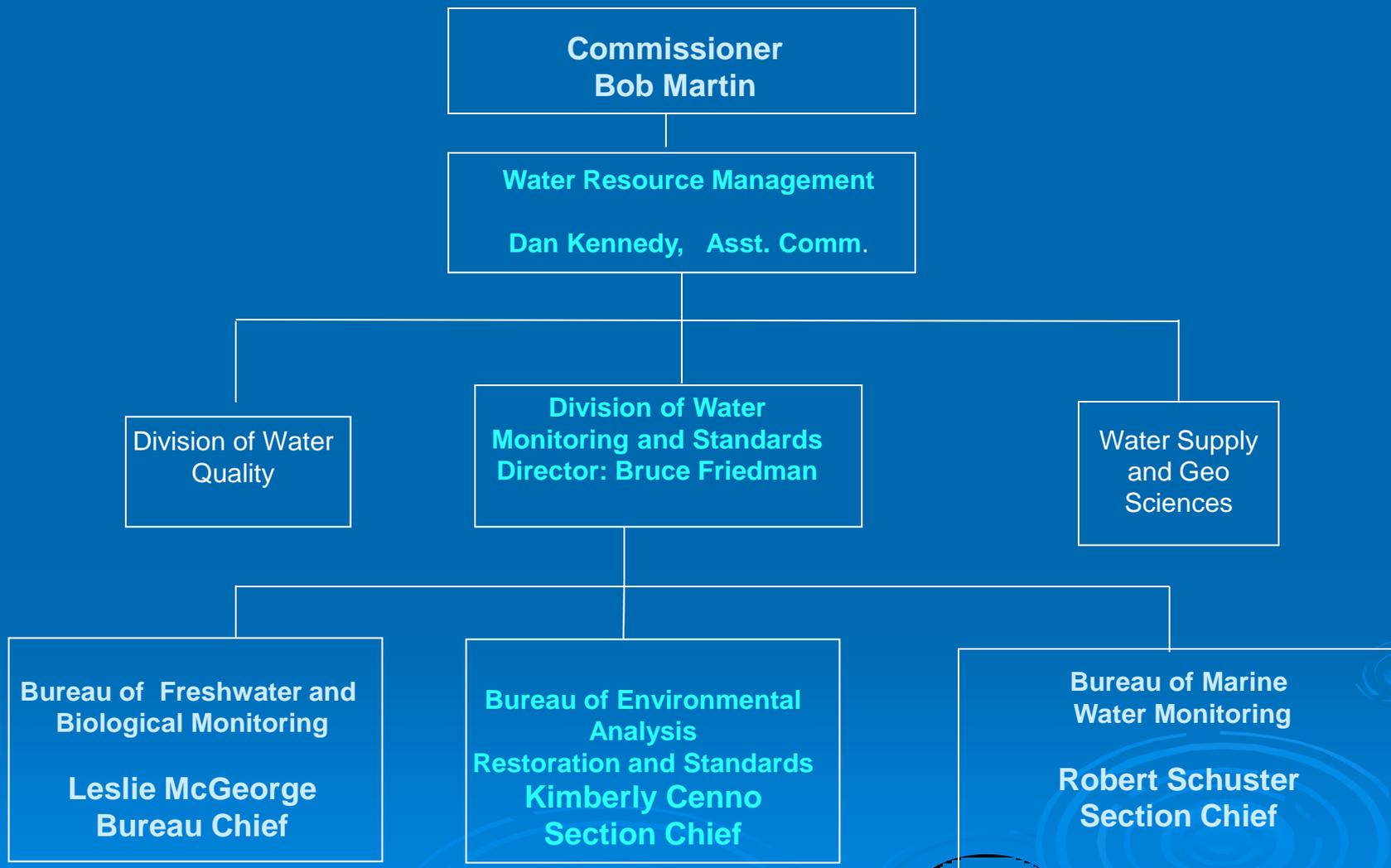


NEW JERSEY
Surface Water Quality Standards
(N.J.A.C. 7:9B)
Stakeholder Meeting
December 8, 2015

Department of Environmental Protection
Division of Water Monitoring and Standards
Bureau of Environmental Analysis, Restoration and Standards



WHO WE ARE:



Division of Water Monitoring & Standards
Bureau of Environmental Analysis
Restoration and Standards
What We Do

- GWQS/SWQS
- Monitoring
- Assessment
- TMDL Development/Restoration



BEARS What We Do...

