

THE OSPREY

The International Journal of Salmon and Steelhead Conservation

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Fraser Basin Summer Steelhead Collapse **Commercial salmon fisheries intercept adult spawners**



ALSO IN THIS ISSUE:

***KLAMATH DAMS UPDATE • RECOVERING SALMON TO SAVE
ORCAS • COLUMBIA-SNAKE RIVER SALMON AND STEELHEAD
COLD WATER REFUGIA • WILD REDFISH LAKE SOCKEYE***

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The Osprey

69278 Lariat

Sisters, OR 97759

jyusk@bendcable.com

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Nature and the Virus

by Jim Yuskavitch

As much of the world's population hunkered down over the last couple of months to help slow the spread of the Coronavirus and Covid-19, the disease that it causes, scientists and other observers of nature began to notice some changes. As human activity — everything from travel, use of motorized vehicles, industrial and other commercial endeavors slowed — the planet was slowly becoming noticeably cleaner and quieter.

In national parks, wildlife were observed expanding into areas that were formerly crowded with people, and in both Europe and the US, there were reports of various wildlife species coming out of the forests and mountains to wander through towns and cities as the human populations remained mostly indoors.

With fewer cars and trucks on the road, pollution levels in the world's major metropolitan areas began to drop significantly. In fact, the skies over the Indian city of Jalandhar cleared enough that its residents were able to see the Himalayan Mountains in the distance for the first time in 30 years.

Some optimistic souls speculate that the Human Race may take some lessons to heart from our pandemic experience, and find the motivation to live less heavily on Planet Earth, and treat her and her wide range of inhabitants — including wild fish — with more respect and value.

Perhaps something good will come out of all of this. People are riding bicycles more, and some cities are closing streets

to vehicles to allow for outdoor dining. Conservation officials in Thailand are planning to close their parks periodically to help wildlife.

It remains to be seen whether or not people are willing to make some changes in how they live and use natural resources. It's just as likely that everyone will go back to doing things they way they always did.

For wild salmon and steelhead advocates, a new, more positive and responsible world paradigm, would undoubtedly help, but it's unlikely to put us out of business.



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*Jim Yuskavitch
Editor, The Osprey*

Coldwater Refugia, Yes; Wild Skagit Steelhead, No

By Pete Soverel

This issue's Hits & Misses column includes progress for wild Columbia River steelhead and salmon, a big miss for wild steelhead on the Skagit and discussion of the various strategies used to restore salmon and steelhead runs after dam removal.

HITS

Columbia River coldwater refugia

The Oregon Department of Fish and Wildlife has established cold water refugia at several locations along the Oregon side of the Columbia River. As the summer progresses, temperatures in the main stem Columbia approach lethal levels. The fish naturally congregate in the cold water plumes at the mouths of cold water tributaries. These congregations attract, in turn, targeted recreational as well as tribal fishing effort. After years of persistent lobbying led largely by The Conservation Angler, Oregon did the right thing. Now it's up to the Washington Fish and Wildlife Commission to follow suit, closing similar areas on the Washington side such as Wind River and Drano Lake. It's beyond overdue. See page 19 of this issue for a detailed article on the Oregon Fish and Wildlife Commission's pursuit of protecting wild fish using cold water refugia.

Fish recovery strategies following dam removal

The Osprey Editorial Board has identified dam removal and fish responses to removal as key topics for editorial attention systematically in all or most editions of *The Osprey*. Dam removal proposals and programs are flourishing in Salmon Nation from the Canadian border to southern California. A wide range of recovery strategies have been utilized or planned to accompany dam removal:

1. Do nothing and let the fish recover themselves (White Salmon/Condit Dam);

2. Massive hatchery programs to "jump start" wild populations (Elwha/two dams)

3. "Conservation" hatcheries (talk about an oxymoron) based upon wild or near wild brood stock to prevent local extinctions and provide a base for recovery of wild populations (Sandy River; Klamath – proposed);

4. Mining eggs from wild, in-river redds to be reared in hatcheries to boost locally adapted wild populations (Elwha winter run steelhead)

5. Elements of some or all of the above.

So far, there is little evidence that hatchery assisted recovery based upon either massive or conservation hatcheries is effective — Elwha Chinook and winter steelhead, for example. There is some evidence that natural recovery can be effective (Elwha: dramatic summer run steelhead, bull trout, searun cutthroat rapidly increasing natural populations; Alewife populations in Maine rivers; less clear in the case of White Salmon populations following removal of Condit dam). In other words, the jury is out on the most efficacious fish recovery strategies following dam removal.

It was within this context, especially in light of radically different responses of Elwha fish populations to different recovery strategies that I expressed skepticism in the winter 2020 issue of *The Osprey* about the proposed Klamath steelhead and Chinook recovery strategies that rely heavily on exceptionally short-term (one generation) hatchery based models. Let's be clear, *The Osprey* supports strongly dam removal and restoration of robust wild populations. There are a variety of fish recovery strategies now in use or proposed. Let's carefully examine alternative approaches and let the fish guide us in selecting the most efficacious strategies to restore WILD populations. There is no point spending billions of dollars to remove dams while continuing or expanding hatchery programs. In coming issues, *The Osprey* will explore

results of different recovery strategies to help provide an evidentiary basis to guide recovery strategies, monitoring regimes, and fish/fisheries management.

We are pleased to have received a detailed description of Klamath dam removal and fish recovery strategies, which readers will find beginning on page 10. More such articles will be published in future issues of *The Osprey*.

MISSES

Skagit Steelhead Management Zone

In 2008, the Washington Fish and Wildlife Commission adopted a Statewide Steelhead Management Plan and directed the Washington Department of Fish and Wildlife to identify the most productive rivers for designation as Wild Steelhead Management Zones (WSMZs). After years of dithering, WDFW finally designed several lower Columbia and Olympic Peninsula rivers. Finally, in 2015, WDFW committed to designate at least one such system in each of three zones in Puget Sound — Hood Canal, South Sound and North Cascade.

WDFW solicited recommendations from the public and held three separate regional meetings to hear from the public. The Department received hundreds of public comments and the meetings were well attended. Overwhelmingly, 800 to 900, favored a very specific set of rivers to be designated WSMZ's headed by the Skagit River source to mouth, and all its tributaries. Many organizations stated flexibility in river selection with the exception of source to mouth protection for the Skagit. On that issue, most conservation organizations stipulated their commitment to "go to the mat" to secure WSMZ designation for the entire Skagit with many noting that, as a result of a successful lawsuit, the Skagit was, already, a de facto WSMZ.

WDFW reacted by rejecting public input and establishing a special advisory group, Puget Sound Steelhead Ad-

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Puget Sound Steelhead Advisory Group Minority Report

By Jamie Glasgow

visory Group, to guide selection of Puget Sound WSMZ rivers. Members included several organizations that committed to go to the mat for the Skagit. Three years later, the group published their report:

“QuickSilver - Restoring Puget Sound Steelhead and Fisheries”

https://wdfw.wa.gov/sites/default/files/202005/quicksilver_pssag_report_final_draft_5-5-20.pdf

You can imagine my surprise to discover this group, with a single exception, did not commit to WSMZ for the Skagit top to bottom to which they pledged in 2015. Indeed, the document envisions a wild brood stock program in the future for the Skagit — never mind an earlier version of such a program was terminated by WDFW because WDFW concluded that the wild brood-stock program run by the Wildcat Steelhead Club, based near Sedro Woolley, WA, produced fewer returning adult steelhead than if the broodstock had been left in the river to spawn in the wild with the mates of their own choice

The sidebar at right provides a short explanation from Wild Fish Conservancy dissenting from the QuickSilver report.

The Osprey welcomes a detailed explanation from members of the advisory group on their decision-making process and the rationale for waffling on their earlier commitment to WSMZ source to mouth.



Pete Soverel is Chair of The Osprey Management and Editorial Committee and founder and President of The Conservation angler:

www.theconservationangler.org

Correction and Clarification

The January 2020 Hits and Misses column misstated the number of Klamath River dams to be removed. Four are planned for removal — Iron Gate, COPCO 1 & 2, and J.C. Boyle. The associated cost stated was an estimate of total long-term restoration expenses, not for initial dam removal and restoration work, which is estimated at \$450 million. See the article beginning on page 10 for a Klamath River update.

As a member of the Puget Sound Steelhead Advisory Group (PSSAG), Washington’s Department of Fish and Wildlife (WDFW) asked me to share my knowledge, experience, and perspectives on recovering ESA-listed Puget Sound steelhead while enhancing sustainable recreational fishing opportunities. To that end I attended meetings for three years, finding common ground with 12 fellow advisors — all passionate recreational fishermen — where I could. While there are some advisory group recommendations that I do support (those addressing the acknowledged lack of data necessary for responsible management and recovery planning), there are significant recommendations in the group’s final report “QuickSilver – Restoring Puget Sound Steelhead & Fisheries” that I do not support. My dissent with the advisory group is largely informed by three recent WDFW publications which, despite their relevance, were not provided to the group by WDFW — <https://wdfw.wa.gov/publications/02070> <https://wdfw.wa.gov/publications/02121> <https://wdfw.wa.gov/publications/0213>.

My advice to WDFW is to strive for environmental, ethical, and fiscal responsibility — let’s get it right with the steelhead hatcheries and fisheries we’ve got before adding more. To be clear, I share QuickSilver’s vision for a “...future in which wild Puget Sound steelhead are no longer threatened with extinction and are healthy enough to support fishing.” There is a time and a place for responsible recreational fishing. WDFW currently provides a diversity of angling opportunities for salmon, trout, steelhead, and other sport fishes; when monitored and managed responsibly, recreational fisheries can be sustainable even as angler demand grows — but that requires conservative management in the face of uncertainty. Over the past few decades recreational fishing opportunities have suffered as wild fish are impacted by habitat loss, human population growth, climate change, and data-limited fishery and hatchery management that is slow to respond to changing conditions. As WDFW looks to increase opportunities for recreational fishing, the agency needs to be thoughtful and realistic, and may at times need to disappoint today’s recreational anglers to meet conserva-

tion obligations for future generations. Expectations established previously may no longer be appropriate. Wild fish populations threatened with extinction are not ones to target for expanded recreational fishing pressure. Instead, existing hatcheries and recreational fisheries targeting threatened or endangered fish populations should be critically reviewed and monitored to ensure they align with the best available science, and changed if the risks they pose to wild fish recovery don’t far exceed the benefits.

One of the primary lessons the Advisory Group learned together is that WDFW needs better information than currently available to manage wild steelhead responsibly. State and federal steelhead managers are making decisions about harvest and hatchery management with limited data, and with models that do not account for crucial aspects of steelhead biology and ecology. Funding is needed to obtain critical wild steelhead data, hatchery data, and fishery data, and use them to develop models that more accurately predict the effects of various management actions and enable better goal-setting. The entire advisory group accepted this as true, and that is a QuickSilver recommendation I wholeheartedly support. The fact that this is still the case 13 years after Puget Sound wild steelhead were listed as Threatened under the Endangered Species Act is indicative of a management culture whose fiscal constraints cause it to prioritize fishing today ahead of science-based fishery management that will provide fisheries for future generations.

With this observation comes the question “how then do we move forward to restore wild steelhead and the fisheries they can support?” QuickSilver describes a diverse portfolio of new Puget Sound steelhead hatchery and fishery programs to be added on to existing ones — an experiment. An effective experiment requires specific testable hypotheses; a rigorous, repeatable, and well-funded study design built on a strong understanding of the system you’re studying; experimental controls; an evaluation of data prior to implementation (i.e. before-time period); controlled manipulation of multiple independent variables; close measure-

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Fraser Basin Summer Steelhead Collapse

Canada's government unwilling to support effective conservation measures

By Scott Simpson

Fraser River late-run summer steelhead is a group of 10 discrete spawning stocks distributed in the Fraser River watershed above Hell's Gate in the Fraser Canyon. They're commonly known as the Thompson and Chilcotin steelhead. Thompson fish, in particular, have long been celebrated internationally by sport fishermen for their exceptional size and tenacity, and for the challenges associated with fishing for them in one of the largest and most powerful rivers in British Columbia.

