

2024 wild salmon returns, what are salmon telling us?

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January 2025

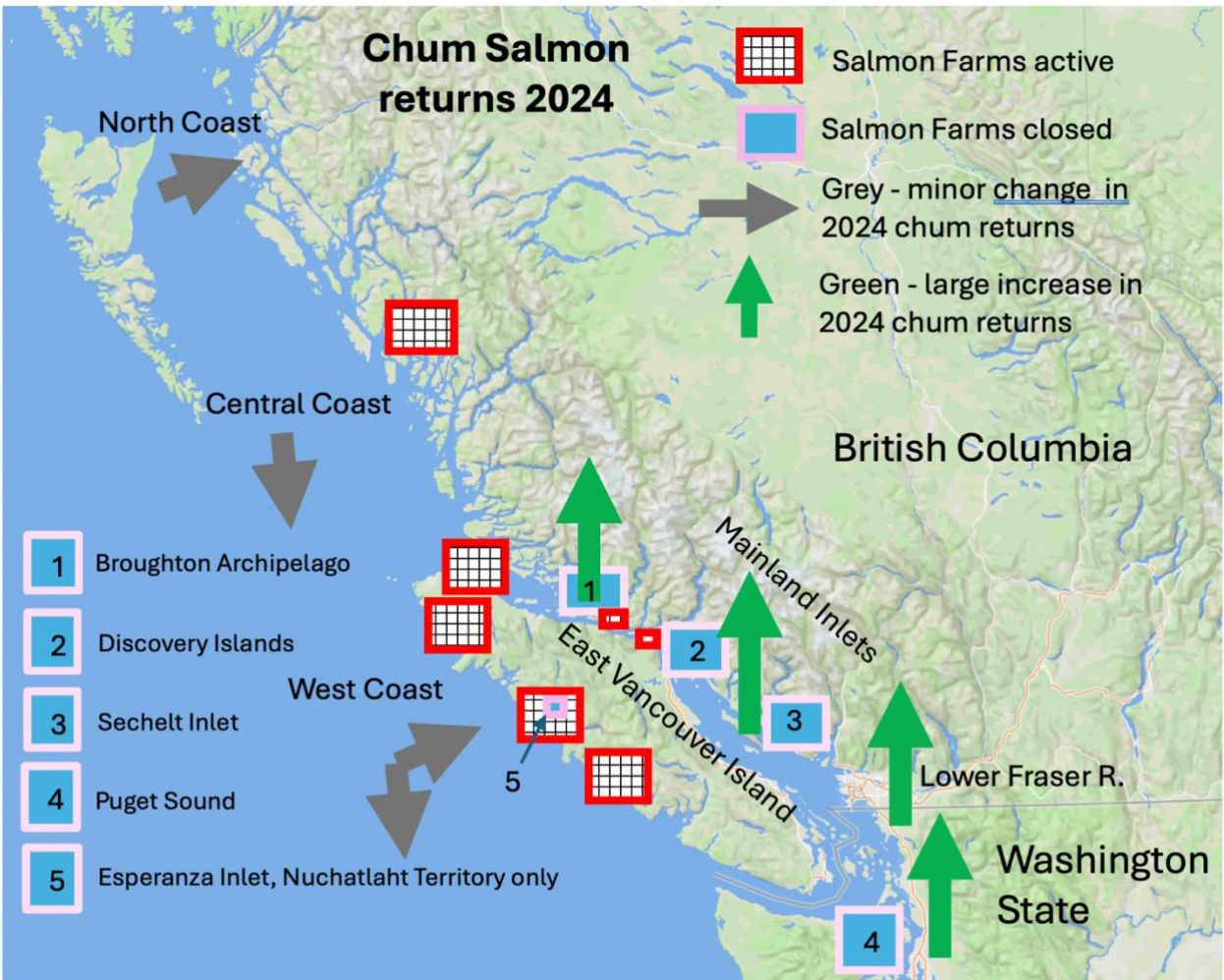


Figure 1. Unexpected, large returns of chum, and other salmon, occurred throughout east Vancouver Island, the adjacent mainland inlets and Puget Sound in 2024, this marine corridor is where most salmon farms have been closed .

DFO forecasted chum salmon returns to the BC South and Central coasts would be poor in 2024. While chum salmon did continue to collapse in parts of the Central Coast and elsewhere, unexpectedly huge returns occurred in a swath from Alert Bay through Puget Sound. Something significantly benefitted the salmon of this region.

Because chum salmon have been in such steep decline in recent years, it seems important to understand why this generation suddenly rebounded, increasing 10-20xs in a single generation. While this report is focused on chum because the DFO chum data is the most complete, pink, Coho and Chinook salmon also rebounded in 2024 throughout the same region.

Salmon survival is linked to freshwater, nearshore and open ocean conditions. In Figure 1 it is clear the explosive increase in chum returns occurred precisely where industrial salmon farms had recently been removed. Science informs us that removing the ~12 million farm salmon from this region reduced levels of waterborne infectious pathogens, but is this the reason salmon rebounded?

Most chum salmon that returned in 2024 migrated to sea in 2021, the very first year after the 2020 closure of salmon farms in the Discovery Islands. Salmon farms were also closed in the Broughton Archipelago and Puget Sound (Fig 1). We know sea lice infection of young pink and chum salmon migrating through the Discovery Islands in 2021 [dropped by 96%](#) compared to previous generations back to 2005 and this raised the question – would this relief from infection increase survival of this generation. Sea lice are just one pathogen released by salmon farms. This briefing provides a preliminary record of the pattern of salmon returns in 2024 in hopes we can understand what salmon are telling us to ensure this trend continue.

Overview

This report is for First Nations concerned about the decline of salmon. The 500 km stretch of coastline from Alert Bay through Puget Sound is the first place in the world that salmon farms have been removed. The impact of this on salmon returns has not been studied until now. From 2018-2023, 50% of salmon farms in BC and 100% of salmon farms in Puget Sound were closed by First Nations, Canada, and Washington State to protect wild salmon. This required significant effort.

We know ocean conditions influence salmon survival, and that the recent and persistent La Niña conditions, which typically cool the North Pacific, is expected to have had a positive effect on salmon survival coastwide. Conversely, damage to freshwater salmon habit occurs coastwide, but only impacts salmon survival in specific rivers. Ocean productivity, high seas trawling, Alaskan interception and many other factors are also known to negatively influence salmon survival coastwide. The puzzle of the 2024 returns is that something undetected by DFO's forecasting models caused explosive salmon returns up to 20 times greater than previous generations in one region of the coast and that region correlates precisely with where salmon farms were removed.

It may not be immediately obvious how pens of 600,000+ farm salmon could influence salmon returns. Over the past 20 years researchers from Canadian universities and scientific organizations have painstakingly examined young salmon as they approached and migrated past salmon farms; recording sea lice, bacteria and virus infection, length, weight, and condition. The water was sampled, measuring pathogen loading around salmon farms and the immune response of salmon exposed vs unexposed to salmon farms was analysed. Measurable and significant impact is correlated with salmon farms (see [Appendix1](#)).

When Mamalilikulla, Namgis, and Kwikwasut'inuxw Haxwa'mis began closing salmon farms in the Broughton Archipelago in 2018, the industry was granted a few years to demonstrate lack of impact, but these Nations required access to all the remaining farms in their

territories. This is unprecedented. No independent research has ever been allowed in salmon farms. Their members, with DFO and Pacific Salmon Foundation scientists, screened the fish in the farms for pathogens and disease-related organ damage. They counted farm lice monthly and [documented the impact of industry lice treatments](#). Based on what they learned, the leadership of these nations closed 17 farms in the Broughton. This [ground-breaking research](#) is now being published in peer-reviewed journals and serves as a warning: salmon are attracted to the farms, where they are exposed to elevated levels of infectious viruses and bacteria. Informed on the state of disease in salmon farms, Namgis is taking the companies and Canada [to court for failure](#) to screen for the foreign *Piscine orthoreovirus* (PRV) and [suing Canada for issuing salmon farm licences](#) until 2029. They are doing this out of concern for what happens to their salmon *beyond their territory* as young salmon migrate past salmon farms off Port Hardy and the Central Coast.

