

EQC Action Item: Water Quality Standards – Revisions to Freshwater Ammonia Criteria

January 7-8, 2014
Portland

DEQ's recommendation

- DEQ recommends that the EQC adopt proposed amendments to the Water Quality Standards rules as shown in Attachment A. These amendments:
 - Revise Oregon's freshwater ammonia criteria
 - Correct a minor error in the Snake River rule language
 - Amend site-specific standards for an irrigation canal in the Umatilla Basin
 - Inform the reader that the general and temperature-specific natural conditions criteria are not in effect due to EPA disapproval
 - Incorporate plain language revisions consistent with the Oregon Administrative Procedures Act

Why is DEQ proposing revisions?

- To update Oregon's ammonia criteria based on the latest science
 - EPA's latest recommendations (2013) are based on the sensitivity of ammonia to mussels, snails and other aquatic life
- To address EPA disapproval of criteria adopted in 2004

What are aquatic life toxics criteria?

- Concentrations of a pollutant at which fish, shellfish and other aquatic life are protected
- Toxics criteria are used in wastewater discharge permits, water quality assessments, TMDLs and the Cleanup Program

Beneficial use
protected: *fish and
aquatic life*



2004 ammonia standards adoption

- EQC adopted ammonia criteria based on EPA's 1999 recommendations—these criteria have never been in effect for Clean Water Act purposes
- EPA must approve state revisions to water quality standards before they are in effect
 - REQUIRED:** Endangered Species Act (ESA) consultation with National Marine Fisheries Service (NMFS) and U.S. Fish & Wildlife Service for criteria affecting threatened and endangered species

2004 ammonia standards disapproval

- **Aug. 2012:** NMFS ESA consultation indicated that Oregon's ammonia criteria would cause harm to T&E species
- **Jan. 2013:** EPA disapproved the ammonia criteria:
 - do not protect freshwater mussels and snails, and
 - according to NMFS would cause jeopardy to T&E species
- Oregon's effective criteria continue to be based on EPA's 1985 recommendations

