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2020 Salmon Sourcing Strategy

Introduction

On October 4, 2019, an organization representing the larger seafood companies in BC announced they were voluntarily withdrawing from the Marine Stewardship Council's (MSC) sustainable fisheries certification program for sockeye, chum, and pink salmon in BC. "Everyone who cares about wild salmon in British Columbia should be worried," said Christina Burridge of the Canadian Pacific Sustainable Fisheries Society (CPSFS). "There will now be no independent oversight of how Fisheries and Oceans Canada Pacific Region (DFO) manages these fisheries." Because the Ocean Wise Seafood Program followed MSC's certification as guidance, Ocean Wise also removed these salmon fisheries from its consumer recommendations as a result. While the DFO's mandate is conservation first and foremost, and some academics and fishermen even criticize the DFO for not allowing enough fishing opportunity, third party auditors and recommendation bodies play an important role in providing independent oversight to ensure that fishing activities place top priority on the long-term, sustainable management of marine ecosystems in concert with healthy economic activity.

Central to what we do at Skipper Otto CSF is ensuring that every species of seafood we catch and offer to our members comes from abundant stocks, is well-managed, and has minimal impacts on ecosystems and other marine life. In order to have confidence that we're achieving these goals, we've relied heavily on the MSC and Ocean Wise labels, trusting them to provide a strong endorsement of DFO's fisheries management in BC. With the loss of these well-known ecolabels for three species of Pacific salmon, it became necessary for us to take a closer look at pink, chum, and sockeye salmon fisheries and come to a richer understanding of their sustainability. Our suspicion was that some salmon runs would actually meet MSC's criteria if we applied MSC criteria specifically to individual runs rather than to a species as a whole. To determine which salmon runs we could confidently source our fish from, we created a modified version of MSC's Fishery Standard alongside publicly available data and expert opinions to develop a system for assessing potential sources of salmon in BC on a run-by-run basis. We call this project our Salmon Sourcing Strategy. Our process is not equivalent to the rigorous scientific assessments carried out by Ocean Wise or MSC, but we made use of the resources we had, and evaluated multiple specific sockeye, pink, and chum salmon runs against MSC's criteria for sustainability.

This report is not meant to supersede or subvert Ocean Wise recommendations, but to provide our CSF members with context for our decision to continue harvesting and offering sockeye, chum, and pink salmon products that no longer carry the broader approval of the MSC or Ocean Wise labels. First, the report offers background on MSC and Ocean Wise. It then describes why three species of Pacific salmon are no longer certified by these ecolabels. Thirdly, it outlines how we constructed our Salmon Sourcing Strategy using a provisional criteria set and scoring scheme, and how we assessed

various salmon sources based upon elicited expert advice and publicly available data. Finally, we provide a summary of the evidence we found, and present results of our assessment in tables by species.

This research project was undertaken by Skipper Otto's Sustainable Fisheries Researcher, Jeff Scott, MSc. Jeff has worked at Skipper Otto since 2015, shortly after he began working on his Master's Degree at UBC's Institute for the Oceans and Fisheries. In addition to writing his thesis on herring fisheries management in BC, Jeff has worked in the fishing industry in a variety of capacities: as an observer in five different US fisheries, as a biologist for the International Pacific Halibut Commission's annual longline survey, and also as a fisherman, gillnetting with our co-founder Shaun Strobel on a handful of salmon and herring trips.

Marine Stewardship Council and Ocean Wise

The Marine Stewardship Council began in 1996 as the offspring of two unlikely partners, the World Wildlife Foundation (WWF) and the multinational corporation Unilever. The food giant had begun to worry about the long-term viability of its seafood interests, as fisheries around the world showed signs of trouble, and took the forward-looking step of engaging with the non-profit WWF to incentivize change in fishing practices and assure its customers of their dinners' sustainability. Since then, the MSC has certified over 300 fisheries worldwide as sustainable (MSC 2019).