Another 17 salmon farms were closed in 2020 by Canada in the Discovery Islands. This region was flagged by the Cohen Commission into the decline of the Fraser sockeye due to the risks associated with high farm salmon pathogen loads in narrow migratory waterways. The Kwiakah, Gwawaenuk, shíshálh, and Nuchatlaht First Nations closed another 16 salmon farms out of concern for wild salmon. On Feb 15, 2018, the [Washington State House and Senate passed bills to phase out salmon farms](#) in Puget Sound at the urging of local tribes. Approximately nine First Nations in Clayoquot, Nootka, Esperanza, Port Hardy, Klemtu, the southern Broughton and Johnstone Strait have agreed to allow salmon farms to continue to operate and so we can compare salmon returns to regions with and without salmon farms.

Important to understanding what happened in 2024, is the 2003 provincial [Pink Salmon Action Plan](#). In 2001, young out-migrating Broughton pink salmon were so [infected with sea lice](#) that 98% were forecast by researchers to die. When this generation collapsed by 99% across the seven Broughton rivers, the Province of BC responded by requiring salmon farms on a migration corridor through the Broughton to have zero sea lice in the spring of 2003. The farms had to be empty or stocked with freshwater smolts only (which have no lice.). The result was very similar to what we saw in 2024. Broughton pink salmon survival [sky-rocketed by 1480%](#) according to DFO. Pink salmon survival in the Hada River was **49.83%** whereas typical [pink salmon survival is 5.2-0.7%](#). Despite the remarkable success of this “Action Plan”, the salmon farms were allowed to restock in 2004, [lice infection returned](#) and salmon fisheries in the Broughton Archipelago collapsed.

This report was written to flag the extraordinary pattern of salmon returns in 2024. Large hatcheries were omitted due their reluctance to share production details that could influence hatchery-only returns. This report relies on numbers and graphs released by Fisheries and Oceans Canada (DFO), First Nations and Washington State media. This report is preliminary.

Regions

North Coast

No salmon farms have ever operated on the north coast of BC. Salmon returns there were good with some large pink salmon returns and slightly depressed Chinook returns. Overall returns were reported to have remained steady compared to recent years.

Along the Alaskan border pink salmon returns to Portland Inlet (Area 3) were the highest since record keeping began in 1950. While not the huge increases experienced further south, this may be evidence of good ocean conditions and the state of the freshwater habitat.

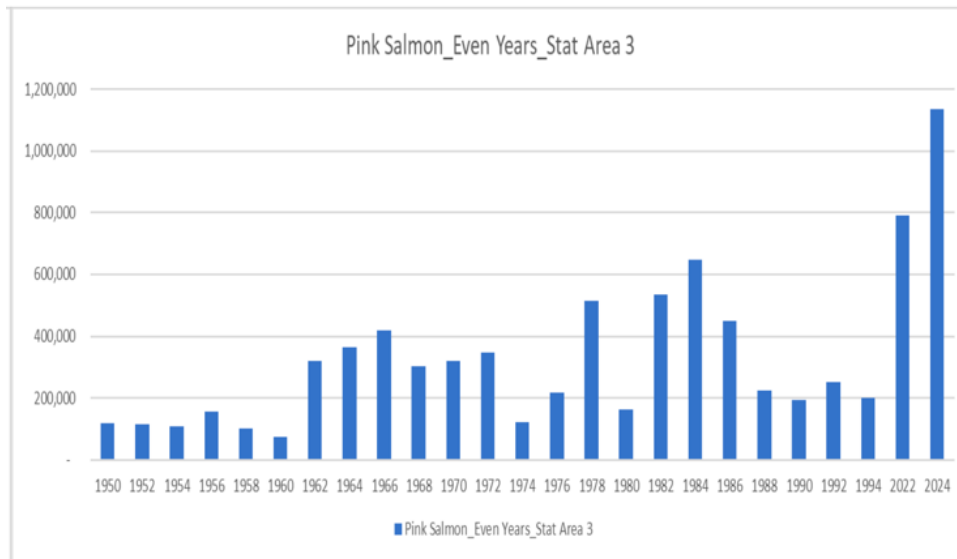


Figure 2. Pink salmon, even cycle returns 1950-2024 for DFO Area 3, the most northern region of the BC mainland (missing 1996, 1998, 2000) [Graph Source](#)

Sockeye returns to tributaries in the Skeena varied widely.

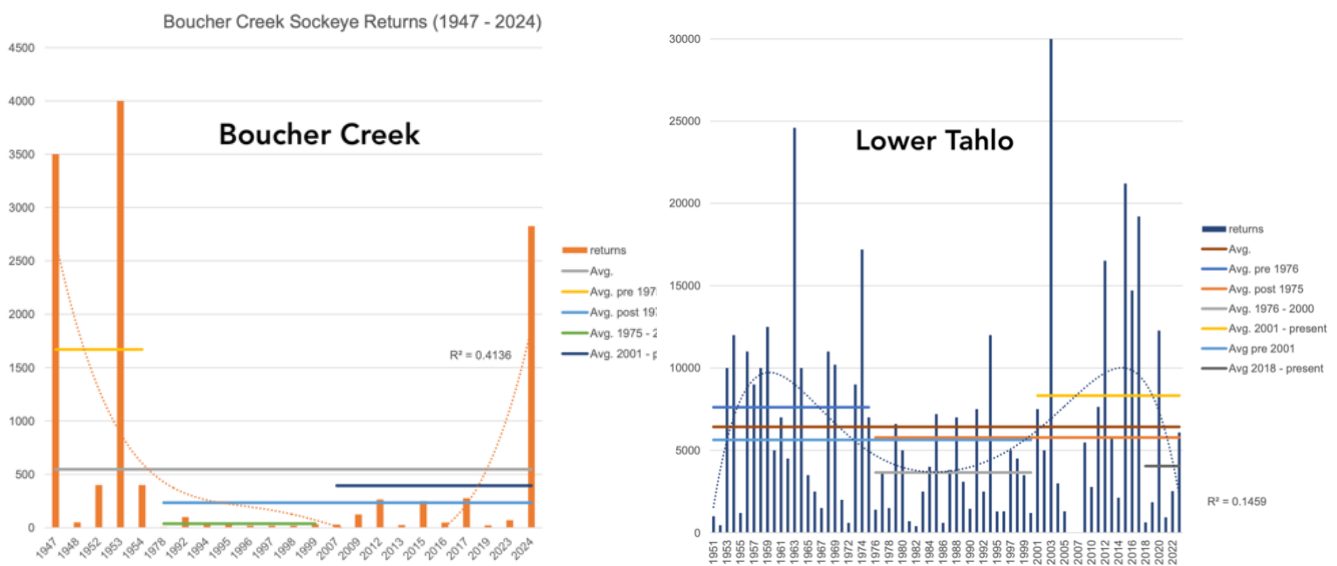


Figure 3. Sockeye returns to Skeena tributaries were variable. The cause of the large increase in Boucher Creek is unknown [Graphs source](#)

Preliminary returns for all species to the Nass River were fair to excellent.