Oregon needs to respond to disapprovals in a timely manner

EPA's Aug. 2013 recommendations

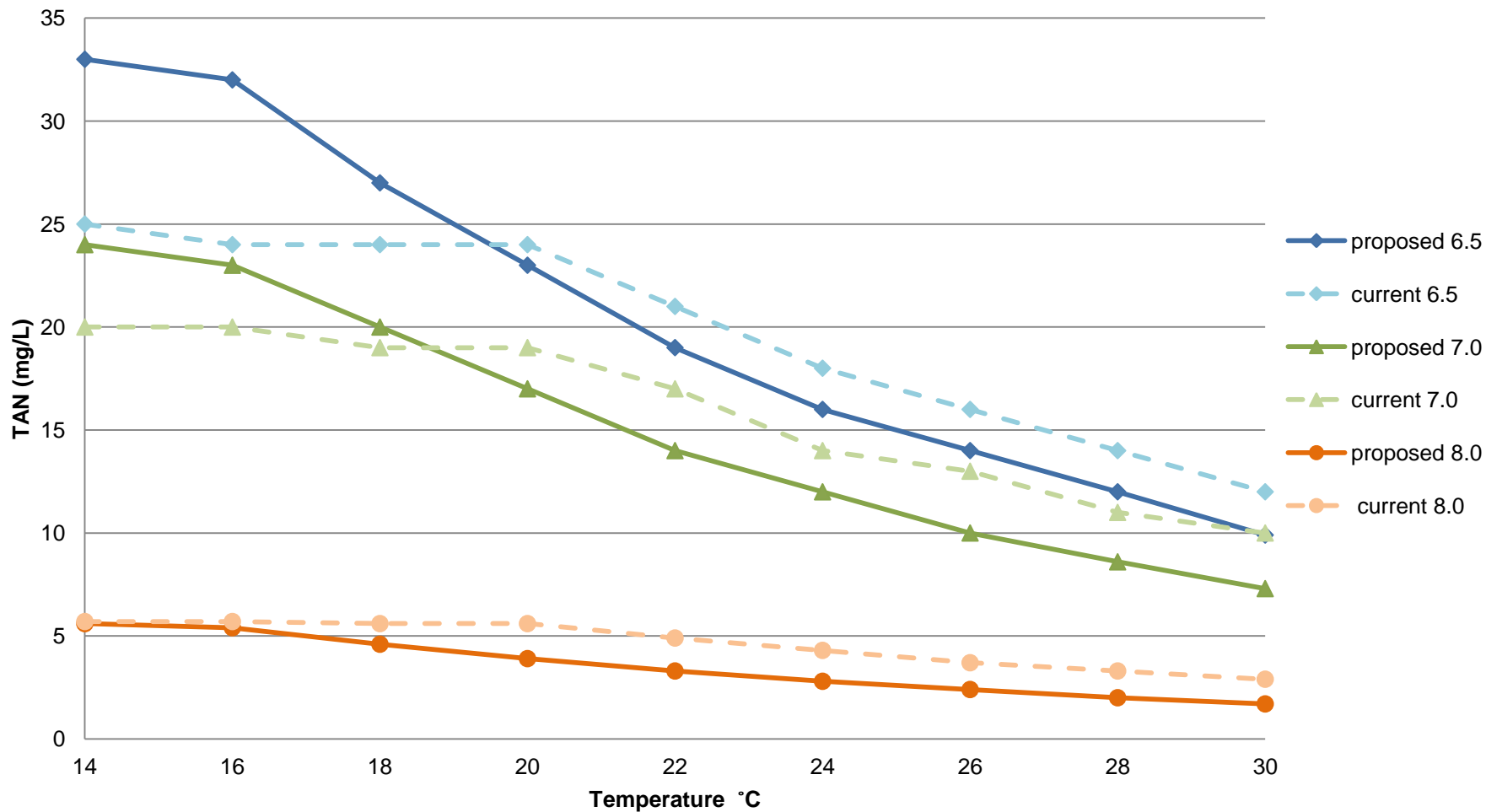
- DEQ proposes to adopt EPA's 2013 ammonia criteria recommendations
- EPA used 27 years of toxicity data—largest dataset of all aquatic life criteria, including data on:
 - **Mussels** and **snails**, some of the most sensitive species
 - 14 threatened and endangered species (5 are mussels)



