# Algal Growth Narrative Criterion Application Procedures

Oregon DEQ Water Quality Standards

***Connie Dou, Water Quality Program Manager***

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# Project Scope

- Oregon has narrative WQS for excessive algal growth and nuisance phytoplankton growth
  - No prior procedures to interpret the narrative

- Goal: To develop implementation procedures determining aquatic life use impairments due to excess algal growth

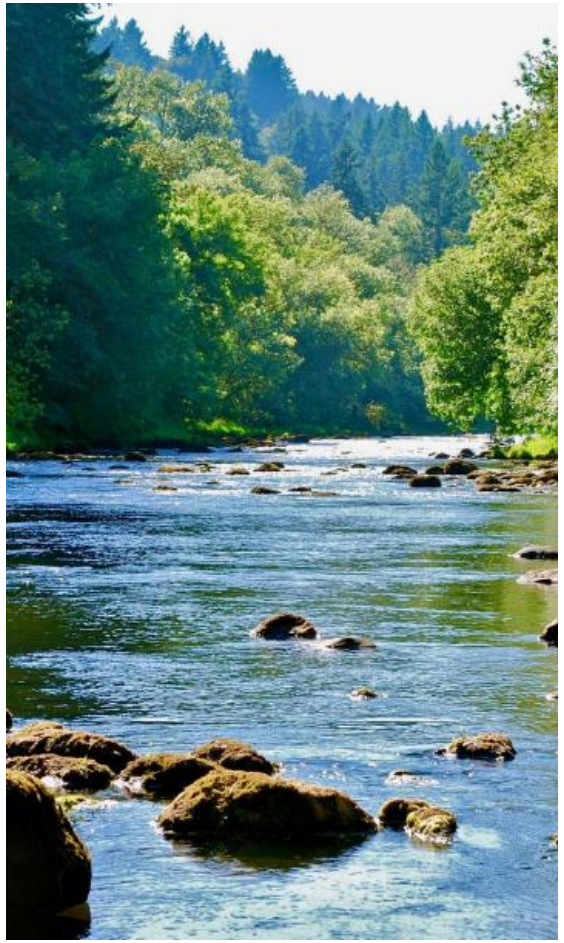

Photo: DEQ WQ Monitoring Strategy, 2020

# Desired Goals and Outcomes

- Clear methods and procedures for defining, interpreting, and applying the narrative algal growth criterion for:
  - DEQ's Assessment, NPDES permitting, and TMDL programs
- Application procedures training and communication for:
  - DEQ's WQ program staff
  - Public
- Recommendations whether site-specific numeric nutrient criteria should be adopted
  - If so, at what scale and for which waterbodies?

Photo: DEQ HABS Strategy, 2011

# Background Research

2015

- OR NSTEPS project examined algal growth and nutrient relationship
  - Did not assess effects on aquatic life

2024

- Literature review: What do other states do?
  - Metrics, models, approaches
  - Translator value approach

- Surveyed States through the Association of Clean Water Administrators

- Reviewed EPA guidance and recommendations

# Cross Program Collaboration

- Developed policy framework using EPA guidance and other States' approaches
- Incorporated current Chlorophyll a action value from 1986 in DEQs 'Nuisance Phytoplankton Growth' Rule **340-041-0019**
  - Recreational criteria
- Worked with Assessment, Biomonitoring, and TMDL programs to further develop the approach

# Cross Program Collaboration

- Current Framework:
  - Multiple Lines of Evidence Approach
  - Periphyton & Ash Free Dry Mass as algal screening values
  - If exceed thresholds, assess impacts on aquatic life

# Current Effort

## Rivers and Streams

- Developing Stressor ID thresholds for algal growth effects on macroinvertebrates
  - Functional feeding groups, habit of invertebrates

## Lakes

- Working with EPA to develop site specific Chlorophyll a benchmarks using Secchi depth data
- Hypoxia modeling

Photo: Deschutes River Alliance

# Questions?

Contact information:

Connie Dou at Connie.Dou@deq.Oregon.gov