Each fishery must apply for and fund its own assessment, carried out by an authorized third party using MSC's Fisheries Standard (MSC 2018). The Standard's criteria evaluate 1) the health of the target fish stock, 2) impacts of the fishery on other species and the physical environment, and 3) effectiveness of the management regime in charge of that fishery. Often, MSC assessors will determine that a fishery does not meet "best practice" across all 28 indicators in the standard but still meets an acceptable level, in this case the fishery can be certified but will be assigned conditional certification. The fishery must meet these conditions within a specified timeline (usually four years) to bring the fishery to a level of best practice and must set yearly targets for progress toward these goals. Failing two years in a row to meet any one of the targets or failing to completely satisfy any of the conditions by the final deadline, results in loss of certification.

MSC has been criticized for some of its practices, including its conditional certification of fisheries that aren't up to standard from the start. Other seafood sustainability guides, like Ocean Wise and the Monterey Bay Aquarium's Seafood Watch, offer independent recommendations to consumers, with no involvement from the fisheries they evaluate[1].

[1] In practice, Ocean Wise typically borrows the recommendation made by Seafood Watch, with modification, or else defers to MSC when the fishery in question is MSC certified. In cases where neither Seafood Watch nor MSC has anything to say on a fishery's sustainability, Ocean Wise may not make any recommendation.

Neither guide's recommendations include the strict chain-of-custody standards that come with MSC-certified seafood, though, which could be a problem if unscrupulous processors or sellers mislabel their products.

We've been aware of each program's pros and cons for some time, but Skipper Otto has been happy to advertise our products as Ocean Wise-recommended, because of the ecolabel's trustworthy reputation and Canada-wide recognition. While we proudly continue to sell many Ocean Wise-recommended products, losing that recommendation for three species of salmon forced us to look more closely at what the endorsement meant.

MSC's issues with BC salmon

When BC sockeye, chum, and pink salmon received MSC's mark of approval in April 2017,[2] the certification came with conditions (Blyth-Skyrme et al. 2017). The assessors identified 22 issues needing resolution by 2021 and worked with the Department of Fisheries and Oceans (DFO) and industry representatives to establish yearly targets for addressing those conditions (Blyth-Skyrme et al. 2017, p 88). Annual audits were scheduled to check on each condition's progress. The first audit in 2018 found most conditions being addressed on or ahead of schedule, but 9 of the 22 were behind (Blyth-Skyrme et al. 2018). The Canadian Pacific Sustainable Seafood Society (CPSSC) alluded to these behind-target conditions when announcing the industry's voluntary withdrawal from MSC certification. CPSSC, an offspring organization of the BC Seafood Alliance (neither of which Skipper Otto is affiliated with), had initiated and funded the MSC certification process, but saw little hope of DFO making further progress toward meeting the conditions on schedule. "We might well pass the 2019 audit but we see little prospect of meeting the 2020 requirements," said their spokesperson. They therefore took the unusual step of voluntarily withdrawing from the program and avoiding that year's auditing costs.

The 2018 audit's behind-target conditions concerned three broad issues: 1) lack of adequate monitoring and assessment of salmon stocks throughout the Central and North Coasts of BC; 2) lack of data to evaluate potential interactions between artificially enhanced salmon and wild populations; and 3) lack of evidence that fishermen follow rules to minimize harm to protected stocks of steelhead trout, Chinook, and coho caught incidentally as bycatch. A few specific issues stood out in the auditors' report:

1) DFO has not conducted adequate monitoring or assessment of many salmon stocks on the North and Central Coasts in recent years, while the data they do possess suggest several chum stocks have been below their optimal size. DFO sets annual plans to manage these stocks, but the MSC auditors complain that the analyses informing these plans are poorly documented and not publicly available.

[2] Each of the three fisheries had previously been certified separately, but were lumped together for expedience in the 2017 assessment for certification renewal (Blyth-Skyrme et al. 2017).

They also blame DFO for sloppy accounting when it comes to differentiating hatchery-reared fish from wild ones in their statistics; this issue ties in with the following one (Blyth-Skyrme et al. 2018, pp 25-29).

