



COASTAL
FIRST NATIONS
GREAT BEAR INITIATIVE



COASTAL GUARDIAN WATCHMEN: STEWARDING THE COAST FOR ALL

A CASE FOR INVESTMENT

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Prepared for
CFN – GBI
Support of EPI





*Nuxalk sputc pole (photo credit: CFN).
(Cover page photo credit: CFN).*

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Glossary of Acronyms

BC	British Columbia
CCG	Canadian Coast Guard
CCIRA	Central Coast Indigenous Resource Alliance
CFN	Coastal First Nations - Great Bear Initiative
CPP	Canada Pension Plan
Declaration Act	Declaration on the Rights of Indigenous Peoples Act (BC)
DFO	Department of Fisheries and Oceans Canada
EBM	Ecosystem based management
EI	Employment insurance
EPI	EcoPlan International
FLNRORD	BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development
HR	Human resources
MaPP	Marine Plan Partnership
NGO	Non-government organization
RMS	Regional Monitoring System
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UVic	The University of Victoria
WCB	Workers Compensation Board

Executive Summary

PURPOSE

First Nations along British Columbia's North and Central Coast and Haida Gwaii have been stewarding their territories since recorded time. In recent decades, the member Nations of Coastal First Nations – Great Bear Initiative (CFN) have established stewardship offices, including Coastal Guardian Watchmen, which are integral to territorial stewardship. For stewardship responsibilities to be sustained, they require significant investment. Is this investment worth it? Should it be sustained? Expanded? To what extent is secure, core funding for Coastal Guardian Watchmen justified? Essentially, what is the Case for Investment in these initiatives? The purpose of this report is to investigate these questions from the perspective of the general public and the provincial and federal governments who are mandated to serve the public.

APPROACH

Two areas of research and analysis were conducted.¹ First, interviews with provincial and federal employees, non-government organizations (NGOs), academics, and people working within CFN and its member Nations helped to identify the benefits and contributions of Guardians along the coast.² Second, a comparative analysis was undertaken that looked at the Coastal Guardian Watchmen in contrast with provincial and federal agencies that do similar work.³ The results are organized as key findings and highlighted by case studies.

KEY FINDINGS

Guardians provide benefits to the general public, and more directly to provincial and federal governments with similar mandates, via three main contributions:

1. Filling in the gaps of provincial and federal agencies, specifically with contributions to:
 - Compliance and enforcement;
 - Emergency response and ensuring public safety; and,
 - Conservation and environmental management.
2. Contributing to improved knowledge and public understanding.
3. Providing opportunities to meet commitments of reconciliation.

These contributions benefit the public in many ways, including:

- The presence of real-time eyes and ears on the lands and waters;
- Saving lives;
- Saving tax dollars;
- Protecting and enhancing ecosystems;
- Protecting and enhancing significant places and resources (natural, cultural, spiritual, and economic); and
- Advancing relations between Indigenous and non-Indigenous governments and individuals.

1 This project builds on previous research and analysis. In particular, in 2016, Coastal First Nations – Great Bear Initiative (CFN) published *Valuing Coastal Guardian Watchmen Programs: A Business Case*, which evaluated the benefits Guardians provide from the perspective of their communities. The business case found a 10:1 return on investment.

2 This report focuses specifically on Coastal Guardian Watchmen (i.e., Guardians employed by CFN member Nations); however, we often use the blanket term “Guardian” in the report for ease of reading. We expect the findings of the report to be relevant for any Guardians who undertake similar work to the Coastal Guardian Watchmen.

3 Agencies include the Department of Fisheries and Oceans (DFO), the Canadian Coast Guard (CCG), Parks Canada, BC Parks, and the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FNLROD).

Government agency staff and NGO employees familiar with the work of Guardians confirmed these contributions and highlighted how Guardians benefit the general public (Figure 1).

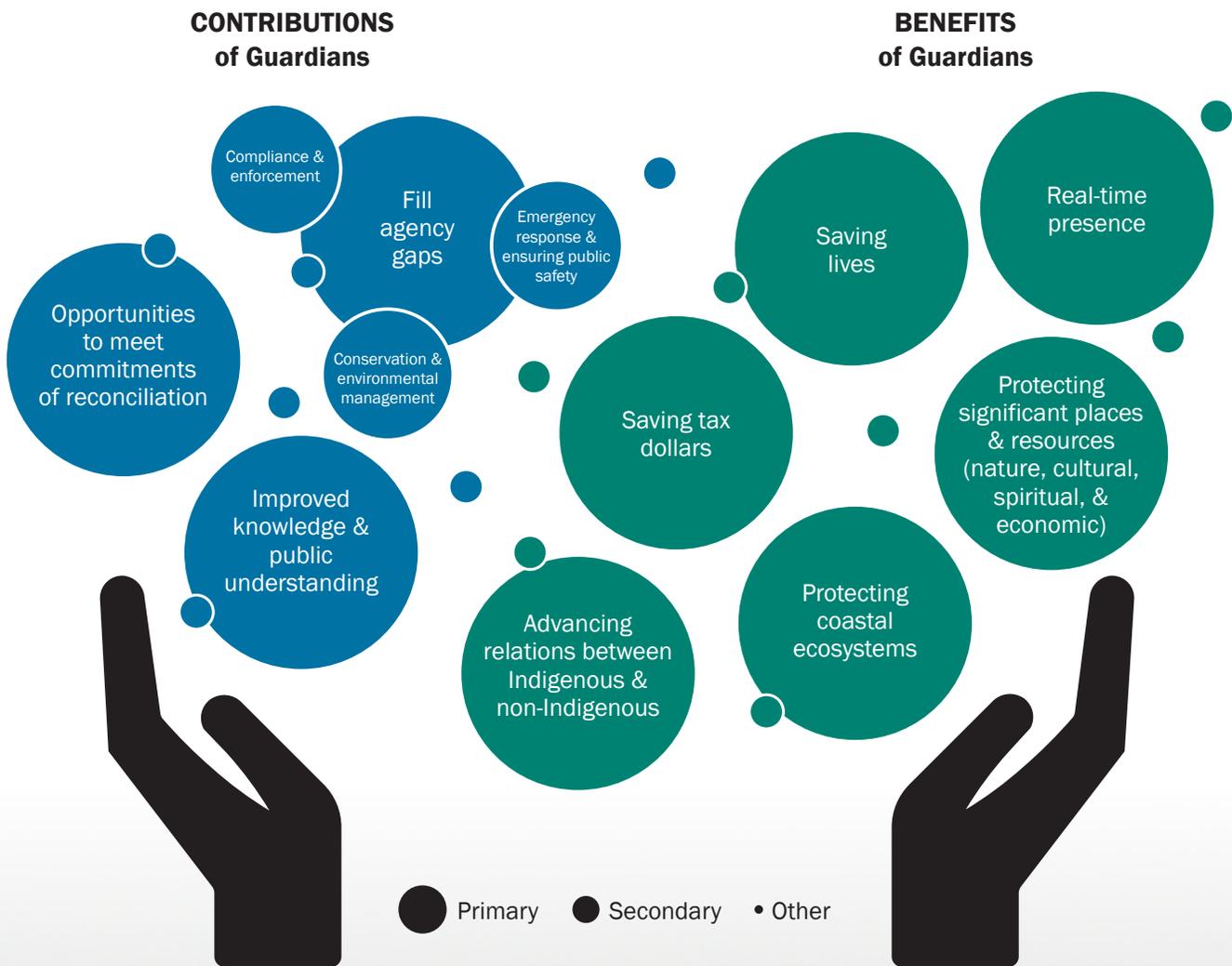


FIGURE 1: Guardian Watchmen contributions and benefits identified with this research (medium and large circles) and not identified with this research (small circles). The small circles do not represent the number of unidentified benefits and contributions, but are included to illustrate that Guardians provide more than what was identified with this research.



1. Introduction

PURPOSE

Coastal First Nations – Great Bear Initiative (CFN) commissioned EcoPlan International (EPI) to investigate and report on the contributions of Coastal Guardian Watchmen initiatives to better understand the value of current investments and the extent to which secure core funding for Coastal Guardian Watchmen is justified. More specifically, how do these contributions benefit the general public - including the provincial and federal government agencies mandated to serve the public - non-governmental organizations, academic institutions, non-Indigenous coastal communities, resource-based industries, local and foreign tourists, and other resource users? What is the *Case for Investment*?

REPORT ORGANIZATION

This report begins with an overview of Coastal Guardian Watchmen initiatives. Section two outlines the methods for identifying, summarizing, and exemplifying Guardian contributions. Sections three to five describe Guardian contributions to the broader public good that align with contributions from NGOs, academia and provincial and federal agencies. These sections also describe barriers faced by provincial and federal agencies and how Guardians contribute to overcoming these barriers. Section six identifies some of the unique contributions Guardians provide, serving as employees of their stewardship offices and acting under the mandate of their Nation. Finally, section seven concludes with a discussion of current and future potential contributions of Coastal Guardian Watchmen and provides an overview of some barriers they face.

OVERVIEW: COASTAL GUARDIAN WATCHMEN INITIATIVES

CFN is an alliance of First Nations living on British Columbia's North and Central Coast and Haida Gwaii. For thousands of years, these First Nations have stewarded their territories by caring for people, wildlife and ecosystems. Today, Guardians carry on the work of their ancestors, stewarding their territories and working to ensure the resources are sustainably managed; that the laws, plans, and agreements are followed; and that their communities and other mariners are safe. The stewardship offices and Guardians of CFN member Nations work together as the Coastal Stewardship Network (CSN): Gitga'at, Haida, Heiltsuk, KITASOO Xai'xais, Nuxalk, Metlakatla, and Wuikinuxv (Figure 2). These seven nations supported and participated in this research and together they create a network that provides a regional stewardship focus.

The CSN supports stewardship offices in each member's community by providing opportunities for networking and collaboration, training and professional development, a Regional Monitoring System (see Box 1), communications and outreach, support to stewardship offices and support for Coastal Guardian Watchmen initiatives including the enhanced authority of Guardians.



As each Coastal Guardian Watchmen initiative is unique, their activities vary. All Coastal Guardian Watchmen are primarily oriented around territory patrol; however, the specific activities carried out by Guardian Watchmen vary from Nation to Nation, depending on their priorities. Activities include data collection and analysis, upholding and advancing cultural knowledge, community engagement and outreach, youth engagement, public engagement and outreach, planning and management, restoration work, emergency response and ensuring public safety, and collaborating with other Nations.

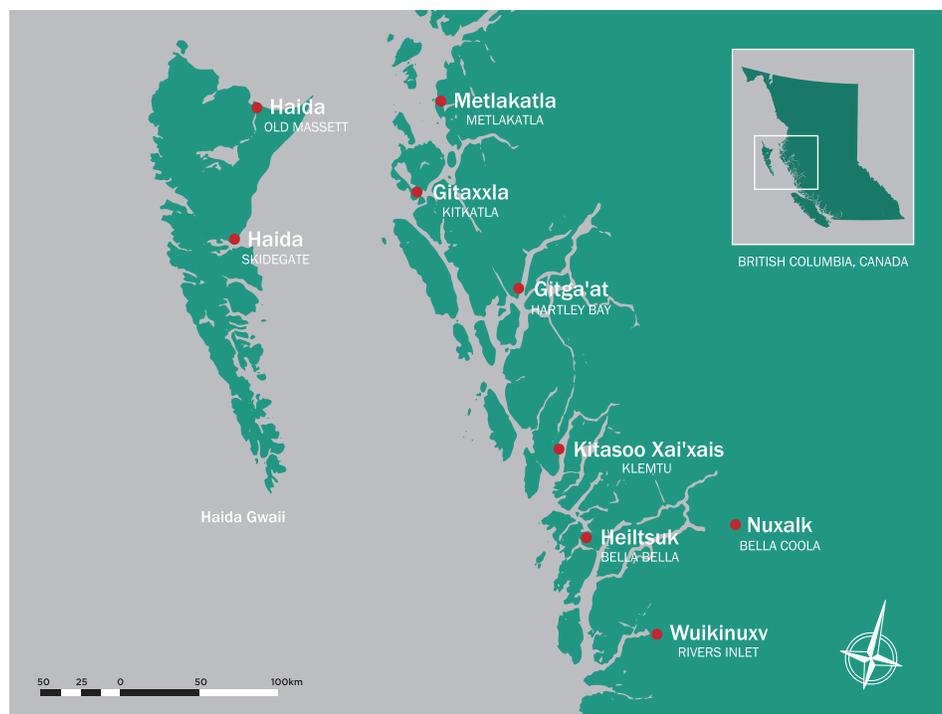


FIGURE 2: Coastal Guardian Watchmen initiatives on the Central and North Coast and Haida Gwaii (adapted from CFN website: <https://coastalfirstnations.ca/our-stewardship/coastal-guardian-watchmen/>).

BOX 1

The Regional Monitoring System (RMS)

The RMS was developed by CFN in 2009 to ensure a standardized digital approach to data collection and management for the CFN member Nations.

The RMS consists of:

- Standard methodology and guidelines for collecting data;
- Custom mobile application to collect data in the field;
- Centralized database to store Nations' information on Canadian servers;
- Web-based Data Management System for data access and analysis, planning and decision making.

2. Project Approach

SCOPE

The benefits and value of Central Coast, North Coast and Haida Gwaii Coastal Guardian Watchmen initiatives are well documented particularly from the perspective of their communities (see *Box 2*). However, the benefits extend well beyond their individual First Nations to include the broader public, industry, provincial and federal governments, and others.⁴ The research presented here focused on systematically investigating and chronicling the contributions of the Guardians that result in benefits to the general public, industry, and provincial and federal governments (see *Figure 1*).⁵

APPROACH

Research Methods

An overview of the research methods are presented here. For more detail on research methods, see Appendix A: Research Methods. Information for this report came from four research methods:

1. Literature review of research related to Guardians.
1. Interviews with provincial and federal employees, NGOs, academics, and people working within CFN and the member Nations.
1. Desktop research and analysis.⁶
1. Analysis of Regional Monitoring System data.

