

Umpqua River Basin Replacement Temperature TMDL

Informational Meeting

September 30, 2025, 4:00 p.m. PT

Roseburg Oregon, Public Library

Hosted by Oregon DEQ

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



Total Maximum Daily Loads

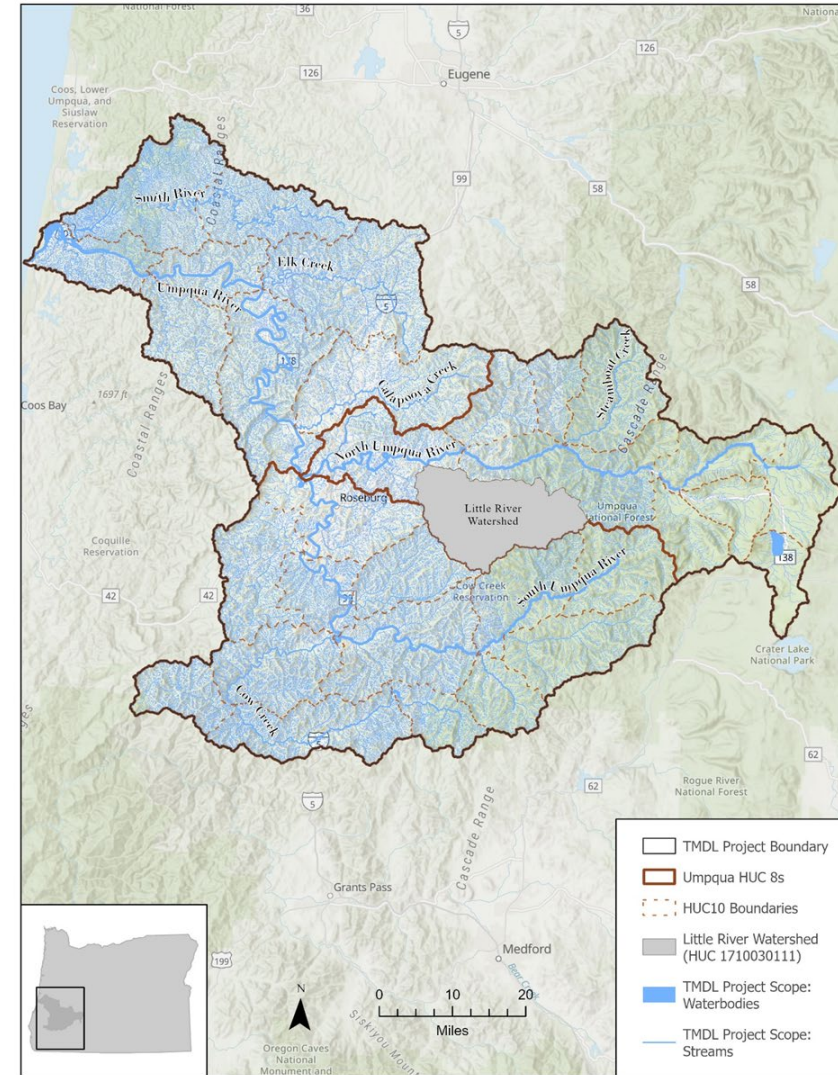
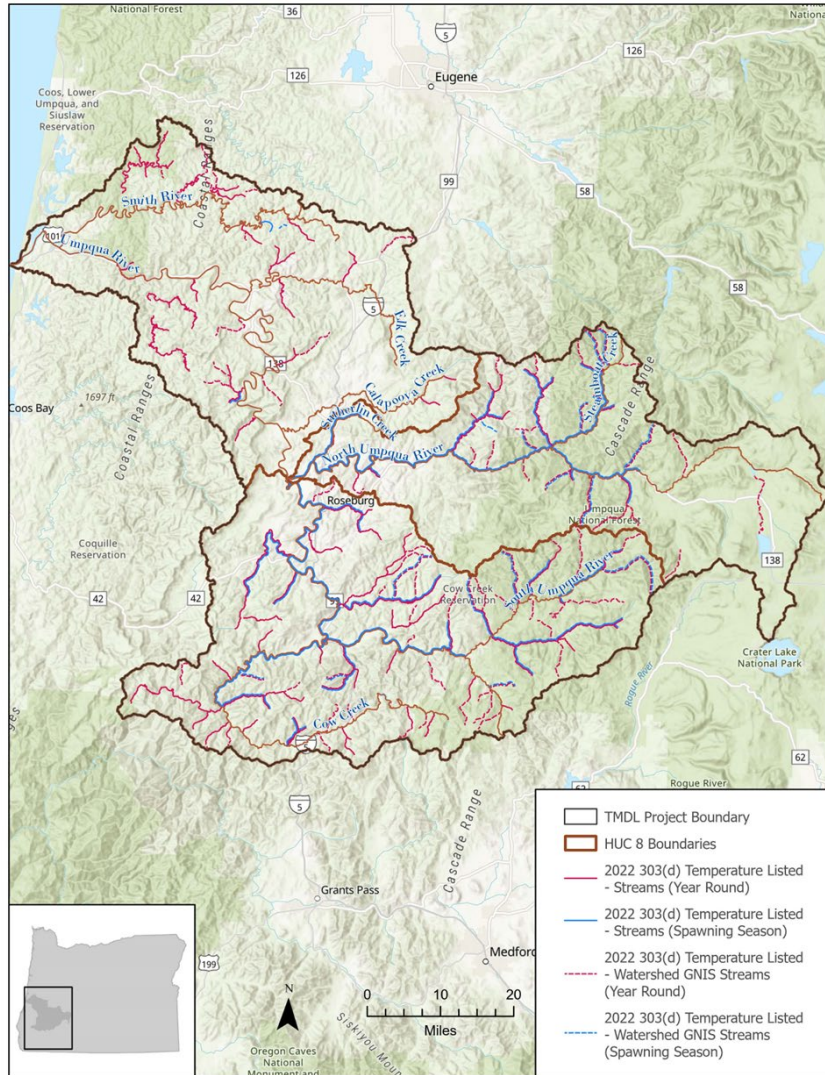
A TMDL is a science-based plan that directs cleaning up polluted waters to restore beneficial uses