Standards

SWQS
Development
GWQS
Development

C1 Designations

Analysis

Assessment:303(d) List
and Integrated Report

TMDL Development/
Watershed Based Plans

Restoration

319(h) NPS Grant Program

NJ Watershed
Ambassadors Program
Citizen Scientist/
Volunteer Monitoring

Why we are here

- NJ SWQS will expire in November 2016
 - Provide input on contemplated updates and revisions to NJ's SWQS
 - Updates since last Stakeholder Meeting
- 
- The background of the slide features several concentric, light blue circular ripples that resemble water droplets hitting a surface, positioned in the lower right quadrant.

Why we are here

- CWA requires Triennial Review
 - EPA revised several water quality criteria
 - Revise state's criteria, or provide justification
 - EPA must review and approve SWQS
- 
- The bottom half of the slide features a decorative graphic of several concentric, light blue ripples on a darker blue background, resembling water droplets or ripples on a pond. The ripples are arranged in a cluster, with some overlapping, and are positioned in the lower right and center-bottom areas of the slide.

Recap from April 15, 2015 Stakeholder Meeting

- Criteria for Recreation, freshwater ammonia
- Nutrients
 - Applying 0.01 mg/L TP criteria for tidal freshwaters
 - Ensure continued protection of designated uses both in receiving and downstream waters when dischargers demonstrate that waters are not rendered unsuitable under current conditions

The narrative nutrient criterion continues to be applicable to all waters

Revisions Contemplated in Major 4 Areas

➤ Recreational Water Quality Criteria

- 2012: EPA updated Recreational Criteria per BEACH Act

➤ Ammonia Criteria

- 2013: EPA updated Ammonia criteria for freshwaters based on sensitive mussels and snails

➤ EPA WQS Rule Revisions

- Variance procedures
- UAA Applicability
- Definitions

➤ Downstream Protection

Any necessary changes (citations) reflecting WQMP rule post adoption



Recreational Water Quality Criteria



EPA Recreational Water Quality Criteria (2012 RWQC)

- Relied on *National Epidemiological and Environmental Assessment of Recreational Water* (NEEAR) studies conducted from 2003 to 2009
- Criteria would apply to all waters, including inland / non-beach waters



2012 RWQC

➤ Two sets of numeric concentration thresholds

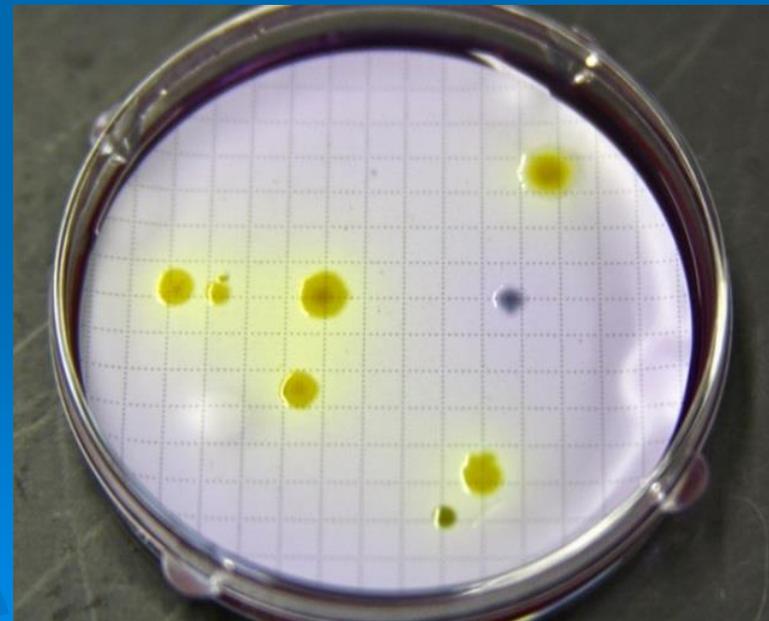
- Duration/Frequency: 30 / **90** Day (Rolling or Static)
- Magnitude: Geometric Mean and Statistical Threshold Value (STV): 90th percentile of the water quality distribution

➤ Two bacterial indicators

- Enterococci - fresh and marine
- E. Coli – fresh

➤ Applicability

- Seasonal / Year round



COMPARISON OF NJ AND EPA RECREATIONAL CRITERIA MARINE WATERS (ESTUARINE AND COASTAL WATERS)