These unique fish may have finally met their match. Over the last three generations, the return of spawners to the Thompson has fallen 79 percent, to the Chilcotin 81 percent, and these Interior Fraser stocks now stand at less than 10 percent of their estimated abundance 40 years ago. In spite of this, Fisheries and Oceans Canada (DFO) continues to work to facilitate commercial salmon fisheries that intercept mature adult steelhead hundreds of kilometers from their spawning grounds.

These interception fisheries take place in coastal areas north of the Fraser River confluence with the Strait of Georgia, off the west coast of Vancouver Island and finally, in the lower Fraser itself. Steelhead co-migrate through these areas with commercially targeted runs of Pacific salmon. In marine areas, steelhead bycatch happens during seine fisheries targeting primarily chum and late-run sockeye. In the Fraser River, steelhead are intercepted during commercial and Indigenous gill-net openings for chum, a species which relies on the lower river for about 80 percent of its annual spawning.

In Canada, responsibility for management of anadromous species is divided, sometimes awkwardly, between the provincial and federal governments. The feds are responsible for management of all five species of Pacific salmon, deciding allocations to commercial, recreational and Indigenous

sectors. The province is responsible for ostensibly freshwater species such as rainbow, cutthroat and bull trout. Steelhead, as seagoing rainbow, are managed by the province through its Fish and Wildlife Branch. The Department of Fisheries and Oceans Canada (DFO) however, is the senior regulator and final arbiter in all allocation disputes.

Beginning in 1989, the British Columbia Fish and Wildlife Branch made wild steelhead release of Interior Fraser

Fraser basin summer steelhead returns have fallen to 10 percent of their historical abundance. Yet DFO continues to support commercial salmon fishing that intercepts adult steelhead.

steelhead mandatory. There is no hatchery augmentation, and its introduction is strongly resisted by the Branch as well as most conservation groups. In 2008 and 2010, full recreational fishing closures were imposed, with re-openings keyed to in-season migration estimates obtained through steelhead interceptions during a weekly salmon test fishery in the lower Fraser River. The primary objective of the test fishery at Albion is to gauge salmon migration volumes for the purpose of commercial fishery openings.

The depth of the Interior Fraser steelhead collapse became evident after the Branch carried out spawner surveys in early 2017 to assess returns to Thompson tributaries and the Chilcotin for fall 2016. In the final post-season assessment, Fish and Wildlife Branch fish-

eries stock assessment biologist Robert Bison said the returns were "the lowest spawning population estimates" in 41 years in the Thompson and 47 years for the Chilcotin). (https://www.fraser-basin.bc.ca/Library/TR/ts_2017_oct_status_update.pdf) The Branch counted 260 spawners in the Thompson system, and 180 in the Chilcotin. For both rivers, the stocks were in a state of 'Extreme Conservation Concern,' Bison wrote.

Public interest and scrutiny about the state of these steelhead populations intensified after December 7, 2017, when the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) announced it was undertaking an emergency assessment of Interior Fraser steelhead. COSEWIC is an independent advisory panel of Canadian scientists and other wildlife biology experts who advise the Canadian government about threats to Canadian wildlife. Species determined to be at risk of extinction are considered for inclusion under the Canadian Species at Risk Act (SARA), which provides broad protections to threatened Canadian wildlife.

In a letter to the federal government, COSEWIC chair Rick Taylor, a University of BC zoology professor, pointed to recent "biological information indicating that there is an imminent threat to the survival of the species" as underlying the decision to undertake the emergency assessment. The announcement came just weeks after DFO-sanctioned commercial fisheries in 2017 removed 55 Thompson steelhead from a record low pre-fishery estimated abundance of 205 steelhead, and 17 Chilcotin steelhead from a record low estimated adult spawner return of 94.

COSEWIC followed up in February 2018, notifying federal Environment Minister Catherine McKenna that it had assessed both Thompson and Chilcotin steelhead as Endangered and recommended an Emergency Order placing them on Schedule 1 of the Species at Risk Act. "In summary, bycatch in com-

Continued on next page

mercial Pacific salmon fisheries and poor ocean conditions are causing high mortality for both [Thompson and Chilcotin] units of Steelhead Trout resulting in steep past, and projected future, declines,” Taylor said. “Projections of continuing declines in ocean habitat quality indicate that the precipitous declines in Steelhead Trout will continue unless bycatch mortality in commercial Pacific salmon fisheries is eliminated.”

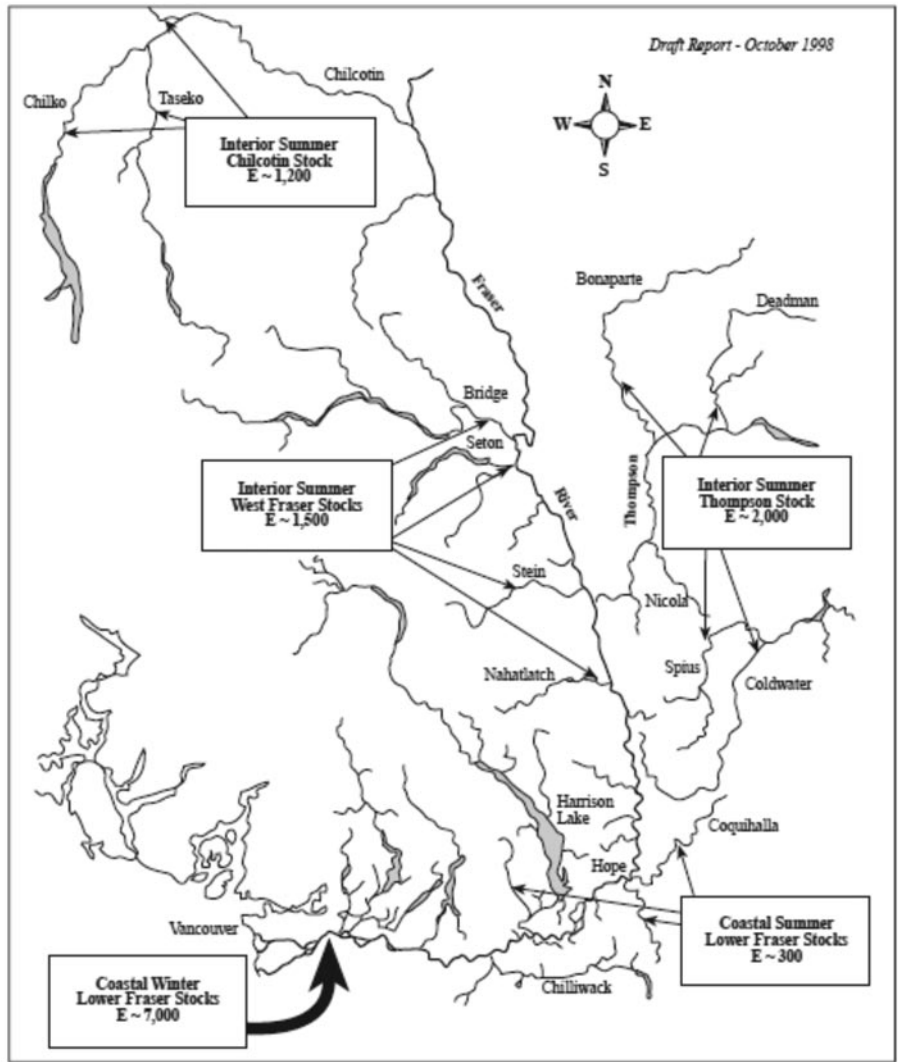
The fisheries department rejected COSEWIC’s recommendation and sanctioned a fall 2018 gillnet opening for chum in the lower Fraser River.

As it was explained on June 5, 2019 to the federal government’s Parliamentary Committee on Fisheries by DFO Pacific Region Director General Rebecca Reid, the fisheries department planned to manage impacts on Interior Fraser steelhead in 2018 through expanded “conservation measures” including “a series of 27-day window closures to salmon fisheries designed to cover the time period over which approximately 90 percent of the Thompson and Chilcotin steelhead migrate. Closures were applied to all commercial and recreational fisheries targeting salmon in freshwater, and to some commercial gillnet fisheries in marine waters. In-river aboriginal food, social and ceremonial fisheries using gillnet gear were also reduced by 50 percent during this period.”

The 2018 commercial bycatch impact on the steelhead was estimated using Albion test fishing data, at 20 percent on both Thompson and Chilcotin spawners. Indigenous exploitation was estimated at eight percent for Thompson spawners and 20 percent for Chilcotin spawners.

Reid told the Committee that DFO in 2019 was planning to facilitate future commercial fisheries that would include steelhead bycatch. Conservation groups protested, in particular, the innate conflict of interest facing commercial and Indigenous fishing groups, which would be self-reporting steelhead interceptions.

It was only because of a simultaneous collapse of Lower Fraser chum, pre-saged by other weak runs along the south coast, that DFO did not open the Fraser for chum fishing in fall 2019. Salmon stocks throughout BC were at multi-decade lows, with the commercial salmon catch 3.4 times lower than the next-worst year since 1951 (3.5 million



Major stock groups of steelhead trout in the Fraser River system (E=approximate mean annual escapement in the 1990s.) Source Ministry of Environment, Land and Parks, and Department of Fisheries and Oceans (1998)

pounds in 2019 compared with 11.9 million pounds in 2008.)

The salmon collapse heralded a collapse of efforts by the BC commercial salmon fleet to have their product designated as sustainable. The Canadian Pacific Sustainable Seafood Society, representing processors and exporters of BC salmon, announced on October 4, 2019 that it was withdrawing from the sustainable fishery certification process established internationally by the London-based Marine Stewardship Council. MSC certification is a key marketing tool for fish processors seeking access to high-end international seafood markets.

The BC salmon fishery had been re-certified by the MSC as recently as April 2017. Although the Seafood Society’s news release excluded any men-

tion of conservation concerns for Interior Fraser steelhead, a 2018 MSC audit report included 65 mentions of steelhead and a Condition (#14) that within four years, proponents of the southern BC fishery including the Fraser River demonstrate those stocks are “highly likely” to be above the point at which recruitment of the stocks are impaired by commercial activity, or that fishing activities do not hinder the recovery and rebuilding of the stocks.

The MSC’s requirements appear to be an insurmountable obstacle to the “allowable harm” risk methodology DFO employs to predict the amount of commercial interception Thompson River steelhead spawners can sustain without compromising chances to maintain or recover their population.

Conservation groups including the Steelhead Society of British Columbia have suggested the federal government's actions align with a popular definition of insanity — doing the same thing over and over and expecting a different result. The DFO methodology incorporated, as recently as 2019, a built-in assumption that 20 percent of Interior Fraser steelhead would be intercepted during spawning migration. DFO's schedule for the 2020 Integrated Fisheries Management Plan calls for public release of plans in June 2020.

DFO's ongoing support for industry, to the detriment of weakened individual populations of salmon and steelhead, is a matter of record.

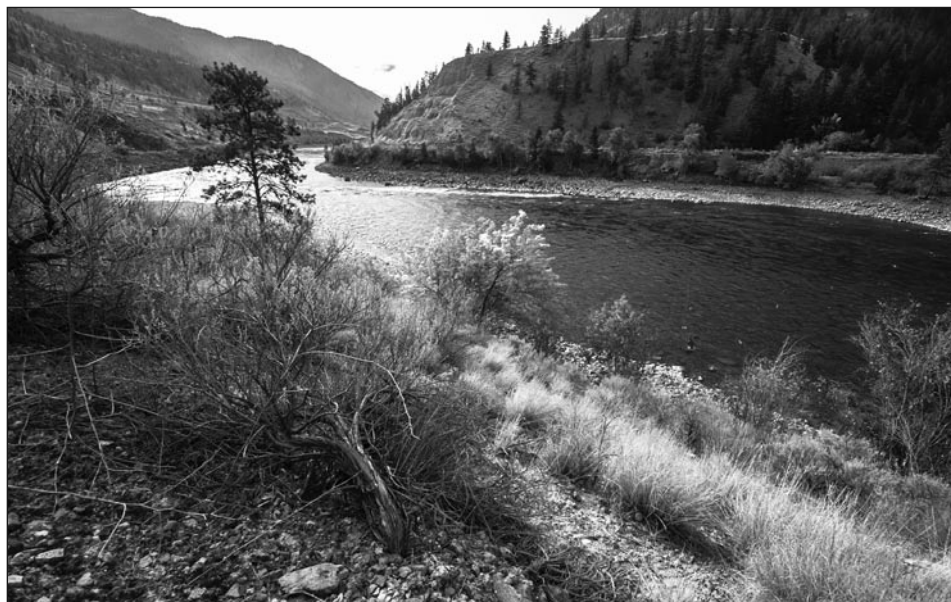
In 2012, after two-and-a-half years of public inquiry, British Columbia Supreme Court Justice Bruce Cohen released a monumental three-volume examination of reasons for the collapse of sockeye in the Fraser River. In the executive summary of his report, Justice Cohen noted that "In relation to wild fisheries, DFO's paramount regulatory objective is the conservation of Fraser River sockeye salmon and other wild fish species. . . Still, I heard evidence of confusion on DFO's part respecting its paramount regulatory objective. For example, several DFO witnesses testified about the need for DFO's Science Branch to provide advice to its 'clients' rather than focusing on research to support the department's conservation mandate."

