Report to MPATT

Comments on the NSB Marine Protected Area Network
First Draft Scenario

FINAL

BC Commercial Fishing Caucus

FEBRUARY 6, 2020

Table of contents

Background

In 2010, a broad representation of commercial fisheries interests met to discuss marine planning in British Columbia and the role commercial fishing should play. At that meeting the Commercial Fishing Caucus (CFC) was created. The CFC is open to commercial fishing individuals and organizations interested in working together on marine planning processes. The membership is committed to participation in BC marine planning and in bringing together diverse commercial fishing interests. The CFC approach is based on a set of common goals including:

- Healthy Ecosystems
- Durable Commercial Fisheries
- Access to Fish
- Constructive and Enduring Relationships
- A Diverse Fleet
- Human Resource Development
- Safe, Reliable and Green Coastal Infrastructure
- Diverse Markets and Distribution Channels

Over the past decade, the CFC has hosted and participated in hundreds of meetings to discuss and contribute to BC marine planning processes, including: PNCIMA, MaPP, West Coast Aquatic, Sgaan Kinghlas Bowie MPA, Hecate Sponge Reef MPA, Gwaii Haanas, SSG NMCA AOI, Offshore AOI, NSB MPAn, and Scott Islands mNWA. Through these processes, the CFC has built relationships with other stakeholders, First Nations, governments, and community members across the coast, where we continue to be a strong advocate for integrated marine planning. More information about the CFC is available at www.bcfishcaucus.ca.

CFC and NSB MPAn

The CFC has been invited to comment on the Northern Shelf Bioregion MPA network (NSB MPAn) draft scenario and related performance measures. The invitation was made by the NSB MPAn governance partners, with funding provided to support the work associated with engaging with fish harvesters potentially affected by the MPAn scenario.

The CFC sees this as an incredible opportunity to build collaborative relationships with governments and stakeholders in the four sub-regions, and show how successful MPA networks can be built with stakeholders to support both ecosystem and human wellbeing.

The CFC has recommended that the NSB MPAn be nested inside the region's Ecosystem-Based Management (EBM) Framework developed and endorsed within the Pacific North Coast Integrated Management (PNCIMA) Planning process. In the development of the NSB MPAn, it is the CFC's position that the EBM Framework be used to guide both the design of, and the performance measurement framework for the MPAn.

The objective at the heart of the EBM Framework is to seek coexistence of ecological integrity and human wellbeing. In addition, the EBM approach requires a commitment to collaboration, problem solving, conflict resolution and inclusion of equitable outcomes. Human wellbeing indicators encompass traditional socioeconomic factors (i.e., tangible benefits such as employment, health, safety and sales value) and community factors (i.e., less tangible values

such as cultural experience, community interactions, food security and sharing). To date the CFC has not seen human wellbeing indicators and targets identified or incorporated into the planning process. If done right, the NSB MPAn should and can strengthen human wellbeing rather than detract from it, while simultaneously achieving ecological objectives.

This absence of consideration of human wellbeing indicators is of significant concern for the CFC, especially in relation to the small boat fleet[1], which has historically contributed in many tangible and intangible ways to the health of the BC coast, in addition to contributing to the global food supply. The small boat fleet is known to have provided multiple benefits for communities and individuals throughout the coast, and especially in rural areas, for generations. Despite many historic changes in fisheries, these benefits continue to be of value to this day.

The depth and spectrum of value and how this interplays with community wellbeing is a complex fabric, and one has to spend time in and amongst a fishing community, talking to fish harvesters and their families, to begin to grasp the extent of this. One analysis of this spectrum of value is presented in the 2013 study *Understanding Values in Canada's North Pacific: Capturing Values from Commercial Fisheries*[2]. This study also emphasizes the importance of accurate assessment of the full spectrum of tangible and intangible values, effective marine planning that incorporates human wellbeing, and ecological outcomes.

> Ignoring the less tangible values during the decision-making process could result in an underestimation of the full value of commercial fishing, resulting in management and policies poorly suited to social and economic realities.[3]

The distinct contribution to the coastal economy and wellbeing made by the small boat fleet has also been documented in the paper titled *Socio-economic contribution of small-scale fisheries (SSF) and large-scale fisheries (LSF) in British Columbia*[4]. The following chart taken from this report shows the dramatically higher level of jobs, landed value and local ownership of small boat fleets as compared to large boats despite a similar landed volume.

[1] By small scale and small boat fisheries we refer to fisheries with vessels less than 65ft.
[2] http://ecotrust.ca/wp-content/uploads/2015/02/2013_Report_UnderstandingValuesCanadasNorthPacific.pdf
[3] Ibid
[4] https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0347666

Table 5 SSF and LSF sectors using the cumulative percent distribution by landed weight.

	SSF	*LSF*
Landings (t)	550,407	647,251
Proportion of landed weight (%)	46	54
Landed value ($)	2,628,469,981	420,004,136
Proportion of landed value (%)	86	14
Average price ($/lb.)	2.17	0.29
Top 3 species landed by weight	Dungeness crab Sockeye salmon Chum salmon	Pacific hake Pink salmon Arrowtooth flounder
Licensed and active vessels (#)	2,336	107
Average overall vessel length (m)	11.5	24.3
Fuel consumption (L/t landed)	28	6
Fuel consumption ($/$100,000 landed)	664	1,056
Crew (#)	6,284	445
Fishers employed per $100,000 landed value	0.24	0.11
Type of ownership (%)	Individual – 56 Community – 5 Company – 39	Individual – 8 Community – 0 Company – 92
Ownership in Greater Vancouver (%)	37	68

Note: The number of active vessels, crew, ownership and fuel estimates could differ slightly with the inclusion of the herring fishery but no data was available due to the licensing system in place. Also note that the estimates of fuel consumption do not include aboriginal licensed fisheries or herring vessels.

[5]

High Level Comments

The following questions and comments regarding the MPAn process and scenario have been collected from fish harvesters over the engagement period.

Governance

In the governance of the MPAn, who are the decision makers? Will these decisions be consensus-based? If not how will they be made? What is the role of federal and provincial ministers? How will fish harvesters and other stakeholder interests and knowledge be considered? How will decision makers be held accountable?

Monitoring to Adaptive Management

Who is in charge of monitoring, enforcement, evaluation and adaptive management? Will this be similar to RCA network implementation where no resources are attached to ongoing monitoring and adaptive management? Many small boat operators fear that monitoring costs will be downloaded onto them with start up electronic monitoring costs close to $10,000/vessel and

[5] ibit (SSF = Small Scale Fisheries, LSF = Large Scale Fisheries)

ongoing costs over $1500/trip. These costs may be easily overlooked by industrial fleets, they can challenge the viability of small scale fisheries.

Structural Adjustment

The impacts to fishing fleets are estimated at $29 million/year by MPATT. Will these entire costs be borne by the fishing industry? Why is structural adjustment not on the table? While we appreciate that the MPATT is not structured to address this theme, we do consider this a valid concern to the engagement of affected interests. We would expect governments to assist in facilitating of ways costs can be addressed equitably, possibly through parallel measures, and to consider how discussion of structural adjustment would be most appropriately placed around this process.

SeaSketch Data Layers

The accuracy of SeaSketch data layers was a common theme of feedback and concern: inaccurate, incomplete, and misused layers. Some data layers have been created by scientific modeling without adequate ground-truthing. Anecdotal information from harvesters challenges these models, for instance the presence of black coral. Without ground-truthing, the use of data models in scenario development will set unrealistic or unachievable targets. Incomplete layers can be driven by limited human observation. For instance seabird data throughout the area obviously follows vessel tracks. It is unlikely that the birds only utilize vessel lanes. These layers are driving ecological targets in the scenario. Use of weak data layers undermines confidence in the methodology underpinning the scenario. In human use data layers, some fisheries values are derived from sales slip data that only represents the down payment paid at the time of delivery, grossly underestimating the actual value.

Reconciliation and First Nations

Much work is being undertaken by Canada to advance reconciliation with indigenous peoples. Over the last two years Fisheries Reconciliation Framework Agreements have been signed across the country and along our coast, several with MPAn partners. These agreements will change First Nation involvement in fisheries. It is unclear how these changes interact with the development of the MPAn.

Senior governments advancing reconciliation has influenced the development of the NSB MPAn, critical questions around equity and sharing costs must be addressed.

In discussing the draft MPAn scenario both in directed meetings and elsewhere people that identified as First Nations raised issues about not being aware or engaged to date regarding the draft scenario. This is highlighted in the letter in Appendix I.

Fisheries Management

How will the proposed MPAn scenario interact and change fisheries management? Most fisheries are structured using biomass models to develop harvest control rules across space and time. There are currently no mechanisms to bring spatial protections into these models. Will the central goal of current fisheries management, sustainable fisheries, change?

Process Fatigue

The draft scenario presents hundreds of potential new MPAs. Will harvesters be required to sit in on hundreds of new MPA management processes, and along with the 21 Integrated Fisheries Management Planning processes? How is this even possible?

Given the proposed MPAn scenario, most commercial fisheries will be required to shift how, where, and when their fisheries are conducted in the region and along the entire coast. Harvesters in all fleets and fisheries use the marine landscape strategically to respond to their needs and constraints. For many, the NSB MPAn will force them to drop long-established fishing strategies and practices. For some, the only fishing areas their families have fished for generations could be closed.

Complex Scenario

With 371 zones, many with different management measures, the NSB MPAn scenario is complex to understand, review and respond to. Building broad understanding of the scenario with fish harvesters with limited bandwidth is no small challenge. Many harvesters want to understand the rationale for the zones, specific conservation targets, the marine conservation gap analysis initiative, and the implications for their commercial fisheries.

Carrot and Stick - Coexisting

Typically fish harvesters come up with mitigating measures to protect at risk ecological and cultural features, and in doing so they are able to maintain fishing time or access to areas. The option to mitigate and coexist is not generally being considered here.