Proposed ammonia criteria revisions

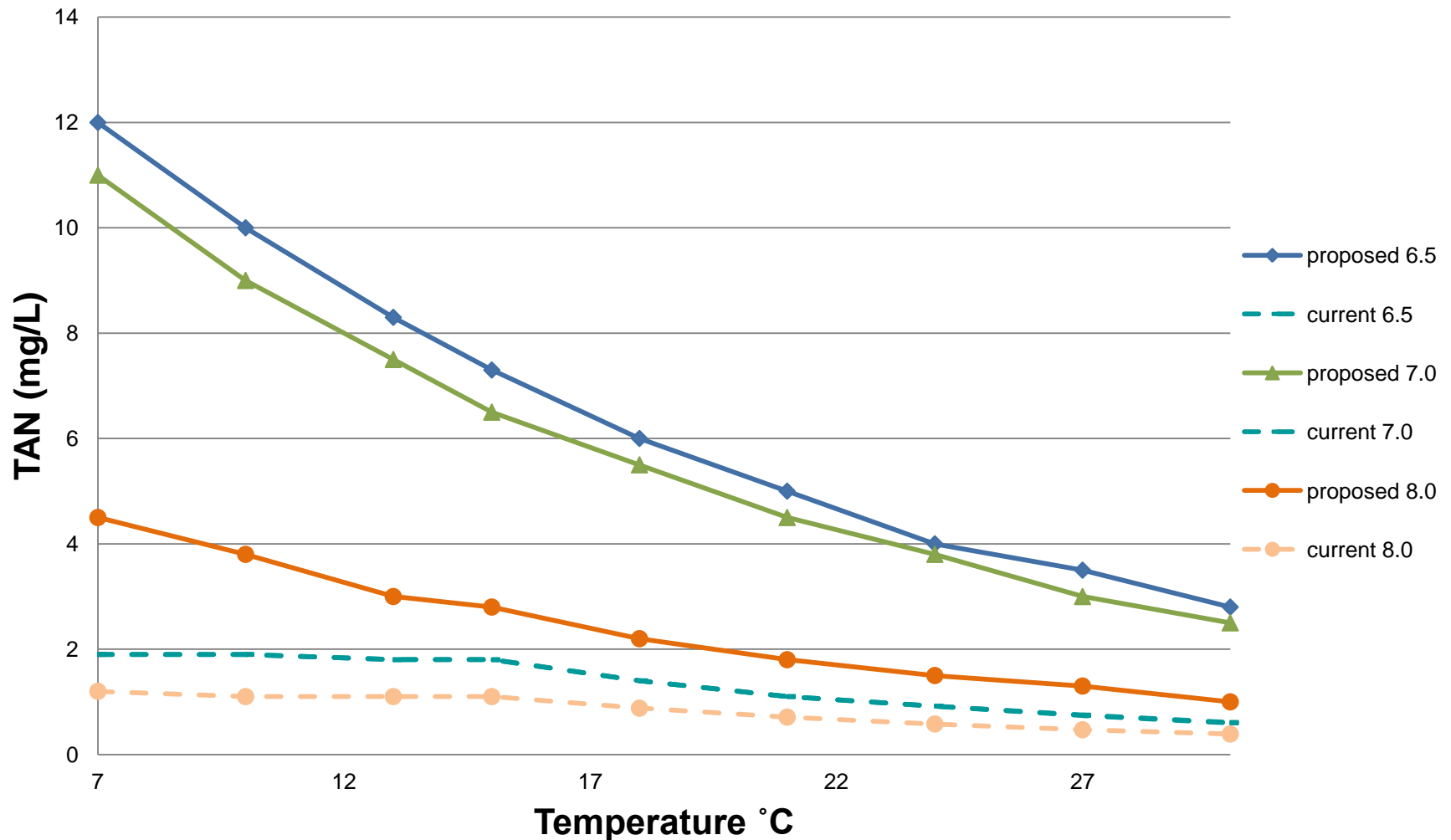
- Ammonia toxicity depends on pH and temperature
 - As pH and temperature increase, the criteria become more stringent
- Expressed as mg/L TAN—**T**otal **A**mmونيا **N**itrogen (NH₃ and NH₄)
- Acute criteria (1-hr duration)
 - Generally more stringent than Oregon's current criteria
 - Two sets of criteria apply based on presence or absence of salmon and trout
- Chronic criteria (4-day and 30-day duration)
 - Generally, less stringent than Oregon's current criteria
 - One set of criteria—not dependent on presence of salmon and trout

Current vs. Proposed Acute Ammonia Criteria at Selected pH *Salmonids Present*



Current vs. Proposed 4-Day Chronic Ammonia Criteria at Selected pH

Mussels Present



Note: The graph above shows current ammonia chronic criteria at pH of 6.5 and 7.0 on one line because they are almost identical. Current criteria based on salmonid presence. Presence or absence of salmonids is not applicable for the proposed chronic criteria.

NMFS and EPA discussions

- NMFS and EPA are currently evaluating whether EPA's 2013 criteria address the recommendations in NMFS's biological opinion.