Enterococcus*	NJ Current 19 illness / 1000	EPA Option 1 36 illness / 1000	EPA Option 2 32 illness / 1000
Geometric mean	35/100 ml	35/100 ml	30/100 ml
STV	N/A	130/100 ml	110/100 ml
SSM (Single Sample Maximum) - beach notification/ closure only	104/100 ml	N/A	
Sampling frequency	Minimum 5 in 30 days	Not specified	
Averaging period	Seasonal geometric mean	30 or 90 days: static or rolling	
Applicability	Year round	Seasonal or Year round	

* 2012 EPA recreational criteria allow Enterococcus to be used as indicator organism in both fresh and marine waters; however, the same illness rates should be used in fresh and marine waters

COMPARISON OF NJ AND EPA RECREATIONAL CRITERIA FRESHWATERS – (RIVERS, STREAMS AND LAKES)

E. coli	NJ Current 8 illness / 1000	EPA Option 1 36 illness / 1000	EPA Option 2 32 illness / 1000
Geometric mean	126/100 ml	126/100 ml	100/100 ml
STV	N/A	410/100 ml	320/100 ml
SSM (Single Sample Maximum) - beach notification/closure only	235/100 ml	N/A	
Sampling frequency	Minimum 5 in 30 days	Not specified	
Averaging period	Seasonal geometric mean	30 or 90 days: static or rolling	
Applicability	Year round	Seasonal or Year round	

Factors to Consider for Implementation

- Impacts to NJ dischargers
 - Shared Waters
 - Some waters are “downgraded” based on UAA
- Translation of Criteria into Permit Limits
 - EPA guidance has not yet been released on calculating limits based on STV
 - Need for sufficient data
 - The Department will consider a compliance schedule of up to three years

Tentative Recommendations

- Adopt option 1 for enterococci and E. coli
 - Consistent with existing criteria
 - Not much difference between the 2 options
 - Equally protective with introduction of STV



Tentative Recommendations (Contd.)

- Adopt option 1 for enterococci and E. coli
 - Consistent with existing criteria
 - Not much difference between the 2 options
 - Equally protective with introduction of STV
- Indicator Organism:
 - Enterococci in estuarine and coastal waters
 - E. Coli in fresh waters
 - No changes to secondary contact recreational criteria (downgraded waters)

Tentative Recommendations (Contd.)

- **Applicability:** Year round application
 - Consistent with current practice
 - Protective Year-round – No backsliding



Tentative Recommendations (Contd.)

- **Applicability:** Year round application
 - Consistent with current practice
 - Protective Year-round – No backsliding
- 30 day static averaging period
 - Consistent with existing rule, assessment / monitoring
 - Higher temporal resolution
 - No changes to NJPDES permits
 - Practical / Amenable to resource constraints

Tentative Recommendations (Contd.) – Duration / Frequency

30 day duration:

Pros

- 30 days – consistent with current monitoring schedule
- Higher temporal resolution
- No changes to NJPDES permits

Cons

- One wet weather could skew results
- Lose temporal representation for the recreational season

90 day duration:

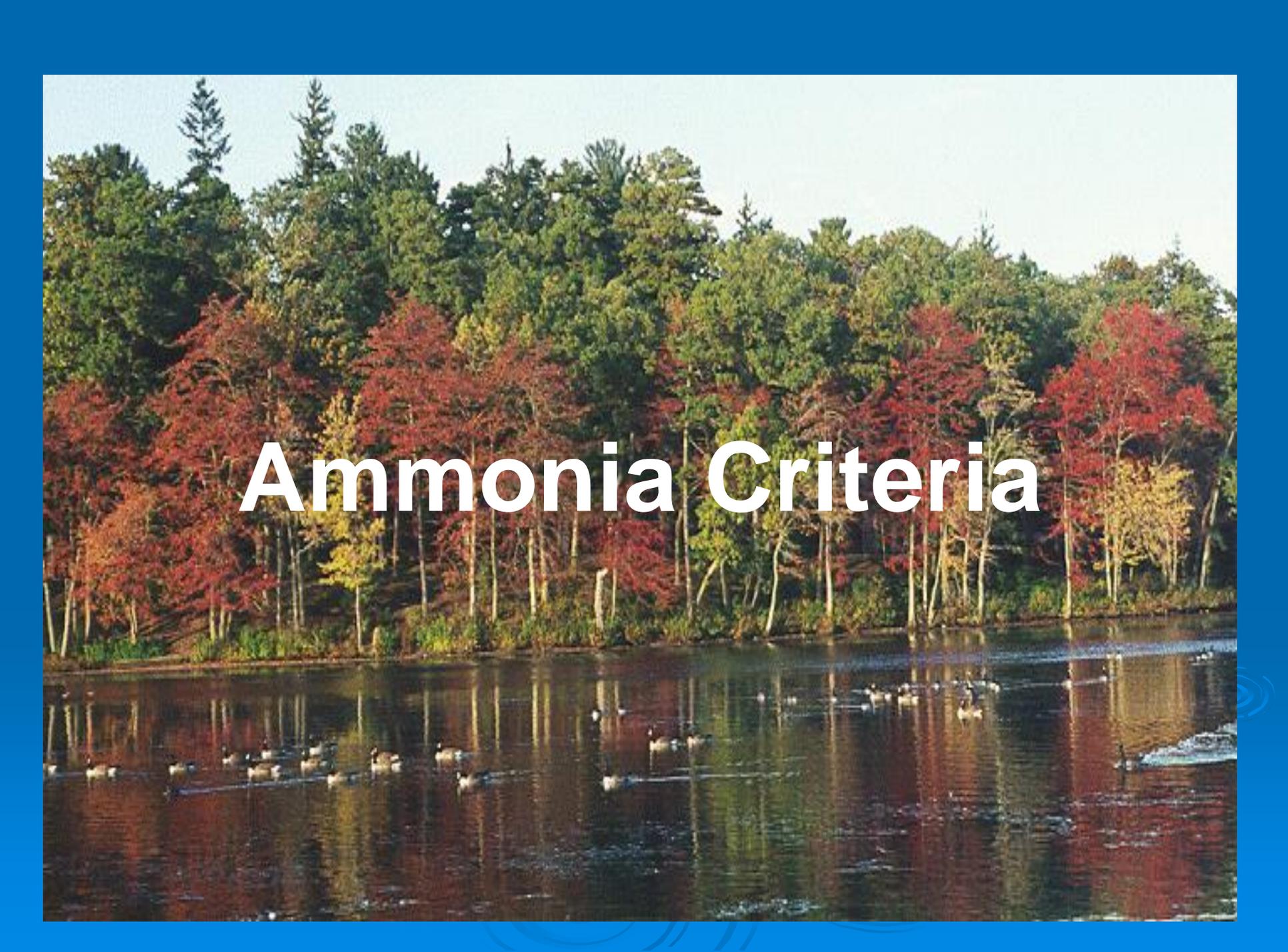
Pros

- More temporal representation
- Covers most part of recreational season
- Higher spatial resolution

Cons

- **Extremely resource intensive – Weekly monitoring for 90 days not practical**
- Inconsistent with current monitoring schedule
- NJPDES permits need to be changed