MPAn Transparency

SeaSketch is the very powerful online tool that MPATT populated with marine data layers to develop and seek feedback on the draft MPAn scenario. The CFC created a Local Knowledge Survey on SeaSketch to gain feedback directly from harvesters on valuable fishing areas in relation to the scenario. This tool was too complex for most to access. For those that did we were surprised when they told us, and confirmed by MPATT, that the scenario was not available to them when logged into SeaSketch. This prevented those that are apt and prepared to engage from understanding the scenario and the reasons specific areas were being proposed. While we understand that the scenario is only a draft as the MPATT was seeking comment from stakeholder, we would have thought that the scenario would be available to all who logged in. Instead of using SeaSketch some stakeholders became disenfranchised by the lack of transparency and opted to disengage.

Other Areas of Interest

In our Interim Report we recommended that de facto closed areas, other areas of interest, be identified and considered in the development of the MPAn. Fisheries management planning processes restrict fisheries in multiple ways by limiting: entry, allowable catch, in space and in time, in addition to specific licence and regulatory restrictions.

Some fisheries, shrimp for instance, fish on less than 0.5% of the entire Northern Shelf. We have asked that the MPATT to add the spatial closures onto SeaSketch so that harvesters could groundtruth and identify areas that are closed to multiple fisheries. Unfortunately many of the permanent closures are not included on the SeaSkecth maps.

Instead we requested and acquired the fishing footprint of bottom contact fisheries and focused our efforts to find areas that have had zero bottom contact over the last ten years.

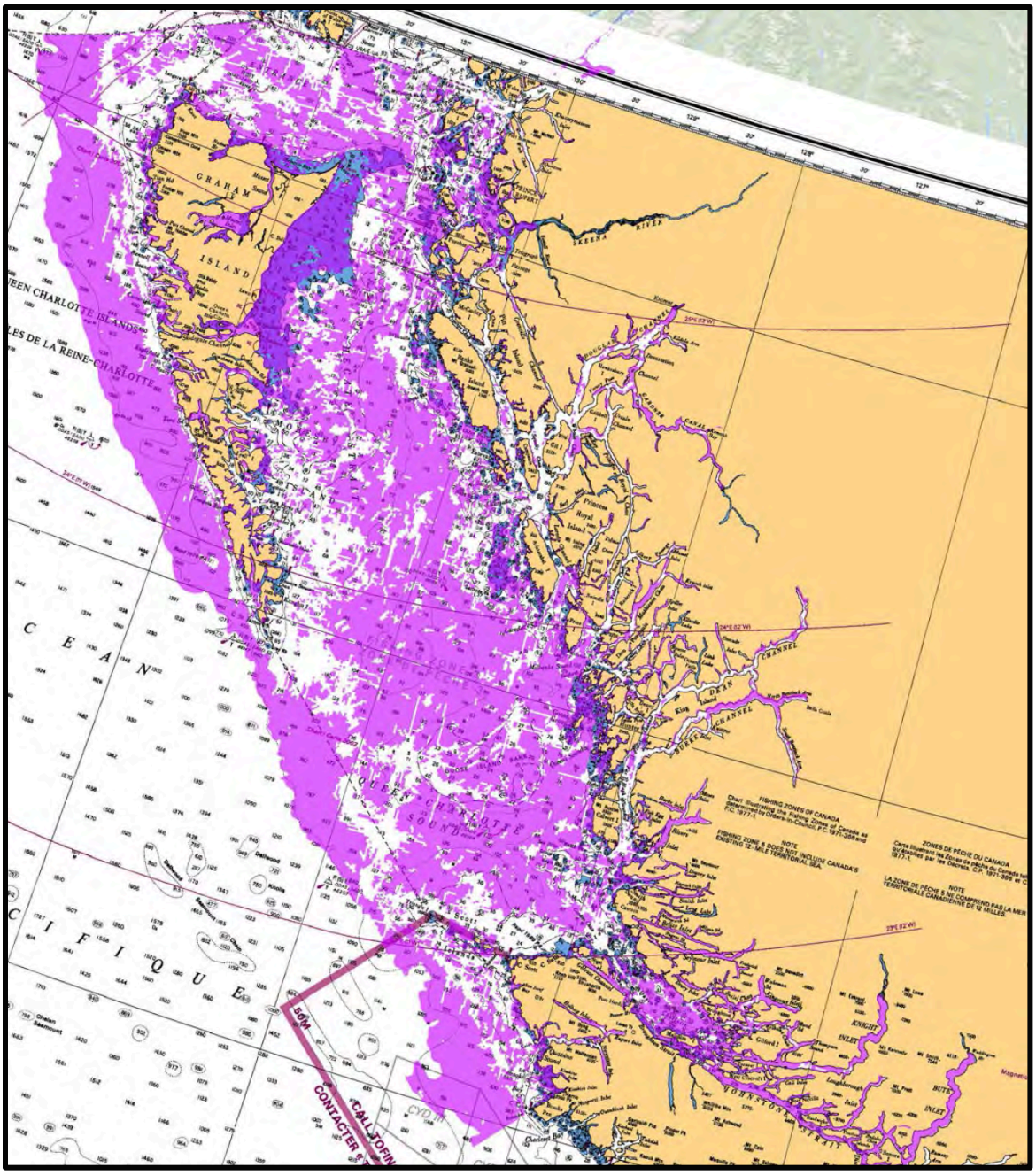
Potential Bottom Contact De Facto Closed Areas

To explore this approach and identify these areas of interest we participated in three meetings with ENGOs, DFO Oceans, Science and Fish Management, MPATT representatives and other industry organizations. We also held several internal discussions and brought maps out to meetings we hosted. See appendix for meeting highlights.

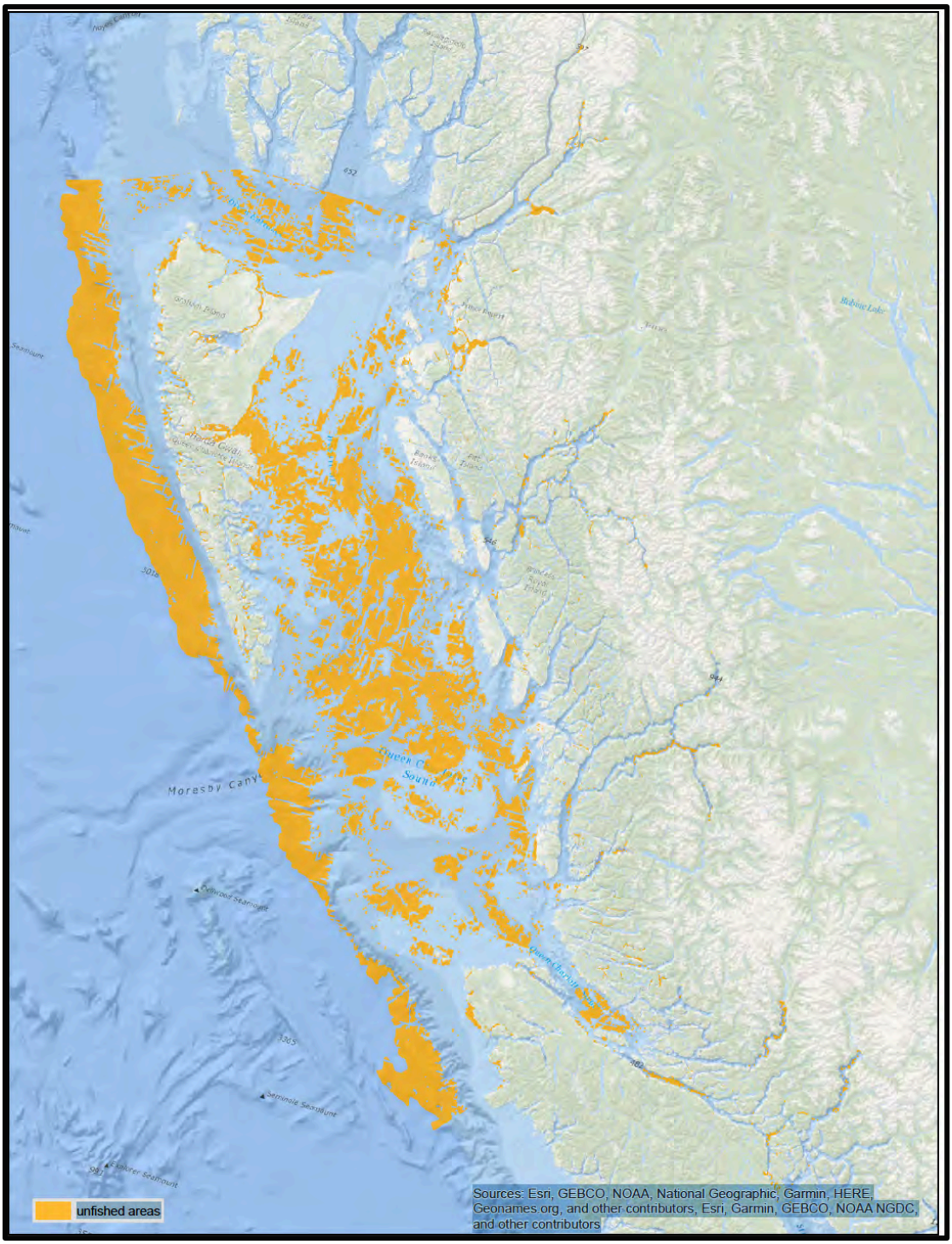
In the three meetings, the importance of this work to the MPAn was discussed, along with the different approaches being undertaken, the complexity of this work, and the need to ground-truth maps with the fishing fleets.

The group loosely defined de facto closed areas as areas naturally avoided by harvesters for a variety of reasons such as vessel traffic lanes, difficult currents, and unmanageable benthic terrain. The CFC was looking for seabed areas that had not been fished by any gear type for over 10 years, and that were not being caused by other management measure, for instance pinch species. We were not looking for bycatch avoidance areas, which could change when species recover, and or areas that change by natural cycles.