2) DFO does a poor job keeping track of how "enhanced" fish, either born in hatcheries or in artificial habitats, interact with nearby wild stocks. Without robust programs in place to mark hatchery fish and gauge their contributions to harvest rates and to wild stock returns, DFO cannot say convincingly whether their enhancement programs are helpful or harmful (Blyth-Skyrme et al. 2018, pp 29-34, 39-45, 49-50).
3) The MSC auditors were not satisfied that DFO effectively keeps fishermen from inadvertently killing fish from weak stocks of steelhead trout, Chinook, and coho salmon. Regulations require fishermen to handle fish gently and to keep a revival tank onboard to help bycatch recuperate before release. The MSC auditors acknowledged that DFO was preparing to release a paper detailing the rate of compliance with these regulations, and which might satisfy the condition for certification, but the paper was not published when the auditors finished their report (Blyth-Skyrme et al. 2018, pp 54-56).

To confirm that we understood these three issues thoroughly, we spoke with MCS's Commercial and Fisheries Manager for western Canada, Kurtis Hayne; DFO's Salmon Project Manager, Marla Maxwell; Christina Burridge from the CPSFS; Ocean Wise Seafood's Manager, Sophika Kostyniuk; and a number of salmon experts from UBC, SFU, environmental groups, and elsewhere. Following these interviews and email exchanges, we felt confident in our interpretation of the core problems facing our sockeye, chum, and pink fisheries.

With regard to Issues 1) and 2) above, we believed we could identify runs whose data quality gave us confidence in their abundance, and which interacted minimally with hatchery fish. Since we know all our fishing families personally, we know exactly where each load of salmon is caught. This also allowed us to specify even more granular spots within DFO's regulatory areas where our fishermen can fish more selectively and minimize intercepting fish from weaker runs. And regarding Issue 3), we feel confident that our fishermen go above and beyond DFO's guidelines for careful handling, revival, and release of bycatch, so we felt no need to address this issue with additional research.

With these issues in mind, we envisioned our own report to examine areas where we have fishing opportunities for 2020 and assess the abundance, and potential for hatchery interactions, for each of these specific runs. The product is our Salmon Sourcing Strategy.

Skipper Otto CSF's Salmon Sourcing Strategy

In the wake of CPSFS's withdrawal from MSC certification, we at Skipper Otto CSF developed our own provisional Sourcing Strategy for BC salmon fisheries we might buy from. We first developed criteria to address MSC's behind-target conditions for sockeye, chum, and pink salmon. By then applying our criteria to individual salmon fisheries in BC,

we were able to avoid conflating problematic fisheries with those whose sustainability we are confident of.

It's important to note that this work would not have been possible without the previous MSC certification process, underscoring the important role of third party certifying and recommending bodies. The methodology we used is not as rigorous as MSC's or Ocean Wise's, and our report is not intended to replace that important work. It's meant only to function as a stop-gap while industry and government work toward re-certifying these three salmon species, or until Ocean Wise publishes an independent recommendation. In the meantime, we feel it important to continue supporting fisheries that are sustainable in these intervening years and to preserve our local fishing industry for years to come.

Sustainability criteria

MSC auditors, independent experts, and Skipper Otto CSF agree that DFO's salmon management fully met all other criteria in MSC's Fisheries Standard certification scheme or were on course to meet them by 2021. We therefore chose to focus only upon the issues singled out by industry and nonprofit groups as those responsible for the withdrawal of sockeye, chum, and pink salmon fisheries from certification. However, it is important to note that the concurrent ongoing work to re-certify sockeye, chum, and pink salmon is necessary to ensure that the other MSC criteria don't fall behind in the coming years.

Our criteria assess, in a given salmon fishery, whether:

A) the targeted stock is part of a Conservation Unit (CU) with green or green/amber status[3] (addressing MSC behind-target conditions 1 and 2; concerning MSC Fisheries Standard criteria 1.1.2 and 1.2.4);

B) bycatch of fish from CUs with red/red, red/unknown, red/amber, and unknown/unknown status is considered minimal, while bycatch of fish from CUs with amber/amber, amber/unknown and green/unknown status is considered minimal to moderate (addressing behind-target conditions 1, 2, and 15; concerning criteria 1.1.2, 1.2.4, and 2.1.2);

C) if the targeted stock is enhanced via hatchery or spawning channel, impacts of enhancement upon nearby wild stocks is considered minimal, with well-documented evidence (addressing behind-target conditions 3, 4, 8-10 and 13; concerning criteria 1.3.1, 1.3.2, 1.3.3).

