Umpqua River Basin
Replacement Temperature TMDL

Informational Webinar

October 29, 2024, 1:30 p.m. PT

Presented by EPA Region 10

https://www.epa.gov/tmdl/umpqua-river-basin-temperature-tmdls

Agenda

Time	Topic
1:30 p.m.	Welcome, introductions, meeting agenda
1:40 p.m.	Draft Umpqua Temperature TMDL
2:10 p.m.	Questions
3:00 p.m.	Wrap up & next steps
3:15 p.m.	Adjourn

Meeting logistics and ground rules

Raise hand to be recognized for questions or comments; please speak for yourself when recognized, let others speak without interruptions

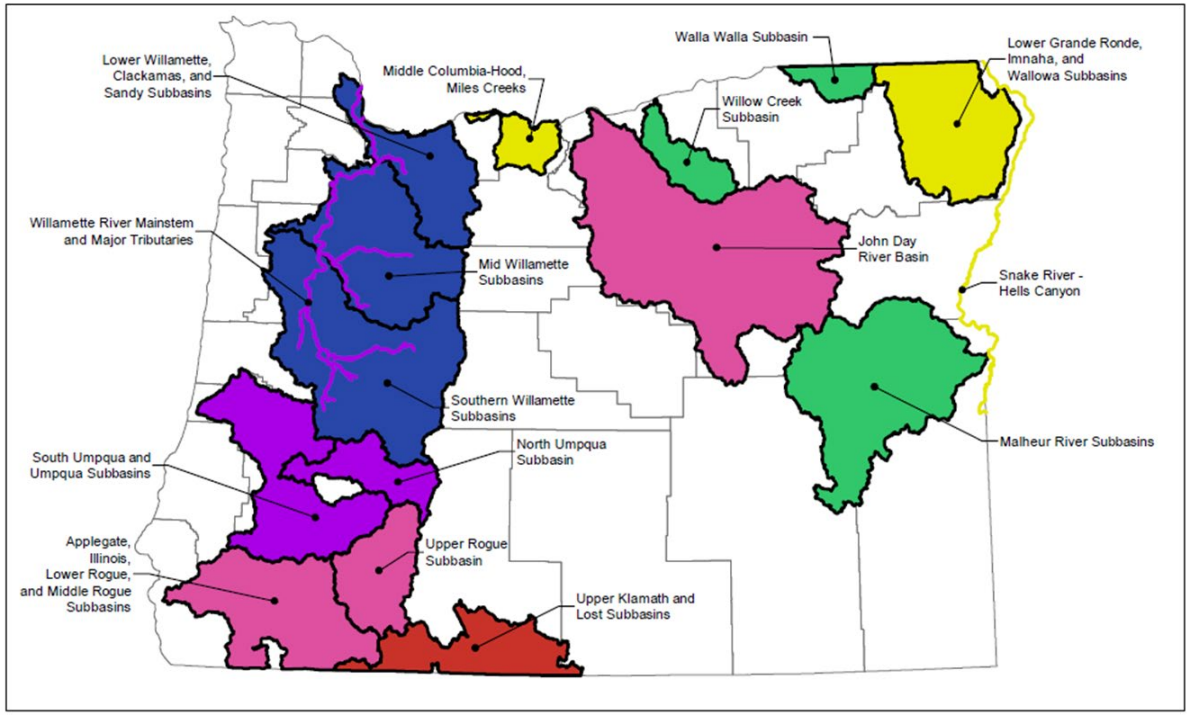
Use chat to:
- Ask questions
- Provide informational resources
- Second ideas/issues

Mute when not speaking

If using phone: press *9 to raise hand, *6 to mute/unmute

Temperature TMDL replacement project

- Court ordered requirement to replace 15 temperature TMDLs in Oregon
- This TMDL replaces the 2006 Umpqua Basin Temperature TMDL
- EPA and Oregon DEQ working together
- TMDL will be completed by February 28, 2025