The following maps depict that reverse of the various fisheries footprints, one for halibut and the other combines across all bottom contact fisheries. In analysing the combined map, the de facto closed area is 1/3 of the region, 33,264 km2 have had zero bottom contact fishery in 10+ years. The largest connected area is 7097 km2 off the west coast of Haida Gwaii. Additional maps are available on request.

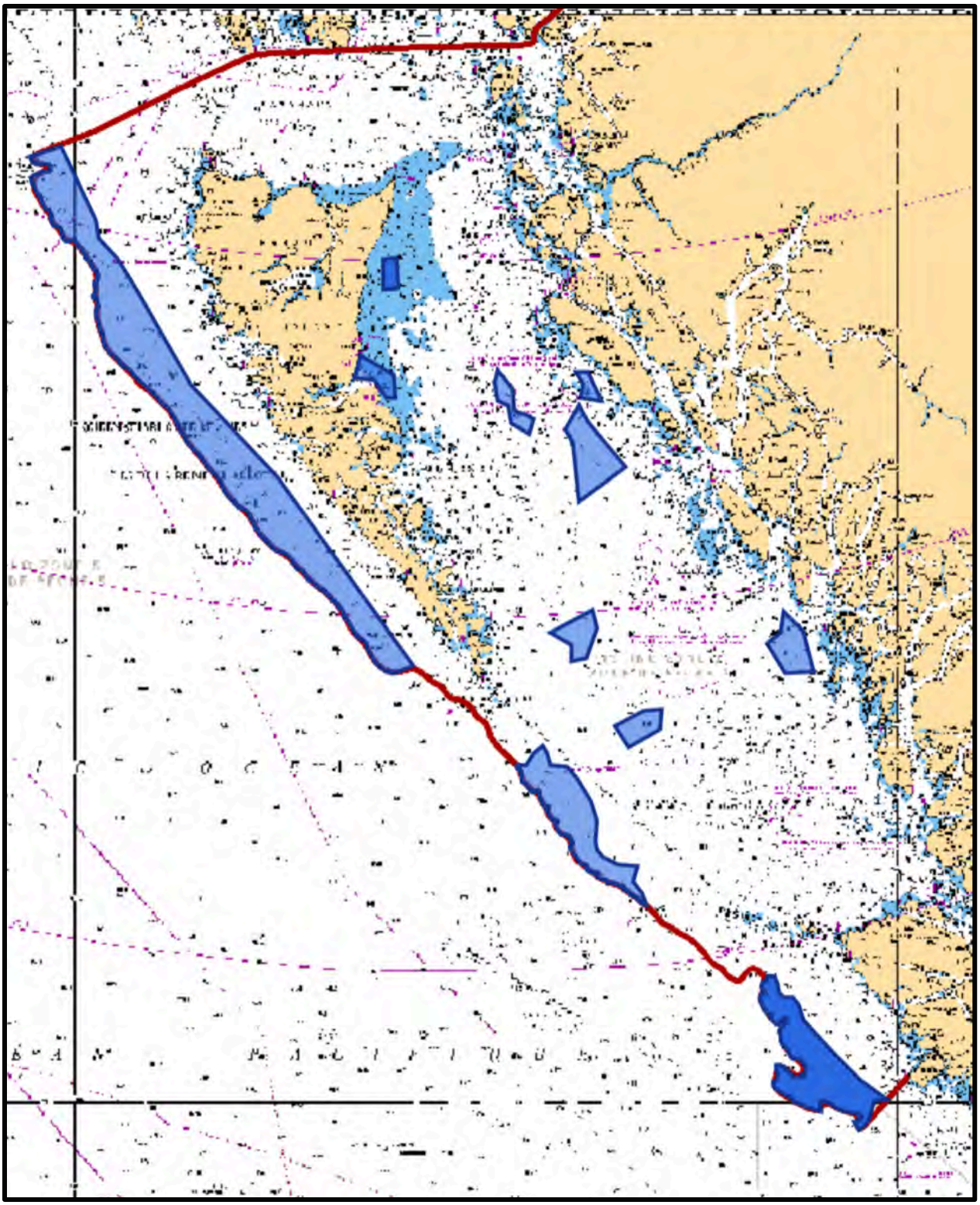


Halibut: 2007-2016

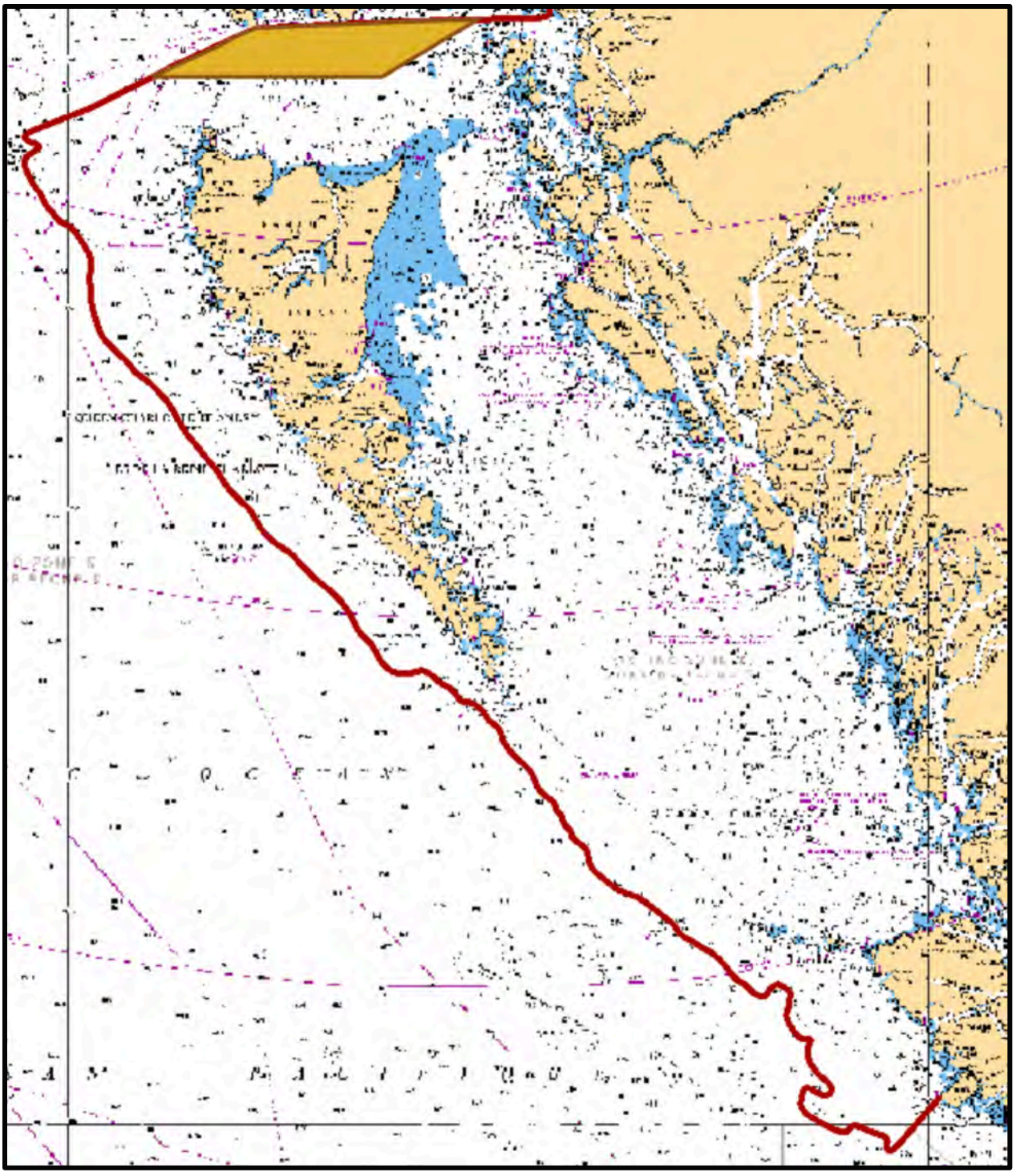


Combined halibut, sablefish, rockfish, lingcod, crab, prawn, groundfish 2007-2016

These maps led us to propose several areas of interest for no bottom contact fisheries in the MPAn.



