

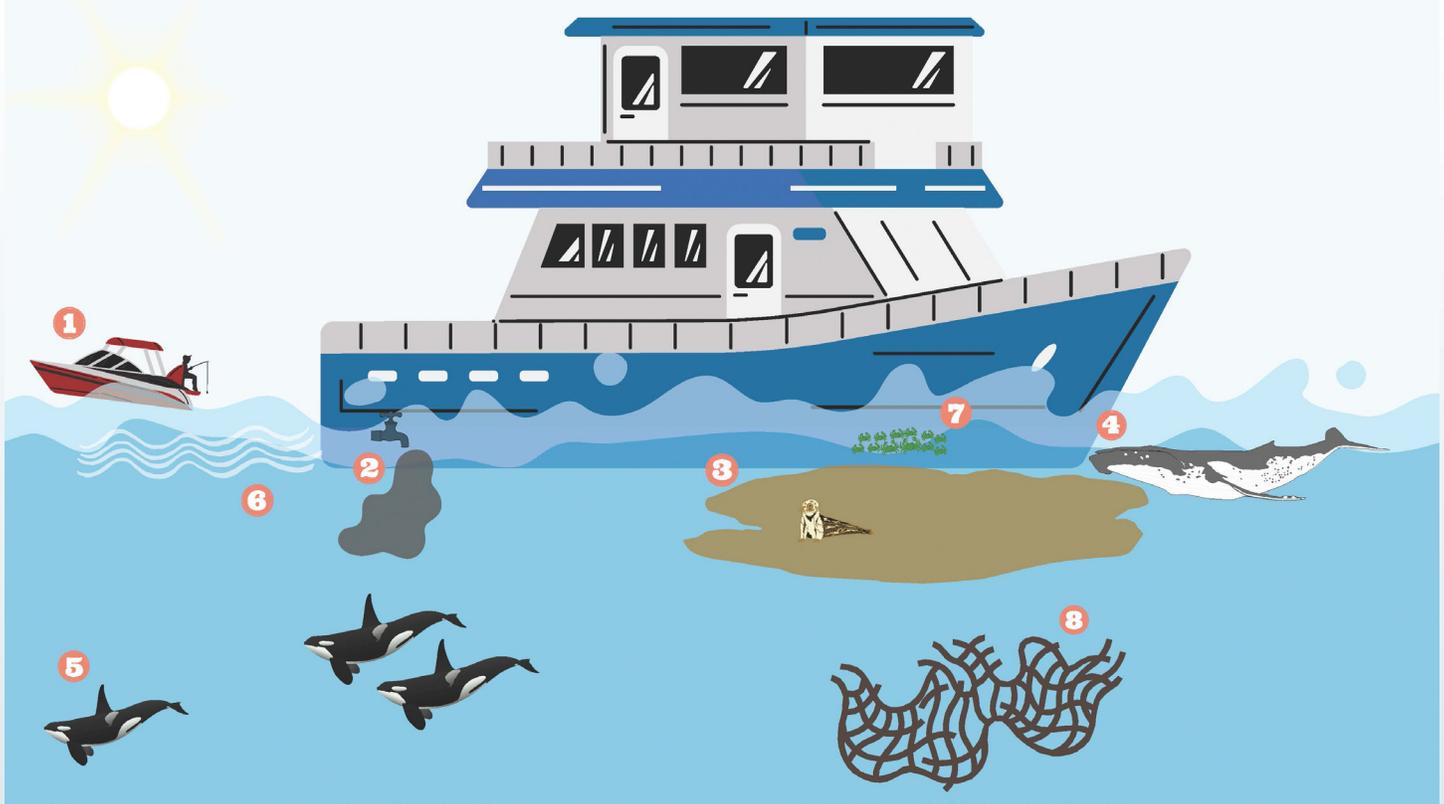


Nicole Holman and the 2023 Northeast Pacific Deep-Sea Expedition Partners

Gyaahláang Tangée • Kii.ngaay Taang.aay *Saltwater News*

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Numbered graphic demonstrating cumulative effects of marine shipping created by Shanti Thurber.

Protecting Chaan · Tang.gwan

Pacific Ocean: Managing the Impacts of Marine Shipping in Haida Waters

By Rhea Botel, Shanti Thurber, and Olivia Choi

What are we facing?

Chaan · Tang.gwan *Pacific Ocean* has sustained the Haida Nation for time immemorial, and so it is the responsibility of the Haida Nation to protect it. Increased vessel traffic comes with risks of impacting the way we live, move, and experience these waters. These impacts are often referred to as the “cumulative effects of marine shipping”, and include pollution of food sources, stress on marine mammals, and barriers to accessing valued places.

Listed below are some impacts of shipping on the marine environment and the living beings that depend on them:

1. **Local Access:** Increased vessel traffic impacts local access to important harvesting and cultural sites.
2. **Oil Spill:** Vessels are at risk of oil spills, which can have serious impacts on ocean inhabitants and important cultural food sources.
3. **Vessel Discharge:** Vessels may discharge certain wastes directly into the ocean, which can impact food sources and the health of ecosystems.
4. **Vessel Strike:** Vessel strike is one of the top known causes of death to whales.
5. **Underwater Noise:** Marine mammals use echolocation for navigation, hunting and foraging. Underwater noise from vessel engines impacts marine mammal behaviours, and can lead to group separation and difficulty accessing food.

6. **Vessel Wake:** Wake generated by vessels can result in shoreline erosion and disrupt experience on the water, as well as pose risks to safety, particularly for small recreational vessels.
7. **Aquatic Invasive Species:** Vessels sometimes carry “hitchhiker” invasive species that can be introduced into ecosystems.
8. **Marine Debris:** Debris originating from vessels is a key contributor to marine pollution.

What are we doing about it?

Local Access

With the increasing number of sport fishing vessels associated with fishing lodges, Haida citizens have expressed concern around local access to important harvesting areas and cultural sites. This concern grows when paired with the increasing number of large commercial vessels transiting through Haida waters as a result of industrial development. These vessels sometimes anchor in [Gadsguud](#) McIntyre Bay – known as the breadbasket for northern Haida communities – to avoid bad weather or to await berth. Under the Cumulative Effects of Marine Shipping initiative, CHN is partnering with Transport Canada to assess environmental, social and cultural impacts of shipping on Haida marine use and values, and to develop policy solutions to protect the resources of [Xaadaa Gwaay](#) • [Xaayda Gwaay.yaay](#) and Haida way of life.

Oil Spills

Vessels pose a threat to the health of the waters through potential oil spills, which can be harmful to marine life, as well as humans through exposure to toxins and consumption of contaminated food sources. While CHN’s top priority is accident prevention, we recognize the need to build local capacity to respond in the event of an emergency. In 2018 and 2019, CHN held workshops with Haida knowledge holders to identify Areas of Concern that are particularly vulnerable and sensitive to oil spills. This work is supporting the

development of site-specific oil spill response plans, known as Geographic Response Strategies. Since 2020, over 120 Areas of Concern on [Xaadaa Gwaay](#) • [Xaayda Gwaay.yaay](#) have been surveyed to develop response tactics. Training and exercising are a high priority for CHN to ensure local responders are equipped with the necessary safety training when dealing with hazardous substances, and to learn and practice techniques for spill containment including boom deployment, and shoreline clean-up and assessment.

Vessel Discharge

While oil spills are accidental, waste discharge from vessels poses a continuous threat to local ecosystems. Under Canadian Maritime law, vessels can discharge certain types of wastewater, typically when they are beyond 12 nautical miles from shore. These may include bilge water, grey water, black water (sewage), and wastewater from exhaust gas cleaning systems (“scrubbers”). These different types of wastewaters can be harmful to sensitive marine ecosystems, as they often contain toxic substances such as oil, chemicals, and excess nutrients. Cruise ships travelling through Canadian waters from one US port to another are often responsible for these discharges, as Canadian environmental laws are less stringent than laws in the US states of Alaska and Washington. The threats posed by wastewater are amplified when there are multiple ships discharging in local waters on a regular basis.