Project Status

- Goal of today's webinar is information sharing and answer questions
- Draft TMDL available for public comment & post on EPA’s website

https://www.epa.gov/tmdl/umpqua-river-basin-temperature-tmdls

- Public comment period is 45-days from Oct. 9 – Nov. 25,2024

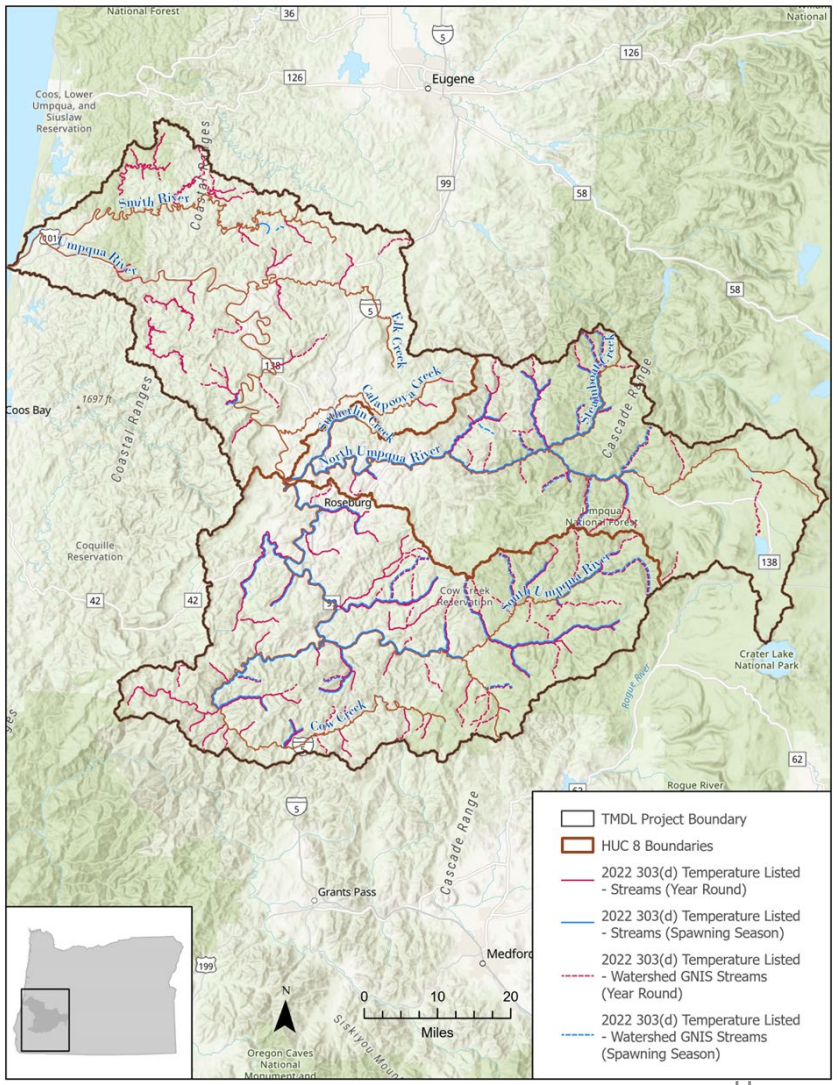
Total Maximum Daily Loads

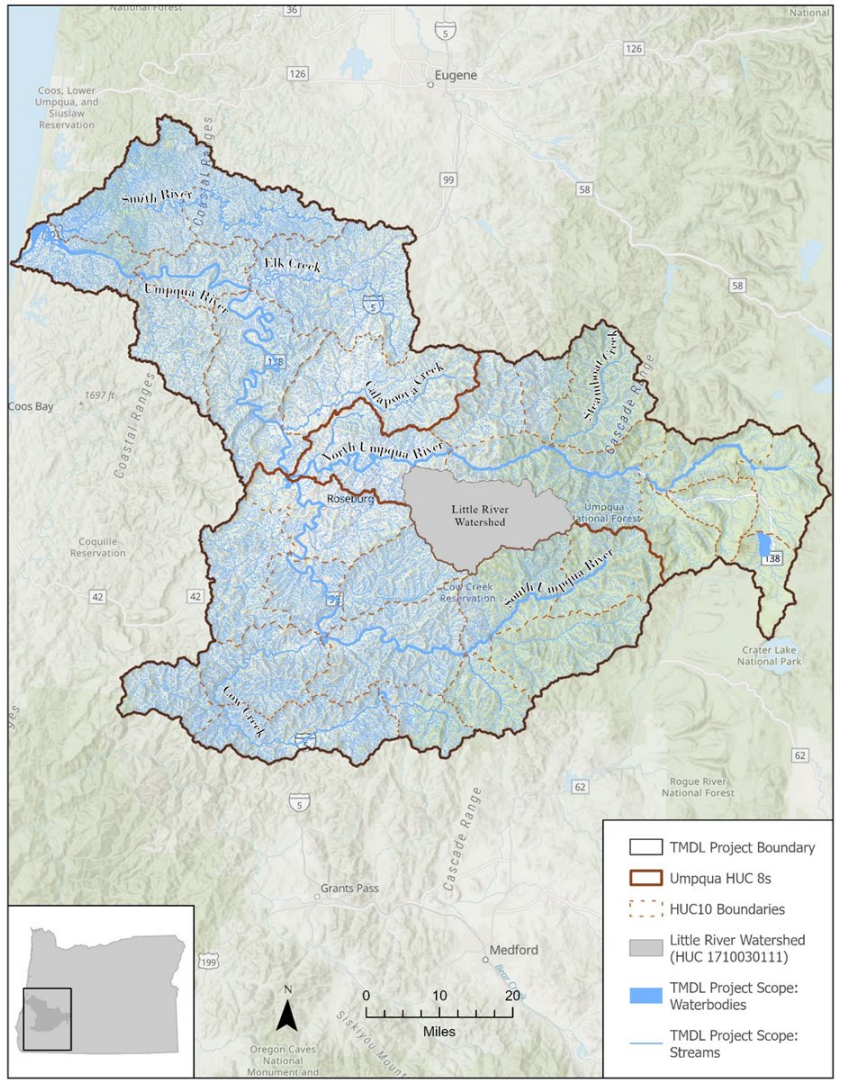
A TMDL is a science-based plan that directs cleaning up polluted waters to restore beneficial uses

