

Oregon DEQ Aquatic Life Use Updates

Rule Advisory Committee Meeting #4



1. Welcome and Introduction

July 27, 2022

Welcome!



Zoom meeting logistics

- Trina Brown – DEQ Admin. Support
- “Raise hand” to be recognized for questions or comments  
- Feel free to post questions into the chat and we will respond
- If you are listening on the phone:
 - Press *9 To raise your hand
 - Press *6 Unmute/Mute your line
- Today’s meeting will be recorded

Agenda

Time	Topic
9 a.m.	Welcome, Introduction, Follow-Up from Meeting #3.
9:30 a.m.	Technical Support Document Overview (James McConaghie, DEQ)
10:30 a.m.	Break (10 mins)
10:40 a.m.	Fiscal Impact Statement Review and Discussion (Mailea Miller-Pierce / Aron Borok, DEQ)
12 p.m.	Lunch Break (1hr)
1 p.m.	Use Attainability Analysis Documentation Overview (Aron Borok, DEQ)
1:30 p.m.	Break (10 mins)
1:40 p.m.	Use Attainability Analysis Documentation con't.
2:10 p.m.	Follow up on Crooked River pH proposal (Debra Sturdevant, DEQ)
2:40 p.m.	Wrap Up and Next Steps
3 p.m.	Adjourn

Meeting Objective

- Follow-up items from last meeting
- Discuss fiscal and economic impact analysis
- Update and discussion on Crooked River pH proposal
- Overview of content of major support documents
(Technical Methods and Use Change Analysis)

Discussion Ground Rules

- Questions and interjections from committee members only please
- Will reserve a portion at end of meeting for questions from observers if time permits
- Be respectful of each other
- Raise your virtual hand to speak
- Speak for yourself when recognized
- Stay on mute unless speaking
- Stay on topic in the chat
- Let others speak without interrupting

Questions about today's meeting?



Image Source: ODFW

Oregon DEQ Aquatic Life Use Updates Rule Advisory Committee Meeting #4

2. Follow Up from Last Meeting

July 27, 2022

Follow Up Items from Meeting #3

- Highlights:
- Key comments for fiscal impact statement (FIS)
- Key comments on D.O methodology

Organizations Submitting Input for FIS

- Association of Clean Water Agencies (ACWA)
- Deschutes River Alliance (DRA)
- Northwest Pulp and Paper Association (NWPPA)
- Oregon Farm Bureau
- Oregon Forest Industries Council (OFIC)
- Pacific Coast Federation of Fishermen Association (PCFFA)
- Portland General Electric
- Portland Water Bureau
- Trout Unlimited

Organizations Submitting Input for FIS

- IP Paper- Springfield notes spawning use for receiving water was incorrect
 - Reviewed and will correct designation in next update.
- Request to better characterize or quantify potential fiscal impacts to non-point sources.
 - Adding additional information to the fiscal

Comments on D.O. Methods

- Requested high-level comments on dissolved oxygen methods
- Comments from four organizations
- Opportunities for detailed and site-specific questions

DISCUSSION DRAFT April, 2022

2022 Aquatic Life Use Updates: Dissolved Oxygen Use Subcategories

Rulemaking Advisory Committee Discussion
Draft



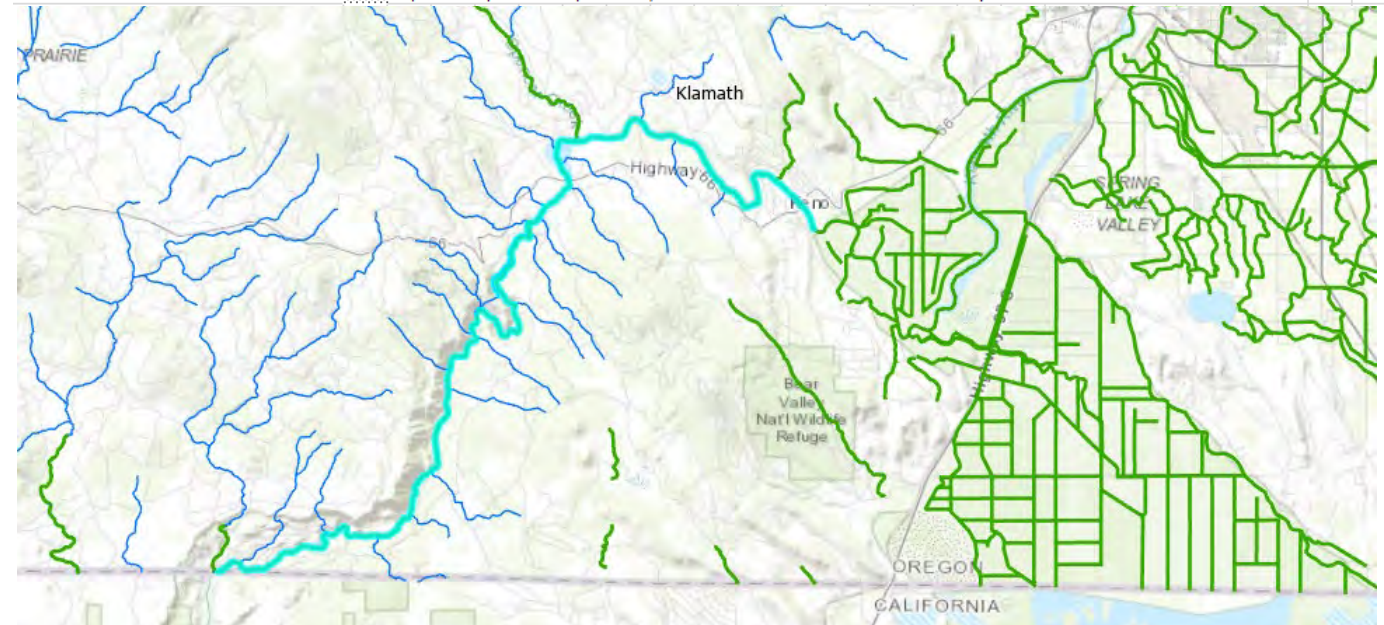
D.O. uses for Klamath River below Keno

- Proposed to re-classify Klamath River below Keno as 'cool water aquatic life'.
- Based on presence of cool-water species and salmonid peak use timing.
- Timing table unusual, misinterpreted.
- Conferred with ODFW, agree it does not meet our methods for cool D.O.
- Propose to revert to 'Cold Water Aquatic Life' in next revision.

Klamath River (below Keno) - Non Anadromous
Waterway ID: Klamath07 July 1 through September 30

Life Stage/Activity/Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Adult Fluvial or Adfluvial Migration												
Redband Trout	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Adult Spawning												
Redband Trout				▨	▨	▨	▨	▨				
Shortnose Sucker				▨	▨	▨	▨	▨				
Adult/Sub-Adult Rearing												
Redband Trout	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Egg Incubation through Fry Emergence												
Redband Trout							▨	▨				
Juvenile Rearing												
Redband Trout	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Juvenile/Sub-Adult Migration												
Redband Trout	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨

▨ Represents periods of peak use based on professional opinion
▨ Represents lesser level of use based on professional opinion
▨ Represents periods of presence, either with no level of use OR uniformly distributed level of use indicated



Oregon Farm Bureau / Oregon Forest Industries Council

- Consultant applied decision rule methodology and reproduced results for a set of test cases
- Suggestions for clarifications in methodology
 - More background information for needed context
 - Some ambiguous/unclear instructions
 - Flow Charts

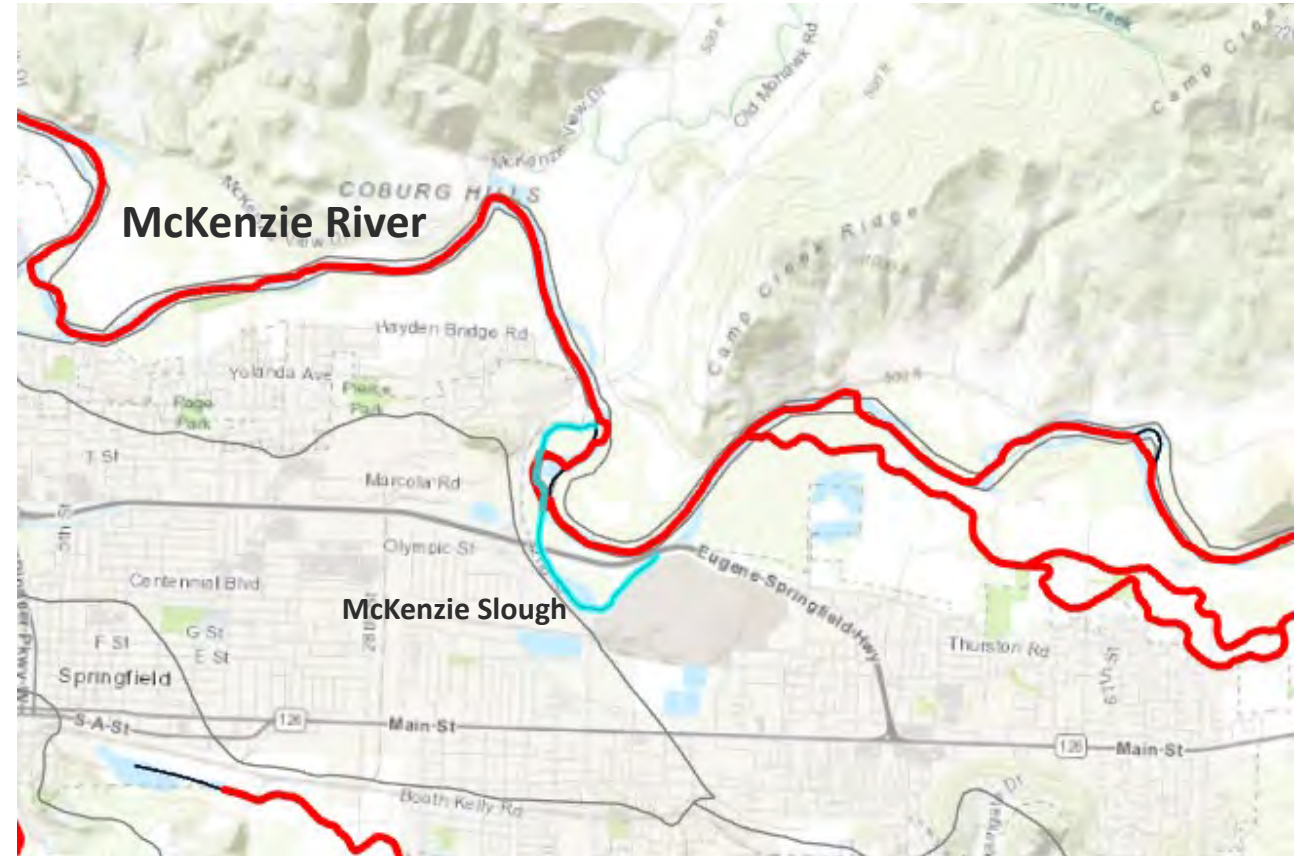
Questions about issues from last meeting?



Image Source: ODFW

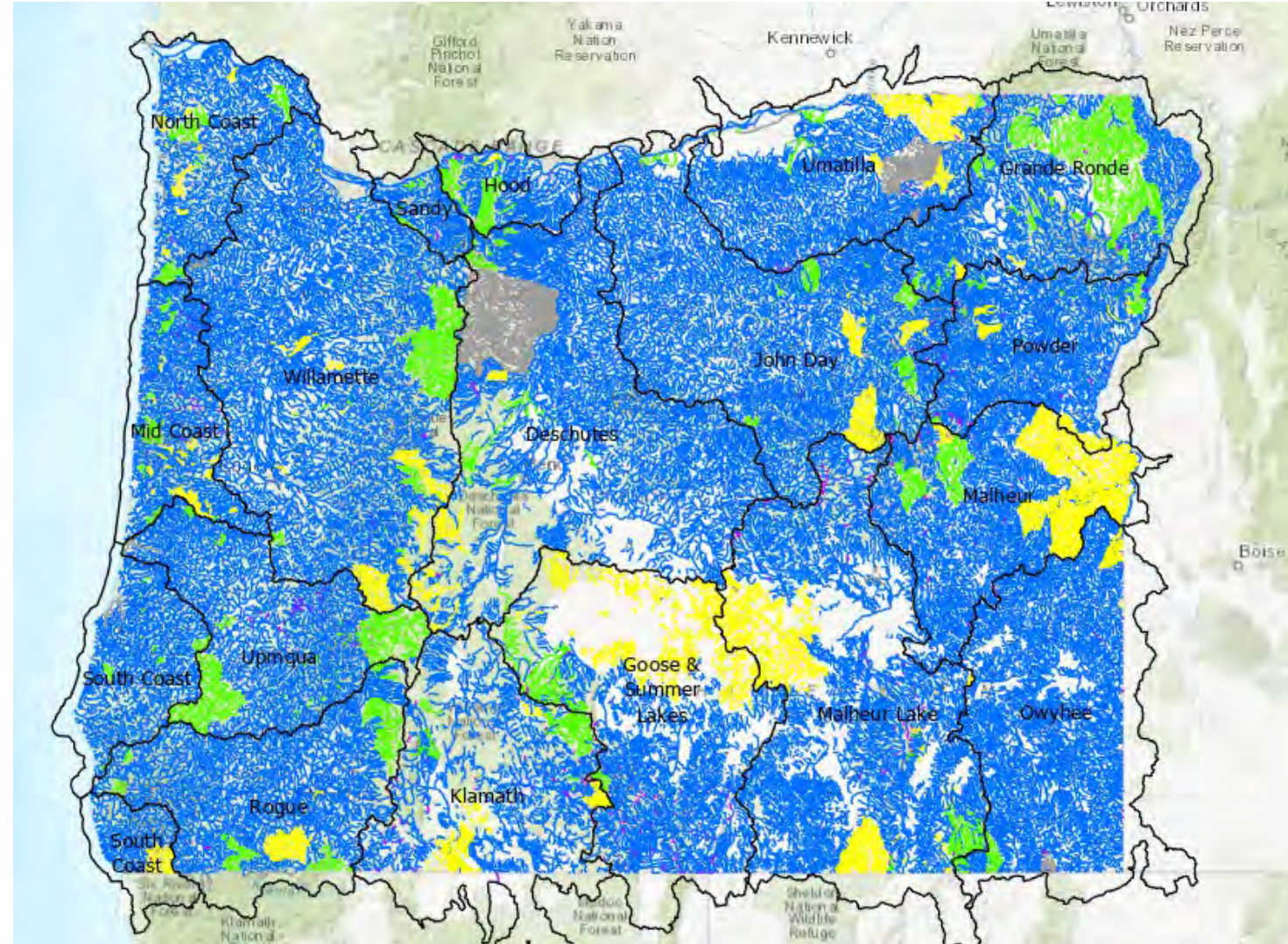
McKenzie Slough spawning error

- Proposed maps indicated “new” spawning use in McKenzie Slough
- Resulting fiscal impact to International Paper Springfield Plant
- Hydrography error.
- No spawning in the slough according to ODFW.
- Will correct in next revision of proposed use maps.



Identify Impacts to Non-Point Sources

Year-Round Temperature Use Subcategory Changes



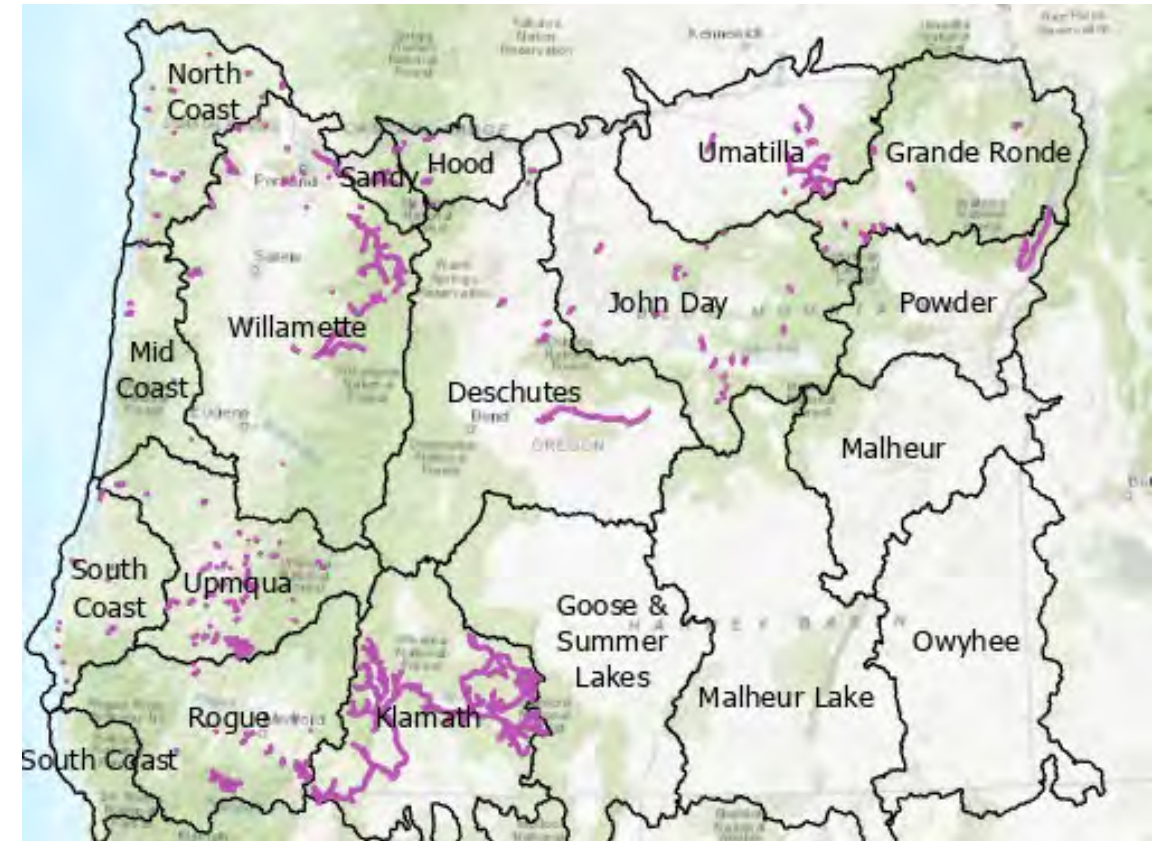
- No Change
- More Stringent
- Less Stringent
- New Classification

- NPS receive load allocations when a TMDL is required.
- Request to better characterize or quantify potential impacts.
- Risk or cost of additional listings or TMDLs resulting from the rulemaking.

