COASTAL FIRST NATIONS
GREAT BEAR INITIATIVE

Stories From the Coast

AUGUST 2020

RESTORING THE WATERS OF JUUS KÁAHLII

The restoration of the marine habitat of Juus Káahlii (Juskatla Inlet) from industrial logging tells a really good story, says Gudt'aawt'is, Judson Brown, Marine Planning Program Manager for the Council of the Haida Nation (CHN).

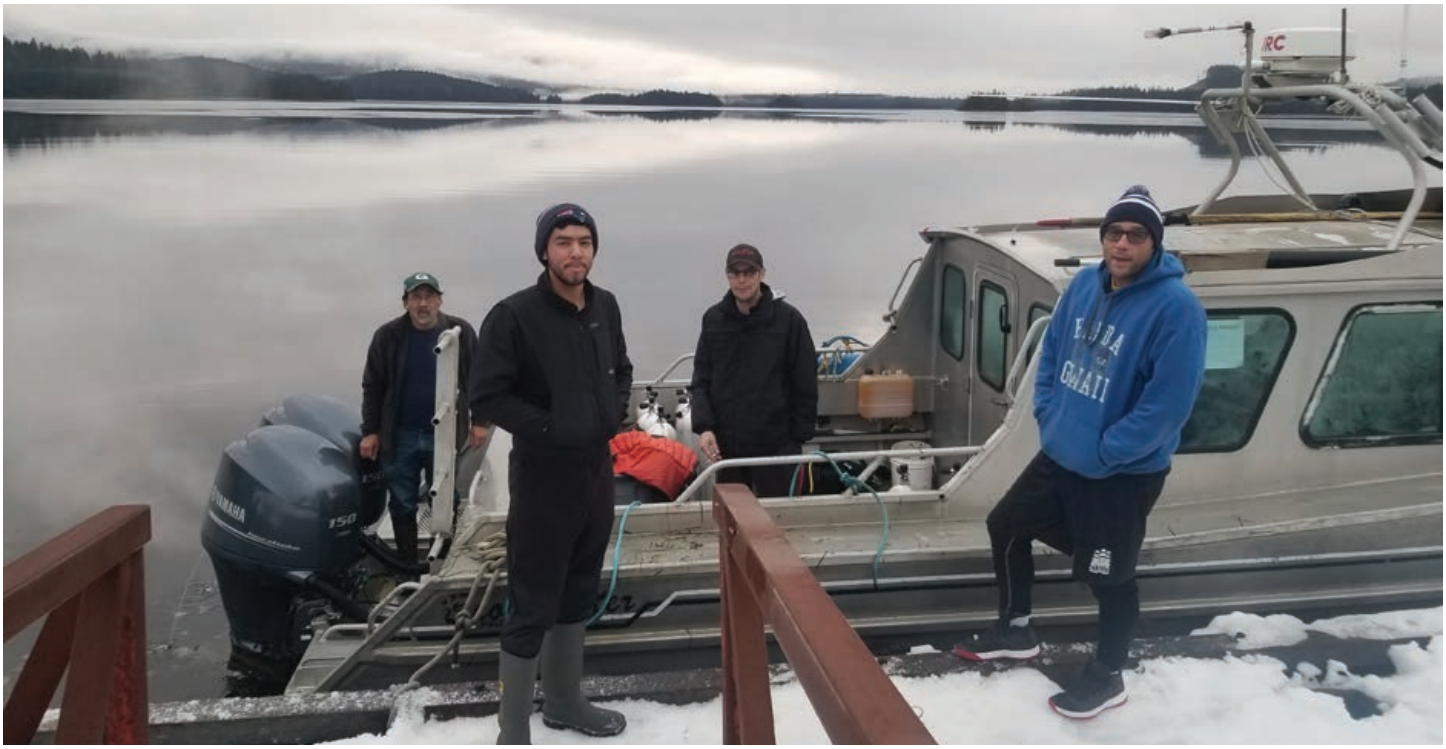
"If you look at the number of old village sites that exist in Juskatla Inlet, it shows how productive the estuaries and bays used to be," he says. "There was a lot of eelgrass. The salmon and the rockfish had a place to be safe. Sandhill cranes and blue herons hung out on the foreshore."