The Justice's observation was soon after echoed by The Royal Society of Canada, the nation's highest arbiter on matters of science. A group of Society scientists in 2012 produced a report, *Sustaining Canadian Marine Biodiversity*, recommending "the Government of Canada reduce the discretionary power in fisheries management decisions exercised by the Minister of Fisheries and Oceans." The group included a former senior salmon research biologist with the fisheries department.

Concerns about conflicts of interest within DFO persist even within the fisheries department itself. On November 30, 2016, Kristi Miller-Saunders, head of molecular genetics at DFO's Pacific Biological Station, made an appearance before the federal government's Standing Committee on Fisheries and Oceans. Miller-Saunders noted that in 2012 when she began her research, which involves transmission of pathogens between wild and farmed

fish, "I was told by an upper manager, who's no longer with the department, that it was irresponsible to ask research questions that could potentially result in negative economic ramifications on an industry if we did not already know the answer."

In April 2018 a science advisor with conservation group Watershed Watch Salmon Society, Stan Proboszcz, expressed strong reservations about the close relationship between DFO and the Canadian Science Advisory Secretariat. The secretariat is a branch of the fisheries department. Each year it coordinates about 100 science advisory processes on topics such as species at risk. The documents it produces ostensibly discuss prospects for recovery or exploitation of marine species that may be facing extirpation or extinction.



A view of the Thompson River, a tributary of the Fraser River, where summer steelhead runs have experienced an unprecedented crash. Photo courtesy Aaron Goodis Photography, www.aarongoodisphotography.com

"CSAS professes to follow the Government of Canada's Science Advice for Government Effectiveness guidelines, yet seems to violate a stated core principle around transparency and openness. Having a science advisory process that is at arm's length from DFO could improve the integrity of the science advice produced on fisheries issues. Good advice is critical at a time when many salmon stocks are in decline," Proboszcz said in an opinion piece for *Policy Options*, an online magazine dedicated to discussion of Canadian public policy issues,"

A December 14, 2018 email exchange

between two senior provincial bureaucrats included this remark: "DFO's conservation of biodiversity may be impeded by its relationship with industry." The email cites the Proboszcz article, stating "we're not alone on the process concerns associated with CSAS."

That exchange was captured as part of a 1,600-page package of BC government and DFO documents and emails made public as the result of a Freedom of Information request by the BC Wildlife Federation. A key aspect of the FOI documents is the outrage and frustration expressed by provincial civil servants after learning that DFO altered several key findings of a science report ('Research Document') on measures necessary to conserve what was left of Interior Fraser steelhead popu-

lations. In particular, unidentified parties within federal fisheries introduced language to downplay the positive benefits of eliminating commercial interceptions and changed the focus of the report to create the impression the current level of commercial interception is acceptable.

The peer-reviewed Research Document was written by three fisheries biologists, one each from the provincial and federal governments and one from the private sector with the expectation it would form the basis of a Science Advisory Report (SAR) for action to ad-

Continued on next page

dress the Interior Fraser steelhead collapse. According to The Vancouver Sun (Feb. 25, 2019, 'DFO buried scientists' concerns') the Document "was vetted by 42 experts from government, academia, First Nations and conservation groups."

The Research Document was never publicly released, with DFO diverging from government policy by releasing only an internally developed SAR summary of it. (BC Wildlife Federation FOI Analysis of Evidence <https://bcwf.bc.ca/wp-content/uploads/2019/09/Analysis-of-Evidence-of-Emergency-Listing-Process-on-Steelhead.pdf>)

Significantly, the FOI documents indicate, unknown parties within DFO altered the scientists' work without their knowledge or consent and sent a revised SAR "directly to the CSAS chair." When the provincial government attempted to intervene to reverse the changes, they were told that "time had run out." (BCWF FOI, letter to DFO Pacific Region Director Rebecca Reid from Tom Ethier, Assistant Deputy Minister, Ministry of Forests, Lands and Natural Resource Operations).

Josh Korman of Ecometric Research in an email to his co-authors, Robert Bison of the Fish and Wildlife Branch and Scott Decker of DFO, asked "What happened? From the outside it looks like fisheries management got to belly up to the SAR bar after closing!"

Decker, in an email to Korman said "Looks like the change in wording in the SAR around recovery projects is intended to down-grade the impact of exploitation."

The SAR report proposes a (post-interception) recovery target of 938 spawners for Thompson steelhead and a target of 562 to 744 Chilcotin steelhead — but persists with the doctrine of enabling continued commercial and Indigenous interception on current, crisis-level populations. "Allowable harm should not be permitted to exceed current levels and should be reduced to the maximum extent possible," the report said.

The DFO-altered SAR report provided CSAS with a framework for its Recovery Potential Assessment for Chilcotin River and Thompson River steelhead. The CSAS Assessment, ostensibly representing the best available science, favoured DFO's efforts to allow commercial and Indigenous gillnet interception of Interior Fraser steelhead to

continue. On July 9, 2019, the federal cabinet overrode the Environment Minister's recommendation for a SARA listing.

The Government said "the most effective approach to the conservation of Chilcotin and Thompson River Steelhead is to continue to influence human activities using existing legislative tools, and complementary measures (e.g. habitat restoration projects), that can be implemented collaboratively with others without making an Emergency Listing Order to add Chilcotin and Thompson River Steelhead to the List of Wildlife Species at Risk set out in Schedule 1 of SARA."

The controversy over DFO's actions is likely to persist with each future fishery opening, despite promises in a DFO-led 'Steelhead Action Plan' announced in July 2019. <https://www.canada.ca/en/fisheries-oceans/news/2019/07/government-of-canada-and-province-of-british-columbia-partner-to-take-bold-action-to-serve-steelhead-trout.html> (Note, similar plans have been developed at least as far back as 1998 <http://www.env.gov.bc.ca/fw/fish/docs/Provincial-Framework-for-Steelhead-Management-in-BC-April-2016.pdf> page 2)

Three months after the Steelhead Action Plan was announced, the Wildlife Federation and other conservation groups wrote a letter to DFO Pacific Region Director Rebecca Reid protesting the department's decision to withdraw funding for a program supporting independent monitoring of bycatch during commercial fisheries (Letter, Rebecca Reid re Fraser Chum Fisheries, October 16, 2019).

The Steelhead Action Plan overlooks trends identified through decades of steelhead research in British Columbia and elsewhere in the Pacific Northwest by researchers inside and outside the BC Fisheries Branch. BC stock assessment biologist Robert Bison suggests the most effective method of getting more steelhead onto spawning groups — by orders of magnitude — is a cull of harbour seals in the Strait of Georgia. It would also be the most controversial. Other actions including habitat restoration, hatchery augmentation and even removal of commercial bycatch provide substantially less benefit.

Nonetheless, he said, halting bycatch-related spawner mortalities is a cornerstone. "You can't recover a steelhead population into the thousands while fishing continues. The other survival

factors are too poor."

Bison also focuses on spawning interactions between steelhead and resident rainbows in the Thompson, revealing that steelhead recovery opportunities are more robust and complex than the Salmon Action Plan is prepared to confront.

One of the opportunities Bison sees for recovery is the tendency of resident Thompson and Chilcotin rainbow trout to contribute to steelhead reproduction. Thompson fish have been studied three times, in 2006, 2010 and 2011, to confirm this tendency. In 2006, based on a run of about 2,500 spawners, a sampling of steelhead parr found 22 percent came from rainbow mothers. In 2010, based on a return of 600 spawners, the split was close to 50-50 between steelhead and rainbow mothers. In 2011, the Branch collected some Thompson steelhead kelts that were either dead or dying and sampled them to determine who their mothers were. Among the females, half came from steelhead mothers and half from rainbow mothers. Among the males, the ratio was about the same," Bison reported.

The conclusion here is that no matter what reasons DFO may put forward for persisting with commercial bycatch fisheries, the potential to recover Interior Fraser steelhead populations continues as long as there are rainbows upstream to contribute.

"The crash of Interior Fraser Steelhead is one of the biggest fisheries stories of this century," Steelhead Society of BC director Poul Bech told the House of Commons Standing Committee on Fisheries and Oceans on June 5, 2019. "The world is watching our efforts, or lack of effort, to recover these endangered fish."

"Steelhead populations cannot endure by-catch mortality of 20 percent or even 10 percent. These days you can't schedule a gill net opening without incidentally impacting one or more threatened salmon stocks. The increasing number of weak stocks itself is evidence that status-quo management has failed. But DFO continues to protect the status quo."



Author Scott Simpson is a former journalist and fisheries beat writer. He is also on the Board of Directors of the Steelhead Society of British Columbia, one of The Osprey's partner organizations. Learn more about them at: <http://www.steelheadsociety.org>

Klamath River Dams: Where are we today?

Stakeholders move forward with plans for removal and restoration

By Dr. Mark Rockwell

I know that the recovery of salmon and steelhead is center stage today on most fly fishers conservation agenda. We have been reading for several years now that populations are in decline, and on the verge of collapse. That is certainly true for wild salmonids in most all western rivers. The Klamath was once the third most productive river behind the Columbia/Snake system and the Sacramento/San Joaquin. In the early part of the 20th Century, two dams were put in on the middle Klamath, Copco No. 1 (constructed in 1916) and Copco No. 2 (1925). Then in 1958, J C Boyle was completed, and in 1964 Iron Gate Dam was finished. None of them had fish passage, resulting in lack of access to historical spawning and rearing habitat mostly in Oregon. Iron Gate hatchery was built in 1960 to mitigate for that loss, but like most western anadromous fish river hatcheries, it did not work well, and has contributed to declines of genetic integrity in the remaining wild fish populations.

In 2002 PacifiCorp, owner of the dams, faced a federal hydropower relicensing process that required up-grading them to current environmental standards, which included fish passage. That started a long and protracted community negotiation beginning in 2005 about the dams (Hydropower Settlement) as well as water sharing and other issues facing the watershed (Basin Restoration Agreement). On Sept. 29, 2009, PacifiCorp reached agreement with the other 44 negotiation partners, and the agreements were signed by all in early 2010. This included Basin watershed restoration through the Klamath Basin Restoration Agreement (KBRA), four dams to be removed as agreed by the Klamath Hydroelectric Settlement Agreement (KHSAs), and a fixed water sharing plan. The deal had to be approved by the US Congress, but did not act and the plan terminated in 2016.

