N-STEPS and T-REQS: Online support for nutrient criteria development

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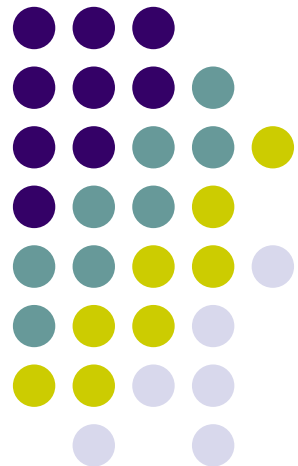


Objective

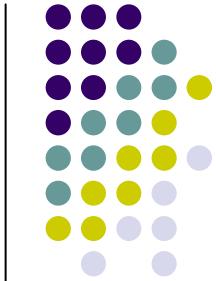
- Provide regions, states, and tribes with support related to nutrient criteria development
- Provide access to expert assistance with issues related to nutrient criteria development and implementation
- Improve communication nationwide

Basic tools

- Nutrient Scientific Technical Exchange Partnership and Support (N-STEPS) Website
  - http://n-steps.tetratech-ffx.com
  - Username & Password: nutrient

- Technical REQuest System (T-REQS)
  - http://t-reqs.tetratech-ffx.com
  - Or access via N-STEPS
  - Request username & password

N-STEPS - Website nutrient criteria support



- Multiple pages
  - Headquarters Nutrient Criteria News
  - Regional Nutrient Criteria News Support documents
  - Statistical Tools
  - Support Literature and Presentations
  - Upcoming Events
  - Links
  - Discussion Board (planned) and Webcasts (planned)
  - Glossary
  - Questions and answers and T-REQS

Website – Homepage

U.S. Environmental Protection Agency

Nutrient Scientific Technical Exchange Partnership and Support

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EPA Home > N-STEPS Home

N-STEPS : Providing support to EPA Regional Nutrient Coordinators, States and Authorized Tribes

- Home
- Technical REQuest System (T-REQS)
- Headquarters Nutrient Criteria News
- Regional Nutrient Criteria News
- Questions and Answers
- Statistical Tools
- Nutrient Criteria Information
  - Support Literature
  - Presentations
- Upcoming Events
- Links
- Interactive Tools
  - Discussion Board
  - Webcasts
- Glossary

Submit Question

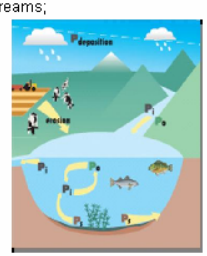
Logout

Nutrients, nitrogen and phosphorus, have consistently ranked as one of the top three causes of use impairment in US waters for more than a decade. Excess nutrients lead to significant water quality problems including harmful algal blooms, hypoxia, declines in wildlife and wildlife habitat, and have been linked to increases in human pathogens. This website is designed to assist managers and other water quality personnel in developing and implementing nutrient criteria. It addresses technical issues related to the assessment and management of nitrogen and phosphorus, and their effects on aquatic biological communities. The focus of the N-STEPS is to provide timely and helpful input on topics such as cause-response relationships, sampling design, data collection, data evaluation, statistical analysis, classification of ecosystems, and implementation of numerical nutrient criteria.

Cyanobacteria in the Potomac, MD.

The types of assistance available from the N-STEPS include:

- Reviewing and/or recommending sampling design of nitrogen and phosphorus and algal response in rivers and streams;
- Reviewing and/or recommending sampling design of nitrogen and phosphorus other biological responses in rivers and streams;
- Providing assistance with the implementation of methods from EPA's technical guidance manuals ;
- Reviewing, recommending or performing statistical analysis on data to determine relationships between nutrient data and biological response; nutrient data analysis along gradients, non-parametric statistics, and power analysis;
- Recommendations for index periods for sampling in different geographic locations;
- Recommendations and /or review of classification of ecosystems beyond the ecoregional approach;
- Recommendations and/or review of implementation procedures such as: the frequency and duration for exceedance in different geographical locations; translation of biological response data into NPDES permit limits; trading point and non-point sources to meet a standard; and ;
- Development of narrative translator mechanisms for incorporation into a standard.



Phosphorus Cycle: Watershed Model

Resources on this website include:

- Technical REQuest System: online question submission area;
- Regional Nutrient Criteria Activity: updates and highlights on nutrient criteria programs;
- Questions and Answer: expert answers to common technical questions;
- Support Documents: publication about nutrient criteria
- Links: find pages with useful information for nutrient criteria development;
- Discussion board: venue for on-line discussion with experts;
- Glossary: definitions of technical terms.