A historic log sort facility at the Juskatla Inlet site was chosen from 69 sites to undergo $1.1-million in marine restoration during a three-year pilot to restore foreshore areas and replant ecologically important eelgrass beds critical for marine life.

Juus Káahlii (Juskatla Inlet) has felt the impacts of industrial logging since the 1940s, including those from handling facilities where giant logs were sorted and dumped into the ocean and loaded onto barges. The CHN website says up to 20 truckloads daily were processed at Maaman Stl'ang near Juus K̲áahlii, during peak times, causing significant damage.

"For me as a Haida, it's an acknowledgement by government and industry that they messed up and this is a way to make it right."

> read more inside



Haida Fisheries crew and divers: l. to r.:Barney Edgars, Dion Lewis, Ben Penna, and Gwiisihlgaa (Haida name) Dan McNeill. Getting ready for a winter dive to explore the seafloor at the historic Juus K̲áahlii Juskatla log sort | Photo credit: Leandre Vigneault

RESTORING THE WATERS OF JUUS KÁAHLII *(cont'd)*

"This project tells a story for the community," Brown says. "The foreshore shouldn't have been left in that state in the first place. For me as a Haida, it's an acknowledgement by government and industry that they messed up and this is a way to make it right."

The story is deeply personal for Gudt'aawt'is, Brown. His father's family – whose Haida lineage goes back for millennia – comes from Juskatla. His dad was also a logger.

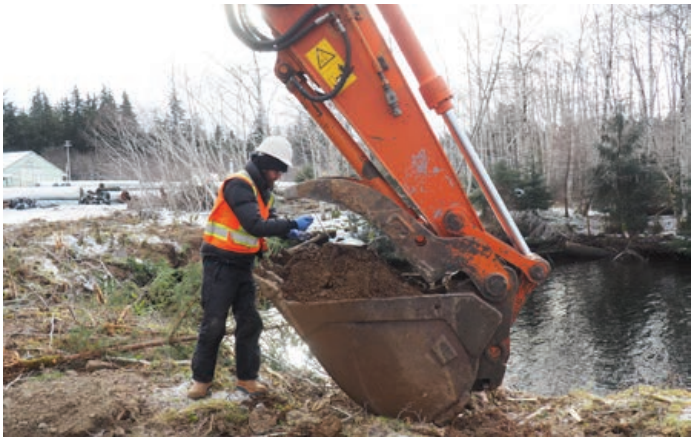
"The logging industry was a big employer. I remember seeing the barge full of logs that would go by and not seeing anything come back to the communities," he recounts. "How many millions of dollars left Haida Gwaii and we don't even have a swimming pool here? It seems that every small town in Canada has an ice rink supported by industry. Here industry didn't support much."

Experiencing the dichotomy of his father being a logger and trying to fix what's been done is really neat, says Brown. "This is an area where we used to harvest salmon, crabs, and waterfowl, and to see the site returned to its natural state is going to make me happy."

"I remember seeing the barge full of logs that would go by and not seeing anything come back to the communities. How many millions of dollars left Haida Gwaii and we don't even have a swimming pool here?"

"An exciting part of work is that it hasn't been done much before, particularly in BC, where it's a pretty large problem up and down the coast," says biologist and project coordinator Peter Dyment. "Generally, these sites are marine dead zones that don't permit much life, so you can have some pretty positive results with restoration."

At many log sort sites including Juskatla, he explains, tons of infill were piled over eelgrass meadows to make it easier to transport logs from the beach to the barges. That, combined with seabed build-up of woody debris from logs, destroyed the eelgrass beds that play a vital ecosystem role for salmon and other species.

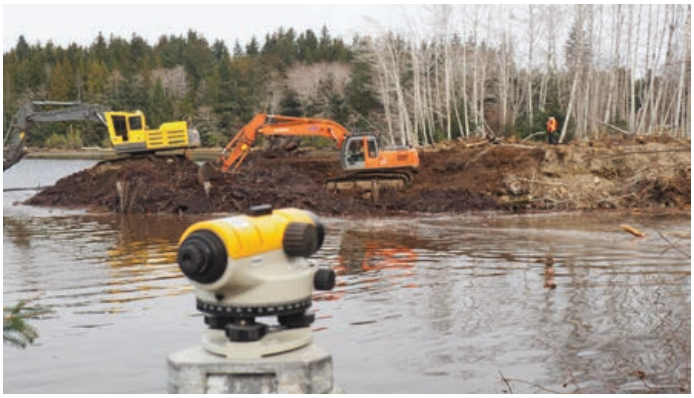


In order to restore T'aanuu eelgrass meadow habitat, tons of infill, which where dumped in the ocean during log sort operations need to be excavated. | Photo credit: Peter Dyment

