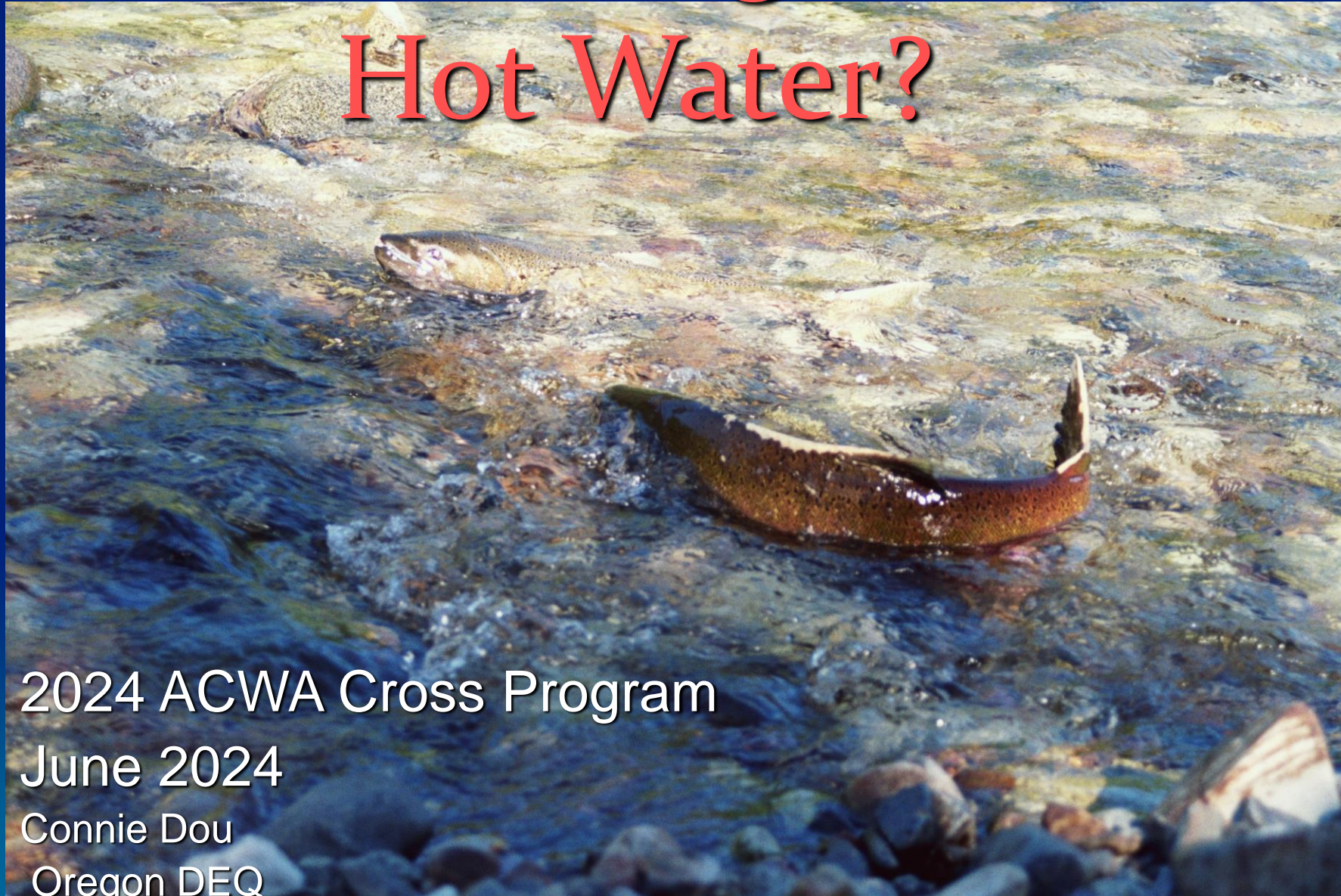


Will we Ever get out of

Hot Water?