Website – Headquarters Nutrient News

U.S. Environmental Protection Agency

Nutrient Scientific Technical Exchange Partnership and Support

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EPA Home > N-STEPS Home> Headquarters Nutrient Criteria News /Tech News

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HQ Nutrient Criteria News

Tech News | Implementation News

Archived Articles

Criteria Development Approaches Recommended in Nutrient Criteria Guidance Manuals

Reference-Based Approach: Utilizes reference (relatively pristine) waterbodies to develop nutrient criteria. Three recommended approaches to nutrient criteria development that identify reference conditions are described in EPA's technical guidance:

Determine the nutrient gradient (least to most impacted) within each class of waterbody (e.g. lakes, rivers, streams etc.). Identify the numeric nutrient concentration associated with least impacted conditions. This concentration becomes the reference-condition for the waterbody, upon which numeric nutrient criteria are set.

Determine the 75th percentile (or acceptable upper percentile - 70th to 99th percentile) of the reference waterbody population from a frequency distribution and use this value to compare waterbody nutrient conditions for developing numeric nutrient criteria

Determine the 25th percentile (or acceptable lower percentile-5th to 30th percentile) of the total waterbody population from a frequency distribution and use this value to compare waterbody conditions for developing numeric nutrient criteria. It is also acceptable to utilize known reference conditions from another state or region to develop numeric nutrient criteria in the absence of true reference systems in a state or region.

Predictive Relationships: Determine nutrient concentrations that results in appropriate levels of response variables (e.g., algal biomass, stable submerged aquatic vegetation (SAV) coverage, etc.). This can be accomplished using empirical or mechanistic models, or other tools, such as, statistical analyses of bioassessment data.

Peer-Reviewed Published Literature: Determine appropriate in-waterbody concentrations of nutrients (thresholds of system changes) to maintain system integrity and protect water quality.

Multi-Metric Indices of Biotic Data: Determine aquatic life responses to nutrient enrichment and derive nutrient criteria that protect aquatic life use and water quality of a waterbody or class of waterbodies.

Designated Uses: A comparison between reference conditions for specific waterbodies or waterbody segments. The most common tool for designating uses as a method of criteria development is to designate the use based on the aquatic life use