How is ODFW's 'historical' habitat distribution captured in use designations? How is it used to evaluate existing, current, and attainable uses?

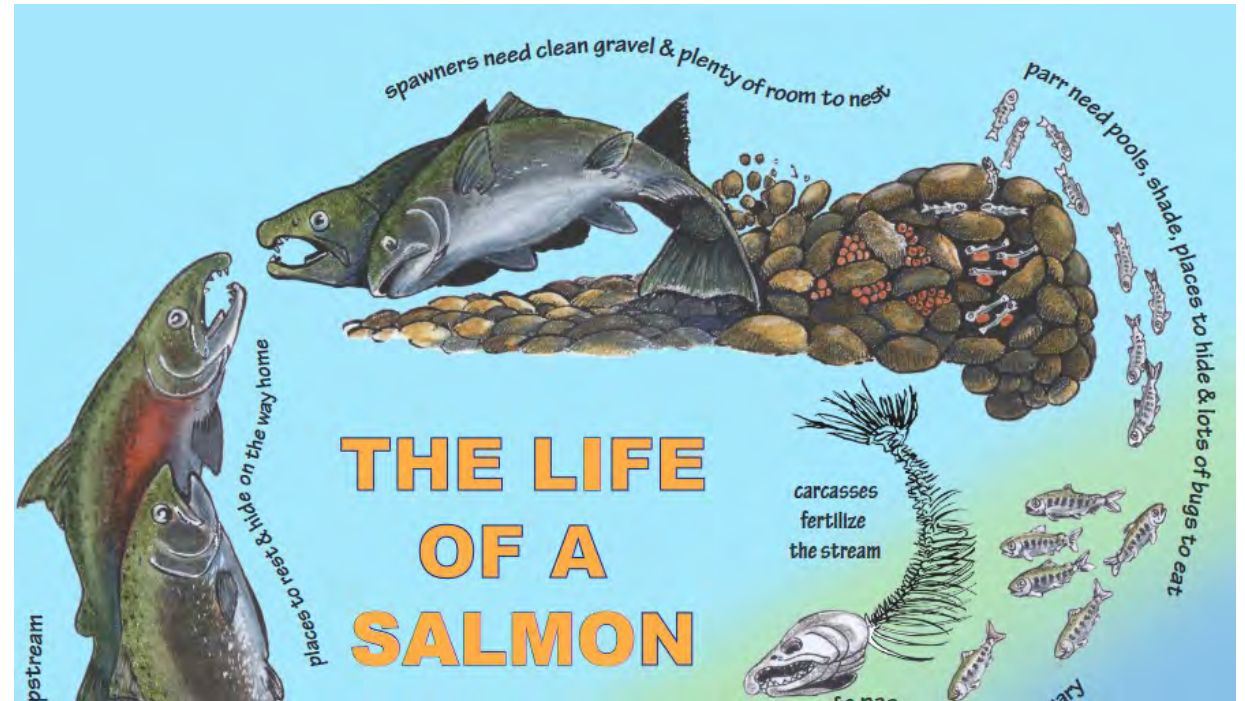
- DEQ has not used 'historical' habitat to designate uses.
- The 'historical' habitat distributions in the FHD database predate 1975.
- ODFW's considers re-classifying a habitat if absent for five life cycles (~15-35 years).
- 'Historical' habitat receive those designations where it meets characteristics for:
 - Bull Trout Spawning & Juvenile Rearing
 - Core Cold Water Habitat
 - Salmon and Trout Rearing and Migration
 - Redband & Lahontan Cutthroat Trout

'Historical' steelhead habitat



How do the cool D.O. criteria protect early life-stages when designated for mixed cool/cold communities?

- “Early life stages” are egg and larval stages.
 - DEQ Issue paper (DEQ, 1995)
 - National WQ Criteria Definition (EPA, 1984)
- Protected by spawning criteria
- Applied to waters identified for the salmonid spawning use, no matter what year-round D.O. use subcategory



What is a “presumed use”?

- Term used in our methodology for applying the D.O. spawning criteria to resident trout.
- Not a term used in the Clean Water Act.
- Indicates waters not know if a use is an existing use or not.
- Criteria applied conservatively by default
 - In case sensitive uses are present
 - Until site-specific status of habitat is determined.
- Precedents:
 - Idaho DEQ - “presumed use”
 - California Water Boards – “potential uses”
- Further discussion in ‘Oregon’s Framework for Presumed Resident Trout Spawning Use ’

Oregon DEQ Aquatic Life Use Updates Rulemaking Advisory Committee Meeting #4

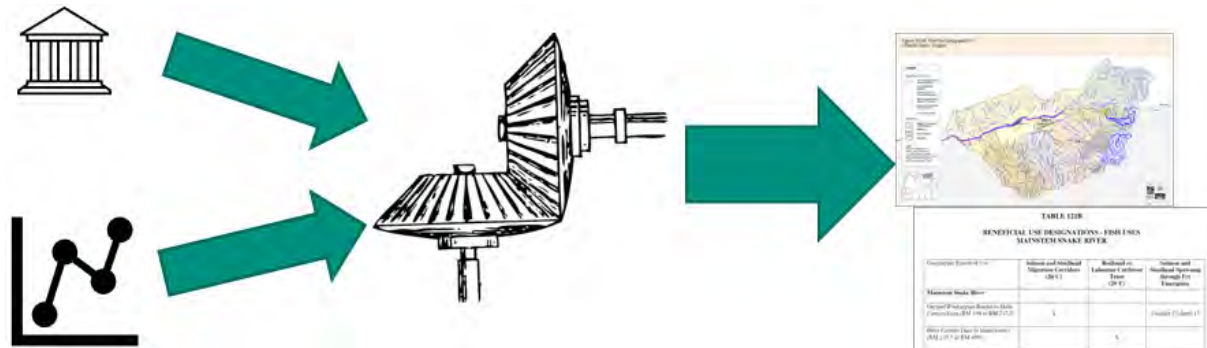
3. Technical Support Document Overview

July 27, 2022

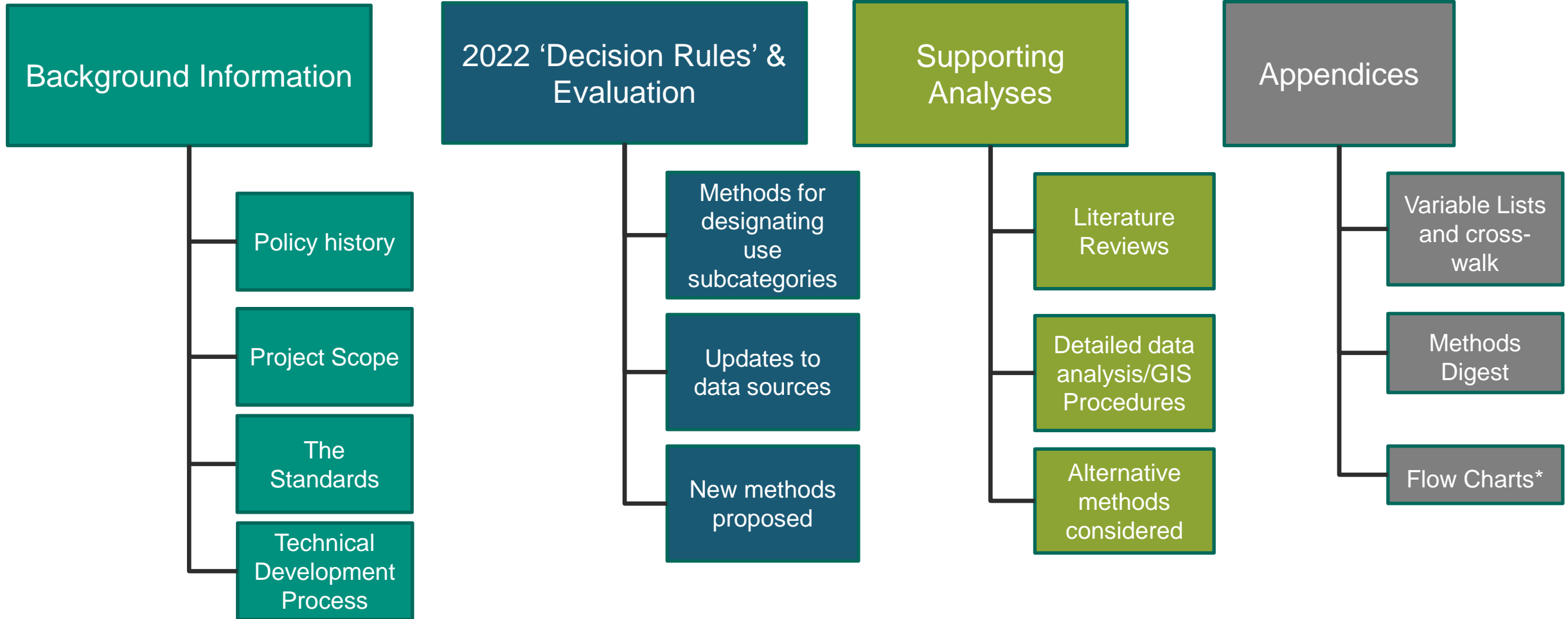
Purpose of Document

Document information supporting new 'decision rule' methods to designate the aquatic life use subcategories

- Documentation
- Analysis
- Procedures
- Literature review
- Created with input and review from the Technical Work Group



Topics & Organization



Highlights: Supporting Analyses

Analyses that provide background and support for new data sets or methods added to the decision rules for 2022.

Key Topics:

- Bull Trout Potential Habitat results.
- Temperature data methods to designate Core Cold Water Habitat

Potential Bull Trout Spawning Habitat

Current designations based on:

- presence and habitat (USFWS, ODFW)
- ‘potential habitat’ identified by professional judgement in 2003.

What is Potential Bull Trout Spawning Habitat?

- Additional spawning habitat outside of current distribution needed for recovery and connectivity:
 - Suitable for bull trout spawning based on current recovery plans, other restoration work
 - Recent reintroductions
 - Unoccupied but high priority for reintroduction
 - May be historical habitat

What are Bull Trout Working Groups?

- Bull Trout experts from federal and state wildlife agencies, tribes, private sector, NGO's
- Jointly hosted by ODFW and USFWS.
- Coordinated by Stephanie Gunckel.
- Reviewed DEQ's "Potential Habitat" data from 2003
- Made recommendations for update and revision to 'potential habitat'
 - Some places went from potential to known spawning habitat.
 - Some places went from potential to a different use.
- In the TSD:
 - Schedule of meetings and participants
 - Summary of recommendations
 - Data and information from recommendations resulting in less stringent criteria documented in Use Change Justification (UAA)

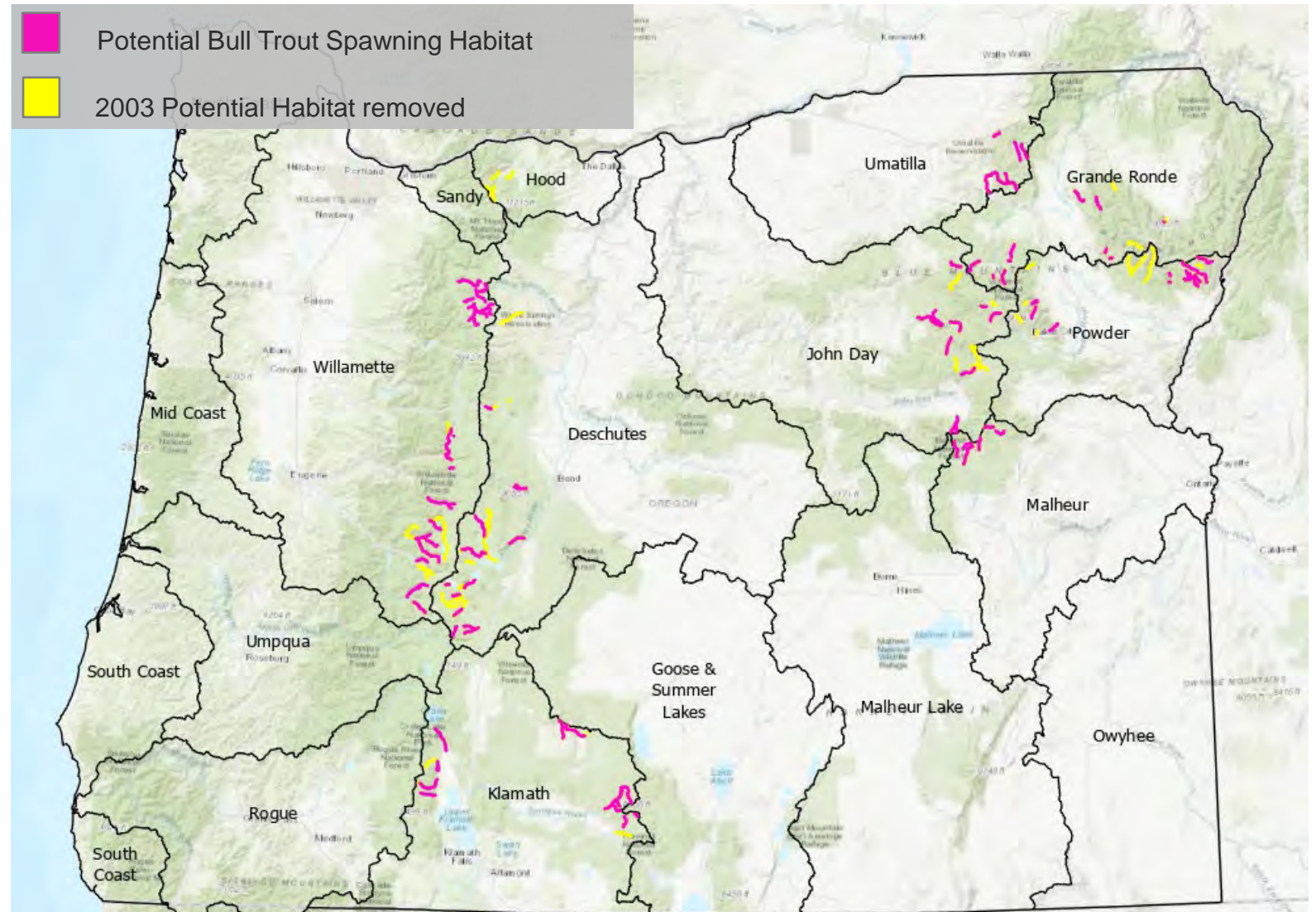
Results of Bull Trout Working Groups

Reasons for adding potential habitat:

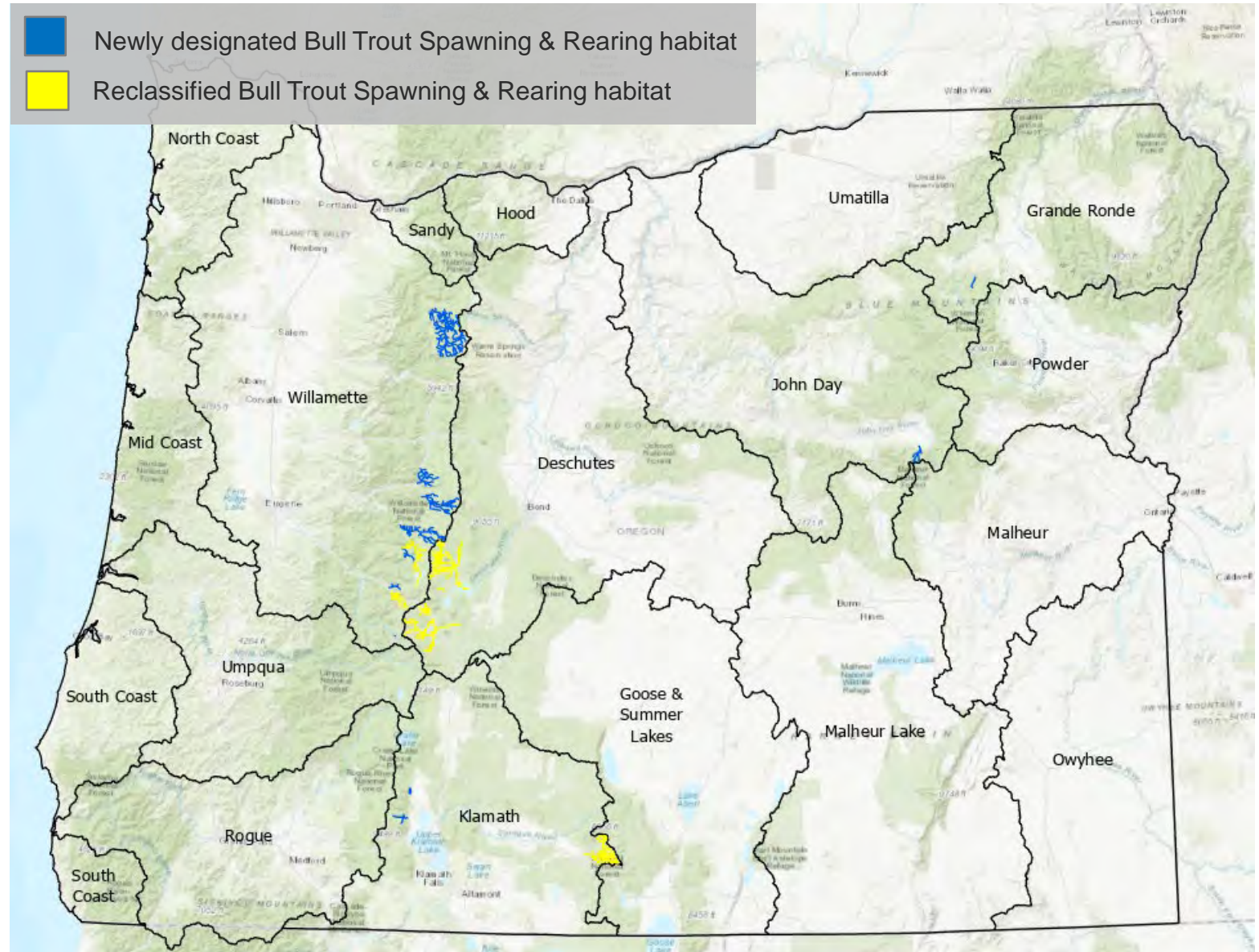
1. Recent reintroduction or restoration
2. Newly identified habitat suitable for spawning
3. High priority for restoration

Reasons for removing potential habitat:

1. Is now known spawning habitat.
2. Is now known adult bull trout habitat.
3. Not feasible / priority for restoration.



Results of Bull Trout Working Group input



Habitat removed from 'Bull Trout Spawning & Juvenile Rearing' designation based on revised potential habitat.