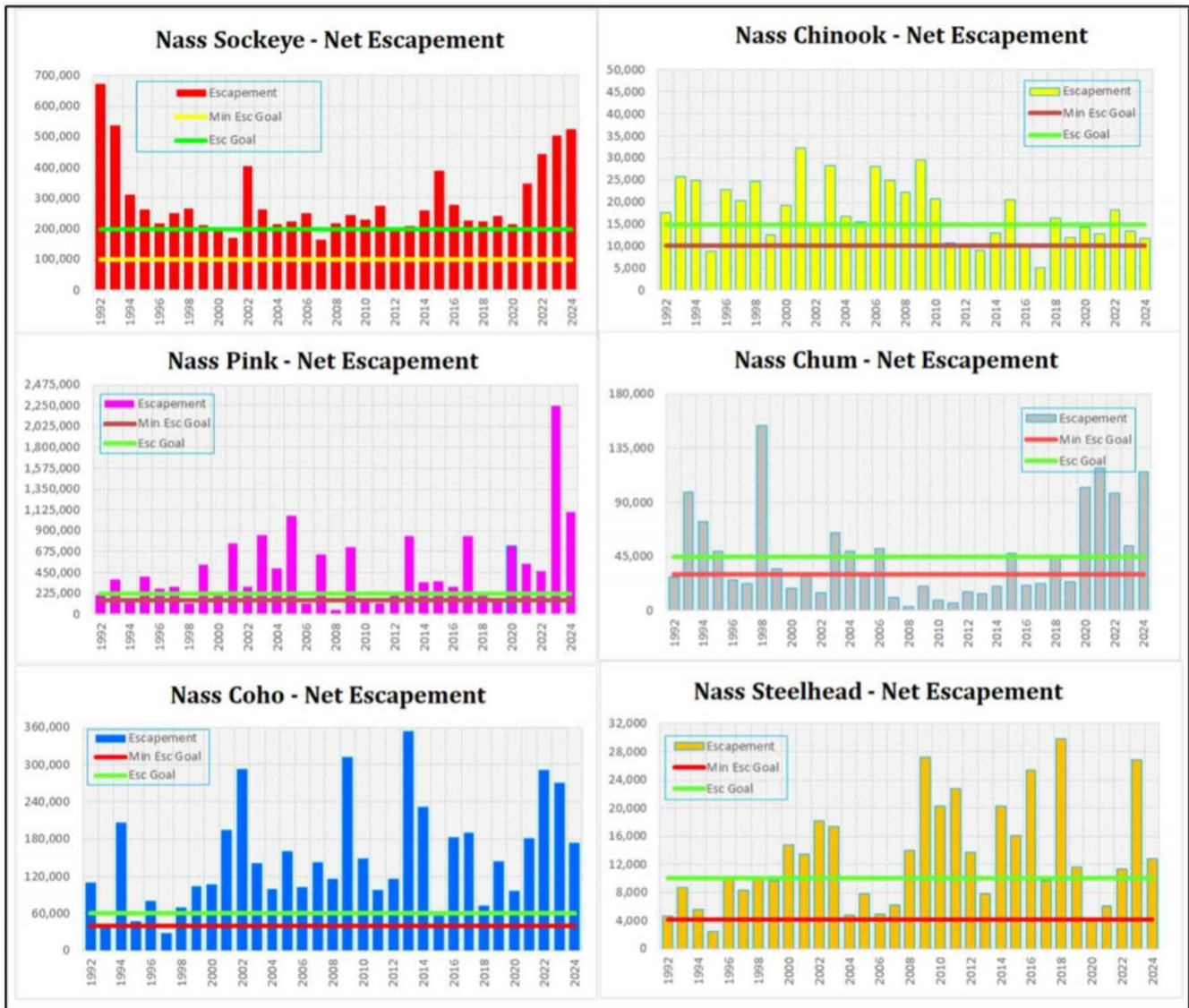


Figure 4. Preliminary Nass Salmon and Steelhead Escapement charts for 1992-2024. These graphs can be accessed from the [2024 DFO Post Season Review](#)

Central Coast

The Central Coast has six active Mowi Atlantic salmon farms in Kitsoo Xai'xais territory in [DFO management Area 7](#) (Fig 5). While there were anecdotal reports of good returns to some Central Coast creeks, the data and locations were not made available or confirmed. Below are quotes from the [Central Coast DFO Post Season Review](#).



Figure 5. DFO Area 7 of the Central Coast has six active Atlantic salmon farms. These are the only salmon farms north of Vancouver Island.

“Area 7 salmon returns fell short of pre-season expectations for the eighth consecutive season. Pink escapements are below, **Chum escapements continue to be far below target** for all the key streams in Area 7 (Fig 6).

Poor expected Chum returns were once again realized throughout Area 7 as the season progressed. There were no commercial gillnet or seine openings in Area 7 during the 2024 season.

The McLoughlin Bay hatchery [near Bella Bella] fell well short of the 2.5 million target with 290,990 on hand, KITASOO hatchery [in Klemtu] fell short of their 1.5 million target with 390,000 eggs collected. Additionally, a die-off event occurred at the KITASOO hatchery, the exact number of eggs lost is uncertain at this time.

The KITASOO Fisheries Program collected approximately 24,000 [sockeye] eggs from Mary’s Cove for their Victor

Creek facility. However, a storm caused damage to their water intake system, leading to a malfunction that resulted in 55% mortality of the collected eggs. Meanwhile, the Heiltsuk (HIRMD – Aquatics) did not collect any eggs from Tankeeah for the Emily Lake hatchery due to poor Sockeye returns”.

Area 7 prospects for the 2025 season include no anticipated pink or chum salmon commercial fisheries. “**Over the past eight years, there have been consistently poor returns of Area 7 Chum.** A positive rebuilding trend must be observed before commercial Chum fisheries can be considered.” ([DFO Post Season Review Central Coast](#))

Pink and chum salmon returns were low for the key Central Coast Rivers (Fig 6).

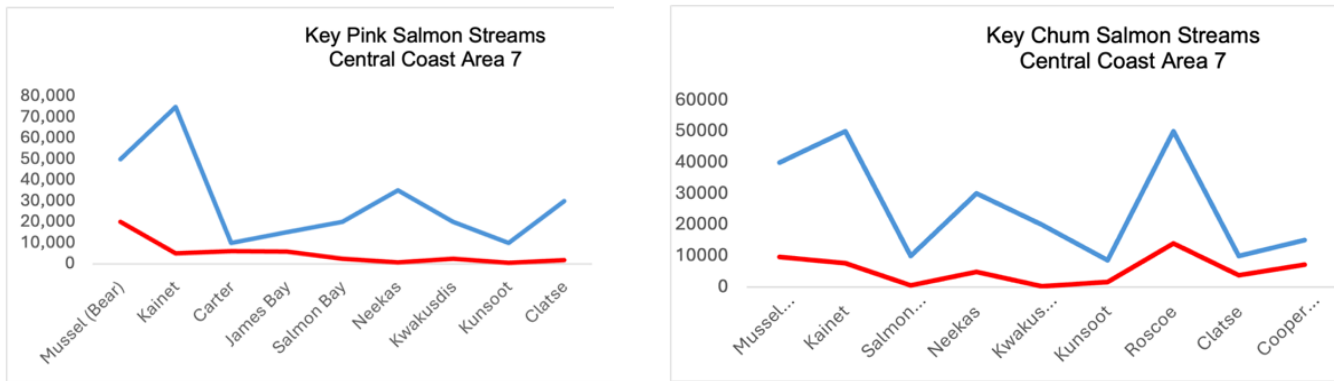


Figure 6. Pink and chum salmon 2024 returns (red line) vs the target number that fishery managers thought might return (blue line) to nine “key” rivers on the Central Coast. Data from [DFO Post Season Review, pages 21, 22](#)

South Coast

West Coast Vancouver Island

Chinook - The West Coast of Vancouver Island (WCVI) has 5 distinct sounds, three are used to farm salmon - Quatsino, Nootka/Esperanza and Clayoquot Sound and two are without salmon farms - Kyuquot and Barkley. This allows an informative comparison between farmed and wild areas (Fig 7). [DFO](#) reports, Chinook in Kyuquot “*have seen an improving trend in escapement*” while Chinook in Clayoquot “*have been consistently below their lower biological benchmark for 30 years with few signs of improvement*” (Fig 7). Thirty years corresponds with the arrival and presence of salmon farms in that region.