2024 ACWA Cross Program

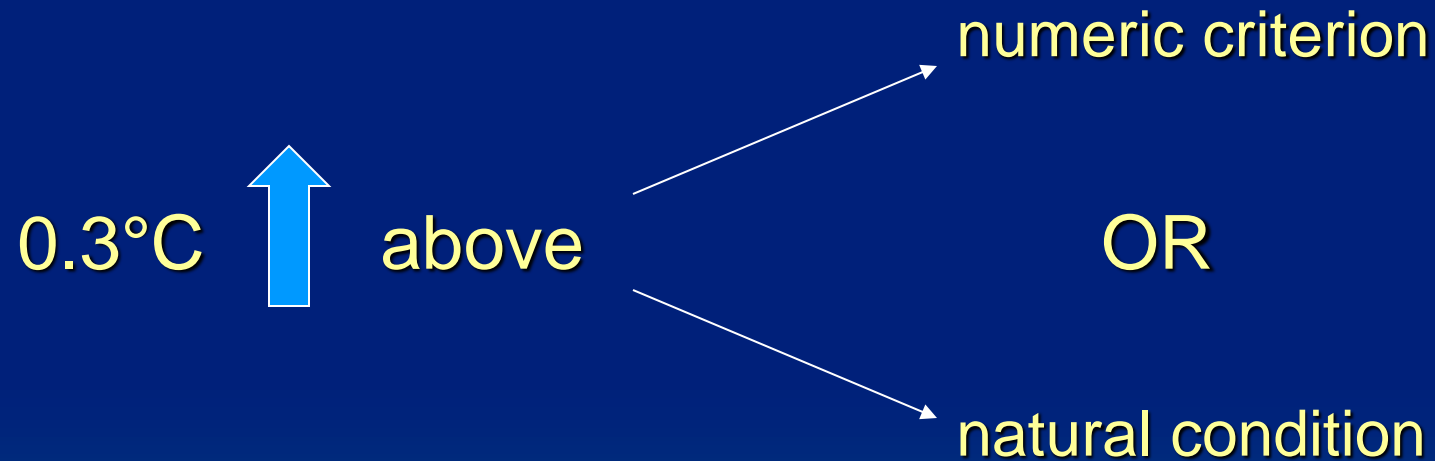
June 2024

Connie Dou

Oregon DEQ

Human Use Allowance

Single Point Source



Dilution: mix with 25% low flow, **or** meet edge of temperature MZ, **whichever is more restrictive**

What are the Designated Uses and Criteria for Temperature?

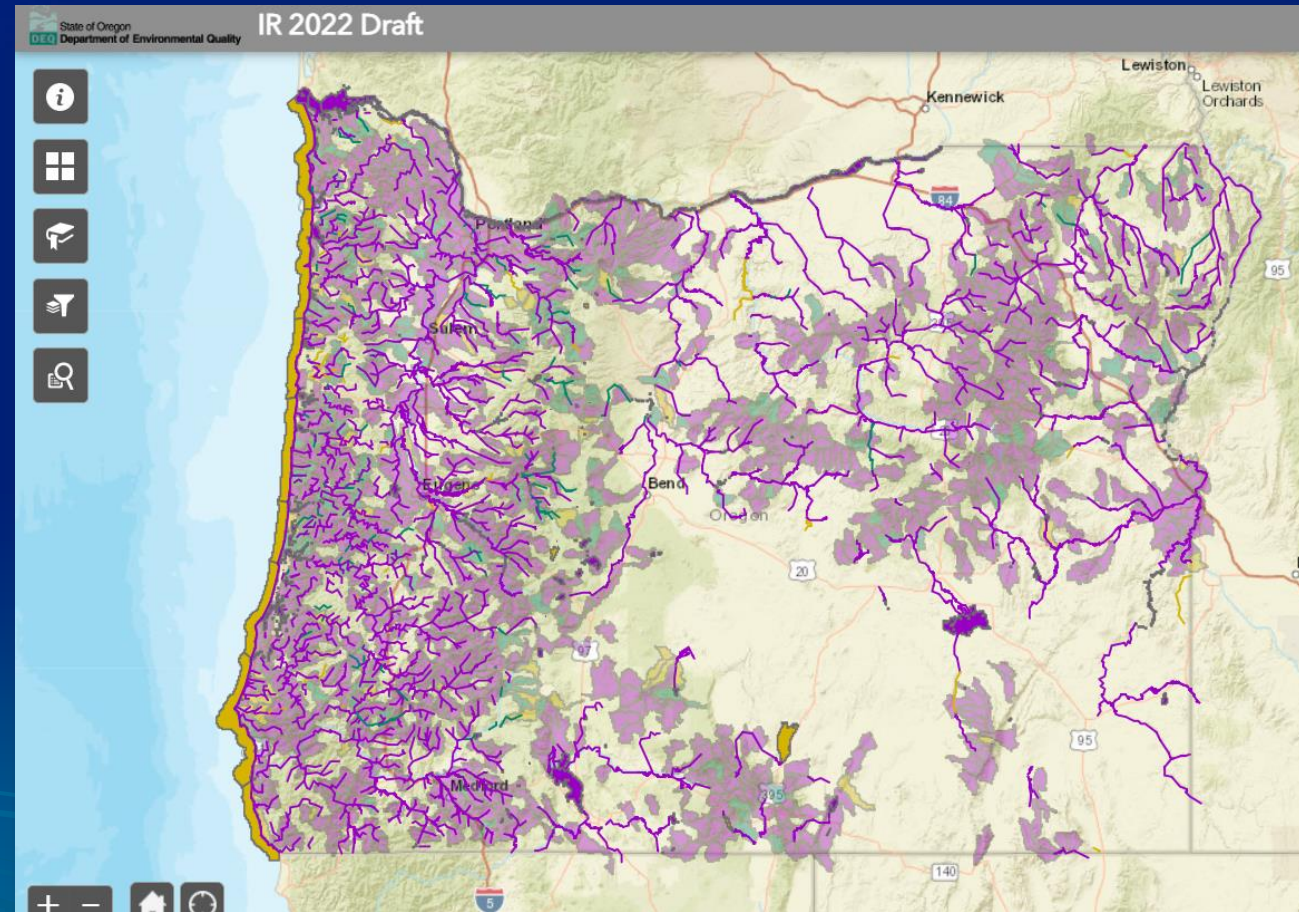
Use Subcategory	Criterion (7dADM-°C)
Bull Trout Spawning and Juvenile Rearing	12°C
Salmon and Steelhead Spawning	13°C
Core Cold Water Habitat	16°C
Salmon and Trout Rearing and Migration	18°C
Salmon and Steelhead Migration Corridors	20°C
Redband or Lohantan cutthroat Trout	20°C
Cool Water Species	narrative
Borax Lake Chub	narrative