A review of related literature established a foundation for developing semi-structured interview tools used to collect information about Guardian contributions from different sources. Interviews were also conducted to understand specific case examples of the Guardians' work.

Desktop research supplemented and expanded on the interview data. For example, data on costs of government agency programs and Coastal First Nation stewardship offices were collected to conduct cost-saving comparisons. Finally, the RMS data was provided by the CSN with permission from each CFN member Nation and allowed detailed analysis of questions related to wildlife abundance and patrolling effort by Guardians.

Case Examples

Interviews with provincial and federal employees, NGOs, academics, and people working within CFN and the member Nations provided stories about the Guardians' work that showcase their contributions to other government agencies and the public. These stories were further investigated with follow-up interviews and desktop research.



CSN Annual Gathering (photo credit: CFN).

4 Much research has identified contributions and benefits either in general or specifically (see: Miller, J, 2021. *The Business Case for a National First Nations Guardians Network*; Social Ventures Australia, 2016. *Social Return on Investment - Consolidated report on Indigenous Protected Areas*)

5 The Haida Nation Guardians and similar positions are integrated throughout three different departments: Haida Fisheries, Haida Protected Areas, and Haida Heritage and Natural Resource Department rather than within a Coastal Guardian Watchmen initiative like the other CFN Nations. This report includes the Guardians and similar positions within all three Haida departments and refers to them all as "Guardians."

6 The use of information available in printed form or published on the internet.

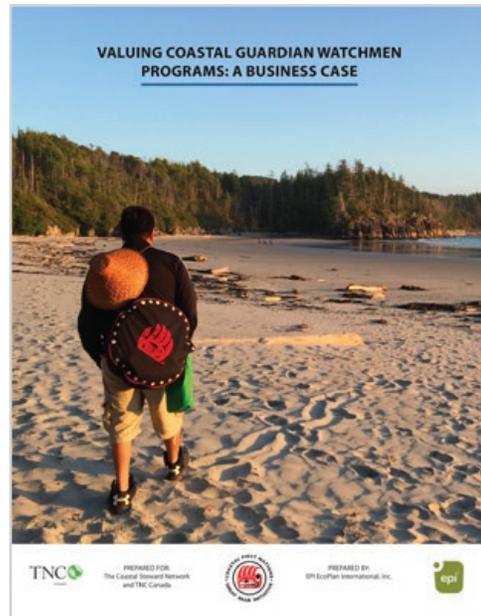
BOX 2

Valuing Coastal Guardian Watchmen Programs: A Business Case

In 2016, Coastal First Nations – Great Bear Initiative (CFN) and Nature United published *Valuing Coastal Guardian Watchmen Programs: A Business Case*, which evaluated the benefits Guardians provide from the perspective of their communities. The business case found a minimum 10:1 annual return on investment. In other words, for each dollar invested in a Guardian Watchmen program on an annual basis, the respective Nation benefits at least 10 times that amount. For all seven First Nations included in the analysis, program benefits were found to be widespread, extending well beyond the core objectives of the programs. Specifically, the analysis found that the benefits positively contribute to many of the Coastal First Nations' values, including:

- Taking care of territory;
- Nurturing cultural wellbeing;
- Improving general health and community wellbeing;
- Advancing governance authority;
- Increasing community capacity;
- Opening and promoting economic opportunities in both Indigenous and conservation economies; and
- Providing much needed financial capital inflows into the community.

The *Business Case* also indicated that many benefits are also valued by the general public, industry and government agencies, suggesting the need for further research.



Comparative Cost Analysis

The role of financial cost was assessed to understand the relative cost of Guardians performing a task or responding to an event compared to the cost of relevant provincial and/or federal agencies doing the same work. Comparable positions to Guardians at other government agencies were identified by comparing the work of Guardians to the mandates of provincial and federal agencies and job descriptions at those agencies. These comparisons were confirmed in interviews with provincial and federal staff. Wages and other human resource costs were then gathered

for the Guardians and the comparable agency positions.⁷

This data was used to estimate the cost differences between Guardian compensation and provincial and federal compensation. In addition to compensation, travel costs were also considered by comparing the costs of provincial and federal employees and Guardians travelling by boat, plane, and/or road from their stations to the worksite for specific tasks or events.

⁷ Human Resource costs include EI, CPP, WCB, vacation pay, group benefits, group pension plans, bonuses, and living allowances.



Alec Willie, Coastal Guardian Watchmen (photo credit: CFN).

3. Contribution: Filling in the Gaps of Provincial and Federal Agencies

SUMMARY

Guardians are mandated by their Nations to serve the interests and needs of their communities, however their work often aligns with the mandates of certain provincial and federal agencies including: the Department of Fisheries and Oceans (DFO), the Canadian Coast Guard (CCG), Parks Canada, BC Parks, and the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FNLROD). Interviews with 13 provincial and federal employees indicate that while they are confident their agencies are fulfilling ministerial mandates (responses for the three mandates ranged from adequate to very good between the five agencies), they are limited by critical barriers in compliance and enforcement, emergency response and public safety, and environmental conservation and management. Interviews with NGOs and academics indicate there is a limited provincial and federal government presence on the North Coast, Central Coast, and Haida Gwaii in compliance and enforcement,⁸ and monitoring and research,⁹ while evidence from previous incidents and an interview with an oil spill expert highlight barriers in federal emergency response.¹⁰

By having a consistent and coordinated presence on their lands and waters, Guardians help provincial and federal agencies overcome some of these barriers. This section summarizes and exemplifies how, in addition to serving their community, Guardians also contribute to provincial and federal agency mandates with interview data, case studies, and summaries of Guardian field data. Although this section focuses on the barriers faced by provincial and federal agencies, Guardians also face barriers of their own in fulfilling their Nation mandates, such as insufficient resources, funding, and training. For more on the barriers faced by Guardians, see the discussion section.

COMPLIANCE AND ENFORCEMENT

The Need for Enhanced Compliance and Enforcement

The Pacific North Coast is a vast, remote, and resource-rich area that acts as a critical marine highway. Individuals and companies come to the region for tourism, sport fishing, hunting, forestry, and commercial fishing. It is also the home of many First Nations.

Today, agreements, plans, and laws are in place to support resource users in their ventures and to protect the resources from poaching, overharvesting, vandalism, culturally insensitive behaviours, and otherwise inappropriate use. Examples of such plans include the Great Bear Rainforest agreements, which are “ground-breaking because they are based upon ecosystem-based management principles that aim to protect ecological and cultural areas while simultaneously striving to improve the cultural, social and economic well-being of local communities, both First Nation and non-First Nation.”¹¹ But laws and plans are only as good as the compliance that supports them. Interviews for this report add to the overwhelming evidence that provincial and federal agencies face significant barriers to monitoring and enforcing compliance with laws, plans, and agreements in the territories of the CFN member Nations.

Guardians are helping to address some of the barriers federal and provincial agencies face. Regional Monitoring System (RMS) data of the extensive patrolling efforts by the Guardians provides evidence of the extent of time and effort Guardians put into compliance monitoring in their territories of provincial, federal, and Indigenous laws directly through observing, recording, and reporting non-compliance and through public education. The inherent and shared authorities of Guardians are outlined in *Figure 4*.

8 Janie Wray (BC Whales), Ken Cripps (Kitasoo Xai'xais Marine Stewardship Director), Natalie Ban (UVic)

9 Will Atlas (Pacific Salmon), Janie Wray (BC Whales), Ken Cripps (Kitasoo Xai'xais Marine Stewardship Director), Natalie Ban (UVic), David Bradley (Birds Canada), Chris Darimont (UVic)

10 Previous incidents include the Nathan E. Stewart and Queen of the North sinkings. Spill expert Elise DeCola (Nuka Research).

11 Coastal First Nations, 2021. <https://coastalfirstnations.ca/christine-smith-martin-heres-a-path-to-protecting-old-growth-and-revitalizing-economies/>



FIGURE 3: Guardians on patrol (photo credit: Nicole Robinson).

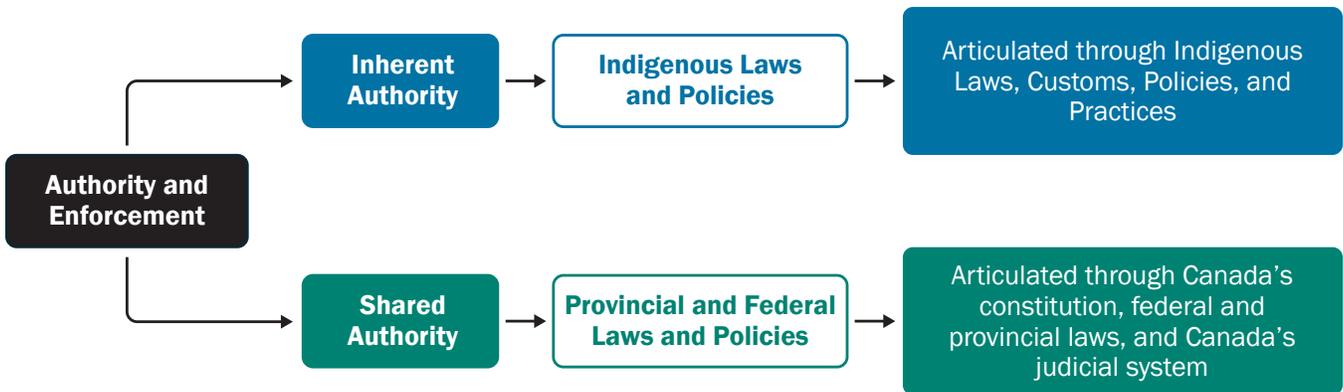


FIGURE 4: Guardian Authority and Enforcement (adapted from the Indigenous Guardians Toolkit).¹²

¹² The Indigenous Guardians Toolkit. <https://www.indigenousguardianstoolkit.ca/>

Provincial and Federal Compliance and Enforcement Capacity

“...the number of patrols we see from the province on the central coast are minimal when compared to patrols conducted by CGW.”

– **Ken Cripps**, Kitasoo Xai'xais Marine Stewardship Director

The compliance and enforcement mandates and capacities of four provincial and federal agencies involved in resource management were researched for this report: the DFO, Parks Canada, BC Parks, and the FLNRORD. It is difficult to track how much compliance and enforcement the agencies do because their patrolling data is not publicly available, nor is it clear if it is collected in a standardized way. When asked how they would describe the level of time and effort their agencies put into compliance and enforcement on the ground, answers from agency employees ranged from “good – enough time and effort” to “acceptable – just barely enough time and effort.”¹³ But people who live and work on the Coast have a different perspective on the compliance and enforcement effort of these government agencies.

Ken Cripps, Kitasoo Xai'xais Marine Stewardship Director, has worked on the Central Coast for decades. He has spent a great deal of time on the water researching, commercial fishing, and living on a sailboat. Cripps has seen DFO conducting research and Coast Guard responding to incidents but has never been approached by a fisheries officer or seen fisheries officers patrolling with smaller vessels, like rigid hull inflatable boats. As for provincial enforcement capacity, “the number of patrols we get from the province on the Central Coast are minimal.” Similarly, Douglas Neasloss, Chief Councillor and Stewardship Director of the Kitasoo Xai'xais Nation, remarked that BC Parks is present in their territory once or twice per year, DFO is present about once per year, and FLNRORD and the Fish and Wildlife Branch have little to no presence in their territory.

Limited human resources and budgets restrict provincial and federal agencies' compliance and enforcement efforts. When asked about the barriers their agencies face in ensuring compliance and enforcement, employees from all four agencies mentioned the challenge of covering such a large geographical area with limited staff.¹⁴ BC Parks, for example, is challenged with increasing demands and decreasing budgets. Between 2008 and 2019, responsibility for protected areas doubled, and financial resourcing for BC Parks fell from 0.6% of the provincial budget to less than 0.2%. At the lowest point in 2016, BC Parks had only seven full-time park rangers to patrol 14 million hectares of protected areas.¹⁵ The other provincial and federal agencies face similar difficulties in patrolling vast areas with limited staff (Figure 5).

“We know DFO, BC Parks, and those kinds of agencies don't seem to have the capacity or the dollars to be out on the water in that way. They have a hard time making a business case for it.”

– **Steve Diggon**, Marine Planning Program Manager, CFN

13 Acceptable (BC Parks, Parks Canada); Good/Acceptable (DFO); Good (FLNRORD)

14 In interviews for this project: Denise Blid (FLNRORD), Danielle Dickson (DFO), Max MacDonald (DFO), Ernie Gladstone (Parks Canada), Steve Hodgson (BC Parks), Mark Beisel (DFO)

15 Ibid.

ONE STAFF IS RESPONSIBLE FOR PATROLLING...

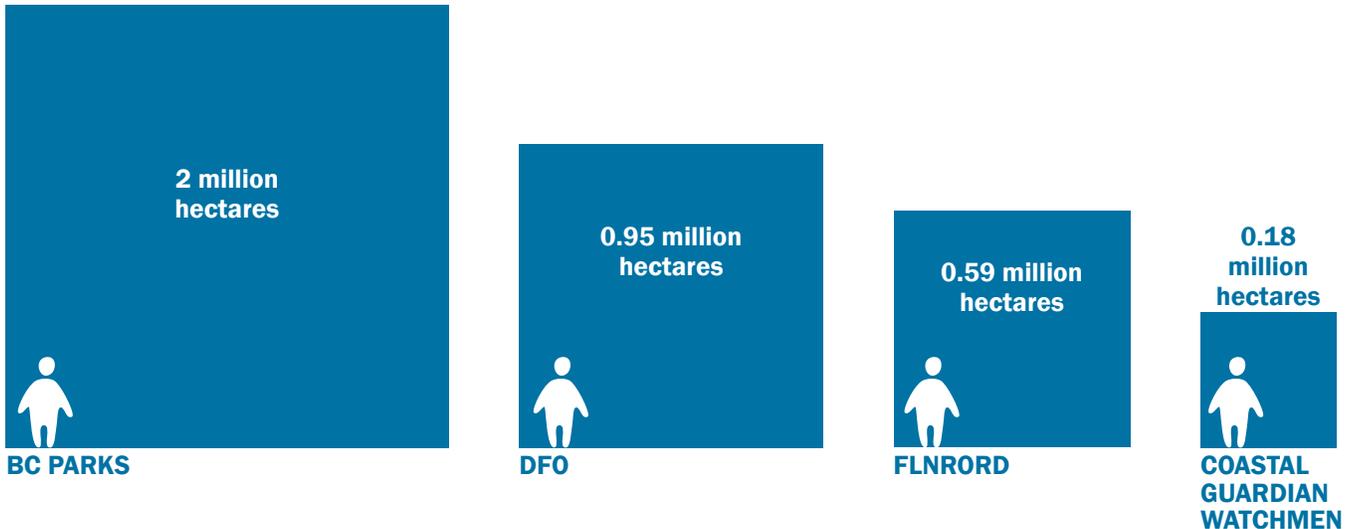


FIGURE 5: The ratio of patrol staff to amount of area within their jurisdiction. Large areas indicate greater scarcity of staff across their jurisdiction.