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



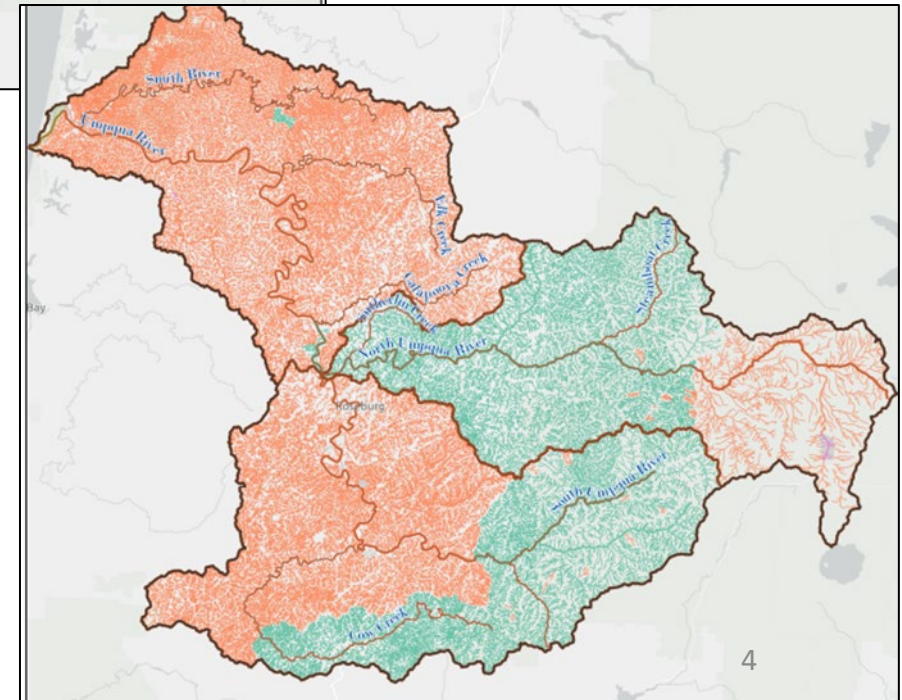
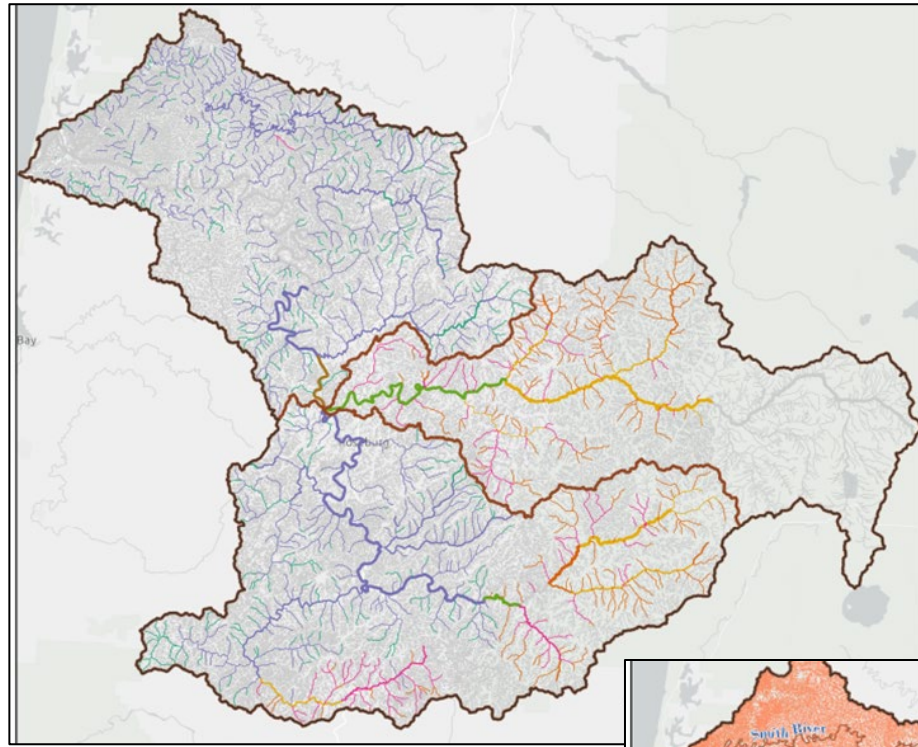
Umpqua Basin Temperature TMDL project area