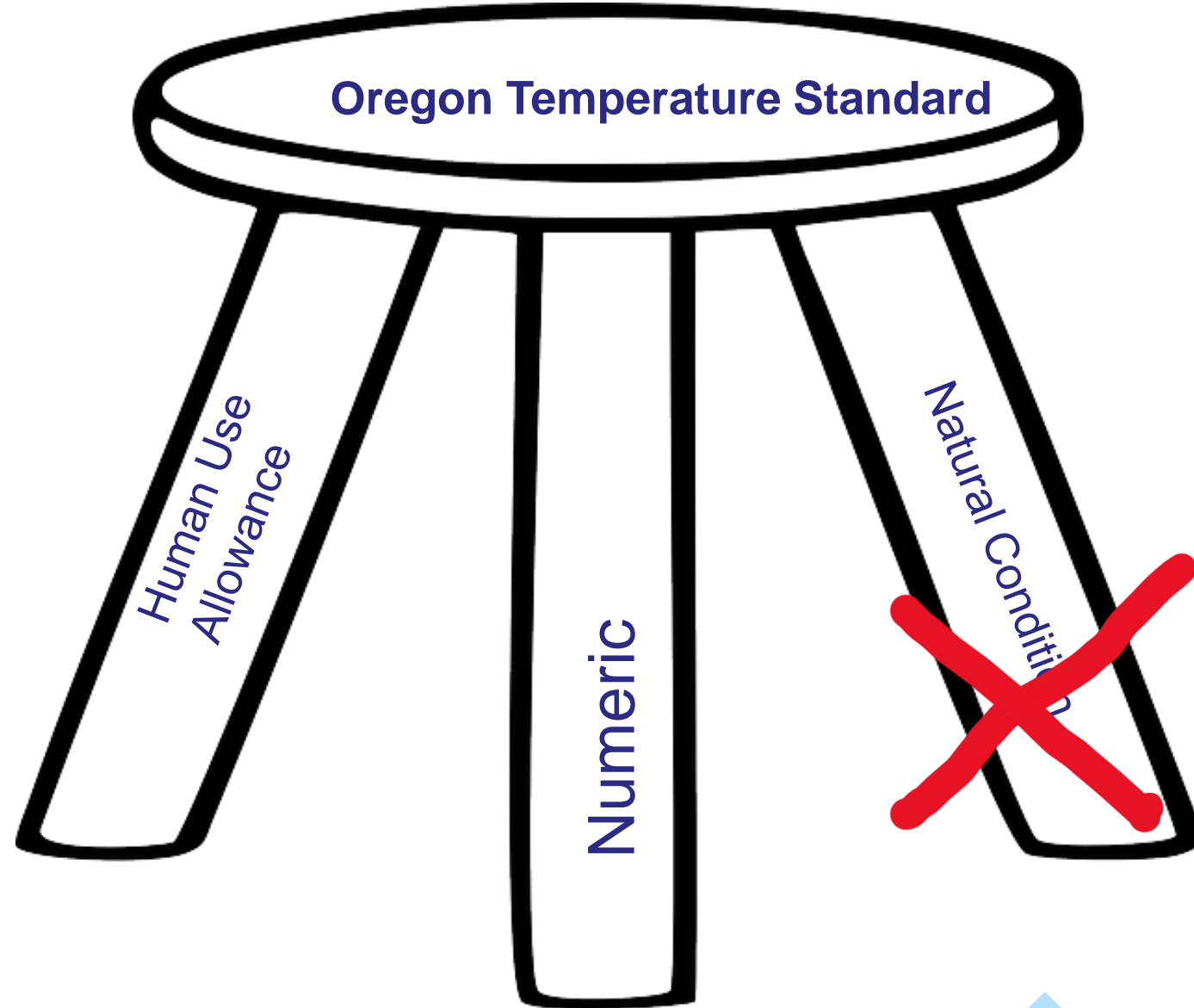
*Protecting cold water provision

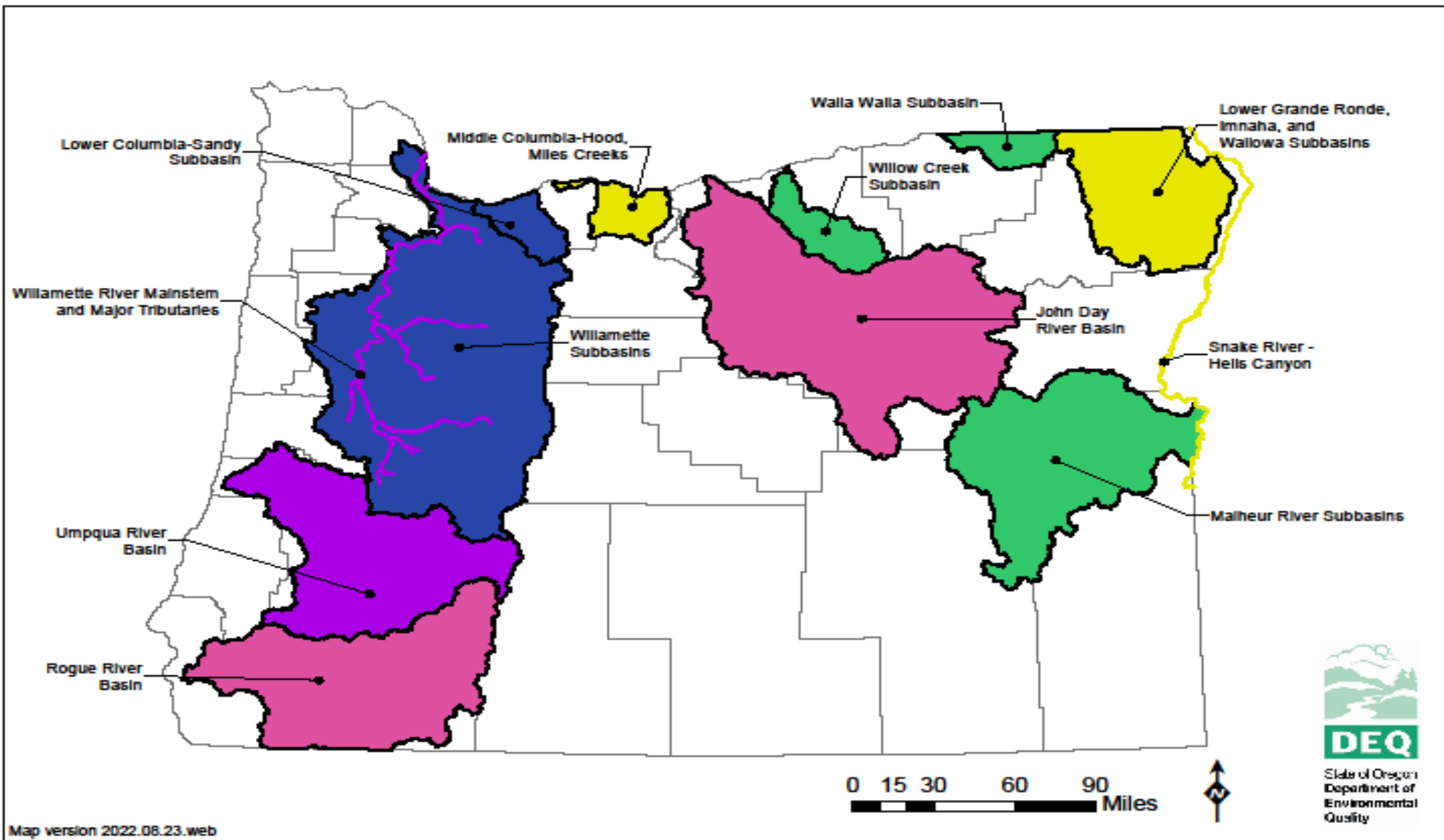
*Upstream waters rule

Temperature Impairment

- No 1 cause of impairment
- ~ 70% of the Assessed Units
- ~ 16% Impaired with TMDLs
- Use continuous data







Clean Water Services' Water Quality Trading Program Provides Watershed-Scale Benefits

SHADE PROVIDED

Clean Water Services has implemented 161 riparian planting projects along streams in the Tualatin River Watershed. Shade provided by these projects help block potential solar load (sunlight) from warming streams.

TO DATE:

1,060,000,000
KILOCALORIES PER DAY OF
SOLAR LOAD BLOCKED

STREAMFLOW ENHANCED

The District releases cool stored water from Barney Reservoir and Scoggins Reservoir (also known as Hagg Lake) during the summertime to enhance stream flows and improve water quality in the Tualatin River and its tributaries.

AN AVERAGE OF **45** CUBIC FEET PER SECOND
(29 MILLION GALLONS PER DAY) WERE RELEASED
IN THE MONTHS OF JULY AND AUGUST (2016-2020)

REDUCTIONS OF SEDIMENT, PHOSPHORUS AND NITROGEN

The riparian planting program not only provides shade for the streams but also helps reduce sediment and nutrients from reaching the streams.

SEDIMENT REDUCED: 1,030,000 LBS.
NITROGEN REDUCED: 8,000 LBS.
PHOSPHORUS REDUCED: 14,000 LBS.

STREAM MILES RESTORED

The District's riparian planting program spans both urban and rural areas across the Tualatin River Watershed.

TO DATE:

77
STREAM MILES RESTORED

Example: Clean Water Services

June 2023



- Stormwater benefits
- Public health benefits

June 2023

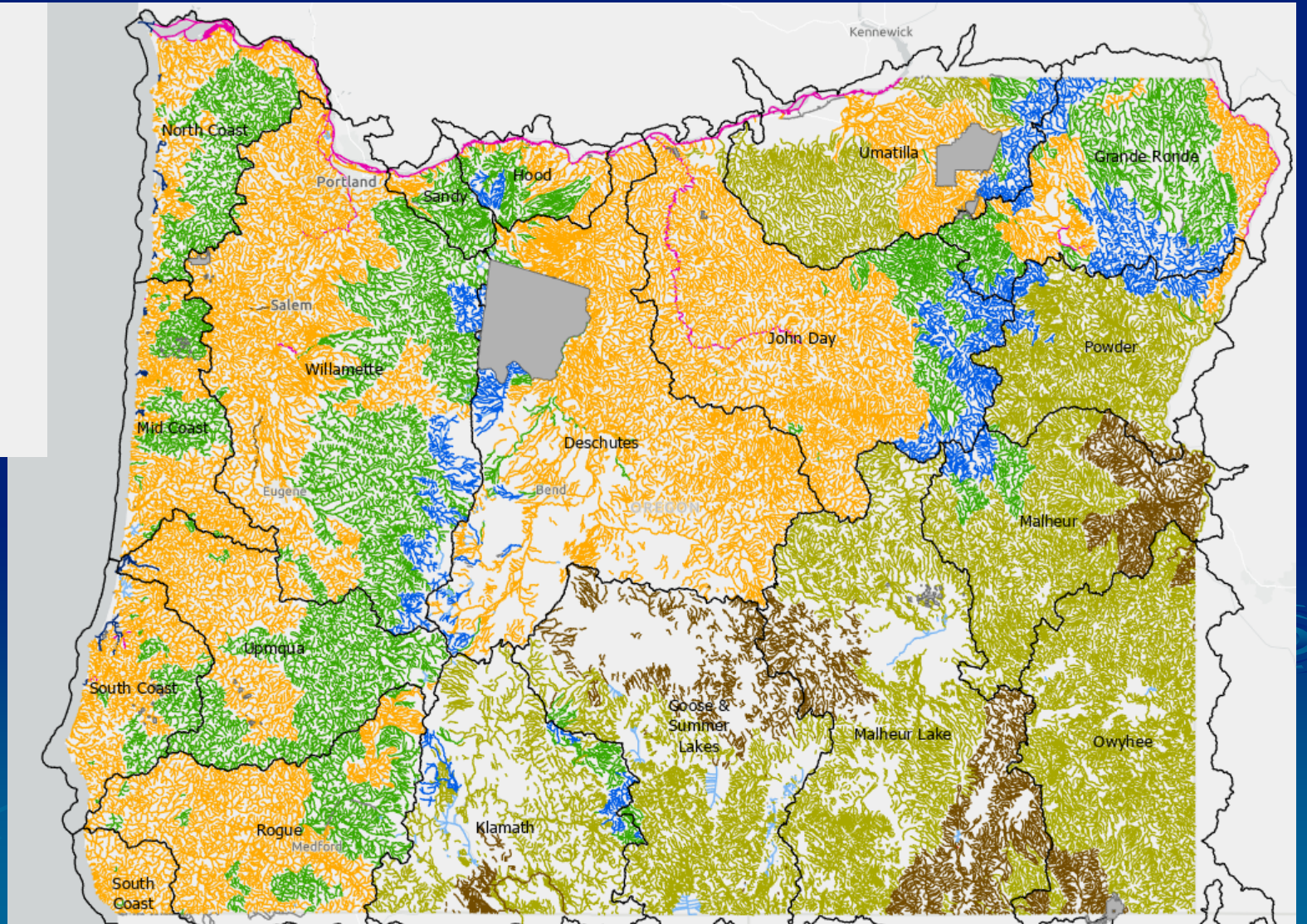


- Beaver Recolonization
- Green infrastructure

Proposed Temperature Year-Round Use Updates

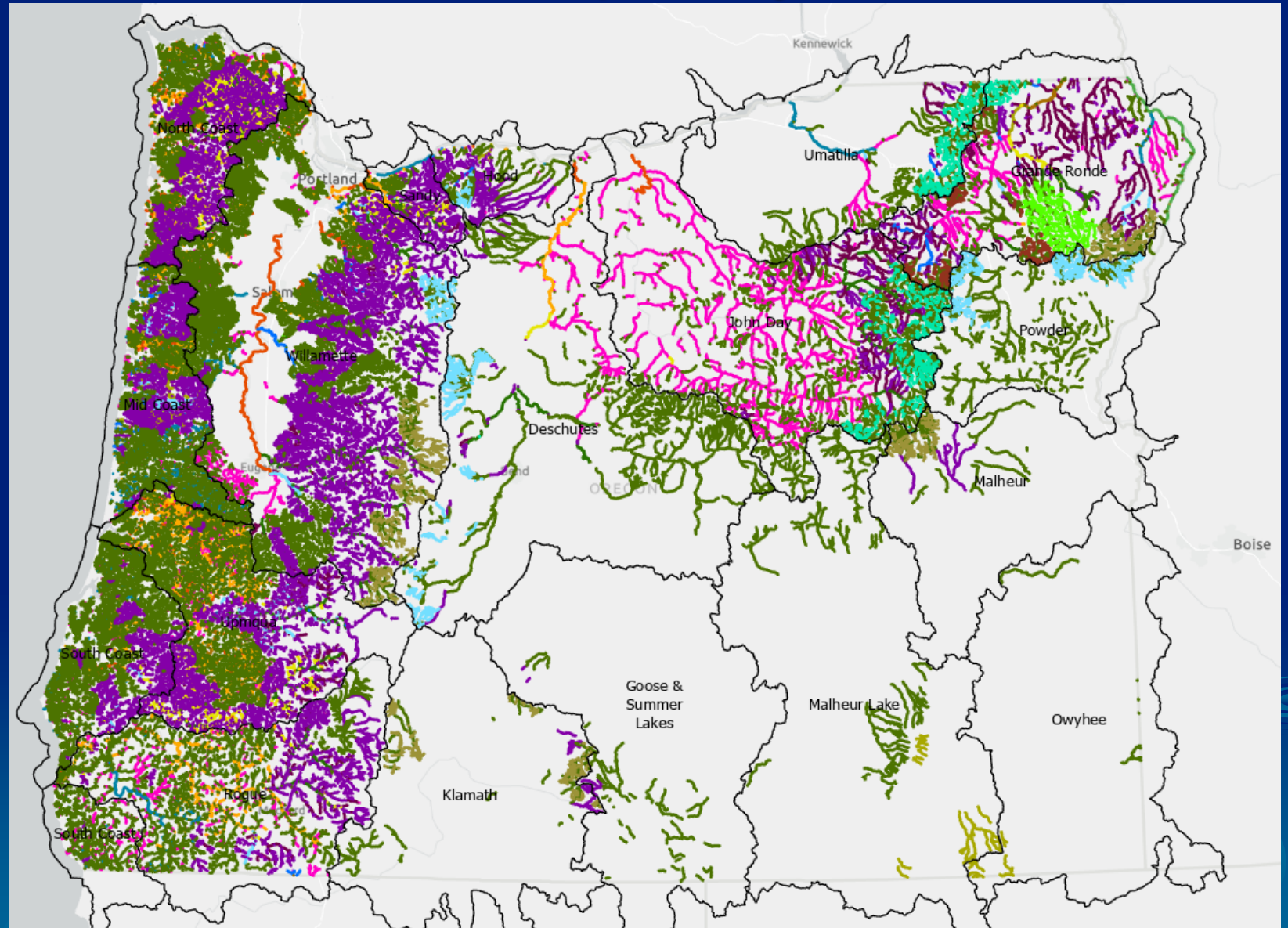
Designated Uses

-  **12°C** – Bull Trout Spawning & Juvenile Rearing
-  **16°C** – Core Cold-Water Habitat
-  **18°C** – Salmon & Trout Rearing & Migration
