Testimony to the Oregon Fish and Wildlife Commission on the 2022 Columbia River Steelhead Return and Fisheries Framework / David Moskowitz, Executive Director / August 5, 2022

Ten Take-A-Ways

1. The 2022 preseason forecast for Columbia Steelhead is the lowest on record, a period dating to 1938.
2. The 2022 forecasted wild summer steelhead return is the second lowest in the past 30 years.
3. Unclipped hatchery fish comprise 6 to 11 percent of the total Col. Riv. wild steelhead count.
4. Early season high flows and cold water were ideal for early migrating adults, but flows are now declining and water temperatures increasing as the steelhead run builds.
5. Wild steelhead are typically more abundant early in the run, but given their reduced abundance so far this year, early season fisheries for hatchery fish are likely putting undue pressure on the depleted stocks of wild fish.
6. State managers use short-term averages that mask long-term declines of wild steelhead. The declining baseline syndrome is evident in *Table 1: 2022 to 2002 Total Steelhead, Wild Steelhead Returns from July 1 thru July 31* (next page) when you examine the Wild Return in 2010 (76,892 wild steelhead over BON from July 1 to July 31). The number of wild steelhead exceeds the combined wild and hatchery steelhead return during the July 1 thru July 31 period in 9 of the past 10 years (2022 thru 2011).
7. The inability to consistently and accurately forecast steelhead returns calls into question the methods, models, and the use of professional judgement. The reality is, forecasting will always be fraught with high levels of uncertainty, which is precisely why managing conservatively is important.
8. When bi-state angling regulations leave some rivers open and others in proximity are closed or restricted, anglers shift their effort, resulting in higher, perhaps unsustainable, levels of effort on the open rivers.
9. Hatchery steelhead production and releases are not managed with respect to forecasted wild fish productivity and these consistent, large hatchery releases cause higher levels of angler effort, predation and pHOS impacts.
10. Thermal Angling Sanctuaries, at the Deschutes since 2018, and 2021 emergency regulations in the mainstem and tributaries enacted by September 2021 reduced angler effort and wild steelhead encounters, which in turn could only have helped more wild steelhead reach the spawning grounds in as healthy a condition as possible.

2022 - 2002 Upriver Steelhead Returns July 1-July 31 (Source**: UW Col. Ri. DART) ***2022 updated to August 4

Return Year	W+H Return	TYA	Percent of TYA	Wild Return	TYA	Percent of TYA
2022*	***42,634***	***51,316***	***83%***	***16,867***	***25,667***	***66%***
2021	12,273	52,158	23.5%	6,736	26,672	25.3%
2020	34,377	74,179	53.3%	18,064	32,555	55.5%
2019	22,288	60,840	30%	13,470	36,460	37%
2018	26,758	83,790	32%	12,196	40,246	30.3%
2017	17,643	87,862	20.1%	9,527	41,591	23%
2016	47,117	87,841	53.6%	17,960	41,806	43%
2015	60,690	90,269	67.2%	33,025	41,833	79%
2014	85,879	88,343	97.2%	46,295	40,323	115%
2013	57,616	92,100	63%	34,228	41,082	83.3
2012	72,994	95,574	76.4%	33,412	42,645	78.4%
2011	96,220	106,432	90.4%	48,454	45,052	108%
2010	157,387	98,576	160%	**76,892**	40,675	189%
2009	119,486	91,408	131%	52,524	37,400	140.4%
2008	122,870	82,652	149%	50,057	33,783	148%
2007	58,362	82,652	71%	22,974	33,783	68%
2006	46,912	81,734	57.4%	20,114	31,843	63.2%
2005	84,968	76,104	112%	33,289	29,306	114%
2004	66,621	72,114	92,4	31,199	27,206	115%
2003	95,185	66,010	144%	41,817	23,024	182%
2002	117,735	59,746	197%	49,045	18,119	271%