Ammonia Criteria



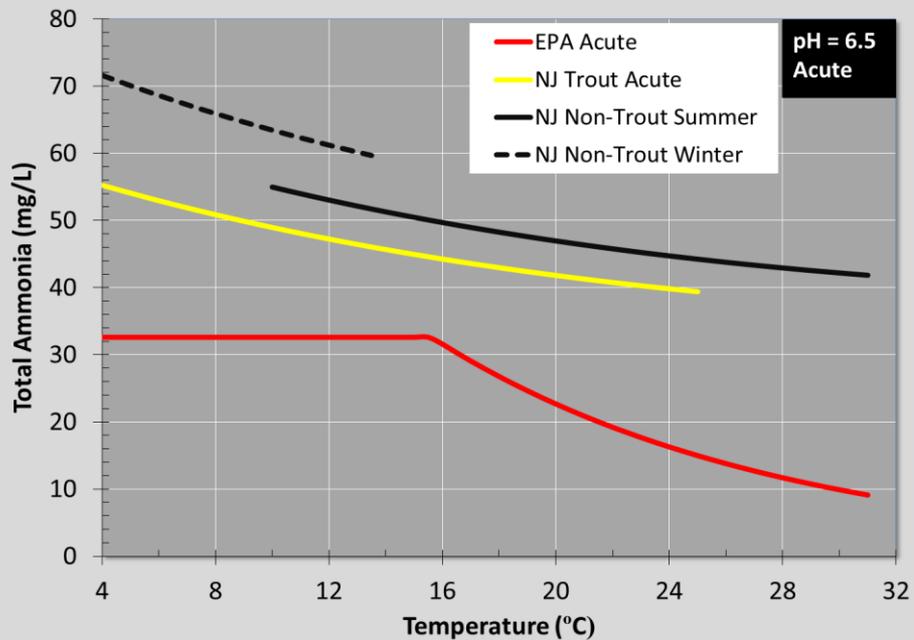
Existing NJ Ammonia Criteria

- Adopted criteria in 2002:
 - FW2-TP/TM
 - FW2-NT – Winter and Summer
 - PL
 - SE
 - SC
- FW and PL criteria dependent on pH and temperature
- Criteria calculated using NJ-specific species

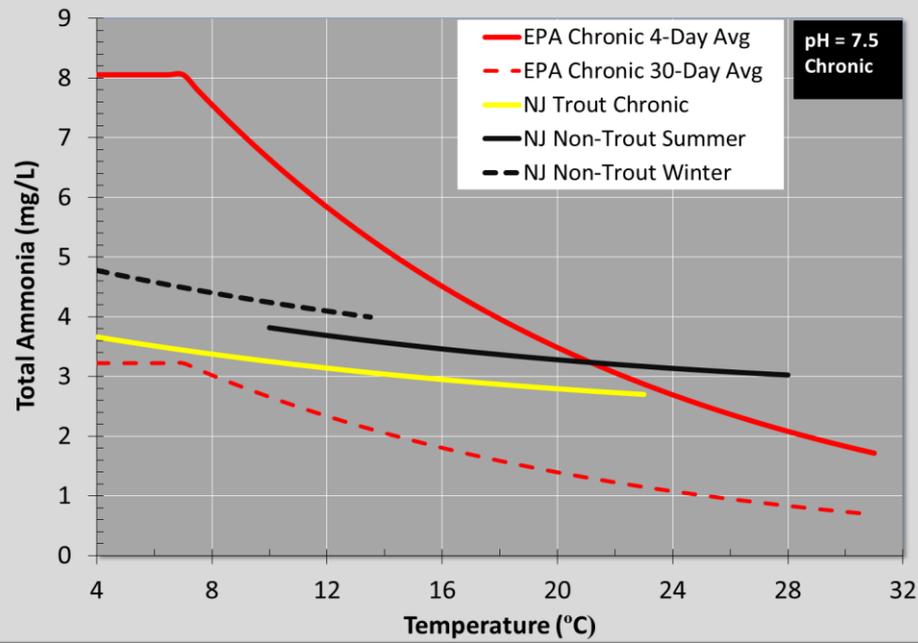
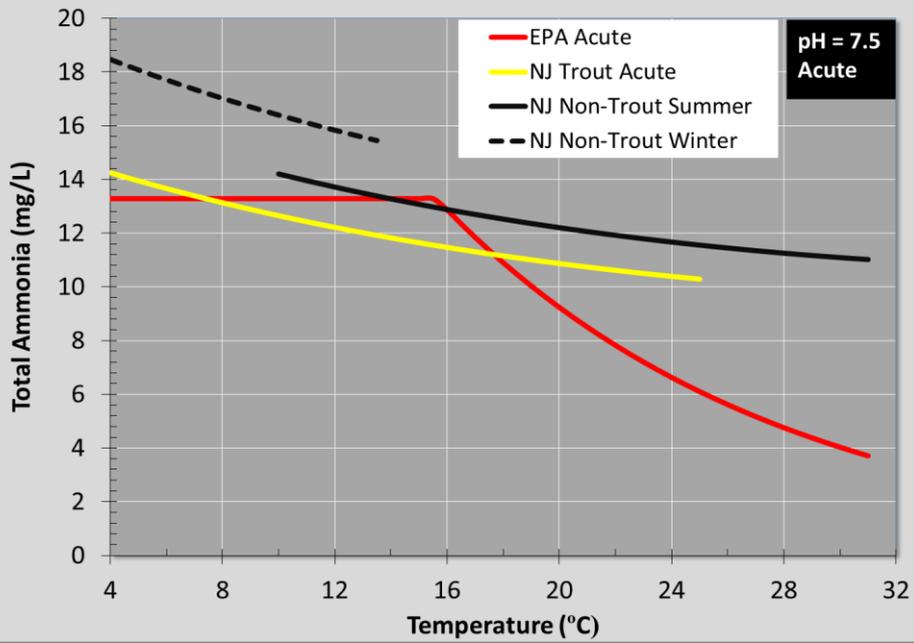
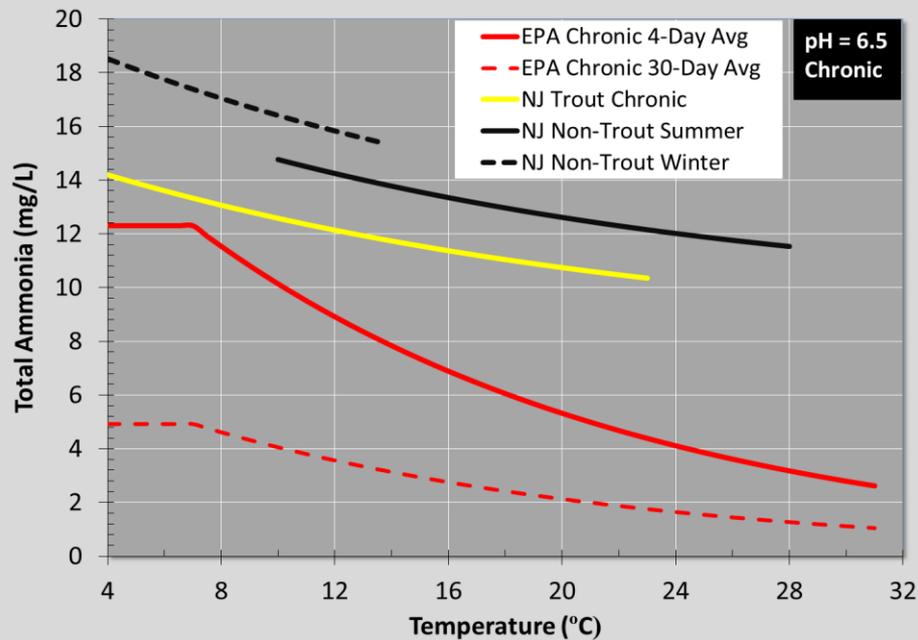
2013 EPA Ammonia Freshwater Criteria – What's New

