



CLATSOP COUNTY

BOARD OF COMMISSIONERS AGENDA WORK SESSION VIRTUAL MEETING

Wednesday, September 06, 2023

BOARD OF COMMISSIONERS:

Mark Kujala, Dist. 1 – Chair
Courtney Bangs, Dist. 4 – Vice Chair
John Toyooka, Dist. 2
Pamela Wev, Dist. 3
Lianne Thompson, Dist. 5

commissioners@co.clatsop.or.us

CONTACT:

800 Exchange, Suite 410
Astoria, OR 97103
Phone (503) 325-1000
Fax (503) 325-8325

www.co.clatsop.or.us

JOIN THE BOARD OF COMMISSIONERS VIRTUAL MEETINGS

Clatsop County Board of Commissioners host virtual meetings on Zoom

The Board remains committed to broad community engagement and transparency of government. To provide an opportunity for public testimony, the Board will host virtual meetings on Zoom.

Join the meeting from your computer, tablet or smartphone ([Zoom link](#))

You can also dial in using your phone.
1-253-215-8782

Meeting ID: 897 3329 6571
Passcode: 463525

WORK SESSION: 10:30 AM

Work Sessions are an opportunity for Board members to discuss issues informally with staff and invited guests. The Board encourages members of the public to attend Work Sessions and listen to the discussion, but there is generally no opportunity for public comment. Members of the public wishing to address the Board are welcome to do so during the Board's regularly scheduled meetings held twice monthly.

TOPICS:

1. County Manager Update
- [2.](#) Clatsop Community College Update {20 min} {Page 3}
- [3.](#) North Coast Watershed Association Presentation {20 min} {Page 9}

ADJOURNMENT

As necessary Executive Session will be held in accordance with but not limited to: ORS 192.660 (2)(d) Labor Negotiations; ORS 192.660 (2)(e) Property Transactions; ORS 192.660 (2)(f) Records exempt from public inspection; ORS 192.660 (2)(h) Legal Counsel

Agenda packets also available online at www.co.clatsop.or.us

This meeting is accessible to persons with disabilities or wish to attend but do not have computer access or cell phone access. Please call 325-1000 if you require special accommodations at least 48 hours prior to the meeting in order to participate.

Board of Commissioners Clatsop County

WORK SESSION AGENDA ITEM SUMMARY

September 6, 2023

Topic:	Clatsop Community College Update
Presented By:	Trudy Van Dusen Citovic, Board Chair, Clatsop Community College Kevin LaCoste, Interim President, Clatsop Community College

Informational Summary:	Clatsop Community Update
-----------------------------------	--------------------------

Attachment List

- A. PowerPoint Presentation
- B. Infographic

Update to Clatsop County Commission

September 6, 2023

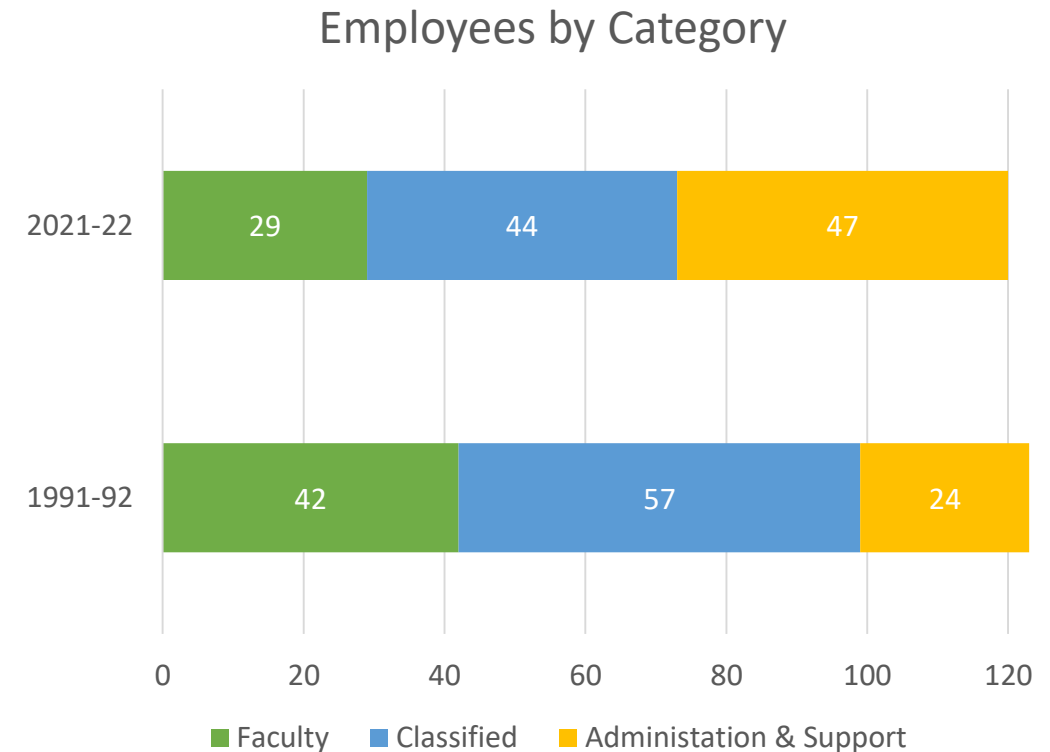
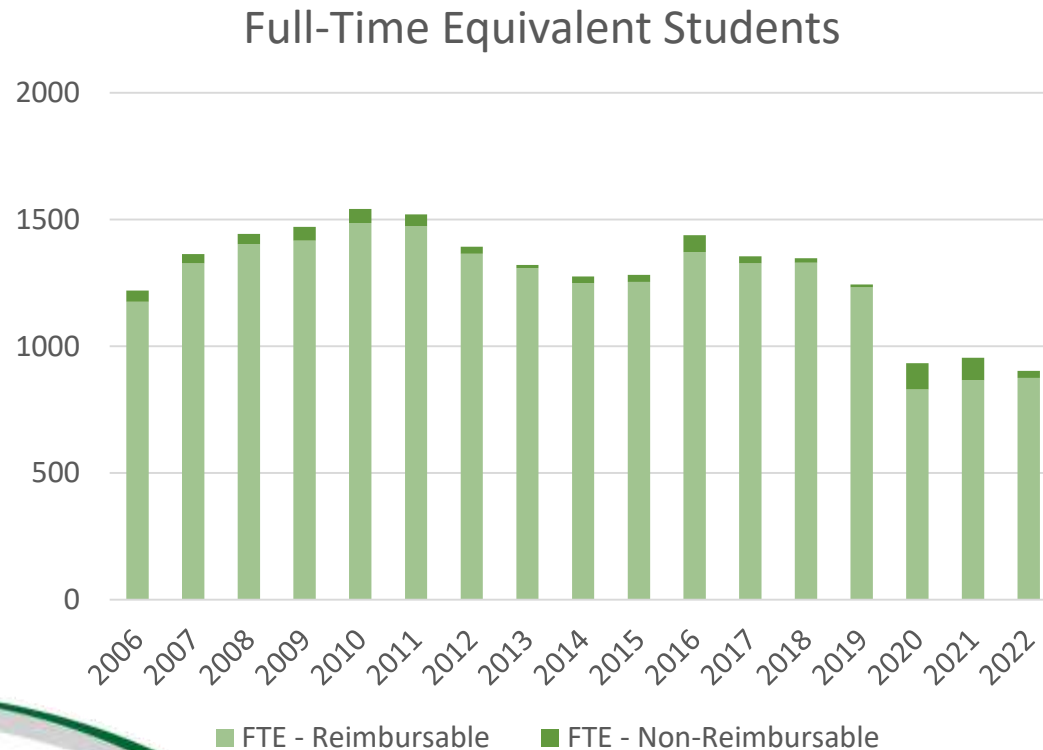