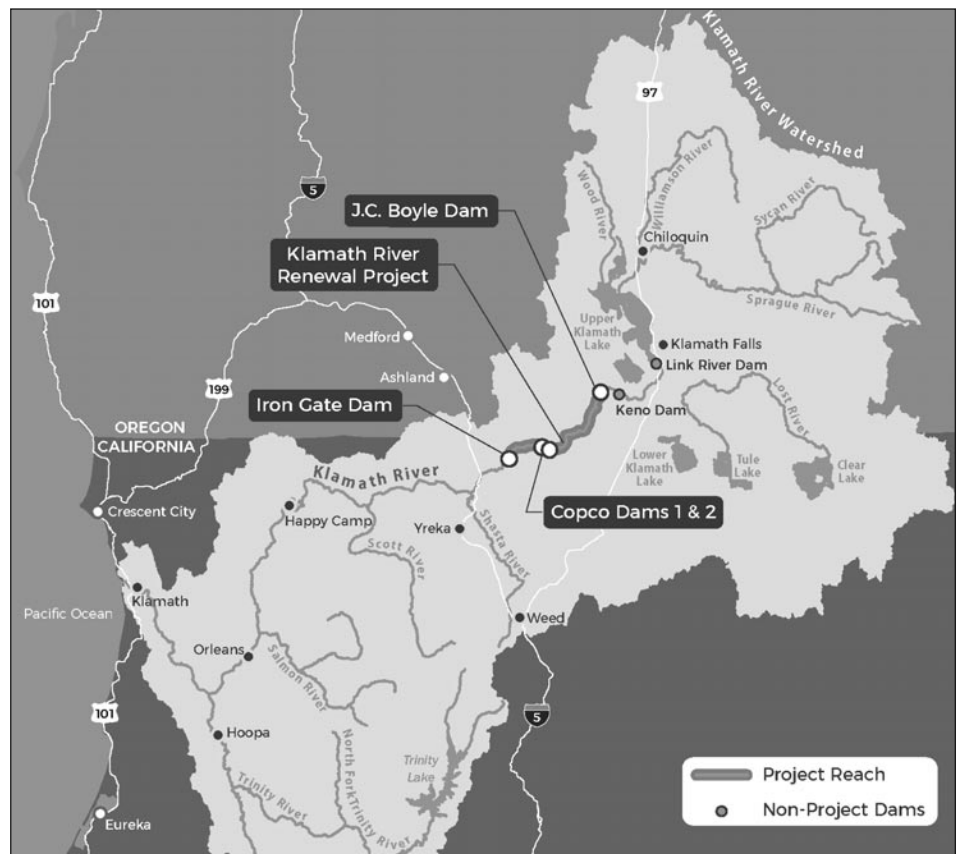
In September, 2016 the parties reached a second agreement on a removal plan for the four dams to be re-

moved by 2020. This agreement did not include a basin restoration plan, which was part of the earlier agreement and to date — there still isn't one. This meant water sharing was not included, and is left to tribal stakeholders, irrigators and the Bureau of Reclamation to develop.

Shortly following the 2016 agreement a corporation was formed, the Klamath River Renewal Corporation (KRRC), and it has been active since doing all the due diligence for dam removal. <http://www.klamathrenewal.org>. The job of KRRC is: remove the dams, re-

fiCorp will continue to operate the dams in the interim. The figure on the opposite page shows current timeline and listing of action items to accomplish this task.

Please know that even though this looks like relatively few actions are needed, the complexity of these actions is very high, and community-wide agreement on removal is not reality. Over the years since 2016 much work has been done by KRRC, the tribes, non-governmental organizations (NGOs) including Fly Fishers International, as well as state and federal agen-

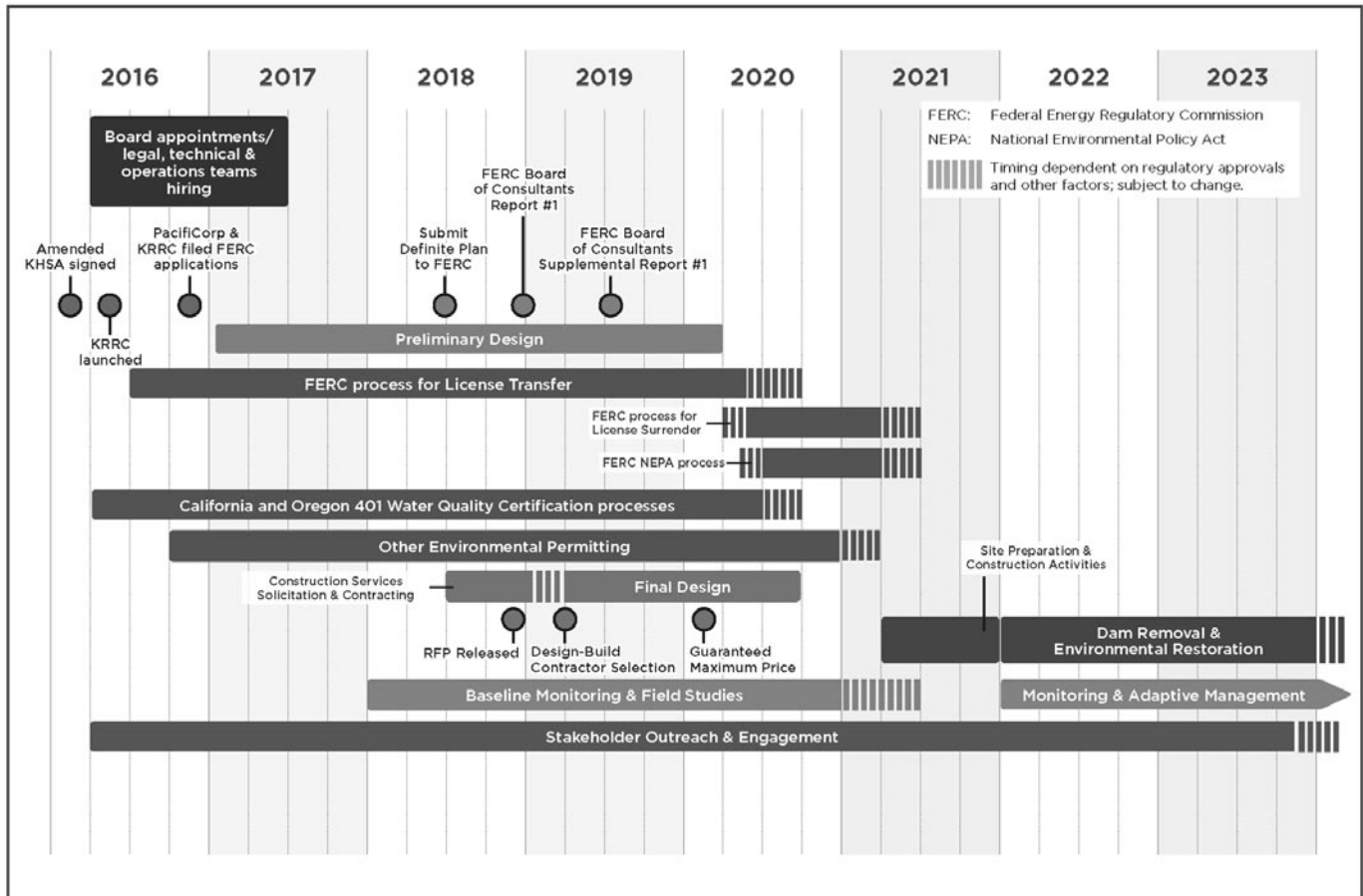


The Klamath Dam removal and restoration project area encompasses the Klamath River basin in California and Oregon. Map courtesy Klamath River Renewal Corporation.

store formerly inundated lands, and implement required mitigation measures in compliance with all applicable federal, state, and local regulations. Paci-

cor and PacifiCorp to get the plan across the finish line. The current major challenge is getting the Federal

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Anticipated Project Timeline
Klamath River Renewal Project

As of: February 2020

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Energy Regulatory Commission (FERC) to approve license transfer from PacifiCorp to KRRC, which will lead to license surrender and facilities removal.

On June 28, 2018, KRRC submitted the “Definite Plan for the Lower Klamath Project” to FERC for the removal of the four dams. Because of the long passage of time since the original agreement in 2009 and other factors, it was not clear to FERC that issues around cost and liability were totally accounted for. So, FERC replied to KRRC with a series of questions to provide clarity that the project was still feasible. In the original agreement there was a commitment by PacifiCorp to contribute \$200 million for removal and restoration, and an additional \$250 million contribution from California. That money has been secured by rate-payer contributions from PacifiCorp, and a water bond from California. In July, 2019, KRRC submitted their response to FERC, which will allow FERC to determine if KRRC has

what’s needed to become the licensee. In February 2020, KRRC submitted additional information to FERC demonstrating the project is within the available \$450 million if undertaken on the current timeline, and provided a plan for additional funding if needed.

Today, everyone is waiting on FERC to finally issue the license transfer. Dam removal is currently scheduled to begin in January 2022, with pre-removal work to begin in 2021. As such, it is critical that FERC issue its approval for License transfer in 2020 in order to keep everything yet to be completed on track. It is well past time for FERC to act, and recent letters from Senators, Governor of California and others asking for action are sitting on FERC’s desktop. The KRRC CEO, Mark Bransom, has stated, “Our project is on track, within budget, and ready to roll”. In recent days the California Water Resources Control Board has issued a section 401 water quality certification approval for the removal, and Oregon had done so in 2018.

One last issue to discuss is the hatchery operation on the Klamath. Iron Gate Hatchery, on the lowest of the four dams that serves as its namesake, will be decommissioned with little expectation of re-opening. An existing hatchery on Fall Creek, a tributary to the Klamath just upriver from Iron Gate, will be upgraded to pick up the slack, but cannot produce the 5 million smolts as Iron Gate hatchery did. Fall Creek capacity will be about 3 million. In the plan, the hatchery is a ‘transition’ hatchery, meaning it will be used only while in-river wild spawning gets established. It will cease operation once wild spawning is established and productive at levels equal to today’s river production.

The Fall Creek hatchery is funded for only 8 years, and could close early if river production goals are met.

This has been a long and arduous process for those of us who have been involved. The goal from the start was to restore the river, its fisheries, and

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find peace in the basin for its residents — Tribes, farmers, ranchers, and the recreational community. The Klamath has a long history of conflict over water because consistent precipitation has never been reality. As with so many western rivers, finding balance between human need and environmental need is hard. It was not easy here, but persistence, understanding and good people have made it happen.

There were lessons learned that I feel can be applied in other watersheds. When we started, those at the table had little trust, were suspicious of each other, and there was very little under-

standing of what “the other side” needed. Hundreds of meetings, calls and thousands of emails flowed between us, and what developed over time were relationships. We’d negotiate in the day, and have a beer and burger together in the evening. We got to know each other and discovered we had more in common than we thought, and a similar vision developed — people, wildlife and fish living together in harmony on the land given to us by our Creator.

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If dam removal and restoration goes as planned, anglers will once again see healthy runs of wild salmon and steelhead on the Klamath River. Photo by Dr. Mark Rockwell

Farmers and ranchers wanted enough water to run their business, and NGO’s and tribes wanted enough water flow in the river to recover the historical fisheries, and to carry on tribal traditions. We came together and recognized we all had to feel our basic needs were met, and we recognized that compromise

common ground is key to success, but you cannot compromise your values, or the needs of what it takes for the watershed to be healthy. Science based policy needs to lead, not politics or personal agendas.

Additional Details of the Klamath Project

The dams will come out almost simultaneously, which will speed the process, but it is very difficult to accomplish. Drawdown of the stored water behind the dams will start early, with Copco No. 1 starting in November, 2020. Then J.C. Boyle and Iron Gate will start simultaneously on January 1, 2022, and finally Copco No. 2 on May 1, 2022. Water will be diverted around the dams so de-

commissioning can happen together, and most of this will be accomplished by using existing infrastructure at the facilities. Once drawdown is low enough, teardown will begin.

In addition to facilities removal the project includes watershed restoration, such as new trees and vegetation planted throughout the project lands. Fishery and sediment monitoring will start at the beginning and continue through well after the project is done. Removal of old recreational facilities around the project is included, as well as road infrastructure improvements. The removal and restoration is scheduled to be completed by the end of 2023 or early 2024. Monitoring and adaptive management will continue well into 2024, and perhaps beyond. Also included in this project is water supply improvements for the city of Yreka, California.

Lastly, community outreach and engagement is critically important and will last well into 2024. It’s critical to communicate the progress of the decommissioning, restoration, watershed riparian recovery, as well as fishery status, and to keep all communities engaged in progress and in touch with the project.

The goal is to keep everyone whole, and to do everything possible to eliminate river barriers to anadromous fish travel up and down the river. The two remaining dams on the river in Oregon, Keno and Link River, both have adequate fish passage, so access to the tributaries of upper Klamath Lake will be open. Oregon says it is ready for the arrival!

We continue to be hopeful that removal stays on schedule, and we see removal begin as planned in 2022. We’re optimistic this is the beginning of recovery of a river that has been damaged for 100 years.



Dr. Mark Rockwell is President of the Fly Fishers International Northern California Council and Vice-President for Conservation. He is a major participant in developing the agreement among the various stakeholders to remove the four lower Klamath River dams.

