



National Nutrient Program

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Water Quality and Nutrients

- Nutrients consistently rank as one of the top five causes of waterbody impairment for waters surveyed by States/Tribes/Territories and reported to EPA.
- Water quality problems attributed to nutrients have use impairment impacts that affect both human health and aquatic life uses.
- Waterbodies with nutrient pollution problems garner national attention, e.g., Everglades, Gulf of Mexico Hypoxia, Upper Klamath Lake, Chesapeake Bay.
- Nutrient pollution is cited as a primary cause for declines in aquatic biota,
 - declines in submerged aquatic vegetation and coral reefs,
 - loss of native mussel species,
 - replacement of native wetland vegetation,
 - oxygen depletion related fish kills, and
 - water quality degradation.

Nutrients Require a Different Approach

- Nutrients are necessary for aquatic life, but are problematic in excess.
- Appropriate concentrations of nutrients vary by waterbody type, climate, and geology.

Statutory Authority

- Clean Water Act Section 101(a)
Purpose:
 - *“To restore and maintain the chemical, physical and biological integrity of the Nation’s waters”*



Statutory Authority

- Section 303(c)(2)(A):

....State water quality standards shall consist of designated uses of navigable waters and the criteria for protecting such uses.

*....State water quality standards shall protect and enhance the quality of water and serve the purposes of the Act, including **protection and propagation of fish, shellfish and wildlife** ("fishable/swimmable") and recreation in and on the water.*



Statutory Authority

- Section 304(a) criteria:

based on latest scientific information on the relationship that a constituent concentration, level, or measure has on a particular aquatic species or human health

to be revised periodically



Application to Water Quality Standards

Water Quality Standard

includes:

- I. Designated Uses
- II. Criteria to Protect the Uses
- III. Antidegradation policy