Website – Regional Nutrient News

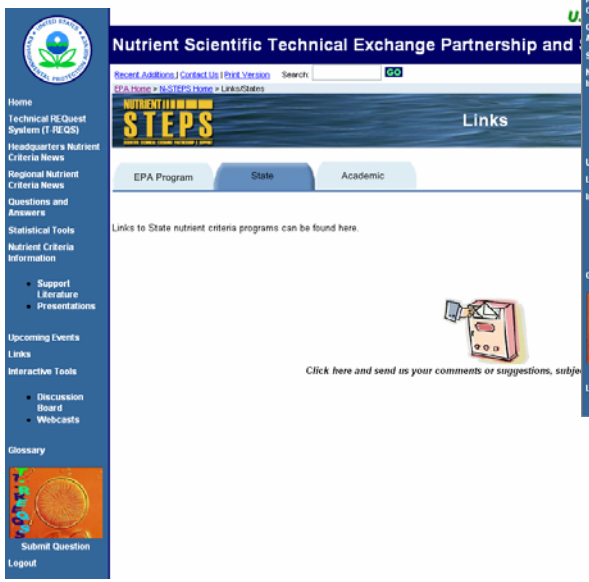
Website – Statistical Tools

Website – Support Literature

Website - Presentations

Website – Upcoming Events

Website – Links



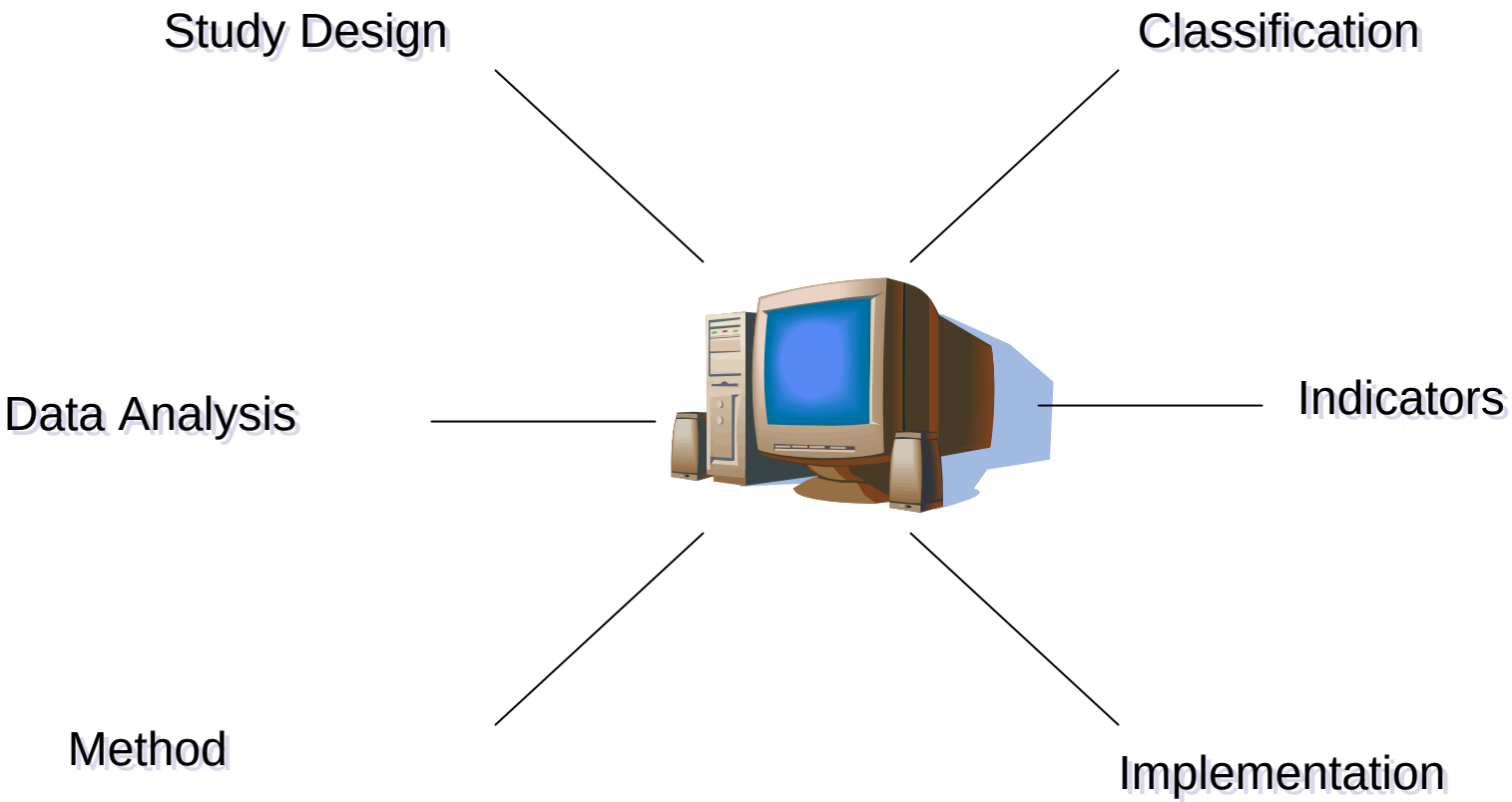
