

March 21, 2025

Senator Janeen Sollman, Chair Senator David Brock Smith, Vice-Chair Senate Committee on Energy and Environment

Re: Trout Unlimited Opposes Senate Bill 301 (Roll-Back of Existing Wake Boat Laws)

Dear Chair Sollman, Vice-Chair Brock Smith, and Members of the Committee,

Trout Unlimited (TU) is a non-profit dedicated to the conservation of cold-water fish (such as trout, salmon, and steelhead) and their habitats. TU has more than 350,000 members and supporters nationwide, including many members in Oregon.

TU and its members are committed to caring for Oregon rivers and streams so future generations can experience the joy of wild and native trout and salmon. TU supports recreational boating opportunity so long as it is consistent with that paramount conservation goal.

TU opposes SB 301 because the existing "towed watersports" framework protects important native fish runs—and guards against further degradation of water quality in the Willamette River—by restricting *certain recreational motor boats* from engaging in *certain damaging activities* in the area upstream of Willamette Falls.

The "-1" amendment would change the statutory language about which boats are eligible to engage in towed watersports on the Willamette River. Specifically, it would allow *larger boats* to engage in towed watersports on the river than are currently authorized.

Below, we have provided background on this topic and statutory program, and information about usage of the relevant portion of the Willamette River by native fish:

1. Background: Underlying Problem, Past Legislative Efforts, Existing Law

Over the past decade or so, recreational motorboat manufacturers have produced larger and heavier watersport boats, especially including the class of "wake surf" boats that create large and artificial waves which enable individuals to "surf" behind the boat on otherwise calm rivers or streams.

<u>Problem</u>: When the wakes of these large boats—especially when towing water skiers or tubers, or using ballast to create surfable waves—reach shallow waters and shorelines, the wave energy can erode streambanks and damage riparian fish habitats (in addition to public safety and private property damage concerns, which TU will not address in this testimony).

In the same period that these boats have become more frequently used in Oregon, there have been wideranging indications of related degradation to fish habitat and water quality in the Willamette River. For instance, homeowners and river users noticed acute erosion and water quality concerns in the area upstream of Willamette Falls (the "Newberg Pool"). <u>Past Legislative Efforts</u>: The legislature has considered *numerous* bills over the past seven years regarding the negative effects of large recreational motor boats in the Willamette River, and did not land upon an enforceable and meaningful management framework until 2022.

In 2018, the legislature considered HB 4099 and HB 4138 (regarding a Task Force and Marine Board rulemaking authority applicable to boating on the Willamette River, respective), but neither passed.

In 2019, the legislature enacted HB 2351 and HB 2352, in effort to minimize the harm of artificial wave energy in the Willamette River. HB 2351 authorized the Marine Board to make special regulations related to operation of boats in the Willamette River Greenway, including speed limits to protect fish and wildlife habitat. Thereafter, the Oregon State Marine Board established a 10,000 pound weight limit for motorboats (based on ramp capacity) in the Newberg Pool. This very large weight limit applied to very few boats available on the market, and therefore, did not meaningfully address the ongoing problem of large boat wakes and erosion. HB 2352 established the "towed watersports" structure within the Marine Board, which created new boater safety and education programs. Neither fully addressed the underlying problem, conflicts, and concerns for native fish and water quality; under HB 2351 and HB 2352, very large boats were still able to tow and wake-surf in the Newberg Pool.

In 2020, the National Marine Fisheries Service warned the Oregon State Marine Board about the risks of wake sports in the Newberg Pool on listed fish species, stating:

"In NMFS' experience, noise and wave action are frequently a threat to juvenile salmon and steelhead. Therefore, we expect that wake sports are likely to have a significant adverse impact on those listed species and their critical habitats by injuring and killing individual fish when, for example, the surge and wakes caused by artificial waves from passing boat and wake sport participants wash juvenile fish onto the shore, or otherwise modify or degrade [physical and biological features] in ways that injure or kill fish by significantly impairing their essential behavior patterns . . ."

K.W. Kratz, United States Department of Commerce, National Marine Fisheries Service, to Val Early, Oregon State Marine Board (January 16, 2020) (emphasis added).

In 2021, the legislature revisited the issue, and considered a bill to address the still-increasing traffic of large ballast capacity motorboats on the Willamette. SB 857 (2021) would have placed a 5,000 pound weight limit on motor boats permitted to engage in "towed watersports" in the Newberg Pool. It did not pass.