FFI is one of The Osprey’s partner organizations. Learn more about them at: <https://flyfishersinternational.org>

A Monumental (Task) Force

Saving salmon to save Southern Resident orcas

By Colleen Weiler

In March of 2018, Washington Governor Jay Inslee initiated the Southern Resident Orca Recovery Task Force in an effort to identify state-based solutions to halt the decline of our region's Southern Resident orcas. The Task Force set out to develop achievable and meaningful actions to improve water quality, reduce vessel noise, rebuild salmon runs, and support a healthier ecosystem. Over 18 months, the Task Force reviewed information and options for action, finally deciding on 49 recommendations addressing everything from shoreline protection for forage fish to the future of the Task Force itself, even tackling the impacts of climate change and human population growth — the massive shadows hanging over every action for conservation.

The Southern Resident orca population is a distinct group of orcas (killer whales) that inhabits the inland waters of the Salish Sea and coastal waters from the west coast of Vancouver Island to Northern California. They are a unique community with their own distinct culture, diet, and behavior that, along with their specific genetic code, differentiates them from other groups of orcas found in the Pacific Northwest and from all other orcas in the world. They are a population of "Resident" type orcas, defined by their diet of fish and their large, close-knit family groups led by elder females. "Transient" or "Bigg's" orcas specialize on other marine mammals, live in smaller groups, and range more widely than their very distant cousins. A third type, the "Offshore" orcas, live farther out at sea and appear to rely on fish and sharks as their main diet.

Although these different orcas live in the same area of the Pacific, they seldom overlap and even actively avoid each other. These divisions have lasted for hundreds of thousands of years, and reflect the remarkable productivity and diversity of food in this area: orcas evolved to be specialists on a particular prey. That specialization can be a handicap in the face of modern threats,

when fast and drastic changes upend everything the orcas rely on to survive: the Southern Residents depend on salmon, especially Chinook, which comprises the majority of their diet. As salmon abundance has declined, the orcas have followed. With the loss of their primary food, increasing levels of contaminants, noise, and disturbance, there is a messy, complicated problem to solve to ensure their survival. The very things that shaped the Pacific Northwest for present-day life — dams

When Southern Resident orcas were listed as endangered in 2005, there were 88. By 2019 there were 73, the lowest in 40 years of surveys.

on rivers, agricultural and industrial development, urbanization, Amazon shipments — have fundamentally changed the ecosystem that Southern Resident orcas need to survive.

When the Southern Residents were listed as endangered in 2005, there were 88 orcas. At the start of the Task Force, there were 76. As of the end of 2019, there are 73 — the lowest in over 40 years of recording exact population abundance for this small community.

As the Jessica Rekos Fellow for Orca Conservation with the nonprofit Whale and Dolphin Conservation (WDC), my focus is specific to protecting orcas and recovering endangered populations like the Southern Residents. When I first started in 2014, the Southern Residents had been through a rough few years, dropping from 89 orcas in 2011 to only 77 in 2014. But things were looking up. There were proposals to protect their coastal habitat and to remove the Klamath River dams, which would boost salmon abundance in the southern part of their range. The population had eight new calves born that lived beyond their first few months. Hope sprang eternal.

But habitat protection was delayed, Congress failed to pass the Klamath Restoration Agreement, and in a repeat of that decline in the early 2010s, salmon populations hit new lows and orcas started dying. After a difficult 2016 that included the loss of the world-famous "Granny," the oldest known member of the population and the matriarch of the entire community, the call for more action was louder than ever. Along with many of our partners working on orca, salmon, and habitat protection, we were part of that call.

The Washington Task Force was developed in response to the requests for leadership to take action, and was immediately met with mixed feelings. Some saw it as doomed from the start, with too much influence from special interests and people on opposing sides of long-controversial issues. I was disappointed that the large and diverse membership of the Task Force included relatively few focused on the orcas themselves — only a handful of members were from orca-related organizations. Three Working Groups dedicated to the primary threats — prey depletion, toxics, and vessel impacts — that helped compile information and suggestions for the main body were more diverse, but precious time was spent in both the Working Groups and the Task Force rehashing basic, well-established information about the orcas and threats to their survival.

Despite the initial doubt, I and many others were optimistic that the Task Force would be a force for good and would enact real change, and consider the needs of the orcas first. With all the benefits of hindsight, I still think we weren't wrong to be hopeful. The Task Force was the biggest and most concentrated effort that's ever happened to develop collaborative solutions for the

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threats facing Southern Resident orcas and the ecosystem that supports them (and us). The final report — with 36 recommendations in the first year and an additional 13 in year two — includes strong actions to recover salmon, protect habitat, reduce toxics, and mitigate vessel impacts. Of course, the work is far from over, and now our job is making sure those recommendations are implemented and lead to positive results.

Many options and ideas were discussed during deliberations, though not all made it into the final report. Some topics, like climate change, were simply too far beyond the scope of the Task Force to result in significant changes. However, it is helpful to recognize the impacts on salmon and orcas. Making the connection with the survival of these beloved regional icons can encourage much-needed attention and resources toward climate change actions — things we know we need to do, like reducing greenhouse gas emissions and increasing habitat resiliency, but need additional motivation to enact.

The climate change recommendations and many of the actions suggested by the Task Force built upon known or existing efforts to recover salmon and improve Pacific Northwest ecosystems. Just like we know what Southern Residents need to survive, we have a pretty good idea how to help wild salmon, too. But those actions often require fundamental changes to how we live in and interact with our environment, and those changes are not only scary to make, they often lack the resources and political will needed to enact them. For example, salmon recovery is chronically underfunded in Washington state; and although policies directing “no net loss” of habitat in development exist, we fall woefully short of meeting that goal. The work of the Task Force to clearly connect the survival of Southern Resident orcas with the necessary big, structural changes needed to address climate change and improve habitat protection makes the need feel real and immediate. Watching the plight of these orcas brings a spotlight to the work we know we need to do.

In addition to the recommendations included to address climate change, habitat loss, and human population growth, smaller changes were also outlined that will make a big difference: simple actions such as slowing boats down around the orcas to reduce noise,

and better monitoring of zooplankton and forage fish. There are significant, important, meaningful actions included in the Task Force report. But of course, it is far from perfect, and the devil is always in the details. The Task Force did not go far enough in some areas, left some important issues on the cutting room floor, and included some questionable recommendations likely by “special request” of some members.

As always when discussing salmon recovery, there was insistence that the problem could “easily” be solved by increasing hatchery production and killing seals and sea lions. However, neither of those concepts is supported by the best available science. Hatchery

As always when discussing salmon recovery, there was insistence that the problem could be “easily” solved by increasing hatchery production.

fish can negatively impact wild salmon recovery and are themselves smaller and less fatty, with less nutritional value for the orcas. Ramping up hatchery production without careful planning and consideration to reduce the impacts on wild salmon does not help long-term recovery. Killing seals and sea lions is unlikely to have any impact on salmon abundance, and as generalist predators they eat many things, so this action may increase the abundance of salmon-eating fish and cause unintended ecosystem consequences. But recommendations supporting both these actions were included, while any discussion of changes in harvest management or protecting key orca foraging areas was quickly shut down.

Not surprisingly, the biggest point of contention, within the Task Force itself and in public perception of it, was action on the lower Snake River dams. The dams have been controversial since they were built, with significant impacts on Snake River salmon and steelhead but also helping to shape the

growth and economy in the Pacific Northwest. Breaching the dams has been seen as an essential action to recover endangered salmon populations for decades, and the Southern Residents have been a bigger part of the debate in recent years as more has been learned about the importance of those early spring Chinook to the orcas. Orca researchers studying their movement and diet in coastal waters have found that they spend a significant amount of time outside the mouth of the Columbia River as spring Chinook gather to return, and studies examining seasonal changes in the general health of the orcas indicate that these fatty, highly-nutritious Chinook are an essential source of food in the otherwise lean winter months.

Many orca advocates hoped that the Task Force would include a recommendation to breach the lower Snake River dams or direct the state to take action on the issue. It may have been asking too much for such a major decision with so many additional needs to consider — energy, transport, irrigation — to be made in the relatively short time frame of the Task Force, especially with all the other topics on the agenda. The Snake River dams probably require a Task Force or two of their own! Like some other issues that a few members of the Task Force were unwilling to even discuss, the Snake River dams were at risk of being left in the “suggestions” pile. However, the sheer volume of public comment and input about the Snake River dams demanded that the Task Force do something.

The resulting recommendation — a stakeholder forum to solicit input from affected communities, concerned individuals, and state and tribal leaders — was somewhat of a compromise. It acknowledged that a future without the Snake River dams might exist, but was not the definitive decision on breaching that most people wanted to see. While it seems like a very minor step, it is one in the right direction. The forum created an opportunity for people to share concerns and ideas outside of the federal reviews and courtrooms that have dominated the debate for decades, and allowed people to discuss the impacts of dam removal and offer suggestions and information about mitigation options — what might be needed if the dams were breached. Stakeholders and the public were able to start a more collaborative dialogue about a potential transition to a restored Snake River.

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The final report from the stakeholder forum was released in March of this year, but it's unclear what the next steps will be. The initiative received funding for two years of work, and while the forum and report provide a helpful stepping stone in the process, more collaboration and discussion about the Snake River is obviously needed — particularly since the latest federal review on Columbia River System Operations doesn't do much to change status quo conditions. The clearest outcome of the report is that

The Task Force recognized that Southern Residents need abundant, diverse, and accessible resources of Chinook, and explored what Washington needed to do to make that happen. And instead of reinventing the wheel, the recommendations emphasize the connection of Southern Resident orca recovery to actions known to be effective that are often underfunded or resource-limited.

Ultimately, what the Southern Resident orcas need to survive is simple: plenty of food, clean water, and a safe home. We generally know what is needed to achieve those goals, but, as noted, these seemingly straightforward

to decline. The Task Force itself recognized this, and included recommendations to ensure continued oversight and management — although that, too, will require effort to implement. After the first year, extensive work went into engaging the state legislature to initiate just a handful of the many actions that require legislation or additional funding. There were some big wins — salmon habitat restoration projects received more funding than they have in the last two decades, but the funding is short-term, and does not guarantee continued action. We need secure, reliable, long-term support, especially in fighting the ongoing battles of habitat loss and climate change.

I remain hopeful and optimistic about the future of the Task Force recommendations. Optimism is a necessary outlook when working on endangered species recovery, because the alternative is just too bleak. WDC and many other conservation groups and caring individuals are committed to keeping the pressure on agencies and elected officials to make sure the report doesn't end up sitting forgotten on a shelf. The process was frustrating at times and the Task Force struggled to include public input from the beginning, but the end result is a comprehensive and detailed package that I believe can really make a difference for salmon and Southern Resident orcas — as long as we do our part to see it through.



Chinook salmon make up a major portion of Southern Resident orcas' food source. As salmon abundance has declined, so has the orca population. Photo courtesy Whale and Dolphin Conservation

while people may still disagree on the future of the dams, everyone is tired of the endless litigation, gridlock, and the uncertain future. For the most part, everyone agrees that they want to recover salmon and Southern Resident orcas, and that a plan supporting all affected communities is needed.

Overall, the majority of the Task Force recommendations that focused on increasing Chinook abundance and availability for Southern Resident orcas are comprehensive and reflect the importance of healthy ecosystems for long-term support and recovery. They include actions to improve habitat and water quality, address barriers to fish passage, and increase forage fish — making sure salmon have what they need to survive so their abundance can increase and, in turn, support the orcas.

solutions can be complex, messy, and require big changes and continued action on our part. For example, the recommendation to update Washington's regulations on shoreline armoring required legislation (passed in 2019 as part of a suite of Orca Recovery bills) and is still in the process of final rule-making and implementation. It may seem like a simple action, but it requires time to establish and implement changes, and continued attention from the public and stakeholders.

All of the recommendations require ongoing vigilance from those involved to ensure that actions have the resources, funding, and regulatory changes needed to make a difference. Without those crucial parts of the puzzle, the Southern Residents and the habitat that support them will continue

Colleen Weiler has been the Jessica Rekos Fellow for Whale and Dolphin Conservation (WDC) since 2014. Her work concentrates on identifying effective conservation strategies and protective measures for orca populations off the West Coast of the U.S. and Canada, especially the endangered Southern Resident orca community. Colleen holds a Masters in Marine Resource Management from Oregon State University and resides in Newport, Oregon.