A TMDL is also a calculation of the maximum amount of a pollutant allowed to enter a waterbody and have the waterbody still meet WQS for that pollutant

A TMDL determines pollutant reduction targets and allocates necessary load reductions

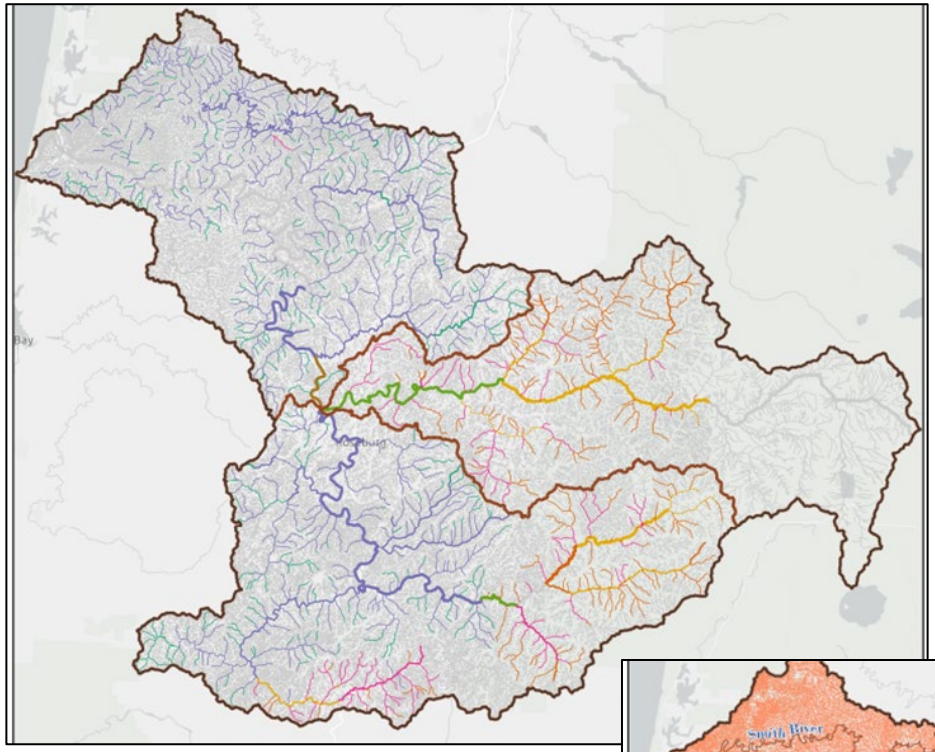
Umpqua Basin Temperature TMDL project area