**Clatsop
Community
College**

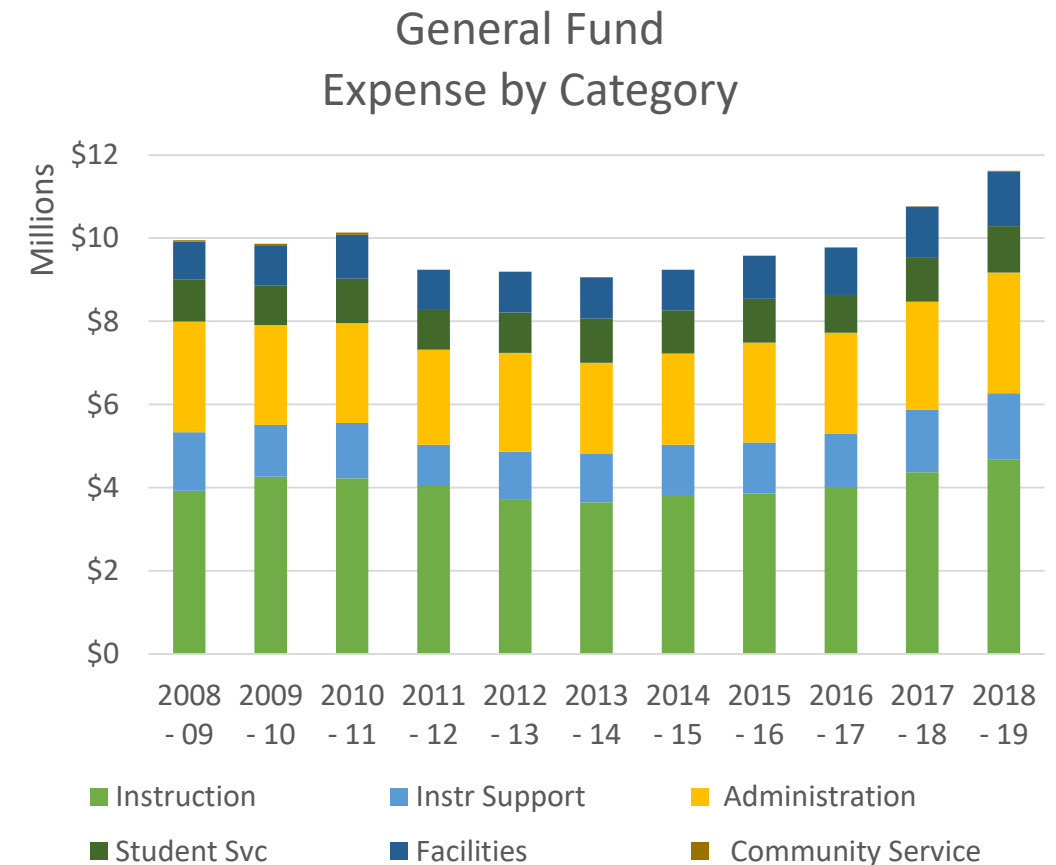
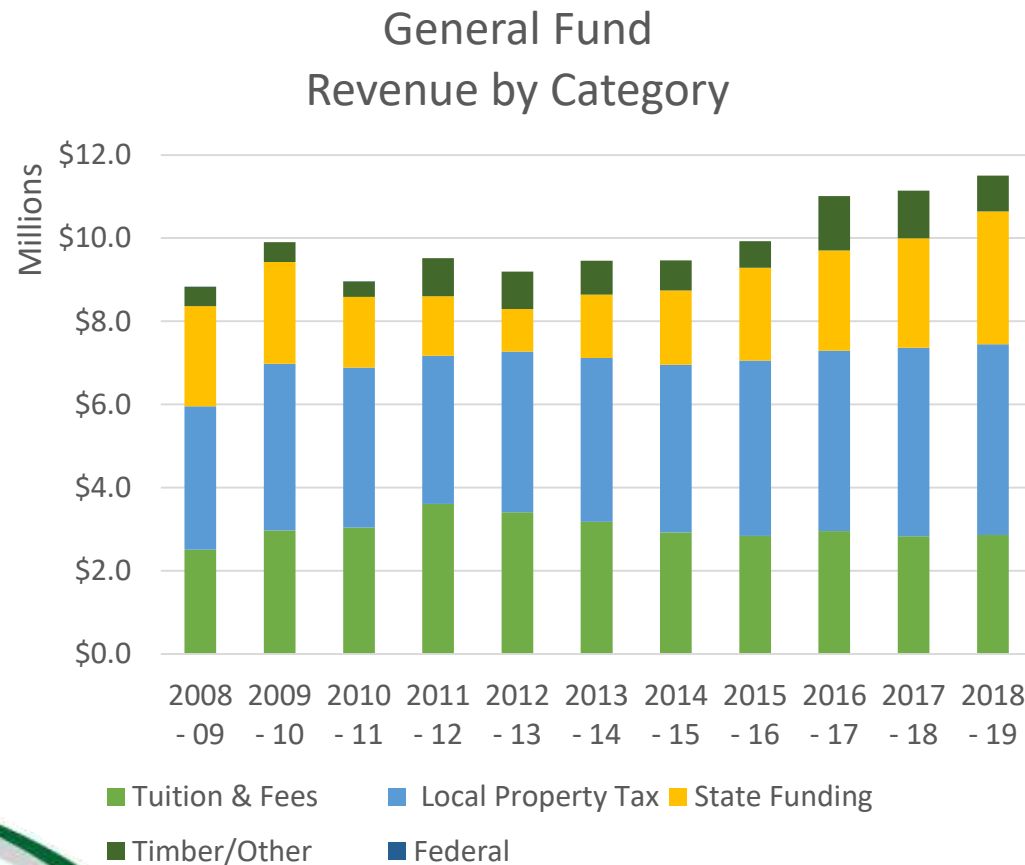
Clatsop Community College Update

- TRANSPARENCY – It's not always pretty
- FINANCIALS – Most precarious condition in CCC's 65-year history
- DISSERVICE – To CCC Students, CCC Employees & Clatsop County
- IT TAKES A VILLAGE – It's a Clatsop County problem that requires a Clatsop County solution
- FUTURE – We will not only survive, but prosper

Fewer Students & Faculty; 2x Administrators

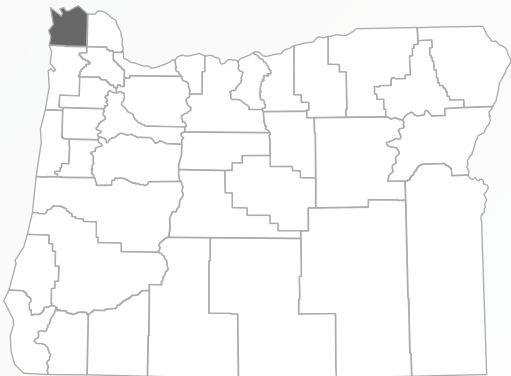
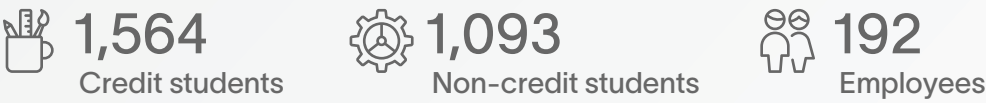


Greater reliance on outside funding & spending on support services



The Economic Value of Clatsop Community College

About CCC



Clatsop County, Oregon

Economic impact analysis

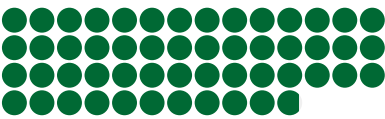


Alumni impact

Impact of the increased earnings of CCC alumni and the businesses they work for

\$97.4 million
Added income

1,321 Jobs supported



An economic boost similar to hosting the World Series
15x

OR



Operations spending impact

Impact of annual payroll and other spending

\$11.7 million
Added income

181
Jobs supported



Enough to buy **248** new cars

OR



Student spending impact

Impact of the daily spending of CCC students attracted to or retained in the county

\$3.5 million
Added income


54 
Jobs supported

Agenda Item #2.



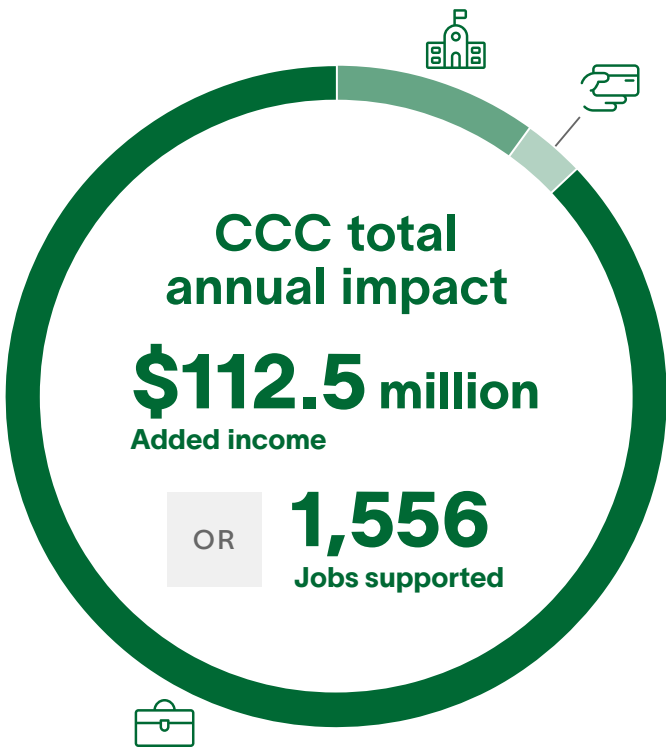
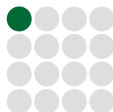
Enough to buy **279** families*
a year's worth of groceries

OR

 = 25 jobs * = family of four

1 out of every **16**

jobs in Clatsop County is supported by the activities of CCC and its students.



Investment analysis



For every \$1...



Students gain **\$6.30**
in lifetime earnings



Society gains **\$5.10**
in added income and social savings

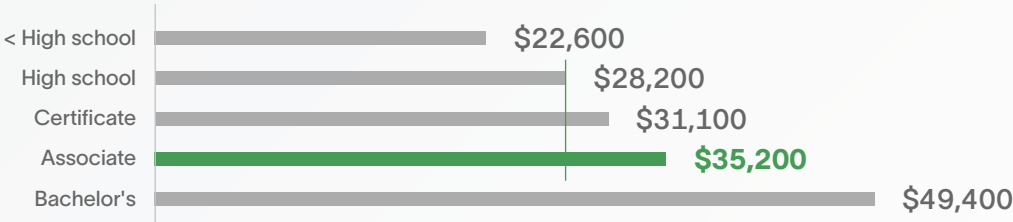


In total...



Taxpayers gain **\$10.8 million**
in added tax revenue and public sector savings

The average associate degree graduate from CCC will see an increase in earnings of **\$7,000** each year compared to someone with a high school diploma working in Oregon.



Board of Commissioners Clatsop County

WORK SESSION AGENDA ITEM SUMMARY

September 6, 2023

Topic:	North Coast Watershed Association Presentation
Presented By:	Gail Henrikson, Community Development Director

Informational Summary:	North Coast Watershed Association staff will present information regarding an on-going grant project related to roadway run-off water sampling.
-------------------------------	---

Attachment List



North Coast Watershed Association (NCWA)

A non-profit, non-regulatory organization made up of local watershed councils.

NCWA Mission

To improve watershed health through community-based efforts.





The **North Coast Watershed Association** is a non-profit organization made up of diverse stakeholders from the community who coordinate, fund, and link watershed councils to community-based efforts to improve watershed health on the north coast of Oregon and in the Columbia River estuary.

Our Current Work in 2023

Return of the Redds

Campaign for restoring Chum salmon

Water Quality Monitoring

Water temperature and other inputs tested

Rapid Biological Assessment and Limiting Factors Analysis Light

Snorkel surveys with Bio-Surveys LLC to count juvenile salmon and trout assess habitat factors

North Coast Watersheds Web Map

Stakeholder engagement tool for scoping restoration and enhancement projects

Restoration and Enhancement Projects

Ongoing...



The **North Coast Watershed Association** envisions healthy watersheds that support optimally functioning ecological processes and sustainable populations of naturally spawning fish, wildlife and human communities. We believe that by bringing back the social, economic and ecological role of salmon, the overall health of the watershed and our communities will improve.

