



Wild Fish Conservancy

N O R T H W E S T

S C I E N C E E D U C A T I O N A D V O C A C Y

New Research Shows Curtailing Chinook Salmon Ocean Fisheries Will Promote Southern Resident Orcas & Wild Chinook Recovery

For Immediate Release

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April 5, 2024—This week, [new research](#) was published in the journal of *Communications Earth & Environment* sounding a grave warning for endangered Southern Resident killer whales (SRKW) and highlighting urgent conservation measures necessary to stem their pending extinction. While projecting rapid population collapse in roughly 40 years' time from maintenance of the status-quo, the authors also shine light on a hopeful path forward to recovery. The publication suggests curtailing ocean-based salmon fisheries in the North Pacific—or transitioning these fisheries toward river-based locations—can immediately increase critical wild Chinook salmon prey for SRKW and prevent the extinction of the Pacific Northwest's imperiled keystone species.

For decades, biologists have understood the factors causing the decline of the Southern Residents. Overwhelmingly, the most critical factor affecting SRKW is the reduced abundance and body size of Chinook salmon—the whale's primary food resource. The Southern Residents are obligate prey specialists on the oldest, largest, and fattiest Chinook, which limits their ability to adapt to a changing environment.

Despite our understanding of the science, conservation actions to stem SRKW decline have been insufficient, and politicians and resource managers have fundamentally avoided addressing the role of harvest in depleting the abundance and quality of the whale's primary food source. For example, the National Oceanic and Atmospheric Administration (NOAA) has openly acknowledged that status-quo management of Chinook ocean fisheries deprives SRKW of the marine prey they require for survival. As a result, the Northwest's beloved whales are malnourished and declining rapidly toward extinction in plain sight.

"I assumed if only we had the right data, we would make the right decisions. But ... not only do we know their biology and the threats they face, we have known these things for a very long time," said lead author Dr. Rob Williams in a recent [Seattle Times article](#).

While projecting accelerated extinction risks for SRKW from maintenance of status-quo fisheries and conservation actions, the new publication shines light on hopeful solutions, demonstrating that policy actions to reform Chinook salmon harvesting in ocean fisheries can immediately halt the decline of SRKW, the first step toward recovering the population.

"Increased abundance and quality of prey within SRKW critical habitat can be realized by changing fishing practices," said the authors. "Moving Pacific Salmon Treaty fisheries in Alaska and BC away from Chinook salmon rearing grounds and migration routes into terminal river and estuarine locations results in an immediate increase of Chinook salmon in critical habitat of up to 25%." Based upon the modeling results, the authors predict this increase in marine prey availability would be more than sufficient in preventing decline toward functional extinction.

If further efforts are made to transition away from ocean fisheries toward the use of selective, in-river harvesting practices, the paper describes additional opportunities to recover the age and size-structure of Chinook salmon populations. "By not harvesting immature fish in marine fisheries, and then allowing large [Chinook] females to pass through terminal fisheries to spawning grounds, a [Chinook] size increase up to 40% can occur over a 50-year period," said the authors. This would provide immediate benefits for both wild Chinook and orca recovery and improve the quality of SRKW marine prey into the future to benefit their long-term recovery.

Acknowledging the sacrifices that must be made in regards to regional ocean use, the authors warn that swift action is needed to avoid mounting societal costs. “In a declining population, the longer the lag time between knowledge and mitigation, the more draconian the recovery actions can become, with a larger social cost, and a higher risk that harm reduction actions may not work,” the authors stated.

In regards to the urgent need for fisheries reforms to stem the extinction of SRKW, the findings of Williams et al. corroborate long-held claims by the science-based nonprofit Wild Fish Conservancy (WFC) and remedies proposed by the organization in their ongoing lawsuit against NOAA Fisheries. In 2020, WFC filed suit against NOAA for approving Chinook harvest levels and practices in Southeast Alaska that are contributing to the extinction of endangered SRKW and wild Chinook salmon coastwide.