[3] A CU is a management term defined in DFO's Wild Salmon Policy as "[a] group of wild salmon sufficiently isolated from other groups that, if extirpated, is very unlikely to re-establish naturally within an acceptable time frame, such as a human lifetime or a specified number of salmon generations" (DFO 2005, p 10).
CU status is currently assessed by DFO using two metrics, one based upon historical stock productivity and one based upon historical stock size. The two metrics do not always agree, so that some CUs receive, e.g., red/amber status while others receive red/red. CUs with inadequate data are assessed "unknown" for the relevant metric; therefore some CUs receive, e.g., amber/unknown or unknown/unknown status.

Scoring guidelines

Assessing salmon fisheries to the sustainability criteria above requires a scoring system analogous to MSC's. Our system replaces the Fisheries Standard scores of 60, 80 and 100 with scores of 1, 2 and 3, but otherwise replicates the logic used in their assessment. Table 1 summarizes our system.

Table 1: Scoring guidelines for sustainability criteria.

Criterion	Score=1	Score=2	Score=3
A) The targeted stock is part of a Conservation Unit (CU) with green/green or green/amber status	Target CU status is red/red, red/unknown, red/amber or unknown/unknown	Target CU status is amber/amber, amber/unknown, or green/unknown	Target CU status is green/green or green/amber
B) Bycatch of fish from CUs with red/red, red/unknown, red/amber, and unknown/unknown status is considered minimal, while bycatch of fish from CUs with amber/amber, amber/unknown and green/unknown status is considered minimal to moderate	Moderate to heavy bycatch of red/red, red/unknown, red/amber or unknown/unknown CU fish	Minimal bycatch of red/red, red/unknown, red/amber and unknown/unknown CU fish; AND moderate to heavy bycatch of amber/amber, amber/unknown or green/unknown CU fish	Minimal bycatch of red/red, red/unknown, red/amber and unknown/unknown CU fish; AND minimal to moderate bycatch of amber/amber, amber/unknown and green/unknown CU fish
C) If the targeted stock is enhanced via hatchery or spawning channel, impacts of enhancement upon nearby wild stocks is considered minimal, with well-documented evidence	Enhanced target stock has moderate to heavy impacts on wild stocks	Enhanced target stock has minimal impacts on wild stocks BUT poorly documented evidence	Target stock is not enhanced; OR enhanced target stock has minimal impacts on wild stocks WITH documented evidence

The sum of scores for each criterion, from 1-9, is used to provide guidance to Skipper Otto staff for selecting sources of sustainable salmon. Scores of 8 or 9 are considered great (and rendered in green font/background); scores of 6 or 7 are considered fair (and rendered in amber font/background); any fishery with a Criterion A, B or C score of 1 is considered poor (and rendered in red font/background).

Assessment sources

Assessments were conducted by consulting publicly available data and expert opinion. Publicly available data, unfortunately, is only somewhat helpful in identifying fisheries that meet our criteria. DFO maintains an online GIS database of salmon CUs by species, but some datasets lack CU status, and even complete sets lack the run-timing data necessary to determine the degree to which fisheries targeting healthy CUs also intercept fish from poor stocks. Data on average run timing could address the issue, and such data may be available within DFO's NuSEDS database, but it was time- and cost-prohibitive for us to examine the unwieldy database, extract the relevant data and analyze it. The Pacific Salmon Foundation's (PSF) Pacific Salmon Explorer website is more user-friendly, and includes CU status with historical stock assessment data where available. The Salmon Explorer has not yet (as of May 2020) uploaded CU data for the South Coast or West Coast of Vancouver Island, though, and we have not been able to interpret run timing data from the site.

Table 2: List of experts consulted.