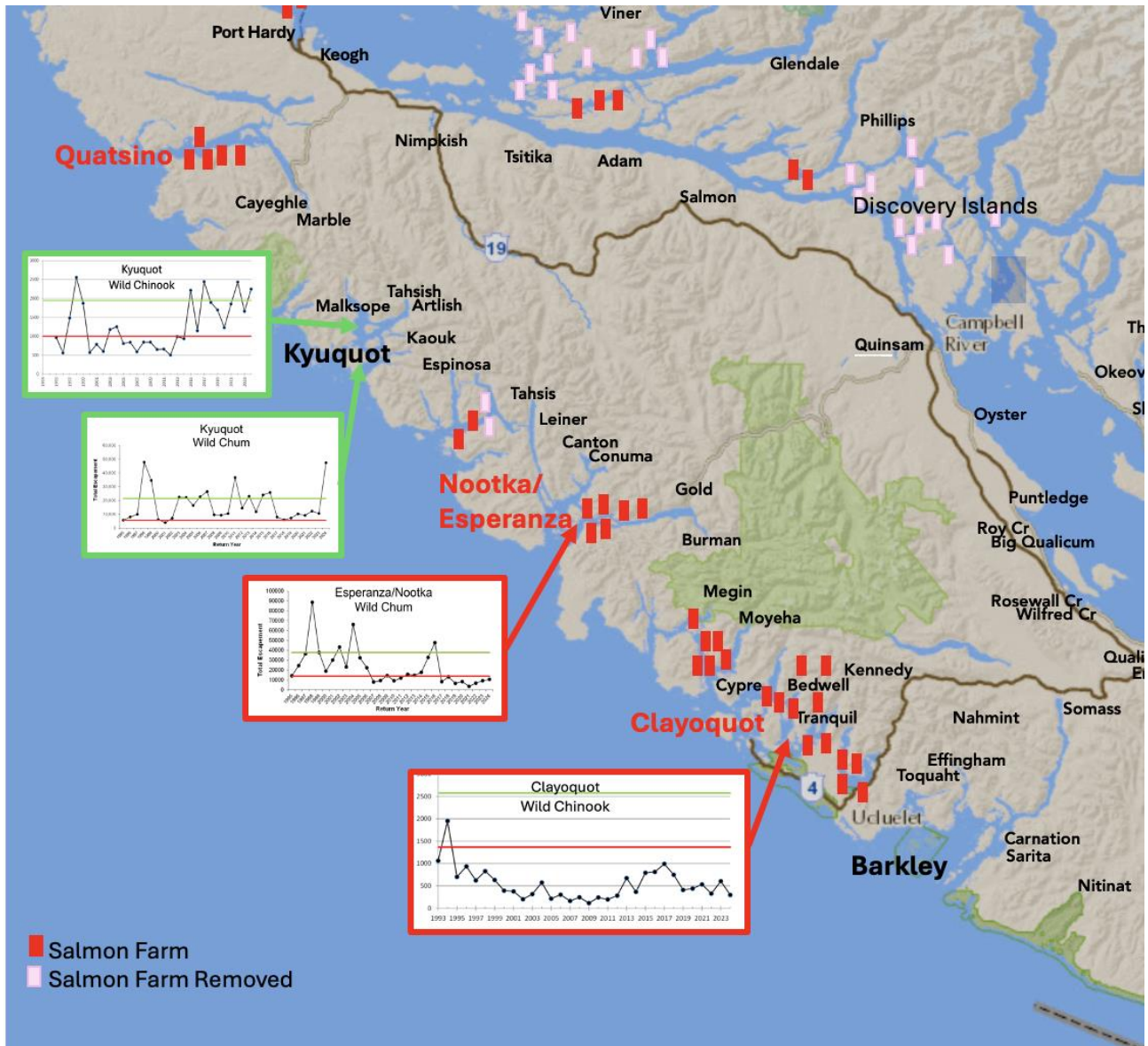


Figure 7. DFO post-season review graphs placed on a map showing wild Chinook and chum salmon returns from the 1990s through 2024 for Kyuquot (no salmon farms) Nootka/Esperanza (salmon farms) and Clayoquot (salmon farms). [Graph source](#)

[The DFO 2024 Marine Risk Assessment for Natural-Origin West Coast Vancouver Island Chinook](#) provides further insight into WCVI Chinook survival.

“Of all the regions in BC, open-net salmon farms in WCVI sounds carry the largest potential for impact to Chinook as juvenile WCVI Chinook salmon spend up to a full year cohabitating with high density farms, exposing wild and hatchery Chinook to various pathogens and parasites.”

This 2024 report notes WCVI Chinook are more infected with bacteria, viruses and parasites compared with Chinook from other regions of BC. Unfortunately, the report lumps all 5 WCVI sounds together, but the graphs in Figure 7 show large increases where there are no salmon farms and very low returns in the areas still used to farm salmon.

The DFO WCVI Post Season Review had little to say about Coho but noted: *“Coho returns in 2024 appear variable, with peak counts to date ranging from less than half the 8-year average to just above the 8-year average... Survival rates have been relatively poor in the last ~15 years compared to historic estimates.”* However, escapement in Carnation Creek, (no farms, Fig 7) *“was an improvement from last year and close to the 12-year average”* ([Source](#)).

Chum - Wild chum returns increased significantly in Kyuquot (no farms) but remained below target levels in Esperanza/Nootka (farms, Fig 7). However, the 2024 chum salmon returns to Clayoquot Sound (farms) did see improvement. Clayoquot is the one anomaly in the 2024 pattern and provides valuable perspective. An examination of what occurred there is provided below on page 13.

East Vancouver Island

While industrial salmon farms are still in operation under agreements with First Nations off the northeast tip of Vancouver Island, most salmon farms south of there have been removed between Vancouver Island and the mainland (Fig 7). Three farms do remain in Tlowitsis territory in the southern Broughton Archipelago (Fig 8) and two farms remain just north of the Discovery Islands in Johnstone Strait because they were considered outside the “Discovery Islands” (Fig 7), the region cleared by Fisheries Minister Bernadette Jordan in December 2020.

The removal of so many salmon farms (~12M farm salmon) from this region provides information on the relationship between salmon farms and salmon returns. We know from recent research that closing salmon farms [significantly lowers farm-pathogens](#). It is important to note what year each species of salmon went to sea. The Discovery Islands were cleared of salmon farms in the spring of 2021. This means 2024 was the second pink salmon return and the first 4-year-old chum salmon return post-salmon farms.

The number of sea lice infecting juvenile pink and chum salmon migrating through the Discovery Islands has been studied since 2005, and so the impact of removing salmon farms was measured. The chum salmon that returned this year were [96% less infected with sea lice](#) in the Discovery Islands than previous generations when they went to sea in 2021. It was anticipated by the research team that this might boost survival.

Pink Salmon - Broughton Archipelago

The salmon farming industry used the Broughton Archipelago from 1989-2023. Today, 19 Mowi and Cermaq salmon farms have been closed. Three Grieg salmon farms on the south side of Knight Inlet remain operational in Tlowitsis Territory (Fig 8).