Eelgrass is the rearing ground for all types of fish and tiny invertebrates, points out project lead and biologist Leandre Vigneault, "providing a source of cover and protection and converting nutrients and sunlight into food for species at the bottom of the food chain."

"What I find cool about this project is that those done in Washington State were really large scale with tens of millions of dollars spent," Vigneault explains. "We don't have that kind of budget so we're trying techniques that are in line with the amounts of money we have."

The project team will excavate old infill from the marine meadow and recreate the shallow, sloping foreshore where eelgrass can be replanted. In three to five years, Vigneault says, the eelgrass should fill in and as it returns "pretty instantly, mobile creatures will start using it."



Getting elevations and reprofiling the shoreline. | Photo credit: Peter Dyment

FOCUS ON RESEARCH - INDIGENOUS-LED SCIENCE IS A WIN-WIN FOR ALL

Half a decade ago, students and faculty had little engagement with the Heiltsuk Nation when conducting research in their territory. The approach for the most part was, "get in and out, publish your work, get your degree," says William Dúqvaʼísḷa Housty, Board Chair of the Heiltsuk Integrated Resource Management Department, HIRMD.

"That approach has changed. We've created a process for anyone who wants to do research in our territory that involves taking a collective approach and including Heiltsuk values," explains Housty. Researchers must apply to undertake projects in the territory which "gives us an opportunity to review whether the research is useful for the Nation and an opportunity to collaborate."

Instituting a collaborative Indigenous-led science approach has been a win-win for all, he says. "For researchers, their outcome is a degree and a publication, for the Nation, it's incorporation of knowledge so that the data is going to inform something for the community long-term."

The process also ensures Heiltsuk input at an early stage to shape the questions being raised. "We used to have researchers come to us at the very end after the paper was almost ready to be published, so it didn't matter what we had to say anyway because the research was already done," Housty points out. "When we started to take more control through the application process, we were able to refine the research questions."

A collaborative approach at the outset ensures the focus is on areas where "one, we need more science, and two, our oral history and Heiltsuk knowledge can really inform the project."

Combining traditional knowledge with science has been huge, he emphasizes. One example is the Heiltsuk crab research undertaken as part of a larger research initiative by Central Coast Nations. Heiltsuk elders were interviewed about the cultural significance of crabs as a food source and traditional use studies were consulted to understand the patterns of Dungeness crab movement.

"Even before putting a trap in the water or doing any work, the researchers and the Heiltsuk had a sense of where we needed to go, and what kind of results to expect in terms of crab numbers and populations," Housty explains.

"When the research started, it was bang on that crabs were moulting at this time and this was the pattern of their movement. It was from the elders' knowledge that we already had a clear picture painted of how things were going to look."

"The results of the research have supported Heiltsuk knowledge and the knowledge has supported the science. They go hand in hand."

When Heiltsuk began science research on grizzly bears in 2011, Housty says the fact the work was rooted in Heiltsuk knowledge helped them ask all the right questions.

"Our research was based on actual data that was ground-truthed. It was also driven by Heiltsuk values of respect for bears. We listed our traditional laws where they applied to grizzly bear management and found a way to dovetail the knowledge and science, so they went hand in hand, and neither was superior. Doing that, we were able to really effectively manage the grizzly bear population in our territory."

Protocol agreements with Simon Fraser University, the University of Victoria, and the Hakai Institute commit faculty and students to working collaboratively to incorporate Heiltsuk knowledge into the research.

The Nation is also calling the shots when it comes to identifying relevant research. Every few years, the stewardship office departments come up with a list of priority projects for their area, says Housty. ""We're reversing the process. Rather than having partners come to us, we go to them and say this what we're looking for."