To learn more about Whale and Dolphin Conservation, visit their website at: whales.org. For more about the the Jessica Rekos Fellowship go to: <https://us.whales.org/the-jessica-rekos-foundation/>



Columbia - Snake River Basin Salmon and Steelhead Crisis 2020

By Joseph Bogaard

On February 28, 2020, the federal agencies charged with protecting and restoring thirteen threatened and endangered salmon and steelhead populations in the Columbia and Snake rivers and their tributaries released a long-awaited Draft Environmental Impact Statement (DEIS) only to confirm what many had feared. Rather than learning from past mistakes or listening to a long line of federal judges, scientists, economists and other experts, the agencies served up an only slightly modified version of the same costly, ineffective and illegal approach to salmon recovery they've relied on for the past 25-plus years.

Given the current administration, this "new" draft report surprised few, but is tremendously disappointing all the same. By deciding to kick the can down the road rather than digging in to advance real solutions for Columbia-Snake salmon and Northwest communities, we'll lose more precious time to actually address this crisis — increasing the cost, pain and risk for all involved. Yet, despite the feds' delivery of yet another woefully inadequate proposal, there are some signs of hope. Within the Northwest, new conversations and leadership are emerging and salmon and fishing advocates have an important role to play to support and advance this new opportunity. In the last 12 to 24 months, for example, some regional stakeholders and policymakers have begun exploring opportunities to bring people together around a comprehensive strategy to protect and recover imperiled native fish populations and invest in communities in a manner that brings everyone forward together.

But before we look at these new possibilities, let's first review how we got here. This article will briefly review the history of recovery efforts in the Columbia-Snake system, then examine the federal government's "new" Draft report (DEIS), and conclude with some recent developments that could, with a lot of hard work by many, become a

turning point for imperiled salmon and steelhead populations in the Columbia Basin and the many benefits they deliver to the Pacific Northwest communities and ecosystems.

A brief history of Columbia-Snake River salmon and steelhead recovery efforts

The Columbia Basin was once the most productive salmon and steelhead landscape on the planet. Not so long ago, adult returns might exceed 15 to 18 million fish — an annual flood swimming upstream from the Pacific Ocean into every river and stream they could

*All five federal
plans for Columbia
basin salmon dating
back to the 1990s
have been found
inadequate and illegal.*

reach. Each year these fish would deliver hundreds of millions of pounds of marine-derived nutrients to feed more than 135 other fish and wildlife species in coastal and freshwater ecosystems. This massive influx of nutrients over time quite literally built the Northwest's legendary forests. And, of course, salmon have also supported human communities too, for as long as people have lived here.

The Columbia Basin's almost unimaginable fecundity began to unravel last century when the nation's push to build dams (for power, flood control, commercial navigation, water storage) reached the Northwest. There are today more than 400 dams — large and small — in the Columbia Basin. And while all

watersheds are unique and causes of fisheries decline vary widely, in the Columbia Basin dams and reservoirs are the single largest source of human-caused mortality. Protecting salmon from extinction and rebuilding salmon abundance will require a multi-pronged strategy to be sure, but making some big changes to dam operations and, in certain cases, removing high-cost, low value dams must be part of any meaningful strategy.

Dams have all kinds of harmful impacts on the natural river systems on which salmon rely. Dams block migration, inundate spawning and rearing habitat, slow currents, raise water temperatures, increase predator populations, churn up juvenile fish in power turbines, and more. Forced to swim through stagnant reservoirs to reach the ocean (rather than be pushed there by a cold free flowing river), the few juvenile fish that survive arrive at the Pacific Ocean with severely depleted energy reserves and are more vulnerable to predation and starvation.

Declining salmon populations in the Columbia first attracted widespread attention in the 1970s, but it was not until the 1991 when the nation's first salmon population was listed for protection under the Endangered Species Act, Snake River sockeye. Since then, twelve other populations in the basin have been added, including all remaining Snake River populations: spring/summer Chinook, fall Chinook and steelhead as well as sockeye. Today, wild fish return to the Columbia and Snake Rivers at 1-2% of historical levels and many unique subpopulations across the basin have disappeared forever.

Despite the impassioned, persistent efforts of conservationists and fishing advocates to secure policies that would help salmon survive and recover, the number of ESA listings rose and fish populations fell. Faced with a lack of political leadership and consistent in-

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transigence on the part of federal agencies, the courts proved to be a critical backstop by (i) repeatedly rejecting the feds' illegal recovery plans and (ii) ordering the agencies — at the request of conservation and fishing plaintiffs, the State of Oregon and the Nez Perce Tribe — to provide critical near-term help in the form of 'spill'. Spill pushes water over the dams during the juvenile out-migration in spring and summer and delivers the fish to the ocean more quickly and safely. Spill has long been opposed by utilities because it diverts water from energy-producing turbines and reduces revenue. But it has bought critical time for at-risk fish populations, especially on the Snake River — helping to keep them alive them while our region works (we hope!) to develop a lawful, science-based plan that finally protects and recovers these irreplaceable Northwest species.

For 25 years, litigation and legal action has served as the backbone of advocates' recovery efforts. All five federal plans for Columbia Basin salmon dating back to the 1990s have been found inadequate and illegal. Three different federal judges — Marsh, Redden and now Simon — have rejected these plans and ordered agencies repeatedly back to the drawing board. The agencies, it turns out, are terribly slow learners and, as a consequence, we've spent approximately \$18 billion over the past two decades on a series of illegal plans that have ignored law and science in order to shield the federal hydrosystem from making meaningful reforms needed to restore salmon and some much-needed balance in the basin.

This extraordinarily expensive and long-running recovery failure is finally getting the attention it deserves. In May 2016, U.S. District Court Judge Michael Simon soundly rejected the agencies' last strategy and ordered them to produce a new lawful plan and to conduct a comprehensive review in accordance with the National Environmental Policy Act (NEPA). As part of the NEPA process, he required the agencies to analyze lower Snake River dam removal as one of several recovery alternatives. The feds spent the last three and half years working on the Draft EIS that was released in late February. More on this below.

Fortunately during this same time frame, regional leaders and policymakers began to acknowledge the unus-

tainable costs and missed opportunities of the feds' failed approach. In the face of seemingly endless litigation, new court orders to increase dam 'spill', rising costs and uncertainty, a new set of problems and pressures surfaced. First, already low salmon returns sharply declined beginning in 2015 and today are at some of their lowest levels on record. Fish managers recently predicted that 2020 returns will look a lot like last year. As a consequence of this decline, fishing seasons have been reduced and closed.

Second, there's the plight of the Southern Resident orcas that rely almost exclusively on Chinook salmon to survive and reproduce. Scientists confirm that Columbia Basin salmon are an important food source for the Southern Residents, especially in the winter months when there are few other fish available. The steep Chinook population declines here and across the region are driving these orcas toward extinction. The orcas were listed under the ESA in 2006 but their numbers have continued to decline. Today just 72 whales remain and people in the Northwest and across the nation are angry and heartbroken — and they are mobilizing. So the problems keep piling up and more people are clamoring for leadership and solutions. Regional policymakers are feeling the heat and beginning to respond.

Back in 2018, for example, after a slew of killer whale deaths and public outcry, Washington State Governor Jay Inslee established an Orca Task Force to study the situation and issue policy recommendations to protect and recover these iconic whales. Thanks to relentless organizing by advocates and citizens, Washington State's initial resistance to discuss the lower Snake River dams fell apart and the Task Force ultimately recommended that the governor organize a lower Snake River Dams Stakeholder Process as a way to begin a state-sponsored dialogue about the costs, benefits and tradeoffs of dam removal. That process (again, thanks to excellent citizen organizing) was subsequently fully funded by the state legislature in 2019. It was directed by a consultant on behalf of the state over the past eight months. A series of stakeholder interviews and public panel discussions in three river communities culminated with a report that was issued in March.

New signs of leadership have also begun to appear in Idaho and Oregon. In April 2019 at a salmon recovery conference in Boise, Idaho Congressman Mike

Simpson planted his stake in the ground before a rapt audience and declared his intention to lead an effort working with others to find regional solutions that (i) recover Idaho's (Snake River) endangered salmon and steelhead and (ii) help the Bonneville Power Administration address its growing financial challenges. While he did not explicitly endorse dam removal, he did ask the question — if the dams must be removed to save salmon, he wants to know what affected communities and industries may need as part of a transition. Notably, Representative Simpson is the only Northwest member of Congress so far to publicly criticize the recently-released Draft EIS as inadequate. At a recent House hearing in D.C. when the Draft EIS was discussed, Mr. Simpson spoke up: "Nobody mentioned fish. Nobody mentioned salmon that come back to Idaho, that in the next 15 years, if something isn't done, they will be extinct. There is no doubt about that, they will be extinct... You can produce (power) differently. Everything we do, we can do differently. Salmon need one thing — they need a river."

In early February this year, Governor Kate Brown of Oregon sent a letter to Inslee to express her interest in working with Washington State to develop a comprehensive regional plan that recovers salmon and invests in vital communities. Brown's letter acknowledged that removing the lower Snake River dams presented our very best opportunity to recover its endangered fish populations.

In one more encouraging development, a set of Northwest utilities and conservation NGOs (including Save Our Wild Salmon) started meeting last fall to explore common ground and opportunities for real collaboration and solutions. While salmon and fishing organizations have long sought dialogue with other stakeholders, most utilities had been content to accept an imperfect status quo — willing to live with uncertainty and high costs in hopes that the feds' next plan might pass legal muster. These recent utility/conservation meetings produced a letter in late February 2020 addressed to the four Northwest governors calling for their leadership to help develop urgent solutions for endangered salmon, struggling tribal and non-tribal communities and the region's financially stressed energy system. It was signed by a set of unusual bedfellows: eleven Northwest utilities, five

Continued on next page

conservation organizations and the Port of Lewiston. The letter was sent just a few days before the feds released their long-awaited Draft EIS and has been well received by regional policymakers, including many members of Congress.

The federal government's 2020 Draft EIS for Columbia-Snake Salmon and Dams

Amidst the emerging leadership, new conversations and calls for a comprehensive regional solution — not to mention a global pandemic — the feds' Draft EIS landed in the region with a thud — a throwback to the old, tired frames and arguments.

Its shortcomings are too numerous to review here (see link below to learn more and read select comments from states, tribes and NGOs), but here are a few highlights. The DEIS: Analyzes five alternatives — three are actually worse for fish than the status quo, one includes dam removal, and one focuses on high spill at all eight federal dams on the lower Snake and lower Columbia rivers. To its credit, the DEIS does explicitly conclude that lower Snake River dam removal will deliver the greatest survival benefits of any of the alternatives.

1. Analyzes likely impacts to the energy system due to the changing climate, but fails to offer any meaningful actions to address intensifying climate impacts on salmon that are made far worse by the presence of the dams and reservoirs.
2. Devotes just two paragraphs to Southern Resident orcas, determines that they are not adversely affected by dam-caused salmon population declines, and moves on.
3. Includes many analyses — climate, energy, salmon and orca science, dam removal, transportation and irrigation economics — that are plagued by unrealistic assumptions, outdated, inaccurate and unsubstantiated costs, and/or appalling incompleteness.
4. Embraces a 'Preferred Alternative' that is built around a 'flexible spill program' at the eight federal dams that is already in place. In other words, the feds spent tens of millions of dollars to produce an incomplete and inaccurate report that recommends a strategy that is already occurring and widely understood to be at best an interim measure.

The 2020 DEIS and its Preferred Alternative has been publicly embraced

by a number of Republican members of Congress, with the notable exception of Rep. Simpson who has criticized it. Northwest Democrats have been silent on the report so far. A number of states, however, submitted comments highly critical of the DEIS.

In a cover letter accompanying Washington State's comments on the DEIS, Governor Inslee notes the plan falls short of Washington's expectations to restore salmon and calls for an "active, collaborative, and visionary regional conversation." Oregon Governor Kate Brown states plainly that the proposed plan "will not meet the expectations and needs of the citizens of Oregon and the region, nor provide adequate protection for salmon and steelhead ..." She adds: "This vision of the future can only be realized with leadership from and strong collaboration with the four states (Oregon, Washington, Montana and Idaho)."