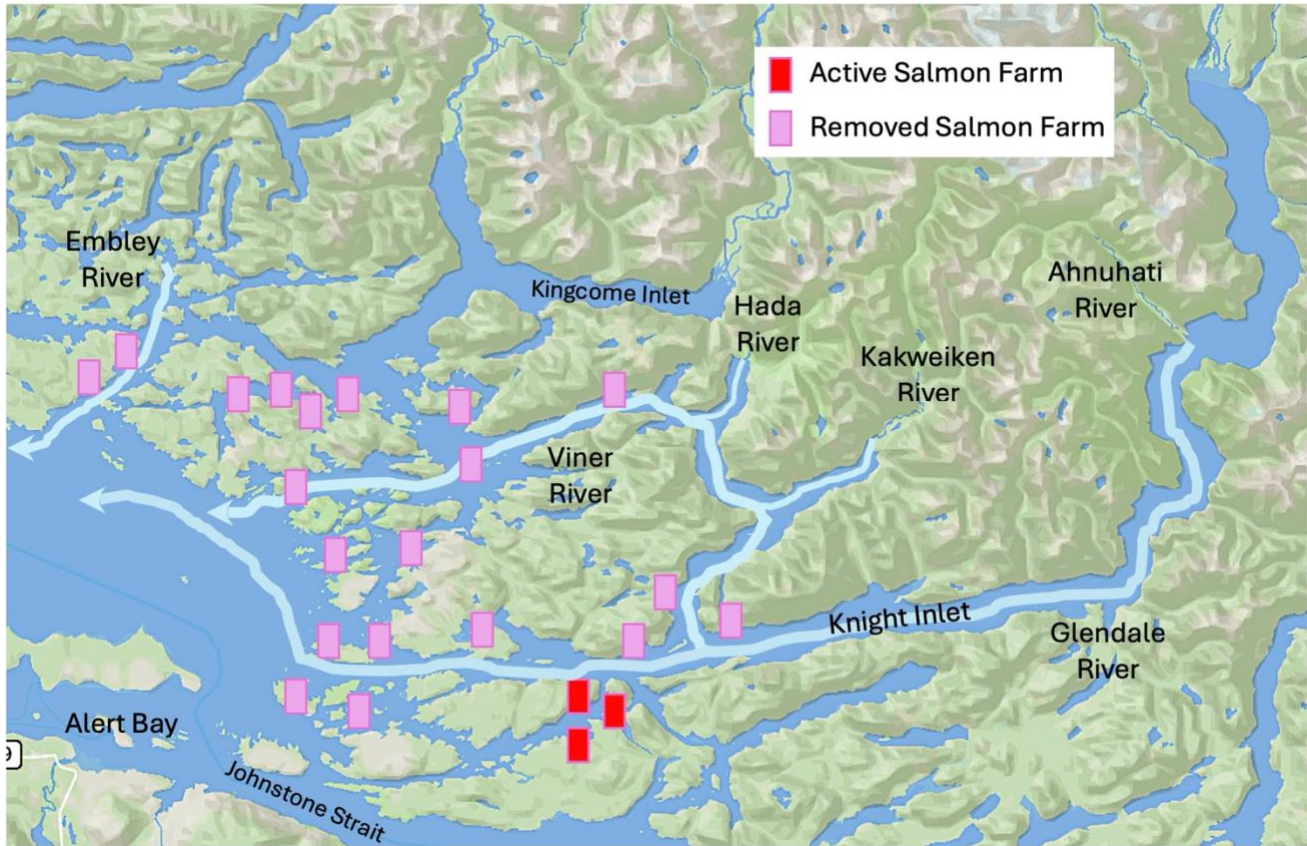


Figure 8. Nineteen salmon farms have been closed by four First Nations in the Broughton Archipelago. Three remain in operation under agreement with another First Nation.

Pink Salmon – Pink salmon returns to the Broughton Archipelago have increased substantially since the removal of salmon farms. The first generation of pink salmon to return to the Hada River after nearby salmon farms were removed increased 10-fold in 2022 from approximately 1000 to 10,000 fish. In 2024, the next generation doubled to 20,000 (Fig 8, 9). Historically, up to 60,000 pinks returned to this river. (Formally called the Ahta)

Pink salmon returns to the Ahnuhati River went from 11,879 over the past three generations to 106,453 in 2024 (Fig 8, 9). Historically over 300,000 pinks have returned to this river. The pink salmon of the Embley River had collapsed to an average of 283 fish over the previous three generations. After Gwawaenuk First Nation removed the two large Cermaq farms near this river (Fig 8), pink salmon returns increased ten-fold to 2,241 in 2024. Historically up to 100,000 pink salmon have spawned in the Embley.

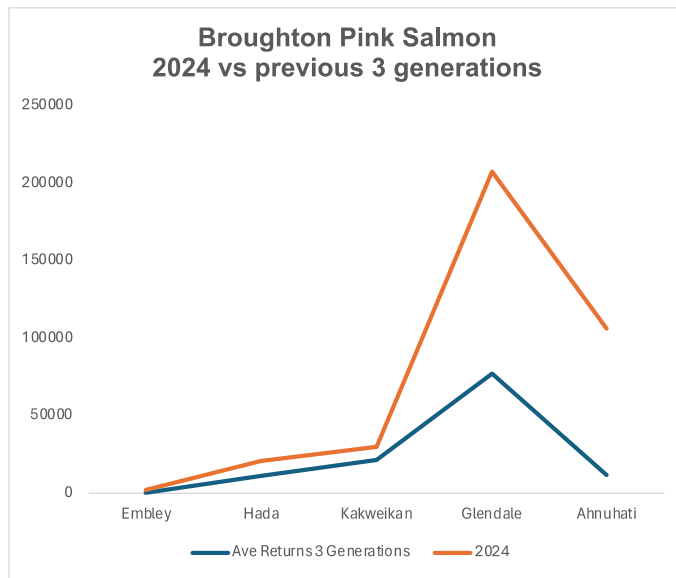


Figure 9. The 2024 returns to five Broughton pink salmon rivers vs average returns for the previous three generations. DFO [data source](#)

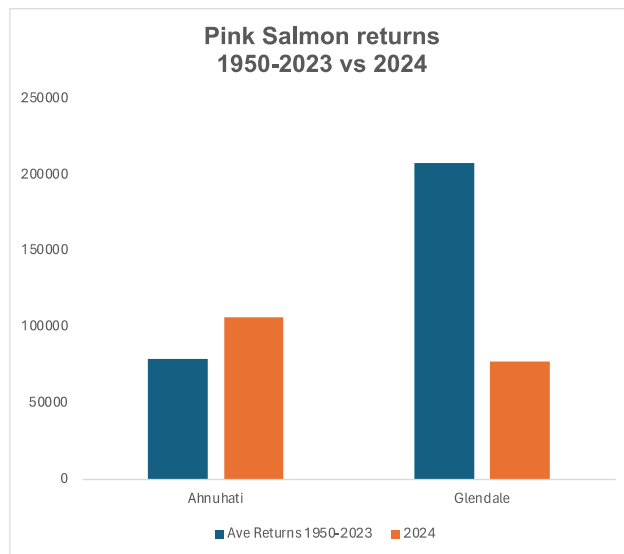
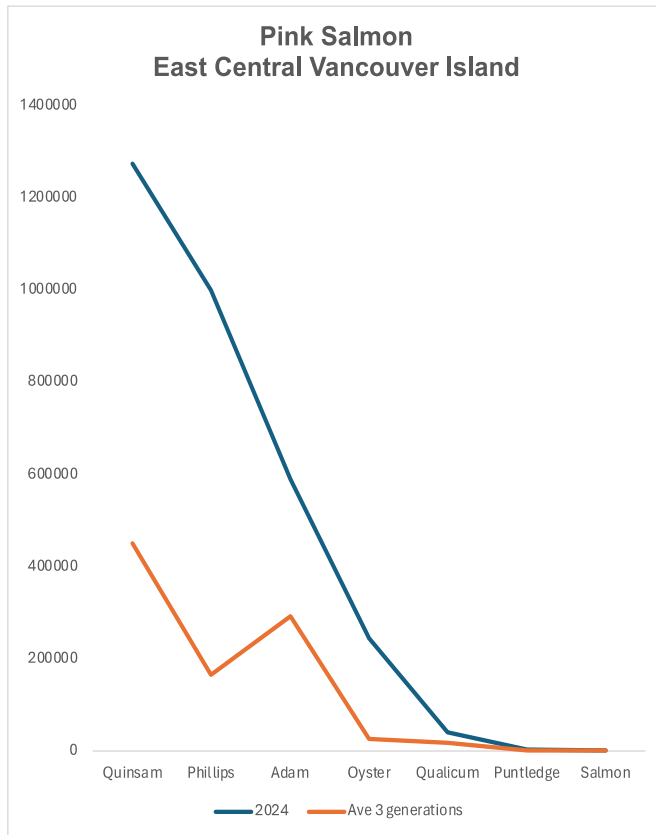


Figure 10. Average returns 1950-2023 vs 2024 for Knight Inlet rivers [Data source](#)

Figure 10 presents data from the [DFO South Coast Salmon Bulletin September 11, 2024 Escapement Update Pink Salmon – Area 12 Mainland Inlets](#) which provides the average number of pink salmon that returned 1950-2023 vs 2024. The 1950-2023 period includes *before and during* salmon farm operation. The Ahnuhati and Glendale Rivers are both in Knight Inlet (Fig 8). While eight salmon farms have been closed on the migration route for fish from these rivers, three remain. Because the Glendale River is much closer to the remaining farms, salmon from that river would be significantly smaller than Ahnuhati pinks as they pass through Grieg salmon farm effluent. Ahnuhati pink returns now exceed the previous 36 generation average, while Glendale pinks remain at less than half.

Pink Salmon - East Central Vancouver Island

Most pink salmon rivers south of the Broughton also saw very large increases in 2024. The 2024 Phillips River pink return was 6 times the previous 3 generations (166,950 vs 1,000,000) and the Quinsam run tripled (Fig 11). Note the Kwiakah First Nation, who removed the Mowi farm near the Phillips River, report 1M pinks in that river. The Puntledge River saw a smaller increase from 2400 – 3100 and interestingly, the pink salmon return to the Salmon River, adjacent to the two salmon farms still operating in this area (Fig 7), didn't increase, remaining at ~800 fish (Fig 11). Mowi also has Atlantic salmon hatcheries on the Salmon River.