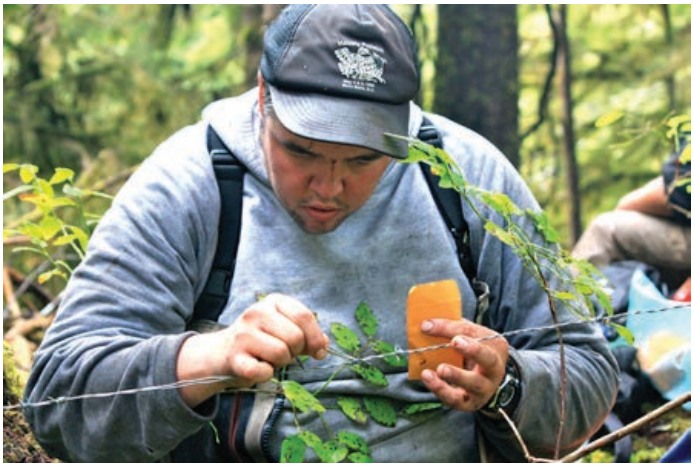


Photo credit: Morgan Hocking

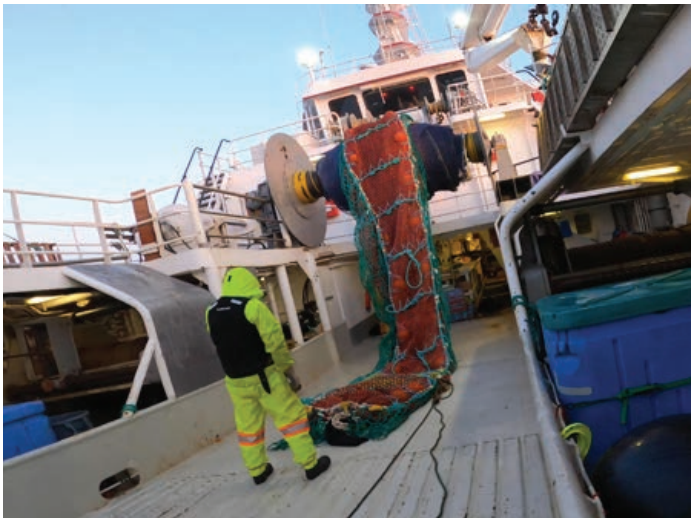
NEW CLUES TO THE DECLINE OF PACIFIC SALMON POPULATIONS ON BC COAST

Preliminary results of two international expeditions to study Pacific salmon in the open ocean may offer new clues as to why British Columbia salmon populations are declining.

Expedition organizer Dr. Richard Beamish says the results also suggest chum and pink salmon runs could be poor this fall on the BC coast, based on low numbers of fish his team caught at sea.

"We'll get our DNA of chum salmon in the next few weeks. If the DNA shows we got more or less same thing as last year, the speculation is that the chum salmon returns could be low this year," says Beamish.

"The next observation, scientifically, and it's almost hard to believe – We know that pink salmon are the most abundant of all salmon and we know that pink should be at least three times more abundant than chum wherever you fish. But pink salmon were very rare in our catches and only found in the southern part of the Gulf of Alaska."



The Pacific Legacy master fisher inspecting the next and preparing to conduct another surface trawl. | Photo credit: Tristan Blaine

"Again, and it is only preliminary speculation, that could indicate that pink returns could not be very good this year," Beamish cautions.

In March, the Central Coast Indigenous Resource Alliance (CCIRA) participated in the second of two expeditions with researchers from Canada, Russia and the United States. They are the first to investigate what factors regulate salmon abundance in the Gulf of Alaska - where most Pacific salmon returning to BC spend their first winter.

While more research is needed, expedition organizer Dr. Richard Beamish, says scientists are exploring the hypothesis that it's the timing and not the number of salmon returning to the ocean every year that regulates abundance.

"We're still analyzing the data from the first expedition and haven't started the second one. However, we have tentative conclusions and most of what we've discovered is new," Beamish says.

"Grow fast or die young." Preliminary results from sampling show salmon that grow very quickly in the first few weeks when they enter the ocean will survive better."

Preliminary results from sampling show salmon that grow very quickly in the first few weeks when they enter the ocean will survive better. "In other words, grow fast or die young," Beamish says.

The hypothesis suggests that the same genetic behaviour that brings salmon back to the coast at different times, also guides them to enter the ocean at a genetically-predetermined time for each stock – allowing them to match up more perfectly with the growth of the best plankton species in the ocean.