Vessel Strike and Underwater Noise

An increase in shipping traffic poses risk of increased vessel strikes on marine mammals, as well as an increase in [underwater noise](#) from ships, which can negatively impact marine mammals by making it harder for them to communicate for the purposes of hunting, travelling, and socializing. Improvements to ship design and maintenance, advancements in new technologies, such as quieter propellers, as well as policy solutions, including vessel speed reductions are some efforts in place to decrease underwater noise. CHN and Transport Canada are partnering on the

Cumulative Effects of Marine Shipping initiative to develop cetacean density and distribution maps for five species of interest (Kún · Kun Xyapxyandal *fin whales*, Skál · Skul *harbour porpoises*, Sgagúud · SGap *humpback whales*, Kún · Kun *grey whales* and SGáan · Sgaana *killer whales*) to identify co-occurrence with marine shipping. This work, along with underwater noise modelling and vessel forecasting to develop future traffic scenarios, will help to inform assessments and management measures to mitigate marine shipping impacts on marine mammals.

Aquatic Invasive Species

Aquatic invasive species are not a new threat to Xaadaa Gwaay · Xaayda Gwaay.yaay. One of Xaadaa Gwaay · Xaayda Gwaay.yaay's most pervasive invasive species is the Tllga jii.nga sda kuust'an k'inhlgahl · Ts'a'am Sgénuwaas European green crab, first detected in Xaadaa Gwaay · Xaayda Gwaay.yaay in 2020 through monitoring that began in 2017. When these invasive species are introduced to an ecosystem, they compete with other shellfish, disturb sediment, and destroy T'anúu · T'aanuu *Eelgrass*, which provide habitat for K'ust'áan · K'uust'an *Dungeness Crab* and Tsíi.n · Chiina *salmon*. While it is unknown exactly how they arrived on Xaadaa Gwaay · Xaayda Gwaay.yaay, CHN Marine Planning is monitoring their population and researching vectors of introduction. Biofouling and the release of ballast water are known pathways of introduction for aquatic invasive species. Biofouling refers to the unwanted accumulation of organisms, typically on vessel hulls or fishing gear. Ships take in large amounts of sea water as ballast and eventually discharge it in another area, thus potentially introducing new organisms into the environment.

As the presence of European green crabs has continued to grow on Xaadaa Gwaay · Xaayda Gwaay.yaay, CHN's Marine Planning Program is working closely with community members and local boat operators to control

their population and mitigate their effects. From reporting sightings to trapping, community members and CHN's Marine Planning Program are also working to increase public awareness and proper identification of European green crabs. CHN has also focused on ensuring community members and visitors know how best to avoid accidental introduction of aquatic invasive species.

Marine Debris

20% – 30% of plastic in the ocean originates from marine sources such as fishing nets, lines, ropes, and abandoned vessels. Discharge from vessels can also include both the legal and accidental disposal of marine debris. These materials can lead to the entrapment or entanglement of organisms, smothering, and introduction of plastics into the food chain.

Starting in 2020, CHN Marine Planning supported the development of a large-scale marine debris removal program, in partnership with local organizations, government agencies and marine-based tourism and transportation operators. The origins of the program aimed to provide economic relief to marine-based operators and workers in the wake of COVID-19 impacts to Xaadaa Gwaay · Xaayda Gwaay.yaay's tourism industry, while supporting a Haida Gwaii Marine Plan commitment to develop a “coordinated response to the cleanup and disposal of marine debris”. Since 2021, \$3.5 million has been invested into cleaning 200+km of shoreline across Xaadaa Gwaay · Xaayda Gwaay.yaay, through BC's Clean Coast, Clean Waters Fund (CCCW). So far, 120,000 kg of debris has been removed, providing work to over 100 local people. Of the debris collected, 65% can be attributed to commercial marine industries.

Learn more

Visit the CHN marine planning website for more information on cumulative effects of marine shipping and related initiatives on Xaadaa Gwaay · Xaayda Gwaay.yaay.

Sharing Knowledge and Building Partnerships: CHN Makes a Splash at 5th International Marine Protected Areas Congress

By Rhea Botel

From February 3rd to February 9th, 2023, leaders from the Council of the Haida Nation and technical staff in the Marine Planning Program travelled to T'agwan Vancouver, BC, ancestral home of the x̱w̱m̱əθḵw̱əy̱əm Musqueam, Sḵw̱x̱w̱ú7mesh Squamish, and səlilwətəl Tsleil-Waututh Nations, to attend the Fifth International Marine Protected Areas Congress, or IMPAC5. IMPAC5 is an event where people from around the world who work in the fields of marine conservation and governance can come together, share stories, and learn from each other's successes and challenges in their efforts to preserve and revitalize delicate marine ecosystems.

A key focus of IMPAC5 was highlighting the work of Indigenous peoples in their global efforts to conserve marine ecosystems. On the first day of the Congress, CHN delegates attended the Indigenous Caucus, an event that was only open to Indigenous attendees, or those who were representing an Indigenous government.

At the Caucus, representatives from all over the world got the chance to meet, share stories of where they are from, their work, the challenges they face, and discuss what it means to embrace Indigenous leadership in marine conservation. In addition to providing an opportunity to share stories and network, the Caucus was also a brainstorming session to provide recommendations for consideration at the Leadership Forum, which took place on February 9th. CHN President Gaagwiis Jason Alsop and CHN Marine Planner K'aayhldaa Xyaalaas Rayne Boyko attended the Leadership Forum, representing the Haida Nation. K'aayhldaa Xyaalaas was also a member of the IMPAC5 Young Professionals Committee for two years prior to



K'aayhldaa Xyaalaas Rayne Boyko, CHN Marine Planner, stands on stage at the closing ceremony of IMPAC5 alongside her peers on the Young Professionals Committee.

IMPAC5, ensuring that all aspects of IMPAC5 were seen through a youth lens, and building the legacy of engaging young people in marine conservation.

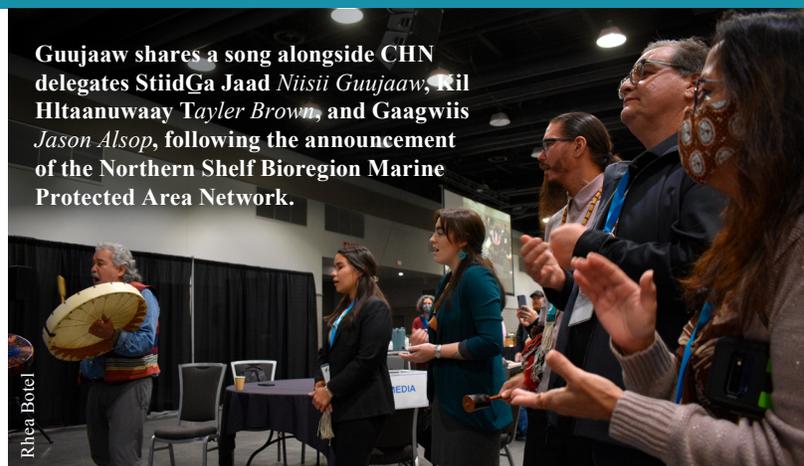
While learning about global marine conservation efforts, many CHN staff were also there to educate an international audience on the strides the Haida Nation has taken to preserve our marine ecosystems. There were a total of nine talks led by CHN staff, which covered a diverse range of topics, including co-managing Marine Protected Areas, the development and implementation of the Marine Plan Partnership, or MaPP, Indigenous perspectives on marine planning, and managing the effects of shipping in Marine Protected Areas.