- Usually reclassified to "Core Cold Water Habitat" to protect adult bull trout uses
- Some potential spawning habitat is now occupied and classified as 'FMO' habitat by USFWS or ODFW.
- Details and information for the reclassification is in the Use Change documentation (UAA).

Temperature Analysis for Core Cold Water Habitat



- To protect large scale thermal heterogeneity and landscape refugia for salmon, steelhead and char.
- At a scale relevant for maintaining populations.
- Current 7-day average maximum stream temperature for the warmest week of the year stays below 16°C.



Temperature Data Analysis Methods

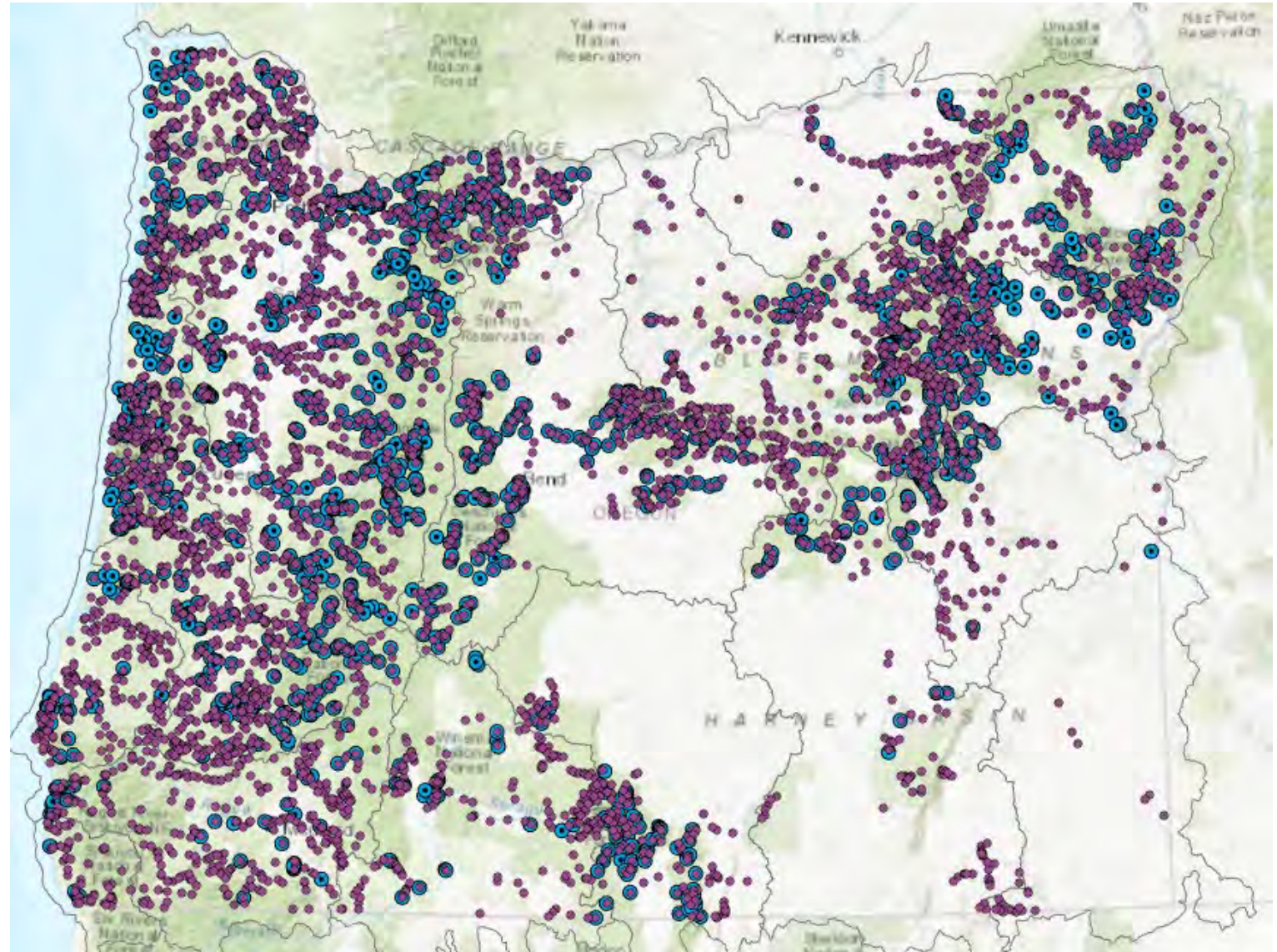
1. Continuous temperature monitoring stations
2. 3rd order streams or above
3. at least 3 different years of data represented
4. Critical warm period (June 1 to September 30) that adequately captures peak temperatures
5. at least 10 observations per year (weekly max or 7-dadms)
6. Warmest 7-day average maximum temperature ≤ 16.0 C

By definition waters currently attain the Core Cold Water Habitat criteria

Temperature Data Sources

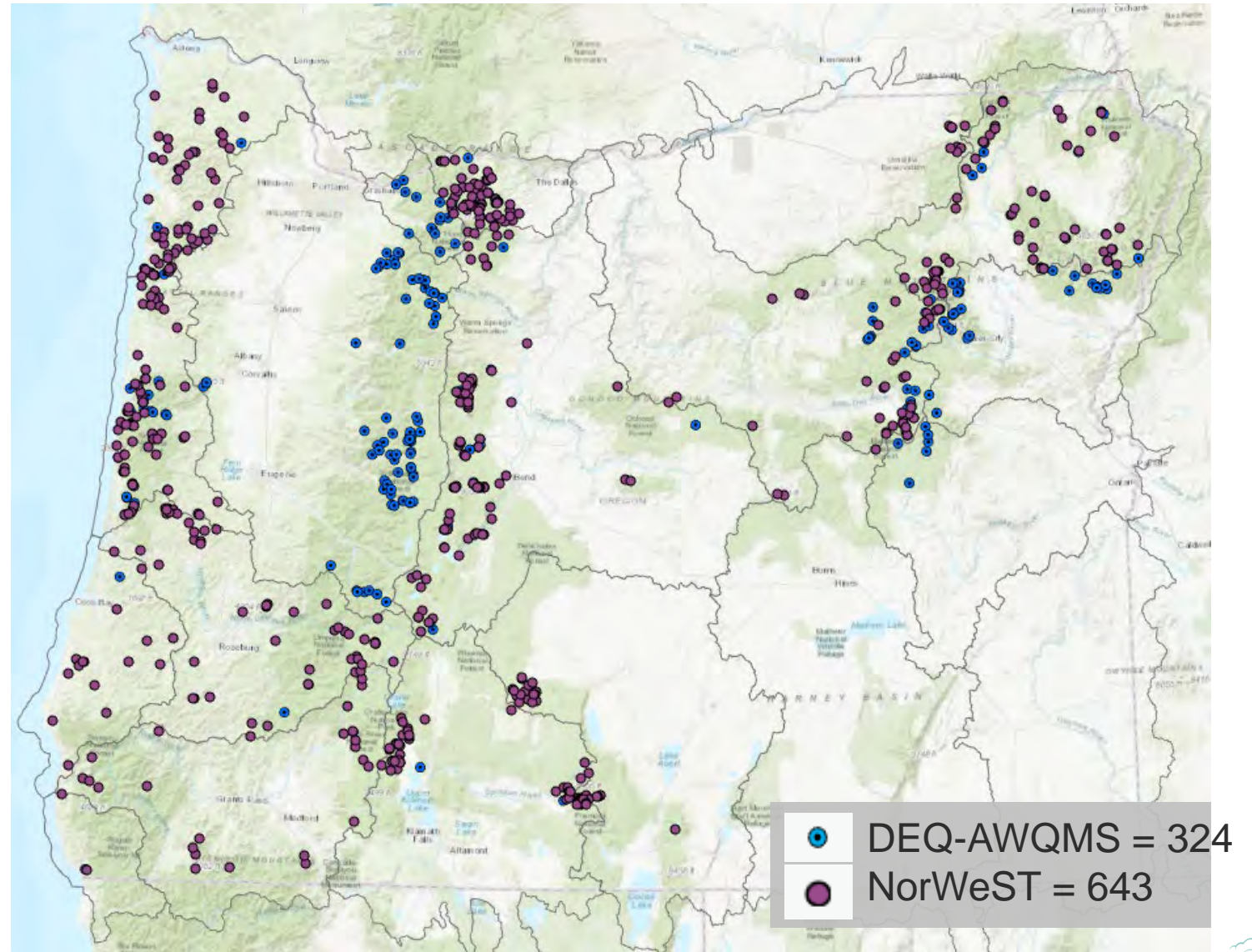
	Originator	Data Set	# Stations
	U.S. Forest Service	NorWeST Observed Temperature Regional Database	1,464
	Oregon DEQ	2020 & 2022 Integrated Report	1,749

	Originator	Data Set
	U.S. Forest Service	NorWeST Observed Temperature Regional Database
	Oregon DEQ	2020 & 2022 Integrated Report



Results

- Identify waterbodies with stations that meet DEQ's data requirements for 'Core Cold Water Habitat'
- Many are on waterbodies already designated:
 - Core Cold Water
 - Bull Trout Spawning & Juvenile Rearing
- Not all result in more stringent criteria



Questions about Supporting Analyses?



Source: NOAA Photo Library

Highlights: Additional Analyses


- Literature reviews
- In-depth analyses
- Background on existing or proposed methods
- Methods that were considered but not adopted
- Key Topics:
 - Non-salmonid indicators for Core Cold Water Habitat.
 - Biological indicators for Cool Water Species
 - Framework for Presumed Resident Trout Spawning Habitat

Non-salmonid Indicators for Core Cold Water

OAR-340-041-0002(13): "Core Cold Water Habitat Use" means waters expected to maintain temperatures within the range generally considered optimal for salmon and steelhead rearing, or that are suitable for bull trout migration, foraging and sub-adult rearing that occurs during the summer.


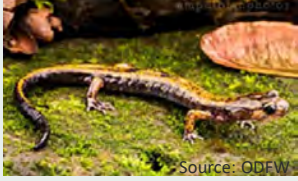
“If additional scientifically credible data becomes available in the future, DEQ may add core cold-water habitat areas to the designated beneficial uses.”

Pacific Lamprey

Potential Indicator Species:	Data Sources:
<ul style="list-style-type: none">Pacific Lamprey (<i>Entosphenus tridentatus</i>)  <p>Source: ODFW</p>	Literature on thermal tolerance ODFW: FHD distribution data

- Higher thermal tolerance range than salmon & steelhead species.
- All life-stages protected by existing use designations and upstream waters rule.
- Not dependent on stream thermal conditions that stay below 16°C through the summer.

Indicator Species Evaluated

Potential Indicator Species:	Data Sources:
<ul style="list-style-type: none">• Coastal Giant Salamander (<i>Dicamptodon tenebrosus</i>)• Cope's Giant Salamander (<i>Dicamptodon copei</i>)• Southern Torrent Salamander (<i>Rhyacotriton variegatus</i>)• Columbia Torrent Salamander (<i>Rhyacotriton kezeri</i>)• Cascade Torrent Salamander (<i>Rhyacotriton cascadae</i>)• Coastal Tailed Frog (<i>Ascaphus truei</i>)• Rocky Mountain Tailed Frog (<i>Ascaphus montanus</i>) <div data-bbox="435 644 677 822"><p>Source: ODFW</p></div> <div data-bbox="810 644 1105 822"><p>Source: ODFW</p></div>	<p>ODFW amphibian experts – Emily Van Wyck</p> <p>Literature on thermal tolerance and distribution</p> <p>ODFW, USGS has some distribution data (not comprehensive)</p>

- Many species do have thermal requirements at or below 16°C.
- Not stream obligate, tend to occupy micro-habitats and/or terrestrial habitats.
- Many suitable stream habitats unoccupied due to other factors (wrong substrate, predators/competitors, disturbances).
- Not good indicators of stream thermal conditions that stay below 16°C through the summer.

Freshwater Mussels

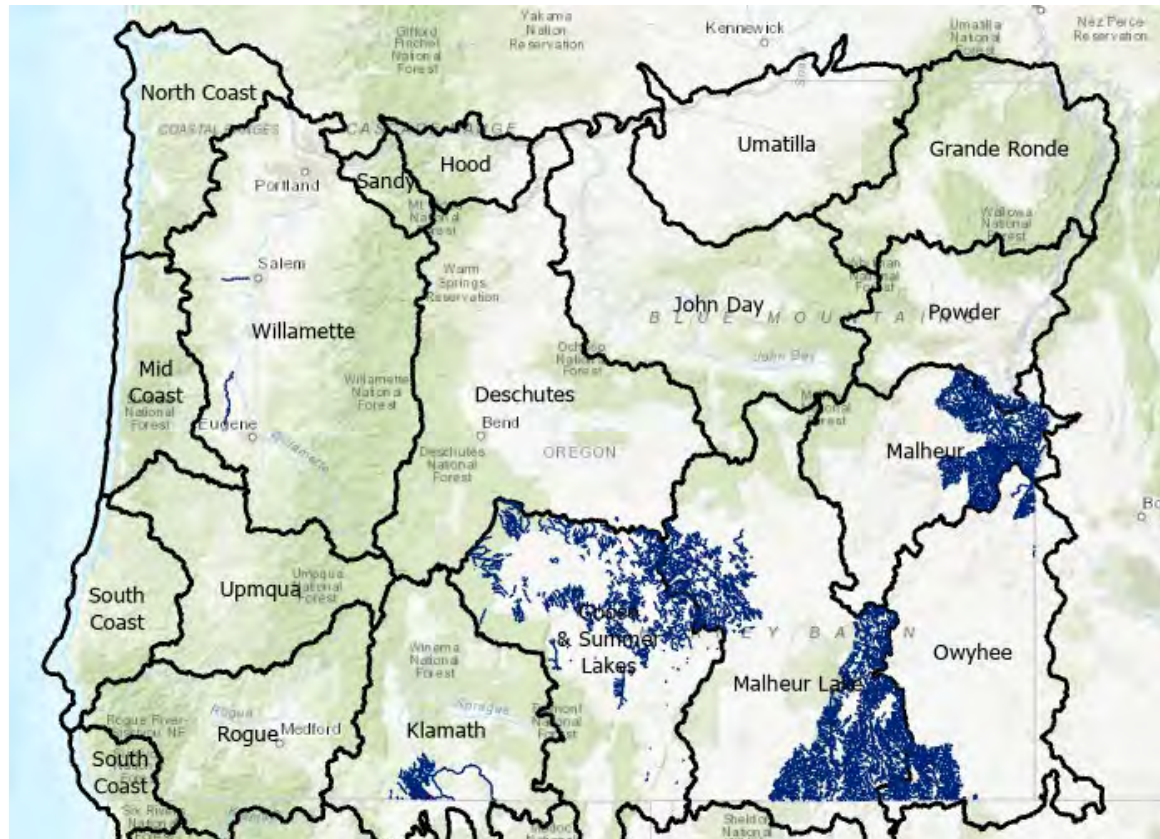
Potential Indicator Species:	Data Sources:
Freshwater mussels <ul style="list-style-type: none">• Western pearlshell (<i>Margaritifera falcata</i>)• Oregon floater (<i>Anodonta oregonensis</i>)• Western ridged mussel (<i>Gonidea angulata</i>)• Winged floater (<i>Anodonta nuttalliana</i>)	Reviewed available literature. Contacted Xerces society.