An added challenge is the difficulty of finding and retaining staff in remote areas, which can result in some positions being unfilled for years. For example, Ernie Tallio, the Nuxalk Guardian Watchmen Manager, recalled in 2017, the DFO invested \$500,000 into a boat that sat unused for four years because they did not have the staff to operate it. Even when agencies do have the staff for patrolling, an additional barrier they face is the inability to access some remote areas where non-compliance occurs.¹⁶

Provincial and federal agencies that already have their compliance and enforcement staff stretched thin across vast areas must also juggle provincial or federal priorities. The agencies have broad mandates, and when resources are needed for a different priority, compliance and enforcement may be under-resourced.

During interviews, provincial and federal employees shared some of the barriers their agencies face in fulfilling their compliance and enforcement mandates, and how Guardians contribute by enhancing or complementing the work of their agencies. Employees from DFO, Parks Canada, BC Parks, and FLNRORD provided comments on compliance and enforcement, which are summarized in Figure 6. The comments on barriers and Guardian contributions were in

response to open-ended questions, and many employees provided similar answers, emphasizing that the barriers and contributions are widespread. For more information about the interview questions, see Appendix A: Research Methods.

“Guardians are stable which is helpful in isolated posts such as Haida Gwaii where staffing may be limited at times and people cycle through every 3 years. This is where the joint patrol work is so important because we can work together when staffing may be short or they do not have anyone to patrol with. It’s always a great opportunity for us to work together.”

– **Max Macdonald**, Detachment Commander for Haida Gwaii, DFO

¹⁶ In interviews for this project: Denise Blid, FLNRORD, and Danielle Dickson, DFO

COMPLIANCE AND ENFORCEMENT

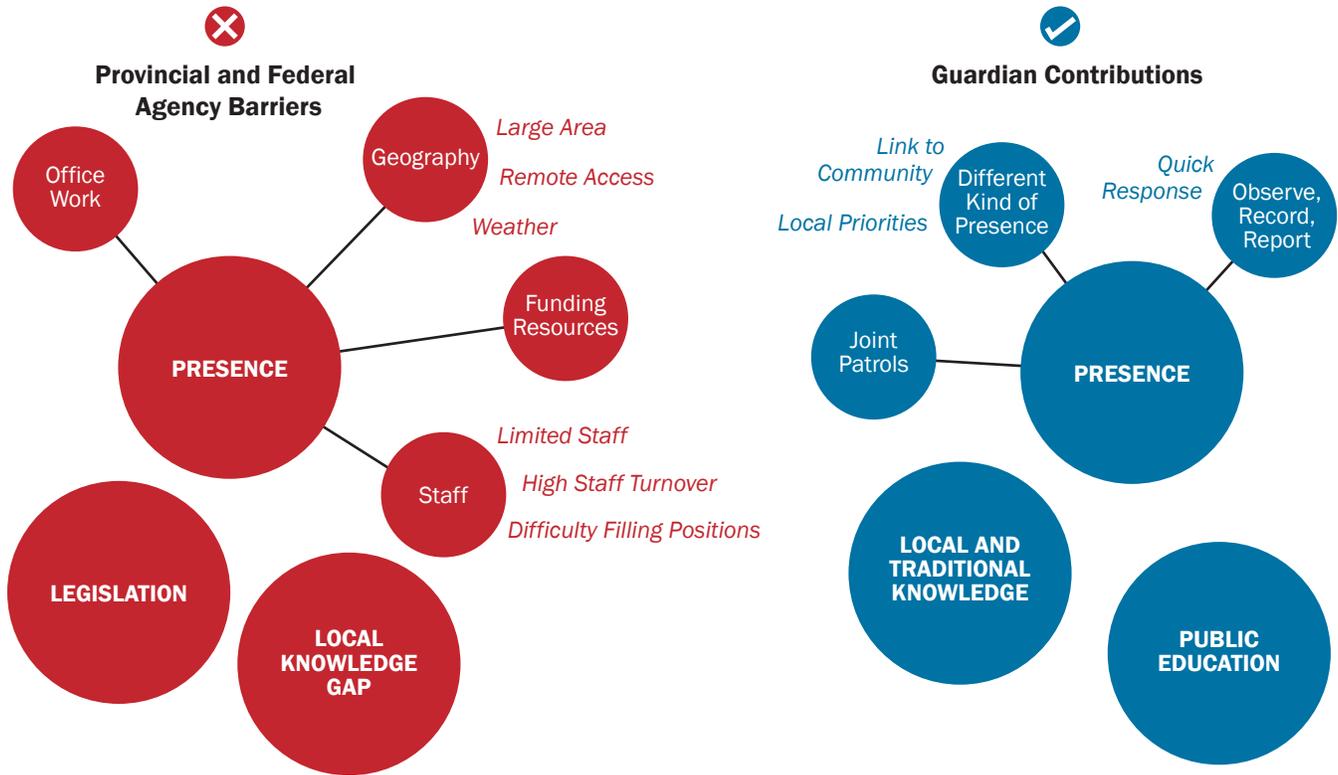


FIGURE 6: Summary of provincial and federal employee interview responses identifying barriers their agencies face in compliance and enforcement, and how Guardians contribute to this work.

Guardian Watchmen Support for Compliance and Enforcement of Provincial and Federal Laws

Stewarding the resources of the Great Bear Rainforest and Pacific Coast involves a myriad of provincial and federal laws and ground-breaking agreements and plans between First Nations, British Columbia, and Canada. However, no matter how well-conceived laws, plans, and agreements are on paper, they are limited by the enforcement capacity available. Meanwhile, Guardians maintain a strong presence in their territories, supporting compliance both directly and indirectly.

The Guardians directly support compliance and enforcement through joint patrols with provincial and federal enforcement officers. Interviewees from FLNRORD and DFO expressed respect and gratitude for the role of Guardians in supporting their agencies' mandates through joint patrols. These patrols are especially helpful for the agencies who may not have enough field staff to do patrols otherwise:

for instance, when they only have one field staff at a post. Beyond the logistical benefits, working collaboratively with Guardians enriches and improves the work of the agencies. Similarly, DFO Fisheries Officer Danielle Dickson appreciates the practical knowledge Guardians share during patrols, including the locations of unmapped creeks and submerged obstacles, and where to look for non-compliance.

Another way Guardians directly support compliance and enforcement is through observing, recording, and reporting infractions as they travel through their territories. They are trained to understand provincial and federal laws, observe non-compliance, record evidence, and report it to federal and provincial enforcement officers, who can then follow up. It is efficient because these efforts occur whenever a Guardian is in the field. Guardians monitor non-compliance to many different plans, agreements, and laws all at once, whereas each government agency typically monitors non-compliance specific to its mandate and/or jurisdiction.

Guardians may collect evidence of illegal forestry to report to FLNRORD, illegal fishing to report to DFO, and vandalism to report to Parks Canada or BC Parks. Evidence recorded by Guardians has led to charges and seizures of equipment in many cases. Here are just a few examples:

- Kitasoo Xai'xais Guardians took a photo of a fishing tourism operator flying into Mussel Inlet, an ecologically sensitive and culturally and spiritually significant estuary where fishing is not permitted. The photo evidence led to charges.
- Wuikinuxv Guardians found black oil jugs being used as buoys for illegal crab traps. They wrote a report for DFO to document the evidence. DFO then seized the traps.
- Heiltsuk Guardians confronted a trophy hunter, took photos of the evidence, and asked about the hunting expedition and permits. The evidence was used in court and led to a \$10,000 fine for lying to obtain a hunting license.

- Heiltsuk Guardians regularly monitored the condition of two derelict logging camp barges and provided photos and status updates. The Province used the Guardians' evidence in the court case against the owner.

A unique way in which Guardians indirectly contribute to compliance is through public engagement and education. Guardians patrolling or stationed in the field act as ambassadors for their territories, approaching resource-users such as tourists and fishers, and educating them. Guardians will tell the visitors about the territory and how to use the resources respectfully and legally. As Indigenous stewards, they are uniquely qualified for this work that includes both storytelling and education about laws. Ernie Gladstone, Gwaii Haanas Parks Canada Field Superintendent and a citizen of the Haida Nation, also appreciates the unique storytelling of Guardians that leads to compliance (Box 3).

“Education has been an important piece – Guardians going up to people, introducing themselves and giving people an understanding that there are people out here who do care and who are keeping an eye out. So even if people aren’t necessarily doing anything wrong, just having that person on the water who is educating and providing a welcoming to that place actually makes a difference.... They see those people out on the water and this creates a relationship and strengthens compliance, it builds a network of people who understand that there are people who care and that may also kickstart other people keeping an eye out as well.”

– Rebecca Martone, biologist, Tula Foundation (previously FLNRORD biologist)

The Eyes and Ears of the Land and Sea: Diverse Pathways to Compliance

AN UNPARALLELED PRESENCE

The Pacific Coast is a vast area threatened by illegal forestry, recreation, fishing, and hunting activities. Employees of four provincial and federal agencies all declared that the extensive area their agencies must cover with limited, and sometimes dwindling, staff is a barrier to fulfilling compliance and enforcement mandates.¹⁷ Coastal Guardian Watchmen help fill this gap by maintaining a strong presence in their territories. Since 2010, Guardians have recorded 38,964 hours of patrols, all registered in their Regional Monitoring System. While out on patrols or stationed in their territories Guardians support compliance in different and complimentary ways: by observing, recording, and reporting non-compliance, and by preventing non-compliance through visitor engagement.

OBSERVE, RECORD, REPORT

There are countless examples of Guardians observing illegal activity, recording evidence, and reporting it to provincial and federal authorities. One example is monitoring crab traps. To avoid wasteful deaths, commercial crab traps are legally allowed to be in the water for a maximum of 18 days. The Kitasoo Xai'xais Guardians monitor for compliance with an innovative tagging system. When traps are left for too long, Guardians notify DFO who use the tags as evidence for non-compliance. This system, developed by Kitasoo Xai'xais fishery Guardians, was used in 2016 to track 339 traps that had been left for up to 35 days, resulting in a \$31,200 fine for the illegal activity. In addition to saving crabs, these efforts also save money. Each time Guardians monitor traps in Kitasoo Xai'xais territory, the cost savings are \$412 per trip, compared to DFO travelling from Bella Bella and monitoring the area for two hours.¹⁸

KEY POINTS

**38,964**

The number of hours of patrolling recorded by CFN Guardians since 2010

**\$412**

The cost savings per trip to monitor crab traps

17 In interviews for this project: Denise Blid (FLNRORD), Danielle Dickson (DFO), Max MacDonald (DFO), Ernie Gladstone (Parks Canada), Steve Hodgson (BC Parks), Mark Beisel (DFO)

18 Based on wages and other HR costs for DFO staff compared to Kitasoo Xai'xais staff, and the travel costs (boat fuel and wages) from Bella Bella to Klemtu. Assumes staff would be onsite for two hours.

UNIQUE PATHWAYS TO COMPLIANCE

Guardians play a key role in educating resource-users, so they are aware of how to respectfully engage in their activities. For example, a trip to Gwaii Haanas is a once in a lifetime opportunity to view wildlife and visit ancient Haida village sites. Haida Watchmen welcome visitors and share their knowledge of their ancestors and culture. The education and stories provided by the Watchmen not only enriches the experience for visitors, but it is also a powerful tool for compliance. Ernie Gladstone, a Parks Canada field superintendent at Gwaii Haanas, commends the unique compliance role of Watchmen engaging with the public, noting that the personalized and unscripted stories of Watchmen educate the public and “results in people behaving appropriately and the sites being conserved.”



FIGURE 7: Kitasoo Xai'xais tags for monitoring how long crab traps have been in the water (photo credit: Haida Gwaii Observer).

“The watchmen pretty much conduct the compliance at each one of their sites. In some ways it’s more effective than having Parks Canada do compliance.”

– **Ernie Gladstone,**
Gwaii Haanas Parks Canada Field
Superintendent, Parks Canada

Finally, and perhaps most importantly, Guardians significantly contribute to compliance through their consistent and wide-ranging presence. Guardians are in their territories daily, patrolling areas across the region, which has amounted to a staggering amount of coverage over time and space (see Box 4). This dedicated presence in the territory changes the way people behave. As Ken Cripps, Kitasoo Xai'xais Marine Stewardship Director, says, "(Guardian) presence brings compliance. Just by virtue of being on the water and flying the Guardian flag. We've seen geoduck poaching and other poaching in the past, and that doesn't seem so prevalent now that Guardians are out on the water. Their presence has people looking over their shoulder."

"Just their presence is essential...When you know someone is watching, you always behave better. So just their presence alone has had a huge influence on how people behave in their territory, whether they are on the land or on the water."

