MCC
Pacific Marine Conservation Caucus

2020 Chinook Management Recommendations, Rational, and Evaluation

Introduction

This document sets out MCC's 2020 Chinook Management Proposal, the rational and concerns underlying the proposal, and an evaluation of our proposal utilizing the template provided by DFO.

2020 Chinook Management Proposal

The following management, monitoring, and assessment actions that should be in place for 2020 fisheries that contribute to Fraser River Chinook Total Mortalities:

North Coast

- The management of North Coast fisheries to be similar to 2019 relative to Fraser Chinook. The MCC will address other issues associated with this fishery in its IFMP submission
- Lodges and Guides in Area 1 and 2W be required to introduce a GSI sampling program for releases
- The recreational fishery around Hakai Pass be required to provide GSI samples of both retained catch and releases
- The Area F commercial fishery be required to ensure 20% of its releases are sampled for GSI

South Coast

- The south coast recreational fishery will be managed as it was in 2019, except for Areas 19 and 20E which would be closed for the month of June, and non-retention in Areas 17, 18, 19, 20, and 29 fisheries, which would be extended until the first week in August, to ensure as many later timing 5-2 Chinook as possible escape fisheries and have an opportunity to spawn. Later timed Summer 5-2s have the best chance of passing through the Big Bar slide.
- Failure of Guides and Lodges or comply with the regulations outlined below would lead to the closure of sub-areas in which they may be operating
- Work with First Nations to gather GSI from FSC catches
- Work with First Nations to develop Guardian Programs in SRKW zones and areas where improved monitoring is required.
- The declining trend for Harrison Chinook, a poor 2020 forecast, and its importance relative to FSC fisheries, requires reducing total mortalities on this SMU. It is recommended that recreational fisheries after August 15th in approach waters be non-retention *or* that all fisheries in tidal and non-tidal Area 29 recreational salmon fisheries be closed.
- The BC Hake fishery should provide a detailed report on Chinook bycatch including stock composition to the SBC Chinook process

South Coast Recreational Guides and Lodges

- Guides and/or lodges must, prior to leaving for the fishing grounds, complete a start fishing report and announce their intention to fish.
- At the end of each fishing day and prior to 08:00 hours of the next day, the Guide or lodge must, as a condition of licence, record their catch information in their Salmon Log Book and report their catch to their selected service provider
- Within 24 hours of the end of a fishing trip and prior to commencing a subsequent fishing trip, the guide shall either phone in or submit via e-log an End Fishing Report.
- Catch validation is mandatory and guides are required to make their own arrangements with a creel service provider authorized by the Department.
- Prior to any landing of fish, the guide shall hail in to the designated creel service provider the following information:
    - Guide Name;
    - Guide registration number;
    - contact phone number;
    - date, time, port and location of landing of the fish;
    - estimated number of retained pieces by species;
    - estimated number of released fish by species
    - releases below legal size limit
    - the number of GSI samples from released Chinook
    - are and sub-area fished; and sub-area fished.
- A designated creel sampler shall be present during all landing of catch to record the number and weight of each species of salmon landed and collect GSI samples.

New South Coast Recreational Fisheries

- All new (from 2019) south coast recreational fisheries (selective, MSF, OR MM) designed to target abundant Chinook SMUs and avoid endangered or threatened SMUs must be developed through DFO's 'New Emerging Fisheries Policy'.
- Any proposed new fisheries should be summarized within a standardized template as was employed for CSAF proposals. As with CSAF proposals, consultations with FNs and stakeholders should proceed through regular processes. Approved pilot projects would be excepted.
- If DFO decides to avoid its own National Policy, and advance such fisheries, they must have in place:
    - Fishery independent estimates of effort, retained catch, and releases
    - A program where a minimum of 20% of the retained catch and releases (including sub-legal releases) are GSI sampled
    - A defensible C&P derived estimate of compliance with the regulations
    - Report the results of these fisheries to the SBC Chinook Committee

Without data, there should be no fishery. Hence, no proposed fishery without the above in place should proceed in 2020.