-  **20°C** – Redband & Lahontan Trout
-  **20°C** – Migration Corridor
-  Cool Water Species (narrative)



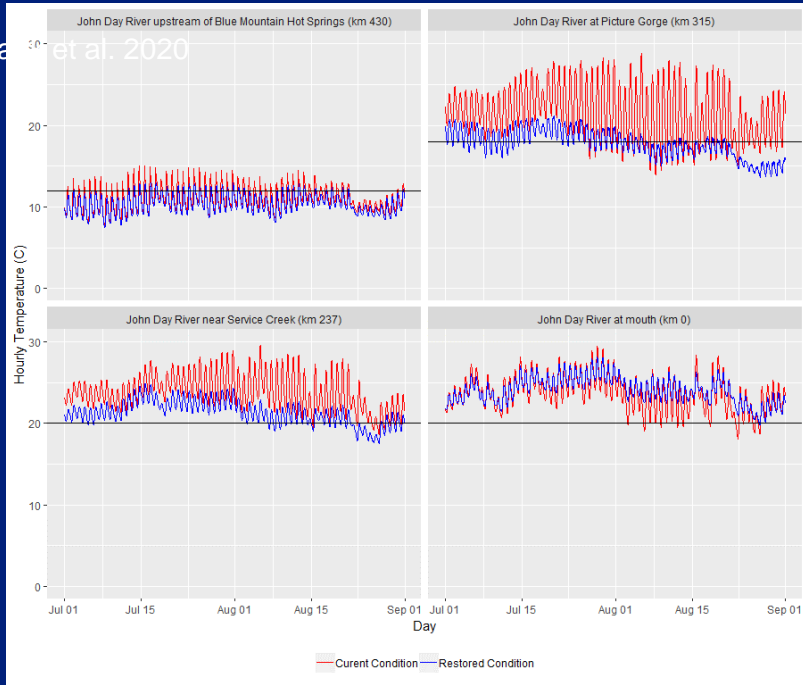
Tendency Toward Greater Complexity in Standards

- Adult spawning and egg incubation
- 15 overlapping species / runs
- 29 distinct date ranges
- As early as July to as late as June.

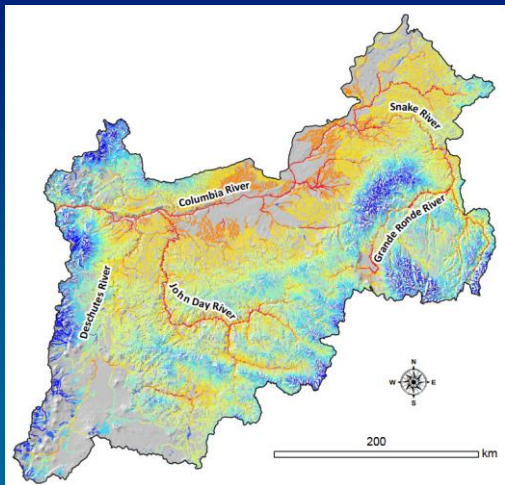
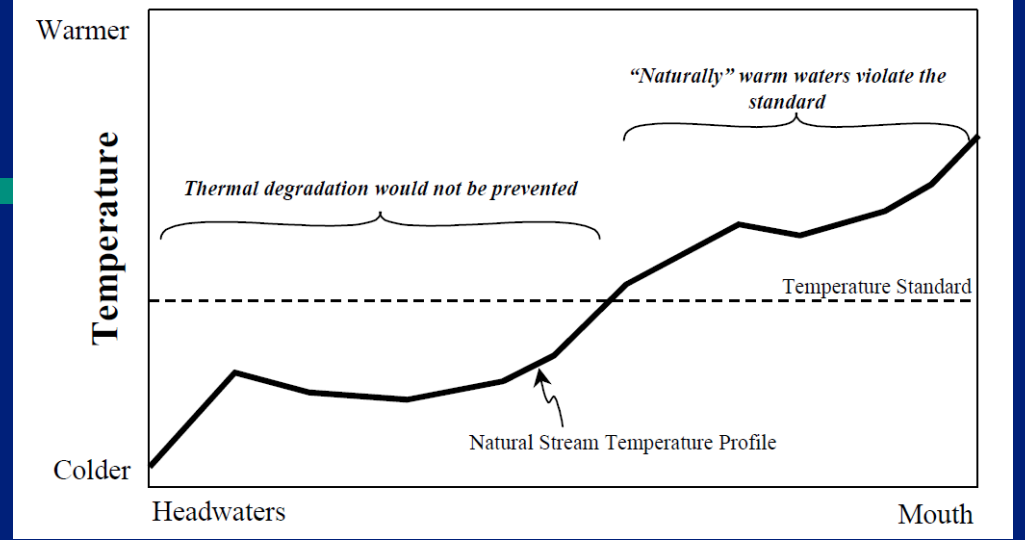