Extensive research on lice infection on juvenile pink and chum salmon swimming past salmon farms documented visible impact on body condition (Fig 12). Adult salmon, clad in large scales, are relatively immune to sea lice. But young pink and chum salmon have no scales when they first enter the ocean and so the lice puncture holes in their skin, graze away the protective mucus and eat into the flesh. Salmon infected at this stage pictured in Figure 12 are thin, weak, and vulnerable to predation by birds and larger fish. The pink salmon in both photos in Figure 12 are approximately 4-5 cm long. For publications on this see [Appendix 1](#).

Figure 11. The 2024 pink salmon returns to east central Vancouver Island vs the average three previous generations. [Data source](#)



Figure 12. Pink salmon Broughton Archipelago 2006 exposed to salmon farms (left). Pink salmon Discovery Islands 2021 after salmon farms removed (right). Photos A Morton, T Campbell

Chum Salmon

In September 2024, [DFO forecasted](#) poor chum salmon returns to eastern Vancouver Island “due to decreasing trends in marine survival observed in recent years (2017-2023)”. However, by the end of October [DFO reported](#) “**Fall chum stocks are the big news story of 2024, with exceptional numbers of chum being reported in various streams across the region**”.

Instead of declining as expected, chum returns to rivers in the Strait of Georgia and Broughton Archipelago skyrocketed (Fig 13). For example, the Viner River (Broughton) was 22xs higher than the previous four years. Historically, up to 75,000 chum returned to the Viner and supported a seine fishery. The 2024 Theodosia chum return was 12xs higher than the four-year average. These rivers received no enhancement during this time period but were part of the



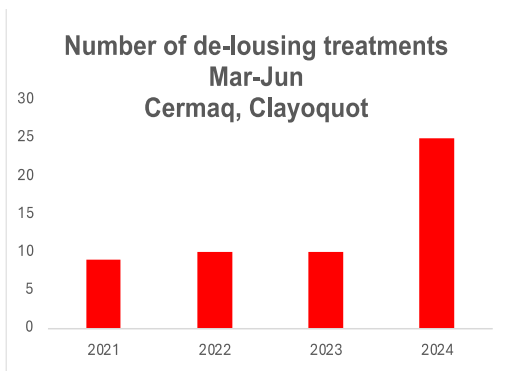
Figure 13. Average chum returns for previous generations (column 1) vs 2024 (column 2). Dark green graphs - exceptional increase, brown graphs - decrease. Grey background - chum that were transferred out from the same hatchery. Green circles - chum salmon from these rivers migrated through regions where salmon farms had been removed. Light blue line – major salmon migration route. Light blue graph - Clayoquot Sound, unique salmon farm management (see text) [Broughton data](#), [East Vancouver Island south data](#), [West Coast data](#), [hatchery reporting](#)

unexpected surge in chum salmon returns that extended the length of Vancouver Island (Fig 13).

The Oyster and Puntledge Rivers are highlighted in grey in Figure 13 because interestingly neither increased as much as the other systems and the [Oyster Rivers appears to have received eggs from the Puntledge](#). Notably, chum returns declined in both the Goldstream and Sooke rivers at the south end of Vancouver Island (Fig 13).

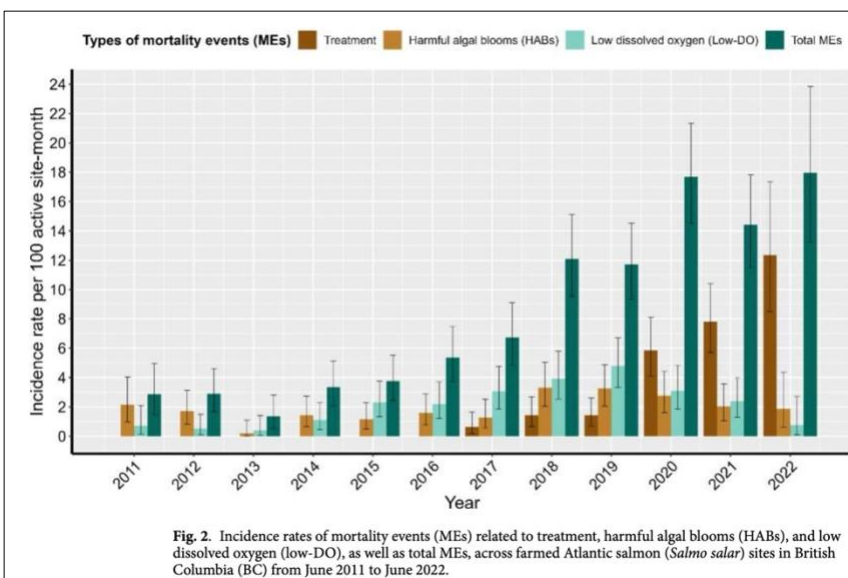
Clayoquot Sound

Chum - Clayoquot is the only fish farmed region where chum salmon returns increased in 2024 and provides very valuable insight (Fig 13). In 2021, when this generation of chum salmon was migrating past Cermaq’s farms in Clayoquot, Ahousaht leadership had just initiated a 1.5 lice limit per farm salmon. This is ½ the level DFO allows salmon farms on the rest of the coast.



In 2021, Cermaq breached the Ahousaht limit 31 times, with up to 5 lice per fish. In 2022, they breached the limit 82 times, with infections as high as 21 lice per fish ([DFO farm lice database](#)). In 2024, Cermaq doubled the number of de-lousing treatments (Fig 14) and in August 2024 they stopped publicly reporting their lice numbers.

Figure 14. Cermaq more than doubled the number of lice treatments during the spring juvenile salmon outmigration (Mar – Jun) from 2021 to 2024
[Data source](#)



According to research just [published by DFO and others](#), de-lousing treatments are *by far* the biggest cause of death of farm salmon. See dark brown bars (Fig 15). The dark green bars are total deaths per year. This study does not include 2024 when the number of Cermaq’s lice treatments doubled.

Figure 15. The highest cause of death of farm salmon in BC is treatments used to control sea lice figure from [source](#)*

Figure 15 suggests that keeping lice low enough to protect migrating salmon, is killing large numbers of farm salmon, and thus threatening profitability. If Cermaq’s lice levels determined

how many chum salmon returned to Clayoquot in 2024, next year's run should begin to decline again and continue in subsequent years. Unfortunately, [no fish farm company has ever achieved long term sea lice control](#) anywhere in the world.

Chinook - Whatever benefitted the 2024 Clayoquot chum did not support survival of Clayoquot Chinook, [the most under-performing Chinook stock in BC](#). Only 2 males returned to the Kennedy River near Tofino signaling extinction. The Cypre River declined to 14 Chinook and the [Tranquil, already at 3% of historic numbers](#) declined further (Fig 7).

Combatting sea lice requires increasingly aggressive treatments. At first in-feed drugs worked. Today, farm fish are pumped into hydrogen peroxide filled tanks or through tubes with water jets and [scrubbers](#) to remove the lice. The stress caused by these treatments is linked to outbreaks of mouthrot and [mass mortality in farm salmon](#).

The remarkable [scientific paper](#) co-published by three Broughton Chief Councillors, DFO, and the Pacific Salmon Foundation on December 28, 2024, reports 1.) Chinook salmon are attracted to salmon farms, and 2.) eleven infectious agents are elevated in the ocean around salmon farms. They state that “*after considering the evidence of negative consequences of infection*” Pacific salmon exposed to salmon farms are at risk.



Figure 16. Juvenile chum salmon migrating past salmon farms off Port Hardy exhibited the classic open sore lesions that are associated with the disease Tenacibaculosis, caused by a [bacteria common to BC salmon farms where it cause mouthrot](#).