Speaking on the topic of co-management, Julien Braun (CHN's Haida Gwaii Marine Plan Project Manager) sat on a panel with representatives involved in the Marine Plan Partnership to discuss the collaborative process between the



Hannah Bregulla, CHN EBM Coordinator, presented on the curriculum that is in development to educate Haida Gwaii youth on the unique SGaan Kinghlas-Bowie Seamount Marine Protected Area.

Rhea Botel



Guujaaw shares a song alongside CHN delegates StiidGa Jaad Niisii Guujaaw, Kil Hltaanuwaay Tayler Brown, and Gaagwiis Jason Alsop, following the announcement of the Northern Shelf Bioregion Marine Protected Area Network.

Rhea Botel

Province of BC and 17 First Nations, including the Haida Nation, to develop marine plans for each sub-region. On the topic of co-managing Marine Protected Areas, **Skil Jáada Vanessa Zahner** (CHN Marine Biologist and Marine Planner), **Kil Hltaanuwaay Tayler Brown** (CHN Marine Spatial Planner), and Hannah Bregulla (CHN Ecosystem-Based Management Monitoring Coordinator) participated in sessions related to the **SGaan Kinghlas-Bowie Seamount Marine Protected Area**, which is an ecologically diverse and culturally significant co-managed Marine Protected Area, located off the west coast of **Xaayda Gwaay.yaay · Xaadaa Gwaay Haida Gwaii.**

Skil Jáada Vanessa Zahner shared her experience on the 2022 Pacific Seamount/Deep Sea Expedition. She spoke about the collection of scientific data within the **SGaan Kinghlas-Bowie Seamount Marine Protected Area**, and the partnerships with neighbouring Nations, governance partners, and research organizations to coordinate these expeditions yearly. A highlight of her presentation was when she described her experience leading the Remote Operated Vehicle (ROV) dive on **SGaan Kinghlas**, being the first Haida scientist to do so. **Kil Hltaanuwaay Tayler Brown** co-presented with Department of Fisheries and Oceans (DFO) on how the governance partners are working together to co-manage the **SGaan Kinghlas-Bowie Seamount Marine Protected Area**. Hannah Bregulla spoke to the **SGaan Kinghlas-Bowie Seamount** curriculum that is currently being developed, which will soon be implemented in classrooms around **Xaayda Gwaay.yaay · Xaadaa Gwaay.**

Nang Jingwas Russ Jones (CHN Senior Contractor) and **Gwiishlgaa Dan McNeill** (CHN Marine Stewardship Director) gave a shared presentation with their colleagues on the Archipelago Management Board (AMB), describing how

Indigenous perspectives have guided marine stewardship for thousands of years, and continue to do so today, by sharing examples from the co-management of Gwaii Haanas. **StiidGa Jaad Niisii Guujaaw** (CHN Marine Planning Program Manager) educated the audience on the ways Indigenous values were integrated into the planning of the recently announced **Marine Protected Area Network for the Northern Shelf Bioregion**. In her talk, **StiidGa Jaad** highlighted how the integration of Indigenous knowledge into the development of the MPA Network not only led to consideration of ecological concerns, but also the importance of conserving and protecting First Nations' traditional and community use, and culturally significant areas.

Olivia Choi (CHN Marine Shipping and Safety Project Manager) co-presented with a representative of the **Kitaso Xai'Xais Nation**. Together, they shared how Indigenous-led stewardship plays an integral role in managing the impacts of marine shipping in Marine Protected Areas. Olivia talked about building capacity within the Nation to respond to marine emergencies, monitoring marine shipping in Haida territory, and how vessels are moving further offshore to increase the likelihood of effective response to a disabled or drifting vessel, with the implementation of the Voluntary Protection Zone off the west coast of **Xaayda Gwaay.yaay · Xaadaa Gwaay.**

After coming together and sharing culture and stories with an incredibly diverse international audience, CHN delegates left the Congress with experiences that inspired continued commitment to work collectively for the protection of the oceans, and a sense of hopefulness for marine conservation. IMPAC5 provided a powerful opportunity to recognize the work that has been done, amplify International Indigenous voices leading the way in marine conservation, and inspire the work that lies ahead.



Map Credit: Kii Hlaanuwaay Taylor Brown

This image, modelled after data taken from the Enhanced Maritime Situational Awareness System (EMSA), depicts the *Darya Shanti*'s path from when it first began drifting on July 7th, 2022. Once reached by an emergency towing vessel (ETV) on July 11th, the *Darya Shanti* was towed to McIntyre Bay, where it anchored for five days until conditions permitted for it to be towed to Kxeen *Prince Rupert* for repairs on July 17th, 2022.

Improving Marine Safety and Environmental Protection

of Xaayda Gwaay.yaay · Xaadaa Gwaay *Haida Gwaii*

By Rhea Botel

Imagine it is a dark night on the waters surrounding Xaayda Gwaay.yaay · Xaadaa Gwaay Haida Gwaii. You and your crew are onboard a bulk carrier chartered to travel from Kxeen *Prince Rupert* to South Korea, carrying nearly 80,000 tons of petroleum coke, a byproduct produced in the refinement of crude oil. You are roughly 40 nautical miles offshore when the ship suddenly loses partial power. Eventually, you lose all use of the engine and are now adrift, at the mercy of the currents, and at a high risk of running aground.

This scenario is not a far-fetched hypothetical. It is exactly what happened on July 7th, 2022, when the *Darya Shanti* lost propulsion 40 nautical miles northwest of K'iis Gwaay *Langara Island*. Due to its proximity to international shipping routes, Xaayda Gwaay.yaay · Xaadaa Gwaay is particularly vulnerable to the potential impacts of adrift vessels. Thankfully, there are plans in place to protect our island and surrounding areas from the environmental devastation that would occur if a large ship were to run aground.

The Places of Refuge Contingency Plan is one key component in [Xaayda Gwaayyaay](#) · [Xaadaa Gwaay](#)'s preparedness plan. A Place of Refuge is a pre-surveyed and pre-identified area where ships may request to temporarily take shelter in the event of a non-life-threatening emergency, such as an engine failure. The goal of these potential Places of Refuge is to provide ships with an area of mitigated grounding risk where they can take shelter until help, such as an emergency towing vessel, can respond.

For a ship to be granted a Place of Refuge in [Xaayda Gwaayyaay](#) · [Xaadaa Gwaay](#), the vessel must first make a distress call, describing the emergency that necessitates a Place of Refuge. This initiates a multi-step process in which the Council of the Haida Nation, Transport Canada, and the Canadian Coast Guard work collaboratively to assess the risk and determine the most suitable Place of Refuge. Monitoring plays an important role in the implementation of the Contingency Plan. CHN has designated analysts who monitor vessel traffic using the Enhanced Maritime Situational Awareness System (EMSA) and may notice an adrift vessel before even receiving a distress call. This type of early notification can aid in the efficient execution of the multi-step process that must occur for a vessel to be granted a Place of Refuge.

Potential Places of Refuge surrounding [Xaayda Gwaayyaay](#) · [Xaadaa Gwaay](#) were pre-surveyed by the CHN and Transport Canada in 2016, with the following factors taken into consideration: available logistics support, environmental and cultural sensitivities, commercial uses of land and water, and navigational challenges. Once identified, additional measures were put into place to ensure the protection of potential Places of Refuge. These include baseline monitoring, which will allow any potential impacts to be measured and addressed, as well as Geographic Response Strategies (GRS) that have been developed for each specific Place of Refuge. In 2018, CHN and Transport Canada announced revisions to the [Places of Refuge Contingency Plan for the Pacific Region and a new Haida Gwaii Annex](#), drawing on [lessons learned from the Simushir incident](#).

