

Policy Framework for Natural Source Exclusion

SCCWRP Workshop

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The Challenge

- Water quality exceeding water quality standards → CWA §303(d) listing and likely TMDL development
- Where sources are “natural,” states/tribes often feel resources are better spent on other environmental challenges

Traditional Mechanisms to Address Natural Conditions

- Site-specific criteria
 - Using ambient levels for aquatic life uses (1997 Tudor Davies Memo)
 - Using TMDL end-points placed in WQS
- Narrative exclusions
 - In WQS
 - In Listing Policies
- Designated use changes

Site-Specific Criteria

EPA Policy: 1997 Tudor Davies Memo

- Applies only to aquatic life criteria
 - States and Tribes may establish site specific numeric aquatic life water quality criteria by setting the criteria value equal to *natural background*. *Natural background is defined as background concentration due only to non-anthropogenic sources, i.e., non-manmade sources.*
- To set criteria equal to natural background, WQS must include:
 - (1) a definition of natural background consistent with the above;
 - (2) a provision that site specific criteria may be set equal to natural background;
 - (3) a procedure for determining natural background, or alternatively, a reference in their water quality standards to another document describing the binding procedure that will be used.

Site-Specific Criteria

Using TMDL Endpoints in WQS

- Adoption of TMDL endpoints into WQS
 - Several states successfully use this approach for establishing site-specific aquatic life criteria
 - Makes use of all the source ID work from the TMDL
 - Closes the loop by establishing WQS that TMDL can be consistent with
 - Can be resource intensive

Using Narratives in WQS (I)

- A word of caution regarding reliance on natural condition narratives in WQS.

Oregon's Temperature Narrative Natural Conditions Criteria

Temperature

- Natural Conditions Criteria. Where the department determines that the natural thermal potential of all or a portion of a water body exceeds the biologically-based criteria in section (4) of this rule, the natural thermal potential temperatures supersede the biologically-based criteria, and are deemed to be the applicable temperature criteria for that water body.

Using Narratives in WQS (2)

- Northwest Environmental Advocates sued EPA on the approval of Oregon's 2004 WQS revisions.
- The Federal District Court in Oregon issued a decision on this case on February 28th, 2012.
 - Upheld EPA's approval of the State's *numeric temperature criteria*, but held that EPA approval of the narrative natural conditions criteria provision (NCC) was arbitrary and capricious and violated the CWA.

Using Narratives in WQS (3)

The Court found 2 main problems with EPA's approval of NCC:

- 1.) The NCC "supplants rather than supplements the numeric criteria," the NCC violates the CWA's § 303(c) new/revised water quality standards review requirements and implementing regulations under 40 CFR 131.11(b)(2).
- 2.) The NCC “attempts to restore one aspect of Oregon's historical water conditions (higher temperatures in some waterbodies) without restoring the other conditions that allowed salmonids to thrive...”
 - The “one-way ratchet”— the NCC allowed for an increase in temperature where natural conditions are found in a waterbody to be warmer, but did not allow for a temperature decrease where natural conditions are found to be a cooler.

Using Narratives in WQS (4)

- Lesson learned
 - Legal vulnerabilities regarding use of narratives to “supplant” numeric criteria
 - Better to:
 - Identify site-specific natural condition values and adopt into WQS or
 - Adopt a performance-based methodology for developing site-specific criteria that is scientifically defensible, reproducible , and transparent

Using Narratives in Listing

- Based on case law and EPA's interpretation of CWA and its regulations
 - A state/tribe cannot use a binding narrative exclusion in a listing policy to exempt the application of water quality criteria
 - New or revised WQS must be reviewed and acted on by EPA before they are effective for CWA purposes

Designated Use Change: 40 CFR 131.10(g)

“States may remove a designated use which is not an existing use...or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

1. Naturally occurring pollutant concentrations prevent the attainment of the use;...”

Natural Conditions Principles

- Decisions based on a natural condition provision should be:
 - Geographically specific
 - Scientifically defensible
 - Well-documented and supported with data and information
 - Provides for public comment and access to information

What has EPA said regarding Recreational Criteria in the past?

- EPA recommends application of the 1986 bacteria criteria unless sanitary and epidemiological studies show the sources of the indicator bacteria to be non-human, and that the indicator densities are not indicative of a health risk to those swimming in such waters.

How does the 2012 Recreational Criteria address natural sources?

- 2012 RWQC does not provide alternative criteria values for natural sources nationally
- However, EPA is providing several options for addressing the issue

Forthcoming Tools

- Marine Sanitary Survey
- QMRA “How To” document
 - Using QMRA to develop site-specific criteria
 - Including case studies
- Epi Study “How To” document
 - Using epi studies to develop site-specific criteria
- Support document for incorporating new technologies, methods or indicators

Best Options for Addressing Natural Sources (I)

- Alternative criteria to protect primary contact uses
 - Using scientifically sound epi study, QMRA w/ site characterization, combo, or alternative indicator
 - Tie analysis to risk level protective of primary contact
 - When source is less risky, results in different (larger) criteria value

Best Options for Addressing Natural Sources (2)

- Designated use change to protect “natural source impacted use”
 - Using scientifically sound epi study, QMRA w/ site characterization, combo, or alternative indicator
 - Tie to different risk level
 - Protective of new use category
 - When source is less risky, results in different (larger) criteria value

Good News

- CA and SCCWRP are well positioned to address natural sources in a scientifically defensible manner



Appendix

California Regional Water Quality Control Board – San Diego Region

- On May 14th, 2008, the San Diego Water Board adopted a Basin Plan Amendment “...to incorporate implementation provisions for indicator bacteria water quality objectives to account for loading from natural uncontrollable sources within the context of a TMDL.”
- San Diego Basin Plan Amendments:
 - This Basin Plan amendment authorizes use of a reference system and antidegradation approach (RSAA) or natural sources exclusion approach (NSEA) during implementation of indicator bacteria water quality objectives within the context of a TMDL.
 - Using the NSEA, implementation of indicator bacteria water quality objectives requires control of indicator bacteria from all anthropogenic sources.
 - Rather than requiring achievement of reference system bacteria levels, the NSEA requires dischargers to demonstrate that all anthropogenic sources have in fact been controlled and that the residual indicator bacteria densities do not pose a human health risk.