Coho - East Vancouver Island [DFO reports](#), “Early indications suggest above average escapement [for Coho], with strong marine survival for the 2023 ocean entry year”

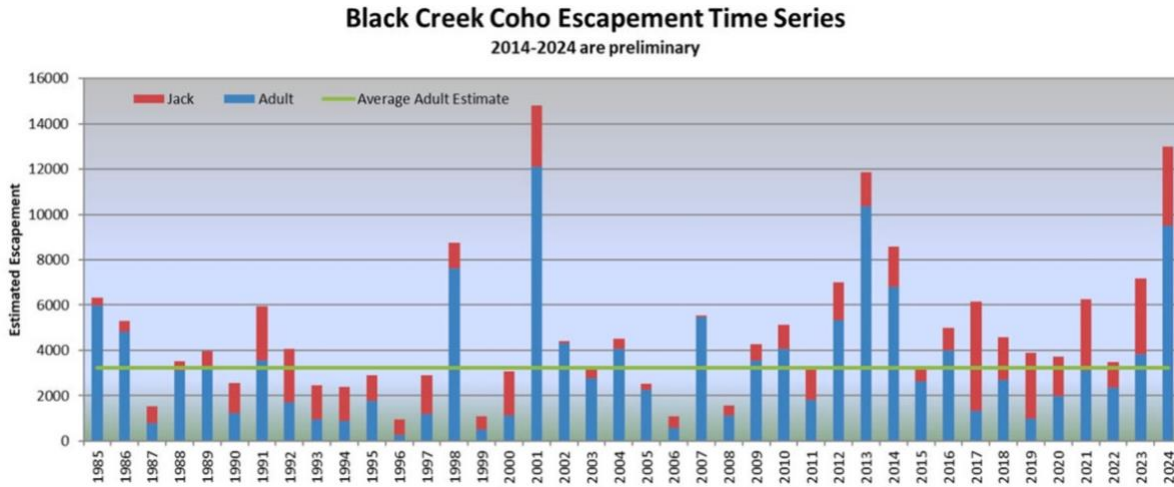


Figure 17. 2024 preliminary coho returns to Black Creek are “dramatically above” recent average and the 2nd best observed since 1996. [Source](#)

Fraser River

Chinook and Coho - Fraser River

Fraser River Chinook and Coho salmon returns are not available from DFO until spring of 2025. However, [the Albion gillnet test fishery](#) recorded a significant increase in catch of both species compared to the previous 20 years (Fig 18).

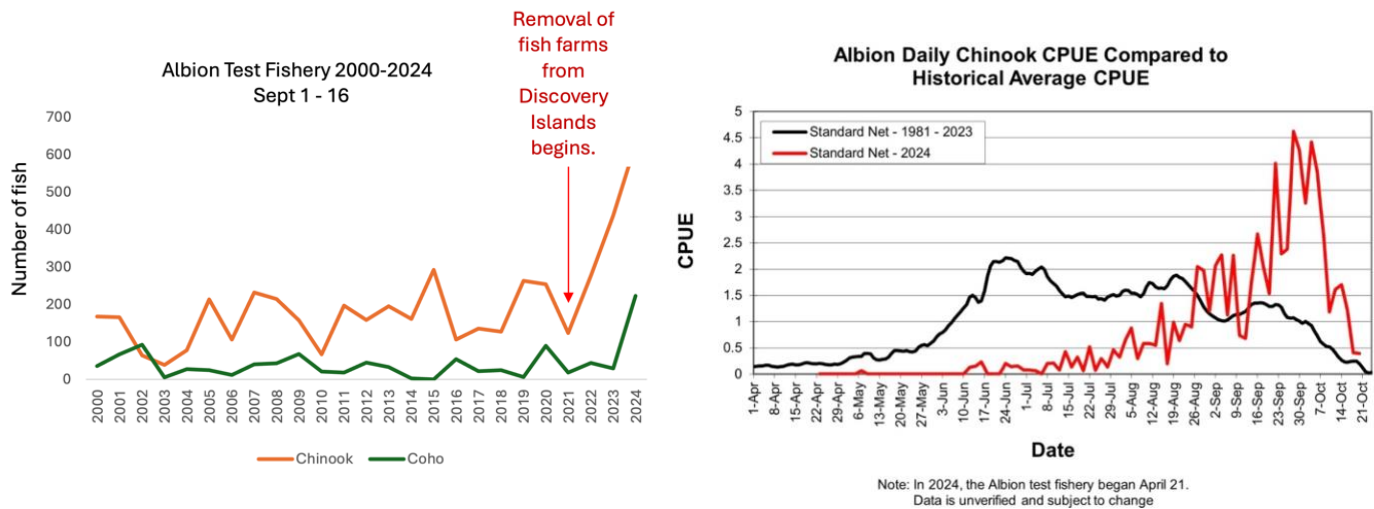


Figure 18. The Albion test fishery, located on the lower Fraser River at Albion, BC (near Fort Langley), uses gill nets to assesses Fraser River chinook, Coho, and chum salmon returns. The 2024 results are higher than observed in this 24-year data set. [Data source](#)

Chum salmon - Fraser River

The Fraser River produces the largest chum salmon population in BC. The Albion test fishery detected a substantial increase in chum salmon in 2024 compared to the 29-year average (Fig 19), consistent with the pattern in nearby rivers.

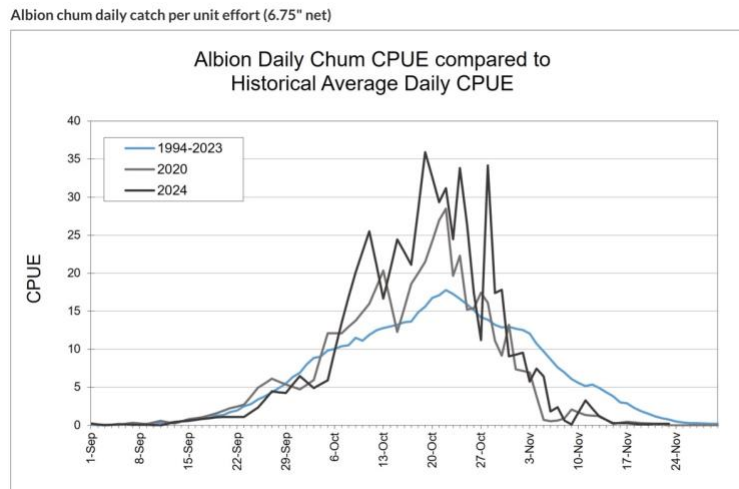


Figure 19. Albion test fishery 1994-2024. [Graph from](#)

As well, informal reports from fishery biologists describe the 2024 Fraser chum return as exceptional. In some areas Chum salmon went from “*rare since the early 1950s to potentially thousands this year*”. The fish were observed in small side channels, spawning in places never seen before.

Sockeye - Fraser River [DFO forecasted the 2024 Fraser sockeye return](#) at 567,000 fish for the entire river, the lowest on record, 85% below the historical cycle-line. DFO reports 474,000 Fraser sockeye returned in 2024 (Fig 20). Fraser sockeye either did not benefit from the factor/s that boosted other 2024 salmon returns, or negative impacts specific to Fraser sockeye were so great that they outweighed the positive. Without the positive impacts benefitting other species, would even fewer sockeye have returned to the Fraser River? Fraser River salmon have suffered repeated catastrophic in-river events including release of ~25 million m³ of Imperial Metals toxic mine tailings into Quesnel Lake, the 2019 Big Bar and 2024 Chilcotin landslides. The Columbia River, which enters the Pacific Ocean off western Washington, saw [high sockeye returns in 2024](#).

	Early Stuart	Early Summer	Summer	Late	Total Sockeye
Post-Season Run Size	180	142,000	307,000	25,000	474,000

Figure 20. DFO Preliminary post-season Fraser sockeye returns. [Table source](#)

Figure 21 was submitted to the Cohen Commission into the 17-year decline of the Fraser River Sockeye Salmon. The salmon farm notation has been added. The red graph tracks productivity (how many sockeye returned for each member of the parental generation) in all Fraser sockeye and reveals a sustained collapse that corresponds with the arrival of salmon farms. The blue graph shows Harrison River sockeye did not collapse.