Existing Law: In 2022, the legislature considered *yet another* bill on the ongoing problem. SB 1589 (2022) passed after the legislature held several public hearings, received extensive written and verbal testimony from the public, and received input from multiple experts (from both sides of the issue). For the first time, SB 1589: (1) specified a maximum loading weight limit for motorboats that engage in "towed watersports" in the Newberg Pool of 5,500 pounds (calculated as the sum of the factory-specified dry gross weight of the boat <u>plus</u> factory-specified maximum factory ballast capacity), and (2) prohibited *wake surfing* (but not water-skiing or wake-boarding or tubing) in the Newberg Pool.

By capping the size of boats that may engage in towed watersports (e.g., waterskiing) and specifying that boaters may not "use devices or individuals to increase wakes," ORS 830.649(5)(a), SB 1589 limited the extent of wave energy in the Newberg Pool that damages the shoreline and riverbanks. In other words, it specified meaningful, reasonable, *and enforceable* limits on a small subset of only the *largest* motorboats engaging in towed watersports, which create the largest and most damaging artificial wakes.

<u>2024 Roll-Back Attempt</u>: In 2024, the legislature considered a bill that would have gutted the SB 1589 program by rescinding the towed watersports program entirely (SB 1590 (2024)), but it died after a public hearing in Senate Natural Resources.

2. The Fish: What's at Risk in the Newberg Pool

The Willamette River is home to numerous runs of anadromous fish, many of which are struggling. Accordingly, water quality issues in the Newberg Pool can affect native fish populations throughout the Willamette River basin. These populations include two species listed as threatened under the federal Endangered Species Act: Upper Willamette River Chinook Salmon (i.e., spring Chinook), and Upper Willamette River Steelhead (i.e., winter steelhead).

Many native fish in the Willamette River basin depend on water quality in the Newberg Pool at some point in their life cycles. As examples only, wild spring chinook from the McKenzie River, and wild winter steelhead from the Molalla and Santiam River basins, migrate through this river corridor twice in their respective life cycles, and require sufficiently high water quality throughout their migration corridors to ensure they return to their home streams as adults. Similarly, the wild coho salmon, winter steelhead, and spring chinook in the Clackamas River (which enters the Willamette about 1.5 miles downriver of the Newberg Pool) require high water quality from upstream portions of the Willamette during their respective migrations.

Salmon are present in the Newberg Pool during the summer boating season. For the Committee's reference, I have attached a spreadsheet showing upstream fish passage data collected at Willamette Falls (i.e., the downstream end of the statutorily-defined Newberg Pool per ORS 830.649(1)(a)) and reported on the Oregon Department of Fish & Wildlife's website.¹

This information – which I've included for 2024 only – shows that adult salmon migrate upstream into the Newberg Pool in every month of the summer boating season. In 2024, this included: 8,697 threatened adult spring chinook in June; 3,461 threatened adult spring chinook in July; 1,631 adult chinook in August; and 37,171 adult coho and 688 adult chinook in September. Those figures do not include "jack" sub-adult size salmon. Further, juvenile salmon and steelhead out-migrate though the reach (typically very close to the shoreline where they are vulnerable to the effects of large ballast boats, as testified by Dr. Stan Gregory, emeritus professor of fisheries at Oregon State University, in the legislative record for SB 1589 (2022))², and lamprey may also be present seasonally in the Newberg Pool. Juvenile salmon and steelhead, resident trout, and lamprey are not included in the attached fish count spreadsheet. Accordingly, the presence of native and migratory species in the Newberg Pool is greater than what is reflected in Exhibit A alone.

3. Result of SB 301 (2025)

Senate Bill 301 as introduced is a study bill. However, the "-1" amendment would materially change the existing, reasonable statutory framework that <u>balances one recreational user group's use of the river</u> with the State's concerns for water quality, threatened fish species, public safety, and protection of private property.

Specifically, it would change the calculation of which boats are authorized to purchase a "towed watersports" endorsement in a way that allows larger boats to qualify than are currently allowed. To

¹ Available at: <u>https://myodfw.com/willamette-falls-fish-counts</u>

² Available at: <u>https://olis.oregonlegislature.gov/liz/2022R1/Downloads/PublicTestimonyDocument/39930</u>

qualify for a towed watersports endorsement, existing law requires that the dry gross weight of the boat <u>plus</u> its ballast capacity equal less than 5,500 pounds. The "-1" would delete the ballast capacity from this equation, but leave the weight limit at 5,500 pounds, thereby allowing boats to qualify for the endorsement which currently exceed the limit by thousands of pounds.