"Fifty years ago, that's what salmon would do. They would match up quickly with the plankton production and grow faster and survive better."

The ocean produces plankton density at slightly different times over the year depending on the climate and currents, Beamish explains. Chum salmon, for example, evolved over time to enter the ocean over a period of two and a half months which he says, allowed them to match up with the best plankton species, so "you would tend to get good returns."

He also speculates that the fish that grew faster and better would come from a variety of populations, and these

NEW CLUES TO THE DECLINE OF PACIFIC SALMON POPULATIONS ON BC COAST *(cont'd)*

populations would take turns doing better, depending on when they entered the ocean each year.

Overfishing those populations, Beamish says, messes with nature's timing for aligning salmon with plankton production. "When we came along and fished populations, we drastically altered the natural process mechanism for regulating salmon abundance."

There is no scientific evidence for the widely-held belief that salmon abundance depends on how many juvenile fish are released into the ocean every year. "We tried it, didn't work."

Beamish argues there is no scientific evidence for the widely-held belief that salmon abundance depends on how many juvenile fish are released into the ocean every year. "We tried it, didn't work."

"What you're hearing from me is another hypothesis: It's not the number that regulates abundance, it's how fast salmon grow. It may be wrong but it's the hypothesis we're working on."

Will research results help with ways to restore Pacific salmon?

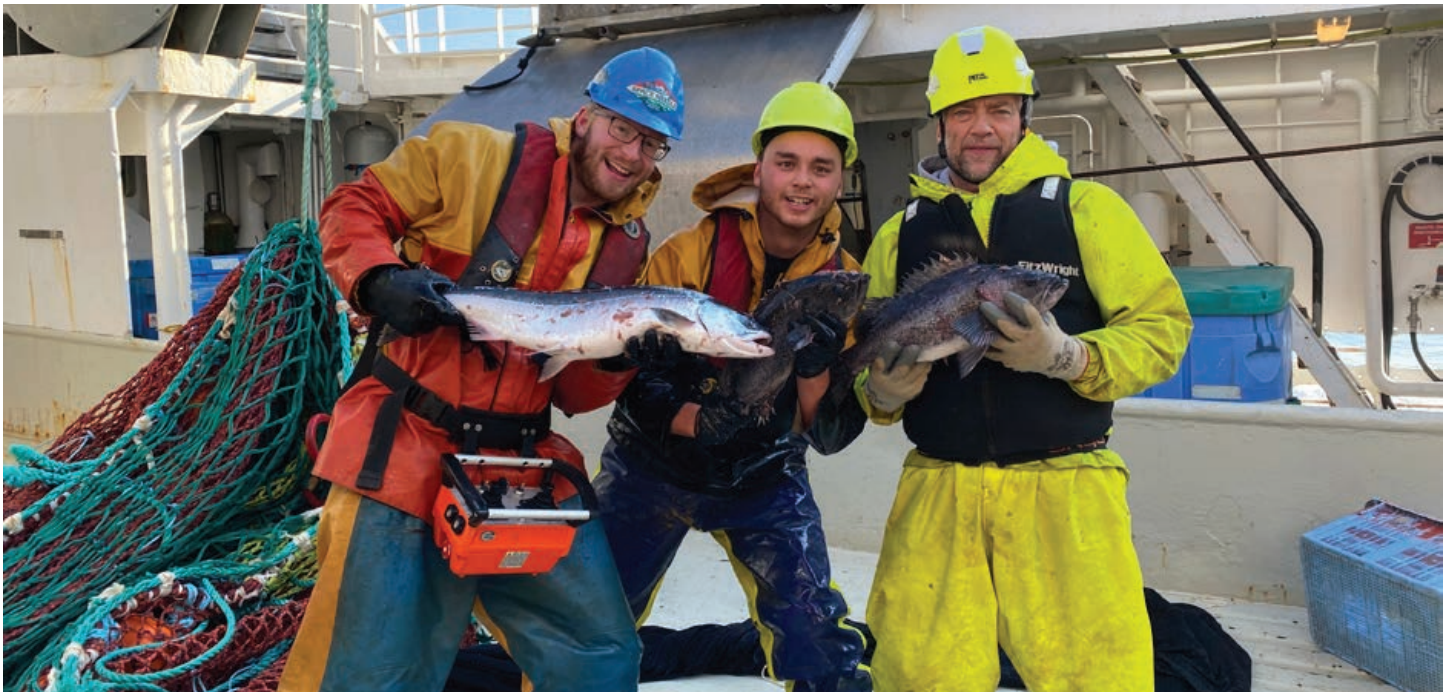
If a solution is to be found – other than fishing in a more sustainable way – Beamish says, "it will require a lot more creative way of thinking."