- Most sensitive species - unionid mussels and gill-breathing snails (more sensitive than those used for NJ criteria)
- Year-round criteria – Not seasonal
- No specific criteria for Trout Waters
- Generally more stringent than existing NJ criteria – Not always
- Does not apply at pH levels <6.5 and >9 (pH criteria in NJ PL waters is 3.5 – 5.5)

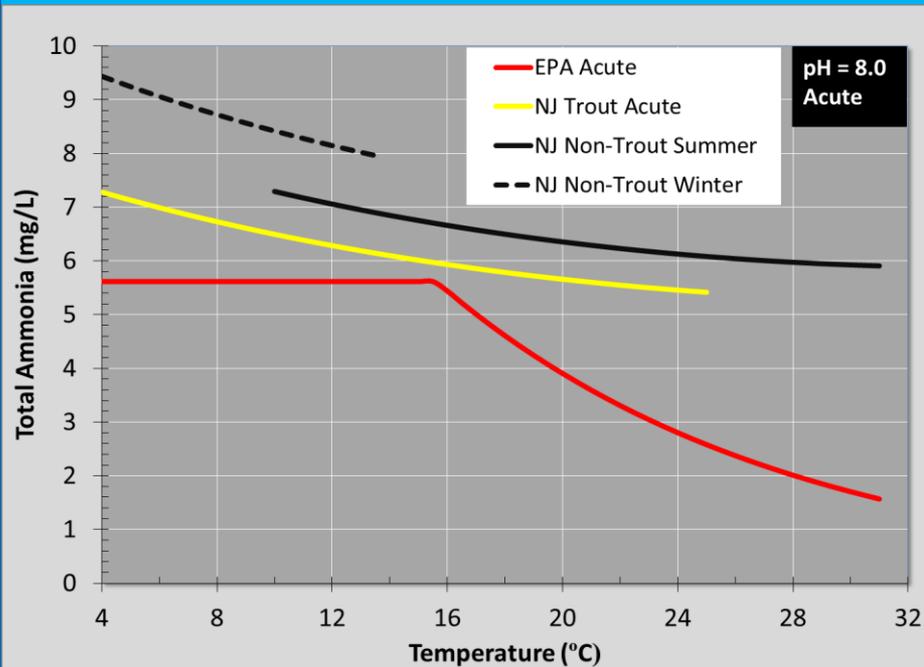
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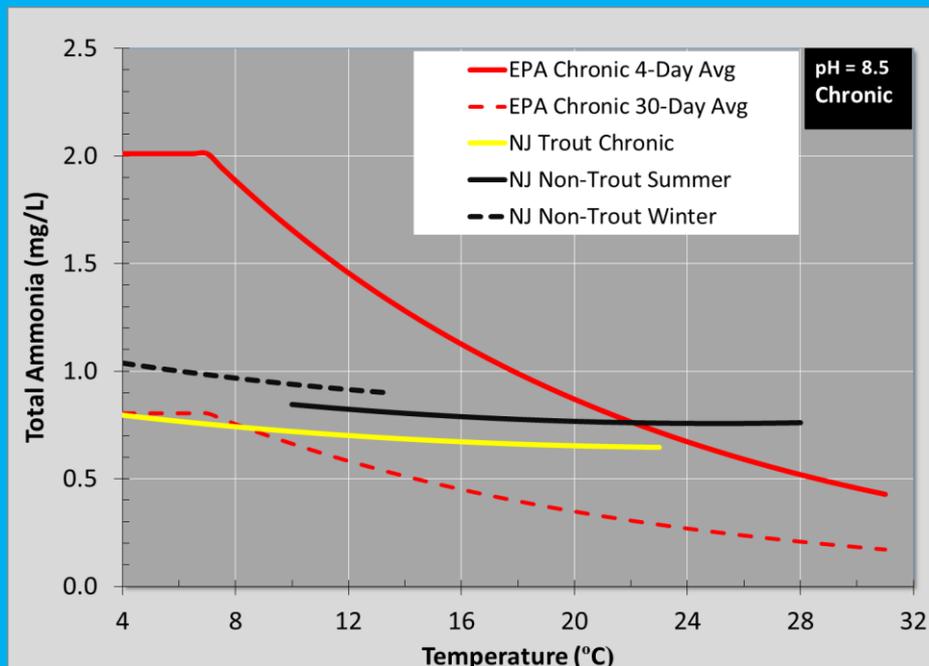
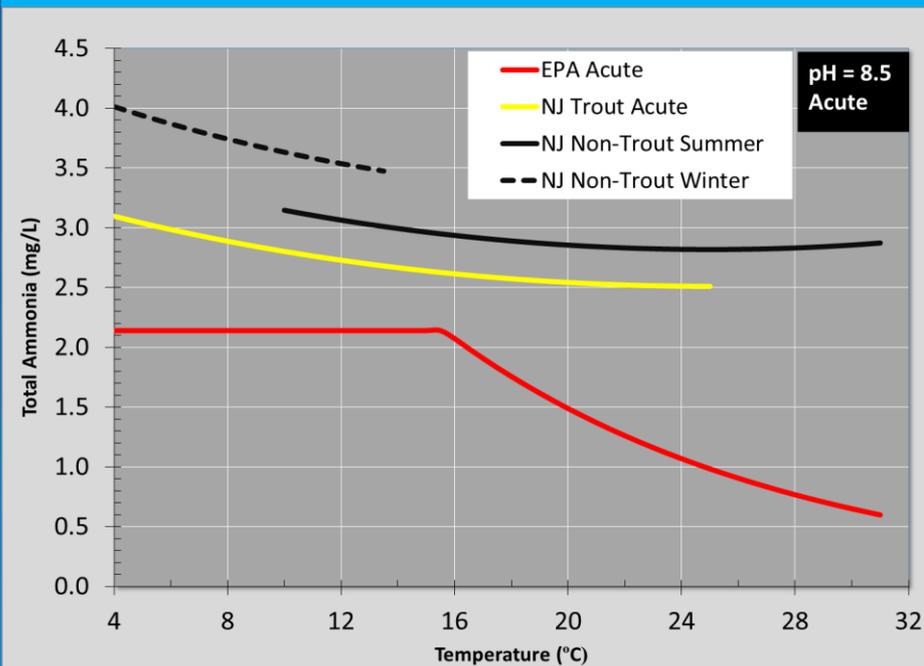
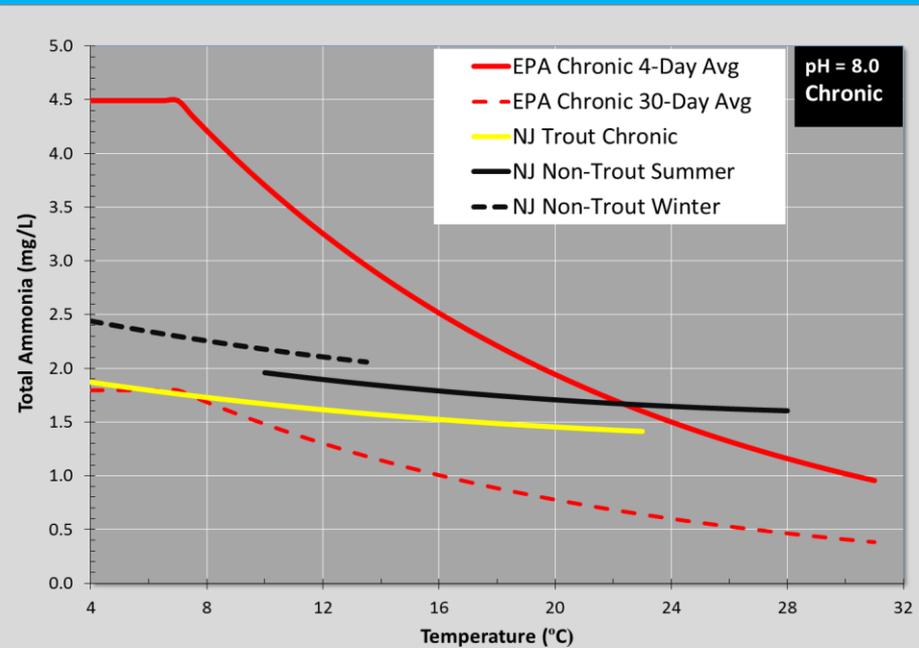
CHRONIC