Areas of Interest for MPAn



Areas that are in dispute and should be avoided in the MPAn – AB Line Grey Zone

Local Fishing Knowledge

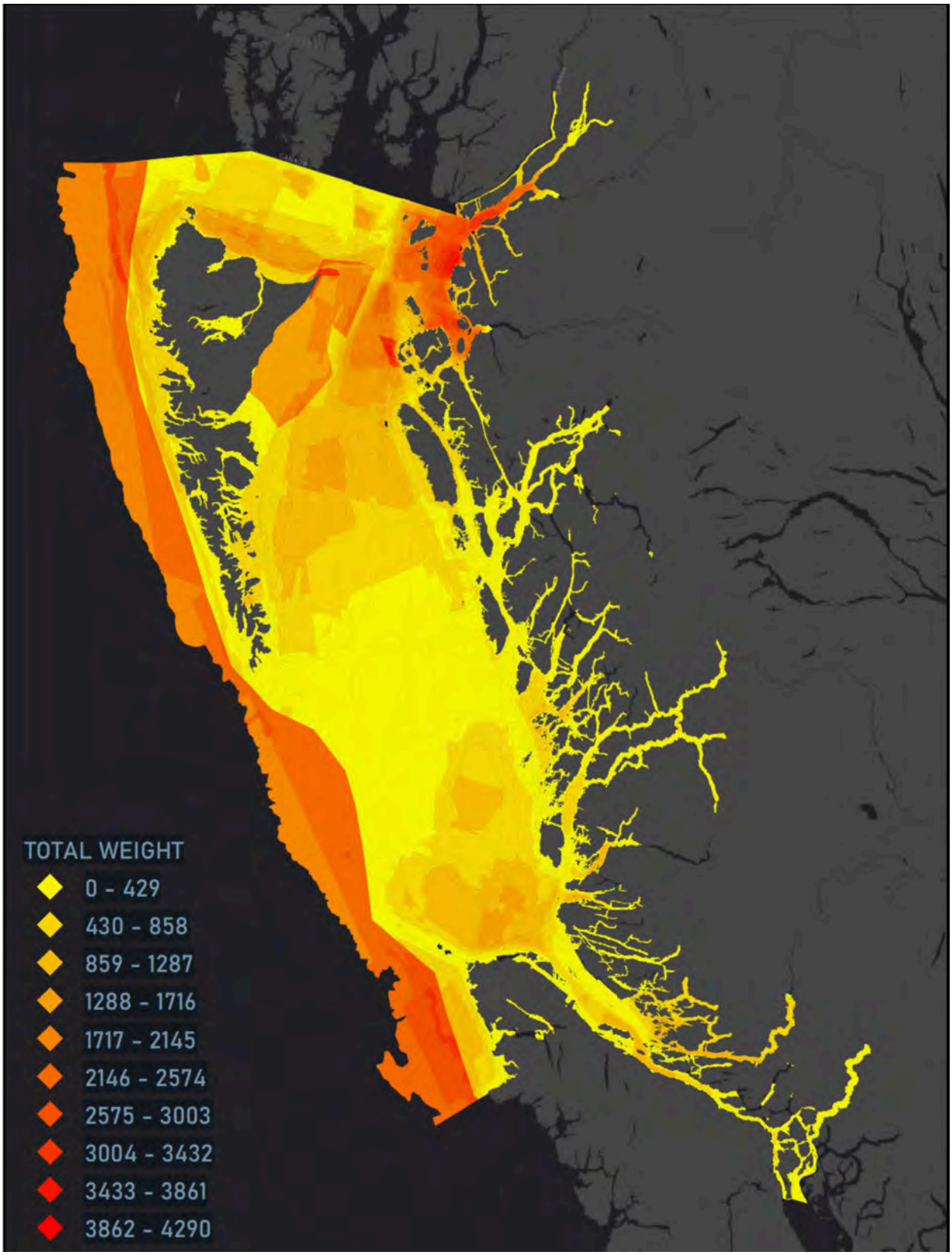
This section is very much preliminary in nature: we had intended to use the SeaSketch local fishing knowledge survey tool to collect and compile all data. Instead we have received data from three sources: SeaSkecth LFK surveys, Open Ocean surveys, and paper surveys. Compiling input in three different formats is a challenge: we still have much data to input.

LFK and MPAn Scenario

The CFC committed to collecting local fishing knowledge (LFK) using the 100 penny methodology. Although SeaSketch is a powerful tool, without access to the scenario, few fishers used this survey tool themselves. Along with the SeaSketch tool, the CFC used paper charts surveys, and Open Ocean personal surveys to collect LFK. This is a list of those compiled to Jan 31, 2020.

Fishery	# / Fishery
Lingcod	22
Crab	19
Groundfish	15
Halibut	45
Urchin	22
Herring Gillnet	30
Herring Seine	24
Rockfish	15
Prawn	20
Sablefish	12
Salmon Gillnet	75
Salmon Seine	30
Salmon Troll	35
Sardine	3
Shrimp Trawl	15
Tuna	21
Other	14
	417

Once the LFK surveys were collected, we then heat-mapped the data across all fisheries, then against the draft scenario to identify the areas of highest conflict. We have not provided separation between fisheries in this report; the intention was to identify highest conflict across all fisheries.


TOTAL WEIGHT
0 - 429
430 - 858
859 - 1287
1288 - 1716
1717 - 2145
2146 - 2574
2575 - 3003
3004 - 3432
3433 - 3861
3862 - 4290

High Conflict Zones

Zones with the highest conflict (top 20) include:

212 - E of Dundas Island
225 - Skeena Estuary
284 - Lax Kwaxl/Dundas-Melville Islands Conservancy
256 - N Chatham Sponge Reef
234 - Lucy Island
211 - Caamano Passage
242 - Stephen's Island NW
241 - Porcher Connector
230 - Stephen's Island E
229 - Stephen's Island N
"226 - Flora
96 - Central Coast PMZ - 30
273 - Gitxaala Nii Luutiksm/Kitkatla Conservancy
228 - Stephen's Island SW
36 - 8_2_west_calvert
31 - 7_1_Goose_Group
119 - Gwaii Haanas NMCAR&HHS (strict protection)
118 - Gwaii Haanas NMCAR&HHS (multiple use)
227 - Gull Rocks
213 - W of Dundas Island

Low Conflict Zones

Zones with the lowest conflict (bottom 20) include:

113 - Carter Bay Conservancy
20 - MaPP ARMDP 4
224 - Lax Galtsap 2
263 - Alty Conservancy
266 - Brim River Hot Springs Protected Area
272 - Foch-Gilttoyees Protected Area
274 - Huchsduwachsdu Nuyem Jees/Kitlope Heritage Conservancy
287 - Owyacumish River Park
288 - Shearwater Hot Springs Conservancy
328 - 16_3_Brooks_Bay_RCA_Klashkish_River_ER
348 - 6_3_Kanish_Bay_RCA_ProvMP
349 - 6_4_Kanish_Bay_RCA_Only
356 - Allison Harbour Marine Park
366 - Phillips Estuary/?nacinuxw Conservancy
367 - Quatse Estuary Wildlife Management Area
368 - Quatsino Park
375 - Xwakwe?naxde?ma/Stafford Estuary Conservancy
49 - PMZ 103 and Cascade Inlet - Proposed Conservancy Extension
64 - Central Coast PMZ - 107
8 - 10_1_Rivers_Inlet

As identified earlier this work is only preliminary, much more work is needed on this.

Wellbeing

Measures, Process and Development to Date

Planning documents as they currently exist for the Northern Shelf MPAn set out draft performance measures for designated areas.

> *"Performance measures" (PMs) are specific metrics that can be consistently used to evaluate and compare alternative draft network design scenarios. They are quantitative or qualitative measures that report the achievement of network objectives and the significance of differences in performance across different draft designs.* [PMs] *also reveal potential trade-offs and can assist in the identification of improved draft network designs and help improve transparency in how trade-offs are evaluated, and decisions are made.*[6]

The development of the "preliminary draft network scenario" includes the collection of "spatial data" on conservation priorities for marine species and habitats, cultural conservation priorities for First Nations, and "human uses (e.g., commercial fishing catch and effort data, administrative boundaries, marine tenure information)".

With regard to commercial fisheries, the draft PMs are limited in scope and detail, identifying at a general level the "overlaps" of network scenarios with the distribution of commercial fishing activities across the fishing grounds and do not fully take into account economic impacts in terms of the revenues generated from catches of groundfish, shellfish, salmon and pelagic species, with attention to numbers of vessels and areas of highest fishing effort, and the interconnection between fisheries. The draft performance measures do not identify the impacts unique to the small boat fleet and the broader impacts this has on social, cultural, economic and ecological outcomes for the coast.

Understanding the Full Scope of Values

The CFC has proposed more detailed PMs for MPAs that potentially impact commercial fisheries and fishing communities. The starting point is to consider the commercial fisheries not just as discrete harvesting activities in specific locations but as a value chain system with backward and forward linkages connecting communities and shore-based activities to final markets where the economic returns for fisheries are realized.

As presented in our June 2019 Initial Report, the following graphic provides an approximate picture based on 2009 data, of the structure of the commercial fishery in British Columbia[7]. Over 2,000 vessels, providing over 5,000 crew jobs, are active in 14 discreet fisheries, although many vessels are active in two or more fisheries.[8] The Transport Canada Vessel Registry however, indicates that this may be an underestimate as there are currently 3370 registered fishing vessels in BC.

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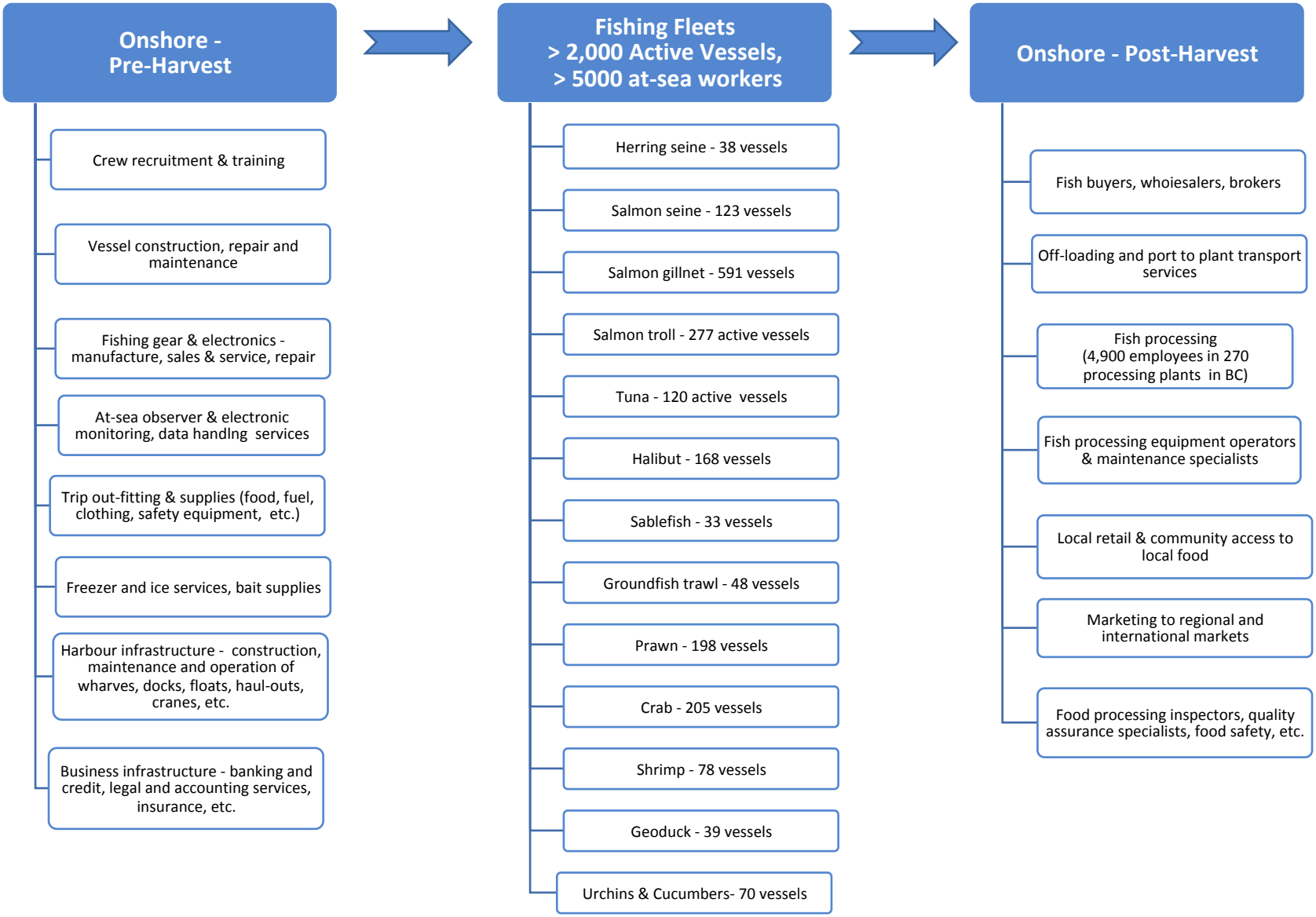
[6] DRAFT Performance Measures_27 February 2019.pdf