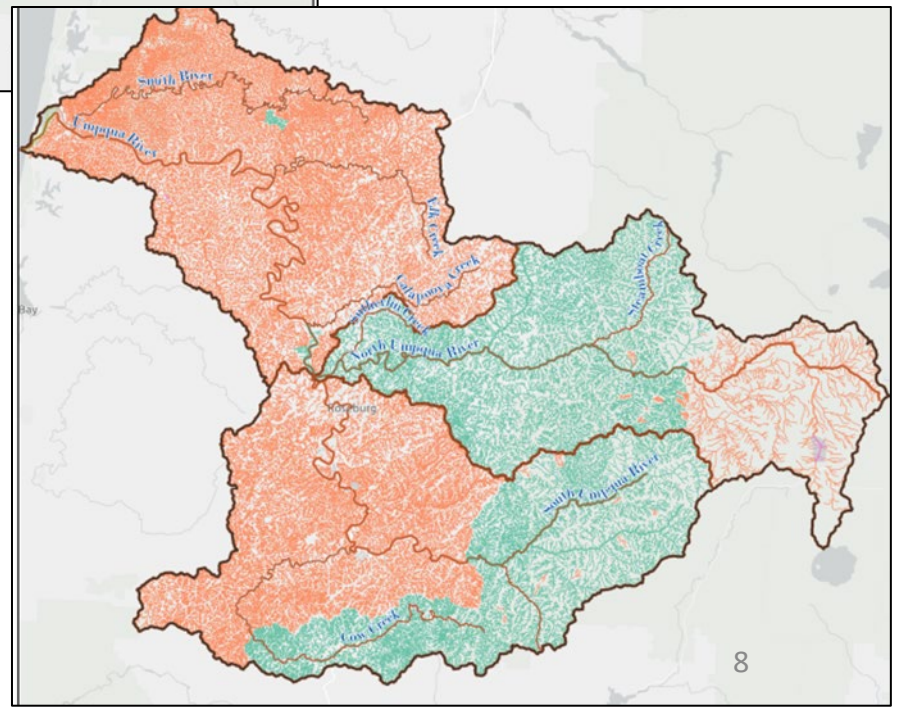




Water Quality Standards

- Salmon and steelhead spawning: 13.0°C
- Core cold water habitat: 16.0°C
- Salmon and trout rearing and migration: 18.0°C
- Human Use Allowance: 0.3°C increase above criteria





Pollution Sources

Point Sources

- Individual Permittees
- General Permittees
  - Cooling Water, 100-J
  - Filter backwash, 200-J
  - Fish Hatchery, 300-J

Nonpoint Sources

- Solar radiation, lack of near stream vegetation
- Dam & reservoir operation
- Channel modifications
- Flow modifications
- Background

Loading Capacity

The greatest amount of pollutant loading the waterbody can receive without violating water quality standards

$$LC = (T_C + HUA) \cdot Q_R \cdot C_F$$

T_C = temperature criteria
HUA = human use allowance
Q_R = daily mean river flow
C_F = conversion factor

- Calculated under low flow (7Q10) to ensure beneficial uses are protected
- Calculated at spatially representative sites

			Criteria			
AU Name	AU ID	Annual 7Q10 (cfs)	Year Round + HUA	Spawn + HUA	7Q10 LC Year Round (kcal/day)	7Q10 LC Spawn (kcal/day)
Calapooya Creek	OR_SR_1710030301_02_105442	2.0	18.3	13.3	9.13E+07	6.64E+07
Calapooya Creek	OR_SR_1710030301_02_105443	1.6	18.3	13.3	7.12E+07	5.17E+07
Canton Creek	OR_SR_1710030106_02_105331	1.5	16.3	13.3	5.90E+07	4.82E+07
Canton Creek	OR_SR_1710030106_02_105332	7.0	16.3	13.3	2.81E+08	2.29E+08
Cavitt Creek	OR_SR_1710030110_02_105363	4.2	16.3	13.3	1.68E+08	1.37E+08
Cavitt Creek	OR_SR_1710030110_02_105364	1.3	16.3	13.3	5.06E+07	4.13E+07
Cow Creek	OR_SR_1710030206_02_105417	4.8	18.3	13.3	2.17E+08	1.58E+08
Cow Creek	OR_SR_1710030209_02_106367	30.2	18.3	13.3	1.35E+09	9.81E+08

Human Use Allowance

- State provision that allows small addition of heat above the criteria
- Point sources and nonpoint sources cumulative increase of 0.3°C
- Point source assignment same as 2006 TMDL
- Reserve Capacity for new or unidentified loads in the future

Source or Source Category	Portion of the HUA (°C)
NPDES point sources	0.1
Water management and water withdrawals	0.05
Solar loading from existing infrastructure (e.g., transportation, buildings, utility easements)	0.05
Solar loading from other NPS source categories	0.0
Dam and reservoir operations	0.0
Reserve capacity	**0.1**
Total	**0.3**