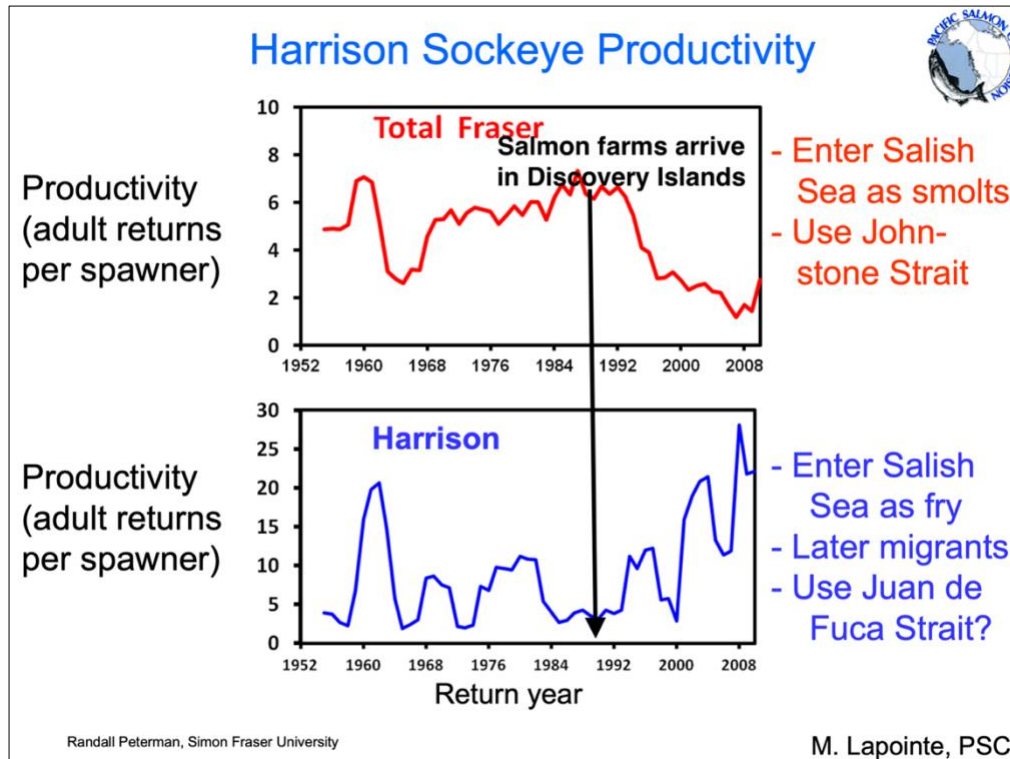


Figure 21. Submission to the Cohen Commission by Mike Lapointe, Pacific Salmon Commission, authored by Dr. Randall Peterman and Brigitte Dorner, titled “[Widespread decrease in productivity of sockeye salmon on the west coast of North America](#)”. Salmon farm notation added for this report.

According to [DFO research](#) Harrison River DNA has not been detected in young sockeye migrating through the Discovery Islands. Instead, their DNA was found off west Vancouver Island. This suggests Harrison sockeye migrate to sea via southern Vancouver Island, not through the Discovery Islands and so were not exposed to salmon farm pathogens. As well, Harrison sockeye leave the river shortly after hatching.

If the red graph was extended to 2024, this line would fall even lower. Fortunately, the massive prespawm mortality that was killing millions of Fraser sockeye through the 1990s just prior to spawning has ceased. Evidence suggests this also has salmon farm linkages. The DFO scientist who discovered this [suffered consequences](#) for her work. As a member of the Cohen Commission, A. Morton received access to .5M DFO documents and produced [this report](#). Government and industry tried to block it, but in the end Justice Bruce Cohen accepted it.

Washington State

Washington State closed the salmon farms operating in Puget Sound and the Strait of Juan de Fuca. The 2024 salmon returns to Washington State are described as exceptional. The 2024 chum salmon return to Puget Sound was the highest in at least a decade [Seattle Times Dec 2, 2024](#). While habitat restoration was credited and undoubtedly contributed, these returns are consistent with the pattern of exceptional chum returns as far north as the Broughton Archipelago (Fig 1), but not on the Central Coast or across West Coast Vancouver Island.

Carkeek Creek just north of Seattle reported chum salmon returns more than double any return as far back as 2019 (Fig 22). The 2024 Hood Canal chum salmon return is the highest since available recording keeping began in 1974 (Fig 23).

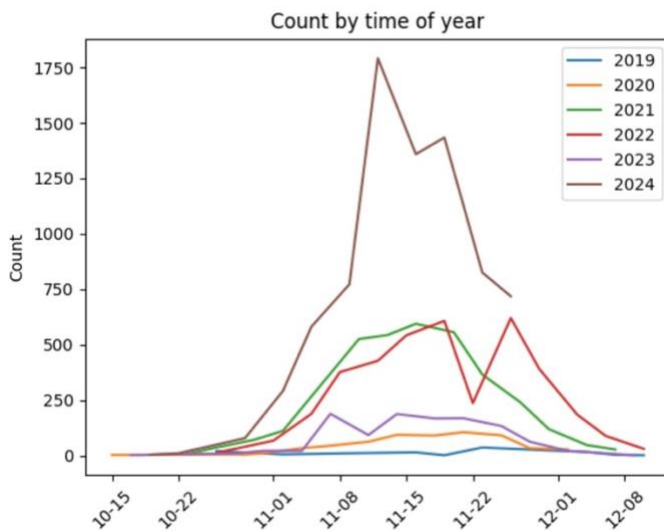


Figure 22. Carkeek Creek chum salmon returns 2019-2024 report more than doubling in size this year over previous ten years [Data source here](#) Carkeek Creek is approximately half way down Puget Sound on the eastern shore

Record-breaking run of summer chum salmon returns to Hood Canal river

Sweeping habitat restoration by tribal nations, nonprofits and government agencies has helped usher in a tide of recovery in some Hood Canal streams, like the Union River.

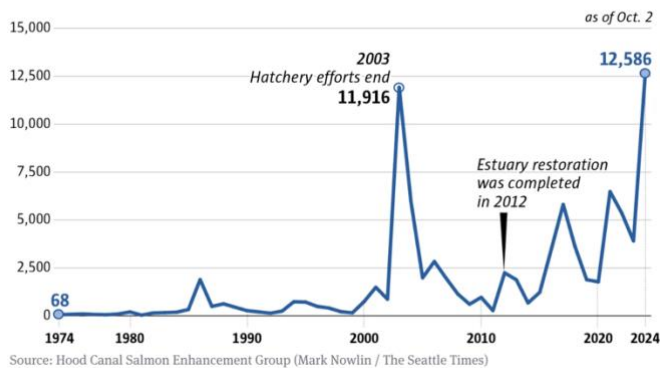


Figure 23. Hood Canal chum returned in 2024 in the highest numbers since record-keeping began in 1974. [Seattle Times](#)

Yukon River

The Yukon River is a western Canada salmon river, that enters the Bering Sea, not the Pacific Ocean, and so exists outside the scope of this report but deserves mention. Chum and Chinook runs to this river were exceptionally low:

Chum - *“The 2024 preliminary return of Yukon River Canadian-origin chum salmon is the lowest on record, while the return to the Porcupine River [a tributary to the Yukon] was among the lowest recorded.”*

Chinook – *“The 2024 cumulative passage at Eagle sonar was 24,112, which is well below average...”*. ([DFO Yukon River Salmon Update](#))

While there have never been salmon farms near the Yukon River, it is perhaps significant that Yukon River Chinook salmon were [used to breed the farmed Chinook salmon stock](#) used by Creative Salmon near Tofino. Creative is the only Chinook farming company in BC and the source of research finding [impact of the North Atlantic virus Piscine orthoreovirus](#) (PRV) on Chinook salmon. PRV appears to cause Chinook red blood cells to rupture en mass leading to organ failure. This is DFO research, another group of DFO scientists and industry do not acknowledge this impact. The Kennedy River close to the infected Creative Salmon farms, saw only 2 male Chinook return this year. PRV is reported [seeping out of most salmon farms](#) tested in BC, in [most farm salmon sold in markets and increases in wild salmon exposed to salmon farms](#).

In 2019, Chinook salmon milt was [sent back to the Yukon from Creative](#) Salmon. Perhaps just a curious coincidence, but since the collapse of Yukon Chinook salmon remains severe and unknown, screening for the virus PRV could at least rule out this pathogen in the effort to restore Yukon Chinook. The [strain of PRV in the Creative salmon](#) is genetically unique and identifiable.

Summary

This report simply presents the remarkable pattern of the 2024 salmon returns. Any questions contact us.

Respectfully,

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[Appendix 1](#) **[partial list of scientific papers reporting impact of salmon farms on salmon](#)**

Sumit Jyoti^{1}, Beibei Jia¹, Sonja Saksida¹, Henrik Stryhn¹, Derek Price², Crawford W. Revie³ & Krishna K. Thakur¹ 2025. Spatiotemporal patterns of mortality events in farmed Atlantic salmon in British Columbia, Canada, using publicly available data. Scientific Reports 14:32122 <http://creativecommons.org/licenses/by-nc-nd/4.0/>.