Proposed revisions to Toxics Rule OAR 340-041-0033

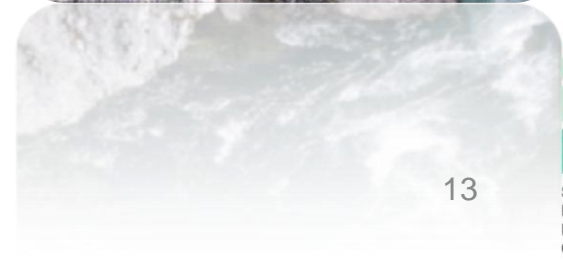
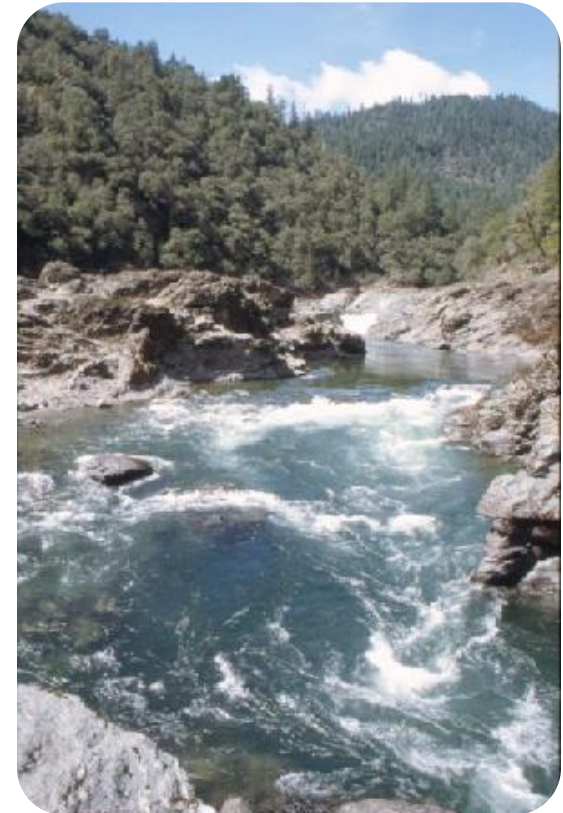
Toxics Substances

- DEQ is proposing to move Tables 30, 31 and 40 to a separate rule in **OAR 340-041-8033**.
 - Table 30 (Aquatic Life Criteria): edits to ammonia criteria and addition of three ammonia criteria tables
 - Table 31 (Aquatic Life Guidance Criteria): minor non-substantive edits
 - Table 40 (Human Health Criteria): no amendments
- Incorporate plain language into -0033 consistent with the Oregon Administrative Procedures Act.

Implementing revised criteria

Integrated Report

- 16 ammonia-impaired waterbodies
- DEQ will re-assess listings in the next cycle of the Integrated Report
 - DEQ may de-list waterbodies that meet the new ammonia criteria



Implementing revised criteria

Total Maximum Daily Loads (TMDLs)

- If a waterbody is listed for ammonia, DEQ must develop a TMDL—ten approved TMDLs, six need a TMDL
- DEQ may need to re-assess current ammonia TMDL wasteload and load allocations based on revised ammonia criteria

Implementing revised criteria

Wastewater and Industrial Dischargers



- Generally, the proposed chronic criteria are less stringent than current criteria
- Some facilities may need to update mixing zone studies or collect more monitoring data to characterize effluent based on the new 30-day chronic average (rather than the current 4-day average)

Other proposed rule amendments

Snake River pH Rule

- In 2003, DEQ identified the wrong river miles for the main stem Snake River
- Proposed revision clarifies that the pH criteria applies to the entire main stem Snake River.



Other proposed rule amendments

West Division Main Canal Site-Specific Criteria

- In 2012, EQC removed certain designated uses and adopted site-specific criteria for this irrigation canal in the Umatilla Basin.
- EPA partially approved and partially disapproved the changes.
- Proposed revisions make Oregon's rule language consistent with the effective criteria following EPA's action.

Proposed rule clarifications

Natural Conditions Criteria Notes

- In 2013, EPA disapproved:
 - the temperature natural conditions criterion, and
 - a general natural conditions narrative.
- Proposed editorial notes are informational:
 - these provisions are no longer effective for Clean Water Act purposes, such as permitting and TMDLs

Public input

- Stakeholder discussions prior to rulemaking
- No advisory committee—DEQ did not anticipate significant fiscal impacts or controversy
- DEQ webinar on Sept. 10 prior to public comment period
- Public comment: Sept. 16 – Oct. 30
 - Five commenters
- One public hearing in Portland: Oct. 15
 - One attendee

When will the proposed rules become effective?

- The ammonia revisions will become effective after EQC adoption and subsequent EPA approval
- Other revisions will become effective upon EQC adoption and filing with Secretary of State.

DEQ's recommendation

- DEQ recommends that the EQC adopt proposed amendments to OAR 340, Division 41 as shown in Attachment A. These amendments:
 - Revise Oregon's freshwater ammonia criteria
 - Correct a minor error in the Snake River rule language
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