conservation Commission (TNRCC) will evaluate options for nutrient criteria for consideration by the United States Environmental Protection Agency (EPA) and the public during the next triennial revision of 30 TAC §307, Texas Surface Water Quality Standards. The plan outlines the work to be performed, status of data analysis, options for criteria development, and time frames for developing and considering nutrient criteria. The information in this plan is preliminary and will be subject to revision as criteria development is reviewed by the TNRCC, EPA, and stakeholders.

Current Status of Nutrient Regulation in Texas

The State of Texas has no numerical criteria for nutrients but does currently consider nutrient controls by 1) applying narrative criteria to address nutrient loadings at sites of concern, 2) developing watershed rules which require additional treatment of wastewater discharges in or near specified water bodies, and 3) employing TNRCC's anti-degradation considerations for increases in discharge loads. TNRCC also screens phosphorus and nitrate nitrogen and chlorophyll a monitoring data as a preliminary indication of areas of possible concern for the 303(d) listings of impaired water bodies.

Scope of Criteria Development

The TNRCC staff will develop and evaluate criteria to address nutrients and eutrophication as well as complementary approaches towards controlling nutrients. The TNRCC will also develop procedures to implement the application of criteria to permitting. The effort will be staged over several years. Preliminary criteria development will focus on major reservoirs. Criteria for streams and rivers, estuaries, and wetlands will subsequently be evaluated.

TNRCC is exploring different strategies to develop nutrient criteria. Some of the strategies now being investigated include: 1) basing criteria on direct concentrations of nutrients, 2) basing criteria on direct indicators of eutrophication - such as chlorophyll *a*, 3) developing "translator" procedures that relate concentrations of nitrogen and phosphorus to direct indicators of eutrophication, 4) relating criteria to protecting water quality-related uses, and 5) basing criteria on various percentiles of ambient concentrations of nutrients and chlorophyll *a* as outlined in the EPA's guidance documents.

With respect to spatial scales for criteria, TNRCC intends to explore criteria which are grouped according to 1) the EPA's major ecoregions as defined in the guidance, 2) smaller ecoregions and watersheds within Texas; 3) chemical, physical, and hydrologic characteristics, and 4) individual water bodies.

The TNRCC will provide drafts of criteria and implementation procedures for nutrient management for EPA review throughout the process.

Data Analysis

TNRCC anticipates that initial development of nutrient criteria will be conducted using existing data. The U.S. Geological Service (USGS) is providing data analysis funded by the EP A to support the TNRCC's development of nutrient controls. The USGS has obtained data from the EPA's and the TNRCC's databases to begin data analysis. Data being considered is not only current data, but also historical data from the 1960's and 70's. The data currently downloaded from the data bases includes the following constituents for a large number of water bodies in Texas: kjeldahl nitrogen, total nitrogen, nitrate plus nitrite nitrogen, total phosphorus, orthophosphorus, total suspended solids, volatile suspended solids, secchi disc depths, dissolved oxygen, and chlorophyll a. Additional parameters will be added to the database as needed. At this point USGS has calculated frequency distributions (quartiles) for chlorophyll a and nitrogen and phosphorus forms. This has been done for reservoirs, rivers and streams as a whole as well as for selected ecoregions as outlined in EP A guidance documents.

Workgroup

The TNRCC will initially utilize a workgroup to aid staff in nutrient criteria development. The first workgroup will consist of a small group of individuals knowledgeable in the response of aquatic systems to nutrients. This workgroup will consider options for developing nutrient criteria, provide guidance on options for data evaluation, offer suggestions for data needs, and provide input on a more detailed workplan. The TNRCC will evaluate their comments and suggestions to further define the development of nutrient criteria and to update the workplan.

Schedule

This plan is provided to the EP A as a preliminary indication of the TNRCC staffs efforts in accordance with the EPA's notice in the Federal Register dated January 9, 2001, and entitled Nutrient Criteria Development; Notice of Ecoregional Nutrient Criteria. The EP A stated that 1) "by the end of 2001, each State and authorized Tribe should complete a plan for developing and adopting nutrient criteria into State or Tribal water quality standards", and 2) "by the end of 2004, States and authorized Tribes should adopt nutrient criteria (either numeric criteria or as procedures to translate

a narrative nutrient criteria into a quantified endpoint) for the water body type and ecoregions associated with the section 304(a) water quality criteria that EPA publishes by the end of 2001."

Prior to the end of calendar year 2004, the TNRCC expects to produce draft proposals for nutrient criteria for major reservoirs in the state for consideration by the TNRCC commissioners and subsequent review by the EP A and stakeholders. The proposed criteria are intended to be available for consideration in the next triennial water quality standards revision for Texas. The date for the next standards revision is still being determined, since the major provisions of the previous triennial revision of the water quality standards remain under EPA review. The schedule for nutrient criteria will be reviewed prior to the end of calendar year 2002 to evaluate potential dates for development of criteria for streams and rivers, estuaries, and wetlands.