[7] Several important small boat fleets were missing in this 2009 report most notably rockfish and lingcod. The lack of update from 2009 highlights that understanding fishing industry socio-economic issues is not a government priority. A recent FOPO Report (2019) made several recommendations to try to address this issue: https://www.ourcommons.ca/Content/Committee/421/FOPO/Reports/RP10387715/foporp21/foporp21-e.pdf

[8] The information in the graphic is drawn from a report entitled *Pacific Commercial Fishing Fleets Financial Profiles Series, 2009* produced by Pacific Region, Fisheries and Oceans Canada. The data is out-of-date, but does provide an approximate picture of the fleet structure in BC commercial fisheries.

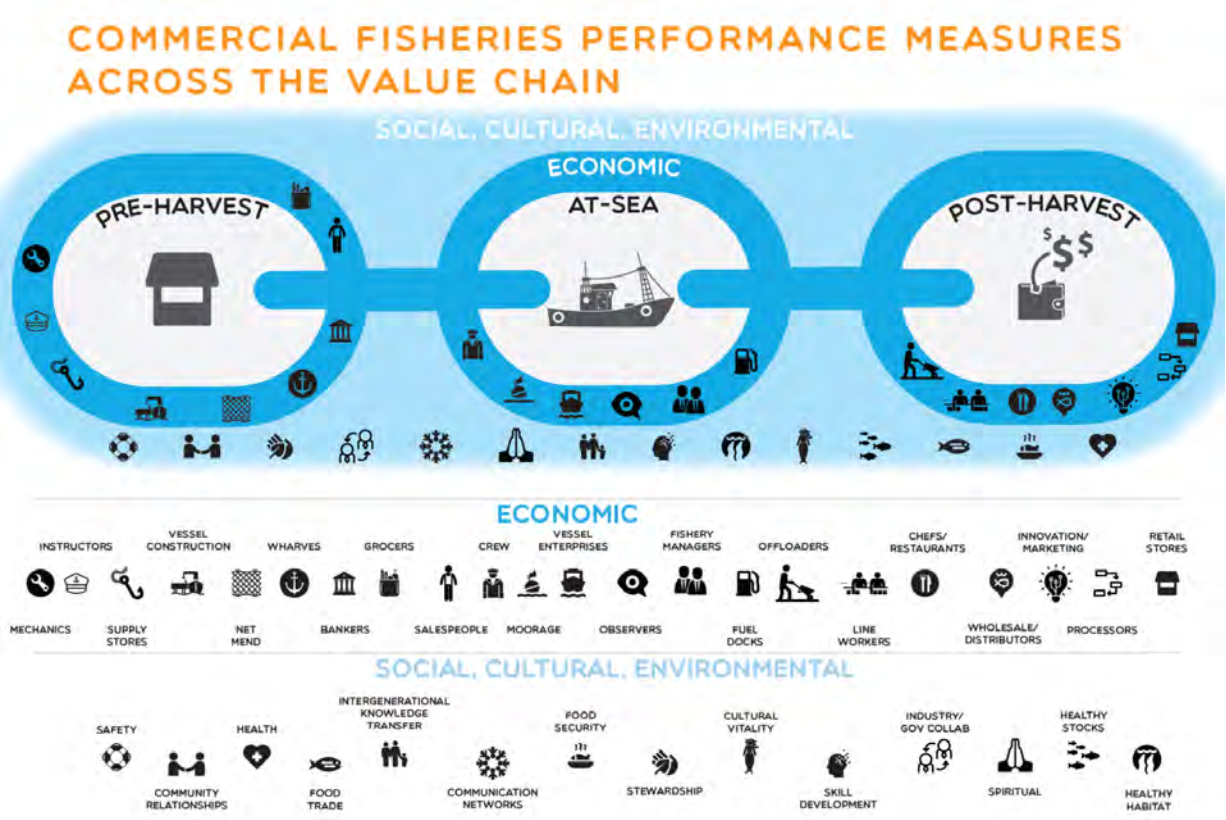
The fishery also supports 270 fish processing plants generating approximately 4,900 FTE jobs. The graphic outlines the fishery value-chain, beginning from its foundations in coastal communities providing the many services and infrastructure supports needed for fleets to operate, through to the landing, handling, processing, marketing and distribution of seafood products.

Value Chain – Commercial Fisheries



Of these 2380 vessels and 5600 fishing jobs, 93.5% of them are considered to be a part of the BC's small boat fleet.

When looking at social, economic and ecological values this fleet contributes, the lens through which indicators, measures and targets must be viewed and designed to achieve EBM objectives far surpasses what has been developed to date. The CFC has presented the following graphic to illuminate the scope of this omission and to begin to identify what is needed to truly understand how to design and implement an effective MPA that meets EBM requirements, and ensures fairness and resilience of both ecosystems and human systems over time.



Socio-Economic and Cultural Framework – Small Boat Commercial Fisheries

The following outlines the breadth of values gained through the presences of an active small boat fishery. It also describes the means by which to monitor and evaluate the effect the MPAn has on those values over time. The best way to achieve this is to apply these indicators and measures where relevant, at the appropriate geographic scale, the community level, and to apply targets for these based on an understanding of the current baseline and desired EBM outcomes. In the case of food production, the appropriate geographic scale would be the total NSB contribution to the global food supply, in most other cases the indicators and measures would be applied at the regional level.

The NSB area at 102,000 km2 is large and is adjacent to many rural communities on the coast, many of which have a rich history in fishing and continue to be deeply connected to fisheries today. These include:

Prince Rupert	Masset	Gitxaala	Port Hardy
Port Edward	Old Masset	Gitga'at	Port McNeil
Oona River	Skidegate	Kitasoo	Alert Bay
Bella Bella	Queen Charlotte	Sointula	Campbell River
Bella Coola	Lax Kw'alaams	Metlakatla	Dodge Cove

There is also a suite of communities outside the region that are connected to the NSB through the commercial fishery. These include:

Comox	Gibson	Port Renfrew	North Van
Courtney	Squamish	Sooke	Vancouver
French Creek	Ucluelet	Victoria	Richmond
Nanaimo	Tofino	Sidney	New Westminster
Cowichan	Ahousat	Ganges	Sechelt
Powell River	Quatsino	Steveston	Maple Ridge
Pender Harbour	Port Alberni	Ladner	Langley

As discussed later in this report, in order to develop a complete, effective, and measurable framework, significant data must be compiled throughout this region, by community, and across

value categories and fishery types. A staged approach with priorities as identified by the small boat fleets are pursued.

Tangible (Socioeconomic)

This section outlines the types of values that can be fairly easily measured or quantified by economic/monetary means. These values are gained throughout all stages of the value chain. The following outlines these values by type, at each level in the value chain, as well as measures or indicators of performance associated with these values. This initial listing is not considered conclusive or final.