- Wide geographic range of distribution.
- Limited distribution data.
- Little data on thermal tolerance.
- Occupy cooler micro-habitats and thermoregulate by burrowing.
- Not good indicators of stream thermal conditions that stay below 16°C through the summer.


Additional indicator for ‘Cool Water Species’ Use

OAR-340-041-00028 (12):

"Cool Water Aquatic Life" means aquatic organisms that are physiologically restricted to cool waters including, but not limited to, native sturgeon, Pacific lamprey, suckers, chub, sculpins and certain species of cyprinids (minnows.)"



Additional indicator for 'Cool Water Species' Use

Potential Indicator Species:	Data Sources:
<ul style="list-style-type: none">Foothill Yellow-Leg Frog (<i>Rana boylei</i>)  <p>Source: ODFW</p>	<p>Literature on thermal tolerance Some ODFW and USFWS distribution data</p>

- Warmer-water dependent species.
- Range overlaps Salmon & Trout Rearing and Migration and Core Cold Water Designations
- Reproduction inhibited below 16°C
- Federal Status Review for Endangered Species Act (2021)
 - Some DSP's listed in California
 - No DSP's in Oregon listed yet.
- Thermal stress not a consideration for threatened status.

Questions about Additional Analyses?



Source: NOAA Photo Library

Designating Salmonid Spawning Use for Dissolved Oxygen

Salmonid Spawning Criteria

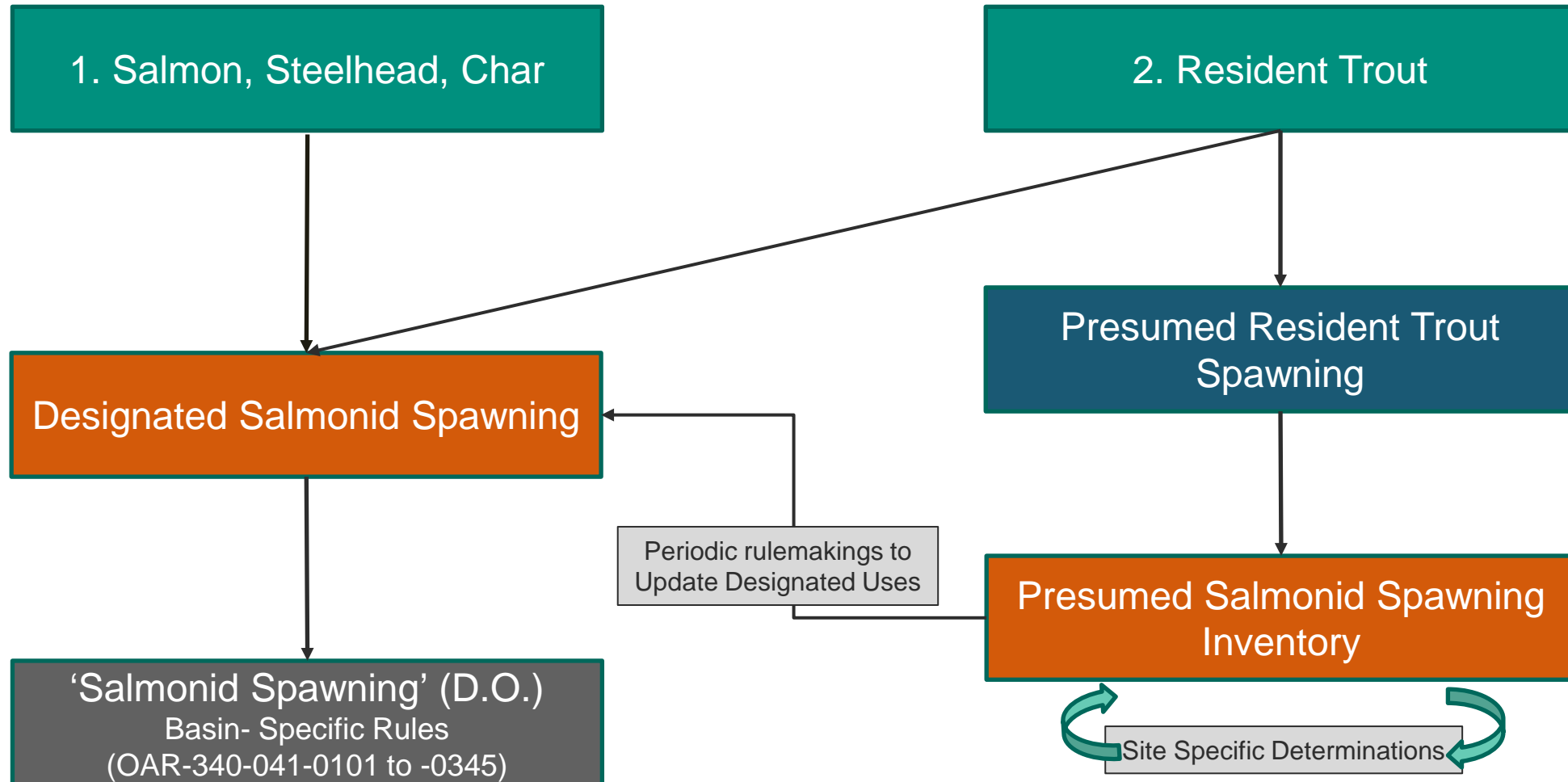
OAR-340-041-0016 (1)

“For water bodies identified as active spawning areas set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, 121B, and 190B, and Figures 130B, 151B, 160B, 170B, 180A, 201A, 220B, 230B, 260A, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species), the following criteria apply during the applicable spawning through fry emergence periods set forth in the tables and figures and, where resident trout spawning occurs, during the time trout spawning through fry emergence occurs.”

Class	Concentration and Period ¹ (All Units are mg/L)			
	30-D	7-D	7-Mi	Min
Salmonid Spawning		11.0 ^{2,3}		9.0 ²
				8.0 ⁴



Framework for Identifying Salmonid Spawning Uses (D.O.)



What is a “presumed use”?

- Not a term used in the Clean Water Act.
- Indicates waters not know if a use is an existing use or not.
- Criteria applied conservatively by default
 - In case sensitive uses are present
 - Until site-specific status of habitat is determined.
- Precedents:
 - Idaho DEQ - “presumed use”
 - California Water Boards – “potential uses”
- Further discussion in ‘Oregon’s Framework for Presumed Resident Trout Spawning Use ’

Presumed Resident Trout Spawning Inventory

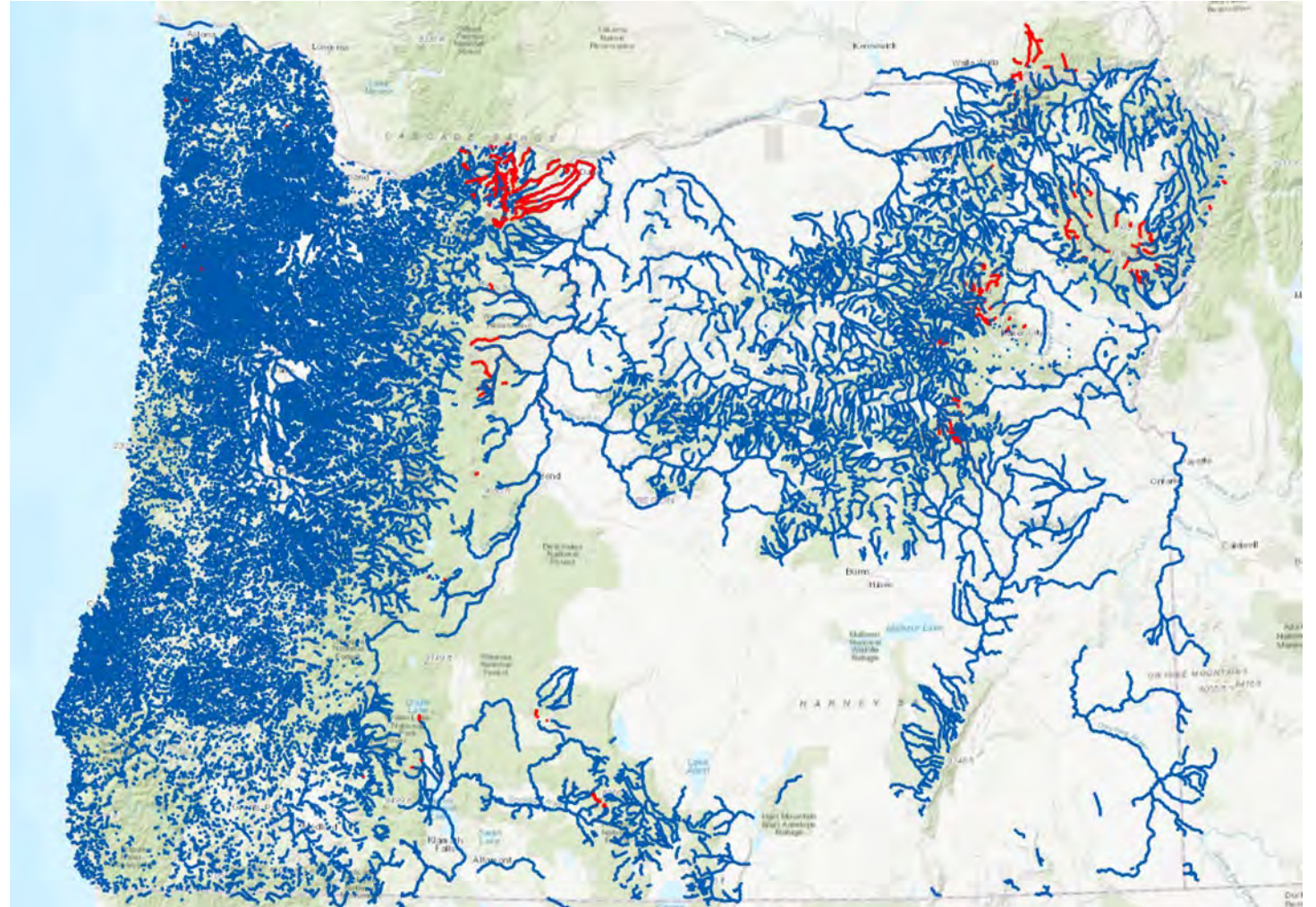
Spawning Habitat:

“primarily spawning”

- Rainbow Trout
- Coastal Cutthroat Trout
- Westslope Cutthroat Trout
- Redband Trout
- Mountain Whitefish

Potential Habitat:

- “resident – multiple uses” or “Unknown use”
- Upstream waters not designated.
- Not listed species
- Habitat and timing for Bull Trout and Lahontan Cutthroat Trout are handled separately.




Making determinations about status of resident trout spawning habitat

- Make a site-specific determination about resident trout spawning habitat
- Need to add or reference a procedure in the rule
- Any survey method used or approved by ODFW
- Consistent with ODFW's requirements for adding spawning habitat to the FHD.

October 2016

Oregon Department of Fish and Wildlife
Salmon Spawning Survey Manual



Spawning Survey Evaluation Form (Example)

REACH ID	SEGMENT #	SURVEY NAME	
ID # OF SURVEYOR COMPLETING FORM	DATE OF FORM COMPLETION		

PROBLEMS WITH SURVEYING THIS STREAM SEGMENT:

BARRIERS TO UPSTREAM MIGRATION:

APPROX. LOCATION (0.1 MILE)	NATURE OF BARRIER	DID IT BECOME	WERE SALMON

RANKING OF SPAWNING GRAVEL

Category	Description
None	No spawning gravel
Low	> 0 to < 20%
Moderate	20 to < 40%
High	> 40%

DISTRIBUTION OF SPAWNING GRAVEL

DOWN-STREAM BOUNDARY	LOCATION WITHIN	
	START TO 1/4	1/4 TO 1/2

DISTRIBUTION OF SPAWNING FISH (%)

DOWN-STREAM BOUNDARY	LOCATION WITHIN	
	START TO 1/4	1/4 TO 1/2

FISH DISTRIBUTION BASED ON:

HABITAT RANKING (circle): NO-HABITAT V

GENERAL COMMENTS AND ADDITIONAL COMMENTS (REVERSE SIDE)

Cold Water Use Designation Assessment Protocol




December 15, 2004

Iowa Department of Natural Resources



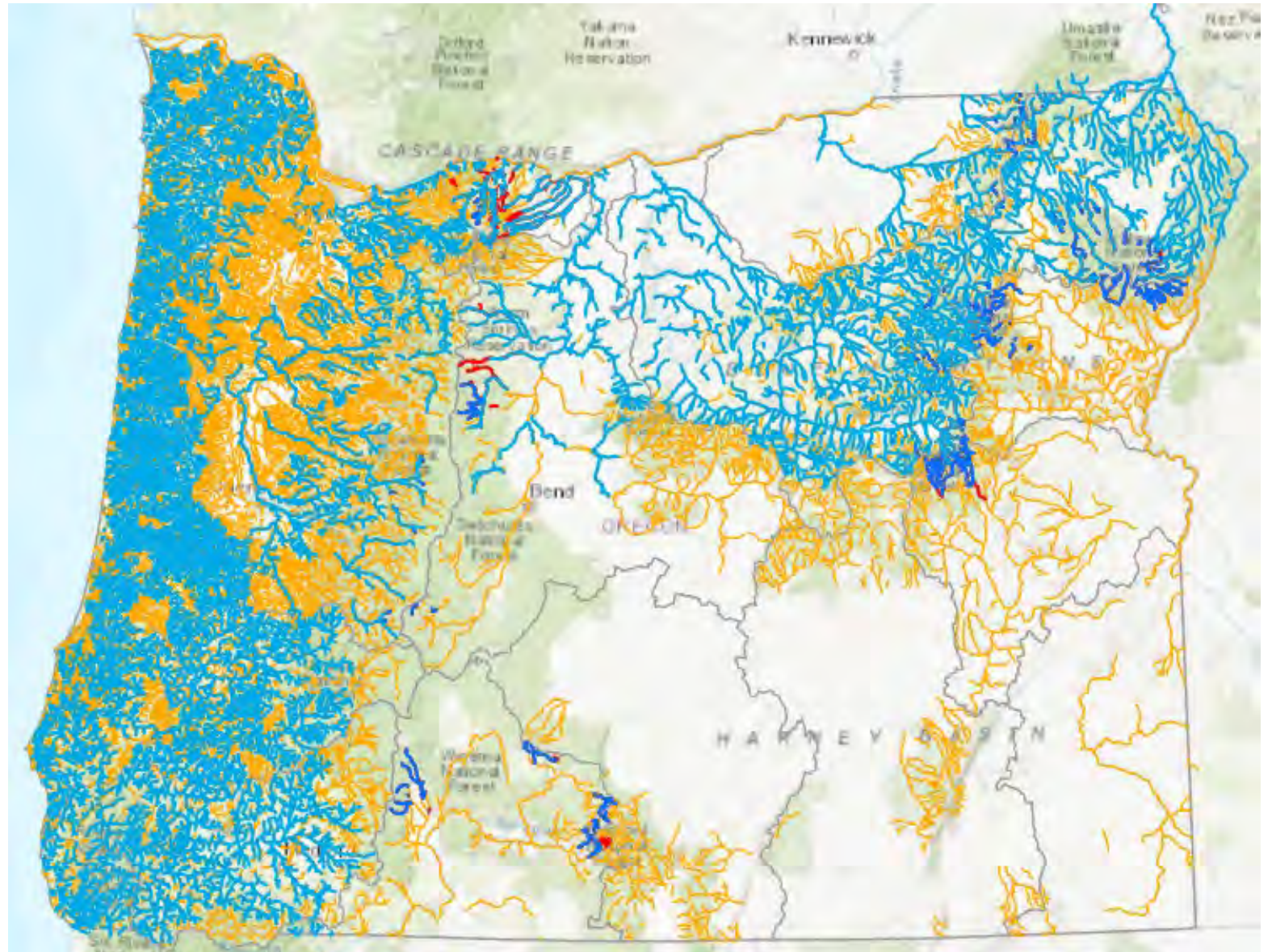
Applying D.O. spawning criteria to protect 'Salmonid Spawning' habitats

Designated Salmonid Spawning

-  Salmon & Steelhead Spawning
-  Bull Trout Spawning
-  Resident Trout Spawning

Presumed Salmonid Spawning

-  Presumed Resident Trout Spawning



Questions about Presumed Resident Trout Spawning Framework?



Source: NOAA Photo Library

Next Steps

- Final revisions with Interagency Technical Workgroup
- Provide a full discussion draft to RAC
- Opportunity to provide written comments.
- Follow up discussion at the last scheduled RAC meeting.

Further Questions?



Image Source: ODFW

Migration Corridors: Multiple Lines of Evidence

- DEQ Rules definition:
“predominantly migration” & “limited or no rearing”
 - Language based on knowledge at the time
- Current understanding:
 - “Seasonally cold” rivers that are not optimal rearing habitat in the summer.
 - Juvenile rearing may be supported widely in cool months.
 - “Limited” (off-peak) juvenile salmon & steelhead rearing in July/Aug.
 - Naturally exceed 18°C and reach $20^{\circ}\text{C}/68^{\circ}\text{F}$ in July/Aug.