“Most people don’t realize that fewer than 3% of the Chinook salmon caught in the ocean offshore of Southeast Alaska truly originate from Alaska. Up to 97% of these Chinook are actually from British Columbia, Washington, and Oregon rivers, and if given the opportunity, these fish would eventually serve as the critical prey for SRKW as the salmon migrate south into the whales’ critical foraging areas,” explains Kurt Beardslee, co-founder and former Director of WFC. “Instead, our region’s Chinook are being harvested before the whales have had a chance to feed, regardless of their status under the Endangered Species Act, and at levels that federal fishery managers acknowledge are unsustainable for the long-term survival and reproductive success of both wild Chinook and the Southern Resident population. We will never be successful in recovering these iconic species if we continue to prioritize extraction over their recovery.”

In May 2023, a Federal District Court [ruled in favor](#) of WFC in the case, acknowledging the harm of the Southeast Alaska Chinook troll fishery to endangered species and ordering the immediate cessation of both summer and winter troll fishing seasons to protect SRKW marine prey. Nevertheless, NOAA Fisheries, the State of Alaska, and the Alaska Trollers Association worked together to achieve a temporary stay of this critical recovery action in June 2023, arguing that the economic harm to industry should outweigh the potential extinction of the whales under the Endangered Species Act. This has allowed the Alaskan Chinook fishery to continue intercepting majority non-Alaskan Chinook and priority prey for the starving Southern Residents while the Ninth Circuit Court continues to consider the case on appeal.

As the public awaits the court’s decision and the Southern Residents continue to starve, the new publication by Dr. Williams and his team [specifically highlight](#) the benefits of curtailing this contentious ocean-based fishery for the recovery of SRKW. “If only the SEAK [Southeast Alaska] fisheries were closed,” the authors note “this would result in a potential 8% increase in abundance of mature Chinook in critical habitat that would be realized immediately.”

Although increased hatchery production of Chinook salmon has been proposed as an alternative means to partially offset the loss of SRKW marine prey caused by ocean-based salmon fisheries, hatcheries are widely known as one of the leading contributors to the decline of threatened wild salmon through both ecological and genetic means, noted co-author Misty MacDuffee. Given that the long-term survival of SRKW depends on the recovery of wild salmon, MacDuffee sees no viable avenue to prevent the extinction of the Southern Residents without fisheries reforms.

Beyond the solution of curtailing ocean-based Chinook fisheries, the authors note that any effort to transition ocean-based salmon fisheries toward river-based locations and the use of selective harvesting practices (to protect large females) will help slow the rate of SRKW decline by increasing the quantity and quality of mature Chinook prey. Methods of selective harvesting to protect threatened salmon runs and large females were [developed by indigenous communities](#) thousands of years ago. Many of these historical selective fishing practices were recently revitalized and proven effective in other peer-reviewed and [published studies](#) to enable a sustainable transition toward this solution of river-based selective harvesting for the recovery SRKW and wild salmon.

“This new publication provides a grave warning, but more importantly, it offers great promise and hope by providing a roadmap of science-based solutions that we can take immediately to reverse the trend of decline toward recovery of Southern Resident orcas, wild Chinook, and the communities who depend on them,” stated Emma Helverson, WFC’s Executive Director. “Now is the time for us to work together to support fishers in overcoming the challenges of transitioning away from ocean fisheries toward in-river, selective fisheries. This transition is the only way we will meet the prey requirements of the Southern Residents, rebuild the age, size, and abundance of wild Chinook, and create resilient fisheries that can exist far into the future.”

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Wild Fish Conservancy is a nonprofit conservation organization dedicated to preserving, protecting and restoring the northwest’s wild fish and the ecosystems they depend on, through science, education, and advocacy.

Further Reading:

- [Celebrating a Landmark Legal Victory for Southern Resident Killer Whales and Wild Chinook Recovery | Wild Fish Conservancy](#)
- [New Research Shows Innovative Commercial Fishing Technique Can Aid Wild Salmon Recovery & Support Sustainable Fisheries – Wild Fish Conservancy Northwest](#)
- [Historic win for orcas, epic fail for NOAA Fisheries managers | Wild Orca](#)
- [Judge faults federal plan to protect orcas from Alaska salmon harvests | The Seattle Times](#)
- [Judge blasts ‘mitigation’ that would imperil both orca and salmon | Courthouse News Service](#)
- [Lawsuit seeks to block Southeast Alaska troll fishing to increase salmon for orcas | Puget Sound Institute](#)
- [Puget Sound Orcas are Starving. Is the Solution Shutting Down Alaskan Chinook Fisheries? | Post Alley](#)