Jobs, Incomes

Value Chain Segment	Value Type	Performance Indicators/Measures
On shore, pre-harvest	> Training - Instructors > Industry services - Vessel and Equipment repair, maintenance, construction - Mechanics, electricians - Monitoring providers > Industry sales - Sales people > Fisheries management - Biologists & fisheries scientists - Fisheries managers > Business services - Accountants - Bankers/lenders > Accommodations - Hotels/motels - Campgrounds > Harbours - Wharfingers and Marina Attendants	Increase or decrease in: > #'s of local jobs > % of total jobs local > Income level averages - Aggregate by job type - Individual, gender, age
At-Sea, Harvest	> Fishing - Fish harvesters - Divers > Monitoring and compliance - Data techs - Observers and monitors - Enforcement officers > Fisheries management - Government employees	Increase or decrease in: > #'s of fish harvesters - Skippers & crew - % Local/inside region > Harvester income levels - Average annual by fishery - Annual average total > Demographics of labour force (age, gender) > Ex vessel prices > Market diversity and demand

On shore, Post harvest	> Buying and distribution - Wholesalers - Buyers - Distributors > Processing - Offloaders - Line workers/ canners - Management - Health and safety staff - Product development, marketing, & communications, etc > Seafood retailers - Small scale fish mongers - Large scale/chains > Restaurateurs	Increase or decrease in: > # of WDB's > # of processing jobs > # of retail jobs > Income averages > Demographics of labour force (age, gender)

Business Viability and Food Contribution

Value chain segment	Value Type	Performance Indicators/Measures
On shore, pre harvest	> Training - Course fees > Industry services - Vessel & Equipment repair, maintenance, & construction fees - Mechanical & electrical fees > Industry sales - Fishing supplies - Fuel - Groceries > Business services - Business fees, interest, and ROI > Harbours - Mooring fees	Increase or decrease in: > Amount of sales/profitability of businesses > #'s of local businesses > Diversity of types of businesses > Seasonality of businesses

At-Sea, Harvest	> Vessel enterprises - Boat share > Monitoring service provision - Service fees	Increase or decrease in: > #'s of vessel enterprises > Landed value of catch - By fishery - All fisheries > Landed volume of catch - By fishery - All fisheries > Cost of vessel operations > Profitability of vessel enterprises > Profitability of monitoring providers > Value per lb landed
On shore, Post harvest	> Processing businesses thriving > Value chain businesses right sized and exist where needed to amplify effectiveness of value creation and distribution throughout the value chain > Local seafood retailers and restaurants thriving and have access to local seafood	Increase or decrease in: > # of WDB businesses - Tocal - total > # of processing businesses/facilities - Local - Total > # of retail businesses - Local small enterprises - Local large/chain > Seafood business sales/revenues/profits > Value of wholesale sales - Domestic - International > Value of retail sales - Local - International > > Value per lb landed, wholesale, and retail

Tangible (non-economic) and Intangible (social, cultural, and ecological)

This section outlines critical values that are unfortunately sometimes discounted as they aren't easily measured in typical economic terms. However, they provide a wide array of benefits to individuals, families and communities connected to fisheries, and, in many ways, provide a foundational contribution to coastal community and human wellbeing. Much like the above listed tangible values, these values are also gained throughout all stages of the value chain. However, they are much harder to delineate as they are often gained across the full value chain. As such, the following outlines these values by type, as well as measures, or indicators of performance associated with these values, but does not attempt to associate them only with one level of the value chain.

Skills and Built Capacity

Value Type	Performance Indicators/Measures
Training programs/certificates in relevant skill areas: > Gear and vessel maintenance > Electronics and mechanics > Navigation, fishing masters and vessel operations > Safety and first aid > Small business management and financial	Increase or decrease in: > Local job readiness and eligibility > Sense of self-confidence, pride, and individual agency > Community level access to needed skillsets/services which are utilized not just on commercial terms but in trades and volunteer/communal support > Fishermen's organization and fish policy development and involvement with conservation, management and other policies
Mentorship and practical experience: > Running and operating a boat > Harvest methods by fishery/species > Electronics/mechanics > Navigation and stability > Marine safety best practices > Primary fish handling > Trades i.e. machine operating and millwright > Team building/leadership	Increase or decrease in: > Job mobility > Vertical (upward)movement through progression from deckhand to vessel owner. > Plant worker – gathering of skills to provide longer employment
On job training and some formal: > Fish handling and processing, non-skilled to trades > Sales > Management > Marketing > Cooking/food prep > Product development	Increase or decrease in: > New entrants moving in > Transferable skills - skilled workers finding employment in other sectors (trades; pilots; tugs) > > non-stagnation of workforce shows a healthy industry

Local infrastructure

Value Type	Performance Indicators/Measures

Existing, functional, and maintained infrastructure that serves the industry and many other needs of the community: > Active and well situated ports > Functional wharves > Small business/retail space > Gear storage and mending facilities > Training facilities > Processing facilities (including freezer space, packing) > Fuel docks > Marine lifts	Increase or decrease in: > Recreational activity > Local boat mooring > Provision of local training and business services > Emergency preparedness and response > Ability to process products for both commercial and recreational personal use. > Travel time away from home to acquire necessary services/products or even access to ports for both industry and communal needs

Human and Community Health and Wellbeing

Value Type	Performance Indicators/Measures
Connectivity, access to, and influence over local/adjacent resources (in this case fish and seafood) for both commercial and non-commercial use, are known to have a direct link to the wellbeing of community. Wellbeing at the community and individual level includes, but is not limited to, the ability to maintain needs and desires in: > Lifestyle > Culture > Religion and spirituality > Mental health > Physical health and fitness > Social connections > Family and home life > Self-determination and agency > Choice	Increase or decrease in: > Suicide rates > Addiction rates > Education levels > Crime rates > Unemployment/poverty rates > Diet related illness > Retention of youth > Health issues > Happiness quotient > Child welfare

Safety and security

Value Type	Performance Indicators/Measures

Marine based communities have their own set of safety and security considerations which result from being on the coast. Many of the assets that a community acquires over time as a result of an active fishery address these needs and ensure the community can meet or beat safety and security measures. These include: > Operational and seaworthy vessels > Trained captains and crew > Local support networks > Effective, accessible transportation (inc. for evacuations) > Advance warning and response systems for emergencies > Housing > Vessel launching, docking, and mooring infrastructure.	Increase or decrease in: > Condition of boats > Availability/level of trained workers > Fatalities and injuries at sea > Exposure to risk at sea > Emergency preparedness and response > Evacuation routes

Food Security

Value Type	Performance Indicators/Measures
> Access to healthy and affordable food - Gift and trade of food - Ability to prepare seafood > Ability ("know-how" to harvest key local food source) > Access to gear/equipment to harvest food > Local handling and processing of seafood > Best use of seafood landed	Increase or decrease in: > Level of knowledge maintained on how to access and prepared food > Level of local food supply available and prices/affordability > Nutrition and hunger levels > Disease and death rates > Availability of functional equipment necessary to harvest and prepare food > Human consumption versus other use

Sound Governance

Value Type	Performance Indicators/Measures

> Collaboration across interest groups > Collaboration across government levels > Collaboration between interest groups and governments > Self-reliance > Control over local resources > Level of interest group engagement > Transparency related to decision-making > Opportunities for interest-based negotiation between and among directly affected parties > Knowledge and experience of First Nations, industry and community interests built into solutions > Meaningful participation by local government interests	Increase or decrease in: > Level and # of interest group engagement > Level and effectiveness of Inter community relations/collaboration > Level and effectiveness of intra gov/industry relations/collaboration > Interest group satisfaction with process and outcomes > Effective negotiations amongst parties as network is developed, implemented and monitored > User group conflict

Historical/local Knowledge

Value Type	Performance Indicators/Measures
> Multi-generational historical knowledge of marine resources and environment > Local knowledge of harvesting techniques > Local knowledge of fish handling at sea > Local knowledge of seafaring and all it encompasses e.g. reading tides, navigation, charts, weather, etc > Gear making/mending > Historical knowledge of patterns/trends in ecosystem	Increase or decrease in: > Level of local and historical knowledge of marine environment and local resources > Level of knowledge being transferred to new generations > Level of new knowledge being acquired

Environmental health and ecological resilience

Value Type	Performance Indicators/Measures
> Coastal/rural communities' resilience in the face of climate change > Local stewardship > Healthy and abundant stocks > Healthy and supportive habitat > Stability of annual returns/biomass > Biodiversity > Climate change	Increase or decrease in: > Level of adaptability contributed through fishing in local economy, harvesting, local infrastructure, food access, etc. > Local capacity levels around monitoring and stewardship activities - "eyes and ears on water" > Stock levels (for diversity species) > Habitat health (for diversity of habitats) > Distribution of effort (pressure in condensed

	areas) > Carbon footprint

Labour force

Value Type	Performance Indicators/Measures
> Organization and fair representation > Independence and agency > Fair compensation > Employment duality > Multi use vessel > Safe working environment > Work life balance	Increase or decrease in: > Worker representation > Compensation as compared to other regions > WCB claims, accidents at sea, injury, or death > Harvester independence and agency over their business > Harvesters dependence on employment from other sectors, i.e forestry, mining > Fish vessels other use FSC, tourism, freight > Harvester ability to negotiate ex vessel prices > Worker protections, insurance, and benefits > Season length, number of days worked/hours in day

Target Reference Points

For each of these categories of tangible and intangible values, target reference points – or desirable targets for management – must be created alongside the listed indicators to enable measurement of progress and success over time. This is necessary to establish and maintain accountability to objectives, including the ability to adapt policies and processes as necessary when objectives are not being met. This is standard and accepted practice in fisheries management as it relates to biological or traditional economic outcomes. This is fairly new practice when it comes to social and cultural outcomes. The FAO however is increasingly demanding social and economic indicators as a part of their pursuit for the sustainable development of marine capture fisheries, and how to develop these has been and continues to be studied.[9]

[9] http://www.fao.org/3/y5228e/y5228e03.htm#bm03.1

For indicators to be most useful for managers, to establish useful, accurate and measurable targets, data collection has to be done on the current state of these values to create a baseline against which to monitor changes to these values over time as a result of the MPA. For example, the following data sets need to be captured within the NSB MPA area:

- Existing number of direct jobs in each fleet in each community/port
- Length of employment (mths/year) # of seasons
- Employment duality with other sectors
- Total landings from each fleet in each community/port
- Employment by gender, and age group
- Active small boats working out of each fishing community/port
- Average income by fishery, community, gender, and age group
- Existing number and type of ancillary service by community/port
- Sales and profitability of these ancillary services
- Percent of total fishing jobs and businesses that are in region
- Number and type of training courses delivered
- Number of successfully certified/accredited students

Further, to create a baseline for the intangible values, data will have to be captured around those as well. These are generally captured through information gathered through interviews and storytelling as well as any statistics available on related indicators such as those in human health, crime, and safety.

Wellbeing Measures: Next Steps

A loss of access to fishing grounds or fishing opportunities impacts more than the vessels and the crews involved, and affects more than just the landed value and volume of seafood. If small boat enterprises are not able to adapt and stay afloat either by maintaining or shifting their fishing effort to a different location, or a different target fishery to make up for the lost opportunity, and the small boat fleet as a result dissolves, there will be far reaching consequences across the value chain and throughout coastal communities affecting human wellbeing on the coast.