He says one approach could be to experimentally try to introduce hatchery fish over a broader time frame, an approach that could cost more and require more careful record-keeping. "You have to be more experimental."

While the concept that releasing more fish to the ocean brings more returns has been scientifically rejected, he says, adding more hatchery fish can work in some cases where the ocean has unused capacity. "But where you have tried it and where it hasn't worked, it's an indication that you have to add fish to the ocean differently."

The hypothesis, says Beamish, "may turn out to be wrong. But I'll bet you I'm not wrong. Fifty years from now, we'll know that for sure. And these expeditions were the beginning of that."

Read the preliminary findings here



Pacific Legacy crew showing off the fruits of their labour. While the purpose of this trip was surveying salmon offshore, they didn't expect to get these 2 black rockfish 500 miles offshore. | Photo credit: Tristan Blaine

SPIRIT BEAR STUDY REVEALS BIG GAPS IN PROTECTION

When Doug Neasloss was first sent out as a young bear guide in early 2000 to find a white bear, he thought someone was pulling his leg. While the Kitasoo/Xai'xais people have always known that Spirit bears existed, he says, nobody talked about them, in order to keep them safe.

"I went for that walk in the forest and a Spirit bear came out from the trees with a salmon in his mouth," Neasloss remembers. "He lay down several feet in front of me with the sun streaming through the forest. It was a pretty magical moment."

Results from a new study published in Ecological Solutions and Evidence in July 5 now raise questions about future protection of the culturally-significant Spirit bear.

Multi-year research, led by the Kitasoo/Xai'xais and Gitga'at Nations, shows the white-coated black bear is up to 50 per cent rarer in the Great Bear Rainforest than previously estimated. Also concerning to Neasloss, approximately half of all hotspots where the Spirit bear gene is most prominent are found to be outside of currently protected areas.

"We have the rarest bear on the planet in our backyard and we want to do what we can to make sure it's protected. And not just the bear but the habitat," points out Neasloss, Kitasoo/Xai'xais Stewardship Director. "These Spirit bears are important to the community culturally and in terms of our economy."

Photo credit: Rosie Child

Bear mapping and hair sampling was conducted between 2012 to 2017, led by the Kitasoo/Xai'xais and Gitga'at Nations with the University of Victoria, Spirit Bear Research Foundation and Raincoast Conservation Foundation. The findings are significant for the Kitasoo/Xai'xais whose economy depends largely on wildlife-viewing tourism through Spirit Bear Lodge.

"The well-being of our people is directly related to the well-being of these bears," Neasloss reports. "We employ about 40 people and almost all our families are involved in tourism - whether it's as hotel staff, tour guides, marketers, or boat operators."

The study is an offshoot of collective large-scale bear research by the Gitga'at, Heiltsuk, Kitasoo/Xai'xais, Nuxalk and Wuikinuxv Nations, covering more than 20,000 square kilometres. As a next step, the Gitga'at and Kitasoo/Xai'xais undertook the Spirit bear population study, to determine how well the bears were being protected and what the gaps were. The research identified not only white bears, but also black bears that carry the white bear gene.

The number one priority is to protect black bears and increase habitat protection, says Neasloss. "The Great Bear Rainforest Act is great, but I think it missed the mark in terms of protecting the most important areas for Spirit bears. I think we need to look at more protected areas."

First Nations-led science is an important step toward this. "It's not just western science we're providing, it's also traditional knowledge," he points out. "We use those areas all the time and our people have a good idea of the territory and what's going on."