Where we work

Our service area and partnership service areas







INTRODUCING RETURN OF THE REDDS

Introducing **Return of the Redds**, a collaboration between the North Coast Watershed Association, local landowners, the forest products industry, nonprofits and state/federal agencies all united around a common goal:

**To revitalize the once-abundant
Big Creek and Youngs Bay
watersheds
and chum salmon populations.**



BASIC PROJECT DETAILS

Goal:

- To restore habitat and increase local chum salmon populations

Timing:

- Began Jan. 1, 2021, habitat restoration work starting in 2022

Project areas:

- The Youngs Bay and Big Creek watersheds

Funded by:

- State, federal and nonprofit partners

Cost to landowners:

- \$0



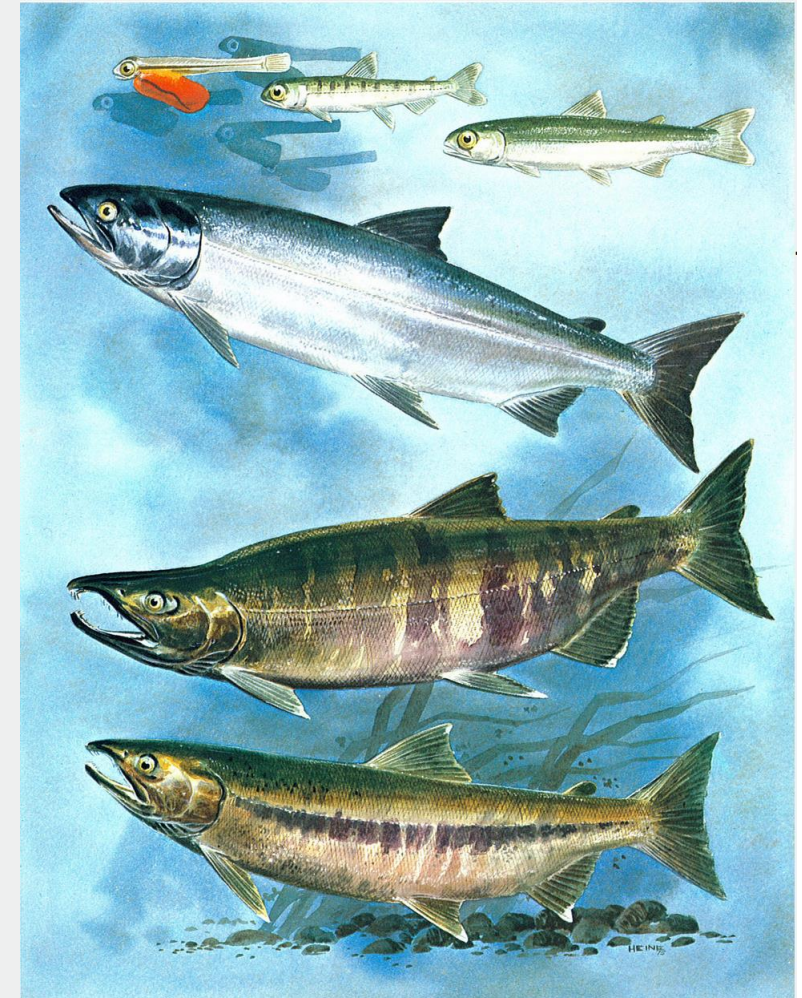
RETURN OF THE REDDS PROJECT AREA





CHUM SALMON: A QUICK OVERVIEW

Oncorhynchus keta is a Pacific salmon, also known as dog, keta and silverbrite salmon. The name chum comes from the Chinook Jargon term tzum, meaning "spotted" or "marked," while keta (the species name) comes from the Evenki language of Eastern Siberia via Russian.





CHUM SALMON: A QUICK OVERVIEW

Why focus on chum?

- spawning habits, improving habitat, adding nutrients

Are chum in trouble?

- vulnerable habitat, on the decline, threatened species

The chum lifecycle

- spawning in lower reaches, peaking in Nov., 3-6 years at sea

Chum and the food web

- providing nutrients for critters, bugs and humans



WHAT DOES RESTORATION MEAN?

Habitat Structure Restoration:

- A project-based approach
- Add large wood, increase off-channel wetlands, protect riparian areas/floodplains, remove invasive species, replant native vegetation

Ecological Process Restoration:

- A long-term approach
- Build relationships and trust with new partners, stream surveys, decommission roads no longer in use, identify areas to upgrade



LANDOWNER AND STEWARD PARTNERS



One of the most important aspects of Return of the Redds is landowner and land steward participation. Restoring stream habitat is good for fish **and** good for folks.





LANDOWNER AND STEWARD PARTNERS

Return of the Redds will be asking landowners and land stewards to be a part of the project in a variety of important ways including:

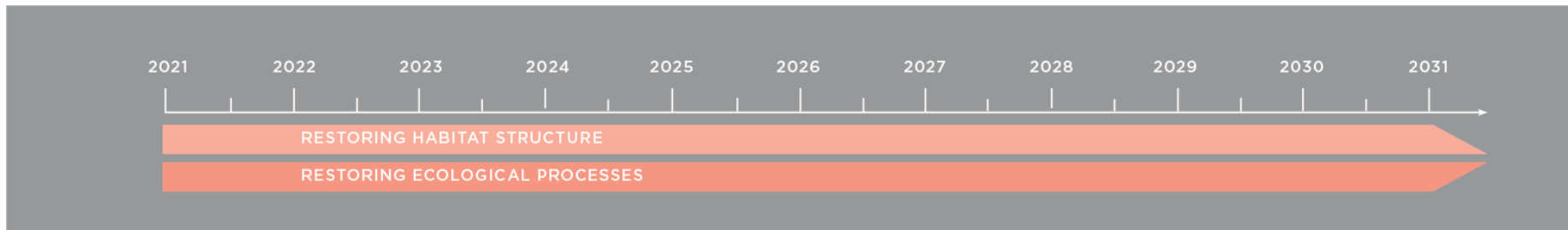
- Sharing the history of their waterways
- Becoming part of the community of RREDDs partners
- Permitting one-time access for stream assessment
- Considering restoration of waterways on their property
- Participating in informational events and gatherings
- Staying in touch, reporting future waterway changes





2021 - 2022 TIMING

We are currently working on landowner outreach and planning. Stream assessment and restoration will begin in 2022.





RREDDs STRATEGIC ACTION PLAN

The Return of the Redds Strategic Action Plan ([available online](#)) is a detailed roadmap illustrating all the steps needed to reach our goal from beginning to end including:

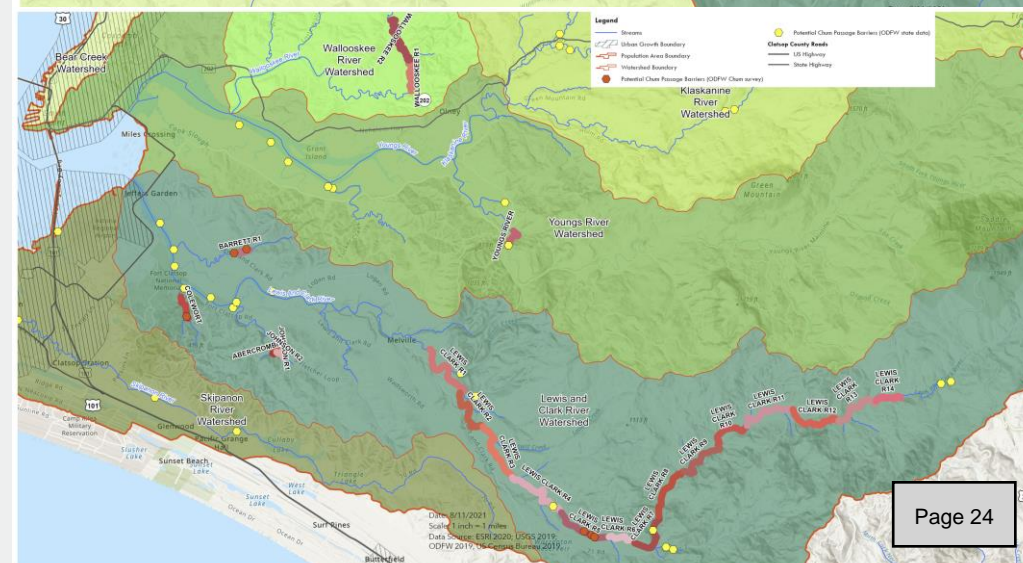
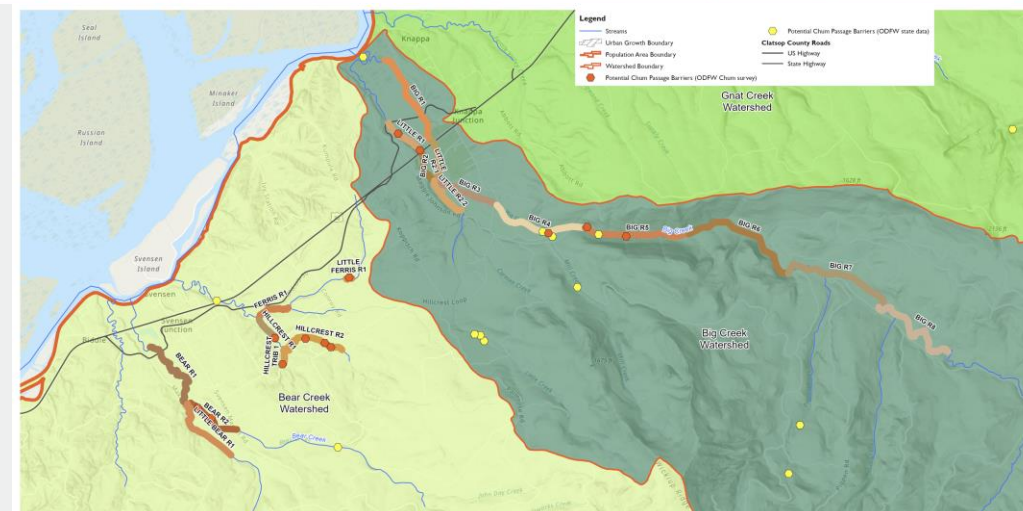
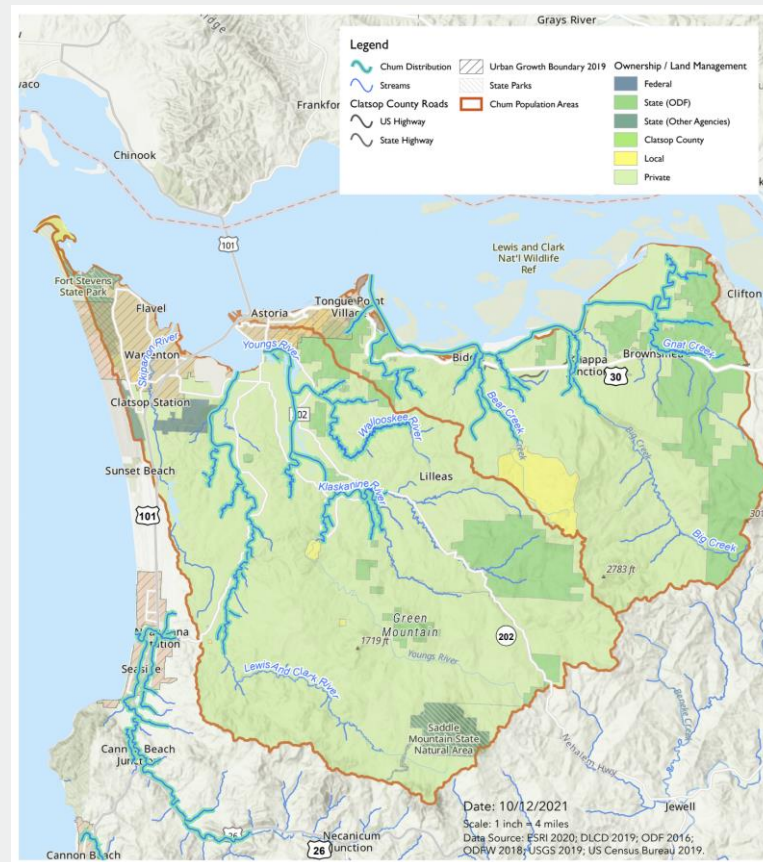
- Development process with RREDDs partners
- Executive summary and overview
- History and historical context
- Economic importance
- Metrics for measuring success
- Past successful case studies
- Project area and species data
- Priorities, objectives, monitoring and evaluation