ACUTE



CHRONIC



Implementation Options

- Develop site specific criteria
- Demonstrate target species are not existing use
 - If present since 1975 – it is an existing use
 - Larvae are transported by host fish - Mussels are capable of colonizing new territory
 - Mussels need to be surveyed every 2-3 years
- Use Attainability Analysis (UAA)
- Variance

Permitting Implications

- Some dischargers would be affected
- Treating for NH_3 would increase NO_3 in discharge and receiving water
- Significant upgrade costs required, particularly for chronic criteria

Questions



EPA WQS REVISIONS

➤ Revised 40 C.F.R. 131

- Administrative Determination
- Designated Uses
- Triennial Reviews
- Antidegradation
- WQS Variance
- Compliance Schedules

➤ WQS rules are effective October 20, 2015



EPA Variance Requirements

- Interim designated use and criterion
- Should meet highest attainable condition (HAC)
 - Highest attainable interim criterion
 - Interim effluent condition reflecting greatest achievable pollutant reduction
 - Interim criterion or effluent condition reflecting greatest pollutant reduction achievable with control technologies at the time of adoption
- Applicable only to NJPDES permits – not for assessing waters for 303(d) list

EPA Variance Requirements

- Part of WQS that must be reviewed and approved by EPA
 - Must reevaluate at least every 5 years for a long-term variance
 - Submit reevaluation results to EPA within 30 days
 - Should have public participation
 - Must be part of Triennial Review
- 

Existing NJ Variance Procedures

- N.J.A.C. 7:9B-1.8 Procedures for modifying water quality-based effluent limitation for individual dischargers to Category One waters
- N.J.A.C. 7:9B-1.9 Procedures for modifying water quality-based effluent limitation for individual dischargers to Category Two waters
- N.J.A.C. 7:9B-1.10 Procedures for reclassifying specific segments for less restrictive uses

Downstream Protection

- Introduce general Policy Language for Downstream Protection
 - In practice but not yet codified
 - Language under discussion
 - Language for Nutrients criteria for Lakes and Streams
 - Still under discussion
 - Non-tidal streams
 - Lakes
- 

Questions / Next Steps