Wasteload Allocations

- Can be incorporated into permit as static number or dynamic flow-based limit
- Permit writers authorized to update 7Q10 or maximum effluent discharge information

Subbasin	Facility	Allocated HUA	WLA (kcal/day) at 7Q10	WLA Effluent Temp (°C)	Month max WLA occurred
Umpqua	Brandy Bar Landing, Inc.	0.1	24,442,365	32.0	June
Umpqua	Drain STP	0.1	630,199	13.2	November
Umpqua	Oakland STP	0.1	475,217	13.2	April
Umpqua	Reedsport STP*	0.1	248,692,913	32.0	April
Umpqua	Rice Hill East Lagoon	0.1	37,477	18.1	June
Umpqua	Rice Hill West Lagoon	0.1	25,477	18.1	November
Umpqua	Sutherlin STP	0.1	2,138,588	13.1	April

$$WLA = (\Delta T) \cdot (Q_E + Q_R) \cdot C_F$$

WLA = wasteload allocation (kcals/day), 7-day rolling average

ΔT = allocated portion of the HUA

Q_E = daily mean effluent flow

Q_R= mean daily river flow

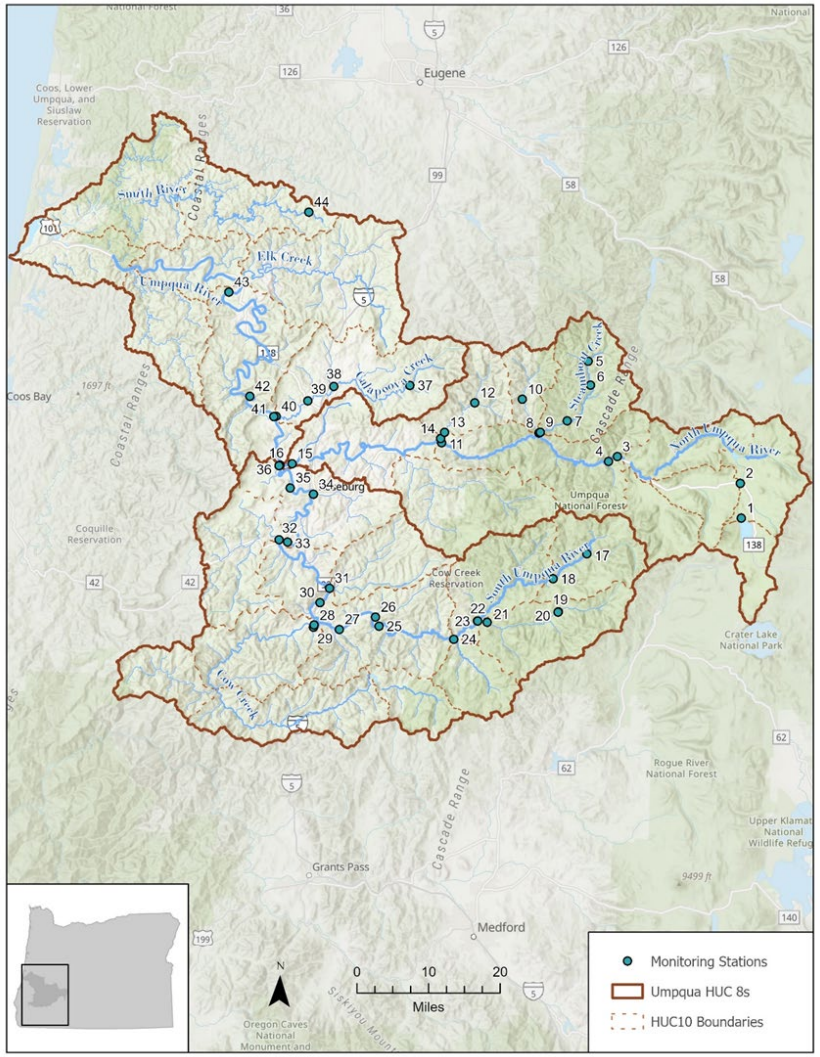
C_F = conversion factor

Load Allocations

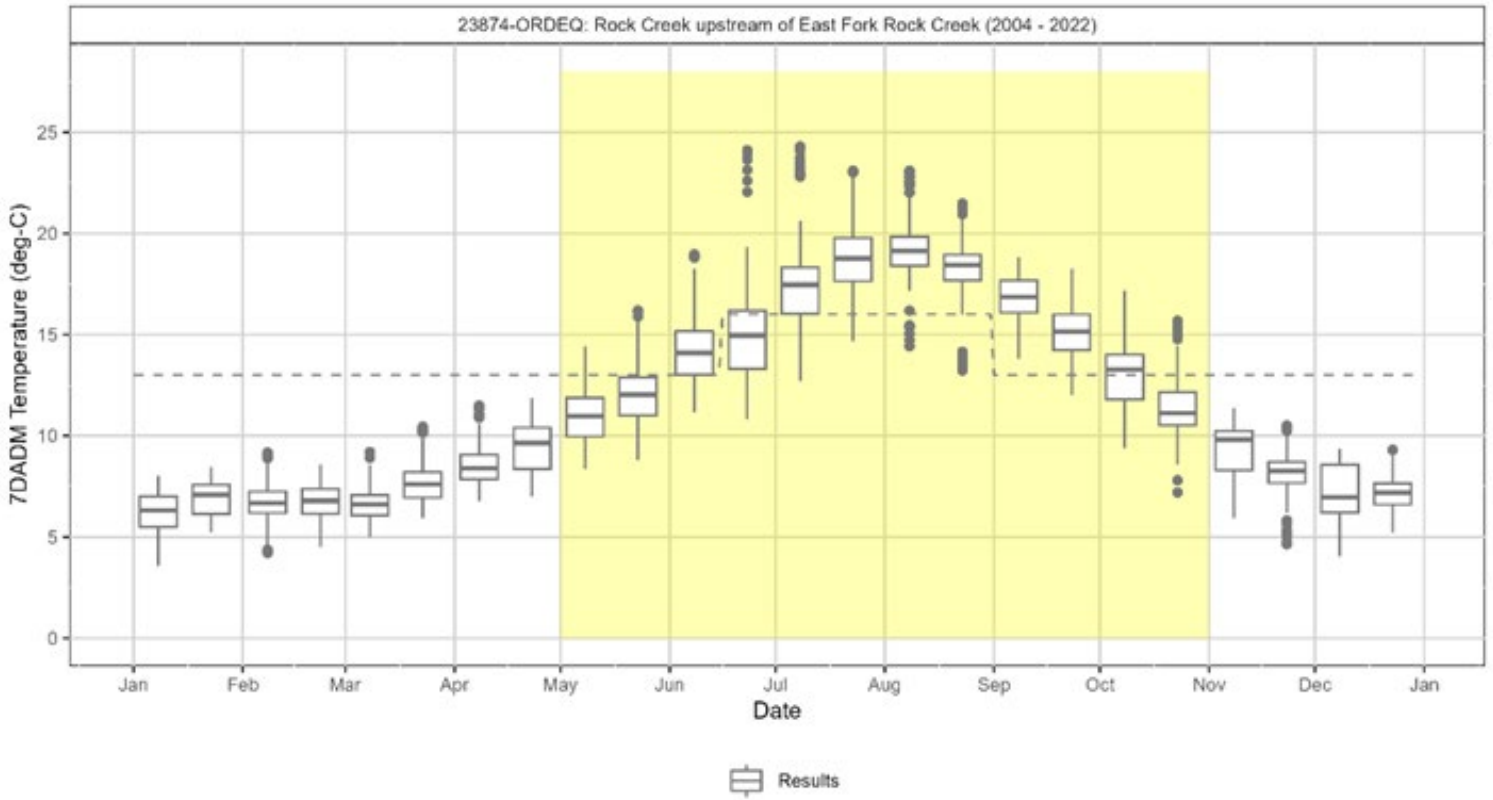
$$LA_{NPS} = (\Delta T) \cdot (Q_R) \cdot C_F$$

- Surrogate measures used to express & implement load allocations
- Riparian Vegetation
  - Shade targets & shade curves
- Dam & reservoir operations
  - Temperatures upstream of the reservoir serve as expected downstream temperature
- Background Sources receive a load allocation

TMDL Critical Condition



Critical Condition Period May 1st – October 31st



2025 Umpqua TMDL & 2006 Umpqua TMDL

- Same geographic scope
- 2025 TMDL temperature is only parameter
- 2025 TMDL addresses both year-round and spawning impairments
- 2025 TMDL has longer critical season due to spawning season impairments. This extends the period when WLA apply
- Shade targets the same as 2006 TMDL

Next Steps

- Public Comments
  - October 9 – November 25,2024

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- Issue final TMDL
  - February 28, 2025

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