At the end of the day, CHN's primary goal is the prevention of shipping incidents. In September of 2020, CHN implemented the [Voluntary Protection Zone \(VPZ\)](#), which is a preventative measure that ensures vessels stay further offshore, allowing more time for emergency towing vessels to reach them in the case of an emergency. The Places of Refuge Contingency Plan is an additional step in keeping [Xaayda Gwaayyaay](#) · [Xaadaa Gwaay](#) and its surrounding waters safe from the unwanted impacts of marine shipping.



Hannah Bregulla

LuGuud Shaun Edgars, GRS Coordinator, is developing Geographic Response Strategies (GRS) for Haida Gwaii. GRS are tactical plans that can be implemented to prevent oil from reaching shorelines in the event of a marine incident.



The Voluntary Protection Zone is a preventative measure that ensures large vessels stay further offshore. The increased distance offshore gives an emergency towing vessel more time to get to a drifting or disabled ship.



Lindsay Curle and Gin Kampen (CHN Marine Planning) conduct an eelgrass survey near Tarundl to monitor the health of the eelgrass bed and potential effects of European green crab on these important ecosystems.

Rhea Botel

Ts'a'am Sgénuwaas • Tllga jii.nga sda kuust'an k'inhlqahl *European Green Crab:*

Responding to Haida Gwaii's Most Unwanted Visitor

By Rhea Botel

During the COVID-19 lockdown of 2020 when [Xaayda Gwaay.yaay](#) • [Xaadaa Gwaay Haida Gwaii](#) was closed to visitors, a very unwanted one was found residing on one of our local beaches. July 2023 will mark the three-year anniversary of the first [Ts'a'am Sgénuwaas](#) • [Tllga jii.nga](#)

[sda kuust'an k'inhlqahl](#) *European green crab* being found here. In the three years since their arrival, the Council of the Haida Nation (CHN), with support from provincial and federal partners, has launched a multi-pronged approach to dealing with this impervious crustacean. You might wonder



Local youth measuring an invasive European green crab found during the first K'aasda Copper Bay European Green Crab Derby, which ran for three consecutive weekends, beginning May 19th and ending June 4th.

SiidGa Jaad Nisiti Gaujaaw

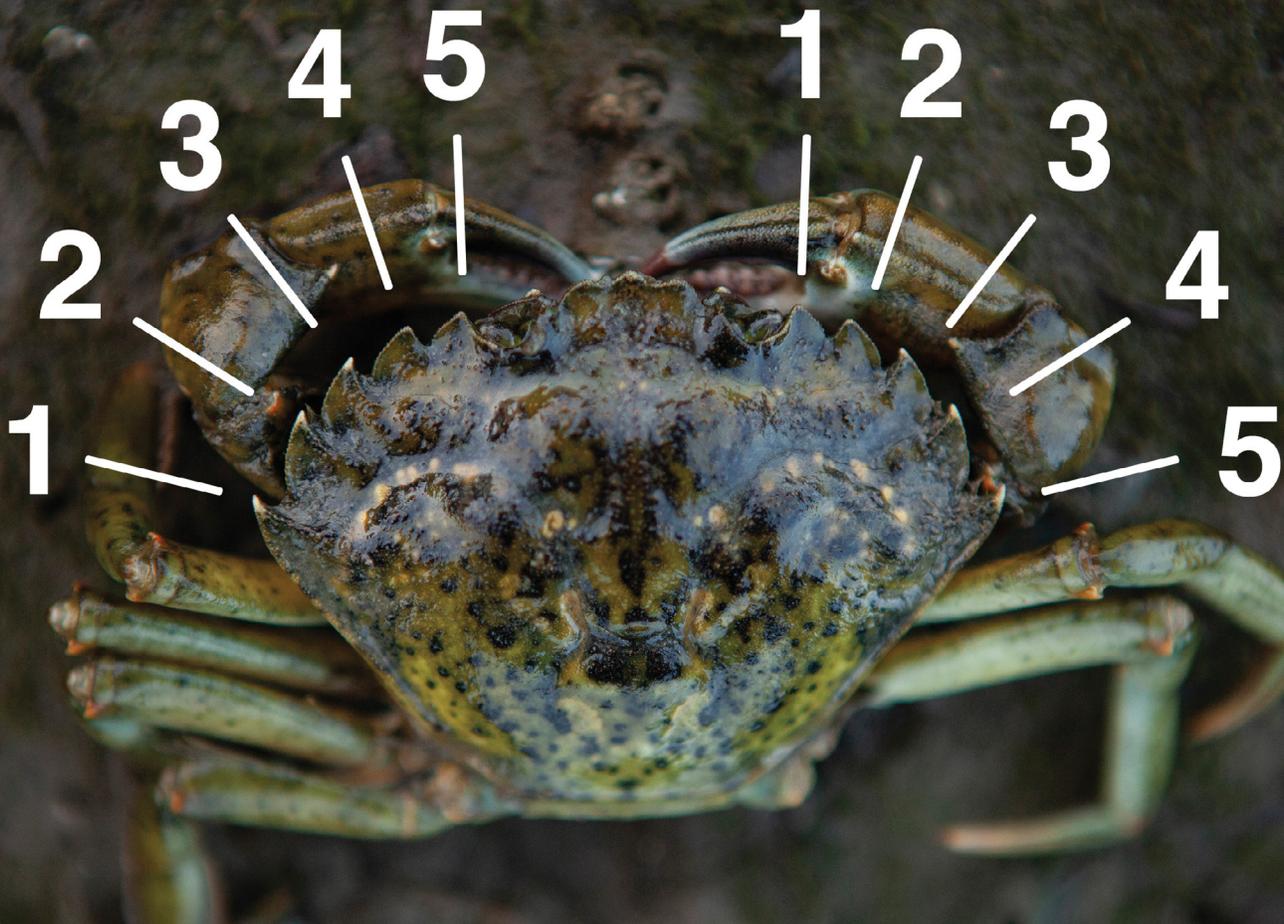
why such a relatively small creature would warrant such a significant response – but despite their size, there are serious environmental impacts that can result from their presence.

Ts'a'am Sgénuwaas · Tllga jii.nga sda kuust'an k'inhlgahl are predatory towards smaller crabs and animals, and are incredibly destructive to eelgrass beds. Eelgrass beds are important habitats as they create nurseries for sea creatures of all kinds, including k'uust'an · k'ust'aan Dungeness crab, tsiin salmon, iinang · 'ináng herring, t'aal · t'al t'uugwaang flounders, cuttlefish, seahorses, and pipefish. They also feed land inhabitants like hlk'it'ún geese. These invasive crabs burrow into the mud, disturbing the roots of the eelgrass, resulting in a desolate muddy ground where the eelgrass once grew. Because of this, a large part of CHN's response has been monitoring the health and abundance of eelgrass beds. In addition to eelgrass, CHN is also monitoring Xaayda Gwaayyaay · Xaadaa Gwaay's native inhabitants; shore crabs and clams. Ts'a'am Sgénuwaas · Tllga jii.nga sda kuust'an k'inhlgahl compete with shore crabs for habitat

and tend to push them into less desirable habitat. They also feed on clams, causing concern for clam populations.

The value of Gina 'waadluxan gud ad kwaagid *Interconnectedness* reminds us that everything depends on everything else. If populations of this invasive species were left unchecked in the environment, everything in the food web would be affected by their presence. Because of this, CHN has spearheaded a significant “depletion trapping” effort. This type of trapping aims to catch and remove as many invasive crabs as possible from the environment. Once trapped and removed from the environment, the crabs are killed and used in a local non-profit composting operation. The goal of depletion trapping is not to completely eradicate this invasive species from Xaayda Gwaayyaay · Xaadaa Gwaay, but to reduce their numbers and protect habitat and food sources for native species.

