

Collaborative Science 8:20min

PERCY STARR Hereditary Chief, Kitsoo/Xais'Xais Nation

We struggle now with aquatic resources, we really struggle....

ART STERRITT Executive Director, Coastal First Nations

30 years ago we had about 100% employment – very wealthy people - had all of the food they needed, all of the economy they needed, all of the jobs they needed. They had lots of boats. They fished all species. But over a period of about 30 years that all started to get mismanaged by government to the point where the salmon industry is down, the different cod fisheries are down. First Nations through legislation began to get marginalized and pushed out of different fisheries so that right now in our communities we'd be hard-pressed to have even one community that had less than 80 or 85% unemployment.

CHARLIE MASON Hereditary Chief, Kitsoo/Xais'Xais Nation

Sort of goes back to the things that we now stand up to fight for. Say like sea cucumber that was the last one, last year. And this year it's herring. These are resources. These are our resources. These are very important to us. They're very important to us," I said, "because once they clean it out there'll be nothing left for us." They're basically just taking your food away, with a care in the world.-They say oh yeah it will come back and it does come back but it is 10,15 years before it comes to a level it becomes satisfactory for us to even harvest it.

We've been hurt a lot by the decisions of the government.

DOUGLAS NEASLOSS Kitsoo Band Council & Kitsoo/Xai'Xais Integrated Resource Authority Stewardship Director

By developing these marine spatial zones, like we have on the land side that will help us protect multiple species and make sure that those species continue to be there, and not just for First Nations, but for everyone.

We wanted to make sure that there was a place for commercial fishermen, recreational fishermen, for food fishermen.

All of us have stewardship responsibilities. It doesn't matter whether you're First nations or non-First nation. So it's really important that we set a good balance.

Narrator

The marine plans initiate that balance by protecting marine ecosystems and supporting economic opportunities that can restore nature and communities. They are a starting point for a different kind of economic prosperity, one that can endure generation after generation.

DOUGLAS NEASLOSS Kitsoo Band Council & Kitsoo/Xai'Xais Integrated Resource Authority Stewardship Director

So it was important that we start doing our own science, and we start partnering up, whether that's with the province, whether that's with the different academic institutions to start gathering the proper data so we can make proper decisions.

Just this year alone we're doing salmon work, we're doing rockfish, we're doing Dungeness crab, we're doing bears, we're doing birds. And we're investing hundreds of thousands of dollars in some of this work, and it's not cheap but it's gonna help us make sustainable decisions, and I think that's really what's important to the community.

Narrator

With the understanding that we depend on a healthy ocean to sustain us now and into the future, the Heiltsuk nation is working with researchers from Simon Fraser University to determine if a commercial harvest of kelp can be done sustainably.

KIRA KRUMHANSL Postdoctoral Researcher & Hakai Scholar, Simon Fraser University

So the kelps are an important form of structure in the ocean, so they provide habitat for a lot of different species, like commercially important fish species, other invertebrates, like sea urchins, abalone, cucumbers, those kinds of things. And so essentially if you remove that habitat structure of the kelp, there's concern that there's impact on these other species that inhabit the kelp, and feed on the kelp.

So we're looking to determine how much can be, of the kelp, can be taken from these ecosystems without impacting negatively the other fishery species in the ecosystem and also the carbon storage and flux value of these ecosystems.

Dr. ANNE SALOMON Marine Ecologist, Simon Fraser University

MaPP Marine Advisory Committee

First Nations had been investing a lot of time, intellectual capacity, knowledge, both traditional knowledge and scientific data, to make marine use plans that the communities were comfortable with and were really community driven.

There was a collection of scientific data that included bathymetry data, current data and also biological data like the occurrence or presence of sea ducks, herring, kelp forest, all kind of mapped spatially – and that was made available to anyone who wanted it to identify areas that were ecologically important, important to commercial fisheries, important to the tourism and recreation sector, and areas that were culturally important.

DOUGLAS NEASLOSS Kitasoo Band Council & Kitasoo/Xai'Xais Integrated Resource Authority Stewardship Director

We're looking at science in a new way. We were able to take traditional ecological knowledge and local knowledge and merge that with the best available western science and I think as stewards I think we have to look at the best way of gathering all information before decisions are made so.

CHRISTINA SERVICE PhD Student, University of Victoria & Spirit Bear Research Foundation

We're working on a bear monitoring project in the Kitasoo First nation territory, in partnership with Raincoast Conservation and Spirit Bear Research Foundation. We're basically looking to monitor these animals non-invasively, so we use non-invasive methods, such as barbed-wire, hair corrals and remote cameras to get hair samples from these individuals and be able to see which unique bears are around, how they're moving across the territory and also how much salmon these bears have been eating this past year.