The Nez Perce Tribe's cover letter to their technical DEIS comments is scathing. It described the Tribes as "stunned in disappointment with the CRSO DEIS. At nearly every stage of the NEPA process, opportunities to develop, evaluate, and choose a path of restoration for salmon, steelhead, and lamprey, and their ecosystems, were missed, ignored, undermined, or rejected. Genuine consideration of the many Indian tribes who live within and whose homelands make up the present-day geography of the CRS, is reflected in the DEIS in only a shallow, cursory way."

The federal agencies' next steps: produce a Final EIS in June; issue a Draft Biological Opinion (based on the FEIS) in July; and officially adopt the "new" plan with a 'Record of Decision' in September. Based on the Draft EIS, and the federal government's clear lack of interest in the values and concerns of the people most impacted this set of issues, a new round of litigation seems highly likely.

New approach, new opportunity?

But litigation and the continuation of a failed status quo is not our region's only option this time around. The conversation is changing, leadership is emerging and Northwest people — governors, members of congress, sovereigns, stakeholders and citizens — have a choice and a new opportunity. We can keep riding a costly, illegal merry-go-round or we can come together based on our common interests to craft

shared solutions that (i) recover abundant salmon, (ii) invest in vibrant fishing and farming communities, (iii) support a clean, reliable and affordable regional energy system, and (iv) uphold our nation's responsibilities to Northwest Tribes. These are the essential criteria of any successful regional solution.

Based on the best scientific and the economic information, Save Our wild Salmon is convinced that restoring the lower Snake River by removing its four federal dams is an essential element of any lawful, effective salmon recovery/community investment package. And we're ready to work with others on creative solutions that bring everyone forward together.

While the regional dialogue has shifted, new conversations are under way and political leadership is emerging, salmon and fishing advocates have a lot of hard work ahead to realize this opportunity for educating, organizing, mobilizing, building relationships and collaborating. How can you help? Northwest policymakers need to hear from you today! Contact your governor's office and your U.S. Senators and Representative. Ask them to get involved and actively support bringing people together to develop a comprehensive solution to recover endangered salmon and invest in affected communities. You can also stay informed and get involved by visiting SOS' website and contacting our staff.



Joseph Bogaard is executive director of Save Our wild Salmon. Learn more about their work at: www.wildsalmon.org

Links to Additional information

SOS website: www.wildsalmon.org

SOS Factsheets and Reports webpage: <https://tinyurl.com/yclzfytt>

SOS 2020 DEIS summary/ resource webpage: <https://tinyurl.com/y9hok3os>

Sign up for SOS newsletters, updates and action alerts: <https://tinyurl.com/ycksmnos>

Questions? Contact joseph@wildsalmon.org

ODFW Establishes No Angling Sanctuaries for Three New Columbia River Thermal Refuges

By Dave Moskowitz

The Oregon Department of Fish and Wildlife (ODFW) has protected wild steelhead and salmon using cold water refuges at the mouth of Eagle Creek, Herman Creek and the Deschutes River by establishing no-angling sanctuaries to benefit heat-stressed migrating wild salmonids this summer.

Anglers have known for decades that wild steelhead and salmon have relied on cold water refugia (CWR) during their upstream migration in the Columbia River. Bill Bakke, then director of the Native Fish Society, had been advocating for the protection of heat stressed wild steelhead and salmon during summer hot water conditions since 1998. It was not until 2018 and again in 2019 that ODFW was moved by public advocates and the Oregon Fish & Wildlife Commission to close the mouth of the Deschutes River to fishing when the Columbia became too hot. The Conservation Angler led the science-based advocacy before the Commission which urged the reluctant department staff to act.

ODFW was unable to ignore a critical US Environmental Protection Agency (EPA) draft report released in October 2019 that highlighted the critical role that CWR played in the migration of wild salmon and particularly, wild steelhead.

The EPA Report presented essential scientific evidence that the CWR were extensively used by heat-stressed wild salmon and steelhead — however, these fish remained vulnerable to targeted sportfishing efforts that significantly reduced the meaningful biological benefit of the thermal resting areas.

The No Angling Sanctuaries will be in effect for two summer months (July 15 thru September 15) and are part of the 2020 Columbia River Salmon and Steelhead sportfishing regulations announced on May 18. ODFW also announced that development of a permanent Thermal Angling Sanctuary rule is underway.

While it took ODFW 20 years to pro-

tect ESA-listed wild salmonids threatened with extinction during their migration to spawning grounds throughout the Columbia and Snake Rivers, The Conservation Angler sincerely applauds ODFW and the Fish & Wildlife Commission for taking critical action in 2020 to protect low returns of ESA-listed wild steelhead and salmon seeking relief in the cold-water refuges.

Anglers have known for decades that wild steelhead and salmon have relied on cold water refugia during their upstream migration in the Columbia River.

Current thermal refuges include:

Eagle Creek Thermal Refuge, from the angling deadline in Eagle Creek (200 feet down from the hatchery fishway entrance) downstream to the mouth at the mainline railroad bridge, closed to angling July 15 to November 30.

Herman Creek Thermal Refuge, located from the mainline railroad bridge downstream to markers at mouth and is closed to angling from July 15 to November 30.

Herman Creek Lagoon from east of a line from the northwest tip of the jetty, south to a marker on the Oregon shore, closed to angling from July 15 to September 15.

Deschutes River Thermal Refuge from the markers at the lower end of Moody Rapids, downstream to the mouth at I-

84 Bridge, closed to angling from July 15 to September 15.

John Day River Thermal Refuge, downstream of Tumwater Falls, closed to steelhead retention from September 1 to December 31.

The Conservation Angler supports the temporary rule and will submit several additional comments applicable to the pending permanent rules regarding the refugia including increasing the boundaries of the Eagle Creek, Herman Creek Lagoon and Deschutes River mouth refuges to protect and buffer the full cold-water plumes in these areas as well as increase the no angling period to five days at the beginning and 10 days at the end. In addition, TCA recommends that the “no steelhead retention” rule be changed to “no angling on the John Day arm from September 1 to November 30.”

These rules are vitally important to wild steelhead conservation. Yet there remains more to do. Washington should establish No Angling Sanctuaries at thermal refuges above Bonneville Dam. However, WDFW did modify specific angling rules that it believes will prevent the targeted angling on wild steelhead resting in CWR at the Wind, Little White Salmon and Big White Salmon rivers. The Conservation Angler will monitor the effectiveness of these modest rule changes in these areas this summer season.

Thermal sanctuaries for ESA-listed wild steelhead are only half the battle, as the EPA Report on CWR predicts that the Columbia River will be a lethal migration corridor for salmonids by 2040, if not before.



Dave Moskowitz is Executive Director of The Conservation Angler, one of The Osprey's partner organizations. Learn more about their work at: www.theconservationangler.org

The Naturals

Will wild Redfish Lake sockeye salmon endure?

By Pat Ford

This spring, in late April and early May, two groups of young Snake River sockeye salmon entered Idaho's Redfish Lake Creek's tumble, and were swept seaward. A few months later, in August and September, two groups of adult Snake River sockeye will come back from the sea, turn right up Redfish Lake Creek, and head to their namesake lake.

Both times, the much smaller of the two groups will be sockeye born in Redfish Lake, as opposed to sockeye born in a hatchery and then released at spring freshet in Redfish Lake Creek or nearby. The two groups have relations, but in essential rank order. The naturals matter much more.

Fish managers call them natural-origin or natural spawners; I'll mostly call them the naturals. On Idaho's sockeye stage, these are the critters to watch — ecologically, legally, and for most benefit to people who live and/or spend quality time in the Sawtooth Valley and Salmon River headwaters.

Several thousand Redfish-born young naturals rode the freshet leaving Idaho this spring, just over two months away as I wrote this story. I focus on those young naturals of 2020, after some background first on the species and lake to which they belong. Throughout, I also worry a bone: how best to tell this story, especially to Idahoans who don't know it, so that more come to care.

Snake River sockeye spawn higher than any sockeye on earth: 6,548 feet above sea level at Redfish Lake.

They spawn further inland than any sockeye on earth: 900 miles inland from the three-mile wide, six-mile long mouth of the Columbia River where it empties into the north Pacific Ocean at the Oregon-Washington state border.

They are the southernmost sockeye salmon population on earth. fish.

The home journey this geography imposes on a four-to-five-pound adult sockeye, even prior to dams, is beyond difficult. Transform from saltwater to freshwater fish, while sexually maturing; swim 925 miles up-current; climb 6,548 feet; dodge predators and other

hazards; hit summer's warm waters at their peak; eat nothing — and keep at it for the 70 or so days. It takes sockeye nearly one-fifth of a year to swim from the Pacific Ocean to Redfish Lake. To their odyssey people have added 320 straight miles of reservoir spaced by eight big dams, twice that the fish must conquer.

Sockeye possess the widest diversity of life histories in any salmon species. Most of it is in three centers: Bristol Bay Alaska, British Columbia's Fraser Basin, and Russia's Kamchatka Peninsula. One outpost of North American

In 1991, when listed under the ESA, Snake River sockeye was the most endangered salmon species in the Northwest.

sockeye diversity lies far south and east of any other. To Redfish Lake come the highest-climbing, farthest inland swimming, and southernmost sockeye salmon on earth.

According to "Status Review for Snake River Sockeye Salmon," Robin Waples, Orly W. Johnson, and Robert T. Jones, NOAA Technical Memorandum NMFS-F/NWC 195, April 1991: "Redfish Lake supports the southernmost sockeye salmon population in the world. Sockeye salmon returning to Redfish Lake also travel a greater distance from the sea (almost 900 miles) and to a higher elevation (6,500 feet) than do sockeye salmon anywhere else in the world. In contrast, sockeye salmon in the Wenatchee and Okanogan river/lake systems spawn at elevations more than 4,000 feet lower.... Collectively, these data argue strongly for the ecological uniqueness (with respect to sockeye salmon) of the Snake River

habitat and make it likely that the population contains unique adaptive genetic characteristics."

Silver tinged blue when they enter the Columbia, they are red when they reach their lake two months or more later. Redfish, and its basin, are in these fish. Standards to survive here are high, and particular; the fish tune to them continuously, in genes and behaviors. Their beauty mirrors their place. Though recent scarcity veils it from us, abundance is their natural condition and capability.

Imagine sockeye abundance, waves of red, in Redfish Lake in late summer. The fish are up for it. I want to be alive for it Idaho congressman Mike Simpson said last April. Surely many people, given the picture and choice, would say, me too. That's something to work with, at a moment when Idaho salmon and steelhead need more Idahoans saying it, out loud.

In 1991, when declared endangered by under the federal Endangered Species Act, Snake River sockeye was the most endangered salmon species in the Northwest, perhaps in North America. A money bin and 28 years later, has that changed? The answer has parts, but the fundamental part is the number of Redfish-born adult sockeye that return each year.

In the five years following their endangered listing, 1992-96, the natural return to Redfish was, respectively, 1, 8, 1, 0, and 1. In 2015-19, it was 14, 33, 11, 13, and 14. The lack of zeroes and ones is real progress. But the static range makes Snake River sockeye still the most endangered salmon in the Northwest. The highest natural return since listing was 443, in 2014. 2010 and 2011 were the only other two years above 100. Overall, the trend was flat from 1993 through 2007, upward 2008 through 2014, and sharply downward since.

To leave the endangered species list alive, 2,500 naturals must return to Sawtooth Valley lakes for eight straight years. Over the period 2015-19, the average return was 17 naturals, seven-

Continued on next page

tenths of one percent of that benchmark.

The math behind this no-recovery trend is about as it was in 1992. Not enough adult naturals are returning to replace, much less recover, the population in the lake. This point is complicated, but not invalidated, by the presence of some sockeye residuals in Redfish Lake. These are sockeye that do not go seaward, but some of whose offspring will. I won't get to this part of their story here.