– **Janie Wray**, CEO and lead researcher, BC Whales

BOX 4

A Dedicated Presence

Since 2010, Coastal Guardian Watchmen have been digitally capturing records of their patrols in the Regional Monitoring System (RMS). This dataset highlights the benefit of Guardians being part of a network and recording regional data with a level of detail that is usually only possible at a local level. One outcome of this dataset is a detailed record of the dedicated presence of Guardians over time and space. This data represents what has been tracked using the RMS and doesn't include any patrols that were undertaken without being recorded in this way. Even so, the numbers are staggering:

Total number of patrols:	6,385
Total kilometres:	619,864
Total hours:	38,964
Coverage of coastal waters of the BC north and central coast:	52%
Coverage of inland coastal waters of the BC north and central coast:	72%
Coverage of inland coastal waters of BC north and central coast within traditional territories:	96%



FIGURE 8: A portion of the patrol tracks recorded into the RMS since 2010. The map does not include all patrols; any patrols that were not recorded with the RMS are excluded, Metlakatla and Haida patrols are excluded, and some patrols on the outside of Calvert Island are also excluded.

Guardian Watchmen Compliance and Enforcement of Indigenous Laws

Coastal Guardian Watchmen are grounded in Indigenous legal traditions that predate the arrival of European settlers, and still today, after the imposition of provincial and federal laws, Indigenous peoples steward their territories with their own laws. Within the context of the *United Nations Declaration on the Rights of Indigenous Peoples*, the Guardians are paving the way for Indigenous-led stewardship by enforcing Indigenous laws. Many Indigenous laws are in place to protect the environment from culturally insensitive behaviours, poaching, overharvesting, and vandalism. These laws often align with wider public values and inform provincial and federal laws.

“With its focus on the health and sustainability of the natural world, Indigenous law has an important role to play in caring for the environment all Canadians depend on for life and livelihood. Thus, cooperative efforts to enhance recognition of the authority of Guardian Watchmen helps all of us build a better relationship with the natural world, for the benefit of all who inhabit it.”

– **West Coast Environmental Law**¹⁹

Ensuring compliance and enforcing Indigenous laws begins with knowledge and extends to action. Guardians are present and have taken an increasingly active role in monitoring the health of fish stocks and wildlife populations, marine habitats, and the impacts of human use. This knowledge forms the base for effective stewardship. In cases where provincial and federal laws are not sufficiently protecting an Indigenous community’s cultural, economic, and ecological needs, Indigenous laws can be declared and upheld. The strength of the laws depends on compliance, which Guardians enforce. Two examples of Indigenous laws that Guardians have enforced are:

- Four Central Coast Nations declared and enforced the closures of commercial and recreational crab fishing at a network of sites (see Box 5).
- CFN member Nations declared the trophy hunting of grizzly bears illegal under Indigenous law (see Box 16).

The public benefits of Guardian-enforced Indigenous laws are immense. For example, in 2015, 91% of British Columbians polled disapproved of trophy hunting, yet the practice remained legal under provincial law. The laws also benefit the public, such as promoting healthier ecosystems that support sustainable long-term economic activities such as bear-viewing (Box 16).

19 West Coast Environmental Law, 2018. Guardian Watchmen: Upholding Indigenous Laws to Protect Land and Sea.

(Photo credit: Brandon Robinson)



BOX 5

Dungeness Crab Closures

DUNGENESS CRAB DEPLETION

Dungeness crab populations are seen to be relatively healthy in British Columbia. Yet, over a period of three months of the year, visiting recreational and commercial fishers would harvest so many crabs from the Central Coast that the population would be depleted to the point that during “those other nine months, there was nothing left to harvest.”²⁰ The cycle was depleting an important food source for remote communities with limited and expensive groceries.

UPHOLDING INDIGENOUS LAWS

Tired of the cycle that left their communities without an important food and cultural resource, Central Coast First Nations took action. DFO wouldn't close any sites without “proof” beyond the lived experience and knowledge of First Nations, so the Nations upheld their laws and began their own research. Four Nations closed 10 crabbing sites in accordance with their Indigenous laws, and Guardians enforced the closure by patrolling the sites, notifying fishers, and tagging any traps they found. While enforcing the closure, Guardians also collected data on the size and abundance of crabs in the 10 closed sites and 10 sites that were left open.



FIGURE 9: Crab closures sign in Kynoch Inlet (photo credit: Deirdre Leowinata).

20 Mike Reid, Heiltsuk Integrated Resource Management Department

KEY POINTS



80%

The percentage of crab fishers surveyed who observed a decline in Dungeness crabs



10 SITES

Guardians enforced closures under Indigenous law at 10 sites



17 SITES

Nations collaborated with DFO to close 17 sites under federal law

“The data the Watchmen collect has provided the scientific basis for recent management actions to improve food, social, and ceremonial crab fishing access for First Nations on the Central Coast.”

– **Dan Curtis,**
Program Head, DFO

A BIG IMPACT

The data collected by Guardians revealed the success of the closures. The results, published in the journal *Global Ecology and Conservation*, show increased size and abundance of crabs at the closed sites compared to the open sites.²¹ Another Nation-led study revealed the decline of Dungeness crab over time; 80% of those surveyed reported a decline.²² The research proved to DFO what Central Coast Nations had been telling them since 2007 – recreational and commercial fishing was impacting their food, social, and ceremonial crab fishing and closures can help. With this information, DFO finally worked together with the Nations to close 17 sites to recreational and commercial fishing with a collaborative pilot program that relies on Guardians monitoring for compliance.

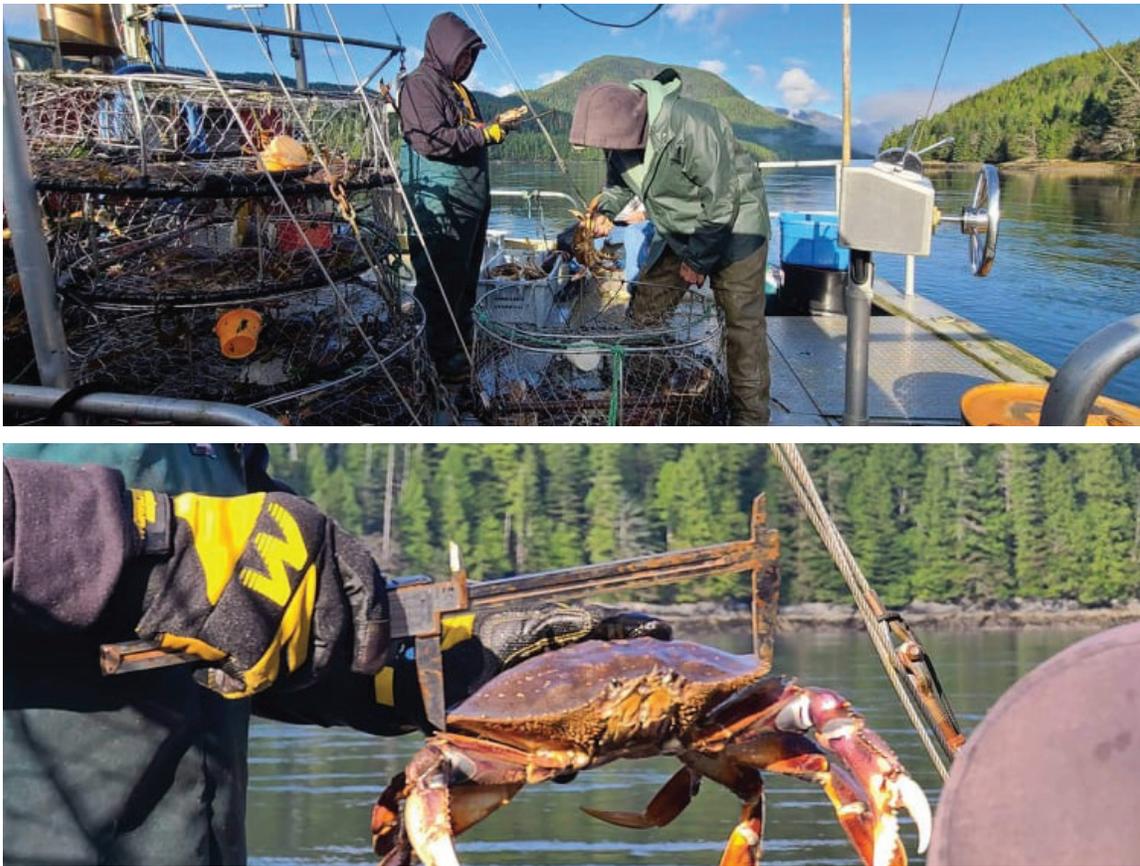


FIGURE 10: (Top) Dungeness crab survey, (bottom) showing crab carapace being measured by callipers for size (photo credit: George Fisher).

21 Frid, McGreer, and Stevensen. (2016). <https://doi.org/10.1016/j.gecco.2016.01.002>

22 Ban et al. (2017)

EMERGENCY RESPONSE AND PUBLIC SAFETY

Summary

The Central Coast, North Coast and Haida Gwaii are stunningly beautiful but sometimes harsh and rugged places. With the exceptions of the ports of Prince Rupert and Kitimat, the region is largely undeveloped and comprised of thousands of kilometres of coastlines and a handful of remote communities. Despite the relative isolation found in many sections along the coast, the region's waterways actually support high levels of local, regional, and international transport. In many ways, the coast is an unpredictable and sometimes dangerous highway for goods, resources, and people. Indigenous communities have responded to emergencies and ensured public safety along this coast for thousands of years. Today, Guardians are an integral part of emergency response and public safety for their communities, and the general public who visit or travel through the vast and sparsely populated coast. Guardians have demonstrated their ability to respond quickly and efficiently to emergencies such as fuel spills, animals in distress, and search and rescue operations. Guardians are also involved in preventing and preparing for emergencies through their work in spill preparedness and reducing human-bear conflict.

Interview data for this project and evidence from previous emergencies reveal that provincial and federal agencies are limited by sparse staff and stations in responding to emergencies along the Central Coast, North Coast and Haida Gwaii. Further, jurisdictional issues and poor coordination between siloed provincial and federal agencies cause delays in spill response. Letters of appreciation, recognition from the RCMP, and interview data for this project illustrate the critical role of Guardians in search and rescue and emergency response.

Provincial and Federal Emergency Response and Public Safety

The Port of Prince Rupert is Canada's third-largest port, handling 32 million tonnes of cargo in 2020 alone.²³ With port expansions and major natural resource export projects moving forward, significant increases in marine traffic are anticipated for the region. As a result, the threat of marine emergencies is ever-present and growing, and provincial and federal agencies are facing significant barriers in responding to marine emergencies.



FIGURE 11: Swift water rescue training (photo credit: Roger Harris).

The Canadian Coast Guard (CCG) is the primary agency responsible for emergency response and search and rescue at sea. They are currently limited by having personnel and equipment positioned at only three stations throughout the vast Pacific North and Central Coast.

Fortunately, search and rescue capacity is increasing with the Coastal Nations Coast Guard Auxiliary (CN-CGA). Incorporated in 2018 under sponsorship of the Federal Government, the CN-CGA has built upon the success of CGW initiatives and includes equipment and personnel trained in search and rescue in seven First Nations, including Kitsoo Xai'xais and Heiltsuk.

Equipment and personnel capacities are also a concern for spill response. Internationally recognized emergency response and spill expert Elise DeCola, who has worked extensively on the North Pacific Coast, reported that "current response forces are clustered in the Vancouver Port area, which reduces response capacity for other sites."²⁴ An additional area of concern is the "very fragmented response" to spills in BC, as Elise DeCola calls it, wherein various provincial and federal agencies have responsibilities that depend on the source of the spill (see *Box 6* and *Box 15* for more information about spill response in BC).

23 Dolphin Delivery, 2021. <https://dolphindelivery.ca/the-5-largest-major-ports-in-canada/>

24 Elise DeCola, 2016. <https://twinsacredtrust.ca/wp-content/uploads/2016/11/TWN-GIC-Nuka-Report-2016.11.25-2.pdf>

The Nathan E. Stewart tragedy exemplified these gaps in provincial and federal marine response. The American tug ran aground in Heiltsuk territory and eventually sank, spilling 110,000 litres of diesel fuel, lubricants, heavy oils and other pollutants into Gale Pass, which is a Heiltsuk food harvesting, village and cultural site.²⁵ The incident “illustrated the critical importance of having a distributed spill response capacity that can be quickly dispatched to the scene to initiate containment and recovery. In the case of the Nathan E. Stewart, the nearest response resources were in Prince Rupert and did not arrive on-scene until more than 34 hours had elapsed.”²⁶ Further, the poorly coordinated response highlighted the shortcomings of the fragmented response in BC, creating a great deal of confusion about who was in charge.²⁷

Beyond the barriers in dealing with critical emergency response, provincial and federal agencies are also ill-equipped to recognize and protect local values within their mandates. They are focused on acute response to large emergencies such as containing large oil spills but do not have the mandates or knowledge to identify and protect resources that are significant at the local level.²⁸ Further, there is little attention from the federal and provincial governments to the regularly occurring, smaller oil spills that are chronic and cause ecological degradation.²⁹

During interviews, provincial and federal employees shared some of the barriers their agencies face in emergency response and ensuring public safety, and how Guardians contribute by enhancing or complementing the work of their agencies. Employees from CCG, Parks Canada, BC Parks, and FLNRORD provided comments, which are summarized in Figure 12. The comments on barriers and Guardian contributions were in response to open-ended questions, and many interviewees provided similar answers, emphasizing that the barriers and contributions are wide-spread.

EMERGENCY RESPONSE AND PUBLIC SAFETY



FIGURE 12: Summary of provincial and federal employee interview responses identifying barriers their agencies face in emergency response and public safety, and how Guardians contribute to this work.

25 Heiltsuk Tribal Council, 2017. <http://www.heiltsuknation.ca/wp-content/uploads/2017/10/HTC-NES-IRP-2017-03-31.pdf>
 26 Elise DeCola, 2016. <https://twinsacredtrust.ca/wp-content/uploads/2016/11/TWN-GiC-Nuka-Report-2016.11.25-2.pdf>
 27 Heiltsuk Tribal Council, 2017. http://www.heiltsuknation.ca/wp-content/uploads/2017/11/HTC_IMRC-Report_Nov-15-2017.pdf
 28 Elise DeCola, in interviews for this project
 29 Patrick O’Hara (ECCC). In interviews for this project.