Regime = Variability

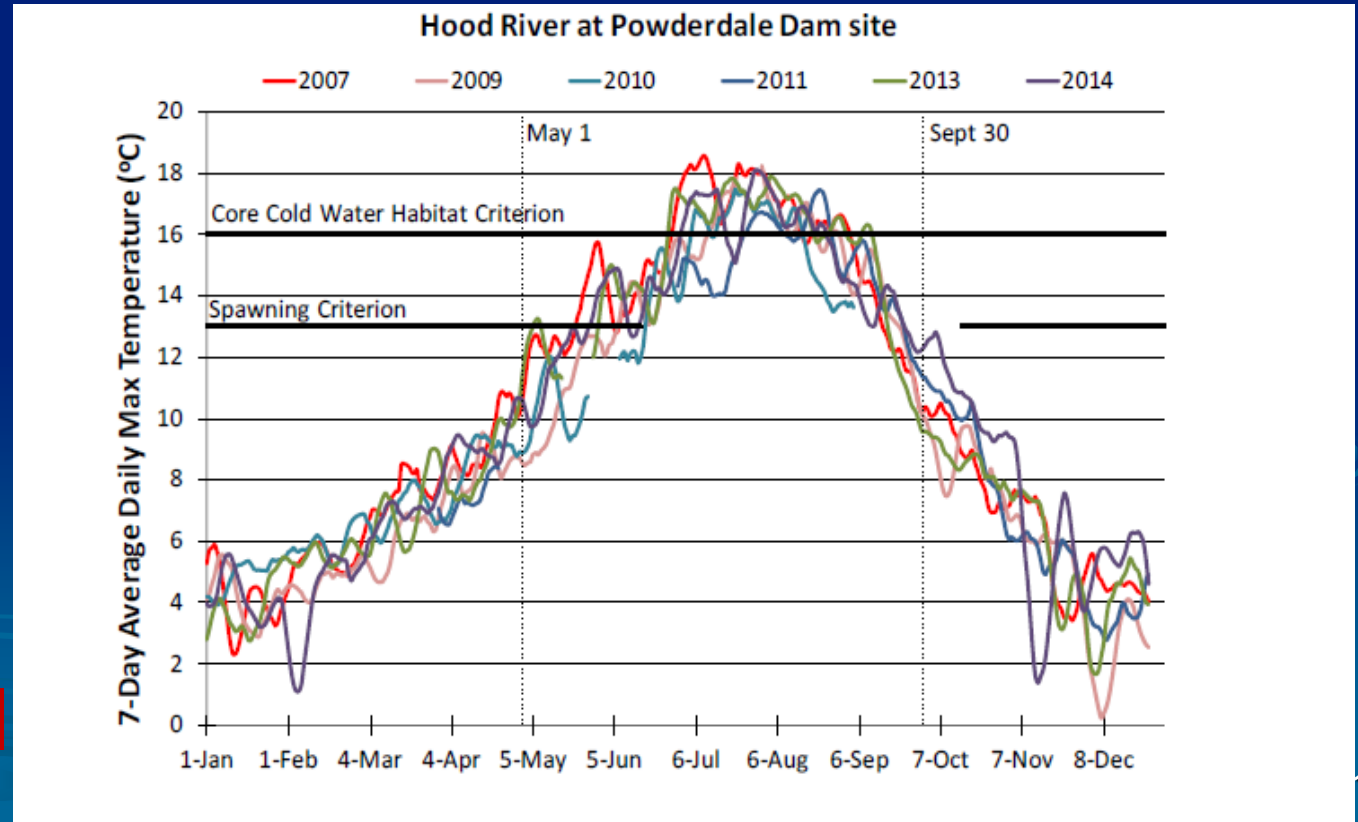
Isa et al. 2020

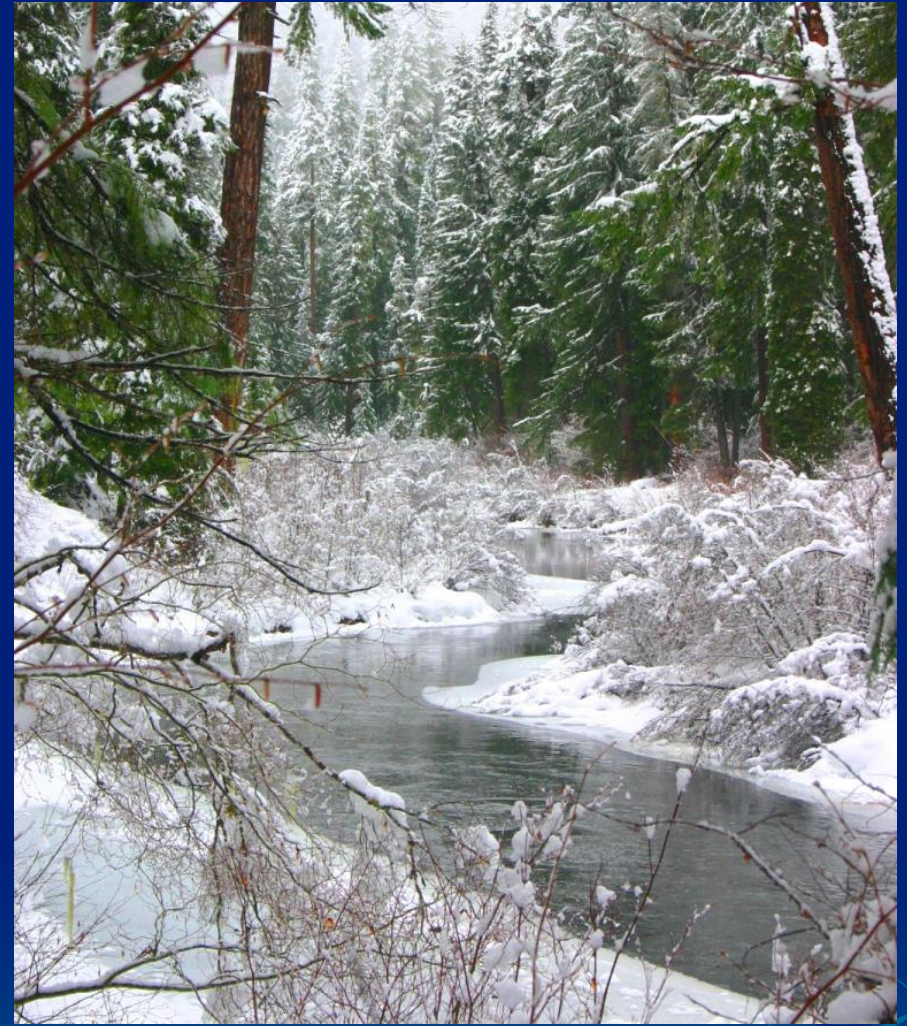