Umpqua Basin Temperature Replacement TMDL
Sept. 30, 2025

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

| AU Name | AU ID | Annual 7Q10 (cfs) | Criteria | | 7Q10 LC Year Round (kcal/day) | 7Q10 LC Spawn (kcal/day) |
|-----------------|----------------------------|-------------------------|------------------------|----------------|-------------------------------------|--------------------------------|
| | | | Year Round + HUA | Spawn + HUA | | |
| 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 (kcal/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

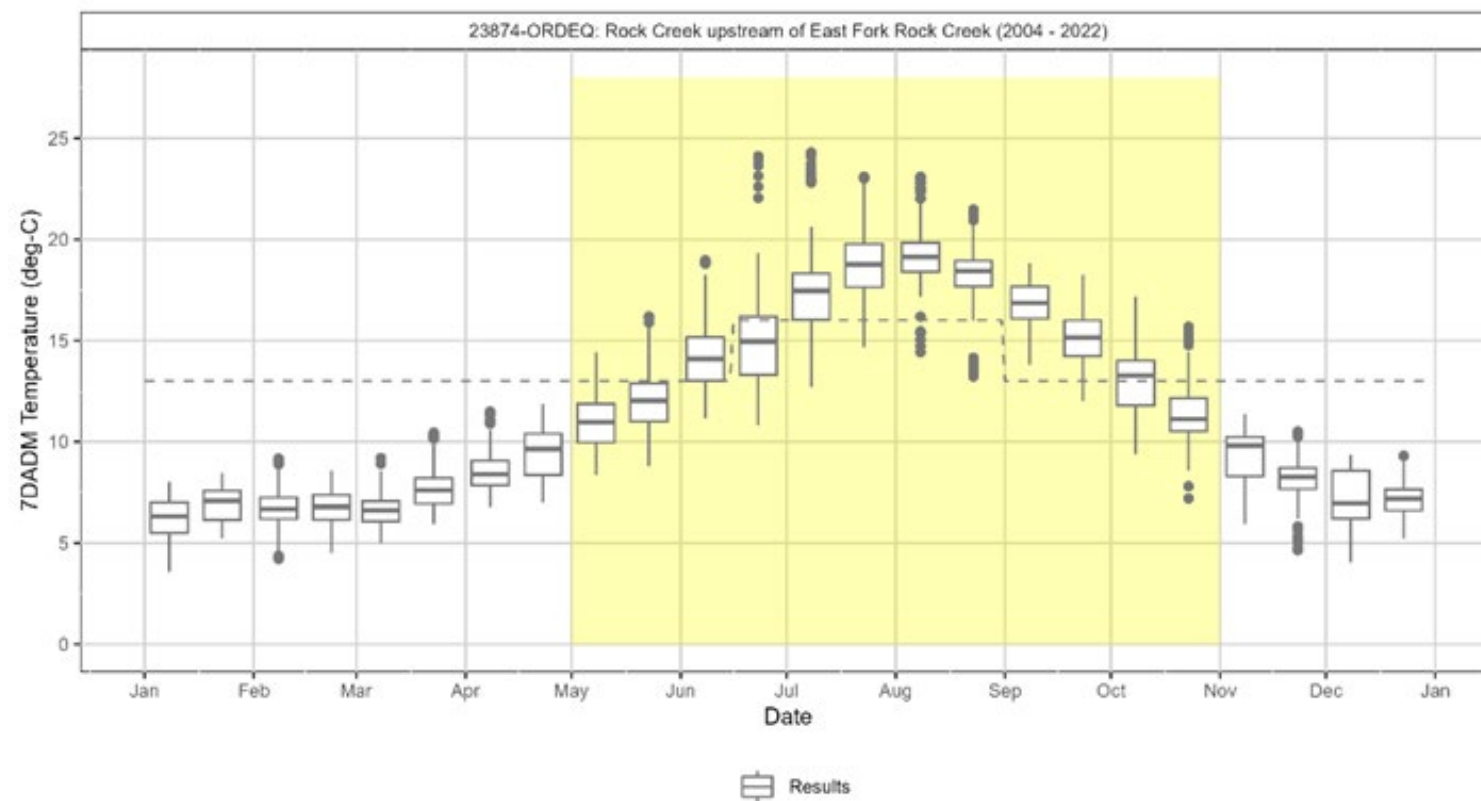
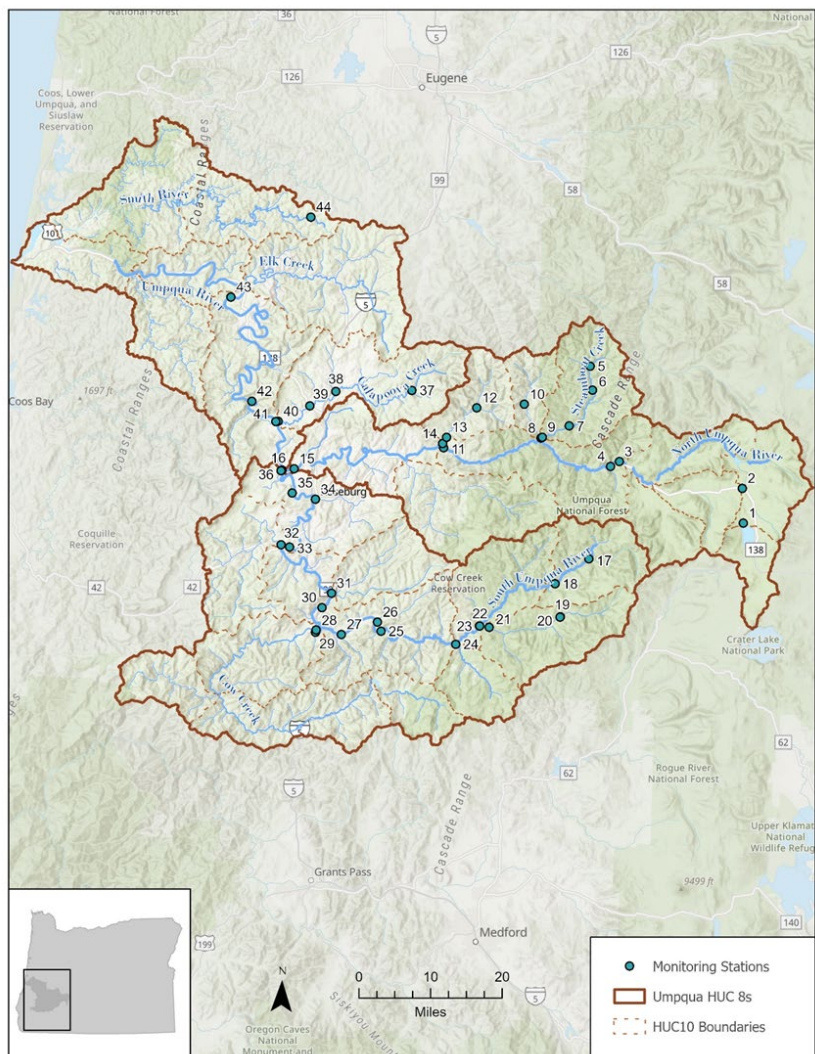
Load Allocations