BOX 6

Protecting the Environment: Rivers Inlet Diesel Spill Response

SPILL RESPONSE IN BC

Toxic spills can quickly turn into tragedies when responses are slow or disorganized. Following the Nathan E. Stewart tragedy, the Heiltsuk Tribal Council noted the slow response time and confusion about who was in charge.³⁰ These inadequacies are realities of what internationally recognized emergency response and spill expert Elise DeCola describes as a “very fragmented response” in BC.³¹ Guardians are often first responders and fill in the gaps between other government agencies.³²

A QUICK AND COORDINATED RESPONSE

On February 15, 2021, a storage tank released 7000 – 8000 L of diesel onto the shore of Rivers Inlet in Wuikinuxv territory. The Guardians responded immediately, arriving on-site within the hour, and getting to work with assessment, containment, and identifying culturally and ecologically sensitive estuaries and food resources. On February 16, fellow Coastal Guardian Watchmen from the Heiltsuk Nation travelled across the cold and rough winter waters to bring supplies and their emergency response expertise.

While the Wuikinuxv and Heiltsuk Guardians worked on-the-ground, provincial and federal agencies assisted by remotely coordinating response efforts and ordering an over-flight to assess the spill. Three days after the spill was reported, and when most of the spill area was contained, two provincial officers arrived to assist.

30 Heiltsuk Tribal Council, 2017. http://www.heiltsuknation.ca/wp-content/uploads/2017/11/HTC_IMRC-Report_Nov-15-2017.pdf

31 Elise DeCola, 2021 interview

32 For more discussion on oil spill response in BC, see Box 15

KEY POINTS



1 HOUR

The time it took Guardians to be on-site addressing the spill (3 days before provincial officers)



90%

The area of the spill Guardians contained within 3 days



\$19,129

The cost saving for having Guardians address the spill

“Guardians are able to be out on the water way faster than any of the government agencies.”

– **Elise DeCola**, oil spill preparedness and response expert, Nuka Research

PREVENTING TRAGEDY

The Guardians contained 60% of the area within one day, and 90% within three days. Fortunately, diesel did not enter the culturally and ecologically sensitive Kilbella Bay and estuary. The quick and efficient Guardian response also saved \$19,129 as compared to the cost of a provincial response.³³

“[Wuikinuxv] wouldn’t have been able to do this work without the Guardians... it would have taken two or three days for a contractor to travel to the territory and begin to deal with the spill.”

– Andra Forney, Wuikinuxv Stewardship Director



FIGURE 13: Rivers Inlet in Wuikinuxv territory (photo credit: Wuikinuxv Nation).

³³ Based on the travel costs, wages and other HR costs of Guardians from the two Nations responding to the spill compared to the travel costs, per diem expenses, wages and HR costs for the same number of Ministry of Environment staff responding to the spill.

BOX 7

Save the Whales: How Guardians Save Time, Money, and Lives

SAVING WHALES

About a decade ago, a humpback whale entangled in fishing gear was crying out in distress in Gitga'at territory. The Gitga'at Guardians immediately responded and joined whale researchers including Janie Wray, CEO of the North Coast Cetacean Society. They worked together throughout the night monitoring the whale until losing sight of it in the darkness at 3:00 am. After briefly returning to shore until sunrise, the Guardians went back out on the water to keep searching. Eventually DFO's Marine Mammal Coordinator, who is the *only* person certified by DFO to disentangle whales in BC, joined the Guardians and the whale was found and freed.

Again in 2015, Gitga'at Guardians responded to a whale in distress. An orca had beached herself and was exposed to the sun on a hot July day. Guardians and whale researchers used water pumps and other materials they found on their boats to keep the whale cool and moist. Finally, after nine hours, the tide rose enough for the whale to swim away and reunite with her family.

"[DFO's Marine Mammal Coordinator] is the only person trained for this. So If you have more than one whale that is entangled at a time, one of those whales is going to be sacrificed."

– **Janie Wray**, CEO and lead researcher, BC Whales



FIGURE 14: (Left) A beached orca. (Right) Guardians working to rescue the orca (photos from <https://www.bcwhales.org/whaleblog/2017/5/12/rescuing-a-stranded-transient-orca>).

KEY POINTS



270%

The increase in whale entanglements in BC over the last five years



19+

The number of Guardians that have received specialized training to help entangled whales



\$2,865 PER DAY

The proven cost savings of Guardians rescuing a beached whale (compared to DFO based on a one-day incident)



\$14,010 PER INCIDENT

The potential cost savings of Guardians rescuing an entangled whale (compared to DFO based on a two-day incident)

FILLING A GROWING GAP AND SAVING MONEY

A 2018 audit found the federal effort to protect whales has been inadequate and noted that DFO lacked resources and national guidance in responding to distressed marine mammals.³⁴ Showing some improvement, Canada recently announced legislation requiring fishing gear in eastern Canada to be safer for whales.³⁵ Meanwhile, status quo fishing gear will persist on BC's coast, despite the growing threat of entanglement. Over the last five years in BC, DFO's Marine Mammal Coordinator has seen a drastic increase from 3 to 10 confirmed entanglements per year to 10 to 25 annually.³⁶ As more whales are becoming entangled and DFO certified responders are limited, Guardians play a key role in their rescue. Guardians are often first responders when marine mammals are in distress, and now many Guardians have been trained to attach satellite trackers to monitor whales until it is feasible to disentangle them, which increases the chance of success.³⁷

The benefits of Guardians responding to whales in distress are significant. Beyond the direct value of saving the lives of ecologically, spiritually, culturally, and economically significant whales, there are notable cost savings to the public purse.

Whenever Guardians can rescue a marine mammal without the assistance of DFO, such as the beached orca incident, the cost savings are an estimated **\$2,865** per day (compared to DFO based on a one-day incident).³⁸ With only one qualified expert on the west coast, the need for more capacity to conduct whale disentanglement is immense. Should this be filled by local Guardians, the potential cost savings are also significant, reaching in excess of **\$14,010** per incident (compared to DFO based on a two-day incident).³⁹ Over 90% of this cost saving comes from the fact that the Guardians are local residents, leading to considerable travel and per diem savings.

“There is a need for whale disentanglement up and down this coast, and if anyone should be trained to disentangle whales, it should be the Guardians.”

– **Janie Wray**, CEO and lead researcher, BC Whales

34 Office of the Auditor General of Canada, 2018. https://www.oag-bvg.gc.ca/internet/English/att__e_43151.html

35 Government of Canada, August 11, 2021. <https://www.canada.ca/en/fisheries-oceans/news/2021/08/government-of-canada-launches-new-20-million-fund-to-make-fishing-gear-safer-for-whales.html>

36 Nair, Roshini, October 22, 2021. <https://www.cbc.ca/news/canada/british-columbia/humpback-whales-entanglements-pinky-rescue-1.6217506>

37 Vancouver Sun, August 17, 2018. <https://vancouversun.com/news/local-news/risky-rescues-disentangle-the-oceans-giants-from-fishing-gear>

38 Based on the travel costs and wages of Guardians travelling by boat from their community to the nearby incident compared to the travel costs and wages of DFO employees travelling by seaplane from Prince Rupert.

39 Based on the travel costs and wages of Guardians travelling by boat from their community to the incident compared to the travel costs, wages, and per diem expenses of DFO staff flying in from Vancouver



(Photo credit: Medrick Robinson)

Guardian Search and Rescue

For as long as there have been mariners on this coast, Indigenous communities have been involved in ensuring public safety. One example of this was the sinking of the Queen of the North. In 2006, a BC Ferry ran aground in the middle of the night in Gitga'at territory. The CCG was hours away, and the situation was escalating quickly as the ferry began to sink. Gitga'at community members heard the distress call and sprang into action, travelling in the dead of night to rescue 99 crew and passengers and welcome them into their community. Although the scale of this incident and the attention it drew was unique, Indigenous involvement in marine public safety is not. As DFO Minister Dominic LeBlanc has said, "the first responders in many cases were the coastal Indigenous communities that were there."⁴⁰

"The Guardian Watchmen are first responders. Whether it's their job or not, it's what they do. They are going to help people who are in need."

– **Elise DeCola**, oil spill preparedness and response expert, Nuka Research

"Guardians play a big role in search and rescue and responding to vessels in distress. They know the waters, they have the experience, and in a lot of cases, they have the training."

– **Steve Diggon**, Marine Planning Program Manager, CFN

Guardians are now leaders in ensuring marine public safety on the Pacific North and Central Coast. Beyond the benefits of being a dispersed network on the water, they also bring their wealth of knowledge to search and rescue. Geoff Carrow is a CCG Senior Officer for the Indigenous Community Response Training Project and has experience working with Guardians to build search and rescue capacity. Carrow recognizes the value of local knowledge in search and rescue; the Guardians know the area well, they know where boats go down, where to look for kayakers and divers, and how to safely manoeuvre their own waters.⁴¹ Carrow also commends Guardians' connection to their communities; they know when mariners are overdue, what their vessels look like and where they usually travel.⁴² All of this knowledge and connection reduces response time and can save lives.

40 Thomas, Megan, 2017. <https://www.cbc.ca/news/canada/british-columbia/coast-guard-dfo-funding-1.4140148>

41 Geoff Carrow (CCG), in interviews for this project

42 Ibid.



(photo credit: CFN)

There are countless examples of Guardians leading search and rescue operations. Here are just a few that were mentioned in interviews for this project:

- Nuxalk Guardians saved the lives of a teacher's aid and two students whose kayaks had capsized and left them stranded in the frigid waters. The rescue garnered public recognition from the Bella Coola RCMP for the Guardians' "exemplary service to the community of Bella Coola."⁴³
- Kitasoo Xai'xais Guardians saved two lives by rescuing a trawler that had lost steerage (see Box 8 for a letter of appreciation).
- On a cold November evening with high winds and rough water, Nuxalk Guardians rescued a boat that had run out of fuel and was drifting in the dangerous conditions.⁴⁴
- Gitga'at Guardians rescued a broken-down whale research vessel.⁴⁵
- Kitasoo Xai'xais Guardians rescued a man, his dog, and his sailboat, while simultaneously preventing a pollution event (see Box 9 for more details).

43 Coast Mountain News. June 5, 2018. <https://www.coastmountainnews.com/news/rcmp-commends-local-action-for-saving-lives-of-three-kayakers/>

44 Ernie Tallio (Nuxalk), in interviews for this project

45 Janie Wray (BC Whales), in interviews for this project

BOX 8

Letter of Appreciation for Rescue by Kitasoo Xai'xais Guardians

Dear Mr. Edgar,

Enclosed please find a check for \$1000 (U.S.) for deposit into the Council's account. Our intent is to provide some support, however small, to the Kitasoo Guardians program, including operational costs of the vessel Kitasoo Watchman. We strongly support the Coastal First Nations' mission of safeguarding the integrity of the coastal environment in which First Nations have been sustainably living for thousands of years. This environment must not be destroyed or degraded.

We became aware of the Guardians program by accident: On Friday, July 30, the Kitasoo Watchman graciously towed our 32-ft trawler 35 nautical miles into Klemtu after we lost steerage from a deadhead encounter in NW part of Laredo Channel. The deadhead encounter was very badly timed: We had seen no vessels since leaving Borrowman Bay, and when we sent out a Channel 16 call for help at 2 PM, we were starting to drift toward a steep-to lee shore. Also, a southeasterly gale was forecast to occur by 6 PM, so we had limited time to get into shelter. The Watchman's alert intervention saved us from a very bad situation. The two young men on the Watchman graciously gave six hours of their time, and any hope of being back home by dinner time and the start of the weekend, to bring us down Laredo Channel, across upper Laredo Sound, through Meyer Passage, and down to the fuel dock at Klemtu, all at a crawling pace of a few knots. We were impressed by their resourcefulness, generosity, and decency; and by the generosity and decency of the Guardian organization.

Sincerely, Abe and Carole Jacobson

BOX 9

Saving Lives and Protecting the Environment: Guardians Rescue a Skipper and his Dog while Preventing Pollution

A RESCUE MISSION

On September 17, 2019, the Kitasoo Xai'xais Guardians were working on a Geographic Response Plan to enhance spill response preparedness when they heard a distress call on the radio. Guardians were first on the scene to find a wooden boat taking on water and listing at 45 degrees. The Guardians brought the skipper and his dog to safety onto their boat, lashed the sinking boat to shore, and prevented pollution by retrieving fuel from the boat. The Guardians began pumping water out of the boat, retrieved a jerry can of gas from the sinking boat and began to make radio calls for support and to locate a larger pump. From there, they brought the man and dog to Klemtu so they could warm up. Shortly thereafter the Guardians returned to the site, pumped out the boat and towed it to Klemtu safely.

THE VALUE OF INTEGRATED STEWARDSHIP

In addition to saving lives and preventing a spill, this incident showcases the value of integrated stewardship – of having these Guardians who are mariners capable of search and rescue, vessel recovery, and environmental protection simultaneously. Elise Decola, from Nuka Research, who was with the Guardians throughout the incident, commends their quick thinking to not only save the lives involved, but to also gather the fuel to prevent pollution. DeCola adds that it “was all instinctive” for the Guardians.



FIGURE 15: Vessel in distress when Guardians arrived on the scene (photo credit: Elise DeCola).



FIGURE 16: Skipper and his dog brought to safety on the Guardian boat (photo credit: Elise DeCola).

KEY POINTS



40

The number of minutes it took Guardians to arrive first on the scene



2

The number of lives saved



20

The number of litres of fuel and oil contained and prevented from spilling

“Guardian Watchmen are problem solvers, they are doers, and they have a stake in everything they do.”