Rational and Context Underlying Recommended 2020 Management Actions

The MCC's proposed 2020 Management Actions for conserving and rebuilding Fraser 5-2 endangered and threatened chinook are in recognition that the 5% total mortality cap for these SMUs was exceeded in 2019, possibly by over 100% in some instances (see Appendix A). This is based on evaluating 2019 total mortalities relative to terminal abundance. If 2019 total mortalities are evaluated relative to escapements, the cap was exceeded by 400 to 600%, depending on the SMU. The absence of GSI make similar estimates for 4-2 Chinook difficult. Indications are that that 2019 impacts on 4-2 Chinook were lower, but likely still exceeded the cap.

While lower reference points have not been developed for these SMUs, each has significant component CUs whose status is in the 'red'. It is likely, therefore, that the SMUs are currently below any Lower Reference Point that may be developed. Abundance based reference points are only part of spawner target objectives, as recovery goals need to address diversity, population structure and size at age. First Nations have also expressed concerns that Lower Reference Points must accommodate distribution, life-history, genetic composition, and size. Canada's Sustainable Fisheries Framework specifies that no directed harvest be applied to SMUs below their Lower Reference Point. Although there will be arguments that bycatch is an indirect harvest impact, this is a justification, not a defensible argument. If there were no directed fisheries in areas where significant numbers of these SMUs are present, there would be no mortalities.

In 2019, 51% of total fisheries related mortalities on Fraser 5-2 Chinook were from marine recreational and commercial fisheries, whereas 40% were in freshwater FSC fisheries. However, neither is a sufficient measure of actual total mortalities. The lack of adequate fisheries monitoring and assessments can only be characterized as gross negligence. Few fisheries have anywhere near adequate GSI estimates on retained fish. And fewer still have GSI monitoring of releases. Estimates of retained catch, releases and compliance are not verified.

Since most management actions require Chinook from these SMUs to be released, the lack of GSI monitoring means there are no robust measures for total mortalities. Further, DFO makes no effort to apply Fisheries Related Incidental Mortality (FRIM) to releases, which again leads to gross underestimates of total mortalities.

In freshwater, DFO is aware of the significant discrepancy of the number of Chinook estimated to enter the river and those that arrive on the spawning grounds in the 10 years prior to the Big Bar slide, but has made no effort to understand if these fish are lost to warm water, harvest, and/or FRIM. Further, C&P states that there are extensive illegal fisheries operating in the lower Fraser when these SMUs may be present. Again, the lack of monitoring makes any assessment impossible.

In 2019, DFO allowed retention recreational fisheries to operate on the WCVI. These fisheries were limited to being within one mile seaward of major points of land, opening up the nearshore area to retention fisheries. But because there was no GSI monitoring of releases, there is no defensible estimate of the impact of these fisheries on SMUs.

The recreational fishery wants to open several more of these type of fisheries on the South Coast. The answer must be "no data – no fishery'. Any proponent of a retention fishery which may impact endangered or threatened SMUs must have verifiable estimates of effort, retention, and releases.

Further, a minimum of 20% of both retained and released chinook should be sampled and processed for GSI.

Further, these fisheries must be developed within the context of DFO's National 'New Emerging Fisheries Policy' (https://www.dfo-mpo.gc.ca/reports-rapports/regs/efp-pnp-eng.htm). The Policy sets out a process where new fisheries can be developed. Since these fisheries propose to open areas currently closed to protect endangered and threatened SMUs, they are indeed, new fisheries. In that these fisheries are proposed for areas where they may impact other South Coast Chinook SMUs, the SBC Chinook process (if issues around FN involvement and representation are resolved) may be a robust group to evaluate and approve these new fisheries. The template developed for the development of new fisheries through the Commercial Salmon Allocation Framework might be employed. As for CSAF proposals, these new fisheries would be considered under current FN and stakeholder consultation processes.