Expert	Title	Affiliation	Responded?	Area of advice given
Carl Walters	Professor Emeritus	UBC Institute for the Oceans and Fisheries	Yes	Specific fisheries, DFO management, hatchery-wild interactions
Michael Price	Fisheries ecologist	SkeenaWild, SFU	Yes	Skeena fisheries, hatchery-wild interactions
Marla Maxwell	Salmon project manager	DFO	Yes	DFO management, MSC process
Kurtis Hayne	Regional manager	MSC	Yes	MSC process
Christina Burridge	Executive Director	Canadian Pacific Sustainable Fisheries Society	Yes	MSC process
Peter Rand	Ecologist	Prince William Sound Science Center	Yes	Hatchery-wild interactions
Richard Alexander	Fisheries Stock Assessment Biologist	LGL Limited	Yes	Specific fisheries, MSC process, DFO and FNs management, outlook for 2020

Brian Riddell	Science Advisor	Pacific Salmon Foundation	No	
Karl English	Senior Fisheries Biologist	LGL Limited	No	
Jeffery Young	Senior Science and Policy Analyst	David Suzuki Foundation	No	
Wilf Luedke	Stock Assessment Area Chief, South Coast	DFO	No	
Shaun Davies	Stock Assessment Area Chief, North Coast	DFO	No	
Ryan Galbraith	Planning and Assessment Regional Manager, Salmonid Enhancement Program	DFO	No	

Given the limited utility of publicly available data, expert opinion constitutes the bulk of evidence considered when compiling our Sourcing Strategy. Thirteen experts were consulted, including academics, non-profit representatives, fisheries consultants, DFO managers and scientists, and a manager at MSC (Table 2). Seven responded by May 14, 2020 to offer advice regarding the MSC process, specific salmon fisheries, general DFO management strategies, and hatchery-wild salmon interactions. The less-than-complete response rate necessarily biases our results toward the opinions of those who were kind enough to offer their time and insight, but we felt there was adequate diversity in respondents' views to provide us with useful guidance. Table 2, and our Salmon Sourcing Strategy, will be updated as further expert advice becomes available.

Where two or more experts offer conflicting advice on a given criterion for a fishery, the default score for that criterion is 2, and comments are provided in our Sourcing Strategy detailing the advice. Where neither expert opinion nor public sources offer advice regarding a criterion for a given fishery, the default score for the uninformed criterion is 1 (Criterion A) or 2 (Criteria B or C). Where public sources and/or experts offer ambiguous evidence, the relevant criteria are scored conservatively.

Summary of evidence

Data availability and management effectiveness

There is a significant shortfall in DFO's data collection, especially on the Central Coast. More than half of salmon populations there do not have the data needed to perform status assessments, leaving DFO managers largely in the dark. Qualitative forecasts such as "average to above average" are the extent to which management can plan for each

fishing season on the Central Coast (e.g., DFO 2019, p 201). DFO's own managers are frustrated with the lack of resources with which to do their jobs.

Marla Maxwell, Project Manager for DFO's Pacific Salmon Team, expressed confidence to us in a phone call on January 20 that the situation is improving, with more money now available to address the backlog of unassessed stocks. She also reiterated that decisions concerning fisheries openings take uncertainty into account, so that data-poor areas are managed more conservatively.

Carl Walters, Professor Emeritus of fisheries at UBC, agrees. If anything, he says, "DFO management of all five salmon species has been conservative to a fault," with harvest rates "reduced more than would be best from an economic perspective" (personal communication). He feels the issue is actually a glut of information – that, compared to fisheries management programs elsewhere, "we at least know that the production system is supported by literally thousands of genetically distinct local salmon spawning runs, even though it will never be practical to monitor most of them to the standard expected for single populations in fisheries where many fewer population units are known to contribute to production" (personal communication).

Richard Alexander, Western Region Manager and Senior Fisheries Biologist at LGL Limited environmental research associates, echoes this conclusion: "[Loss of MSC certification] is not too surprising when trying to group all river systems together by species given the status of salmon abundances by area each year" (personal communication). Walters' summary is: "[S]almon management is far from perfect, but is good enough and now careful enough that most salmon stocks are now being sustained and will be capable of increasing if marine survival conditions permit, so that you should not hesitate at all to promote sales of wild BC salmon no matter what MSC says about the management" (personal communication).