– **Elise DeCola**, oil spill preparedness and response expert, Nuka Research

Guardian Support for Bear Safety

Coastal Guardian Watchmen also ensure public safety by reducing human-bear conflict. In Bella Coola, some grizzly bears were getting too comfortable with humans and coming into the community at night. Nuxalk Guardians, as well as local volunteers, patrolled the streets at night to push the grizzlies out of the community and back towards the river. This non-lethal method helps balance the values of community safety and protecting the economically, ecologically, spiritually, and culturally significant grizzly bears. Ernie Tallio, Nuxalk

Guardian Watchmen Manager, explained that if Guardians were not there to mitigate conflict, conservation officers could come to trap, relocate, or kill the bears, and/or locals could take matters into their own hands. Both of those scenarios have outcomes that do not reflect the public value of protecting bears. Guardians also reduce human-bear conflict through public education. Steve Hodgson, Bella Coola Acting Parks and Protected Areas Section Head with BC Parks, commended the Nuxalk and Kitsoo Xai'xais Guardians for educating visitors about bear safety at parks and conservancies.⁴⁶

46 Steve Hodgson (BC Parks), In interviews for this project.



(Photo credit: CFN)

CONSERVATION AND ENVIRONMENTAL MANAGEMENT

Summary

The fragmented islands and inlets of BC's North and Central Coast and Haida Gwaii provide habitat for more diversity of plants, wildlife, and people than anywhere else in North America. An abundant combination of animals such as whales, dolphins, wolves, and bears make the area different from anywhere else in the world. The region includes the Great Bear Rainforest, the largest intact coastal temperate rainforest on Earth named after the grizzly bears, black bears, and unique Spirit Bears that live there. These ecosystems are rich and diverse but face daunting environmental management challenges such as declining salmon populations and invasive species.

Indigenous communities have stewarded the lands and waters of the Pacific's North and Central Coast and Haida Gwaii, conserving and managing precious life, for millennia. Today, Guardians play a crucial role in conservation and management for their communities, other resource users and for the public who visit. Guardians have demonstrated their abilities to protect vulnerable and culturally significant species such as grizzly and spirit bears, freshwater mussels, and crabs.



FIGURE 17: Guardians examining a Dungeness crab and recording the data for a survey (photo credit: Sandra Thomson).

Interview data for this project reveal provincial and federal agencies face significant barriers in conservation and environmental management, including capacity and resource limitations, jurisdictional and legislative barriers, and knowledge gaps. Interview data, case studies, and desktop research reveal how Guardians contribute to conservation and environmental management in ways that complement and enhance the work of provincial and federal agencies.

Provincial and Federal Conservation and Environmental Management

Since initial settlement, Canadian federal and provincial governments have overtaken management of the resources on the Pacific's North and Central Coast and Haida Gwaii. As such, they have also taken on the responsibility to monitor, protect, and manage these resources. However, as pressure increases on coastal resources, federal and provincial governments continue to face funding and staffing shortfalls, local knowledge gaps, jurisdiction constraints, and legislation barriers.

“The province covers a large geographic area and there are a lot of places that require monitoring and management. Resourcing is always our biggest challenge. We don’t always have the capacity needed to do the level of monitoring that we might like to see. We need to set priorities, especially in the context of a smaller public service.”

– Kristin Worsley, Manager of the Marine and Coastal Resources Unit, FLNRORD

A cornerstone of strong environmental stewardship is making informed decisions underpinned by knowledge of the resources and ecosystems. A challenge faced by provincial agencies, federal agencies, and Nations alike is making management decisions with limited data. The capacity gaps of the agencies exacerbate the data gaps, and governments are faced with making decisions without reliable, site-specific data. For example, Ken Cripps explained that DFO is currently monitoring prawns in Howe Sound near Vancouver and applying the results to the coast-wide management of the species. Another example is the decisions the province was making about bears on

the Central Coast using habitat models of the number of bears, rather than actual observations about the number of bears (Box 16). Similarly, DFO makes decisions about the number of salmon that can be harvested each year without monitoring the number of returning salmon for most populations (Box 12).

Provincial and federal agencies are also limited by narrow jurisdiction and legislation. For example, the legislation for kelp that FLNRORD operates within focuses on managing kelp from a food-safety perspective rather than a resource stewardship perspective. Similarly, jurisdiction limits the involvement of provincial and federal agencies by dividing the management of ecosystems between agencies and levels of government in ways that do not align with how ecosystems actually function (Box 15). Jurisdictional challenges are exacerbated by limited coordination between levels of government, as evidenced by the management and monitoring of fish between FLNRORD and DFO.

“Regarding coordination with the federal government, there is some when it comes to monitoring and management of salmon...we are gathering information that gets used, but we are not always doing that work together, which is especially important for species that cross the land-sea boundary.”

– **Rebecca Martone**, marine biologist,
Tula Foundation
(previous FLNRORD marine biologist)

“The focus in the BC Fish and Seafood Act, which informs the Province’s approach to kelp harvest management, is on food safety, and provides less specificity about managing the natural resource.”

– **Rebecca Martone**, marine biologist,
Tula Foundation
(previous FLNRORD marine biologist)

During interviews, provincial and federal employees shared some of the barriers their agencies face in conservation and environmental management, and how Guardians contribute by enhancing or complementing the work of their agencies. Employees from DFO, Parks Canada, BC Parks, and FLNRORD provided comments, which are summarized in Figure 18. The comments on barriers and Guardian contributions were in response to open-ended questions, and many interviewees provided similar answers, emphasizing that the barriers and contributions are widespread.

Guardian Conservation and Environmental Management

Guardian contributions to conservation and environmental management are central to everything they do as Indigenous stewards. Guardians are involved in many ecological monitoring projects which inform legislation and management plans. Some of their monitoring is through specific projects that directly contribute to provincial and federal management, such as:

- Monitoring ecosystem-based management (EBM) indicators for the Marine Plan Partnership for the North Pacific Coast (MaPP), including invasive green crabs, kelp, and Dungeness crabs (Box 11).
- Monitoring salmon populations through salmon enumeration and DNA sample collection (Box 12).
- Monitoring invasive rodents on remote islands that are integral seabird breeding sites.⁴⁷

47 Guardians partnered with Birds Canada to monitor remote islands for invasive species. David Bradley of Birds Canada provided an overview of Guardian involvement

CONSERVATION AND ENVIRONMENTAL MANAGEMENT

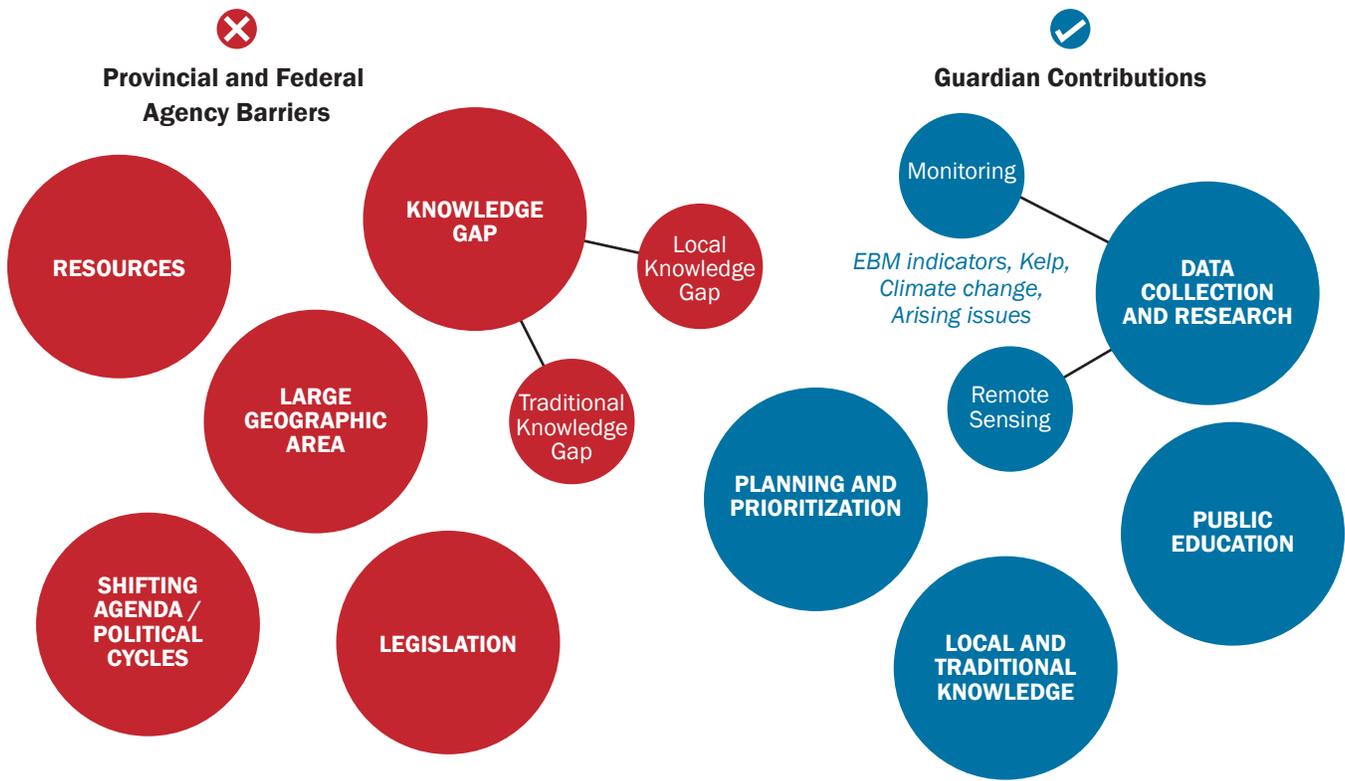


FIGURE 18: Summary of provincial and federal employee interview responses identifying barriers their agencies face in conservation and environmental management, and how Guardians contribute to this work.

- Long-term, diverse, and integrated monitoring of bears (Box 16).
- Collection of herring samples for genetic analyses.
- Collecting scientific data and Indigenous knowledge to inform environmental impact assessments.

In addition to the direct ecological monitoring by Guardians, they also contribute to ecological monitoring through their consistent presence in their territories. By observing the environment in their daily work, Guardians can pick up on changes in abundance, distribution, and timing of different species and ecological phenomena. For example, Guardians first noticed an increase in bryozoa on kelp. Bryozoa are tiny invertebrates that live on kelp, causing a thick crust that can kill the seaweed if it becomes too abundant. The Guardians sent photos to a post-doctoral researcher at Simon Fraser University and with their remote support, have begun conducting kelp and bryozoa surveys at designated beds 3-4 times per year.

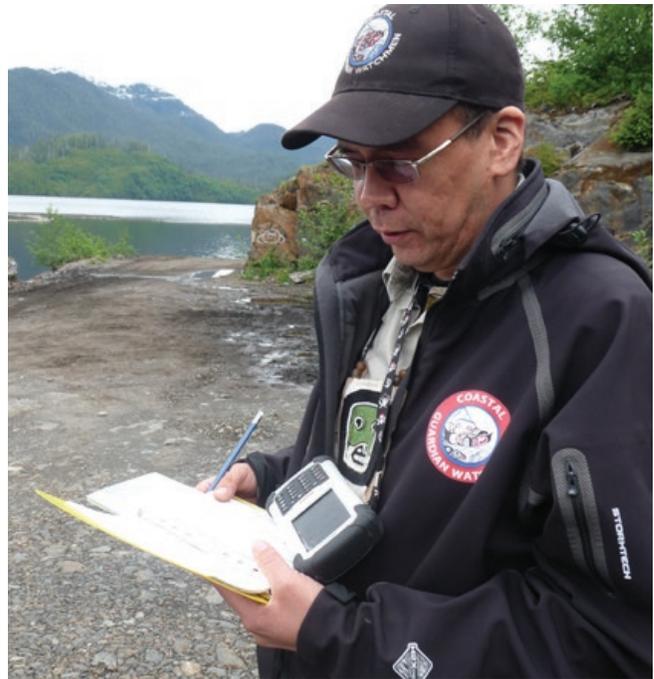
“Them being out in the field and observing through the seasons the emerging issues coming up - those are things we want to be responsive to in our planning. What are the things that are of concern, have those changed over the years? So being able to be adaptable when these things come up. A lot of the times it’s the Guardians who notice these changes – such as declines in certain seaweed species.”

– **Sally Cargill**, Marine Planning Specialist, FLNRORD

The impact of ecological monitoring undertaken by the Guardians has informed not only their own resource management but has also resulted in legislative changes in Grizzly hunting and crab harvesting and is informing the adaptive EBM of MaPP.

“The Central Coast has started noticing a bryozoan that’s linked to climate change and can be a potential driver of loss of nearshore kelp habitats. That was a really important observation that has led now to more dedicated research efforts.”

– **Rebecca Martone**, marine biologist,
Tula Foundation
(previous FLNRORD marine biologist)



(photo credit: Sandra Morrison)

BOX 10

The Marine Plan Partnership for the North Pacific Coast (MaPP)

MaPP is a co-led process between 17 First Nations and the Province of BC that developed and is implementing plans for marine uses with an ecosystem-based management (EBM) approach.

EBM is adaptive management of human activities that seeks to ensure the coexistence of healthy ecosystems and human communities.⁴⁸

48 Marine Plan Partnership for the Pacific North Coast. <http://mappocean.org/>

BOX 11

Collaborating Against a Dangerous Invader: European Green Crab Monitoring

DEVASTATING CRABS

DFO describes the European green crab (*Carcinus maenas*) as “one of the world’s 10 least wanted species.”⁴⁹ Green crabs have spread from northern Europe across the world by travelling in ships, including ballast water, ocean currents and fishing gear in their larval form. They are voracious predators that out-compete native crab species for prey. Green crabs can destroy beds of bivalve shellfish, destroy critical habitat for wild salmon, manila clams, and Dungeness crabs.⁵⁰



FIGURE 20: European Green Crab (photo credit: USFWS - Pacific Region).