4. Existing Path for Adjusting the Framework

Section 4 of SB 1589 (2022) already set forth a process for informing further changes to existing law. It states:

SECTION 4. (1) The State Marine Board may conduct <u>a study on increasing or decreasing</u> the maximum loading weight prescribed in ORS 830.643. If the board undertakes a study, the board shall determine <u>on the basis of objective</u>, peer reviewed scientific research whether increasing or decreasing the maximum loading weight is likely to:

(a) Have an adverse effect on the waters, beds and banks of this state;

(b) Have an adverse effect on aquatic, nearshore and shoreline habitats, fish and wildlife habitats and salmonid habitats; or

(c) Exceed or violate state or federal turbidity limits.

(2) Before making a determination, the board shall consult with and receive comments from the Department of State Lands, the State Department of Fish and Wildlife and the Department of Environmental Quality.

(3) If the board undertakes a study under this section, the board shall report to the interim committees of the Legislative Assembly related to the environment, in the manner provided in ORS 192.245, on the board's research, findings, determinations and recommendations, including recommendations for legislative changes, if any.

SB 301 short-circuits that process. If the Legislature is interested in changing existing law on this topic, then TU recommends that the Legislature provide funding for the study contemplated by SB 1589, and direct the Marine Board to complete the study and use that to inform changes to the existing framework.

Conclusion

Trout Unlimited opposes SB 301. Thank you for this opportunity to provide comments on the bill, and please let me know if you have any questions.

Sincerely,

James Fraser Oregon Policy Director Trout Unlimited james.fraser@tu.org

Exhibit A

2024 Upstream Fish Passage Numbers - Willamette Falls (Source: ODFW)

(Attached.)