A STRATEGIC ACTION PLAN IS FORMED!



STRATEGIC ACTION PLAN





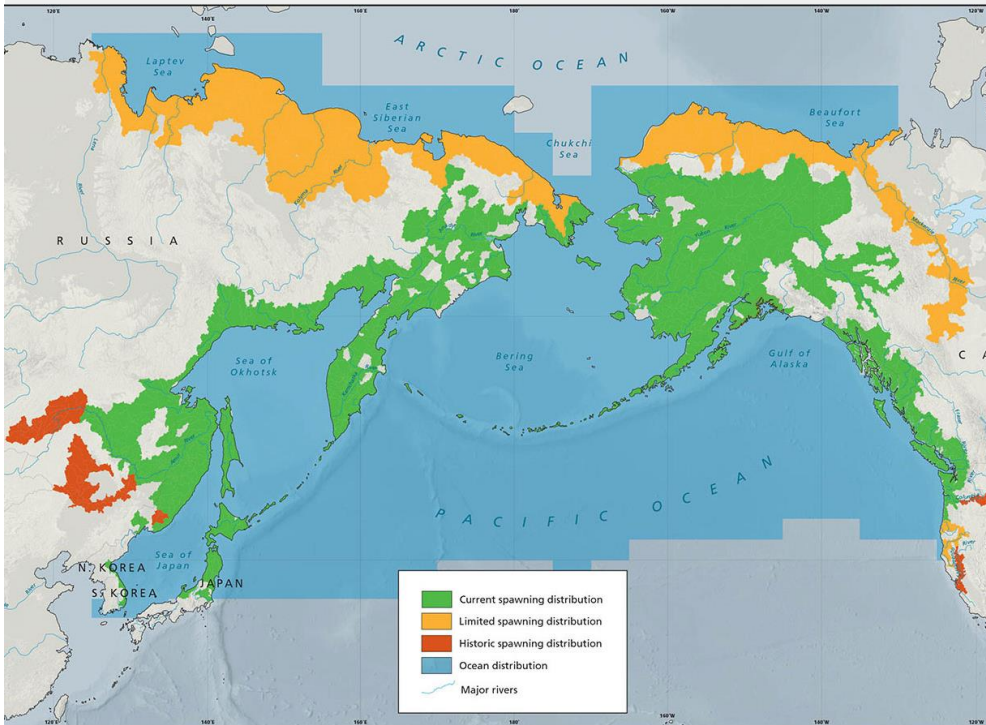
LANDOWNERSHIP

LAND USE/ OWNERSHIP (AND MANAGEMENT)	BIG CREEK POPULATION AREA ACRES (%)	YOUNGS BAY POPULATION AREA ACRES (%)	TOTAL
Federal	215 (0.3%)	1,213 (0.9%)	1,428
State Forest (Managed by ODF)	18,415 (24.8%)	11,307 (8.4%)	29,722
State (Other Agencies)	119 (0.2%)	5,205 (3.9%)	5,324
Clatsop County	51 (0.1%)	167 (0.1%)	219
Local Government	4,102 (5.5%)	1,309 (1.0%)	5,411
Private	51,381 (69.2%)	115,155 (85.7%)	166,537
TOTAL	74,283	134,356	208,641

TABLE 1. Land Use/Ownership within the Big Creek and Youngs Bay Chum Salmon Population Areas



HISTORIC HABITAT



Global Chum Habitat - Pacific salmon atlas - The Wild Salmon Center

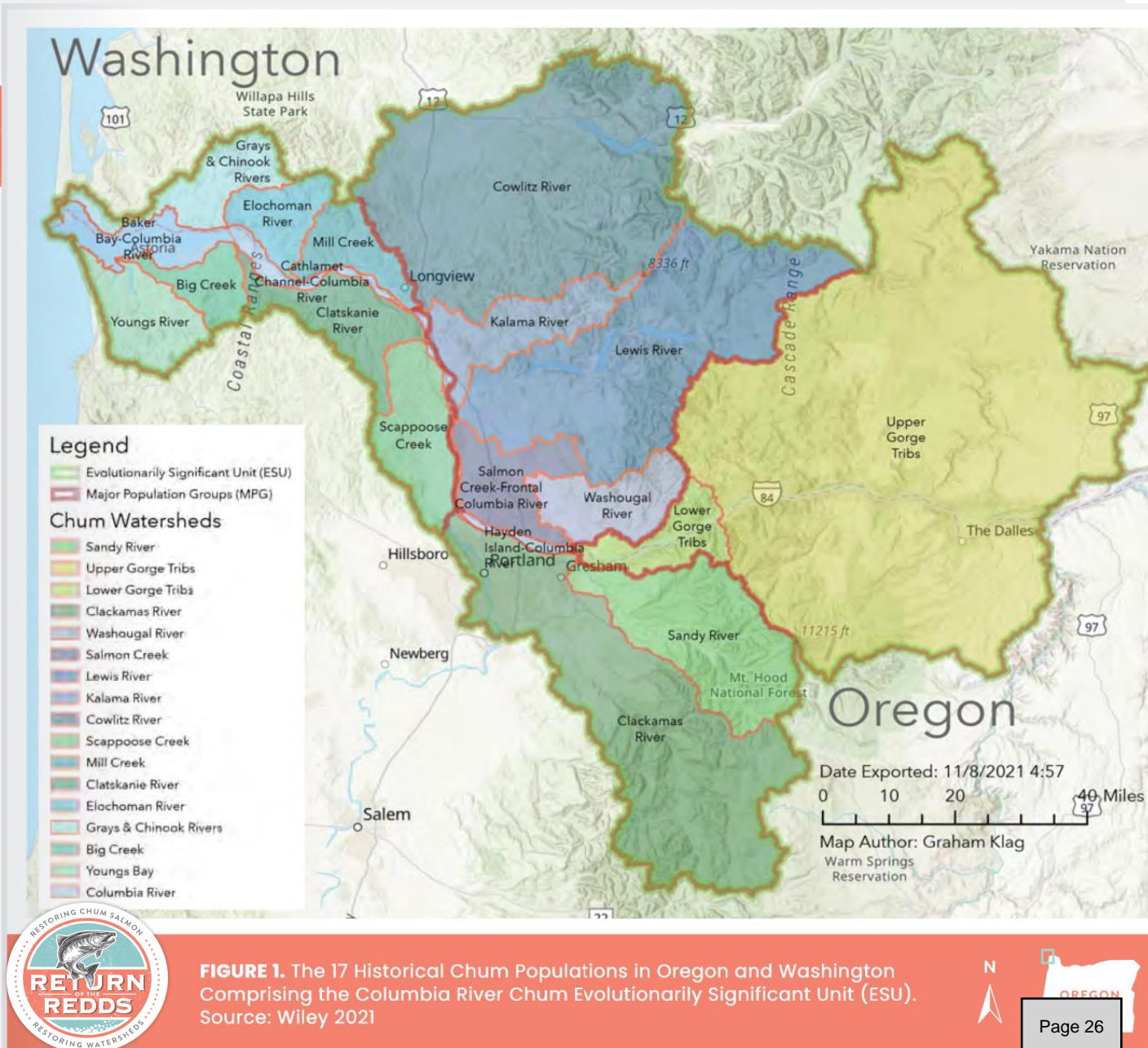
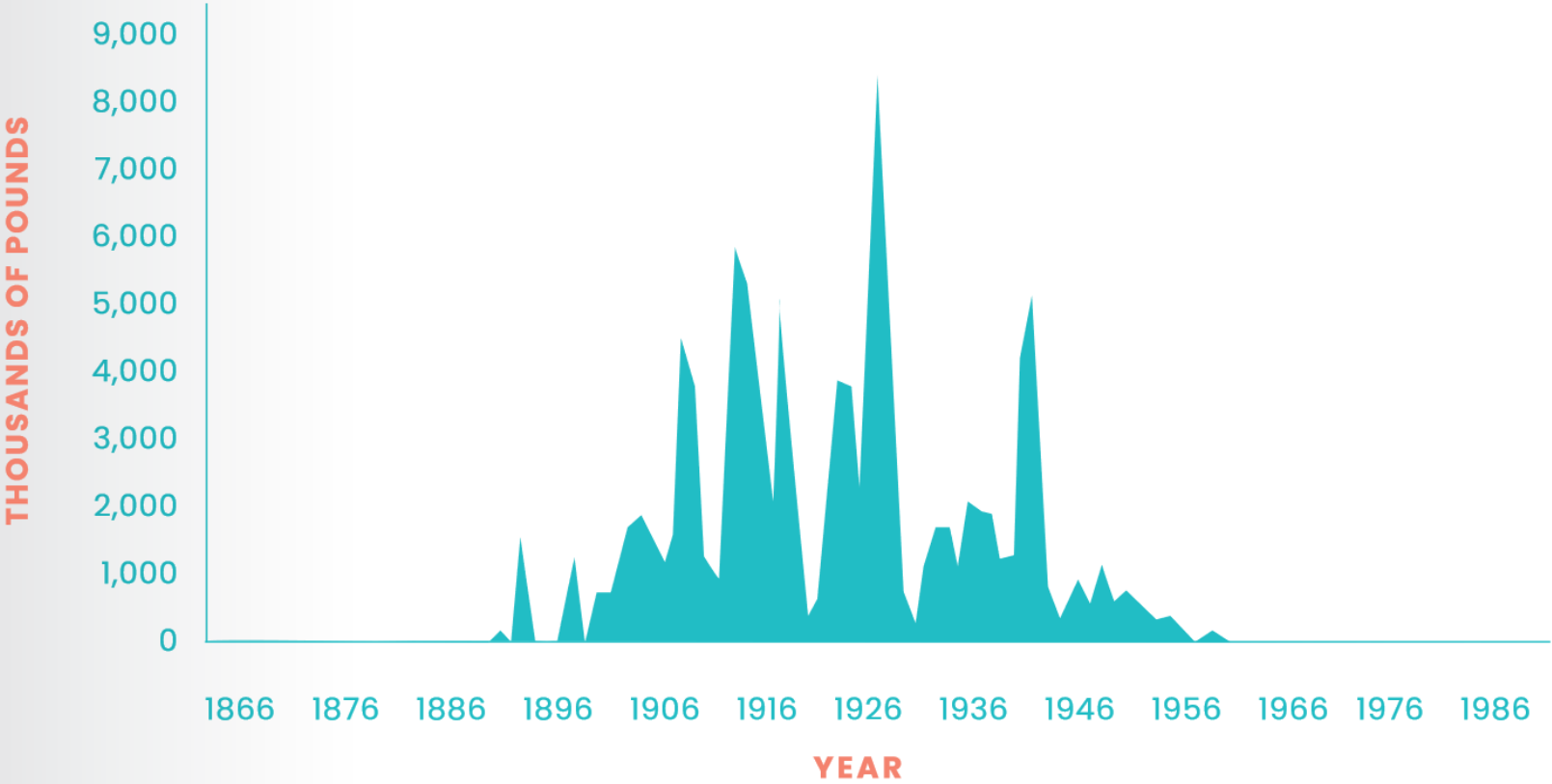