PUSHING BACK AGAINST AQUATIC INVADERS

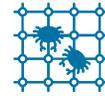
The Heiltsuk Nation has been working towards eradicating green crabs in their territory for over a decade. In 2017, a network of Guardians from other Nations joined Heiltsuk in their efforts. The Guardians use traps designed to reduce bycatch, travelling to sites several times weekly and freezing any green crabs they find. On the Central Coast, green crab has been found at 4 of 25 continuously sampled sites – the data suggest the crabs are spreading slower than expected, perhaps due to the long-term and relentless efforts of the Heiltsuk Guardians, who destroy thousands of green crabs annually. The Guardians are now monitoring indicators at a greater scale than any provincial or federal agency, and the data collected is changing the way biodiversity is protected and species are managed.⁵¹

49 Government of Canada, 2021. European Green Crab.

50 MaPP, May 15, 2018.

51 MaPP, February 6, 2020.

KEY POINTS



25

The number of sites
Central Coast Guardians
sample continuously



RESULTS

Monitoring efforts reveal
green crab is spreading
slower than expected



\$197,645

The annual cost savings
of Guardians monitoring
EBM indicators



FIGURE 21: Nuxalk Guardian retrieves a trap to monitor for green crab (photo credit: CCIRA).

FAR REACHING BENEFITS

For invasive species which travel between territories, the network effort is crucial. In July 2020, green crab was found on Haida Gwaii for the first time. The data collected by Guardians across the network may help the Haida anticipate and combat the spread as they are in the early stages. The data have even reached Alaska, where the Department of Fish and Game took notice and collaborated with Metlakatla to monitor the invasive species as it spreads north.⁵²

COST SAVINGS

Green crab monitoring is just one part of a larger effort Guardians are leading with monitoring ecosystem-based management (EBM) indicators under the Marine Plan Partnership (MaPP) with BC. The partnership funds two Guardian positions with four Nations. Guardians in these positions benefit the general public by informing the adaptive management of MaPP to result in better ecological and economic outcomes for the coast. Guardians need to be more fairly compensated for this work, and with savings in wages and human resources of approximately **\$197,645** compared to provincial staff, there is surely an opportunity to do so.⁵³

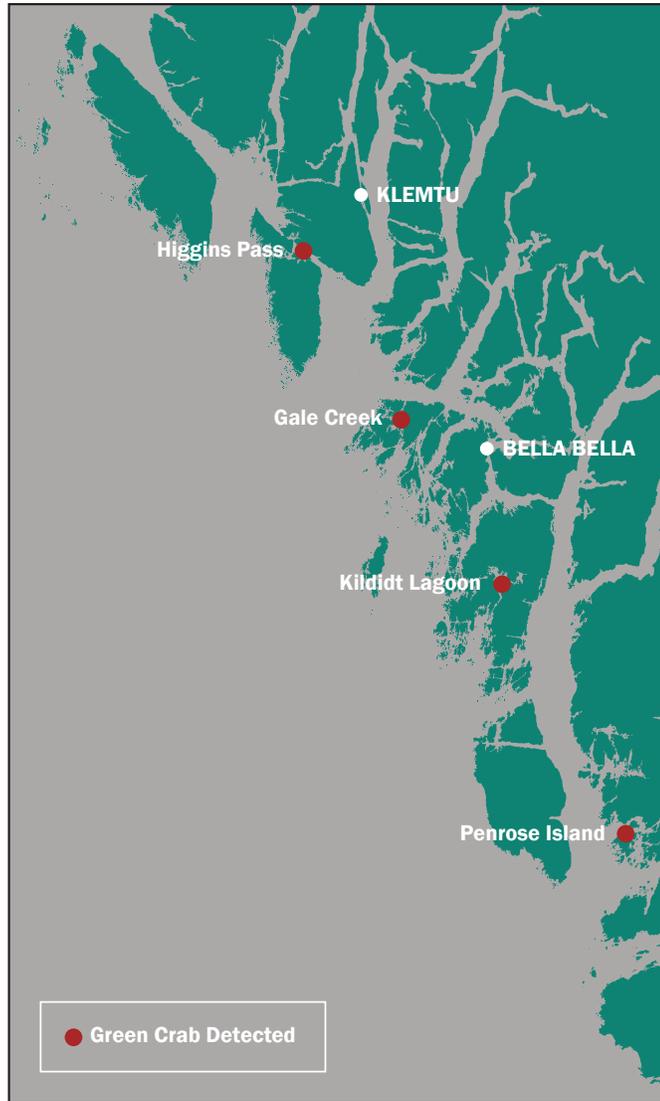


FIGURE 22: Map showing where green crab has been found on the Central Coast. Adapted from CCIRA.

52 Viechnicki, Joe, December 17, 2020.

53 Based on provincial wages and other HR costs for 8 full time provincial staff compared to wages and other HR costs of 8 full time Guardians at the respective Nations

BOX 12

Gathering Critical Salmon Data with Creekwalks

THE ROLE OF KNOWLEDGE

Salmon are integral to the wellbeing of coastal ecosystems and communities, from feeding bears to nurturing forests and sustaining livelihoods, cultures, and traditions. Once abundant in the streams of the Great Bear Rainforest, salmon populations are now devastatingly low.⁵⁴ Creekwalkers are at the frontlines of understanding the decline. They visit streams multiple times while salmon are spawning to count the fish and provide detailed assessments of the number of salmon that return to their natal streams. These assessments enable informed management decisions that are imperative in conserving wild salmon because “you can’t manage salmon populations if you don’t know how they’re doing.”⁵⁵

Despite the critical importance of creekwalkers, DFO has drastically cut funding towards monitoring in recent decades. On the North Coast, for example, there was once 150 creekwalkers, and now there are only two. DFO has shifted to counting through aerial surveys and fish tagging at just a few sites in larger stream systems and modeling populations. The accuracy of these estimates can be off by as much as 50 per cent, and it does not show what is happening to individual populations.⁵⁶

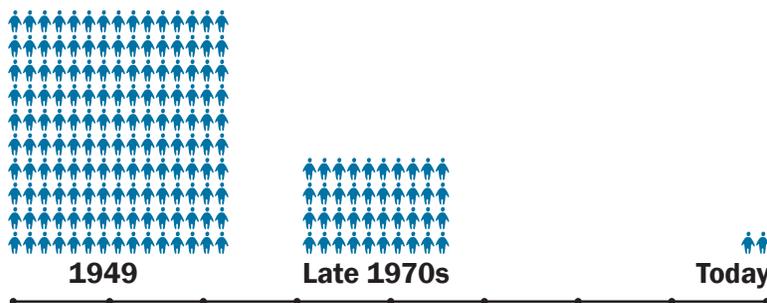


FIGURE 23: Decline of creekwalkers on the North Coast.

54 Pacific Wild, (n.d.). Salmon Count./

55 John Reynolds, SFU researcher. See: Linnitt, Carol, 2017.

56 Simmons, Matt, February 18, 2021.

KEY POINTS



60%

The percentage decline in DFO monitoring in the last 15 years



<10%

The proportion of spawning streams on the Central and North Coast that are monitored



Guardians are stepping up to take on creekwalker roles

“The single greatest asset to salmon conservation on our coast is on-the-ground monitoring by Indigenous Nations Guardian programs, academics, volunteers, stewardship programs, and a few remaining DFO charter patrolmen who are trying to keep the salmon count alive.”

– Pacific Wild

GUARDIAN CREEKWALKERS

In the absence of DFO Creekwalkers, Guardians from Nations including Gitga'at, Heiltsuk, and Kitasoo Xai'xais have stepped up to monitor salmon in their territories with creekwalks. The Heiltsuk and Kitasoo Xai'xais receive a small amount of funding from DFO to do this work, and they share the data with the agency. Efforts are underway to standardise the data collection across the network of Guardian programs to make sure the data is compatible with DFO in all Nations.⁵⁷

GUARDIAN POTENTIAL

There is a lot of potential within the Guardian initiatives to expand and align their role in salmon monitoring with DFO. If the agency decides to invest in Creekwalkers to fill the gap they have left with funding cuts, it makes good practical and economic sense that Guardians are offered the job. As a dispersed network, Coastal Guardian Watchmen are well positioned to monitor streams through the Pacific North and Central Coast, and they have the skills and knowledge for the job.

57 Fraser Los, Coastal Stewardship Network. See: Simmons, Matt, February 18, 2021.



(Photo credit: Elodie Button)

4. Contribution: Advancing Knowledge and Public Understanding

SUMMARY

In addition to carrying out data collection and research that directly aligns with provincial and federal agency mandates, Guardians are also involved in research that advances knowledge and public understanding in other ways. Guardians are uniquely positioned to gather this information and document changes and observations as Indigenous stewards and knowledge holders who are also trained in western science.

NATION-LED RESEARCH

Since 2010, data collected by the Guardians using the RMS covers a vast region with a high level of detail. The RMS includes a custom-made, standardized mobile application that Coastal Guardian Watchmen use to collect data on priority concerns identified by communities, including damage to cultural sites, excessive hunting and overfishing, declining fish and wildlife populations, and the limited presence of provincial and federal enforcement agencies. This data is not only beneficial for the stewardship efforts of the Nations, but it also advances knowledge and public understanding. For example, RMS data reveals increases in humpback whales and their seasonal migration patterns (Box 13). Additionally, the Nation-led research into Dungeness crabs (Box 4) and bears (Box 16) advanced knowledge and has management implications for the broader public.

“There are outcomes but the process itself is really important, the research that informs evidence-based policy by First Nations, using their own local knowledge and their own scientific research. The process of doing that is that these governments are investing in a generation of evidence to inform their decision making, and one of their investments is the Guardian program.”

– **Chris Darimont**, UVic professor and scientist at the Raincoast Conservation Foundation



FIGURE 24: Kelp survey training at the CSN Annual Gathering (photo credit: CSN).

“A lot of the projects that I am involved in can only happen because Guardians exist...Their presence enables research, and enables researchers who partner with First Nations to do that work.”

– **Natalie Ban**, Associate Professor,
School of Environmental Studies, UVic

COLLABORATIVE RESEARCH

For far too long, researchers would engage with First Nations in extractive relationships; the researchers gathered data from the communities and territories, benefited from the research, and then gave nothing back to the community. In some cases, we are now seeing a paradigm shift towards more collaboration and mutually beneficial relationships. Guardians are central to this shift as they provide capacity for Nations to engage in research collaborations. Guardians are involved in many such collaborations, including:

- Investigating black seaweed with the Hakai Institute⁵⁸ to understand what led to the mysterious die-off of this important food source in 2016. Guardian research at various sites along the coast will help identify what led to the die-off.⁵⁹
- Gitga’at Guardians collaborating with North Coast Cetacean Society to install and maintain a hydrophone network to monitor whales (Box 13).

58 The Hakai Institute is a scientific research institution that advances long-term research at remote locations on the coastal margin of British Columbia. <https://hakai.org/>

59 Kellogg, Jonathan, October 11, 2018.

- Gitga’at Guardians collaborating with Scripps Institute of Oceanography to investigate the conditions that support whale populations in their territory.⁶⁰
- Investigating bryozoa on kelp in partnership with SFU and Uvic researchers. This collaboration is especially significant because it fills a potential data gap from the COVID-19 pandemic. When the pandemic hit, monitoring of bryozoa could continue because of the capacity and coordination of Guardians across the Central Coast. This data can help researchers understand when, why, and how bryozoa outbreaks happen, which is an important step in managing resources to ensure the resilience of kelp.⁶¹
- Rockfish conservation area research with the Central Coast Indigenous Resource Alliance (CCIRA). Guardians are monitoring areas that are closed to rockfish harvest compared to areas that are open to see the impact conservation areas have on rockfish.

In addition to the Nation-led research and collaborative research, Guardians also enable research they are not involved in by providing a safety net for researchers along remote coasts. Janie Wray, who researches whales in Gitga’at territory, commented that “the only reason we can actually do this work and feel safe is because we know the Guardians are just 30 minutes away.”

60 Coast Funds, (n.d).
 61 Meyer, Robyn, November 27, 2020.



FIGURE 25: Guardians and Hakai researchers surveying intertidal seaweed on Calvert Island with a quadrat (photo credit: Hakai Research Institute).

BOX 13

From Observation to Management: How Guardian Research Protects Whales

IMPROVING BASELINE KNOWLEDGE

Despite a resurgence in recent decades, northern Pacific humpback whales are still at risk.⁶² They are becoming entangled in fishing gear more often⁶³ and are the whale species most susceptible to vessel collision in British Columbia.⁶⁴ To reduce these threats, management decisions should be informed with knowledge of the abundance and behaviours of humpback whales. No one is contributing to this baseline knowledge quite like the Guardians.

UNIQUE CONTRIBUTIONS TO RESEARCH

The Pacific North Coast is vast and remote, and DFO does not maintain a strong monitoring presence throughout the area.⁶⁵ Meanwhile, since 2010, CFN member Nations have completed at least 6,385 patrols covering 20,746 km², or 72% of the inland coastal waters of the North and Central Coast.⁶⁶ During these patrols, Guardians have recorded 60,000 marine mammals in 7,100 unique sightings, including 2,900 humpback whale sightings. The Guardians record these sightings into a network-wide monitoring system for a consistent and comprehensive dataset.

In addition to the whale sighting research, Gitga'at Guardians are going further to understand whales in their territory. They partnered with the North Coast Cetacean Society to install a hydrophone network and during patrols they identify and record individual whales based on their unique tail fin markings.

62 See: Government of Canada, *Search Aquatic Species at Risk*.

63 Nair, Roshini, October 22, 2021.

64 BC Cetacean Sighting Network.

65 As evidenced by the scarce DFO presence observed by Janie Wray of BC Whales and Ken Cripps of Kitsoo Xai'xais Stewardship Authority.

66 These numbers only reflect what has been collected through the CFN Regional Monitoring System and do not include data and information that has been collected through other methods.