Identifying Factors For Decline of Columbia River Steelhead

The factors for decline are numerous and include, but are not limited to the following:

1. Passage mortality as steelhead pass through the Columbia and Snake River Hydro System
2. Tribal Commercial Set and Gill Net Fisheries that target adult steelhead
3. Catch and Release Mortality in mainstem and tributary sport fisheries for steelhead
4. Warm water which delays migrations and adds stress to fish, especially those handled in C&R Fisheries
5. Adult Predation by marine mammals downstream of Bonneville Dam downstream
6. Juvenile steelhead predation by birds, fish and mammals during rearing and out-migration
7. By-catch in Columbia River Commercial Mainstem and Off-Channel fisheries
8. Tribal platform fisheries in tributaries such as the Wind, Klickitat, Deschutes etc.
9. Depleted ocean food availability caused by massive hatchery production of pink, chum and sockeye
10. By-catch of adult steelhead in commercial fisheries in the Pacific Ocean
11. Illegal harvest (poaching) in the Columbia River and tributaries
12. Natural mortality during migration and spawning, or exacerbated by poor water flows or quality

While fishing (tribal, commercial and sport) and hatchery production is only two of many factors for decline, they are both within our immediate administrative and legal control to affect. Acting to reduce the impacts of fishing and hatchery production on wild steelhead will result in percentage increases in survival within the Columbia and Snake River Basin – percentages that matter in-season and over time for rebuilding productivity.

The Deschutes River

The Deschutes River is one of the most important trout rivers in the world. There, trout can become steelhead and the steelhead can become trout. The Deschutes has distinct ecological characteristics and a variety of tributaries for summer steelhead to migrate to for spawning, and steelhead also spawn in the mainstem where it is possible that trout fisheries may impact spawning success.

In 2021, in response to very low wild steelhead abundances, restrictive steelhead fishery regulations were enacted on September 1 on the Lower Deschutes Rivers as well as the John Day River. Angling had been authorized under permanent rules between June 1 and August 31, and after September 1, angling was still permitted for chinook and coho salmon as well as bass. The John Day was closed completely.

A review of ODFW creel and encounter data collected at Heritage Landing and on Macks Canyon Road indicated that angling effort and encounters was reduced by two-thirds from previous years – even with the early season fishery open, and salmon angling permitted conserved wild steelhead in 2021.[1]

The reduced angler effort, and angling closures on the Deschutes River as well as on John Day River, and angler encounters with wild steelhead will have reduced mortality and likely even reduced sub-lethal impacts that depress spawning success.

However, in 2022, ODFW established a "Deschutes River Steelhead Fisheries Framework to guide its decision-making and provide some sense of certainty to the angling public. The announced opening on the Deschutes River scheduled for August 15 based on wild or unclipped steelhead passage at Bonneville Dam has created a virtually wide-open gold-rush situation for steelhead. This "opening day" style fishery is inappropriate given the dangerously low size of the wild steelhead return to date.

As anglers, TCA believes fisheries can be implemented when runs are low, but before you do that, state managers need to establish escapement goals or spawner targets that are sufficient to maintain diversity, spatial structure, productivity, and abundance. It is possible the "minimal abundance threshold" (MAT) would work as the minimum threshold for that target, but you can't manage fisheries relying on extinction thresholds (noted as a "critical

[1] Lower Deschutes Fish Population Study 2020-2021, F21AF00269 Final SFR Performance Report: 10/01/20-9/30/21 (ODFW)

abundance threshold" (CAT). That is equivalent to managing your bank account for a zero balance all the time without knowing how much money will eventually come in.