Year: 2024
Month: May

							Our al	1		_	~				_	1			01			_		Others Oraced					
							Spring	g Chinook						<u> </u>		- CC	ono	<u> </u>						Steein	ead				Other Species
Date	Hydrolog	ical Data			Adult				Jack	-	M	ini Jack		Ac	lult			Ja	ck			Winter (Nov	2023-May 2	2024)	SI	ummer (Ma	r 2024-O	ct 2024)	
	Flow	Temp		Daily		Cum.		Daily		Cum.	Daily	Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.	Species/Total
			Total	Clipped	Unclip	2,471	Total	Clipped	Unclip	5		0	Total	Clipped	Unclip		Total	Clipped	Unclip		Total	Clipped	Unclip	8,505	Total	Clipped	Unclip	2,929	
1	22,800	53	24	18	6	2,495	0	0	0	5	0	0									9	0	9	8,514	61	61	0	2,990	
2	23,100	53	33	25	8	2,528	0	0	0	5	0	0									14	0	14	8,528	88	88	0	3,078	
3	24,200	52	40	32	8	2,568	0	0	0	5	0	0									10	0	10	8,538	106	106	0	3,184	
4	26,500		49	33	16	2,617	1	1	0	6	0	0									13	0	13	8,551	121	121	0	3,305	
5	38,100		29	23	6	2,646	1	0	1	7	0	0									8	0	8	8,559	41	41	0	3,346	
6	50,800	50	7	5	2	2,653	0	0	0	7	0	0									6	0	6	8,565	10	10	0	3,356	
7	53,500	50	0	0	0	2,653	0	0	0	7	0	0									6	0	6	8,571	4	4	0	3,360	
8	49,300	50	13	11	2	2,666	0	0	0	7	0	0									13	0	13	8,584	69	69	0	3,429	
9	43,900	50	34	28	6	2,700	0	0	0	7	0	0									18	0	18	8,602	209	209	0	3,638	
10	37,300		121	91	30	2,821	0	0	0	7	0	0									21	0	21	8,623	411	411	0	4,049	
11	32,900		514	424	90	3,335	7	5	2	14	0	0									21	0	21	8,644	321	321	0	4,370	
12	30,300		806	593	213	4.141	7	5	2	21	0	0									59	0	59	8,703	336	336	0	4.706	
13	27,800	60	941	722	219	5.082	11	8	3	32	0	0									28	0	28	8,731	342	342	0	5.048	
14	25,800	60	565	418	147	5.647	9	6	3	41	0	0									24	0	24	8,755	372	372	0	5.420	
15	22,100	60	430	322	108	6.077	16	12	4	57	0	0									17	0	17	8,772	283	283	0	5.703	
16	20,000	61	288	246	42	6.365	2	2	0	59	0	0									3	0	3	8,775	265	265	0	5.968	
17	18,100	61	348	280	68	6.713	15	15	0	74	0	0									2	0	2	8,777	229	229	0	6.197	
18	17,100		257	205	52	6.970	8	7	1	82	0	0									20	0	20	8,797	222	222	0	6.419	
19	16,500		227	174	53	7,197	13	10	3	95	0	0									21	0	21	8,818	176	176	0	6.595	
20	15,600	61	212	168	44	7,409	9	7	2	104	0	0									14	0	14	8.832	172	172	0	6.767	
21	14,800	60	128	112	16	7.537	5	4	1	109	0	0									17	0	17	8,849	174	174	0	6.941	
22	14,100	60	125	101	24	7.662	3	2	1	112	0	0									9	0	9	8,858	142	142	0	7.083	
23	14,500	58	145	111	34	7.807	4	3	1	116	0	0									16	0	16	8.874	141	141	0	7.224	
24	14,200	58	126	105	21	7,933	6	6	0	122	0	0									4	0	4	8,878	153	153	0	7.377	
25	14,900	58	165	145	20	8.098	2	2	0	124	1	1									1	0	1	8,879	146	146	0	7.523	
26	13,500	57	172	137	35	8.270	29	25	4	153	0	1									6	0	6	8,885	131	131	0	7.654	
27	13,500	58	154	125	29	8.424	2	2	0	155	0	1									1	0	1	8,886	147	147	0	7.801	
28	13,400	59	131	106	25	8.555	4	4	0	159	0	1									3	0	3	8,889	150	150	0	7.951	
29	13,100	60	203	166	37	8.758	1	1	0	160	0	1									3	0	3	8.892	187	187	0	8.138	
30	13,200	60	178	143	35	8.936	1	1	0	161	0	1									5	0	5	8,897	176	176	0	8.314	
31	12,800		187	133	54	9.123	3	2	1	164	1	2									11	0	11	8.908	210	210	0	8.524	
Total	Clip/Uncli	D		6,907	2,216			133	31				-									149	8,759			8,524	0		

Link to USGS Willamette River Portland (Morrison) Daily Hydro Data Link to NOAA Willamette River Salem Flows