FIGURE 1. The 17 Historical Chum Populations in Oregon and Washington Comprising the Columbia River Chum Evolutionarily Significant Unit (ESU). Source: Wiley 2021



THE CHUM SALMON COLLAPSE



Agenda Item #3. Columbia River Chum Processed in Thousands of Pounds, 1866 to 1986. By the 1960s, Very Few Chum Were Present. Source: Johnson et al. 1997



THE CHUM SALMON FISHERY

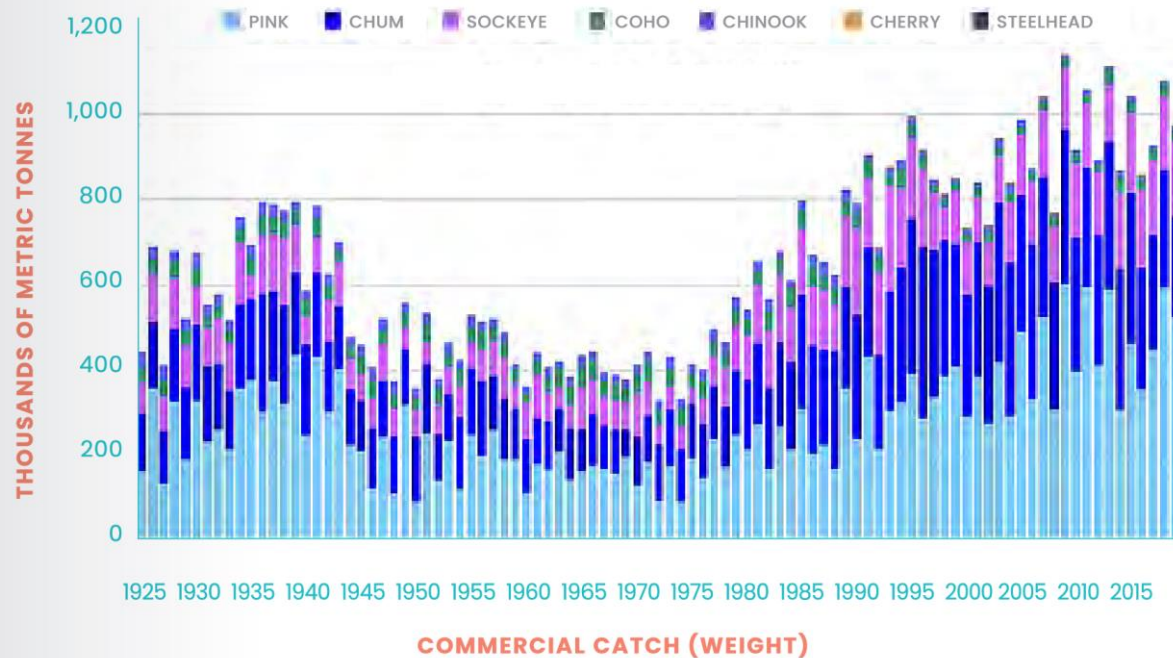


FIGURE 5. Annual Commercial Salmon Catch by Weight (Thousands of Metric Tonnes) 1951–2019. Source: North Pacific Anadromous Fish Commission 2020

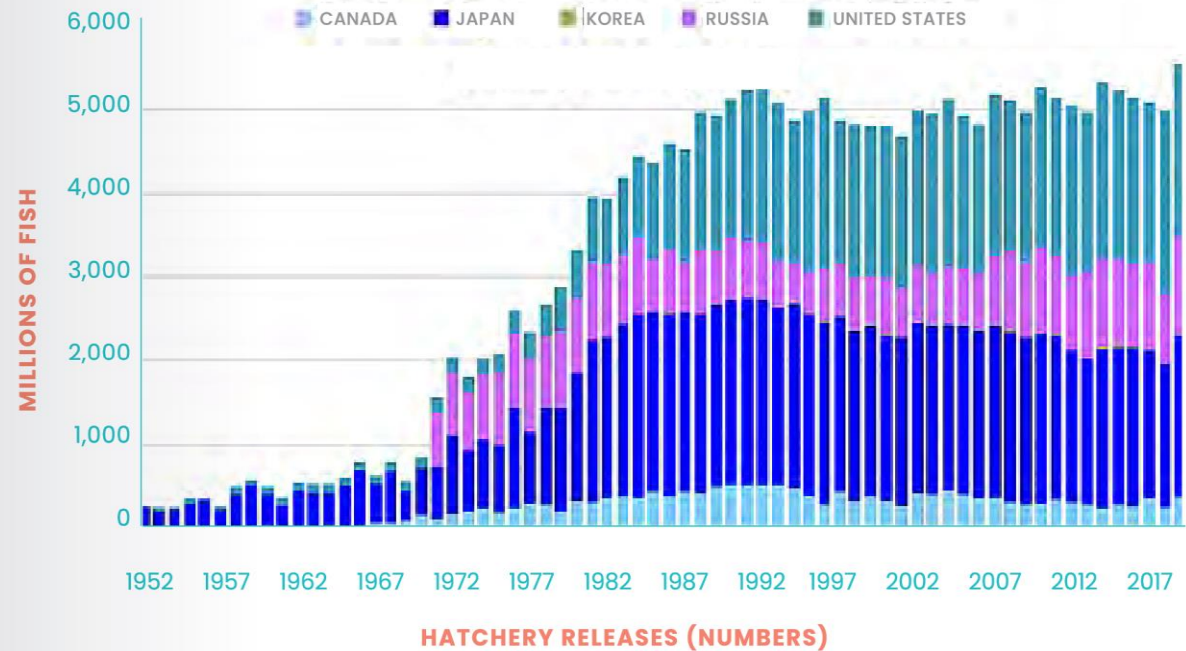


FIGURE 6. Total Hatchery Production (U.S., Canada, Korea, Russia, and Japan) of Pacific salmon, 1951–2019. Source: North Pacific Anadromous Fish Commission 2020



PROPERLY FUNCTION CONDITIONS V. EXISTING

AQUATIC HABITAT BENCHMARK UNDESIRABLE DESIRABLE

LARGE WOOD:

Key pieces (≥ 60 cm diameter and ≥ 10 m long per 100 m (328 ft.))	≤ 1	≥ 3
Number of pieces (per 100 m/328 ft.)	≤ 10	≥ 20

POOLS:

Pool frequency (number channel widths between pools)	≥ 20	$\leq 5 - 8$
--	-----------	--------------

RIPARIAN CONIFERS (30 m from both sides):

Number > 50 -cm dbh/305m (1000 ft.) stream length	≤ 150	≥ 300
Number > 90 -cm dbh/305 m (1000 ft.) stream length	≤ 75	≥ 200

SUBSTRATE:

% fines in riffles (≤ 2 mm diameter)	$\geq 15\%$	$\leq 8\%$
% gravel in riffles (2-64 mm diameter)	$\geq 54\%$	$\leq 10\%$