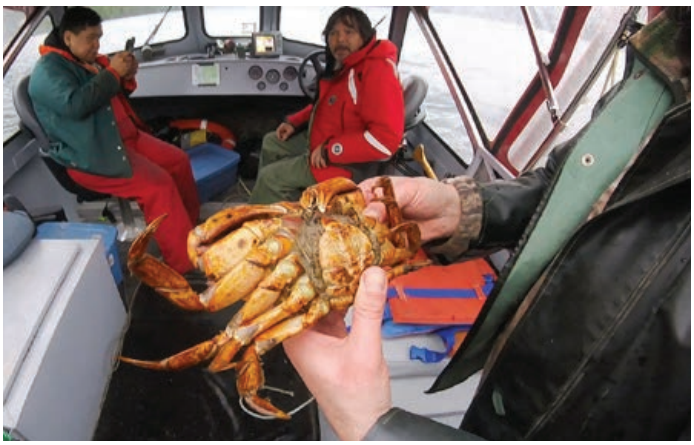
Christina Service, Kitasoo/Xai'xais Wildlife Biologist and Science Coordinator who led the research, says the project was undertaken in part, because previous estimates didn't resonate with people on the ground such as Neasloss, or bear guide Marven Robinson in Gitga'at territory. Learning that white bears are much rarer than estimated was a "gee whiz moment" for scientists, she says, but not for the communities of Klemtu and Hartley Bay.

What did come as a surprise were the findings that only half of all Spirit bear hotspots were safeguarded. "In Kitasoo/Xai'xais territory, a lot of the landscape has been protected so it's surprising that there's still so much work to do if the Nation desires a high level of protection."

Service says conservation planning based on preserving genetic diversity that leads to unique colours, such as the white bear gene, is a new way of doing things.

"We want a conservation plan for this rare and culturally important colour of animal basically, and that's a unique undertaking," she says. "Generally, a traditional conservation approach would say "the black bears in your area are doing fine." So if the population of black bears stays static, but the genetic change that causes the Spirit bear blinks out, that would get the same conservation win score."

CENTRAL COAST NATIONS AWAIT LANDMARK CRAB CLOSURES TO PROTECT



Wuikinuxv Guardian Watchmen conducting a Dungeness crab survey. Josh Vickers (former Wuikinuxv watchmen), Patrick Johnson and Tristan Blaine. | Photo credit: Tristan Blaine

Central Coast Nations are hoping landmark crab closures put forward in March will soon be in place to protect Food for Social and Ceremonial (FSC) fisheries in their territories. The four Nations are awaiting the final step in a process with Fisheries and Oceans Canada (DFO) that was expected to happen this summer but has been delayed.

The closures were proposed through the Central Coast collaborative crab management process – a co-governance process that began in 2017 with First Nations and Canada to protect crab populations and ensure sufficient access to FSC fishing.

"It's a huge step" says Madeleine McGreer, Fisheries Coordinator for the Central Coast Indigenous Resource Alliance (CCIRA) and Technical Working Group Coordinator for the process. "This will be the first area-specific recreational crab closure in British Columbia and it's for more than one area at a time."

The pilot is part of a larger Fisheries, Resources and Reconciliation Agreement (FRRA) process underway with Canada by Coastal First Nations (CFN) that will offer economic and governance opportunities to CFN communities. The collaborative First Nations/DFO steering committee is recommending a list of closures based on a joint review of information on local crab biology and First Nations' FSC needs.

"It was exciting how much further along in actual co-governance the Nations were as a result of the process. Nowhere else in BC has this been the case."

"It was exciting how much further along in actual co-governance the Nations were as a result of the process. Nowhere else in BC has this been the case. The Nations were at the table with DFO and finalizing the recommendations from the steering committee to leadership," says McGreer.

Concerned about declining crab populations in their territories, the Central Coast Nations have led exhaustive data collection for the past decade – forming the largest body of scientific data on Dungeness crab available for the region.

"Central Coast Nations became the experts in crab research and DFO came to them. Crab was chosen as a pilot for the FRRA co-governance largely because the Nations had the expertise, they had the data," says McGreer.

Indigenous-led research has been key to the process, she points out. "The Nations had a lot more scope to shape the research questions because they were the ones bringing the data to the table."

"Crab was chosen as a pilot for the FRRA co-governance largely because the Nations had the expertise, they had the data."

"Decisions are being made together. Data is being reviewed and interpreted by both parties simultaneously instead of having a cumbersome back and forth review. And First Nations are formulating the questions."