rear: 2024
Month: June

						S	pring	Chinook								Co	oho							Stee	elheac	ł			Other Species
Date	Hydrolog	ical Data		A	dult			J	ack		Mini	i Jack		Ac	lult			Ja	ck		Win	ter (Nov 20	023-May	2024)	Sur	nmer (Mar	2024-00	ct 2024)	
	Flow	Temp		Daily		Cum.		Daily		Cum.	Daily	Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.	Species/Total
			Total	Clipped	Unclip	9,123	Total	Clipped	Unclip	164		2	Tota	I Clipped	Unclip	1	Total	Clipped	Unclip		Total	Clipped	Unclip		Total	Clipped	Unclip	8,524	
1	12,700		140	115	25	9,263	4	4	0	168	1	3													254	237	17	8,778	
2	12,800		156	121	35	9,419	4	4	0	172	2	5													198	186	12	8,976	
3	14,800	62	229	195	34	9,648	2	2	0	174	3	8													198	192	6	9,174	
4	23,400	62	168	128	40	9,816	4	3	1	178	3	11													180	169	11	9,354	
5	21,000	60	151	123	28	9,967	4	3	1	182	6	17													185	172	13	9,539	
6	18,200	60	86	66	20	10,053	5	5	0	187	4	21													159	146	13	9,698	
7	16,600	61	165	132	33	10,218	7	7	0	194	5	26													202	189	13	9,900	
8	16,000		257	203	54	10,475	3	3	0	197	14	40													254	228	26	10,154	
9	15,500		296	268	28	10,771	4	3	1	201	26	66													249	246	3	10,403	
10	14,500	65	256	198	58	11,027	10	10	0	211	14	80													233	210	23	10,636	
11	13,600	65	253	197	56	11,280	13	10	3	224	20	100													307	280	27	10,943	
12	12,800	67	225	171	54	11,505	12	11	1	236	9	109													223	204	19	11,166	
13	11,900	67	409	319	90	11,914	15	11	4	251	20	129													320	287	33	11,486	
14	11,500	68	511	408	103	12,425	5	5	0	256	19	148													314	290	24	11,800	
15	11,300		485	386	99	12,910	9	7	2	265	29	177													361	330	31	12,161	
16	11,200		411	371	40	13,321	7	5	2	272	25	202													350	341	9	12,511	
17	11,100	68	430	367	63	13,751	7	7	0	279	29	231													330	323	7	12,841	
18	10,800	66	244	192	52	13,995	7	7	0	286	38	269													380	338	42	13,221	
19	10,200		285	244	41	14,280	4	4	0	290	52	321													473	466	7	13,694	
20	9,700	64	450	350	100	14,730	7	6	1	297	72	393													355	325	30	14,049	
21	9,380	64	476	382	94	15,206	13	11	2	310	81	474													356	320	36	14,405	
22	9,300		434	359	75	15,640	11	11	0	321	107	581													335	310	25	14,740	
23	9,400		374	302	72	16,014	7	5	2	328	99	680													278	266	12	15,018	
24	9,650	70	275	220	55	16,289	10	10	0	338	99	779													188	179	9	15,206	
25	9,480	70	275	227	48	16,564	11	10	1	349	73	852													205	199	6	15,411	
26	9,250	71	212	189	23	16,776	5	5	0	354	58	910													129	125	4	15,540	
27	9,220	71	288	228	60	17,064	25	23	2	379	104	1,014													195	189	6	15,735	
28	9,150		229	196	33	17,293	9	7	2	388	62	1,076													77	62	15	15,812	
29	9,050		280	220	60	17,573	4	3	1	392	91	1,167													246	229	17	16,058	
30	9,400		247	198	49	17,820	5	2	3	397	136	1,303													236	214	22	16,294	
Total	Clip/Uncli	р		13,982	3,838			337	60													•				15,776	518		