Estimates of 'Missing' Chinook

It is recognized there is a significant discrepancy between the number of 4-2 and 5-2 Chinook estimated at Albion and the number that arrives on the spawning grounds. To date there has been little effort to quantify this discrepancy or identify what is contributing to this discrepancy. A research program should be put into place in 2020 to identify the fate of these 'missing' Chinook.

Assessing Total Mortalities in 2020

DFO, First Nations and stakeholders recognize the absence of estimates of FRIM in 2019 compromised assessments. While DFO management and science branches have said that the issue must be addressed, there appears to be little sense of urgency to deal with the issue. The MCC has developed a model to estimate FRIM in fisheries. Until there is an agreed upon FRIM rate per fishery, this model should be used in collaboration with stakeholders to produce a range of FRIM that can be used in the evaluation of total mortalities in 2020 fisheries.

Big Bar Slide

There are concerns that the Big Bar slide has not been fully remediated and that it will again have a significant impact on some 5-2 Chinook CUs. This, coupled with expectations of high water levels in 2020, could lead to mortality levels similar to, or greater than, what were experienced in 2019. This alone justifies the June closure of the Area 19 and 20E fishery. Consideration must be given to closing all fisheries if DFO cannot commit to limiting total mortalities to 5% in 2020.

COVID-19 Implications

Management and assessment of South Coast recreational fisheries is dependent, to a large extent, on an effective creel sampling program. If COVID-19 concerns curtail or eliminate an effective creel program an alternative must be found. For instance, for BC groundfish fisheries, when the use of at-sea observers ended due to COVID-19 concerns, industry and DFO immediately developed and began implementing an effective alternative. If an effective monitoring and assessment program is not put in place for the recreational fishery, that can provide a similar level of confidence as does the creel program, closures may be necessary in areas which see significant effort. The Department should consult with First Nations

and stakeholders on how management actions and monitoring would be adjusted if the 2020 creel program is adjusted due to COVID-19 concerns.

Chinook Management Measure Evaluation Framework
April 9, 2020

Benefits	
Conservation and Rebuilding	GSI information shows the closure of Area 19 and 20E in June will significantly improve escapements of 5-2 Chinook. This, plus the improved monitoring of fisheries, will allow for a much better analysis of the impacts of fisheries and the contribution of fishery reductions and improved monitoring and assessments to the conservation and rebuilding of endangered and threatened Chinook populations. Also, the combined proposals will provide a better understanding of FRIM and 'missing fish' and what the 'true' TM are relative to successful spawners.
Potential Risks of Big Bar	Big Bar slide has not been fully remediated. Also, a significant snow pack suggest Fraser water levels will be higher in 2020 than 2019, increasing the challenge for migrating Chinook. Additionally are concerns for Chinook estimated at Albion but do not arrive on spawning grounds. It is imperative, therefore, that not only is 5-2 escapements abundance maximized but that run timing distribution also be considered. The latter portions of the return may be particularly important as they may have the best chance to successfully spawn.
First Nations and Treaty Fisheries	Actions that benefit conservation, rebuilding, and improved assessments will benefit these fisheries
Recreational and Commercial Fisheries	Actions that benefit conservation, rebuilding, and improved assessments will benefit these fisheries. In particular, the improvements in assessments and monitoring will provide the recreational fishery, First Nations, and stakeholders the capacity to identify, manage, and evaluate new and expanded fishing opportunities. The suggested improvements in monitoring and assessments will also provide DFO, First Nations, and stakeholders greater confidence in the management of such fisheries.
What will make this proposal successful	The key is improved monitoring and assessments. It will lead to greater collaboration, trust, and confidence in the management of recreational fisheries and support the exploration of expanded fishing opportunities. The direct 2020 management actions, such as the June closure of 19 and 20E, protection for the latter portions of the Summer 5-2 return, and increased protections for the fall SMU will increase spawner abundance. the proposal also provides for a transparent pathway to new recreational fisheries.
Risks	
Conservation Risks	Allowing any fishery in 2020 is a risk. There is a defensible argument that Chinook forecasts, lack of monitoring and assessment, COVID-19 concerns, and, of course, the Big Bar slide are reasons to close all Chinook fisheries up until the middle of August.
Economic Risks	They are limited. The closure of the June fishery in Areas 19 and 20A will only redistribute effort.
Cultural Risks	See 'conservation risks'
Compliance	If the suggested improvements in monitoring and assessment are not implemented in 2020, fisheries should be closed: no data, no fishery. It is clear that there is a significant problem with compliance in the recreational fishery. Other commercial fisheries have successfully dealt with the problem. It is past the time this fishery does the same.