Migration Corridors – Methods

1. 'Primarily migration' habitat

Species Common Name

- Chinook salmon
- Chum salmon
- Coho salmon
- Sockeye salmon
- Steelhead

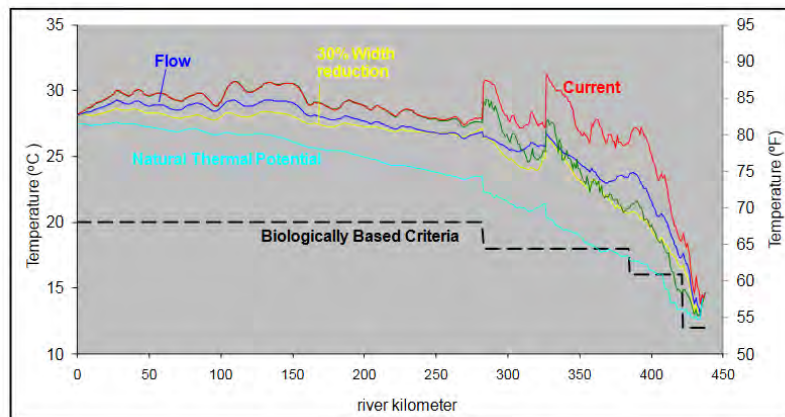


2. Temperature Evidence not currently attaining 18°C



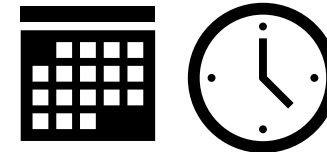
4. Naturally exceeding summer maximum temps.

Figure B-3. Predicted maximum 7DADM temperature profiles of the John Day River resulting from described scenarios during the model period, 2004.



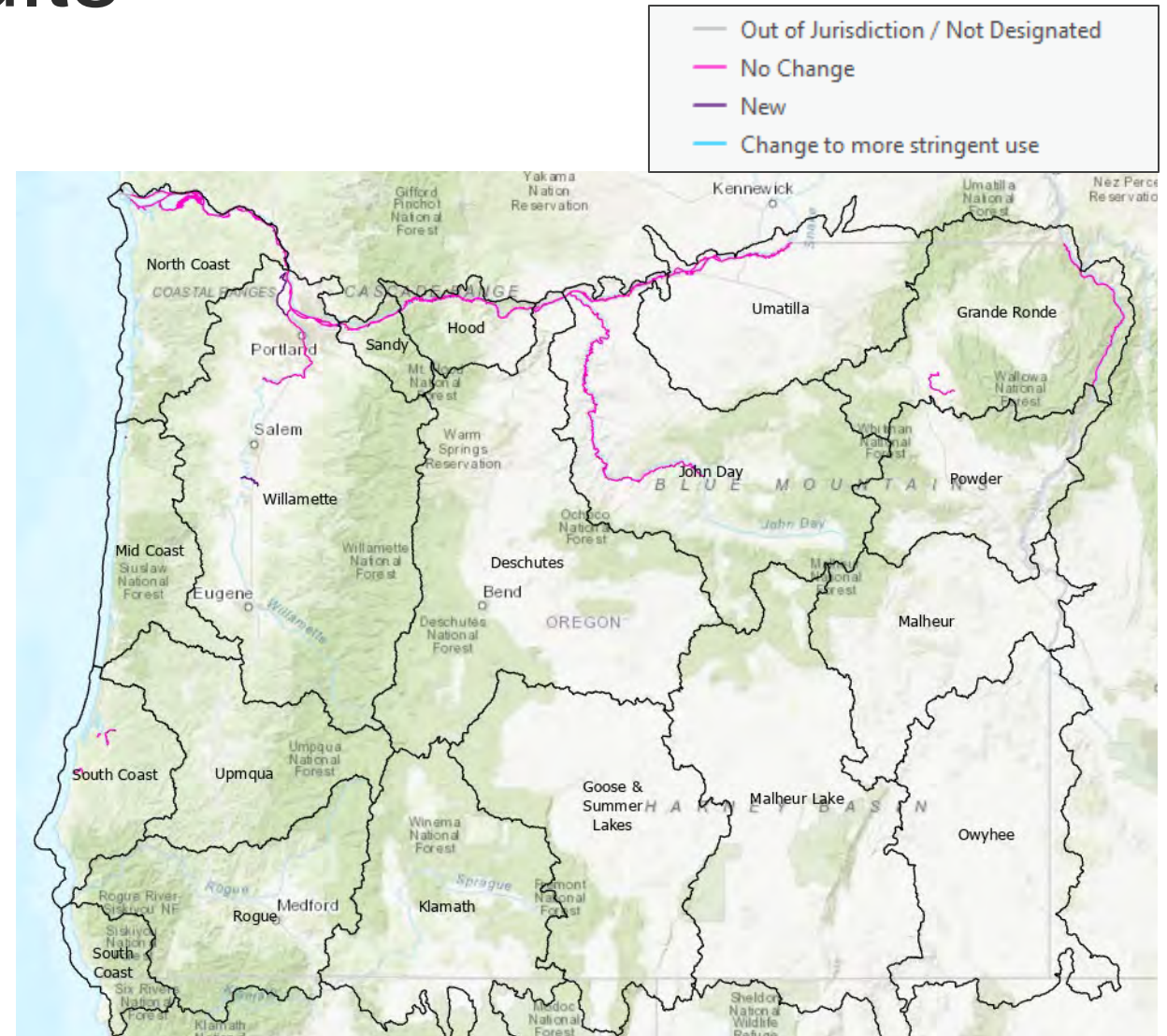
3. Timing of peak uses July 1- August 30:

- Rearing
- Adult Migration
- Adult holding
- Spawning, Incubation, or Emergence



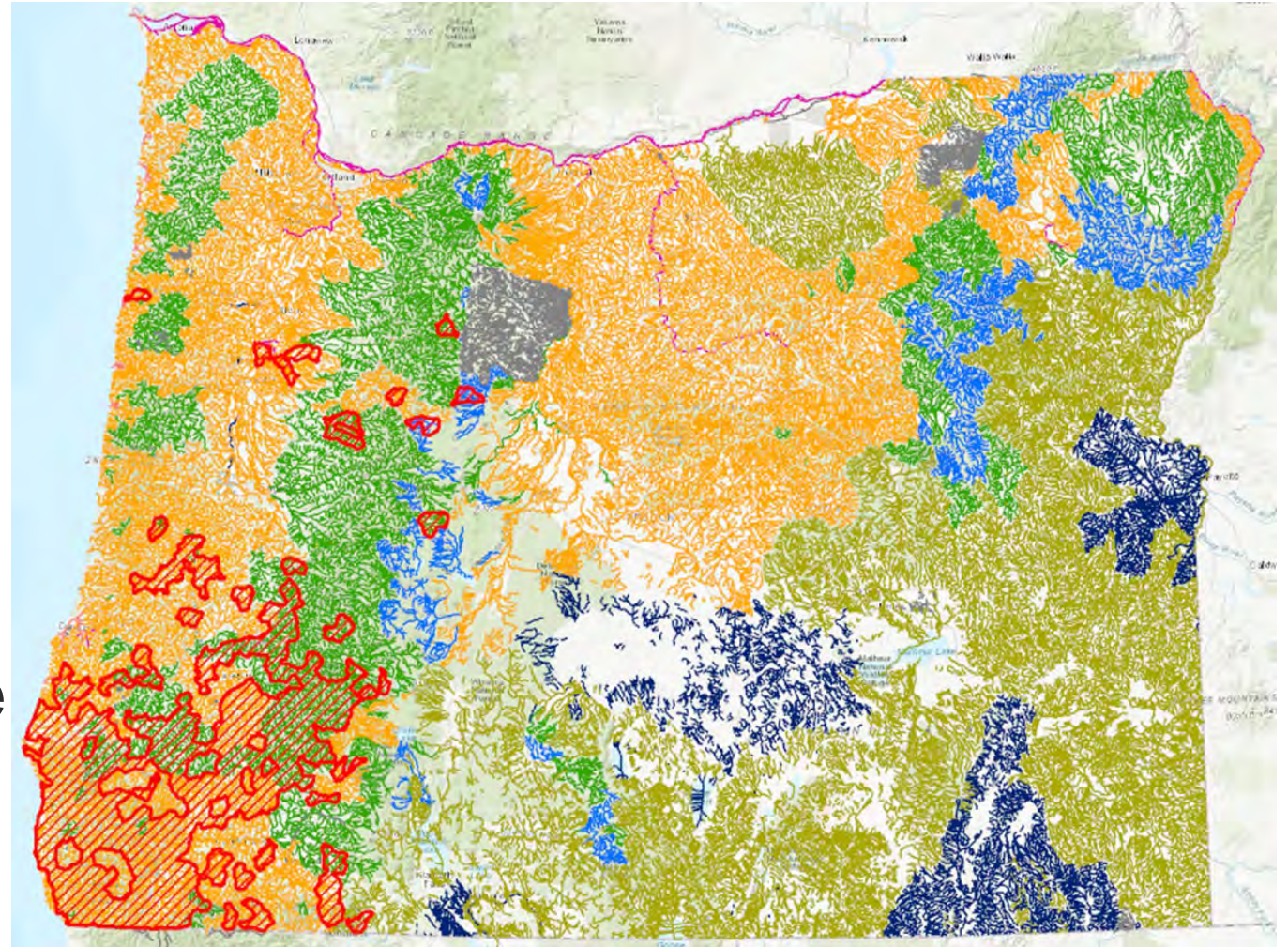
Migration Corridor Results

- Mostly unchanged
- New Candidates for the designation:
 - Multnomah Channel and Scapoose Bay
 - D River (Lincoln City, OR)
 - Lower Santiam River (RM 0-10)
- Rationale for use changes is detailed in the Use Change Justification (UAA) documentation


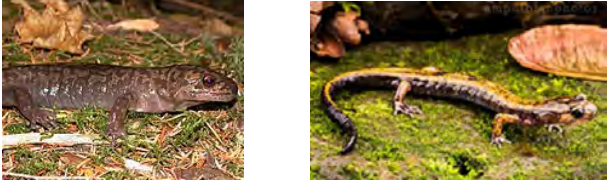



Thermal Requirements and Range

- Preferred range: 8-27°C
- Reproduction: 18-19°C, inhibited below 16°C
- Range overlaps Salmon & Trout Rearing and Migration and Core Cold Water Designations
- Oregon's criteria on cold side of supporting reproduction

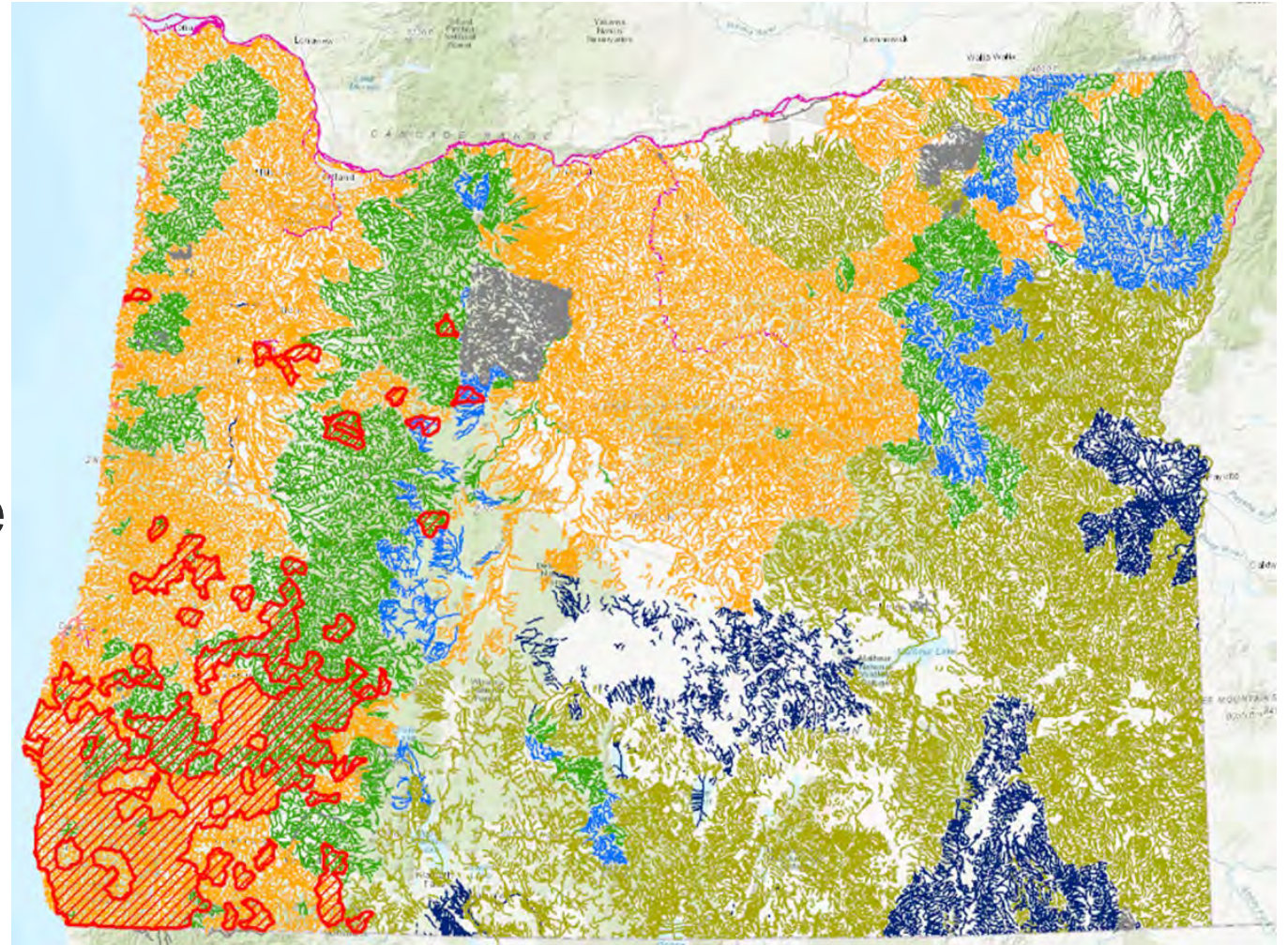


Indicator Species Evaluated

Pacific lamprey	 A photograph of a Pacific lamprey, a long, slender, eel-like fish with a yellowish-brown body and a row of seven pairs of gill openings along its side.
Cold water amphibians	 Two photographs of cold water amphibians. The left image shows a dark-colored salamander, possibly a Hellbender, resting on a mossy log. The right image shows a yellow-bellied salamander with a black dorsal stripe, resting on a mossy log.
Native Freshwater mussels	 A photograph of several native freshwater mussels resting on a rocky riverbed. The mussels have various shell colors and patterns, including some with prominent ridges.

Thermal Requirements and Range

- Preferred range: 8-27°C
- Range overlaps Salmon & Trout Rearing and Migration and Core Cold Water Designations
- Oregon's criteria on cold side of supporting reproduction



Oregon DEQ Aquatic Life Use Updates

Rule Advisory Committee Meeting #4

4. Documenting and justifying potential use changes

Jul. 27, 2022

Fiscal and Economic Impacts

Aquatic Life Use Updates Rulemaking

Rulemaking Advisory Committee Meeting #4

What is a fiscal impact statement?

- Identification of entities the proposed rule may economically affect
 - State agencies
 - Units of government
 - The public
 - Small and large businesses
- Projection of any significant economic impact
- Cost of compliance for affected businesses

ORS 183.335 (2)(b)(E)

- Requires a statement of fiscal impact identifying entities that may be economically affected by the proposed rule
- If possible, an estimate of the economic impact
- Utilize available information to project any significant economic effects
- Inclusion of a cost of compliance effect

ORS 183.333

- Advisory committee recommendations on:
 - whether the rule will have a fiscal impact,
 - the extent of that impact;
 - will rule have significant adverse impact on small businesses.
 - If so, recommendations on reducing economic impact on small business.

Proposed Rule Overview

- Proposed rule should not result in negative impacts to salmonid populations or other aquatic life
- Proposed rules will protect existing uses
- Increasing protections in waters where current uses were not correctly identified or sufficient

Overall Effects

- Possible positive and/or negative effects, costs largely unknown
- Updates to the subcategories will result in more stringent AND less stringent criteria
 - Most waters will not change designations
- ~ 43 NPDES-permitted facilities may be directly affected by criteria
 - 38 facilities impacted by temp criteria; 5 facilities impacted by DO criteria
 - Permitted dischargers may have increased costs with more stringent criteria
- May be a positive impact on tribal interests, recreational/commercial fisheries, jobs, water quality, water treatment costs

State and Federal Agencies

- Likely no increased cost to DEQ for assessment
- Cost may increase if permits become more complex to meet revised criteria
- If impairments occur, TMDLs will need to be developed

Local Governments

- Possible negative fiscal impacts if POTWs need to expend money to improve treatment processes
 - These costs are unknown
- May be aesthetic and recreational benefits for communities located near healthier and cleaner waterbodies

Public

- May have a positive economic impact in some regions
 - More protective WQ standards may positively influence fish populations
- Possible positive fiscal impacts on:
 - Commercial & recreational fishing
 - Jobs & income in fishing-dependent communities
- Negative fiscal impact may result if:
 - POTWs increase sewage treatment fees

Large Businesses

- PGE's hydroelectric facilities are not expected to be impacted
- Some NPDES permitted facilities that may be impacted are large businesses

Small Businesses

- Proposed rules should maintain and support the current economic benefits to:
 - Commercial, Recreational, & Tribal fisheries
 - No data exist to quantify exact impacts
- Increased protections of salmonid populations could result in a positive impact on recreation related businesses
 - Recreational retail, gear manufacturers, lodging, restaurants, fuel stations, etc.