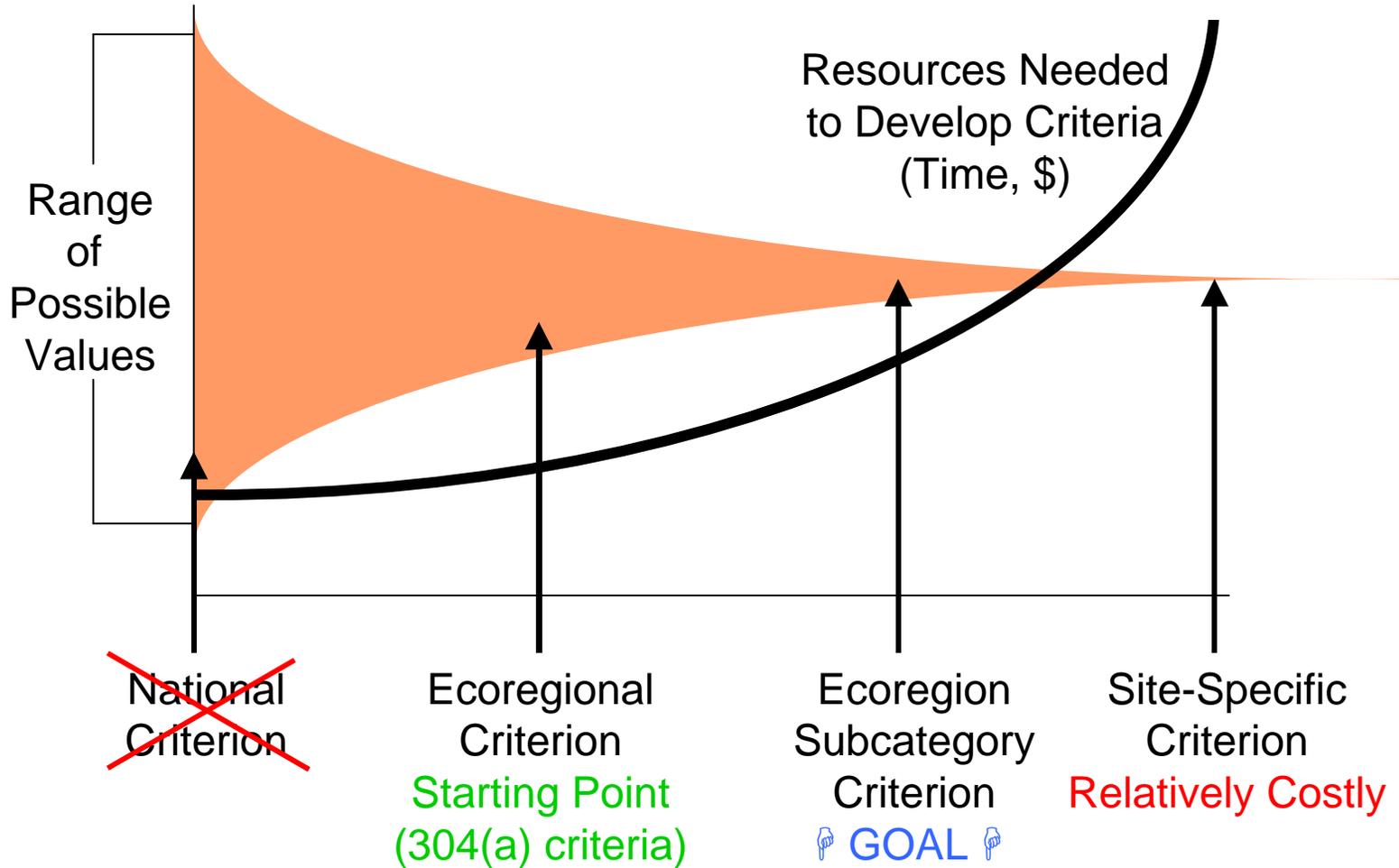
EPA/State and Tribal Roles



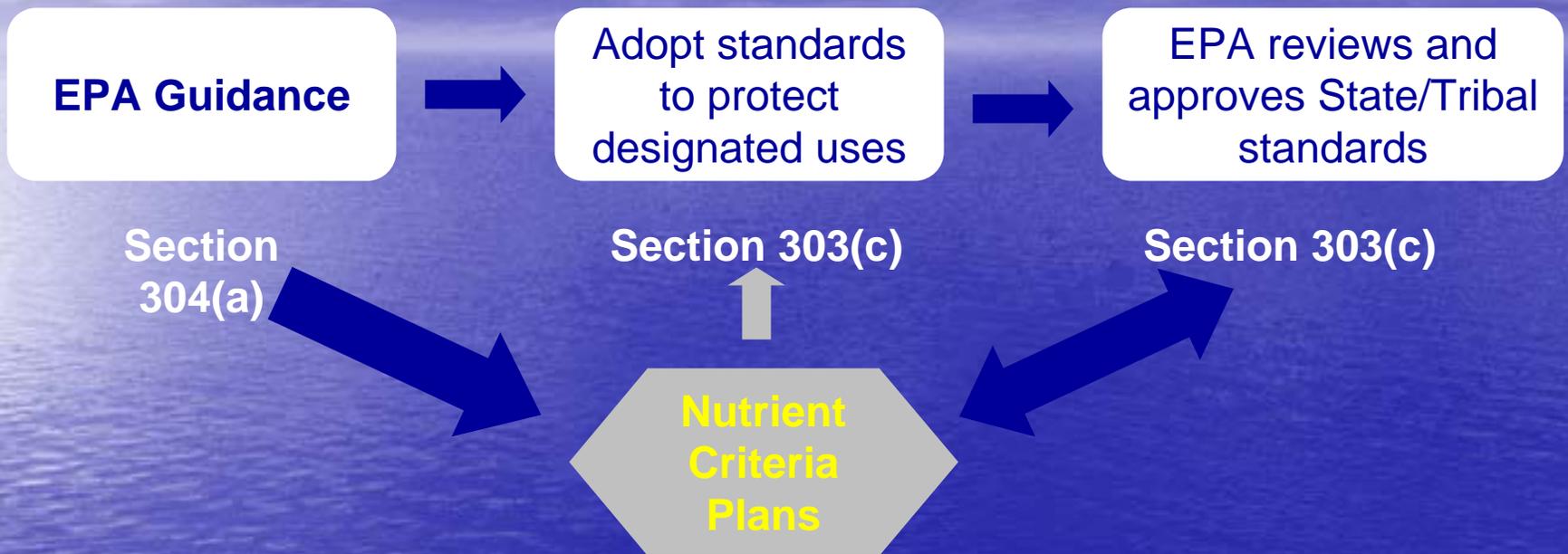
EPA's NATIONAL 304(a) NUTRIENT CRITERIA

- Issued as values that broadly protect the most sensitive aquatic life uses in an ecoregion
- Intended to be used as starting points or baseline to help States/Tribes/Territories develop more locally appropriate criteria.
- Were statistically derived in the context of 14 nutrient ecoregions across the continental US (and cover 95% of continental freshwaters).

Geographic Scales of Nutrient Criteria Development



NUTRIENT CRITERIA PLANS



Nutrient Criteria Plans bridge the gap between EPA's defined statutory roles of producing criteria guidance and reviewing and approving standards

Nutrient Criteria Development Plans

- 50 States and Territories out of 56 have submitted draft nutrient criteria development plans
- 28 of those 50 have been mutually agreed upon by EPA and the State or Territory
- Plans are considered by EPA to be a commitment on the part of States and Territories to develop numeric nutrient criteria and to adopt quantitative nutrient standards
- 21 States/Territories will have numeric nutrient standards in place for priority waters and parameters by 2008 if current schedules in submitted plans are followed.

Current Products

- 304a Nutrient Criteria Documents 2001-2002
 - 13 for lakes and reservoirs
 - 12 for rivers and streams
 - 1 for the Everglades

Criteria Ranges: 14 Nutrient Criteria Ecoregions

Reference Condition Values: 84 Level 3 Ecoregions

- to be used for comparison when developing nutrient criteria

Current Products

- **Technical guidance documents**
 - **Lakes and Reservoirs (2000)**
 - **Rivers and Streams (2000)**