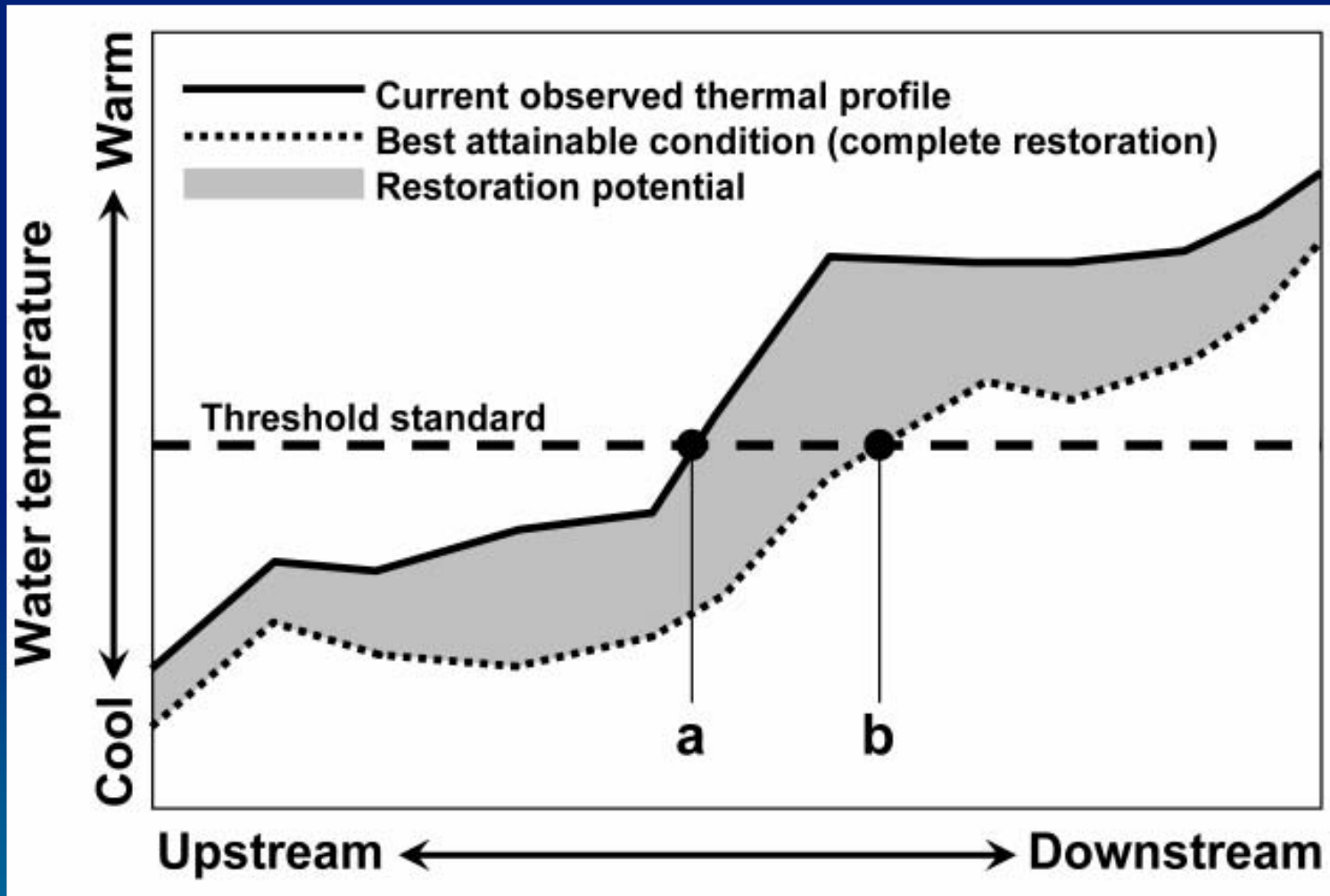


Diel
Longitudinal



Spatial
Seasonal /
Interannual





Upper Rogue River, November