TABLE 2. ODFW Aquatic Habitat Benchmarks

Chum Population Area	Subwatershed	ODFW Chum Stream & Reach Designation	Stream Survey Year	Length (m)	LW Key Pieces/ 100 m (≥ 3)	Number of LW Pieces/ 100 m (≥ 20)	Pool Frequency (Channel Width b/t Pools) ($\leq 5-8$)	Number of Conifers/ 1000 ft > 50 cm dbh (≥ 300)	Substrate Condition (% Fine in Riffles) ($\leq 8\%$)
Big Creek	Lower Big Creek	Reach 1	2007	1555	- (0)	- (3.1)	- (12.1)	- (0)	- (25)
		Reach 2	2007	759	- (0.2)	- (8.1)	+	- (30)	- (15)
		Reach 3	2007	1200	- (0.1)	- (11)	+	- (30)	- (15)
		Reach 4	2007	1830	- (0.8)	+	+	- (122)	- (15)
	Upper Big Creek	Reach 5	2007	1729	- (0)	- (8.7)	+	- (15)	- (16)
		Reach 6	2007	2478	- (0.2)	- (8.1)	+	- (0)	- (17)
		Reach 7	2007	1950	- (0.1)	- (11)	+	- (12)	- (15)
		Reach 8	2007	2061	n/a	n/a	+	- (20)	n/a
Big Creek	Little Creek	Reach 1	2008	750	- (0.6)	- (7.3)	- (14.4)	- (49)	- (38)
		Reach 2.1	2008	666	- (0)	- (5.3)	- (90.5)	- (0)	n/a
		Reach 2.2	2008	805	n/a	n/a	n/a	n/a	n/a
	Bear Creek	Bear 1	2008	1516	- (0.9)	+	+	- (91)	- (12)
		Bear 2	2008	1112	- (1.7)	- (11.5)	- (20.5)	- (61)	- (13)
		Little Bear 1	2008	1434	- (1.1)	- (12.6)	+	- (0)	- (18)
	Ferris-Hill Crest Creek	Ferris Creek Reach 1	2008	550	- (0.4)	- (6.8)	- (8.8)	- (91)	- (31)
		Hill Crest Creek Reach 1	2008	436	- (0.5)	- (9.4)	- (15.4)	- (41)	- (55)
		Hill Crest Creek Reach 2	2008	1688	- (0.9)	- (5.6)	n/a	n/a	- (48)
		Little Ferris 1	2008	550	- (2.7)	+	- (19.0)	- (30)	- (20)
	Mill Creek	Reach 1	2008	668	- (0.6)	- (6.4)	+	- (61)	- (66)
		Reach 2	2008	496	- (1.0)	- (11.0)	n/a	- (0)	- (46)

TABLE 3. Habitat Benchmarks for ODFW Chum Spawning Habitat Evaluation Reaches within the Big Creek Chum Population Area. Table Header Number in Parenthesis = Benchmark Value. Min (-) = Does Not Meet the Benchmark. Plus Symbol (+) = Meets or Exceeds Benchmark. Reach numbers in Parentheses = Observed Habitat Value.



LARGE WOOD INSTREAM SOUTH FORK MCKENZIE



Pre-project



Post-project



EVOLUTION OF A GRAVEL BAR



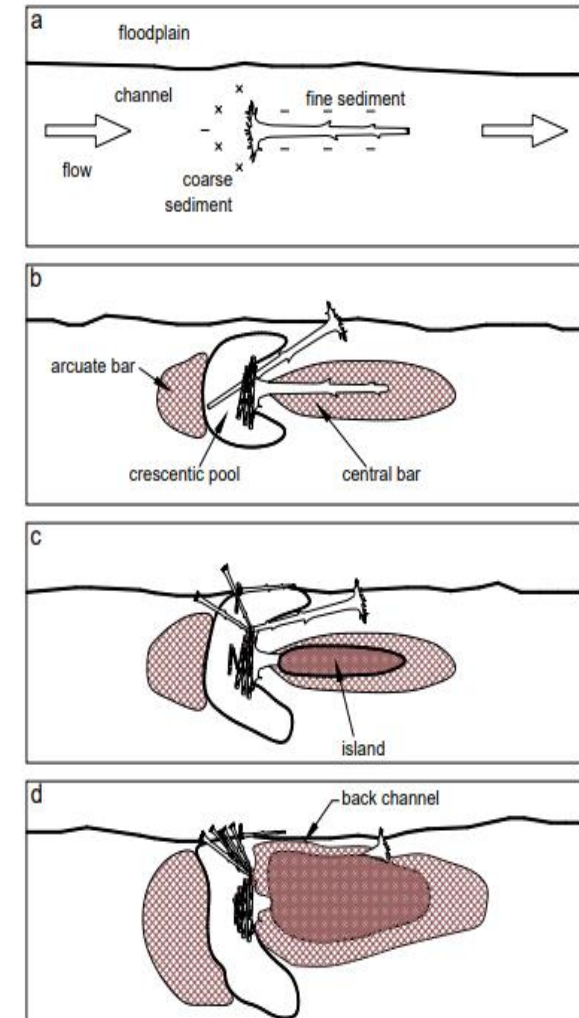
Large Wood and Log Jams Figure 2.

Visual and physical isolation provided by a rootwad for juvenile coho salmon. (photo from NF Stillaguamish River, Snohomish County, Washington, Source: Peter Peters, USFWS).



Large Wood and Log Jams Figure 3.

LW placed on the floodplain will provide low velocity refuge during high flows. (Finney Creek, Skagit County, Washington).



Large Wood and Log Jams Figure 1. Schematic of side channel formation against the bank at a logjam (courtesy Tim Abbe). Morphological stages in alluvial topography associated with construction of a woody debris (barapex) jam. (a) Deposition of an especially large tree with the rootwad intact. (b) Formation of a coarse gravel bar upstream, a crescent-shaped pool immediately upstream of the rootwad, and a downstream central bar of finer sediments along the axis of the tree. (c) Island development along the central bar. (d) Integration into the broad floodplain. Modified from Abbe and Montgomery (1996).



COMPLEX HABITAT



Scannoose Creek mainstem

Agenda Item #3.

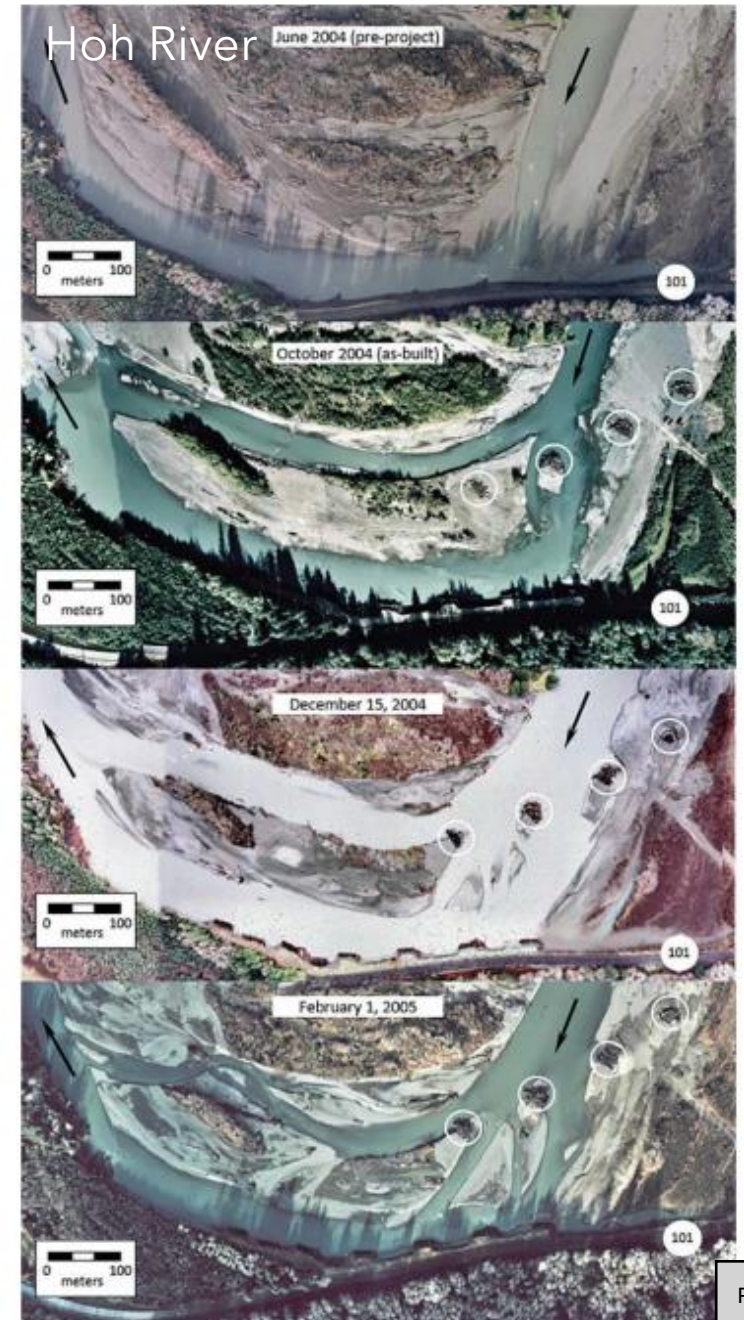


Fig. 2 Time sequence photos of pre-and post-project conditions for ELJs re-directing flows on the Hoh River, Jefferson County, WA.



THE WATERSHED PROCESSES

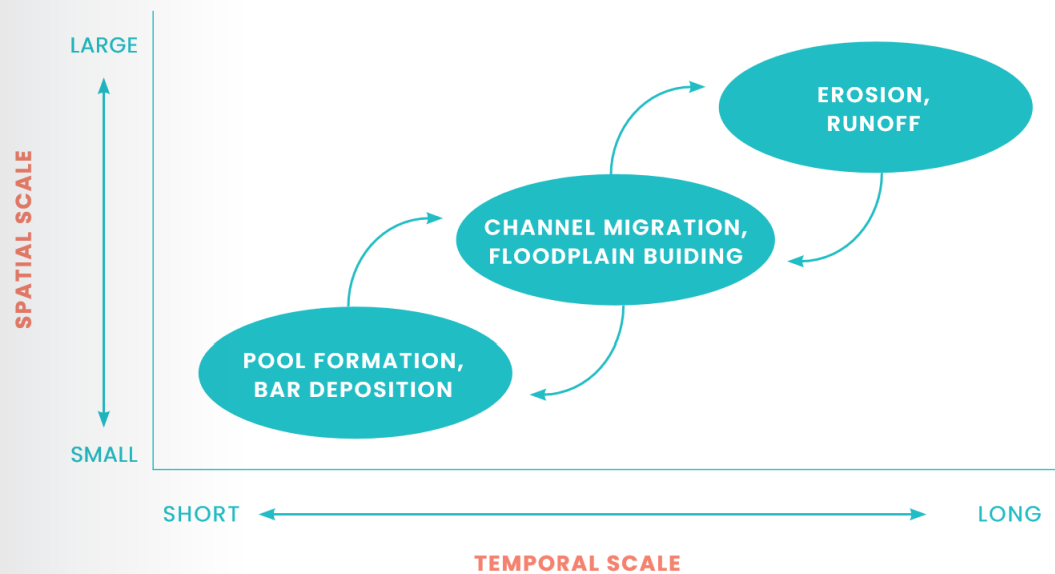


FIGURE 10. Watershed Processes Operate at a Variety of Space and Time Scales, with Processes Operating at Larger Spatial Scales and Influencing Processes Operating at Smaller Scales (Heavy Arrows). In this Case, Large-scale Erosion and Water Runoff Influence Channel Migration and Floodplain Formation at Medium-Spatial Scales, and Pool Formation and Bar Sediment Deposition at Fine-Scales. Source: Beechie et al. 2010