As presented in earlier submissions by the CFC, specifically the *"Interim Report, Commercial Fishing Caucus Initial Collected Comments on the Northern Shelf Marine Protected Area Network Scenario",* we are at the table in good faith and expect that the planning for NSB MPA networks will be guided by certain principles:

- The established protocols, processes and guidelines for integrated fisheries management will be followed,
- Affected parties (e.g., commercial fishermen, recreational fishing interests, local governments, ENGOs, marine transportation, forestry, aquaculture, marine tourism) will be engaged in the planning process, their interests recognized, and materially respected within and throughout the planning process, and
- Given that spatial alternatives or options for achieving specific MPA conservation/protection objectives, minimizing negative social, economic and cultural impacts will be a high priority guiding factor in decision-making.

The NSB MPA must be designed and implemented in line with these principles as must the intended outcomes. The data necessary to monitor and secure management outcomes for the NSB MPA, is not up-to-date or sufficiently detailed enough to serve as PMs or targets. More in-depth analysis and data collection is needed to generate measurable and useful targets for the fishery that are inclusive of social, cultural, ecological and economic values[10].

[10] The importance of social, economic and cultural objectives in MPA success is well documented:
https://www.sciencedirect.com/science/article/abs/pii/S0964569117304015
https://www.sciencedirect.com/science/article/abs/pii/S0964569117307883
https://www.sciencedirect.com/science/article/abs/pii/S0964569116303805

Appendix

Appendix A – Engagement

Social Media: 7733 reached, 1051 engaged

Email correspondence list: 275 people

SeaSketch Surveys: 82

Open Ocean Surveys: 163

Paper Chart Surveys: 63

Meetings Attended to Present MPAn Information for Engagement:

Central Coast Fisheries Meeting
Prawn Industry Caucus Meeting
Groundfish Trawl Advisory Committee Meeting
Herring Industry Advisory Board Meeting
Crab Industry Advisory Meeting

Thirteen in person meetings hosted, total number of attendees: 97.

Meeting schedule:

Prince Rupert Saturday *August 17th*

Nanaimo Tuesday *November 12th*

Bella Coola Monday *November 18th*

Campbell River Tuesday *November 26th*

Powell River Monday *December 2nd*

Port Hardy Monday *January 7th*

Nanaimo Tuesday *January 8th*

Powell River Wednesday *January 9th* - cancelled due to weather

Vancouver Thursday *January 10th*

Masset Monday *January 13th*

Prince Rupert Wednesday *January 15th*

Tsehum Harbour Sidney Monday *January 20th*

Bella Coola Saturday *January 25th*

French Creek Harbour Tuesday *February 4th*

Appendix B – Initial Input on Sites

We have been asked to provide initial input on sites within the draft MPA network scenario expected to have the greatest impacts on the commercial fishing sector. A rough economic estimate is available from the MPATT that starts to point to impacts. This data is rough and by no means covers the full impact closing a given area would have on the fishery, nor does it cover cumulative impacts and tipping points. To help in our analysis we have created a matrix with the 371 zones and 7 categories to capture harvester concerns. They are:

- Culturally significant for commercial fisheries
- Proximity to community for harvester
- Economically significant for commercial fisheries
- Cyclically important for commercial fisheries
- Safety for commercial fisheries
- Increased gear conflict between commercial fisheries
- Increased inter-sector conflict

We have received much local knowledge input over the past few weeks and have not had time to fully catalogue nor comprehensively analyse this data. We have identified what we would class as important and critical areas for the commercial fisheries. This non-comprehensive list includes:

- Robson Bight (cultural, salmon, crab, safety),
- Hakai (cultural, crab, prawn, geoduck, urchin),
- Cape St James (cultural, sablefish, halibut, rockfish, tuna),
- Dogfish Bank (crab, inter-sector conflict),
- Celestial Reef (halibut, proximity),
- Rose Spit (crab, inter-sector conflict),
- Broughton (crab, prawn, inter-sector conflict),
- Burke (crab, prawn), and
- Union Passage (crab, prawn)

Haida Gwaii:	Important 144, 145 Very Important 129, 142, 143, 158, Critical 131, 132, 138, 148, 154
Central Coast:	Important 2, 3, 4, 5, 6, 13, 22, 23, 25, 29, 31, 36, 73, 95, 96, 107, 112 Very Important 10, 11, 15, 33, 38, 48, 50, 63, 64, 65, 70, 76, 93, 97, 102, 105, 114 Critical 36, 60, 66, 84, 95, 103
North Coast:	Important 211, 225, 260 Very Important 212, 216, 217, 238, 239, 240, 241, 252, 257, 259, 262, 264, Critical: 218, 261
North V. Island	Important: 330, 336, Very Important: 333, 334, 352

Critical: 351

Many of these important areas are for highly migratory pelagic species like tuna and salmon. The science is clear that these species are unlikely to respond to MPA protections and generally have little interaction with benthic features. Rather, they are cyclical in nature, responding to temperature, salinity, oxygen, tides, currents, eddies, winds and broader oceanic cycles.

It is widely known that various management measures create defacto closed areas, in fisheries management areas that are avoided because of pinch species quota limitations - for instance off Frederick RCA - and critical transportation corridors that fishermen try to avoid to reduce gear loss -for instance the ferry routes to Skidegate.

Appendix C – Initial Recommendations

1) MPATT needs to clarify the MPAn governance. Affected parties need to know how decisions will be made, how to best provide local knowledge, and who will be held accountable.

2) MPATT needs to establish socio-economic targets for the MPAn. This will not only support the ecological targets, it will strengthen the MPAn connection to the regional EBM goals. One approach would be to host a workshop with experts and affected parties.

3) MPATT needs to address structural adjustment. It is not sufficient to identify the scale and scope of social and economic loss with proposed changes: to be EBM people must be dealt with equitably.

4) MPATT to get fisheries managers more involved. Not only with this help create more durable outcomes, fisheries managers' detailed technical knowledge is much needed.

5) MPATT to bring de facto closed areas into the MPAn discussion. These areas are avoided because of other management measures or areas created to reduce inter sectoral conflict. -MPATT could host a workshop with experts and stakeholders to discuss.

6) MPATT to consider zoning in the water column. This would be very useful in supporting pelagic fisheries on fast moving passing species that have little benthic interactions.

7) MPATT to provide key documents in other key languages, specifically Vietnamese.

Appendix D – Low Usage Area Meeting Overview

Working together to identify areas of low fisheries utilization and ecological value

Friday, Nov. 29, 2019 – Video/Call-in using Zoom

In attendance:

Jenn Burt – BC Marine Program Lead, Nature United
Scott Wallace – Senior Research Scientist, David Suzuki Foundation

Jim McIsaac – Commercial Fisheries Caucus (CFC)
Emily Orr – Prawn Industry Caucus Representative, CFC member for NSB MPAn consultations
Kim Olson – Commercial fisher (primarily salmon, also herring, shrimp, everything) – gillnet area C
Amy Mar – Regional Manager - Sustainable Fisheries Framework, DFO Fisheries Management
Ross Jamison – Ocean Conservation Manager, CPAWS-BC
Katie Gale - Biologist, DFO - Science
Emily Rubidge – DFO Science
Karin Bodtker – MPA Technical Team (MPATT)
Aleria Ladwig – Ecosystems Approach Officer, DFO - Fisheries Management
Faith Yu – GIS Analyst, Sustainable Fisheries Framework, DFO - Fisheries Management
Tiare Boyes – Executive Director BC Tuna Fisheries Assoc., Commercial fisher

NOTES FROM MEETING:

Welcome and Introductions

Recap from Past Meetings and Report on Follow-up Items

First meeting Sept10th (in person)
- Discussion on general interest in exploring de facto reserves (reduced fishing & ecological value)
- The idea to try and map "de facto reserves[11]" is something that members of the commercial fishing and conservation sectors have discussed on and off in the past (Fisheries-ENGO roundtable, Gwaii Haanas, WCA..)
- Presentation by Robyn Forrest who showed some outputs from a collaborative research effort with the halibut longline fishery examining changes in fishing effort over time and space.
- General interest in exploring ways we can look at existing de facto reserves. This info should help inform MPAn process.

Second meeting Oct. 17th (Video Conference call)
- Affirmed the desire to have access to the outputs from some of Robyns work to help inform feedback for MPAn.

REPORT ON FOLLOW-UP ITEMS:
- Robyn is working on getting yelloweye hotspot shape files and metadata to Katie Gale over the next couple of days.
- Robyn is working on getting the abandoned and negative halibut fishing grounds in a GIS file to send to Katie.
- DSF to report on their analyses (see notes below)

Overview of today's agenda and objectives

1. **Share updates** and work being done by different groups to examine and map fishing utilization and/or ecological value in the Northern Shelf Bioregion.

2. **Discuss how various mapping outputs may be useful to inform feedback** on the draft MPA network scenario in the NSB.

3. **Discuss whether there are additional analyses or engagements** that should occur to further advance and inform this work.

[11] The term "**de facto reserves**" is being used here to describe areas that have low fisheries utilization and contain ecological values. The reason these areas may have low utilization could include: 1) high bycatch or choke species, 2) gear gets tangled/caught on bottom, 3) fishermen have agreed not to fish (e.g. BC ferries routes), 4) high vessel traffic, …. other reasons.

Appendix E – Letter from Chief Davis

January 26, 2020

Nia Kun Kii Gaaway

Clan

Point Town People

Honorable Justin Trudeau,

Honorable John Horgan

I Chief Tl' aagaang Quna / Elvis Davis / Hereditary Chief of the Nia Kun Kii Gaaway Clan, passed down to me from the late Chief Sam Davis of the Rose spit area, who's traditional lands and waters take in from Rose Spit South down the East coast and Hecate Straights to Argonaut Hill and on the North Coast and Macintyre Bay West to near Tow Hill.