Housing Cost & Land Use

- Housing Cost: No expected effect
- Land Use: No expected effect

Racial Equity

- Positive impact expected if proposed rules help support Tribal fishing interests
- Increased protections could benefit individuals and communities
 - Jobs and incomes related to fishing
 - Consumption of fish

Revising Definitions

- Revising cool and cold-water aquatic life definitions in the definitions rule is not expected to have any fiscal impact
 - Not expected to affect how DEQ applies DO criteria

Revised pH criteria

- Revised criteria will be consistent with neighboring basins and protects aquatic life.
- We don't expect fiscal impacts to the City of Prineville because we don't expect changes to permit limits for pH

Next Steps

- Please provide any additional information to be included in the next draft by August 10th

Questions and Discussion

- 1) What types of entities will be impacted by the proposed rule?
- 2) How and to what extent will the proposed rule have a positive, negative, or no impact on these entities?
- 3) To what extent will the proposed rule affect cost of compliance for small businesses (with under 50 employees) and large business (over 50 employees)?
- 4) Will the proposed rule positively or adversely impact racial equity?
- 5) Will the proposed rule influence housing costs?
- 6) Will the proposed rule influence land use?

Objectives

- Review of requirements for use attainability analysis.
- Overview of use updates resulting in less stringent criteria, including:
 - justification (UAA factors) to support updates
 - resulting (highest attainable) use.

Use Attainability Analysis

- UAA is required when...
 - State wishes to remove a fishable/swimmable use, to remove a sub-category of such a use, or to designate a sub-category of such a use that requires *criteria* less stringent than previously applicable.
- 40 CFR 131.3(g) – Use attainability analysis
 - “a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors...”

Regulatory background – UAA factors

Use cannot be attained due to...

Naturally occurring pollutant concentrations

Natural, ephemeral, intermittent or low flow conditions

Human-caused conditions or sources of pollution

Dams, diversions, or other hydrologic modifications

Physical conditions and natural features

Substantial and widespread economic and social impact

Regulatory background – highest attainable use

- Highest use and water quality feasibly attainable.
- Must at least attain existing use (use attained on or after November 28, 1975).

Use change rationale – background

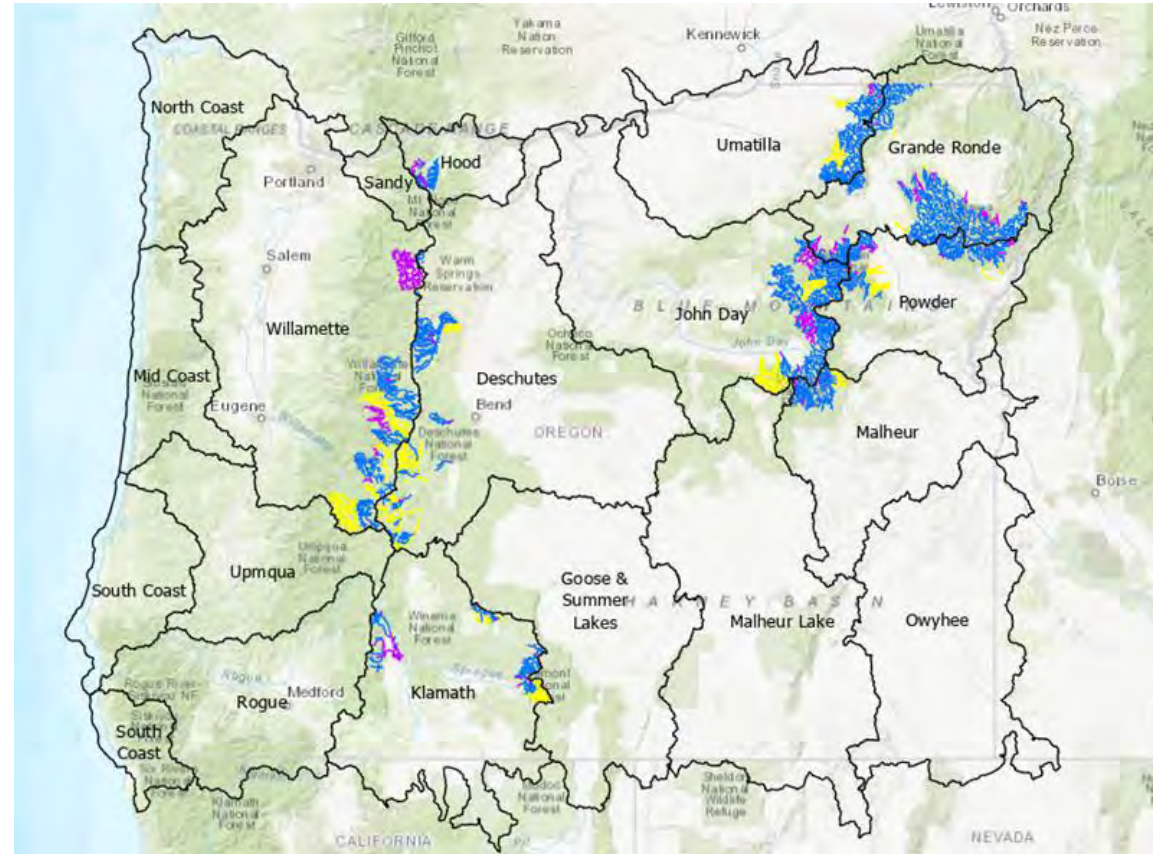
- Working with EPA to determine required information to justify use updates resulting in less stringent criteria.
- “Batch” similar changes for efficiency.
- ODFW considers habitat suitability, not only presence, in the fish habitat distribution database.

Presentation objectives

- Types of use changes
- UAA Factor
- Highest attainable use

Updates to bull trout spawning/rearing use

- No change
- New
- Change to less stringent use



Updates to bull trout spawning/rearing use

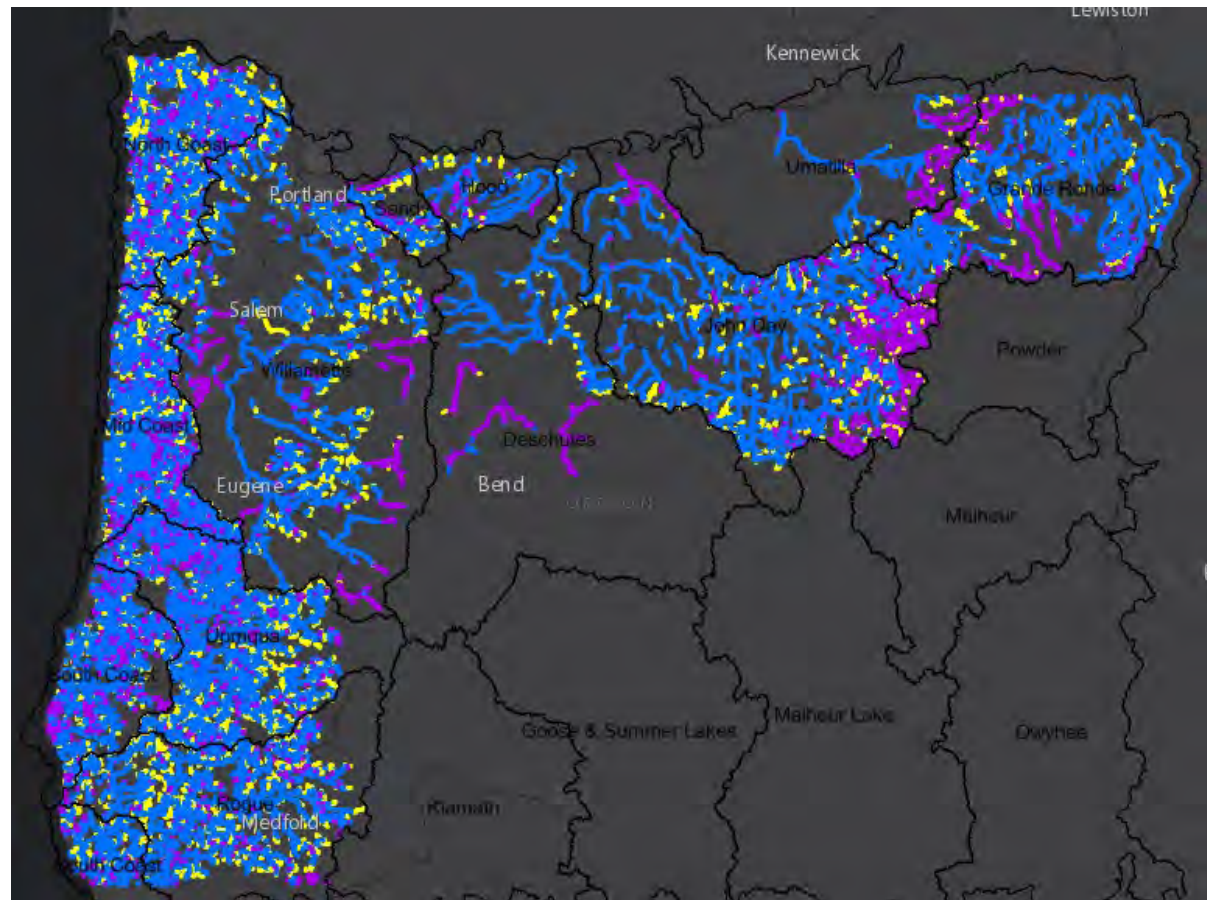
- Updates due to final critical habitat rule
 - Changing use where USFWS and ODFW agree that water is not current or **potential** bull trout spawning habitat.
 - Bull trout have narrow habitat requirements.
- Factor 5: “Physical conditions ...preclude attaining aquatic life protection uses.”
- Highest attainable use is Core Cold Water, except in Powder River Basin (Redband Trout).

Updates to bull trout spawning/rearing use

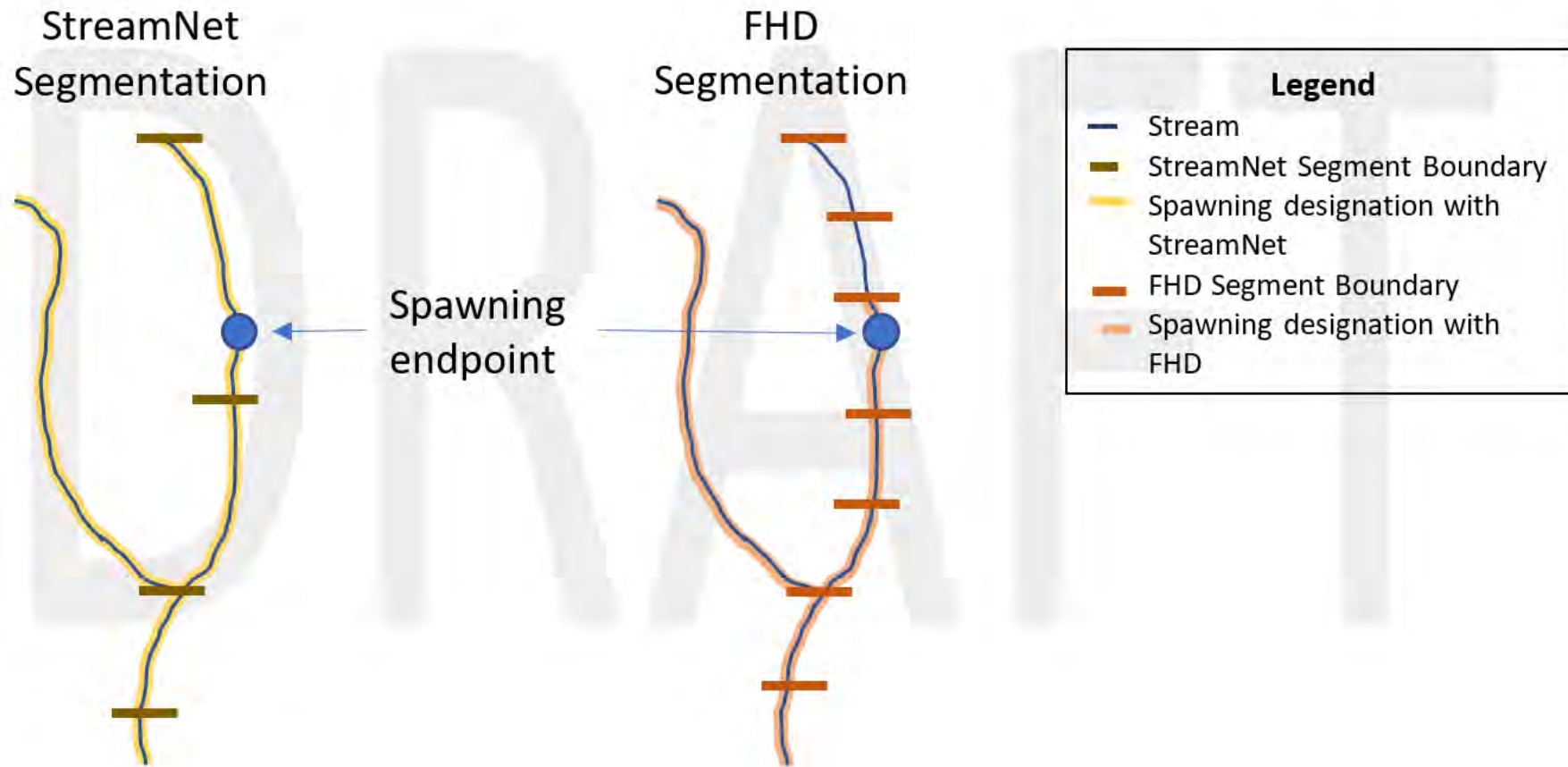
- Updates due to changes in ODFW data (FHD and Bull Trout Working Group).
- UAA Factor based on site-specific conditions
 - Naturally high temperatures in lakes or tributaries with temperature modeling or data (Factor 2 – Naturally occurring pollutant concentrations)
 - Certain reservoirs (Factor 4 – dams, diversions or other hydrologic modifications prevent attainment of use)
 - Intermittent or low flow tributaries or larger “high flow” rivers (Factor 5 – Physical conditions)
- Highest attainable use – core cold water

Updates to salmon/steelhead spawning use

- No change
- New
- Change to less stringent use



Updates to spawning due to improved GIS



Updates to spawning due to improved GIS

- No change
- Change to less stringent use

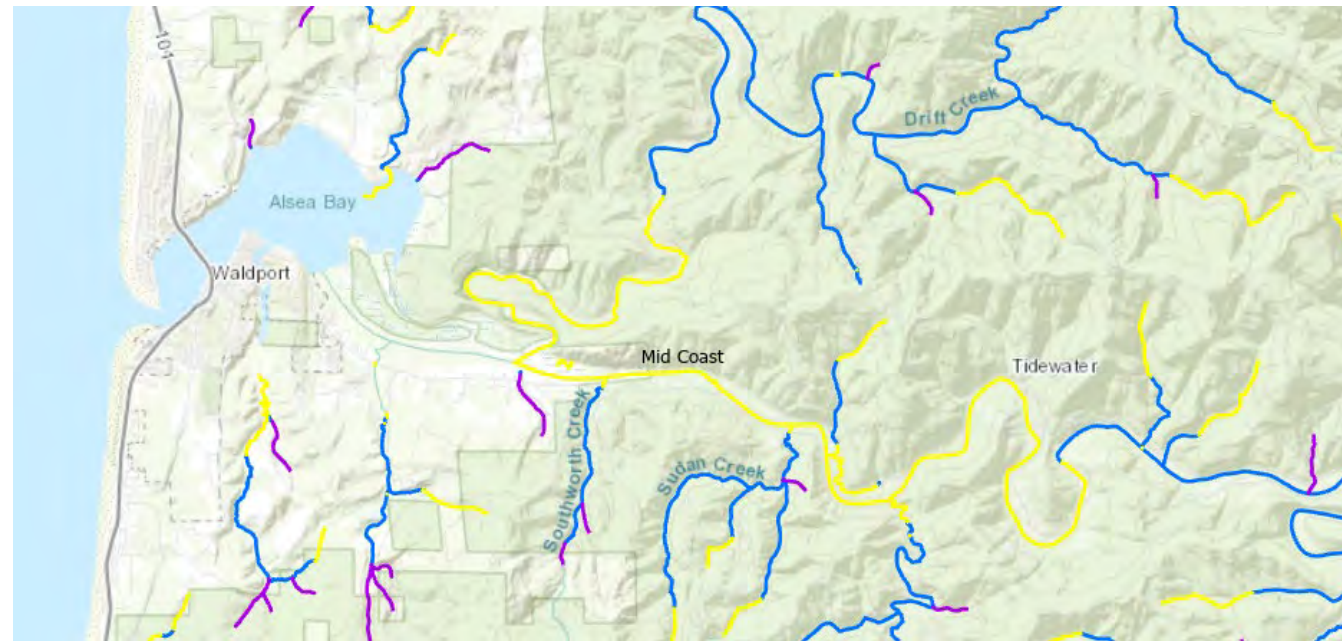


Updates to spawning due to improved GIS

- Did not update use if upstream spawning endpoint was due to a manmade barrier that can feasibly be removed, such as a culvert or small dam.
- Factor 5: “Physical conditions...preclude attaining aquatic life protection uses.”
- ODFW considers habitat characteristics when identifying spawning habitat.
- Highest attainable use - year-round use.

Updates to spawning use in estuaries

- No change
- New
- Change to less stringent use



Updates to spawning use in estuaries

- In 2003, some areas of estuaries and tidally influenced lower river segments were designated for spawning.
- Estuaries now more precisely mapped using CMECS.
- Factor 5: “Physical conditions ...preclude attaining aquatic life protection uses.” Habitat conditions do not support spawning in estuary due to flow, substrate, lack of D.O.
- Highest attainable use – year-round use, either rearing and migration or “oceans and bays.”