Since the 1990s, the Kitasoo/Xai'xais, Heiltsuk, Nuxalk, and Wuikinuxv Nations have watched crab numbers decrease on the Central Coast, culminating in a major decline in the early 2000s as commercial and sport fishing increased.

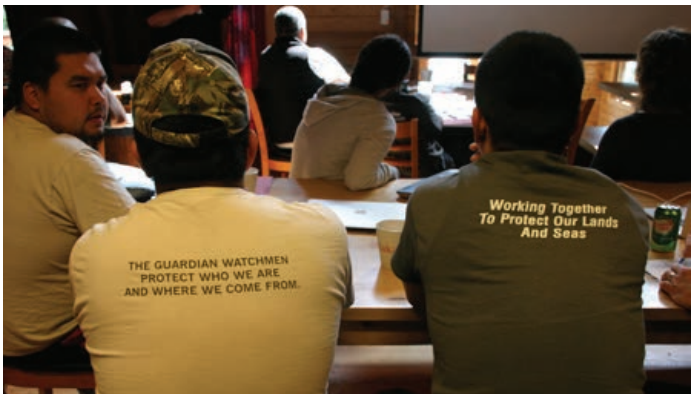
A 2014 CCIRA study showed that by reducing fishing pressures, crab numbers showed recovery in as little as ten months. This research supported the joint proposal by DFO and the Nations to establish recreational and commercial year-round crab fishing closures in important areas for FSC crab access.

COASTAL GUARDIAN WATCHMEN RELEASE STRATEGIC PLAN

Indigenous Nations of the Pacific North Coast, Central Coast, and Haida Gwaii have stewarded their lands and waters for thousands of years.

Today, these efforts continue on within the Stewardship Offices throughout coastal communities, and much of that important work is carried out by Coastal Guardian Watchmen—the frontline stewards for their Nations.

Each Guardian Watchmen program within CFN member Nations has a mandate and distinct set of goals, objectives and priorities, based on the uniqueness of their Nations' territories and governance structures. And these programs all share a regional stewardship perspective as well, and a recognition that working together can help build knowledge, capacity and success. This collective focus is a big part of what defines the Coastal Guardian Watchmen, and it's also why they are recognized across Canada and beyond for their success and effectiveness.



The *Coastal First Nations Guardian Program – Strategic Plan*, released in July 2020, articulates the shared goals and objectives of the Guardian programs within CFN member Nations, and outlines eight Strategic Priorities for enhancing their work into the future.

Created through in-depth conversations and workshops between CFN member Nations' stewardship leaders, and coordinated by the Coastal Stewardship Network, this publication is part of a long-term planning effort that aims to strengthen unity and provide a clear pathway for achieving stewardship goals. The priorities are designed to allow each Nation's Guardian program to develop its own unique strengths individually, while also developing collectively as part of a regional network.

"As Guardian Watchmen programs have become better known both within communities and to external agencies, the scope of their work has grown," says Mike Reid, Aquatics Manager with the Heiltsuk Nation, who has played a leading role in establishing the Coastal Guardian Watchmen that we know today. "With the Guardians' workload and expectations increasing," he adds, "we recognized the need for strategic actions with respect to collective support, capacity building and governance to provide focus for these programs going forward."

It's already clear how valuable these Guardian Watchmen programs are for communities along the coast. In 2016, a business case assessed the value of these stewardship programs and found that, on average, Guardian Watchmen programs see a return on investment between 10:1 and 20:1 when measuring results in terms of dollar values of community values, such as economic opportunities, cultural well-being, governance authority and taking care of territory.

"When we speak to funders, we can point to that business case and say that for every dollar you put into the program, you get this much value out of it," says Ross Wilson, Stewardship Director for the Metlakatla Nation.

Wilson says that many others across the country are seeking to replicate this regional stewardship model in their own areas. "This strategic plan is about building on that success," he says, "and working together to continually enhance our collective efforts."

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Contact: Stories From The Coast | Editor – Bessie Brown | bbrown@coastalfirstnations.ca

COASTAL FIRST NATIONS
GREAT BEAR INITIATIVE

Suite 1660
409 Granville Street
Vancouver BC V6C 1T2
www.coastalfirstnations.ca