In the first two years of the three-year response, the number of crabs trapped increased from 116 in the 2021 field season to 31,236 in the 2022 field season. While the 2023 season is still



Gaëtan Lamarre

Remember! Green does not equal mean. When identifying [Ts'a'am Sgénuwaas · Tllga jii.nga sda kuust'an k'inhlgahl](#), look for five distinct points lateral to each eye and a pentagon shaped shell.

underway, contractors and staff have reported significantly greater numbers of [Ts'a'am Sgénuwaas · Tllga jii.nga sda kuust'an k'inhlgahl](#) being caught. In 2022, CHN hired 13 contractors to participate in depletion trapping, while this year that number increased to 21. The greater number of contractors is important, as CHN could not manage this rapidly growing population without the involvement of community members. In addition to the increased number of contractors regularly doing depletion trapping, the whole community was able to get involved when CHN hosted the first ever [K'aasda Copper Bay European Green Crab Derby](#) that ran during the three [K'aasda](#) sockeye fishery weekends. In that time, participants of all ages went out and hand caught over 1,550 [Ts'a'am Sgénuwaas · Tllga jii.nga sda kuust'an k'inhlgahl](#). Most removal efforts rely on trapping equipment, but this impressive feat was done solely by searching and removing the crabs by hand!

Oftentimes, green colored shore crabs and juvenile Dungeness are misidentified as [Ts'a'am Sgénuwaas](#) ·

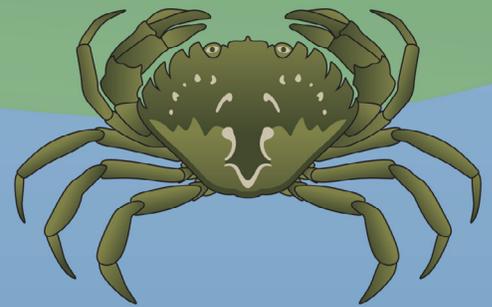
[Tllga jii.nga sda kuust'an k'inhlgahl](#) due to their color, so a major part of CHN's response has been public outreach and education surrounding the identification of this invasive species. Reminding people of all ages that **“green does not equal mean”** has been an important component of this effort, as the native crabs that we are trying to protect can also be green! Having informed community members who can accurately identify the invasive crabs protects native crab species from misidentification, aids in the removal [Ts'a'am Sgénuwaas · Tllga jii.nga sda kuust'an k'inhlgahl](#) and assists in the identification of areas where their populations appear to be growing.

While the presence of [Ts'a'am Sgénuwaas · Tllga jii.nga sda kuust'an k'inhlgahl](#) on [Xaayda Gwaay.yaay · Xaadaa Gwaay](#) is an unfortunate reality, the silver lining is seeing how people have come together to address this threat. Amazing things happen when we work together, and a united effort is necessary in continuing to address this invasive species' presence here.

Ts'a'am Sgénuwaas
 Tllga jii.nga sda k'uust'an k'inhlgahl
**Invasive European Green Crab
 Response Program Report
 2022**

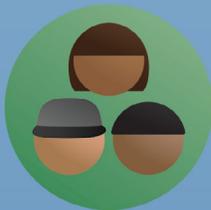
In 2021, CHN secured a 3-year fund for the response to this invasive crab. The 2022 field season took place between May and November.

Range in size
 1.5 - 8.4 cm



31,236 trapped

Of all crabs found, 67% were male and 33% were female.



51 field crew members



12,956 traps set

- ◆ Surveyed, crabs found
- Surveyed, no crabs found

*Survey sites displayed here represent approximate locations where traps were deployed, for illustrative purposes.

Report a sighting : invasives@haidanation.com



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Duu Gúusd • Daawxuusda West Coast Haida Gwaii Bottom-trawl Survey:

Shining a Light on the Trawl Fishery in Haida Territory

By **Skil Jáada** Vanessa Zahner

As I was flying over to Rupert on a seaplane to board the trawler the *Nordic Pearl* for a week, I couldn't help but think, what have I signed up for? I had been supporting CHN's work on groundfish issues for a year, and we jumped at the opportunity to join the West Coast Haida Gwaii bottom trawl survey. We'd been discussing the best options to get Haida observers on trawlers to understand the fishery better – which was difficult since the fishery switched from at-sea observers to electronic monitoring during COVID. This survey provided a perfect opportunity to observe trawling operations firsthand and get a sense of how data used for stock assessments is collected. I felt like I was stepping out of my comfort zone, but others who had been on the first leg of the trip had assured me that it was a very welcoming crew, and that the food was phenomenal.

The first day, I felt like I was in over my head. The seas were rough as soon as we entered the Hecate Strait. It was hard to see the nets dragging up so many fish – and those were relatively small survey sets with assorted catch in comparison to the targeted species catch. The stench of the fish lab below deck made my stomach churn, and watching the science team sort the catch and yell over the loud conveyor belt machinery felt extremely chaotic and unapproachable. I took a few photos and videos, but mainly stayed up in the bridge, recording GPS locations to see if our sites in Dixon Entrance overlapped with any marine protected areas proposed in the MPA Network. I reflected on how upset it made me to see rockfish stuck in the net and then swept or kicked down into the fish hold. That first day was very overwhelming. I couldn't be sure if it was seasickness,



The Fishing Vessel *Nordic Pearl*, a large wet-deck (non-freezer) trawler.



Skil Jáada

Trawl net with a large ~22,000kg catch offshore Rennel Sound. Most of the catch pictured is Pacific Ocean Perch Rockfish.



Skil Jáada

Main line of the conveyor belts below deck, filled with various rockfish, including Pacific Ocean Perch, Yellowmouth, Sharpchin, and Redstripe Rockfish, caught in Northwest Dixon Entrance.



Skil Jáada

Pictured is a habitat sponge, home to a Thornyhead Rockfish and various other invertebrates living inside it.

or if it was seeing the large-scale trauma to long-lived and diverse fish species caused by trawling practices that made me ill. These factors, combined with my own sensitivities, contributed to a strong sense of uneasiness being on board the first day of this journey.

By day 2, I got my sea legs under me. The science crew showed me how the lab processing worked and taught me the basics of groundfish ID (rockfish being a particularly complicated group!). I did my best to get my hands dirty – or more accurately my whole body scaly – by helping sort the more obvious species. It turns out there's a real art to grabbing slimy flat fish and not getting too stabbed up by rockfish spines, but I never did master it. I then learned how to weigh, measure, sex and age each fish certain species of interest, such as rockfish, [Skil](#) • [Skil Black Cod/Sablefish](#), [Skáaynang](#) • [Skaynang Lingcod](#), [Kyaa.n](#) • [Scaahlann Pacific Cod](#), Grenadier, [Xaguu](#) • [Xaaguu Halibut](#), [T'ál](#) • [T'aal Arrowtooth Flounder](#) and other flatfishes. Even after I understood the process a bit better, there was still a considerable amount of chaos and panic during species sorting when we had a

diverse catch. Conveyor belts would zoom along (unless we adjusted the speed or paused them) and we would have to keep up with the sorting. It felt a lot like a factory, and sometimes we were told to hurry up since the next set would be on deck ready to go into the hold before we finished! We sorted fish and other species into dozens of baskets, with fish flying in all directions, often hitting someone or the floor if we were even a little out of sync.