Year: 2024 Month: July

								Co	ho							Stee	elhead				Other Species								
Date	Hydrolog	ical Data			Adult				Jack		Mi	ni Jack		Ad	ult			Ja	ck		Wint	er (Nov 20	023-May	2024)	Sum	nmer (Mar 2	2024-00	t 2024)	
	Flow	Temp		Daily		Cum.		Daily		Cum.	Daily	Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.	Species/Total
			Total	Clipped	Unclip	17,820	Total	Clipped	Unclip	397		1,303	Total	Clipped	Unclip		Total	Clipped	Unclip		Total	Clipped	Unclip		Total	Clipped	Unclip	16,294	
1	10,000	70	209	156	53	18,029	10	10	0	407	160	1,463													235	211	24	16,529	
2	10,500	71	266	239	27	18,295	4	4	0	411	180	1,643													330	326	4	16,859	
3	10,500	71	375	336	39	18,670	12	10	2	423	202	1,845													296	291	5	17,155	
4	10,100		279	242	37	18,949	7	7	0	430	150	1,995													197	195	2	17,352	
5	10,100		332	297	35	19,281	14	14	0	444	161	2,156													158	151	7	17,510	
6	10,000		284	228	56	19,565	6	7	-1	450	168	2,324													140	136	4	17,650	í .
7	9,900		221	171	50	19,786	6	6	0	456	160	2,484													109	105	4	17,759	1 SHAD
8	9,800	73	155	104	51	19,941	3	1	2	459	119	2,603													83	75	8	17,842	
9	9,650	75	117	79	38	20,058	5	4	1	464	115	2,718													40	36	4	17,882	í .
10	9,680	77	74	59	15	20,132	2	1	1	466	94	2,812													25	24	1	17,907	í .
11	9,580	78	37	28	9	20,169	3	3	0	469	43	2,855													9	9	0	17,916	
12	9,450	78	43	34	9	20,212	1	1	0	470	27	2,882													7	5	2	17,923	
13	9,380		26	21	5	20,238	2	2	0	472	18	2,900													5	5	0	17,928	1
14	9,380	78	21	17	4	20,259	0	0	0	472	38	2,938													3	3	0	17,931	
15	9,380	78	16	11	5	20,275	1	1	0	473	20	2,958													5	4	1	17,936	
16	8,400	78	8	8	0	20,283	0	0	0	473	22	2,980													4	3	1	17,940	
17	7,900		10	7	3	20,293	0	0	0	473	17	2,997													2	2	0	17,942	
18	6,880	76	5	3	2	20,298	0	0	0	473	13	3,010													-2	-2	0	17,940	
19	6,880	76	16	14	2	20,314	0	0	0	473	24	3,034													1	0	1	17,941	
20	7,000		19	12	7	20,333	1	1	0	474	52	3,086													6	6	0	17,947	1
21	7,100		34	27	7	20,367	2	1	1	476	58	3,144													5	4	1	17,952	
22	7,450	77	63	42	21	20,430	1	1	0	477	40	3,184													4	3	1	17,956	
23	7,500	77	80	59	21	20,510	3	3	0	480	37	3,221													8	7	1	17,964	
24	7,400	76	93	59	34	20,603	2	0	2	482	48	3,269													11	10	1	17,975	
25	7,660	76	80	62	18	20,683	0	0	0	482	66	3,335													5	5	0	17,980	1
26	8,600	76	72	48	24	20,755	1	-1	2	483	81	3,416													13	12	1	17,993	
27	8,700		136	91	45	20,891	3	2	1	486	143	3,559													25	24	1	18,018	
28	8,600		142	96	46	21,033	8	4	4	494	168	3,727													24	20	4	18,042	
29	8,160	74	89	60	29	21,122	3	3	0	497	93	3,820													22	20	2	18,064	
30	7,500	74	76	44	32	21,198	4	3	1	501	104	3,924													24	19	5	18,088	
31	7,400		83	48	35	21,281	2	0	2	503	106	3,926													25	21	4	18,113	
Total	Clip/Unclip	р		16,684	4,597			425	78																	17,506	607		