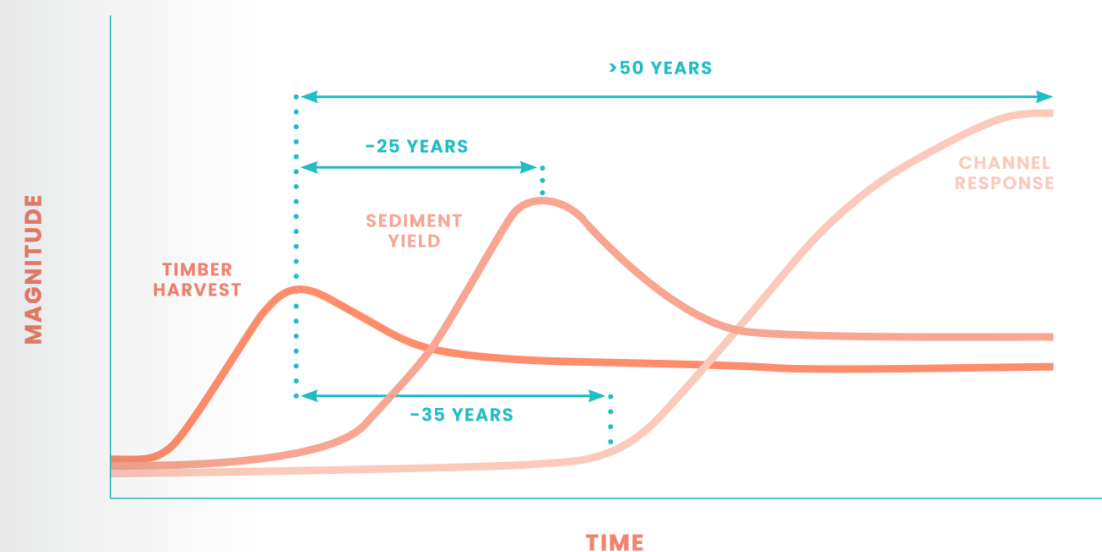


FIGURE 11. Conceptual Model of Trends of Sediment Yield in the Upper Grays River Channel Network and Channel Response over Time from Historical – Before Modern Forest Practices Rules – Timber Harvest and Forest Roads. Source: May and Geist 2006



UPDATING FOREST PRACTICES

Rearing Grounds and Riparian Habitat

What Oregon Dept. of Forestry does for RREDDs?

Riparian Buffers

Hydrological connectivity

Wet weather haul restrictions

Transportation system planning

Stream restoration and enhancements





WATERSHED PRIORITIES

POP. AREA	WATERSHED/ PRIORITY	SUBWATERSHED AND REACH	NOTES / RESTORATION APPROACH
Big Creek	Big Creek /1st-Tier Priority (Higher Priority)	Estuary Transition (R1)	Most of the area is protected
		Lower (R2-4)	Key historical chum spawning area and habitat restoration
		Middle	Process-based restoration
		Upper	Process-based restoration
	Little Creek /2nd-Tier Priority		Targeted Opportunities: Process-based and habitat restoration
	Farris Creek /2nd-Tier Priority		Targeted Opportunities: Process-based and habitat restoration
	Bear Creek /2nd-Tier Priority		Targeted Opportunities: Process-based and habitat restoration
	Gnat Creek /3rd-Tier Priority (Lower Priority)		Targeted Opportunities: Process-based and habitat restoration

POP. AREA	WATERSHED/ PRIORITY	SUBWATERSHED AND REACH	NOTES / RESTORATION APPROACH
Youngs Bay	Lewis and Clark River /Highest Priority	Estuary Transition	Key historical spawning area: Habitat restoration in the estuary and lower ends of tributaries
		Lower (R1-5)	Key historical spawning area: Habitat restoration in the river and lower ends of tributaries
		Middle	Process-based restoration
		Upper	Process-based restoration
	Klaskanine River /2nd-Tier Priority		Targeted Opportunities: Process-based and habitat restoration
	Youngs River /2nd-Tier Priority		Targeted Opportunities: Process-based and habitat restoration
	Wallooskee River /3rd-Tier Priority		Targeted Opportunities: Process-based and habitat restoration
	Skipanon River /3rd-Tier Priority (Lower Priority)		Targeted Opportunities: Process-based and habitat restoration



CHUM SALMON RESTORATION

POPULATION	FISH BARRIERS ADDRESSED (#)	LARGE WOOD PLACEMENT (MI) ¹	FLOODPLAIN/OFF-CHANNEL ENHANCEMENT (ACRES)	SIDE-CHANNEL CREATION (MI)	RIPARIAN PLANTING (MI) ²
------------	-----------------------------	--	--	----------------------------	-------------------------------------

RESTORATION OUTPUTS FOR BROAD SENSE RECOVERY					
Youngs Bay	NA	46	1.3	0	19
Big Creek	NA	58	5.1	5	19
ACCOMPLISHMENTS (THROUGH 2019)					
Youngs Bay	4	3.01	0.1	0.75	2.27
Big Creek	4	0.75	2.1	0.42	2.15

TABLE 8. LCR Plan Restoration Outputs Necessary to Achieve Broad-Sense Recovery and Accomplishments through 2019 for Big Creek and Youngs Bay Salmon Populations

NOTES: 1. Large wood placement volume – 706 ft.3 (20 m3) of large wood per 328 ft. (100 m) of stream channel
2. Riparian Planting 98 ft. (30 m) width on each side of the stream channel

OREGON LOWER COLUMBIA RIVER POPULATION AREA	ABUNDANCE		POTENTIAL RECOVERY GOAL RANGE (CUMULATIVE FOR THE FOUR POPULATION AREAS)		
	RECENT	HISTORICAL	LOW	MEDIUM	HIGH

Youngs Bay	15	9,000	2,500	5,000	7,500
Big Creek	299	5,000			
Clatskanie	3	6,000			
Scappoose	0	500			

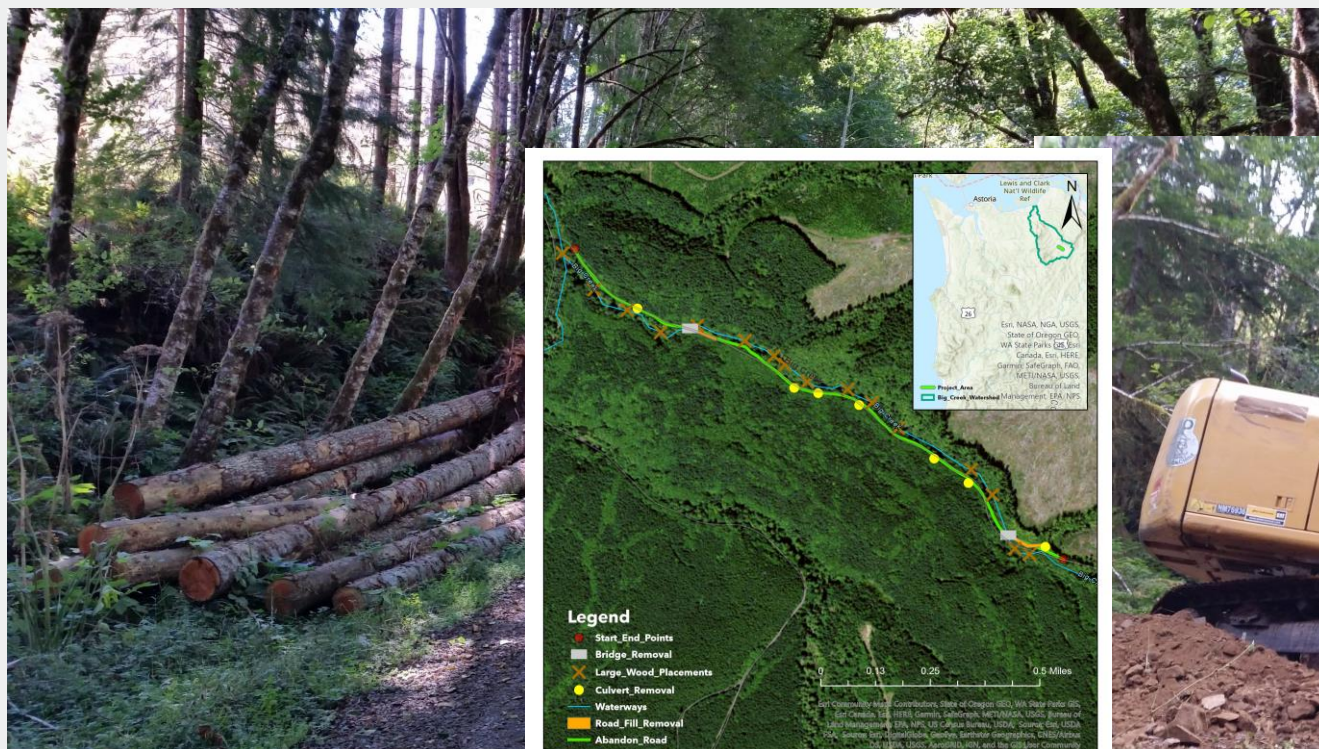
TABLE 9. Recent and Historical Abundance and the Potential Cumulative Recovery Goal Range for the Numbers of Chum Adults Returning to the Four Oregon Population Areas (Columbia Basin Partnership Task Force 2020)





RESTORATION AND ENHACEMENT

Upper Big Creek Floodplain Restoration - 2021



<https://arcg.is/0SjOO8>



North Coast
Watershed
Association

Upper Big Creek Floodplain
Restoration Project Area

Map Author: Graham Klag



RESTORATION AND ENHACEMENT

North North Fork Klaskanine River Fish Passage Project - 2022





RESTORATION AND ENHACEMENT

Blind Slough Wetland Reconnection - 2022



North Coast
Watershed
Association

**Blind Slough Wetland Reconnection
Project Proposal Area**

Map Author: Graham Klag





Targeted Chemicals in River TALC

River TALC: Toxics Assessment of the Lower Columbia

Vehicle-related chemicals
(+)1,3-Diphenylguanidine
(+)Hexa-(methoxymethyl)melamine
(+)N-cyclohexyl-1.3-Benzothiazole-2-amine (NCBA)
6PPD-quinone
Benzothiazoles & Benzotriazole
(+)Benzotriazole
(+)5-methyl-1-H-Benzotriazole
(+)2-amino-Benzothiazole
(*)2-hydroxy-Benzothiazole
(+)2-(4-morpholinyl)Benzothiazole
Pesticides
(+)Clothianidin
(+)Imidacloprid
(+)Thiamethoxam
(+)Fipronil
(+)Carbendazim
(+)Iprodione
(+)Pentachlorophenol
(+)Diazinon
(+)Diuron
(+)Mecoprop
(+)Prometon
(+)4-Nitrophenol