The measure charting this for Idaho salmon and steelhead is smolt-to-adult return ratio, aka SAR. A 2% SAR ratio (of every 100 outbound smolts, two adults return) maintains a population's level over time. A 4% SAR ratio produces a recovery trend over time. Over the last twelve years, Idaho Fish and Game estimates the average SAR for Redfish naturals at 0.89%. Over the last five years, the estimate is 0.45%.

The main human-caused depressor of the naturals' return rates is their enforced passage twice through eight large dams and 320 unbroken miles of reservoir. This system harms sockeye as it does Chinook salmon and steelhead, and also in ways noteworthy to sockeye. The urgent latter example is the summer timing of their return migration to Idaho, which exposes sockeye to heat traps downstream in the Columbia and Snake rivers.

Every year, debilitating heat kills and depletes homebound Idaho sockeye. In 2020, about two-thirds of Idaho naturals projected to enter the Columbia are projected to die before reaching Redfish Lake. (Heat is one cause, but not the only cause.) 2015 showed us the worst case when 98% of Idaho's sockeye were killed before reaching Idaho by an early hot water spike that then sustained at only slightly lower temperatures for most of that summer.

The heat trap for Idaho's naturals has three ingredients. Summer, the hot season, always poses risks for cold-water sockeye migrating then. Yet sockeye would not have evolved summer migration unless it conferred advantage. In the Redfish case, I bet it connects with their extremely long migration home.

Second, homebound Idaho sockeye must spend three to four weeks, each summer, swimming 320 straight miles up the Snake and Columbia rivers that are now ponded in reservoirs. Without the cooler escape patches and heat-distributing ameliorations of a flowing

river with inflowing tributaries, heat collects in this long uniform environment. Such conditions kill outright, and set up later deaths by stripping reserves from fish that, once finally through the reservoirs, still have 450 miles and about a month to swim to reach Redfish Lake. Third, the Columbia and Snake are getting steadily hotter, in both dammed and free-flowing sections.

The heat trap now exists every year; in some it clamps harder and longer. Idaho's adult naturals trying to get

of Redfish naturals passing the eight downstream dams over spillways will rise a bit, and the percentage passing through powerhouses will drop a bit. (Spring flows — the higher the better, for salmon — will determine the important details.) This will improve overall sockeye survival to the ocean, and thus back to Redfish Lake. The State of Oregon and the Nez Perce Tribe negotiated this agreement with leverage won against the dam agencies in court. [Editor's Note: Columbia River treaty tribes along with state and federal agencies,



Imagine a time when Redfish Lake sockeye salmon are once again abundant and the lake is filled with waves of red each autumn. Photo courtesy Save Our wild Salmon

home will face 2020's version this summer. Restoring free river flow and function through the lower Snake River will much increase the survival of young sockeye to sea each spring, and thus fish back to Idaho. It will also reduce, by 43% of its miles and 50% of its dams, the unbroken hot slackwater that now poaches adult naturals every summer.

Despite its endangerment, spring is the season to celebrate and salute the fish we call Snake River sockeye. For its being, independent of ours and of deeper standing in Idaho and at Redfish. For hardihood I can't really comprehend. For how its presence with its lake and mountains delights and helps anchor ours. To bid godspeed to 2020's young naturals; ask that they come back; and make a small pledge to their future.

I will also celebrate more incremental progress downstream. Due to the flex spill agreement, in 2020 the percentage

agreed to develop a flexible flow strategy for the Columbia River basin hydrosystem to improve salmon survival for the years 2019 - 2021.]

Redfish Lake Creek is the geography. In it the naturals slip from Redfish Lake, and are soon rocking down to the Salmon River, with one calmer break through Little Redfish Lake. Starting to sea in these home waters, they somehow take true bearing, as they go out, for their return.

I penciled in May 1 to 10, and a few days each side, as likely peak time for their going. Coronavirus and ground conditions permitting, I'd like to walk Redfish Lake Creek from the lake to the river. Or, walk or ski where I can, use the road, and stop where I can along the ripping creek to salute outbound fish I can't see which are ripping by with it. A walking ceremony if you will, of outing length. Since I am focused on the naturals, I will not linger at the Redfish

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FISH WATCH — WILD FISH NEWS, ISSUES AND INITIATIVES

Wild Fish Conservancy Sues NOAA on Behalf of Salmon and Orcas

On March 18, the Wild Fish Conservancy filed a lawsuit in Seattle's federal courthouse alleging the National Oceanic and Atmospheric Administration (NOAA) is in violation of the Endangered Species Act for failing to protect Southern Resident killer whales and wild Chinook. The lawsuit alleges the federal agency's authorization of the Southeast Alaska Chinook troll fishery contributes to the extinction of the endangered population of killer whales found in Puget Sound and much of the US Pacific Coast and of wild Chinook, a conclusion NOAA acknowledges in their own analysis of the fishery.

"Most people don't realize that fewer than 3% of the Chinook caught in the ocean off Southeast Alaska are from Alaska. Over 97% of these Chinook are from British Columbia, Washington and Oregon rivers, eventually serving as the critical prey for Southern Resident killer whales as the salmon migrate south into the whales' traditional forage areas," explains Kurt Beardslee, executive director of Wild Fish Conservancy, the plaintiff who filed suit. There are only 72 Southern Resident killer whales, down alarmingly from nearly 100 twenty five years ago. Southern Resident killer whales are listed as endangered by the US and Canadian governments. Reduced prey availability, specifically large Chinook, has been identified by killer whale experts and NOAA's analysis as the primary cause of their decline. Many populations of Chinook in Oregon, Washington, and British Columbia currently being harvested in the Southeast Alaska troll fishery are also listed as threatened or endangered.

NOAA's most recent review of the fishery, the analysis challenged in this lawsuit, concluded, "Under the existing management and recovery regimes over the last decade,

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ment of their effect on multiple dependent variables; an adequate sample size to provide sufficient statistical power; an understanding of cumulative impacts from other (commercial, tribal) fisheries, non-WDFW hatchery programs, ocean conditions, and climate change; and sufficient post-implementation time periods to address substantial uncertainty and natural variability in fish responses. We don't need all those details right now, but to support this experiment I must have confidence that they are attainable. Looking at the history of fishery and hatchery management in Washington, I don't have that confidence. It was the absence of these scientific components that thwarted WDFW's efforts in 2019 to perform a quantitative analysis of the effectiveness of WDFW's Hatchery and Fishery Reform Policy c3619, as discussed in my complete minority report.

Adding new pressures on wild steelhead as an 'experiment' at this point in the arc of Puget Sound steelhead decline strikes me as irresponsible. We don't know enough about steelhead to know which of their independent populations are expendable. The risks are too high, the state's budget too uncertain, and the state's commitment to effectively monitor and adaptively manage its fisheries and hatchery programs

salmon availability has not been sufficient to support [Southern Resident killer whale] population growth." Even though this fishery contributes to that problem, NOAA approved continued harvest by citing speculative and unproven plans to mitigate the harm.

"In short, NOAA's promised mitigation is legally deficient and scientifically untenable," explains Dr. Nick Gayeski, Senior Fisheries Scientist for Wild Fish Conservancy. "The proposed mitigation measures violate recommendations by independent scientific panels and NOAA's own scientists, advice designed to protect threatened wild salmon. These programs will likely put threatened Chinook at greater risk of extinction, and NOAA offers no evidence that the programs would ever benefit Southern Resident killer whales. If there were any benefits from these programs, they would not materialize for years, during which time more orcas will die of starvation. Yet again, killer whales and Chinook are being asked to prove that taking fish out of the sea does them harm, rather than requiring fisheries to demonstrate that they cause no harm to these irreplaceable parts of our natural world."

To make the mitigation possible, Washington state suspended rules meant to reduce the harm hatchery-raised salmon do to wild populations; NOAA did not include assessment of the harm federally-listed wild Chinook would suffer because of these changes and increases in hatchery releases. Wild Fish Conservancy sent NOAA a warning letter 60 days ago, requesting that they correct their assessment of the fishery, acknowledge the proposed mitigation is insufficient, and implement a plan that will address the needs of threatened and endangered killer whales and salmon. During those 60 days, Alaska announced plans to harvest 201,100 Chinook off the coast of Southeast Alaska, a member of L-pod was reported missing and presumed dead, and NOAA has not issued a revised assessment of the fishery's risks. WFC's lawsuit asks a federal judge to invalidate the assessment and NOAA's approval of the fishery.

is as yet unproven. Instead WDFW should employ a responsibly precautionary approach: prioritize the commitment to science stated in their existing policies and permits, collect the overdue data needed for responsible management of its existing portfolio of permitted fishery and hatchery programs, use the data to responsibly manage their programs consistent with hatchery and fishery reform science, and follow the recommendations of their own science staff: perform a scientific evaluation of whether higher-risk strategies — such as expanding hatchery and fishery programs — are necessary or appropriate. We won't outsmart nature. Wild steelhead have proven to be incredibly resilient and adaptable when we get out of their way; and when their populations are strong they will support increased recreational angling. This science-based approach to healthy wild steelhead populations and sustainable recreational fisheries requires constraint, but is more likely to be successful.

Jamie Glasgow is Director of Science and Research for the Wild Fish Conservancy, one of The Osprey's partner organizations, www.wildfishconservancy.org

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weir. That is how I plan to salute Redfish naturals outbound this spring. I have also sketched an approach that stays close to the fish in their place, should others consider doing the same.

The Redfish weir lies about a half-mile below the lake, for counts and physical assessment of juveniles and adults, tagging of juveniles, and capture and destination sorting of adults. From simple beginnings in the 1950s, today's weir features considerable complex apparatus, buildings, a lengthy standing flume to sluice young hatchery sockeye in large numbers into the creek, and steady truck traffic when sockeye young and adult are present. Only at the weir are young naturals likely to be visible; some are briefly trapped to provide an index count of their total numbers. The weir's story is sockeye management by people, not natural sockeye in their element. It provides valuable information and tools for the complicated business Idaho sockeye management now is. We would not know much of the data in this article without its presence. But the weir is a poor place to celebrate naturals and their dance with Redfish.

And, while Redfish is the workhorse, two other Sawtooth lakes will have naturals on the move this spring. Managers estimate 2970 sockeye, all naturals, went out from Alturas Lake in 2019. Pettit Lake sent 261 out last year, mostly first-generation progeny from

hatchery adults put into Pettit in 2017-18. If natural sockeye are re-established in Pettit and Alturas Lakes — a goal of the Shoshone-Bannock Tribes among others — those fish will extend each of these global distinctions just a bit past their kin in Redfish. Should you be at or pass by Alturas or Pettit this spring, send good wishes to those lakes' naturals too.

You see that hatchery-origin sockeye are not readily kept out of the naturals' story. This makes a challenge. The sockeye action visible to people this spring, and more so this summer, at the Redfish weir and the lake, will tell the hatchery story. I bet all the media, unless counter action is plotted, will tell the hatchery story. The naturals' story will be submerged, as it has been for 25 years. Yet I think only the naturals and their story of place can rouse Idahoans to care and act for Idaho's sockeye.

The hatchery story is interesting. It is hard and consuming work for the managers who must execute it. It is woven ecologically with the naturals, for good, or ill, or both. I think its main effect on people is to muffle both the magic, and dire condition, of Redfish Lake's sockeye. And thus muffle our connection to and caring for them in the only place on earth they exist. I hope communications pros can find ways round this. I can't yet; I keep trying.

Pat Ford worked for the Idaho Conservation League from 1977-1984. He helped found the Save Our wild Salmon Coalition in 1992-93, and then worked for the organization for 21 years, 16 of them as executive director. He lives in Boise with his wife Julia Page.

Cecil Andrus: Idaho Fish Champion

Cecil Andrus, Governor of Idaho from 1971 to 1977 and 1987 to 1995, was local anywhere he went in Idaho, and the best fighter Idaho steelhead and salmon ever had. One month after wading into Redfish with girls and boys from Stanley School on August 12, 1993 to put a few sockeye back in their lake, he launched the lawsuit whose 27-year course has brought each incremental beneficial step for migrating salmon since, and now to a chance for decisive steps.

Governor Andrus did not live to see red fish back in Redfish Lake. Congressman Mike Simpson is now working, quietly, but with his considerable skill, to fashion an inclusive path through several Northwest brambles to achieve it. I think our best help to him now is to put more Idahoans' feet visibly on that path, and widen it.



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Livingston, MT 59047-9176