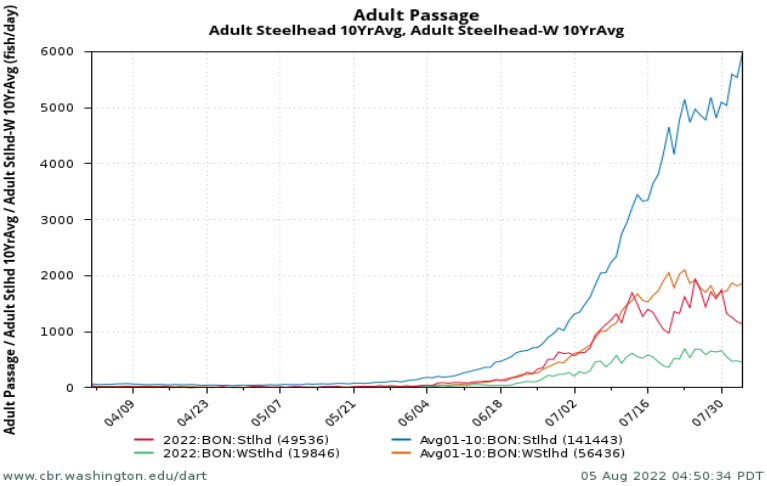
Additionally, once a target is established, ODFW should stop managing only using either a closure or the free-for-all approach that could be triggered by a dam count number that is only exceeded by a few fish. The extensive variation in run size we are experiencing will become increasingly common as climate change effects unfold, and state managers must develop a more flexible fishery framework based on meeting the MAT, not the CAT.

A flexible fishery framework is one that allows a tempered, gradual increase in fishing effort that also limits encounters, one that adopts the traffic light system – incorporating the yellow caution light to temper the transition between red and green stop and start points.

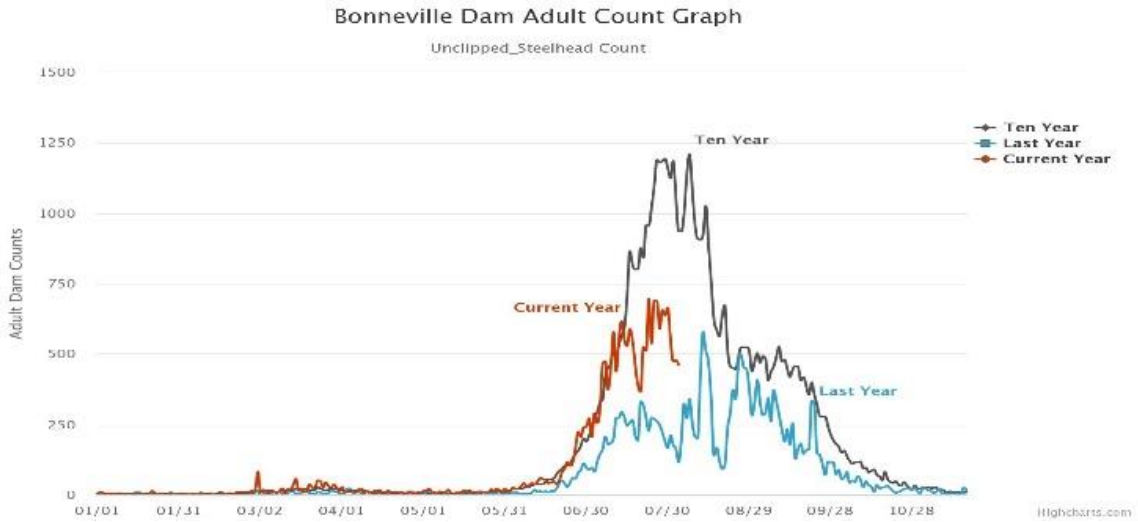
For example, fisheries could be operated very restrictively when run sizes are expected to be close to or just below the spawner target goal, such as further gear restrictions (e.g., fly fishing only with floating lines and unweighted flies, like on N Umpqua), limited entry, restricted hours or days, establish catch and release limits, lower hatchery bag limits, and reduction or elimination of fishing guides.

While we are encouraged by the larger return of wild summer steelhead in 2022, the return is not strong and even greater caution should be applied to the fisheries affecting the current adult migration. The following two graphs demonstrate the weakness of the 2022 return to-date.