FSC/Treaty Risks	See 'conservation risks'
Consistent with PST	The fishery is not currently consistent with PST requirements in terms of CWT recoveries. Suggested improvements in monitoring and assessments will improve the situation. The CTC has also identified the problem of assessing FRIM in non-retention and MSF fisheries.
COVID-19	See section on COVID-19 above
Monitoring	
Consistent with Policy?	The fishery is not currently compliant with either Regional or National Monitoring Policy. The suggested improvements are required both for current fisheries, and especially, for any proposed 'new' south coast recreational fisheries. The fishery is also unable to provide defensible estimates of total mortalities. Canada's SFF, WSP, Rebuilding Guidelines, and new Fisheries Act requires an accurate measure of fisheries impacts. These recommendations will contribute to providing better estimates.
Consistent with International 'best practices'?	The south coast recreational fishery is 'out of step' with international 'best practices' (including FAO). If this was a commercial fishery (which much of the recreational fishery is), it would fail Principles 2 and 3 under an MSC assessment.
Consistent with other fisheries that potentially impact endangered species or stocks?	The management, monitoring, and assessment of the south coast recreational fishery is not consistent with any other BC or Canadian fishery that impacts endangered species or stocks. Any other fishery would be required to provide a defensible estimate of the number of endangered fish it is killing, the impact of those mortalities on stock recovery, the effect on First Nations fisheries, and implement a robust monitoring, assessment, and compliance program. Examples are the BC Groundfish fishery, the BC halibut fishery, the BC salmon seine fishery.
Compliance and Assessment	The proposed changes would address many of the above concerns. Currently, there is no measures in place to ensure or measure compliance. This is an unconscionable management failure for a fishery that removes individuals from an endangered species or stock.
What information gaps are addressed	Lack of GSI data, lack of necessary fisher dependent catch and release data, not providing and estimating FRIM, poor compliance, the absence of defensible estimates of the proportion of releases in the reported catch. Addressing these outstanding issues will allow for the identification and management of new retention fisheries in select sub-areas on the south coast.
What information gaps still need to be addressed	The proposed improvements will bring the fishery into a similar level of monitoring and compliance as other BC fisheries impacting endangered and threatened stocks and species in the pursuit of more abundant populations. The one issue still outstanding is developing a better estimate of FRIM. This should be a collaborative effort using the Coastland Model as a consultation tool.
CWT recoveries	GSI sampling and run reconstruction is complementary to the CWT system and provides a secondary line of evidence for CWT exploitation rates. It also compiles information from more systems than just the CWT indicator stocks.
Absence of creel surveys	This issue is not directly addressed if COVID-19 curtails the creel program other than to say an alternative must be implemented in areas where there is expected to be significant effort. If an acceptable monitoring program is not implemented, fisheries should not proceed in these areas and times
Cost	
Are there other fisheries that show it can be done?	Sectors are responsible for the monitoring and assessment costs. Every other sector that has a potential bycatch of endangered or threatened species or stocks has done so. The suggested professionalization of