Pharmaceuticals and personal care products (PPCP)
(+)Caffeine
(+)Cetirizine
(+)Cotinine
(+)DEET
(*)Diclofenac
(*)Ibuprofen
(+)Metformin
(*)Triclosan
Industrial/Commercial chemicals
(+)1,3-Dicyclohexylurea
(*)Bisphenol A
(*)Caprolactam
(*)4-Nonylphenol
(*)4-tert-Octylphenol
Substituted diphenylamine antioxidants & benzotriazole UV stabilizers (SDPA & BZT-UV)
(+)SDPA-diAMS
(+)SDPA-C4C8
(+)SDPA-C8C8
(+)SDPA-C9C9
(+)BTZ & UV-234
(+)BTZ & UV-326



River TALC: Toxics Assessment of the Lower Columbia

6PPD-Quinone

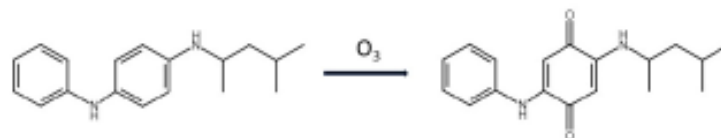


Figure 2: Reaction of 6PPD with ozone (O₃) to produce 6PPD-quinone.

- One of the most deadly chemicals in roadway runoff (23; 24).
- Has been linked to the observed sudden coho death in the Puget Sound area (24)
- Potentially caused by malfunction of the blood brain barrier (26)

- Salmonid toxicity
 - Coho
 - Coastal cutthroat trout
 - Steelhead
 - Chinook
 - Sockeye
 - Chum

- Sublethal effects
 - Eye development
 - Slower/less vigorous
 - More research needed

- LC₅₀=95 ng/L (Center for Urban Waters)
 - Results vary 40-100 ng/L





River TALC: Toxics Assessment of the Lower Columbia

Initial Results: November 2022 (5 sites sampled)

Site	Date	Contaminants	Concentrations
Skipanon River at Hwy 101	11/22/2022	1,3-diphenylguanidine	163
		hexa-(methoxymethyl)melamine	197
		N-cyclohexyl-1.3-benzothiazole-2-amine	36
		6PPD-quinone	56.4
		benzotriazole	16
		5-methyl-1-H-benzotriazole	135
		2-amino-benzothiazole	18.2
		2-hydroxy-benzothiazole	109
		2-(4-morpholinyl)-benzothiazole	80.4
		Caffiene	36.9
		cotinine	4.3
		DEET	9.1
		1,3-dicyclohexylurea	38
		1,3-diphenylguanidine	45.6
NF Klaskanine River at Green Mountain Rd Bridge	11/22/2022	hexa-(methoxymethyl)melamine	29
		N-cyclohexyl-1.3-benzothiazole-2-amine	13.2
		6PPD-quinone	14.2
		5-methyl-1-H-benzotriazole	67
		2-hydroxy-benzothiazole	61
		2-(4-morpholinyl)-benzothiazole	25.3
		Caffiene	16.1
		1,3-dicyclohexylurea	14.6



River TALC: Toxics Assessment of the Lower Columbia

Initial Results: November 2022 (5 sites sampled)

NNF Klaskanine River above Hatchery	11/22/2022	1,3-diphenylguanidine	13.8
		hexa-(methoxymethyl)melamine	8.3
		N-cyclohexyl-1.3-benzothiazole-2-amine	3.8
		6PPD-quinone	5.1
		5-methyl-1-H-benzotriazole	14.3
		1,3-dicyclohexylurea	3
Columbia River at Pier 39 Riverwalk	11/22/2022	1,3-diphenylguanidine	4.1
		benzotriazole	17.4
		5-methyl-1-H-benzotriazole	17.9
		caffeine	14
		cetirizine	2.5
		DEET	6.5
Lewis & Clark River .8 Miles S of Melville	11/22/2022	1,3-diphenylguanidine	3.8



River TALC: Toxics Assessment of the Lower Columbia

Outreach and Potential Mitigations



- CCC guest lecture + field day with 2 introductory biology classes
 - Will repeat this fall
- 2 high school presentations
- 2 community presentations
 - Upcoming: Astoria Sunday Markets & KMUN Block Party
- Volunteers
 - CCC
 - Astoria High School
 - 21 hours combined thus far
- Mapping areas where mitigation is needed
- Bioswales/vegetated strips
 - Similar performance to filtration systems—removal of 85% of suspended solids (29)
- Permeable pavement
- Infiltration trenches
- Tire manufacturing practices
 - 6ppd alternatives currently in R&D



Rapid Biological Assessment and Limiting Factors Analysis Light

Snorkel surveys with Bio-Surveys LLC to count juvenile salmon and trout assess habitat factors

Rapid Biological Assessment

Date and Time

Thursday, August 24, 2023

10:28 ...

Surveyor

Please enter your initials here.

Location of Pool

Tap the compass icon to define the pools location.

Watershed

What watershed are you in?

Spawning Gravels

How many square meters of spawning gravel do you count between the last that pool you sampled and this one?

-

0

+

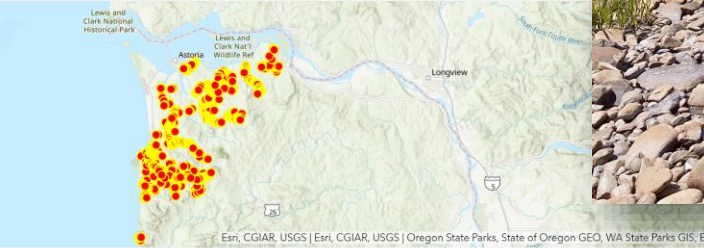
Beaver Dams

How many beaver dams do you count between the last that pool you sampled and this one?

-

+

Electronic data collection and GIS mapping of survey results



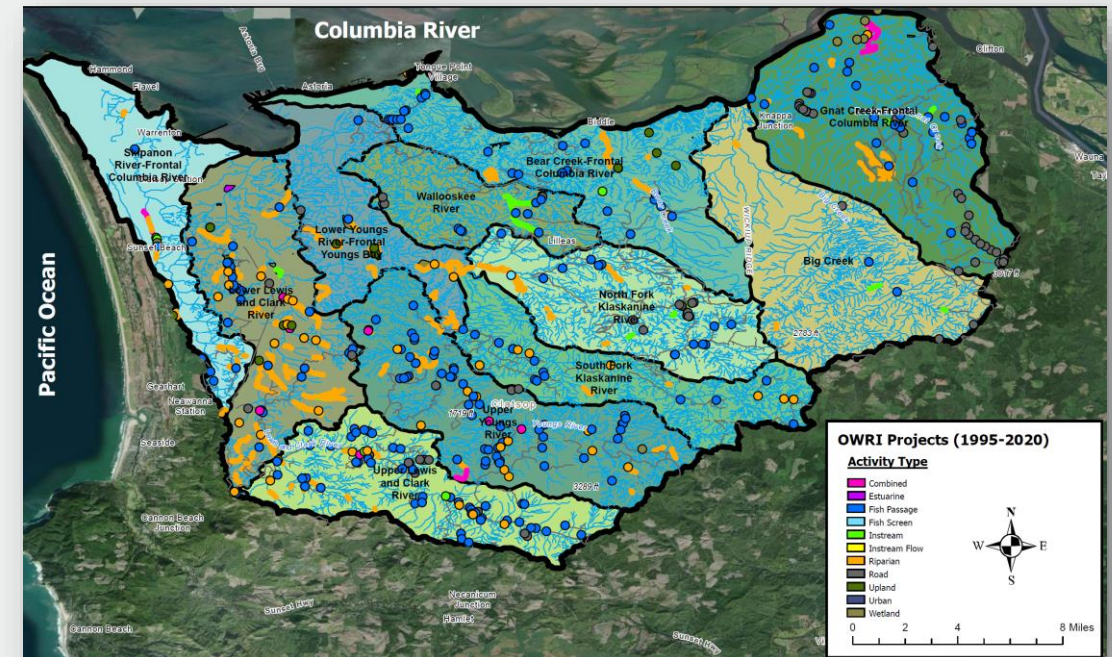
Rapid Biological Assessment									
Date And Time	Adjusted_time	Watershed	Other Watershed	Spawning Gravels	Beaver Dams	Random Sample	Pool Type	Pool Length	Pool Width
Aug 23, 2023, 4:48 PM	Aug 23, 2023	Other	Little creek	3	0	Yes	Dammed Pool	25	10
Aug 23, 2023, 4:41 PM	Aug 23, 2023	Other	Little creek	12	0	Yes	Lateral Scour Pool	30	8
Aug 23, 2023, 4:34	Aug 23, 2023	Other	Little creek	4	3	Yes	Lateral Scour Pool	35	12



North Coast Watersheds Web Map

Developing a map of all restoration and enhancement projects for our watersheds

- Watershed restoration and enhancement projects - completed, current and desired future projects
- Water quality monitoring - historic, current, and desired future water quality data collection sites
- Owner and partnerships resources - Landowner and partnership resource information available for restoration and enhancement
- Watershed history, habitats and vegetation - Watershed human history and historic habitat types overtime
- Fish and wildlife distribution - Geolocation information on the historic, current, and essential habitats for species of concern





North Coast Watersheds Web Map

Focus areas of project development

Electronic data collection using Esri ArcGIS Survey123

Five applications in development to collect stakehold data on **Water, Plants, Fish, Wildlife and Habitat**

Community watershed mapping for restoration project scoping beginning in our three service areas

Non-native Invasive Species Management



Agenda Item #3.

Riparian Planting



Water Quality Monitoring





THANK YOU FOR WATCHING


Questions?





THANK YOU!

Learn more at
clatsopwatersheds.org
returnoftheredds.com

A decorative pattern of overlapping circles in various shades of teal, light blue, and white, with a small cluster of red dots in the center, located at the bottom of the slide.