ROSIE CHILD Field Technician, University of Victoria & Spirit Bear Research Foundation

So to find out how much salmon they're eating, we grab their hair from these barbed-wire corrals. And they're especially valuable in the spring because they've just woken up and they're shedding their hair from the previous fall, where they eat a lot of salmon. And then we use something called stable isotope analysis, which enables us to see what proportion of their diet is salmon or marine mammals or plant-based.

CHRISTINA SERVICE *PhD Student, University of Victoria & Spirit Bear Research Foundation*

So in Kitasoo territory we've been monitoring bears this way since 2012, but this project's a piece of a larger monitoring project at the landscape scale, which includes partners from Bella Bella, the Heiltsuk Nation, the Nuxalk Nation out of Bella Coola, and also the Wuikinuxv Nation out of Rivers Inlet.

Narrator

This collaborative science paired with traditional and local knowledge is central to the marine plans and will inform decisions on sustainable economic development and stewardship of British Columbia's coastal marine environment.

Bear Research 5:00 min

DOUGLAS NEASLOSS Kitasoo Band Council & Kitasoo/Xai'Xais Integrated Resource

Authority Stewardship Director

The Province came up with these Grizzly Bear Habitat maps, and I looked at their maps, and none of these maps had areas where there was Grizzly Bear habitat on the islands. So, we said, "Well, um, we know there's bears on those islands. I've been watching those bears for, ah, the last 5-6 years." So I phoned the Province and I told them there's Grizzly Bears there, and they said I'm not a scientist, I'm a biologist, and that I had no credibility in the scientific community.

That one walks this way, so that's a totally different bear. It's just the cub.

That's the mother right there, sniffing the camera. So, I knew that I had to develop a relationship with economic institutions, and try and find the resources to get out there and fund some projects, so that we can get out there and ground truth it.

My name's Christina Service. I'm a graduate student at the University of Victoria, the Rain Coast Hakai Lab.

I am Margaret, and I'm a field technician with the Spirit Bear Research Foundation as well as a research assistant with the Hakai Rain Coast Lab at the University of Victoria.

Christina Service, Graduate student at the University of Victoria

So when we first come out here in the spring, early May. We set up these barbed wire corrals, so we basically build a barbed wire fence, and then build a pile with sticks and moss and lots of woody debris. Meant to mimic a kill, then we use a non-reward bait, and create a really nasty, nasty smell on that pile to attract those bears in. And it's non-reward in the sense there's no calories involved, so the bears aren't getting habituated, but it does draw them in.

WILLIAM HOUSTY Chair, Heiltsuk Integrated Resource Management Department

Either they go underneath the wire, or they go over top of the wire and leave hair from their legs or their belly, and we can go and collect that hair, and in that hair possesses the genetic code that's unique to every individual bear.

Christina Service, Graduate student at the University of Victoria

We can run different hormone techniques to see what sort of nutritional stress these bears are under. For males, how much testosterone they had in last year of hair growth. And for females, whether or not they're pregnant, sort of the same hormones that are in us in humans as mammals. We can also look to see how much salmon they ate the previous year. And what proportion of their diet that was, and also, just, we know that this is an individual bear now, and if we detect an individual here in Watson Bay, we can also see if it's moving around the territory and how it's moving across seasons and across years.

Jennifer Walkus, Wuikinuxv Nation

What we wanted to do, is we wanted to make sure that we're collecting our data in the same way, because if we're collecting our data in the same way, then we can look for patterns between territories. So that everybody has access to a lot more information than we would if we only did our own project.

Megan Moody, Stewardship Director, Nuxalk Nation

Science is basically adding to those arguments that we already have as aboriginal people.

WILLIAM HOUSTY Chair, Heiltsuk Integrated Resource Management Department

We've all had an understanding of bears and had a feel for what it's like to live with them. But to have that whole science side of it, the whole genetics piece to it really adds a lot of weight to it, and gives us a lot of, what some people might call "sound science."

Jennifer Walkus, Wuikinuxv Nation

They base their "how many bears they're allowed to kill in a year" on what they believe are the current population dynamics. But if they've changed sufficiently to change the bear's behavior, then there's something out of balance out there. And considering how dependent they are on the fish and the fish stocks are falling all over the place, then I can't see how those population estimates can be correct.

Megan Moody, Stewardship Director, Nuxalk Nation The scary part for me about the hunting and killing of bears is that we really don't know how many are there. I mean, generally, we know deforestation, climate change, declining salmon runs are all impacting the bear. I would rather protect them and have them here for thousands of years to come, rather than pretend we know, what, what is going on and allow the needless killing of them.