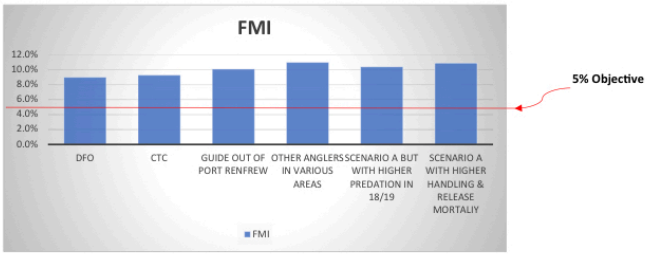
	guide and lodge operations – raising them to the same standard as other BC fishers – will go some distance to internalizing the cost within the sector.
Feasibility	
Do biological parameters make options feasible	Yes, Watershed Watch, working with Coastland Resources, has developed a model which incorporates biological and assessment parameters in a way that allows for collaboration between different interests.
Does it provide effective fishery controls and compliance which fosters confidence in the results?	Yes. It provides confidence that the current fishery can be sustainably managed, and that any new proposed fisheries can be so as well. The suggested improvements in monitoring and assessments will build opportunities for collaboration and experimentation.

Appendix A

Incorporating FRIM into 2019 Fishing Impacts using Slide 19

	Spring 5-2	Summer 5-2	Total	Including FRIM
Escapement	3,100	5,500	8,600	8,600
Fraser FN	735	1,012	1,747	1,747
Fraser Rec	-	58	58	58
Fraser Comm	217	132	349	349
In-River Mortalities	952	1,202	2,154	2,154
Unaccounted for mortalites (a)	22,403	8,479	30,882	30,882
Return to River Mouth	26,455	15,181	41,636	41,636
NBC/AABM (b)	438	248	686	686
FRIM				80
WCVI AABM	N/A	N/A	N/A	N/A
GST-JDF Rec	271	367	638	638
FRIM				*900*
Other Cdn rec	N/A	N/A	N/A	N/A
Cdn Marine Total	709	615	1,324	2,304
US Total	N/A	N/A	N/A	N/A
Total Mortalities	1,661	1,817	3,478	4,458
Run Size Index	27,164	15,796	42,960	43,940
Fishing Mortality Index (c)	6.1%	11.5%	8.1%	**10.1%**
Deviation from 5% target	22%	130%	62%	**103%**

FRIM Scenarios from model	FRIM	Tot Rec Mort	TM	FMI	Deviation
DFO	*353*	991	3,831	9.0%	80%
CTC	*489*	1,028	3,868	9.3%	86%
Guide out of Port Renfrew	*879*	1,417	4,257	10.1%	102%
Other anglers in various areas	*1,348*	1,887	4,727	11.0%	121%
Scenario A but with higher predation in 18/19	*1,053*	1,591	4,431	10.4%	109%
Scenario A with higher handling & release mortaliy	*1,292*	1,831	4,671	10.9%	118%



Notes:

(a) a significant proportion of 2019 unaccounted for mortalities can be attributed to the Big Bar slide, but not all. In the years 2012-2018 unaccounted for in-river mortalities was often larger than any one fishery.

Year	Albion Abundance	Escapements	Difference	Proportion of Term Abund	Terminal Abun Low	Terminal Abun High
2012	37,281	25,306	**11,975**	**32.1%**	26,000	71,000
2013	41,565	35,972	**5,593**	**13.5%**	26,000	57,000
2014	85,747	68,329	**17,418**	**20.3%**	33,000	69,000
2015	74,441	68,809	**5,632**	**7.6%**	34,000	71,000
2016	35,287	29,902	**5,385**	**15.3%**	27,000	70,000
2017	22,245	19,663	**2,582**	**11.6%**	27,000	68,000
2018	23,631	18,965	**4,666**	**19.7%**	28,000	78,000
	DFO memo	Staley	**Average**	**17.2%**		

(b) recommend this be reviewed as it appears high relative to retained 2019 Area 1/2W catch and GSI composition prior to Week 31.

(c) there has been a reduction in FMI relative to the previous 4 years, but it would be useful to understand which fishery(s) were changed, and by how much, to produce this result.