Updates to spawning due to ODFW data

- No change
- New
- Change to less stringent use

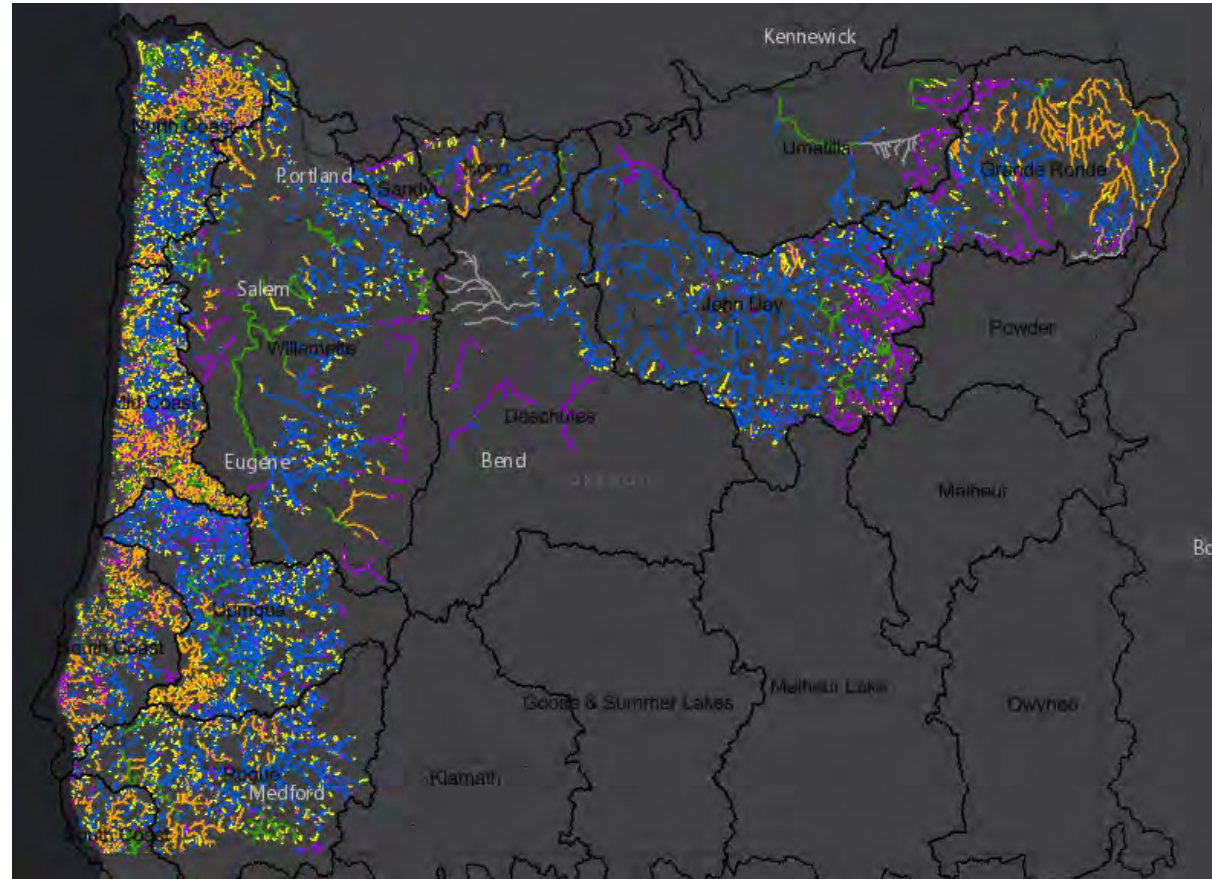


Updates to spawning due to ODFW data

- Small adjustments in ODFW spawning habitat distribution data based on additional habitat surveys since 2002.
- Factor 5: “Physical conditions...preclude attaining aquatic life protection uses.” ODFW considers habitat characteristics when identifying spawning habitat.
- Highest attainable use is year-round use.

Updates to spawning timing (end dates)

- Earlier
- No Change
- Later
- New
- No spawning
- Not determined

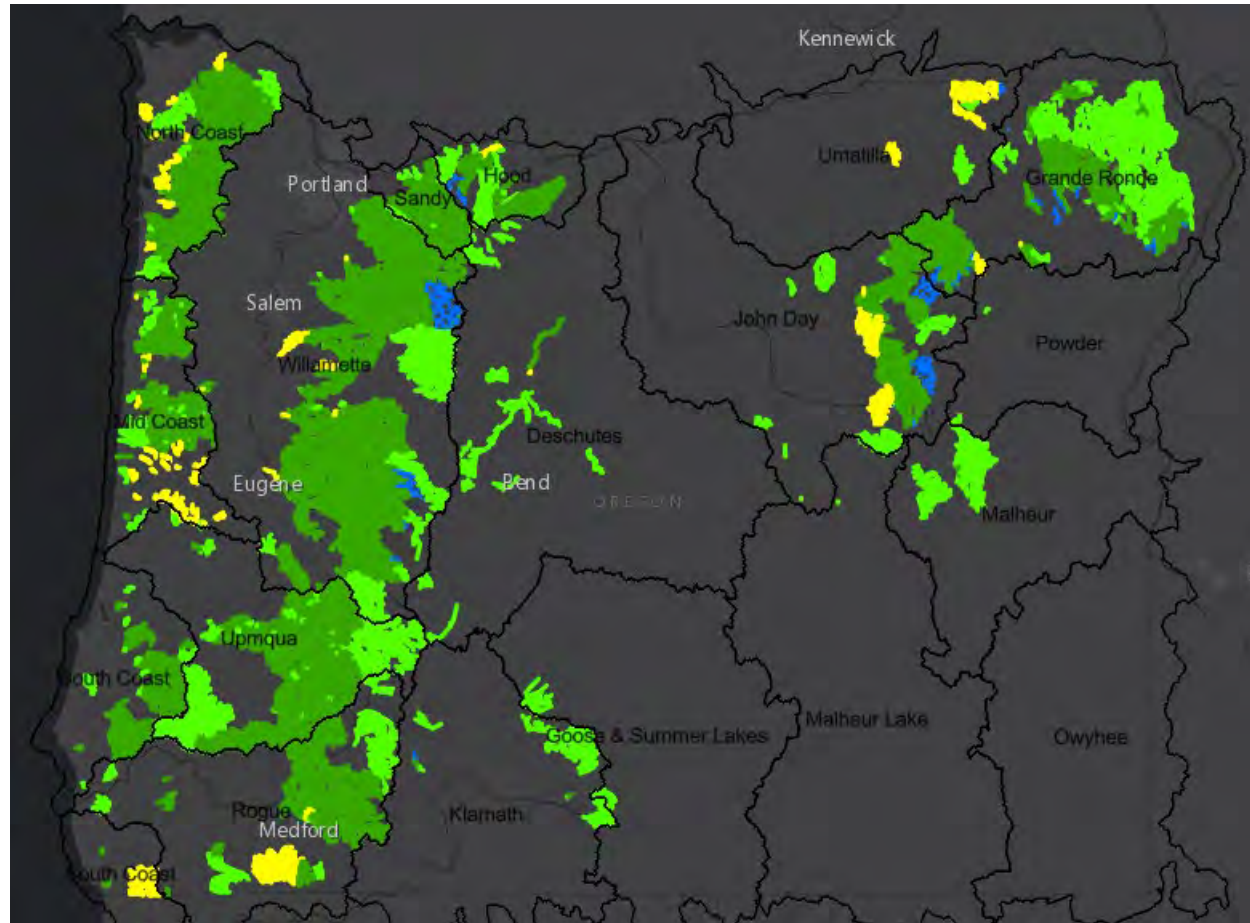


De minimis updates to spawning timing

- Small adjustments in ODFW spawning timing based on additional data since 2002.
- Having discussions with EPA regarding appropriate factor.
- Highest attainable use is year-round use during time when spawning is no longer the use.

Updates to core cold water use

- No change
- New
- Change to more stringent use
- Change to less stringent use



Updates to CCW use – early Chinook Spawning

- Primarily in Applegate River basin and McKenzie Basin.
- ODFW does not consider reaches as spawning for Spring Chinook.
- Factor 5 – “Physical conditions...preclude attaining aquatic life protection uses.”
- Highest attainable use – salmon and trout rearing and migration

Updates to CCW use – Anchor Habitat

- 2003: Designated CCW in North Coast and Siuslaw watershed areas identified as “anchor habitat” by Ecotrust
- Some of these are not core cold water (i.e. not less than 16° throughout the summer)
- Factor 5 – “Physical conditions...preclude attaining aquatic life protection uses.”
- Highest attainable use – salmon and trout rearing and migration


Updates to CCW use – Bull Trout FMO

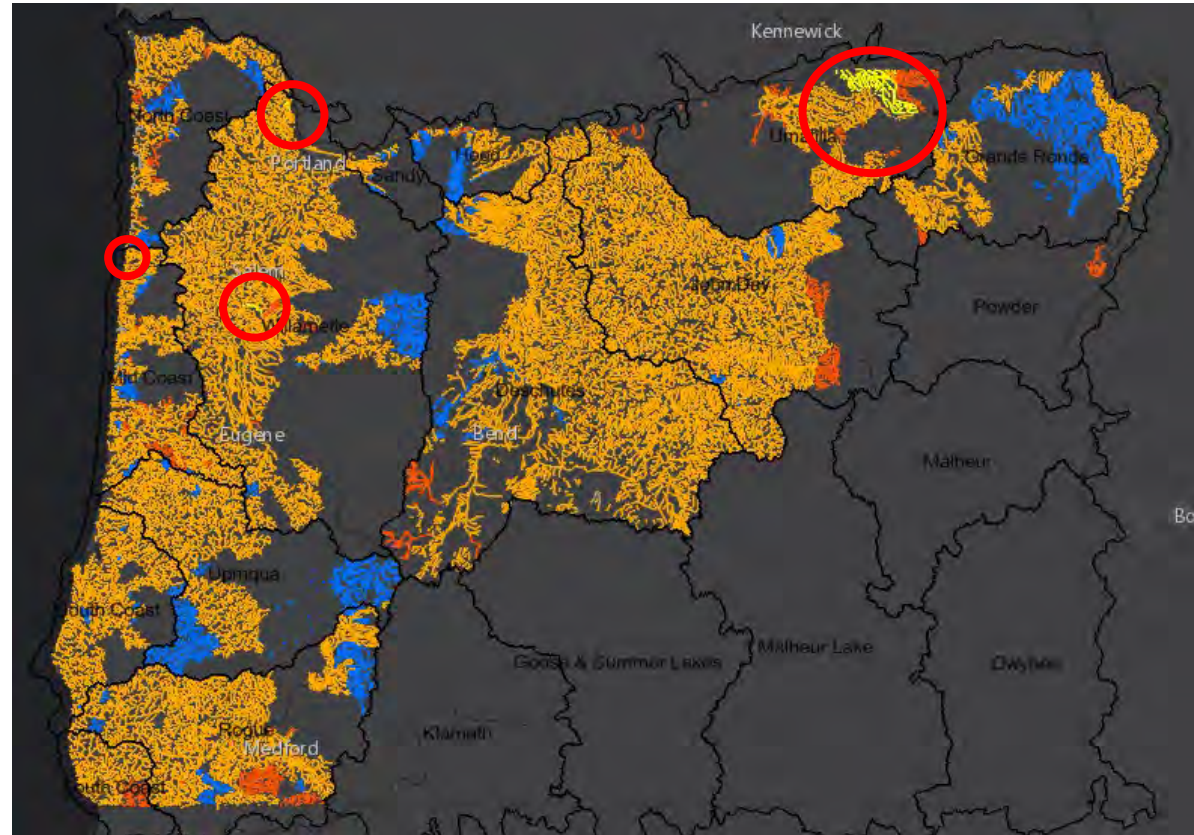
- 2003: designated waters as CCW if they support Bull Trout FMO use or rearing use during the summer
- Updating based on updated USFWS critical habitat designation and concurrence with ODFW.
- Updating three tribs in Hood River Basin inadvertently designated for CCW in 2003 due to upstream rule.
- Factor 5 – “Physical conditions...preclude attaining aquatic life protection uses.”
- Highest attainable use – salmon and trout rearing and migration

Updates to CCW use – NF Smith and Applegate Rivers

- NF Smith River in reference conditions and cannot attain 16 °C except in small headwater reaches.
- Modeling indicates Applegate River downstream of reservoir cannot attain 16 °C under natural conditions.
- Factor 2 – “Naturally-occurring pollutant concentrations...”
- Highest attainable use – salmon and trout rearing and migration

Updates to rearing and migration use

-  No change
-  New
-  Change to more stringent use
-  Change to less stringent use



Updates to rearing and migration use

- Walla Walla Basin.
 - Steelhead not present in tributaries to lower Walla Walla River.
 - Waters in arid area with warm summer temperatures and often intermittent flow; steelhead require cold, free-flowing water and clean gravel.
 - Factor 5 – “Physical conditions....preclude attaining aquatic life uses.”
 - Highest attainable use – redband trout

Updates to rearing and migration use

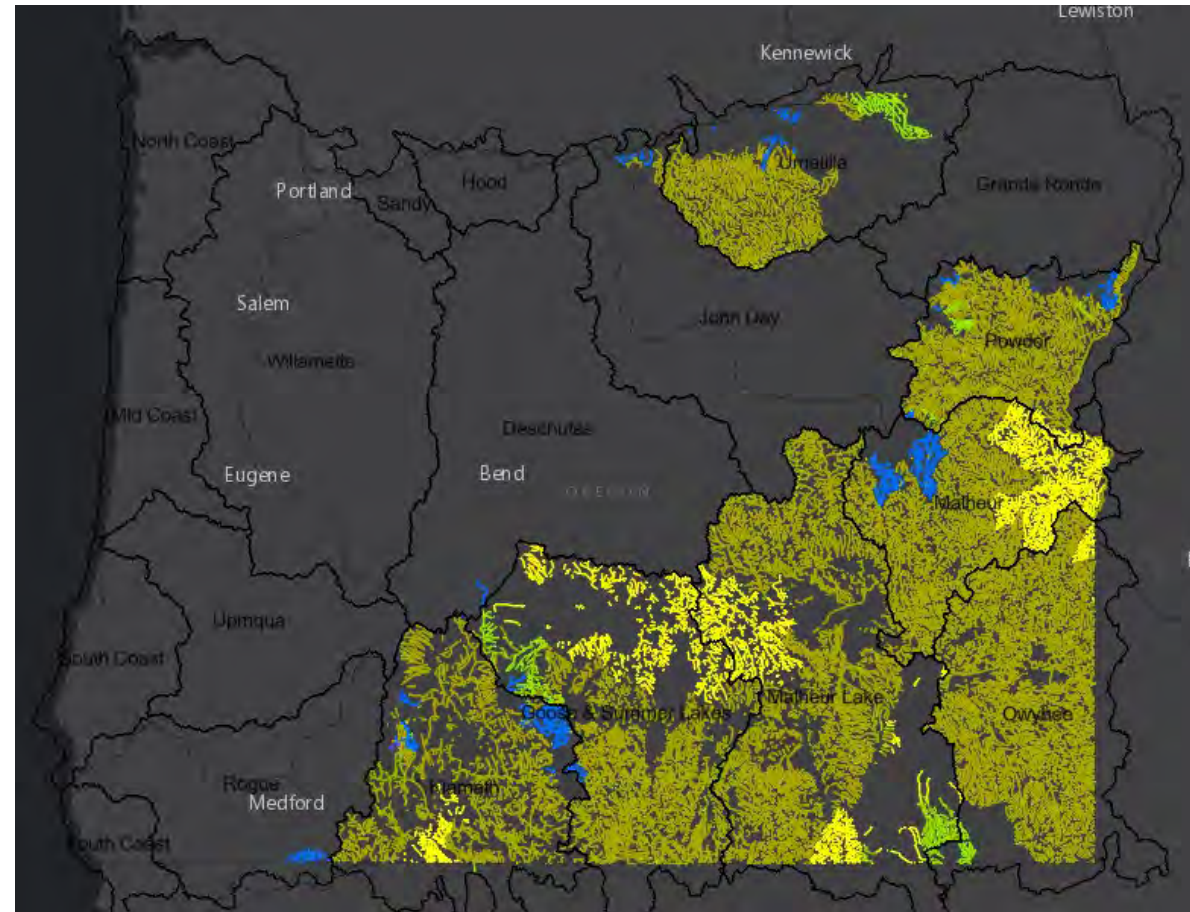
- D River
 - 440' stream that flows under Highway 101 connecting eutrophic Devil's Lake with the Pacific Ocean in Lincoln City.
 - No salmonid holding, migration, spawning or egg incubation during the summer.
 - Factor 5 – “Physical conditions....preclude attaining aquatic life uses.”
 - Highest attainable use – migration corridor

Updates to rearing and migration use

- Santiam River and Multnomah Channel.
 - Willamette Temperature TMDL modeling shows natural thermal potential temperatures exceed 18°C.
 - Presence of cool water species in these areas.
 - Factor 1 – “Natural occurring pollutant concentrations prevent attaining the use.”
 - Highest attainable use – migration corridor

Updates to Lahontan cutthroat and redband trout use

- No change
- New
- Change to more stringent use
- Change to less stringent use



Updates to redband trout use

- In 2003, assumed redband trout were present in SE Oregon basins without data.
- ODFW now has data on redband trout distribution and timing.
- Redband trout do not exist in certain areas; in low desert valley streambeds, they do not reside in July and August.
- Factor 5 – “Physical conditions....preclude attaining aquatic life uses.”
- Highest attainable use – migration corridor