These graphs compares current 2022 steelhead to the 2001-2010 ten-year average (from April 1 to August 3).



This is a Fish Passage Center graph of the wild/unclipped steelhead passage over Bonneville Dam so far in 2022.



Several Columbia River Management Uncertainties Remain Unaddressed

1. Hatchery Steelhead: Anglers and managers assert that without sport harvest of hatchery steelhead, there will be hatchery fish impacts on wild steelhead spawning grounds. TCA would like to see the evidence of this based on spawner surveys and counts. It is also possible that as far as measuring impacts, the mortality rates from catch and release fisheries may outweigh the impacts to wild steelhead from stray hatchery fish on the wild spawning grounds. Further, if hatchery traps were operated to remove every hatchery steelhead that entered throughout the migration period, this would be a positive step in reducing pHOS. Finally, there should be a factor for reduction in overall hatchery steelhead production and releases that accounts for predicted wild steelhead survival. These hatchery reductions would benefit wild steelhead productivity from reductions in predator attraction and reductions in competition for rearing and feeding.
2. Monitoring Effort and Encounters: It is critical that the state agencies and tribes increase their in-season management surveys to be able to better assess the angler effort, effort shifts when some rivers are closed or restricted and to assess wild steelhead encounter rates. Additionally, in mainstem fisheries, measuring angler effort and encounters when "angling for steelhead" was prohibited versus where hatchery steelhead retention was prohibited would be helpful to understand. Finally, in mark-selective fisheries, sport anglers note that they often encounter multiple unmarked or wild fish while continuing to angle for hatchery fish. Managers must understand the likely release mortality rates for fish released in mark-select fisheries. It goes without saying that direct, on-board observation of the Commercial Fisheries (both Tribal and Non-tribal) must be part of annual operations.
3. Forecasting: The table below compares the pre-season forecast for total adult upriver steelhead (hatchery and wild) and the preseason forecast for wild steelhead, by the actual returns of the total hatchery and wild steelhead return. The third column presents the percentage that the actual return deviated from the forecast, expressed as percent over or under the forecast.

Year	Preseason Forecast Total H+W / Wild	Actual Steelhead Return: Total / Wild	Percent Actual Returns Deviate from Forecast	Assessment: * See Note 1
2022	*99,700 / 31,600*	*42,634/16,867 (8/4)*	*TBD*	*50% complete on 8/15*
2021	101,400 / 30,600	69,669 / 21,800	69% / 71.2%	Actual is ~30% off
2020	**99,900 / 36,500**	**111,692 / 35,464**	**112% / 97%**	**Within 12%**
2019	126,950 / 38,050	75,600 / 32,721	60% / 86%	Wide disparity high
2018	190,350 / 51,200	100,483 / 26,702	53% / 52.2%	Actual is ~ 47% off
2017	130,700 / 38,200	116,841 / 29,896	89.4% / 78.3%	Within 22%
2016	265,400 / 99,900	184,000 / 37,100	69.3 / 37%	More than 30% off
2015	**312,200 / 111,200**	**261,400 / 94,400**	**84% / 85%**	**Actual is ~15% off**
2014	281,000 / 91,200	320,700 / 127,400	114% / 140%	Wide disparity low
2013	339,200 / 96,700	231,300 / 95,100	68.2% / 98.4%	Wide disparity high
2012	380,300 / 109,800	230,800 / 83,900	61% / 76.4%	Wide disparity high
2011	**390,900 / 112,000**	**364,900 / 111,800**	**93.4% / 100%**	**Very accurate**
2010	453,000 / 124,600	410,418 / 153,252	91% / 123%	Wide disparity mixed
2009	351,800 / 89,900	601,600 / 171,300	171% / 191%	Very inaccurate
2008	326,400 / 80,100	355,000 / 104,666	109% / 131%	Wide disparity low
2007	314,600 / 56,800	319,400 / 88,000	102% / 155%	Wide disparity low
2006	**312,600 / 76,000**	**329,200 / 74,400**	**105% / 98%**	**Within 5% of actual**
2005	**308,600 / 70,500**	**312,500 / 71,300**	**101% / 101%**	**Within 1% of actual**
2004	388,100 / 100,600	309,000 / 70,800	80% / 70.4%	Within 20 to 30%
2003	**360,900 / 86,600**	**357,200 / 74,700**	**99% / 86.3%**	**Within 14% of actual**
2002	**447,800 / 135,100**	**478,000 / 129,280**	**107% / 96%**	**Within 7% of actual**
2001	249,300 / 63,900	630,200 / 157,200	253% / 246%	Very inaccurate
2000	**254,000 / 68,700**	**274,200 / 77,700**	**108% / 113%**	**Within 13% of actual**