Salmon enhancement

Not everyone shares this optimism, though. Sockeye in the Skeena River comprise over two dozen conservation units (CUs), but the populations that breed in artificial channels leading to Babine Lake account for approximately 70% of the fish that return annually to the watershed (Michael Price, personal communication). Critics including Michael Price of SkeenaWild, a non-profit, allege that fisheries targeting the enhanced Babine channel fish catch too many fish from smaller stocks in the Skeena watershed, some of which are at risk of local extinction (Walters et al. 2008; Price et al. 2014). Price contends that the Babine channel fish are the only reason fisheries have been able to open in the past several decades, as overall Skeena wild fish numbers are now roughly a quarter of their size a century ago (personal communication); these wild stocks have each declined in size by 56%-99% since the early 20th century (Price et al. 2019). SkeenaWild "would not

endorse Skeena sockeye caught in a mixed-stock fishery[4] as sustainable in 2020" (Price, personal communication).

More generally, it is unknown to what extent enhanced fish in the Skeena, Central Coast, and elsewhere escape to streams and interbreed with wild fish (Blyth-Skyrme et al. 2018). It has long been theorized that escaped hatchery fish can have negative impacts on wild populations through competition for food, genetic homogenization, and poor survival of interbred offspring (Gardner et al. 2004); a recent study from Alaska confirms that such interbreeding does occur amongst pink salmon in Prince William Sound and results in decreased survival of offspring (Lescak et al. 2019). Watershed Watch Salmon Society and the Pacific Marine Conservation Caucus (MCC), to which it and SkeenaWild belong, advocate for a thorough risk assessment of hatcheries and other enhancement programs in BC (MCC 2019).

DFO has committed to just such an assessment as part of its Wild Salmon Policy (DFO 2005). It has also produced documents detailing the future course of its Salmonid Enhancement Program (SEP). They include a catalogue of the techniques and practices available to the SEP (DFO 2016), a planning framework for the SEP going forward (DFO 2018a), and the implementation plan for the Wild Salmon Policy through 2022 (DFO 2018b). These reports include strategic policies and technical practices for mitigating harm caused by enhanced/wild interbreeding; nearly all the SEP-related actions laid out in the Wild Salmon Policy are currently on track.

Assessment results

This Sourcing Strategy is organized by species, with a table for each listing the fisheries assessed by our sustainability criteria, as described above. Note that the sources assessed herein are not exhaustive of BC's salmon fisheries; they represent those for which data and/or expert opinion could be found. Comments describe the evidence used in scoring. Where Jeff Scott, our Sustainable Fisheries Researcher, has decided that publicly available sources add caveats to or supersede an expert's advice, comments are provided detailing his reasoning. The same applies when expert advice is deemed to supersede public data.

As explained in the above section "Sustainability criteria", we accept MSC auditors' conclusions that DFO management decision-making is sufficiently conservative to avoid overfishing where stocks are demonstrably below a pre-determined threshold for harvest. We emphasize here, then, that the assessments presented in our Sourcing Strategy are contingent upon DFO decisions to allow fishery openings in the selected areas.

[4] "Mixed-stock fishery" refers to a fishery that catches more than one overlapping run of salmon as they intermingle on their return migration upriver. Typically, these are fisheries occurring in saltwater or in the lower stretches of a river. "Terminal" or "single-stock" fisheries occur near the spawning grounds of a single run of salmon and catch only fish from that run. The flesh quality of fish decreases as they enter freshwater and swim upriver, making them less commercially valuable.

Given the likelihood of historically poor returns of Fraser River salmon in 2020, for instance, we assume it a moot point this year whether fisheries targeting Fraser fish are considered sustainable, as they will almost certainly remain closed to fishing.

