

National Trends in Water Quality Standards

Oregon Association of Clean Water Agencies
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Ephraim King, Director
Office of Science and Technology
Office of Water, USEPA



Overview

- Technology-based Solutions
- Water Quality Standards Focus
- Health and Ecological Criteria
- Recreational Criteria Development
- Biosolids
- Nutrients: Nitrogen and Phosphorus Pollution
- Future Trends



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Technology-Based Solutions

- Construction & Development
 - Final active construction rule by Dec. 1, 2009
 - Considering next steps for post-construction
- Airport Deicing
 - Moving to rulemaking proposal
- Steam Electric
 - Upcoming decision on whether to revise regulations
- Cooling Water Intake Structures (316(b))
 - Supreme Court decision on April 1, 2009 that cost-benefit may be considered under 316(b).
 - Considering how to proceed with both Phase II (2nd Circuit) and Phase III (5th Circuit) facilities
- Secondary Treatment Update for Nutrients?



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Water Quality Standards Program Focus

- Timely EPA review of State standards package
- Strategic revisions to WQS Regulations to ensure a protective yet flexible & responsive program
 - Includes focus on antidegradation & restoration standards
- Numeric nutrient standards
 - Proposed federal promulgation for Florida by Dec. 2009
 - Petition on Mississippi River states
 - Upcoming Nutrients Innovation Task Group Report
 - Chesapeake Bay Executive Order
- New recreational water quality criteria in 2012
- Mercury Implementation Guidance



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Health and Ecological Criteria Priorities


- Developing PFOA/PFOS Health Advisories
- New Contaminants of Emerging Concern Risk Assessment Methodology
- Ammonia Criteria
- Atrazine Criteria
- Selenium Criteria
- CWA/FIFRA Effects Assessment Methodology




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Recreational Water Quality Criteria Development

- Revised Recreational Criteria by October 2012
- Science must be done by Dec. 2010
- 19 studies under way or under design
 - Epi Studies- Puerto Rico/South Carolina
 - Quantitative Microbial Risk Assessment
 - Indicators, Methods Development, Validation
 - Modeling & Inland Waters
- Partnership & Collaboration is Essential
 - Feb. 2009- EPA/WERF Inland Waters Expert Workshop
 - April 2009- Research Forum followed Beach Conference
 - General stakeholder update Oct. 6 & 7, 2009 in Chicago



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Biosolids

- Biennial Reviews
 - Purpose is to identify additional pollutants for regulation
 - 2005 and 2007 reviews available shortly
- Targeted National Sewage Sludge Survey (TNSS)
 - Results published in January 2009
 - Designed to provide nationally representative results
 - Included 145 pollutants, including metals and PPCPs
 - Results showed wide variation in levels detected and frequency of detection
- Decatur, Alabama – PFOA/PFOS
- Next Steps
 - Evaluate risk from TNSS pollutants for 2009 Biennial Review
 - Investigate new risk evaluation approach for pollutants not evaluated by IRIS or OPP

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Nutrient Pollution

- Significant, widespread, and growing
- Substantial control efforts to-date, but not succeeding at State or National level
- 135 million population increase in next 40 years will accelerate rate and impact of nutrient pollution
- Population growth translates into increased
 - Urban stormwater runoff
 - Municipal wastewater discharges
 - Livestock operations
 - Row-crop runoff
 - Air deposition

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Nutrient Pollution Impacts

- Drinking water
 - Disinfection by-products & methemoglobinemia (blue baby syndrome)
 - Increasing trend in Nitrate MCL violations
 - Increased treatment costs
- 49 states have 14,000 section 303(d) listings for nutrient or nutrient related impairments
 - 2.5 million acres of lakes and reservoirs
 - 80,000 miles of rivers & streams and 70,000 acres of wetlands
- Coastal & Estuarine
 - 168 hypoxic zones in U. S. coastal & estuarine waters.
 - 78% of assessed continental U.S. coastal area with eutrophication symptoms

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Nutrient Costs

- Chesapeake Bay Program estimates \$28 billion to restore bay health
- Tampa Bay Estuary Program estimates \$250 million/year to manage nitrogen
- Taste and odor costs nationally \$813 million (2003)
- Recreational costs lost fishing and boating \$1.2 billion in (2001)
- Costs of continuing status quo will grow significantly

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Nutrients Conclusions

- Problem significant and expanding
- Current tools are underutilized
 - Numeric nutrient criteria
 - Urban stormwater controls
 - POTW N & P limits
 - Livestock operational controls
- Row crop management remains a challenge
- Knowledge, collaboration, & incentives will fail absent an effective accountability framework for **ALL** sources

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Future Trends

- Nitrogen and Phosphorus Nutrient Pollution
- Water Quality Standards
 - Recreational Criteria, Restoration Uses, Antidegradation,
- Contaminants of Emerging Concern (PPCPs)
 - Biosolids
 - Human Health & Ecological Aquatic Criteria
 - New Criteria Development Methodologies
- Technology-based Solutions
 - Construction & Development (C&D), Airport Deicing, 316(b) Cooling Water Standards, Steam Electric, and Response to Secondary Treatment Petition
- Climate Change

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