Website – Discussion Board/Webcasts

Website – Glossary

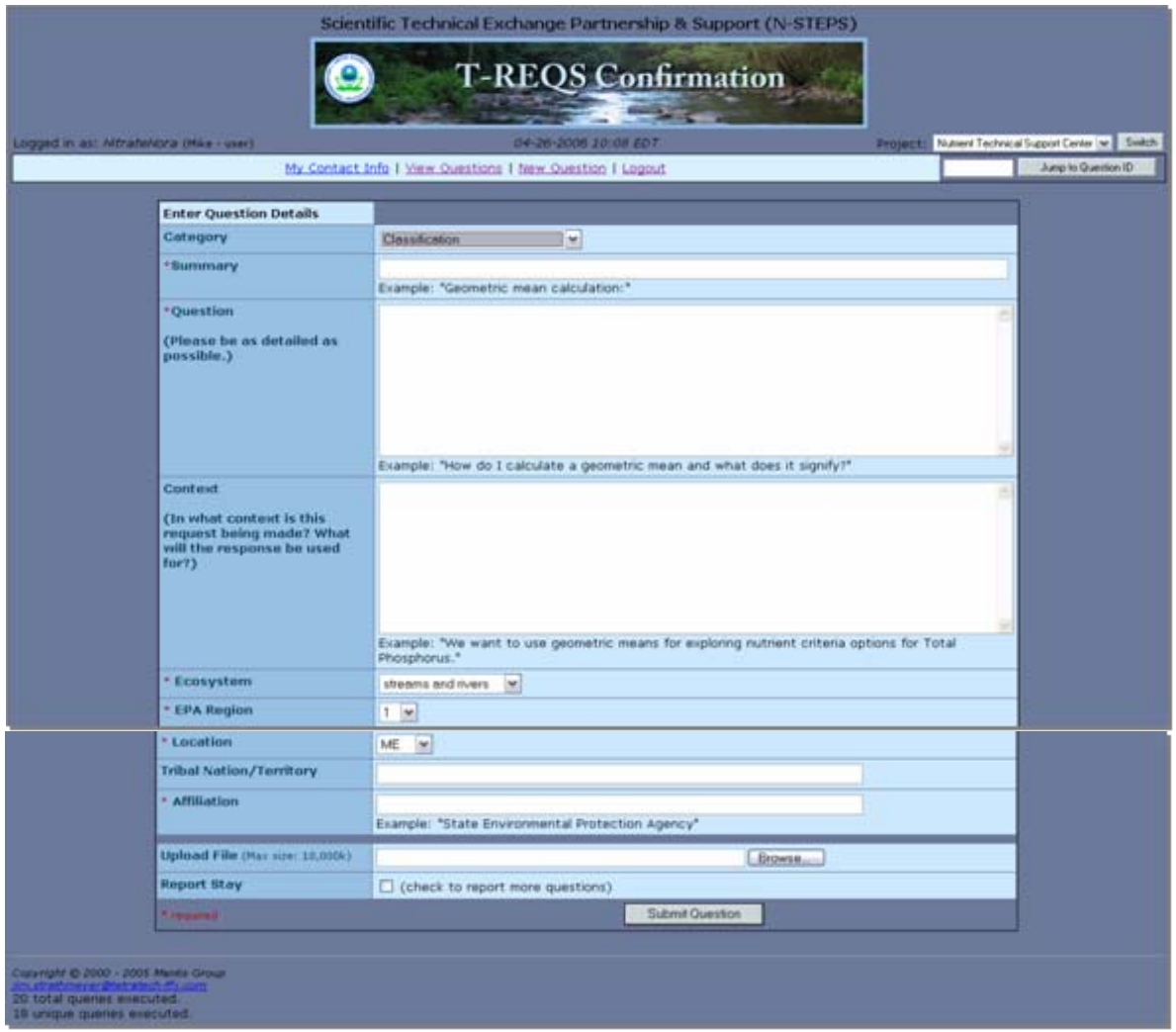
Website – Questions and Answers

T-REQS – Technical REQuest System

- Expert answers for questions related to:



T-REQS – New Question



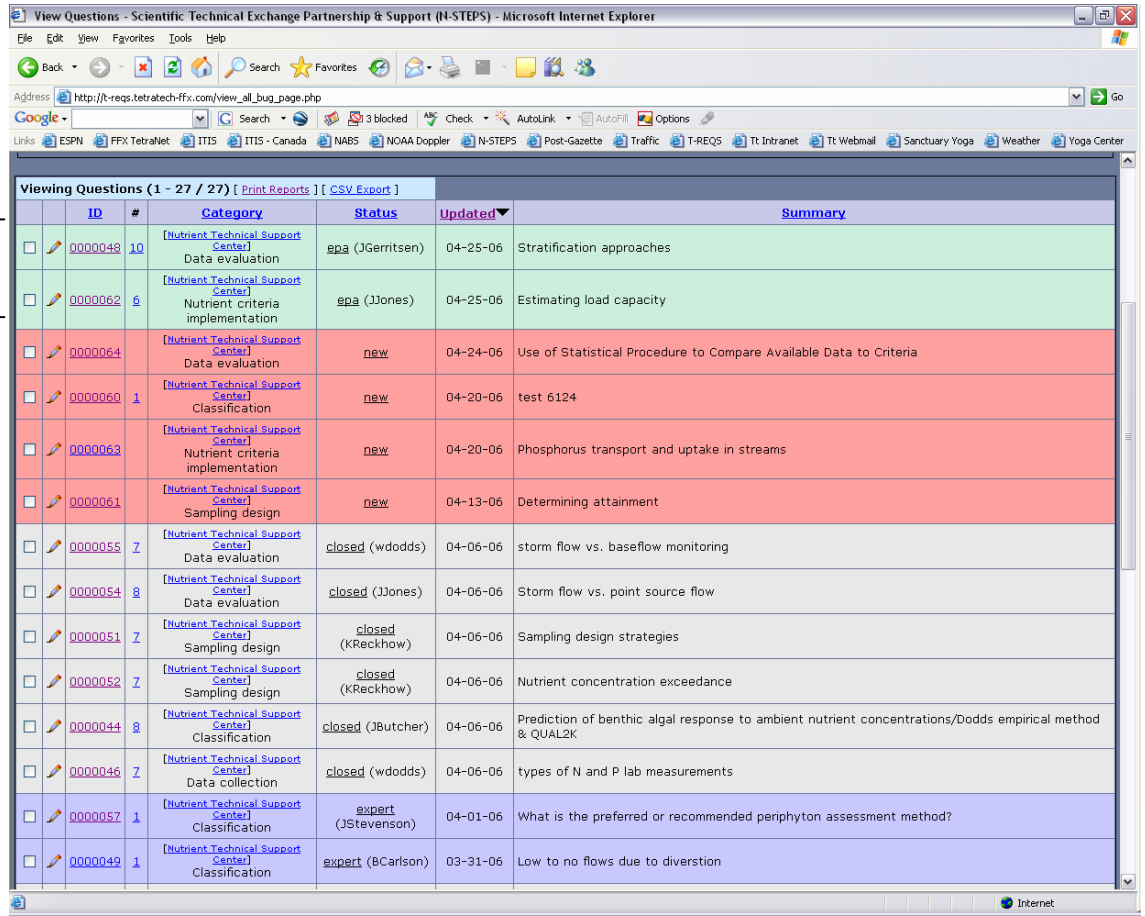
T-REQS – View Questions

EPA

New

Closed

Expert



ID	#	Category	Status	Updated	Summary
0000048	10	[Nutrient Technical Support Center] Data evaluation	epa (JGerritsen)	04-25-06	Stratification approaches
0000062	6	[Nutrient Technical Support Center] Nutrient criteria implementation	epa (JJones)	04-25-06	Estimating load capacity
0000064		[Nutrient Technical Support Center] Data evaluation	new	04-24-06	Use of Statistical Procedure to Compare Available Data to Criteria
0000060	1	[Nutrient Technical Support Center] Classification	new	04-20-06	test 6124
0000063		[Nutrient Technical Support Center] Nutrient criteria implementation	new	04-20-06	Phosphorus transport and uptake in streams
0000061		[Nutrient Technical Support Center] Sampling design	new	04-13-06	Determining attainment
0000055	7	[Nutrient Technical Support Center] Data evaluation	closed (wdodds)	04-06-06	storm flow vs. baseflow monitoring
0000054	8	[Nutrient Technical Support Center] Data evaluation	closed (JJones)	04-06-06	Storm flow vs. point source flow
0000051	7	[Nutrient Technical Support Center] Sampling design	closed (KReckhow)	04-06-06	Sampling design strategies
0000052	7	[Nutrient Technical Support Center] Sampling design	closed (KReckhow)	04-06-06	Nutrient concentration exceedance
0000044	8	[Nutrient Technical Support Center] Classification	closed (JButcher)	04-06-06	Prediction of benthic algal response to ambient nutrient concentrations/Dodds empirical method & QUAL2K
0000046	7	[Nutrient Technical Support Center] Data collection	closed (wdodds)	04-06-06	types of N and P lab measurements
0000057	1	[Nutrient Technical Support Center] Classification	expert (JStevenson)	04-01-06	What is the preferred or recommended periphyton assessment method?
0000049	1	[Nutrient Technical Support Center] Classification	expert (BCarlson)	03-31-06	Low to no flows due to diverstion

T-REQS

- Questions and responses sent to user and posted to website
- Building a set of useful answers to important questions

- Use statistics will help guide better future support too

Come visit us!

- During the poster session: Monday - Wednesday
- Sign up for T-REQS username and password
- Get a T-REQS User's Guide