It was so fast paced onboard the trawler that it was hard to take a moment to stop and reflect on the experience of participating in the trip, but certain moments stood out, like when we were anchored up near [K'iiis Gwaay](#) for the night, or when we took in the purple sunrise over the mountains at Rennel Sound. This was the first time I'd seen that much of the West Coast, and it was strange to experience it aboard a trawler, where we removed so many animals. It became very apparent to me that the trawl fishery does not practice the values of [yahgudáng respect](#) or [tliisdluu gudang kilagangs isdaa only take what you need](#). While on the boat, I realized that this lack of respect for the fish and ecosystems did not

come from the fishers and crew themselves, they were all great people who care about conservation. It is the scale and the nature of the fishery that makes it unavoidable.

There were many moments that didn't sit right with me, like how we handled the fish, cut them open for samples when they were still twitching, and tossed them overboard. It was also upsetting to see culturally important species like Xaguu • Xaaguu Halibut and Skil • Skil Black Cod/Sablefish, and other species that were treated as bycatch. Technically, on our science survey, we wanted to look at every species, but we saw many non-commercial species. There were different species of skates, Spiny Dogfish, catsharks, corals, sponges, sea stars, snails, crabs, anemones, squids, sea urchins, shrimp, and so many more. We didn't see many corals and sponges, but we did encounter a few large sponges, including one that had a small Thornyhead Rockfish and different invertebrates living inside it as a habitat.

By the end of the trip, I did notice how “normal” it all felt. Quickly sorting species began to seem like a fun game, and although I wasn't a species ID pro yet, I still felt like part of the crew. I had begun to become a little numb to all the rockfish I'd seen. Whenever we caught a huge rockfish that would have been around 70 years old, I would compare it to our Elders, but when we'd catch nothing but small fish, that was concerning in a different way. There used to be so many large rockfish in the water, but many of those large older ones have been fished out over time.

The trip was an unbelievable experience for me. I had never joined a fisheries survey before, despite having had many opportunities to do so in my time at UBC, because I knew that as a sensitive person, it would be incredibly hard to see that many fish being caught and not being harvested for food. And yet here I was, participating in bottom trawling! It was incredibly worthwhile to share what I saw with the Nation and gain invaluable information. Joining this survey was one of the many tasks of the CHN – DFO Joint Halibut and Groundfish Technical Committee,



Skil Jáada

Skil Jáada holding a large Skil • Skil Black Cod/Sablefish down in the fish lab below deck.

as we continue our collaborations to address Haida concerns and meaningful involvement in the management of the trawl fishery. I can't express my gratitude enough to Joey Greene and the whole crew on the *Nordic Pearl* for letting us join, providing a safe environment, showing me the ropes, and sharing fish with us. Joe dedicated the survey to the late Kwiinyaans Ken Bedard, who was a close friend of his, making the trip that much more special.

Tang.Gwan ChaaGan Daanaay Kuuyada

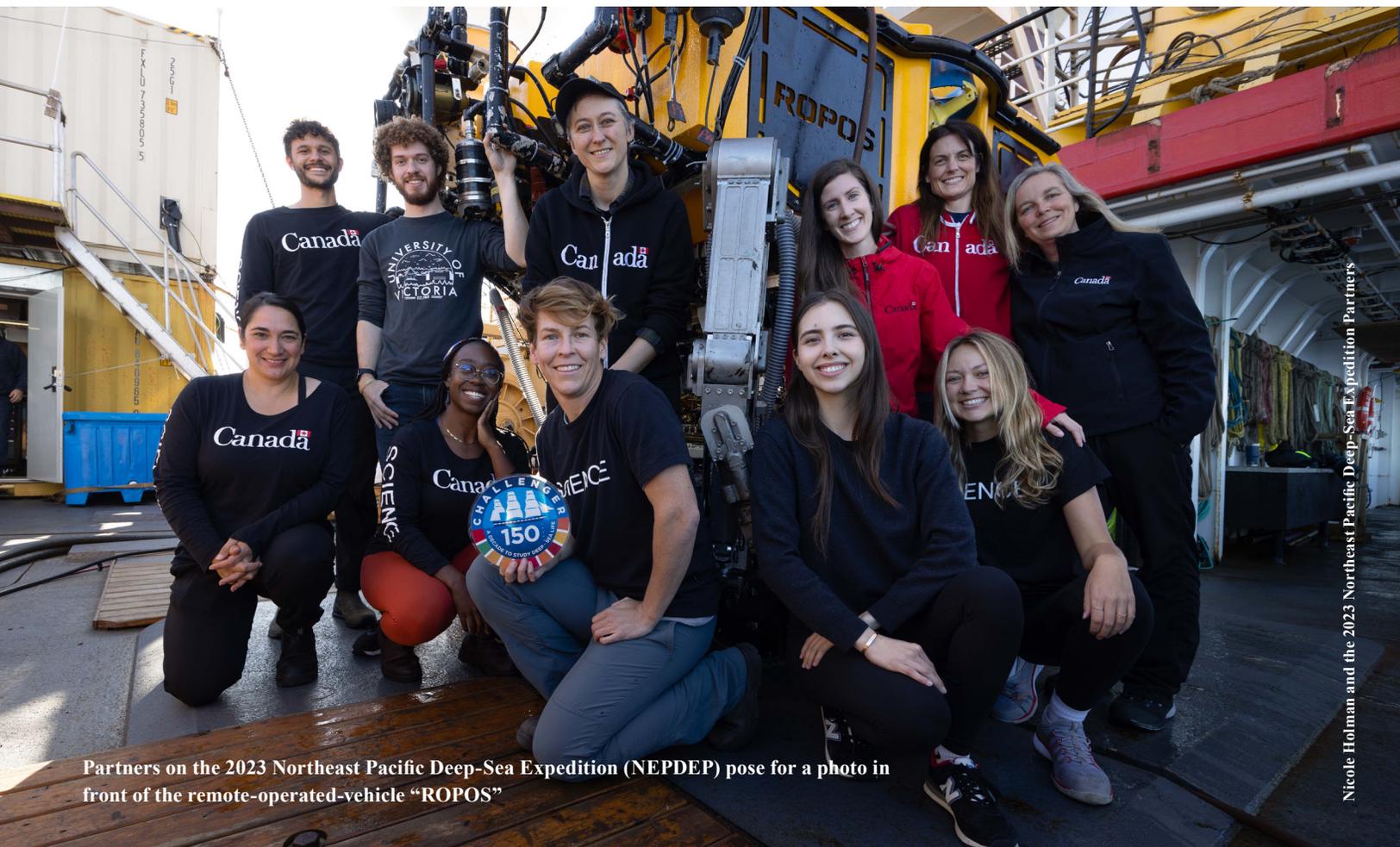
Precious Deep Water Ocean Place

By K'aayhldaa Xyaalaas Rayne Boyko

On May 28th, 2023, the Council of the Haida Nation, Fisheries and Oceans Canada, Nuu-chah-nulth Tribal Council, Pacheedaht First Nation, and Ocean Networks Canada mounted an expedition to monitor and learn more about deep-sea ecosystems within the proposed Tang.Gwan – Һаčхʷiqak – Tsigis Marine Protected Area (MPA). The name of the MPA comes from the Haida word

meaning “deep ocean” (Tang.gwan), a Nuu-chah-nulth and Pacheedaht word meaning “deepest part of the ocean” (Һаčхʷiqak) and a Quatsino word referring to a “monster of the deep” (Tsigis). The full name for the Haida portion of MPA is Tang.Gwan ChaaGan Daanaay Kuuyada meaning Precious Deep Water Ocean Place in Xaayda Kil Haida language. The Tang.Gwan – Һаčхʷiqak – Tsigis MPA is

***The article includes selected words in [Xaad kil](#) • [Xaayda kil](#), northern place names are in [Xaad kil](#), southern in [Xaayda kil](#). ***



Partners on the 2023 Northeast Pacific Deep-Sea Expedition (NEPDEP) pose for a photo in front of the remote-operated-vehicle “ROPOS”

located 150km off the Westcoast of Vancouver Island, and its total area is roughly 133,019 square kilometers.