Source: Joint State Staff Reports from ODFW and WDFW (2000 to 2022)

***Note 1**: The table reflects fourteen instances of being more than 15% over or under over a 22-year period. The **bold** rows highlight the years when pre-season forecasts were fairly accurate.

Conservation Angling Tips for the Wild Steelhead Season – How to be a Conservation Angler

Wild Steelhead returning to the Columbia River are facing their seventh consecutive poor return. In 2021, fewer than 1,300 wild B-run steelhead returned to Idaho. Fewer than 22,000 wild steelhead migrated up the Columbia and Snake Rivers in 2021, and only 31,000 are expected in 2022. These fish will face angling effort measured in thousands of angler days. To preserve these iconic and threatened wild fish, all anglers must be incredibly careful and conservative, even considering not fishing for steelhead at all.

Twelve Ways to be a Conservation Angler

1. Make a conscious choice to not fish in areas where you know wild fish will congregate in order to survive warm water or heavy fishing pressure.
2. Fishery research activities are required to stop work when water temperatures exceed 68f, so voluntarily stop your angling before water temperatures reach 68f.
3. Use an appropriately sized rod, reel and line combination that allows you to land your fish without undue time and stress.
4. Don't use barbed hooks or treble hooks. Use small gap hooks and pinch the barbs when you change flies or lures.
5. Don't drag a wild fish into shallow or silty water or onto rocky or sandy banks while landing it. The silt and sand can hurt the gills, and the fish can mortally wound itself on the cobbles.
6. Carefully handle a landed fish in a safe place with clean flowing water. Wet your net, hand or any glove or rag you may use before handling your fish. Handle your fish lightly without squeezing or lifting them. Use a rubberized mesh net rather than a knotted nylon or cotton and try to photograph and measure your fish while it remains in the water.
7. Keep fish in the water. Don't take a picture of your catch if you cannot keep the fish in the water or cannot keep the fish from hurting itself while it is struggling and trying to return to its river.
8. Be patient and take the time to allow your fish to recover its strength and balance and can stay upright before you release it into the current.
9. Avoid using bait. You know it works, so try something less effective. Certainly don't use harmful chemicals to make bait nor treat bait to make it "tastier."
10. Learn what a salmon, steelhead or trout spawning nest (or redd) looks like so when you encounter them, you can avoid wading through these spawning beds. Never fish over spawning fish.
11. Take a novice fishing (during prime time) and teach them how to fish, and to respect the river, fellow anglers, and most of all, the fish themselves.
12. Know the number for the fishery enforcement agency in your area and report illegal or suspicious behavior by anyone harming or harassing wild fish. Here are Pacific Northwest TIP numbers:

    OR: 800-452-7888 WA: 877-933-9847 ID: 800-632-5999

A Conservation Angler goes fishing not only to catch or encounter a fish but also to enjoy nature's gift of clear sweet waters, lush forests, inspiring desert canyons, lonely and serene tundra and all the creatures that live in these places. Enjoy your time on the river with family and friends and protect the future.