Year: 2024 Month: August

		Spring/Fall Chinook														Co	ho							Stee	lhead				Other Species
Date	Hydrolog	ical Data		A	\dult			J	lack		Mini	i Jack		Ad	ult			Ja	ck		Winte	er (Nov 20	23-May	2024)	Sum	nmer (Mar	2024-00	t 2024)	
	Flow	Temp		Daily		Cum.		Daily		Cum.	Daily	Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.	Species/Total
			Total	Clipped	Unclip	21,281	Total	Clipped	Unclip	503		3,926	Total	Clipped	Unclip	0	Total	Clipped	Unclip	0	Total	Clipped	Unclip		Total	Clipped	Unclip	18,113	
1	7,360	72	138	83	55	21,419	1	1	0	504	133	4,059	0	0	0	0	0	0	0	0					43	39	4	18,156	
2	7,240	72	187	93	94	21,606	14	13	1	518	115	4,174	0	0	0	0	0	0	0	0					37	32	5	18,193	
3	7,200		129	62	67	21,735	4	4	0	522	145	4,319	0	0	0	0	0	0	0	0					21	17	4	18,214	
4	7,800		64	40	24	21,799	26	26	0	548	139	4,458	0	0	0	0	0	0	0	0					21	21	0	18,235	
5	7,880	74	37	23	14	21,836	7	7	0	555	92	4,550	1	1	0	1	0	0	0	0					8	8	0	18,243	
6	7,660	74	30	16	14	21,866	3	3	0	558	62	4,612	0	0	0	1	0	0	0	0					5	5	0	18,248	
7	7,540	77	12	6	6	21,878	3	2	1	561	32	4,644	0	0	0	1	0	0	0	0					З	2	1	18,251	
8	7,570	77	13	6	7	21,891	11	6	5	572	50	4,694	1	0	1	2	0	0	0	0					6	6	0	18,257	
9	7,500	78	18	8	10	21,909	11	9	2	583	47	4,741	1	1	0	3	0	0	0	0					2	2	0	18,259	
10	7,570		16	6	10	21,925	3	2	1	586	50	4,791	0	0	0	3	0	0	0	0					6	6	0	18,265	
11	7,480		10	3	7	21,935	4	4	0	590	30	4,821	1	0	1	4	0	0	0	0					4	3	1	18,269	
12	7,500	75	18	4	14	21,953	1	1	0	591	24	4,845	0	0	0	4	0	0	0	0					5	3	2	18,274	
13	7,600	74	10	5	5	21,963	4	2	2	595	20	4,865	0	0	0	4	0	0	0	0					1	1	0	18,275	
14	7,200	74	4	1	3	21,967	5	5	0	600	28	4,893	2	0	2	6	0	0	0	0					1	0	1	18,276	
*15	7,090	73	22	5	17	21,989	3	2	1	603	38	4,931	0	0	0	6	0	0	0	0					9	8	1	18,285	
16	7,100	73	18	7	11	18	5	2	3	5	31	4,962	3	2	1	9	0	0	0	0					6	6	0	18,291	
17	7,120		47	17	30	65	2	2	0	7	45	5,007	2	2	0	11	0	0	0	0					10	8	2	18,301	
18	7,330		42	10	32	107	8	5	3	15	46	5,053	2	2	0	13	0	0	0	0					23	21	2	18,324	
19	7,480	71	64	22	42	171	7	5	2	22	40	5,093	1	0	1	14	0	0	0	0					19	16	3	18,343	
20	7,300	71	106	42	64	277	12	5	7	34	75	5,168	4	1	3	18	1	1	0	1					18	16	2	18,361	
21	7,200	70	91	22	69	368	6	2	4	40	55	5,223	4	0	4	22	0	0	0	1					25	21	4	18,386	
22	7,180	70	63	17	46	431	6	0	6	46	38	5,261	10	0	10	32	0	0	0	1					22	17	5	18,408	
23	7,150	70	40	8	32	471	0	0	0	46	27	5,288	4	0	4	36	0	0	0	1					16	10	6	18,424	
24	7,300		25	9	16	496	5	0	5	51	11	5,299	1	0	1	37	0	0	0	1					16	13	3	18,440	
25	7,450		36	19	17	532	6	2	4	57	19	5,318	3	0	3	40	0	0	0	1					4	4	0	18,444	
26	7,390	70	47	12	35	579	7	4	3	64	12	5,330	4	0	4	44	0	0	0	1					20	18	2	18,464	
27	7,240	70	57	10	47	636	10	2	8	74	23	5,353	13	0	13	57	1	0	1	2					16	7	9	18,480	
28	7,150	70	58	8	50	694	6	2	4	80	15	5,368	8	1	7	65	3	1	2	5					25	22	3	18,505	
29	7,060	68	74	12	62	768	14	1	13	94	23	5,391	32	6	26	97	3	2	1	8					16	15	1	18,521	
30	7,030		75	10	65	843	9	4	5	103	20	5,411	22	5	17	119	8	1	7	16					13	8	5	18,534	
31	7,270		80	11	69	923	4	2	2	107	26	5,437	20	3	17	139	8	0	8	24					18	14	4	18,552	
Total	Clip/Uncli	р	ChS	17,045	4,944			512	91					24	115			5	19							17,875	677		
	ChF 236 687 38 69																												
*Sprin	g Chinook	(ChS)- Ja	in. 1-Au	ig. 15 Fall	Chinook (ChF)- Aug	j. 16-D	ec. 31																					