The Canadian Coast Guard Ship John P. Tully traversed the proposed **Tang.Gwan – Һаӈx̣ʷiqak – Tsigis** MPA for two weeks from May 28th – June 10th, 2023. Researchers and scientists explored the deep-sea, utilizing the state-of-the-art remotely operated vehicle ROPOS, from the Canadian Scientific Submersible Facility. This allowed us to explore the “Midnight Zone” or Bathypelagic Zone, which is an extremely harsh environment to live in, with no light, a cool temperature of 4°C, and limited food sources.

The 2023 Northeast Pacific Deep-sea Expedition into the **Tang.Gwan – Һаӈx̣ʷiqak – Tsigis** MPA was an incredible, unprecedented expedition. The science team accomplished 11 deep-sea dives on seamounts, hydrothermal vents and cold seep habitats, and for the first time, observed all three of British Columbia’s deep-sea biodiversity hotspots in one

expedition! We made discoveries and documented all three habitats. The team witnessed unique interactions and rare encounters of deep-sea flora and fauna. It became very clear that there is something purely magic and mysterious about the deep ocean that we are only scratching the surface of.

The objective of the expedition was to increase awareness and understanding of the deep ocean and document the unique creatures that dwell within it. The belief is that if we can better understand these extraordinary and fragile ecosystems, then we can better inform marine conservation planning for future protections of this MPA and others.

There were so many highlights of this experience onboard the John P. Tully. Starting with our first dive, we encountered both inactive and active hydrothermal vents. At the active vent sites, some chimneys were spewing hot heavy metal fluids at temperatures recorded over 380 degrees Celsius! These environments are extreme and

A female Pacific White Skate in the process of laying her egg near the Tuzo Wilson (NEPDEP 58) Seamount.



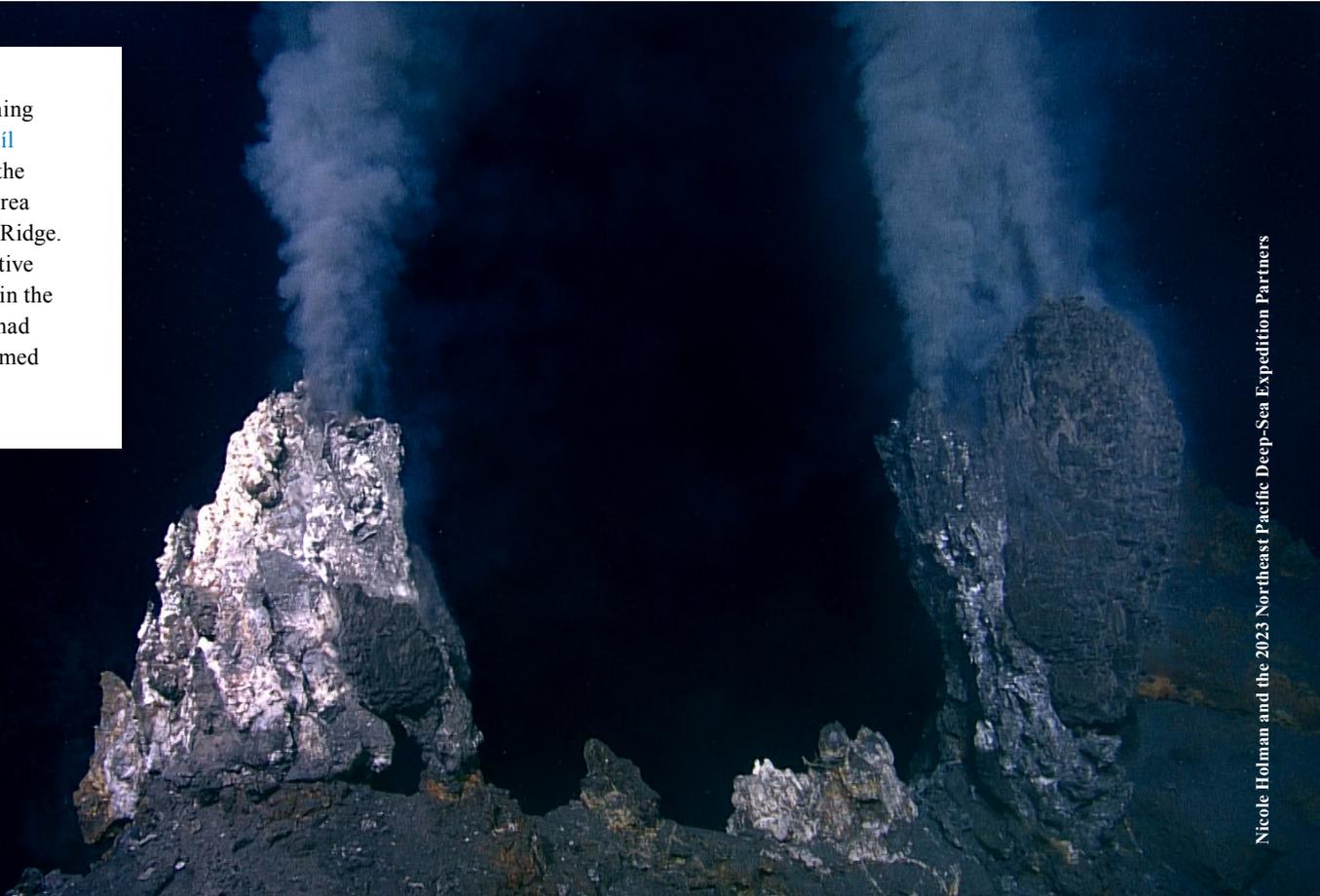
require unique specializations by the creatures who live here. Chemosynthetic organisms are what allow these deep-sea ecosystems to exist and thrive. These organisms survive on chemicals that come from either hydrothermal venting or cold seeps.

Another highlight was the Tuzo Wilson (NEPDEP 58) seamount, located south of [Gangxid Kun Cape St. James](#), [Xaayda Gwaayyaay](#) · [Xaadaa Gwaay Haida Gwaii](#). I was invited to co-lead this dive with Dr. Cherisse Du Preez, which was a true honour, and a memorable experience to say the least. The dive started on a high note with an almost perfectly intact baleen whale skeleton, and a female and male Pacific White Skate (*Bathyraja spinosissima*). This was a good sign, as it supported the hypothesis of the seamount being a Pacific White Skate nursery ground. This area truly envelops the phrase, [Tang.Gwan ChaaGan Daanaay Kuuyada](#), as it certainly is a precious deep water ocean place.

Further into this 12-hour long dive, we discovered active venting along the slope of the seamount! We were surprised to find orange and yellow bacterial matting was apparent with exit holes. This immediately caught our attention, and we started testing the temperature of these small openings. It was indeed hotter than the ambient sea temperature, and we were all shocked with amazement. This discovery indicates the deep-sea skates may choose this seamount for the warmer waters, which likely aids in the successful gestation of the Pacific White Skate eggs. On the same dive, we encountered a female Pacific White Skate laying an egg! The team captured astonishing footage of this skate dipping and lifting her tail in an attempt to lay her egg, which appeared to be quite a laboring process. After 45-minutes of observing, we gave her privacy to finish her birth atop the NEPDEP 58 seamount.

During the expedition, we investigated the “Explorer Ridge” area, which had last been explored twenty-one years ago. While exploring a vent area within the Explorer Ridge,

[Kwaa K'iinaa](#), meaning hot rocks in [Xaad Kil Haida language](#), is the name given to this area within the Explorer Ridge. Pictured here are active hydrothermal vents in the area where venting had previously been deemed extinct.