Sockeye

Area	Fishery	Criterion A	Criterion B	Criterion C	Total score	Expert(s) consulted	Comments
North Coast	Nass	3	3	3	9	Carl Walters, Richard Alexander	Walters recommends Nass sockeye without reservations; Alexander is also enthusiastic. Jeff is concerned that 6/10 CUs are unknown, 1 is green/unknown, and 3 are amber/amber, but defers to expert advice. No enhancement projects.
	Skeena	2	2	2	6	Carl Walters, Michael Price, Marla Maxwell	Walters and Price disagree fundamentally on Babine Lake mgmt.
Central Coast	Smith Inlet	2	3	3	8	Carl Walters	Despite unknown/unknown CU status, Walters is highly confident stock is managed conservatively. No enhancement projects.
West Coast Vancouver Island	Barkley Sound	3	3	2	8	Carl Walters	No information regarding potential issues of hatchery impacts on wild fish; default Criterion C score of 2. No publicly available data for CU status.

Chum

Area	Fishery	Criterion A	Criterion B	Criterion C	Total Score	Expert(s) consulted	Comments
North Coast	Nass	1	1	3	5	Richard Alexander	CUs are near record lows; no enhancement projects. Alexander has concerns.
	Skeena	1	1	3	5	n/a	CUs are red/red or unknown; no enhancement projects
	Area 3 outside	*	*	*	*	n/a	DFO may allow retention of Alaska-origin hatchery chum (DFO 2019); these are assumed to be sustainably managed via Pacific Salmon Treaty, but outside the scope of our criteria.
Central Coast	Area 8	3	2	2	7	n/a	CU status good for Spiller/Fitz Hugh Channel, Bella Coola CUs; MSC auditors raised concerns about bycatch; no documented evidence that hatchery impacts are small. Gillnet opening in Bella Coola gillnet area best bet for minimal bycatch.
South Coast	Johnstone Strait	3	3	2	8	Carl Walters	Broughton Archipelago chums are good says Walters; unknown bycatch issues so default score 2; unknown enhancement issues so default score 2
West Coast Vancouver Island	Nitinat	3	2	2	7	Carl Walters	Walters says Nitinat chums are good; unknown bycatch issues; hatchery impacts assumed small but undocumented so 2

Pink

Area	Fishery	Criterion A	Criterion B	Criterion C	Total Score	Expert(s) consulted	Comments
North Coast	Nass	3	2	3	8	Richard Alexander	Alexander generally recommends Nass salmon, but 2/4 CUs are data deficient: 1 green, 1 amber; defer to Alexander for score=3. Unknown bycatch so default score 2; no enhancement projects (no large ones anyway), so score 3
	Skeena	1	2	3	6	n/a	3/5 CUs are red/red or red/amber; unknown bycatch issues so default score 2; no enhancement projects so score 3
Central Coast	Hecate lowlands odd + even year	1	3	2	6	n/a	Red/red status for both odd and even year CUs; not sure if fisheries might target these CUs exclusively, but these CUs spawn mainly on islands and outside mouths of inlets
	All other Central Coast pinks	3	2	2	7	n/a	2/5 Central Coast CUs are green/green and 1 green/yellow; unknown how much bycatch from Hecate lowlands CUs or other species, so default score 2; unknown enhancement impacts so default score 2; these CUs spawn further up fjords and inlets
South Coast	Johnstone Strait	3	2	2	7	Carl Walters	Walters recommends Broughton Archipelago pinks; unknown bycatch issues so default score 2; unknown enhancement issues so default score 2

Sourcing decisions

Based upon the above results, we've decided that we will not be targeting salmon in areas that are graded as "poor" in our tables. During the 2020 season, we will aim to source from those runs that are the most sustainable. As always with Skipper Otto seafood, we will communicate to our members which runs our seafood is coming from which will allow them to make informed choices about what seafood they choose to purchase.

And, again, we emphasize that our Sourcing Strategy lacks the rigor of third party sustainability assessments such as Ocean Wise. It is not intended to subvert those necessary sources of accountability, nor is it intended as a general consumer guide to BC salmon. It is merely the best Skipper Otto CSF could do to ensure that we buy from sustainably-managed fisheries in a year where we had no third party advice on the matter. We're presenting our Sourcing Strategy to our members in the interest of transparency, to let them know how and why we made our decisions, while cautioning against any urge to interpret our results beyond the narrow conclusions we've reached for our own internal use.

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