Our clan members are over 300 strong and have traditionally and commercially harvested fish within these waters for the purpose of ceremonial, Food and commercial reasons since time immemorable and still do to this day.

I am Writing this letter today to inform our Provincial and Federal Governments that the proposed inshore and offshore closures that are within our traditional territory have never been presented to our clan or our clan members for consultation of any kind.

Our clan has never made any statements supporting nor do we now support any closures to fishing or other harvesting within our traditional lands or waters without first having public consultation with our entire clan and the rest of the Haida Nations people.

That there should not be any decisions being made until the clan is properly consulted and supports what if any decisions that are made!!!

I feel the system in place to close these areas is flawed. There should be proper consultation with the clan within that territory. Any closures will greatly affect this clan and other clans that utilize this area.

Sincerely yours,

Chief: Tl' aagaang Quna (Elvis Davis)

Appendix F – CFC Work Plan

Activities	Schedule
Process Planning & Communications • Coordinate with CFC Team members and partners: schedules, meeting locations, and details, review needs with technical partners • Outreach through member organizations • Meet with NSB partners to review schedule • Continue CFC engagement in NSB MPAn multi-sectorial processes	Ongoing
Engagement • Hold 1 on 1, small group and zoom meetings to go over scenario, conduct 100P survey, and capture fisheries values • Fishing Community sessions on the North Coast, Central Coast, Haida Gwaii, Vancouver Island, Sunshine Coast, Lower Mainland • Hold group sessions in each community where fishermen attend to add their information in SeaSketch layers	May 2019 – Jan 2020
June Report • Provide general and high-level site feedback on draft MPA network scenario • Review of performance measures – focus on community and fisheries values • Input on sites within the draft MPA network scenario that are expected to have the greatest implications for the commercial fishing sector • Continue distribution of SeaSketch CFC 100 Penny Survey	By June 30, 2019
Integration • Meet with CFC team members and partners to bring together data sets of 100P surveys- identify commonality, divergence, review and analyse	By Jan 17, 2020
Final Report • CFC Team and partners prepare report and data layers highlighting areas of high ecological value and low fisheries impact, summarizing socioeconomic data, and offering an alternative to NSB design scenario • Circulate draft report to CFC members and engagement participants for comment	By Jan 24, 2020

Activities	**Schedule**
• Finalize report including: a) Evidence from a series of community meetings where information was gathered to inform development of a fisheries values layer/spatial inventory map of commercial fishing values in the region. b) Analysis of SeaSketch fisheries survey, identification of data layers highlighting areas of higher ecological value and lower socio-economic impact, summarizing fisheries data and offering suggested changes to the current draft MPA network scenarios. c) Summary of the work carried out, who participated, and how issues were resolved, and issues left unresolved. d) Detailed rationale for changes proposed from the current draft MPA network scenarios. e) Identification of, and input on sites that the commercial fishing sector may support for short-term implementation.	
Presentation • Present final report to NSB team	Jan 31 2020

Appendix G – CFC Integrated EBM Goals

"A healthy commercial fishery is one of the best indicators of a healthy marine environment"

Goal 1: Healthy Ecosystems (ecological and economic)
Effective conservation of marine resources, protect habitat from degradation, with particular attention on spawning and rearing habitat. Prevent pollution from entering our ocean from land, sea and air.

Goal 2: Healthy Commercial Fisheries (economic and social)
Commercial fisheries provide food, employment, and income for individuals, companies, and communities on our coast and beyond. The 22 commercial fisheries on our coast compete in a global seafood market by providing consumers with consistent, healthy, quality food products, sustainably harvested, at a fair price (see below for discussion on sustainable).

Goal 3: Access to Fish (governance and economic)
Without access there will be no fishery. Technically commercial fisheries have access to 99% of the coast. In reality regulation, spatial and temporal closures, and resource movement limit usage to a much smaller space. Unnecessarily locking off areas can destroy a fishery. Changing climate, ocean acidification, underutilized species and other conditions may provide opportunity to diversify commercial fisheries. These opportunities require access that should not be unnecessarily restricted.

Goal 4: Constructive and Enduring Relationships (cultural and social)
Numerous interests use the marine space, there are interrelated levels of marine governance and society as a whole benefits from well-managed and sustainable marine ecosystems. Efforts towards sustaining ocean ecosystems will benefit from a collaborative effort and an interestbased approach to planning.

Goal 5: A Diverse Fleet (cultural and social)
A diverse fleet where small boat and independent fishermen can thrive with local and coast wide access.

Goal 6: Human Resources (social and economic)
Maintain and develop well educated, trained, and experienced professionals to manage and execute fisheries. Training programs, inter-generational transfer mechanisms, and full career considerations are needed to develop talented professionals for the industry's future.

Goal 7: Safe, Reliable and Green Coastal Infrastructure (social and ecological)
Coastal infrastructure docks and wharfs, shipyards, fuel stations, recycling facilities, search and rescue, safe harbour buoys, and navigational aids need to be maintained and enhanced. Commercial fishing provides and supports coastal infrastructure to the benefit of communities and other sectors.

Goal 8: Diverse Markets and Distribution Channels (economic and cultural)
Both local and global, retail and wholesale markets are important for BC fisheries. Distribution (sea, rail, road and air) channels are important to the fishing industry and need to be effective and efficient.

Appendix H – MPA Background

The design and creation of marine protected areas has been unfolding along British Columbia's coast for over 100 years, since Strathcona Provincial Park was expanded to include a marine component in 1911. Provincial, federal and local governments, and First Nations have since established protected areas and marine reserves of various kinds throughout B.C.'s coast. Recent estimates gauge that nearly a third of BC's marine territory have some degree of spatial protection, a proportion that is set to grow in upcoming decades. Other regulations, including temporal closures, bring additional protections to marine habitats, biodiversity and ecosystems.

Canada's 1996 Oceans Act

The 1996 *Oceans Act* directed the Minister of Fisheries and Oceans to "lead and coordinate the development and implementation of a national system of marine protected areas". Establishing an MPA requires the Minister to designate "an area of the sea" within Canadian jurisdiction eligible for "special protection". MPAs can be designated to achieve several goals:

a) *the conservation and protection of commercial and non-commercial fishery resources, including marine mammals, and their habitats;*
b) *the conservation and protection of endangered or threatened marine species, and their habitats;*
c) *the conservation and protection of unique habitats;*
d) *the conservation and protection of marine areas of high biodiversity or biological productivity; and*
e) *the conservation and protection of any other marine resource or habitat as is necessary to fulfil the mandate of the Minister.*

Each MPA is established to achieve one or more of these outcomes: some may prohibit certain "classes of activities" (e.g. fishing) to protect vulnerable species or habitats. Others may allow fishing to continue where it does not affect the intended outcomes, or may even be implemented to commercial fisheries by prohibiting activities that impinge on fishing grounds (e.g., offshore mining or oil and gas development) or by conserving habitats to protect and grow valued fish stocks.

The MPA component of the Oceans Act is set out within broad requirements for the Minister to…..

> *…. lead and facilitate the development and implementation of plans for the **integrated management** of all activities or measures in or affecting estuaries, coastal waters and marine waters.* (Emphasis added)

The development and implementation of integrated management plans for MPAs requires cooperation, collaboration and consultations with….

> *…..other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements.*

We understand the concept of integrated management to include the principle that interest groups need to be engaged in the planning process, and the impacts on them need to be taken into account in decision-making on the designation of MPAs.

PNCIMA

The Pacific North Coast Integrated Management Area (PNCIMA) initiative was identified as a priority for the Minister in 2005, and launched in collaboration with First Nations and interested parties in 2009. It is built on co-governance principles that bring together the Province, the federal government, First Nations, affected parties, and scientific evidence to inform decision-making. Key elements of the 2017 PNCIMA Plan include:

- A commitment to integrated management and consideration of the full range of ecological, cultural, social and economic values associated with the plan area.
- A commitment to ecosystem-based management defined in the PNCIMA Plan EBM Framework as "an adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities. The intent is to maintain those spatial and temporal characteristics of ecosystems such that component species and ecological processes can be sustained and human well-being supported and improved."
- Establishment of a set of EBM assumptions, principles, goals and objectives to guide achievement of the outcomes sought within the PNCIMA Plan.
- Five priorities to address EBM goals: collaborative governance arrangements, an MPA network, adaptive management, integrated economic opportunities, and tools to support implementation.

The governments' priority to establish the NSB MPAn emerged from the PNCIMA Plan.

MaPP

The Marine Plan Partnership for the North Pacific Coast (MaPP) was initiated in 2011 by the Province and 16 First Nations. It has produced four sub-regional Plans—for Northern Vancouver Island, the Central Coast, the North Coast and Haida Gwaii—that have been endorsed by all parties. Implementation started four years ago, each MaPP Plan is spatially specific, relies on an ecosystem-based management framework adapted from PNCIMA, and adheres to an integrated management approach.

Other recent MPAs

Five major protected areas have recently been amended or announced in and around the Northern Shelf:

- Scott Islands Marine National Wildlife Area
- Gwaii Haanas National Marine Conservation Reserve
- Offshore Pacific Marine Protected Area
- SGaan Kinghlas-Bowie Seamount MPA
- Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs MPA

Other Area-Based Conservation Measures

To support Canada's commitments to conserving and protecting oceans guidance has been developed for conservation measures in addition to MPAs. In British Columbia, Rockfish Conservation Areas are one example of an area-based measure that limits commercial and recreational fisheries in designated areas that may be amended to fit this category. Bill C68, an amendment to the Fisheries Act, proposes Marine Refuges that could also be considered here.

Ecosystem-Based Management Approach

The CFC endorses the integrated approach to marine planning. This includes the application of EBM to the design and implementation of MPA Network. Among other things it provides a mechanism for integrating management actions with spatial measures in the area being planned. By seeking coexistence of ecological and human well-being values the EBM approach acts as an impetus for collaboration, problem-solving, conflict resolution and inclusion of equitable outcomes.