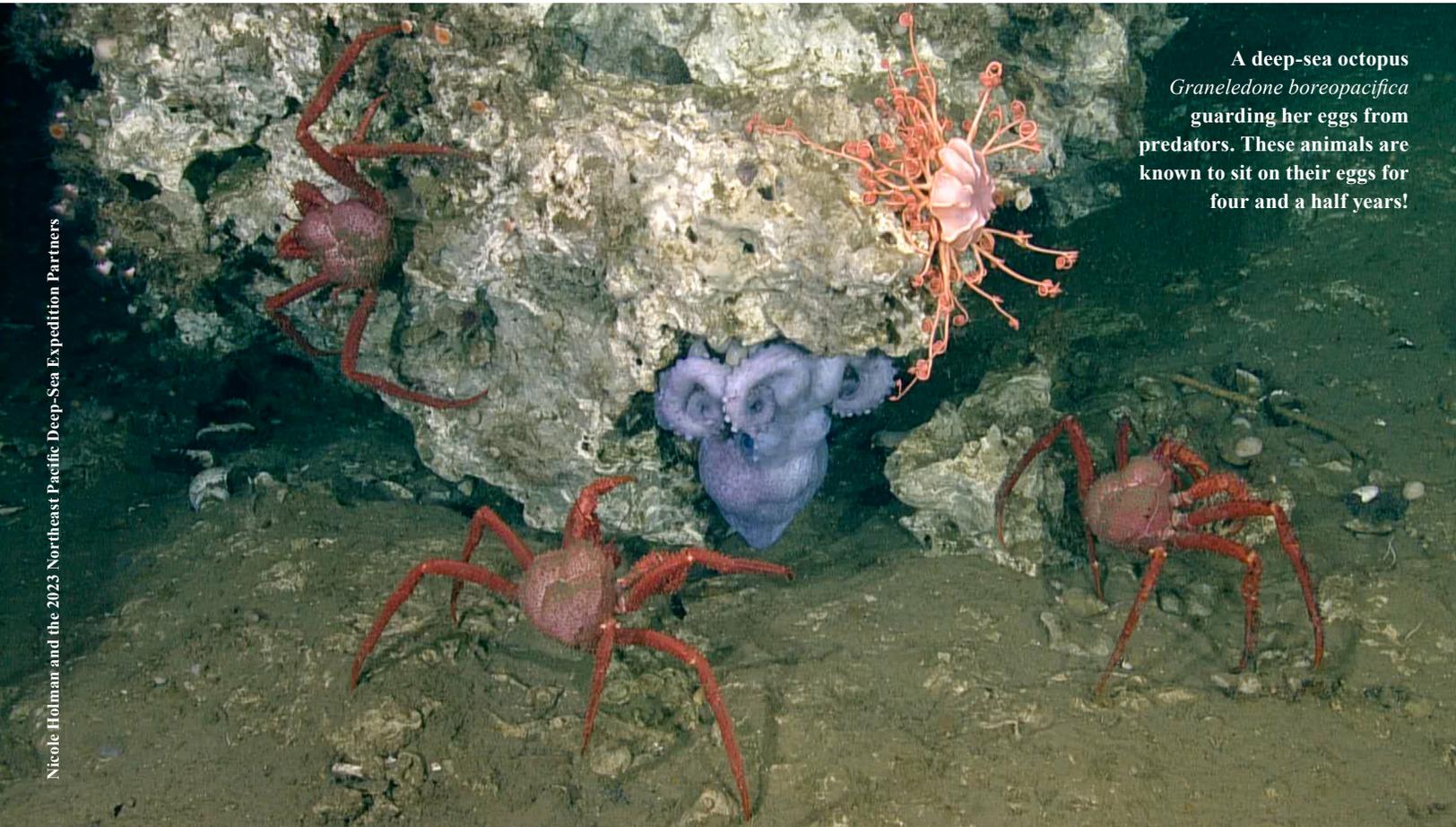
unofficially called “Old Area” as it had been documented to be extinct, we found 5 active chimneys spewing black smoke and jets of hot metals. It was an honor to be given the opportunity to name this dynamic deep-ocean place. It immediately felt appropriate to call this vent area **K'waa K'iinaa**, meaning hot rocks in **Xaad Kíl Haida language**. It is a proud moment for **Xaayda Gwaay.yaay · Xaadaa Gwaay** to have another deep-sea area with a special name to pass on for generations to come.

Among the many amazing discoveries made on this expedition, one of the most memorable occurred when we ended our exploration with a dive in the Hesquiat Sound cold seep field. This deep-sea place was filled with life - most notably, the deep-sea octopus *Graneledone boreopacifica*. This area was an active octopus nursery ground, with purple octopus mothers sitting on eggs at every turn. These deep-sea animals sit on their eggs for 4 ½ years and guard them from predators. Discovering the octopus nursery took us all by surprise, and it was quite an emotional and beautiful

place to witness. It was one of the major highlights of the trip. We were all left in awe of this special deep ocean place.

Throughout the expedition, the team hosted six live outreach events that reached 60 classrooms, coastal communities, and the general public. Each of the 11 dives were live streamed worldwide, with nearly 8 thousand viewers in one day. The final wrap-up video can be viewed online [link] and shared through CHN's Marine Planning team.

As the expedition came to an end, we were all moved by our experience together, and proud of our successful collaborative work. With the unexpected discoveries, and the special connection we all share with the ocean; it was the experience of a lifetime. Moving forward, we will be working together with the DFO science team and the Nation partners to protect and manage this incredibly special and rare deep ocean place. Although the **Tang.Gwan – ɥačx'iqak – Tsigis MPA** is yet to be designated, we look forward to the official announcements in the Fall of 2023.



A deep-sea octopus *Graneledone boreopacifica* guarding her eggs from predators. These animals are known to sit on their eggs for four and a half years!

ABOUT THE CHN MARINE PLANNING PROGRAM

The CHN Marine Planning Program consists of a group of marine planning professionals who provide expertise and technical support for the CHN's marine planning and plan implementation initiatives, including:

- Haida Gwaii Marine Plan
- Gwaii Haanas Gina 'Waadluxan Kilguhlgá Land-Sea-People Plan
- SGáan Kínghlas-Bowie Seamount Gin Siígee Tl'a Damaan Kinggangs Gin K'aalaagangs Management Plan
- Pacific North Coast Integrated Management Area Plan
- Tri-partite marine shipping discussions
- Marine Protected Area network planning

In addition, the Marine Planning Program provides support for other marine-related initiatives, including: reconciliation, cooperative and coordinated management with BC and Canada, and communications and outreach.

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Photo: Nicole Holman and the 2023 Northeast Pacific Deep-Sea Expedition Partners

ABOUT

Gyaahláang Tangée Kii.ngaay Taang.aay

The CHN Marine Planning Program developed this newsletter to provide Haida citizens, Island residents, and the broader public with information about the Haida Nation's marine planning initiatives. Each issue of **Gyaahláang Tangée • Kii.ngaay Taang.aay** features stories about specific marine-related projects that are underway in Haida Gwaii as well as updates on relevant laws, policies and reports that relate to the Haida Nation's marine planning and implementation activities.

Gyaahláang Tangée • Kii.ngaay Taang.aay is distributed to all of the communities of Haida Gwaii and is also available online on the Haida Nation's website at www.haidanation.ca



Like the Council of the Haida Nation's Facebook page to get updates on the Nation's latest news, issues and events.



For more information about the CHN Marine Planning Program, including current issues and initiatives that the program is currently working on, go to www.haidamarineplanning.com

Haawa • Haw'aa to our former team member Laís Chaves for her much appreciated contributions to the European Green Crab Response on Haida Gwaii.