 - **Estuaries (2001)**

Products in the Pipeline

- Technical guidance for nutrient criteria development in wetlands will be released in 2006.
- Estuarine criteria (304a) for select estuaries will be released in 2007.
- Wetland criteria (304a) for pilot wetland types will be release in 2007.

NUTRIENT

STEPS

SCIENTIFIC TECHNICAL EXCHANGE PARTNERSHIP & SUPPORT

N-STEPS and T-REQS

- EPA has launched the first phase of a technical support site to assist States/Tribes/Territories.
- The site provides:
 - information on nutrient criteria development;
 - news, meetings and activities;
 - case studies
 - presentations from the recent all-states meeting, and
 - the user-only Technical REQest System (T-REQS).
- Technical requests and their expert-provided responses are posted once the responses are reviewed.
- The site is heavily used by States--~2500 hits by 61 different users in the last 10 days.

New and Ongoing Work

- Collecting and analyzing large river data from multiple systems to improve understanding about nutrients and biological response in rivers.
- Developing numeric nutrient criteria for near-shore coastal waters at the mouth of the Mississippi River.
- Supporting BMP effectiveness studies to improve NPS nutrient reduction efforts.
- Increasing direct technical support to States/Tribes/Territories.
- Increasing our activities on water quality trading to improve the science and determine the effectiveness for nutrient pollution management.

Contact Information

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Contact information for other Team members can be found at the website:

www.epa.gov/waterscience/criteria/nutrient

www.n-steps.tetrattech-ffx.com

Username and password: nutrient