Questions



Oregon DEQ Aquatic Life Use Updates

Rule Advisory Committee Meeting #4

Crooked River and Trout Creek Subbasin pH Criteria Updates

July 27, 2022

Background

- Current pH criteria adopted in 1996
- Protect aquatic life from impacts due to low or high pH
- Criteria vary by basin
 - hydrologic and geologic conditions lead to different naturally occurring pH ranges

Current pH criteria

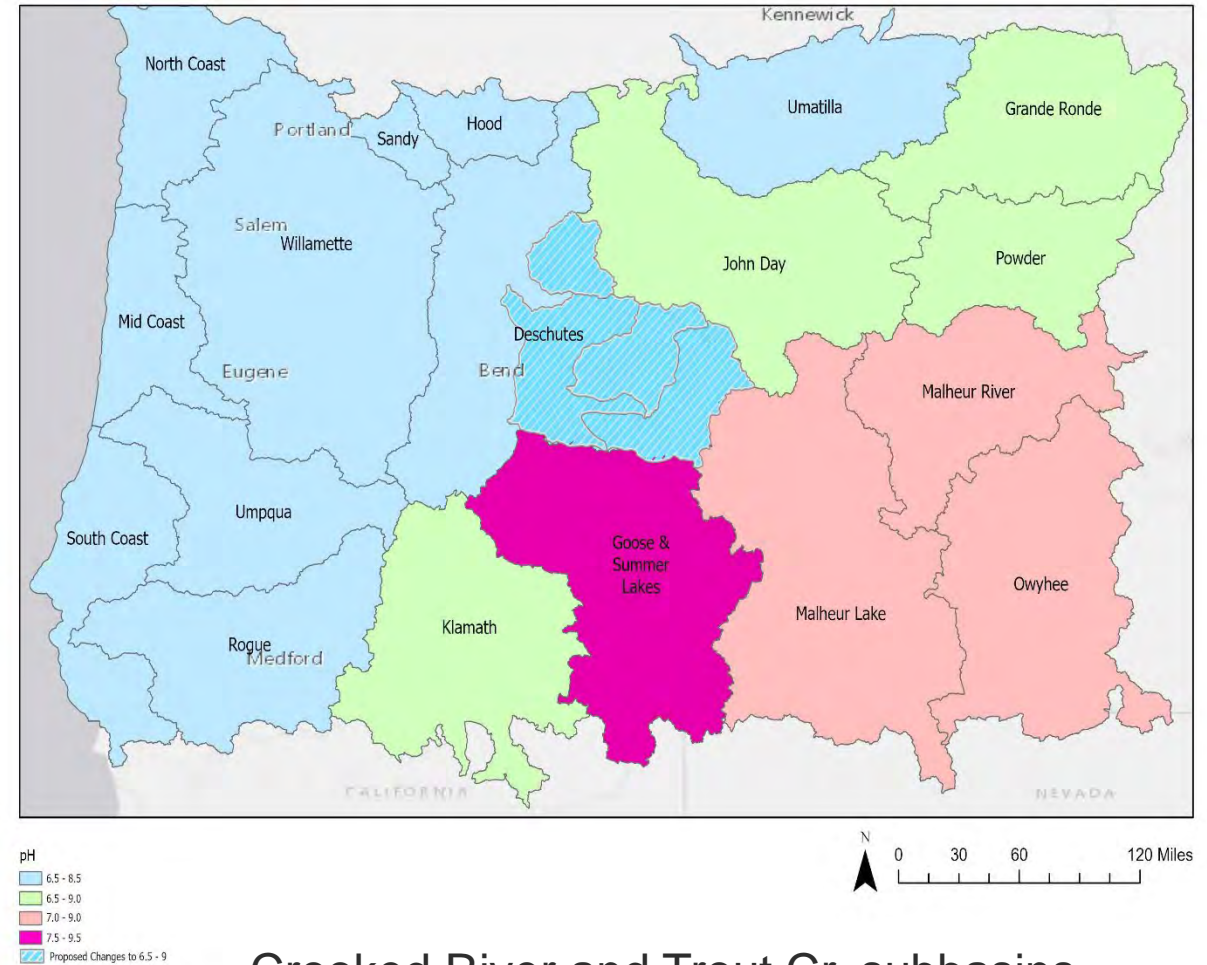
Coast, Western Cascades and Deschutes Basins:

- 6.5 – 8.5 (blue)

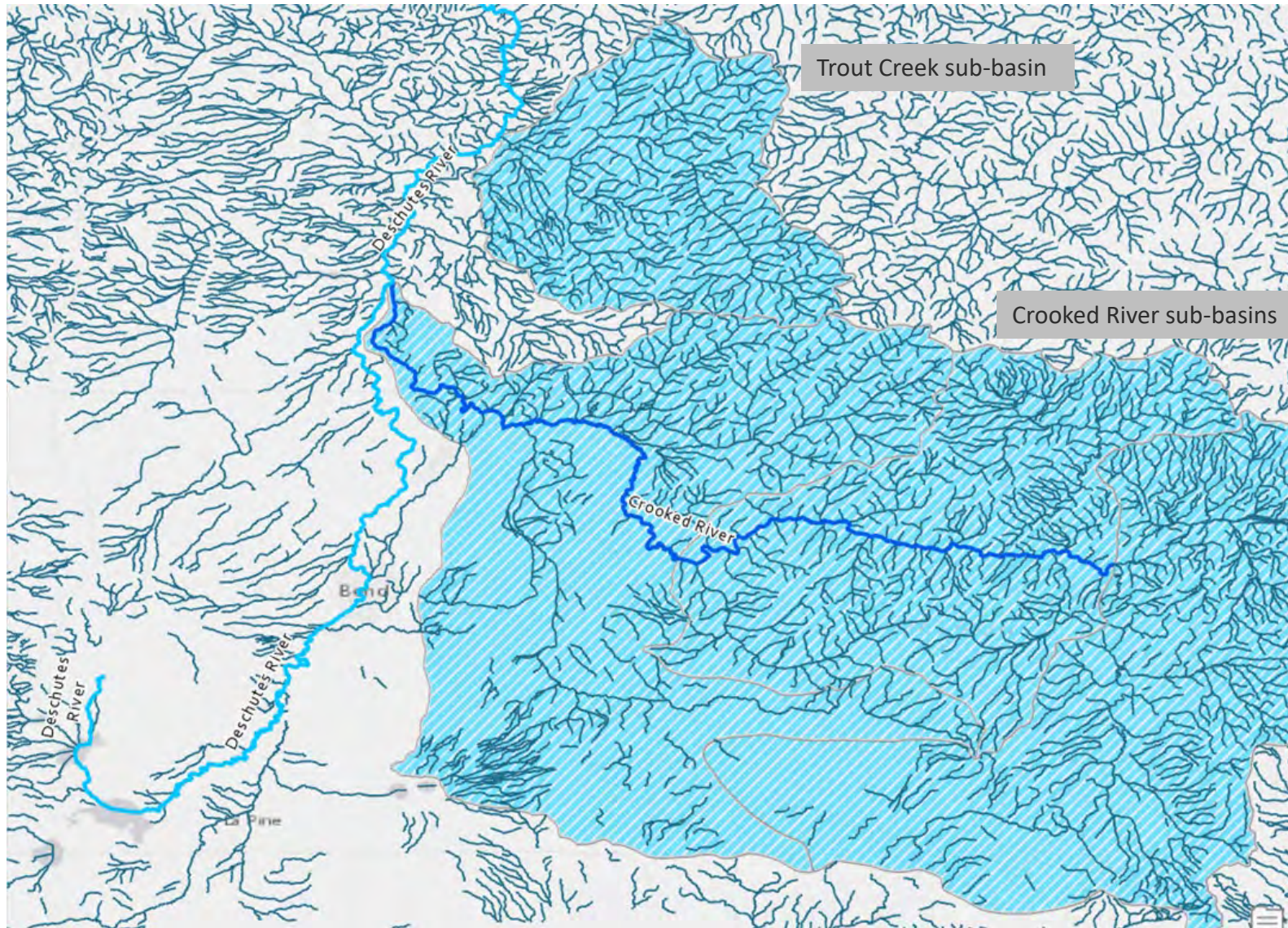
Eastern Basins :

- 6.5-9.0 (green)
- 7.0-9.0 (red)
- 7.5-9.5 (pink)

pH Criteria: Coded by Oregon Basin

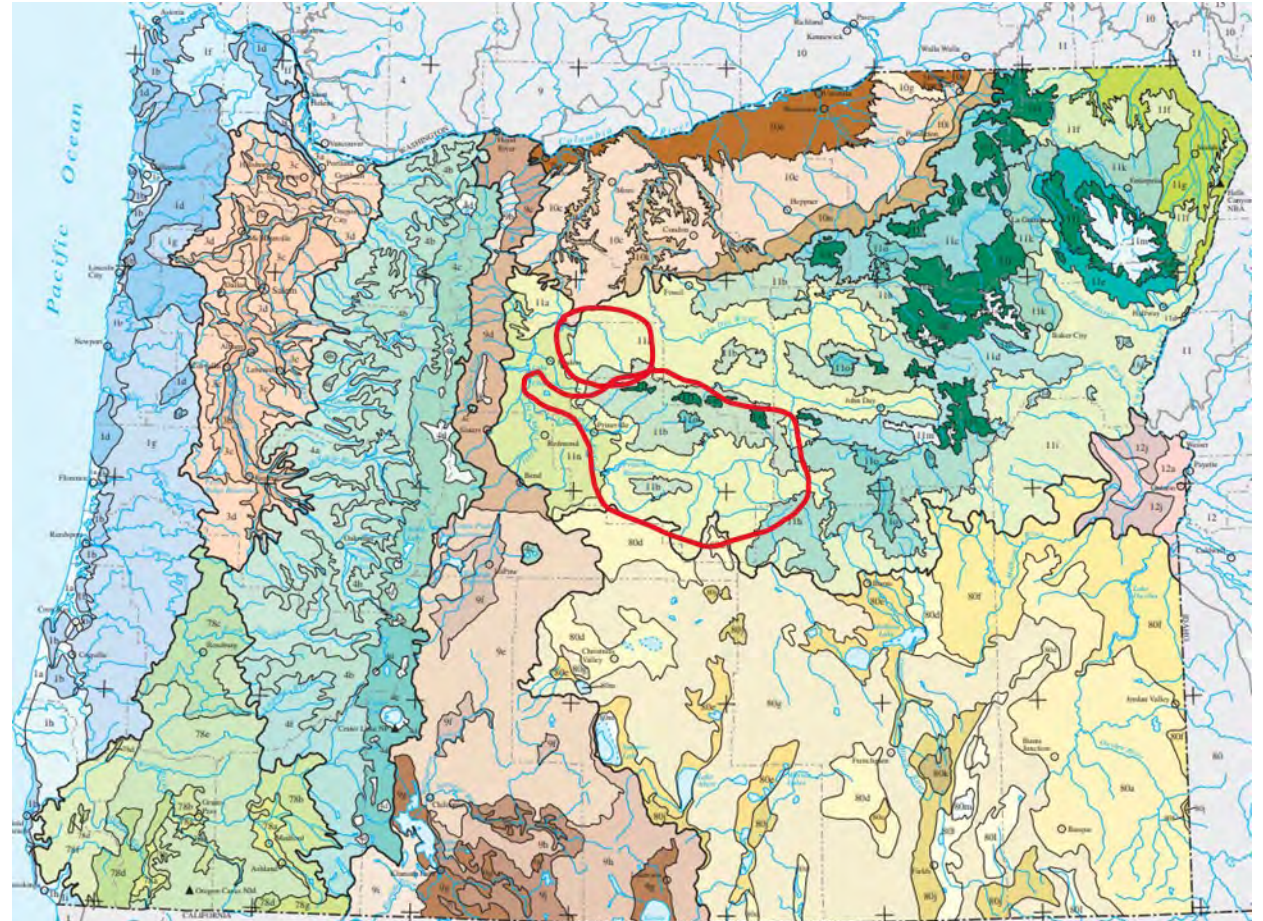


Crooked River and Trout Cr. subbasins are shown in blue and shaded.



Background – Ecoregions

- Crooked River & Trout Creek subbasins are approximated by red circles
- Ecoregion map shows how the hydrology, geology and vegetation of eastern Oregon differs from western Oregon and the Cascades



Aquatic Life Protection

- pH criteria protect aquatic life from impacts of pH
 - Impacts to salmonids occur at pH's higher than 9
 - Increasing acidity (*lowering* pH) can increase the toxicity of other pollutants
- High pH (> 9) and large daily swings in pH can indicate excessive plant and algal growth.
 - To limit algal growth, nutrients likely need to be reduced

Aquatic Life Protection

The proposed pH criteria of 6.5 – 9.0 is consistent with:

- EPA recommended criteria for aquatic life
- Endangered Species Act consultation in 1999
- EPA approval in 1999
- DEQ is not aware of new data or scientific literature showing impacts to aquatic life when pH is 8.5 – 9.0

Crooked River pH updates – Rule language

“pH values may not fall outside the following range: 6.5-9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.”

Reasons to correct

- pH levels in the Crooked River and Trout Creek are above 8.5
 - Listed as impaired, TMDL needed
- Accurate criteria result in appropriate TMDL targets
- Excessive algal growth may be indicated by pH greater than 9.0, or by exceedances of DO criteria, the biocriteria or the chlorophyll-a action level.
- TMDLs for excessive algal growth establish nutrient targets and load allocations.

Possible Effects of Criteria Change

- 2 assessment units on the Crooked R. are listed for phosphorus, biocriteria
- 1 assessment unit on the S. F. Crooked River will remain listed for pH; also listed for DO and phosphorus
- The TMDL will evaluate algal growth and target the appropriate pH criteria and nutrient loads to meet pH and DO criteria
- The pH criteria revision is not expected to change:
 - the Prineville POTW permit limit
 - Nonpoint source BMPs and restoration work to reduce nutrients

Questions



Oregon DEQ Aquatic Life Use Updates Rule Advisory Committee Meeting #3

6. Wrap Up and Adjournment
July 27, 2022

After this meeting:

- DEQ will send:
 - Draft meeting summary will be provided to the group
~1 week for review and corrections
 - Discussion Draft of TSD
- RAC provide any comments for revising the Fiscal Impact Statement by **August 10.**
- RAC provide any preliminary comments on UAA documentation **August 15.**
- Send comments to: aquaticlife.2022@deq.oregon.gov

Before the next meeting:

- DEQ will send the Final draft Technical Support Document
~3 weeks for review and comment
- 2nd Draft Fiscal Analysis Document
- Revised Aquatic Life Use Definitions Proposal

Final meeting:

- Planned Topics:
 1. Aquatic Life Use Definitions
 2. Final Thoughts Fiscal & Economic Impact Statement
 3. Opportunity for written comments:
 - Technical Support Document
 - Use Change Justification (UAA)

Any other topics you would like us to consider for the Agenda?

Project Schedule

Policy Creation & Rule Adoption Phase



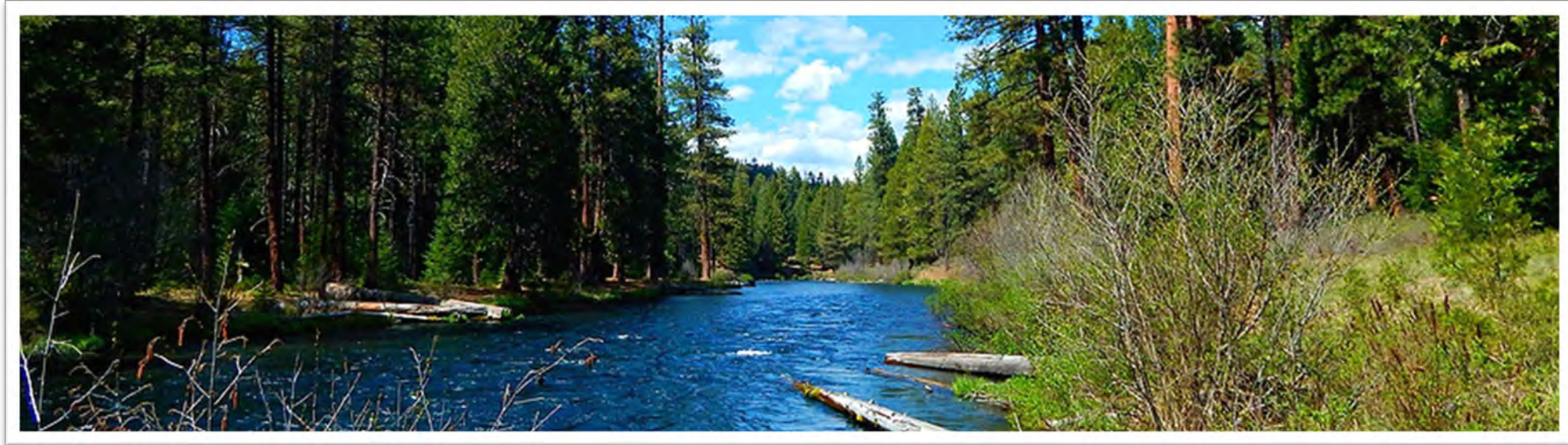
Progress

Questions before Adjournment?



Image source: NOAA Photo Library

Thank you



Metolius River, Oregon

Aquatic Life Rulemaking: aquaticlife.2022@deq.oregon.gov

James McConaghie, Aquatic Life Use Updates Project Lead:

james.mcconaghie@deq.oregon.gov or call (503) 229-5619

Website: <https://www.oregon.gov/deq/rulemaking/Pages/aquaticlife2022.aspx>