Year: 2024 Month: September

		Fall Chinook														Co	ho							Stee	elhead				Other Species
Date	Hydrolog	ical Data		A	dult			Ja	ick		Min	i Jack		Ac	dult			Ja	ack		Win	ter (Nov 20	023-May	2024)	Sum	nmer (Mar	2024-00	ct 2024)	1
	Flow	Temp		Daily		Cum.		Daily		Cum.	Daily	Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.		Daily		Cum.	Species/Total
			Total	Clipped	Unclip	923	Total	Clipped	Unclip	107		5,437	Total	Clipped	Unclip	139	Total	Clipped	Unclip	24	Total	Clipped	Unclip		Total	Clipped	Unclip	18,552	
1	7,570		59	8	51	982	23	7	16	130	28	5,465	23	0	23	162	7	0	7	31					8	7	1	18,560	í l
2	7,630		42	4	38	1,024	11	1	10	141	25	5,490	73	6	67	235	7	0	7	38					7	6	1	18,567	í l
3	7,970	70	37	5	32	1,061	12	2	10	153	18	5,508	55	3	52	290	2	0	2	40					5	4	1	18,572	í l
4	8,530	70	159	20	139	1,220	42	11	31	195	33	5,541	44	11	33	334	6	0	6	46					11	8	3	18,583	í l
5	8,380	71	54	6	48	1,274	5	0	5	200	10	5,551	140	2	138	474	26	0	26	72					18	18	0	18,601	í l
6	8,300	71	31	4	27	1,305	5	0	5	205	10	5,561	189	2	187	663	31	0	31	103					12	10	2	18,613	í l
7	8,790		19	2	17	1,324	4	1	3	209	9	5,570	534	22	512	1,197	54	0	54	157					15	13	2	18,628	í l
8	9,380		54	9	45	1,378	6	0	6	215	26	5,596	754	35	719	1,951	71	0	71	228					13	12	1	18,641	í l
9	9,880		40	5	35	1,418	8	1	7	223	13	5,609	666	43	623	2,617	138	0	138	366					17	15	2	18,658	í l
10	9,680		22	3	19	1,440	3	0	3	226	4	5,613	651	42	609	3,268	91	0	91	457					6	6	0	18,664	í l
11	9,610	70	22	4	18	1,462	5	1	4	231	3	5,616	762	36	726	4,030	127	1	126	584					5	3	2	18,669	í l
12	9,800	70	12	1	11	1,474	1	0	1	232	0	5,616	531	37	494	4,561	120	1	119	704					8	6	2	18,677	í l
13	9,180	70	16	2	14	1,490	3	0	3	235	4	5,620	718	29	689	5,279	88	0	88	792					10	9	1	18,687	í l
14	8,830		11	5	6	1,501	2	0	2	237	0	5,620	712	13	699	5,991	104	5	99	896					12	9	3	18,699	í l
15	8,860		8	3	5	1,509	0	0	0	237	0	5,620	891	8	883	6,882	138	0	138	1,034					5	3	2	18,704	í l
16	8,860	67	14	1	13	1,523	3	1	2	240	0	5,620	2,529	44	2,485	9,411	292	7	285	1,326					15	8	7	18,719	
17	9,250	67	12	2	10	1,535	0	0	0	240	0	5,620	2,248	22	2,226	11,659	369	0	369	1,695					8	7	1	18,727	
18	9,450	65	10	2	8	1,545	0	0	0	240	0	5,620	1,792	19	1,773	13,451	242	0	242	1,937					2	1	1	18,729	
19	9,580	65	7	2	5	1,552	0	0	0	240	0	5,620	2,039	1	2,038	15,490	228	0	228	2,165					5	2	3	18,734	
20	9,850		6	2	4	1,558	1	0	1	241	0	5,620	2,061	12	2,049	17,551	217	0	217	2,382					4	3	1	18,738	
21	10,300		2	-2	4	1,560	0	0	0	241	0	5,620	2,567	2	2,565	20,118	315	0	315	2,697					2	1	1	18,740	
22	10,600		5	2	3	1,565	0	0	0	241	0	5,620	2,256	15	2,241	22,374	213	2	211	2,910					13	9	4	18,753	
23	10,600	63	6	2	4	1,571	0	0	0	241	0	5,620	2,193	17	2,176	24,567	227	2	225	3,137					8	6	2	18,761	
24	10,700	63	11	2	9	1,582	3	1	2	244	0	5,620	1,991	6	1,985	26,558	273	0	273	3,410					9	5	4	18,770	
25	9,980	64	6	0	6	1,588	0	0	0	244	0	5,620	1,567	2	1,565	28,125	259	0	259	3,669					5	3	2	18,775	
26	9,800	64	6	1	5	1,594	0	0	0	244	0	5,620	2,029	1	2,028	30,154	266	0	266	3,935					4	1	3	18,779	
27	9,780		4	0	4	1,598	0	0	0	244	0	5,620	2,077	3	2,074	32,231	205	2	203	4,140					3	3	0	18,782	
28	9,380		4	1	3	1,602	0	0	0	244	0	5,620	1,869	0	1,869	34,100	220	0	220	4,360					3	4	-1	18,785	
29	9,090		5	0	5	1,607	0	0	0	244	0	5,620	1,724	3	1,721	35,824	185	0	185	4,545					8	2	6	18,793	
30	8,990	63	4	0	4	1,611	0	0	0	244	0	5,620	1,486	4	1,482	37,310	195	0	195	4,740					7	3	4	18,800	
Total (Clip/Unclip	р		332	1,279			64	180					464	36,846			25	4,715							18,062	738		