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

- 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

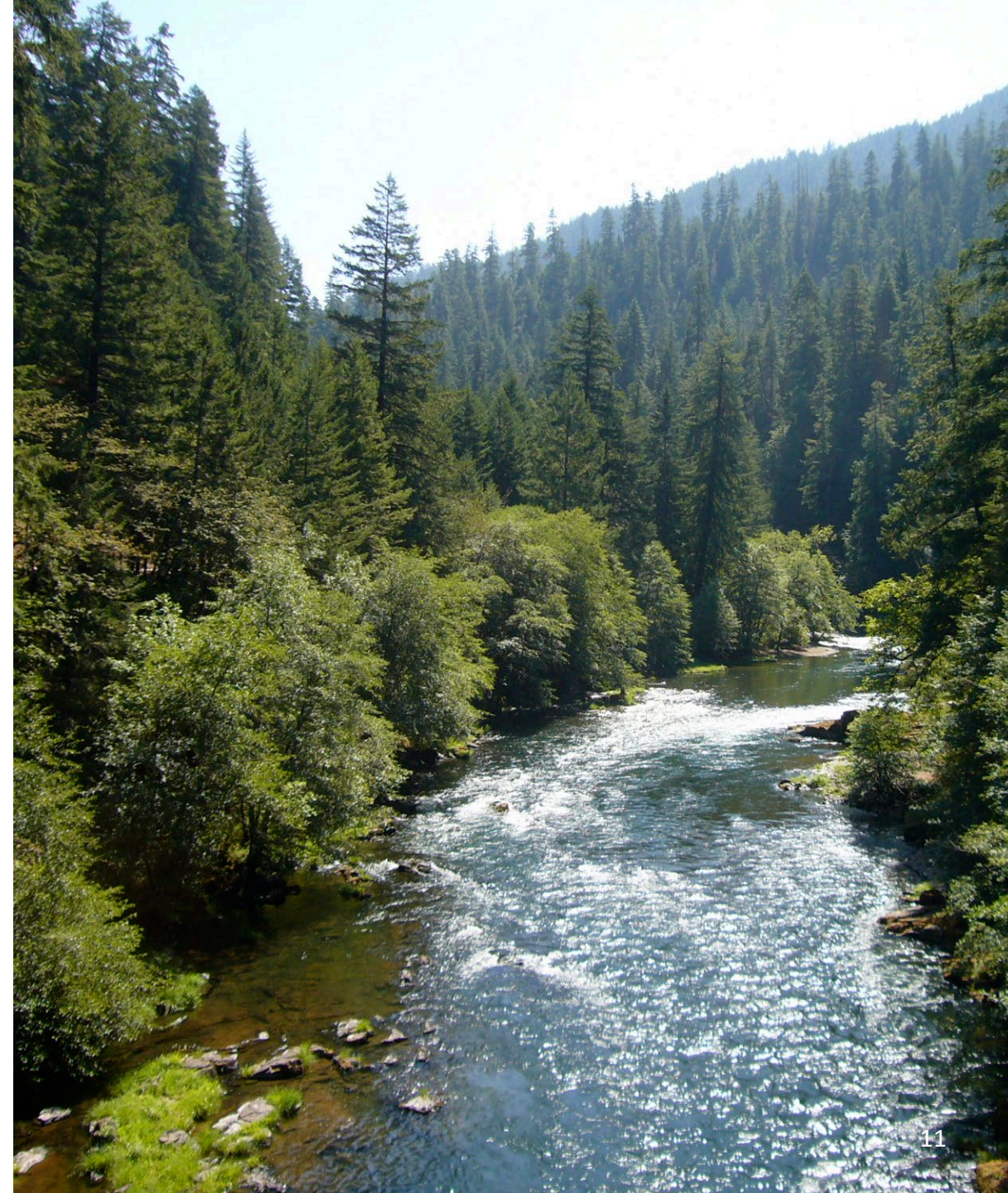
TMDL Critical Condition

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



Final TMDL

- Issued on June 27, 2025
 - <https://www.epa.gov/tmdl/umpqua-river-basin-temperature-tmdl>



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