KEY POINTS



\$2.3 MILLION

The cost savings of Guardians recording whale sightings since 2010 (compared to DFO)



60,000

The number of marine mammals Guardians have recorded since 2010



IMPACT

Guardian whale research has informed marine protected area planning and vessel management

“The Gitga’at Nation and Guardians’ extensive knowledge of whale sightings and frequency helped to design the hydrophone project.”

– **Chris Picard**, Gitga’at Science Director

BOX 13

(CONTINUED)

CONTRIBUTING TO SCIENCE AND MANAGEMENT

The monitoring being undertaken by Coastal Guardian Watchmen shows sightings of humpback whales have been increasing at a rate of 8% per year since 2010, which is consistent with estimates for the rate at which the humpback whale population has been increasing along the BC coast (see Figure 29). The Gitga'at whale research also reveals a seasonal movement pattern. These insights have informed planning of marine protected areas and the management of vessel traffic. The data are being compiled to support an alert system which broadcasts whale presence to vessels so they can slow down or alter course to protect the whales. Beyond the benefits of advancing knowledge and saving whales, the research is also saving a significant amount of money. The cost savings of Guardians patrolling and recording whales since 2010 has saved a staggering **\$2.3 million** compared to the cost of DFO doing this work.⁶⁷ It is an exciting time for humpbacks on the coast and the Guardians are consistently there to monitor, understand, and protect their neighbours.

“We don’t see DFO at all on the water. Years ago, there was more of a presence of DFO in mammal research. Even then there was a presence of DFO a couple of times per year, but nothing like the presence of the Guardians who are out there every day.”

– **Janie Wray, CEO**
and lead researcher,
BC Whales

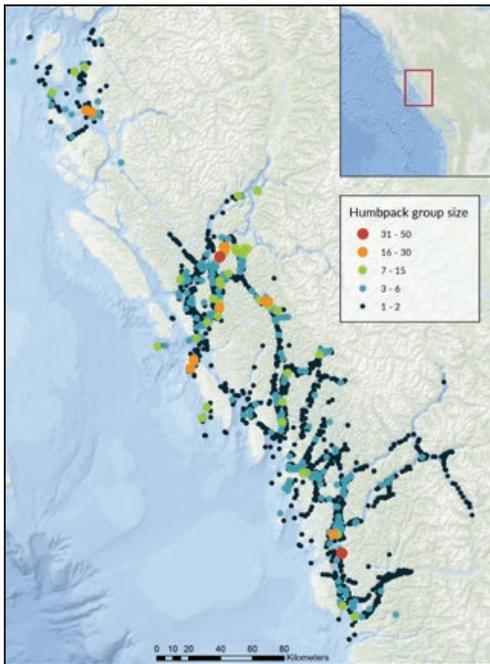


FIGURE 26: Map of humpback whale sightings recorded by Guardians with the RMS since 2010.

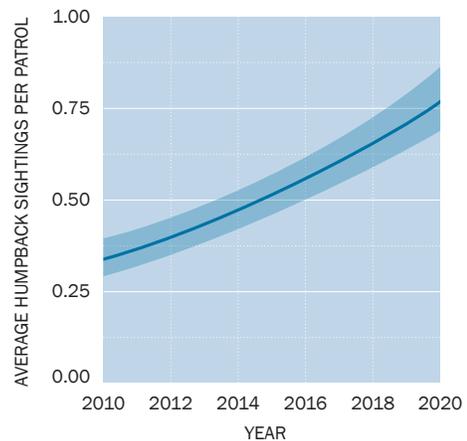
FIGURE 27:

Guardian referencing unique tail fins to identify individual whales (photo credit: Meaghan Hume).



FIGURE 28:

Average number of humpback whales sighted per Guardian patrol since 2010. Solid line is the mean, and the shaded area is the standard error.



⁶⁷ CFN Guardians have recorded 38,964 hours of patrolling with the RMS since 2010. The cost savings is estimated by comparing the wages and other HR costs of Guardians doing the patrols compared to DFO doing the patrols, plus the cost of one roundtrip flight per staff per year from Vancouver to the Central Coast. The costs are all calculated in today's dollars (rather than calculating actual expenses from previous years and adjusting for inflation). The estimation assumes an average of 2.5 staff per patrol.

5. Contribution: Opportunities to Meet Canada and British Columbia's Commitments Towards Reconciliation

SUMMARY

With Canada's first National Truth and Reconciliation Day in 2021 and British Columbia passing the *Declaration on the Rights of Indigenous People's Act (Declaration Act)* in 2019, it is clear that reconciliation is a provincial and national priority. To pursue meaningful reconciliation on the Central Coast, North Coast, and Haida Gwaii, there is a need to delve deeper and, in some cases beyond, existing stewardship frameworks, treaties and agreements between First Nations and federal and provincial governments. Guardians will play a critical role in ensuring reconciliation moves from paper to practice.

TRUTH AND RECONCILIATION COMMISSION: CALLS TO ACTION AND THE DECLARATION ACT

Supporting and funding Guardian initiatives is a step in the right direction towards the Truth and Reconciliation Commission's Calls to Action, one of which was establishing the *United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP)* as the framework for reconciliation. The Province of BC has started that process with the *Declaration Act*, which mandates government to bring provincial laws into harmony with the UNDRIP. Guardian initiatives align with many articles of the *Declaration Act*. By continuing the ancestral stewardship traditions of their Nations, enforcing Indigenous laws, accessing their lands and resources, conserving and protecting their resources, and advancing their cultural heritage and traditional knowledge, Guardians are exercising the rights of Indigenous peoples recognized under the *Declaration Act*. Supporting and investing in Guardian initiatives is an essential move toward reconciliation by advancing the capacity of Nations to exercise their rights. Funding and supporting Guardians is just a part of a much larger effort needed for meaningful reconciliation to become a reality.

IMPLEMENTATION OF AGREEMENTS

Guardians are identified as implementation agents in at least 34 agreements⁶⁸ that are a part of reconciliation efforts between CFN and provincial and federal governments (see *Figure 29*). Some examples include the Great Bear Rainforest Agreements, the Fisheries Resources Reconciliation Agreement (FRRA), and the Marine Plan Partnership (MaPP), to name just a few. When provincial and federal governments enter into these agreements, they commit to uphold their promises to the Nations. Unfortunately, some of the promises that could be advancing government-to-government relations and reconciliation end up unfulfilled on the ground. As reconciliation agreements evolve and expand, it is critical that Nations maintain a strong presence in their territories, not only to uphold their end of the agreements but to ensure that provincial and federal governments are also fulfilling their promises and ensuring reconciliation includes actions in addition to words.

68 Coastal First Nations-Great Bear Initiative. *Inventory of Agreements*. Fall 2020.

GUARDIANS ARE ACTIVE IN SUPPORTING 34 PROVINCIAL AND FEDERAL AGREEMENTS

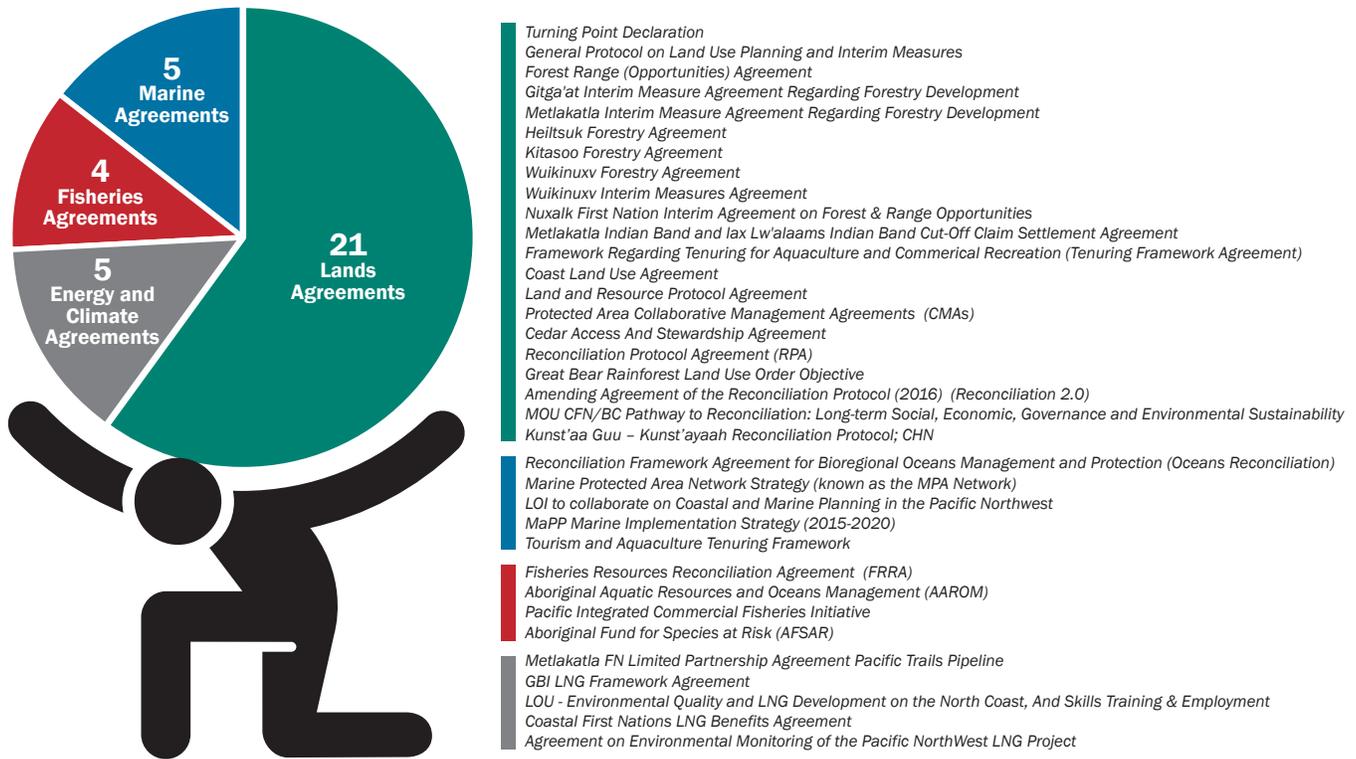


FIGURE 29: Inventory of agreements between CFN and provincial and federal agencies that include Guardians as implementation agents.

An example of Guardians ensuring agreements that advance reconciliation are implemented is the Fiordland Conservancy, managed under a collaborative agreement between BC Parks and the Kitasoo Xai'xais Nation. The two governments worked together to create a management plan that, among other things, specified appropriate use and development of the Mussel Inlet, a popular recreation and tourism destination.

“Guardians are completely implementing the collaborative bear-viewing program for the Laiq (Mussel Inlet) Special Management Area. The Kitasoo Guardians are interacting with members of the public coming in and ensuring the operational plan for bear viewing there is followed. BC parks does not have the capacity to take that on, so having the Guardians there has been critical.”

– **Steve Hodgson**, Bella Coola Acting Parks and Protected Areas Section Head, BC Parks

BOX 14

Meaningful Collaboration: Guardian/BC Park Ranger Initiative

THE ENFORCEMENT GAP

The enforcement capacity of BC Parks is severely limited by trying to cover large geographic areas with limited staff. In 2016, BC Parks had just seven full-time rangers to patrol 14 million hectares of BC Parks and Protected areas. Steve Hodgson, who is the Indigenous Guardian Pilot Coordinator and Acting Parks and Protected Area Section Head with BC Parks in Bella Bella, notes the capacity challenges and the importance of collaboration with Guardians. Meanwhile, Guardians maintain a strong presence in their territories, but do not have the enforcement authority of Park Rangers, so they are limited to observing, recording, and reporting infractions.

PARTNERSHIP AND COLLABORATION

In a monumental and first-of-its-kind model, Kitsoo Xai'xais, Nuxalk, and BC Parks are establishing a framework for shared compliance and enforcement responsibilities with an Indigenous Guardian/Park Ranger Authority Pilot Program. Once implemented, the pilot program will enable Kitsoo Xai'xais and Nuxalk Guardians the ability to take on the authority of Park Rangers under the *Park Act*. Five Guardians have completed the required BCIT courses and if all goes as planned, they will have additional powers and authorities to carry out compliance and enforcement activities within parks, conservancies, and protected areas in their territory by next summer. This unique collaboration enables enhanced authority to enforce provincial laws, while still working for their Nation.

ADVANCING RECONCILIATION

A recent Kitsoo Xai'xais newsletter includes that the pilot program “furthers reconciliation by supporting Indigenous rights and responsibilities in protecting and conserving ecosystems, and continuing the profound connections between land, water and Indigenous culture. It is also considered as a further step in meaningful collaboration with BC Parks.”

“Looking towards realizing some of the principles of reconciliation, we are looking at the powers and authority component with the pilot program.”

– **Steve Hodgson**, , Bella Coola Acting Parks and Protected Areas Section Head, BC Parks

KEY POINTS

BCIT

5

The number of Kitsoo Xai'xais and Nuxalk Guardians who completed the BCIT course and are set to take on Park Ranger authority



\$660

The cost savings per incident (cost difference between the wages and travel costs of BC Park rangers travelling from Bella Coola and Guardians in Klemtu)



IMPACT

Advancing reconciliation

“I don't see BC parks having a mandate any different than ours, they have a responsibility to steward these areas like we do. So we should partner up and do it together. To me that is reconciliation.”

– **Douglas Neasloss**,
Chief Councillor of the
Kitsoo Xai'xais Nation

6. Unique Value of Guardians

SUMMARY

The work of Guardians differs in many ways from that of provincial and federal agencies. Coastal Guardian Watchmen are Nation-led initiatives carrying on ancestral traditions to steward the rich and significant ecological, cultural, recreational, economic, and spiritual resources of the North and Central Coast and Haida Gwaii.

Interviews for this project, along with case studies and journal articles⁶⁹ reveal that Guardian initiatives benefit their Nations, provincial and federal agencies and the broader public due to their unique role as Indigenous stewards, their integrated approach to stewardship, and the combination of local and regional efforts. These unique characteristics lead to efficiencies in their work that save time and money while achieving outcomes that are not often possible for federal and provincial agencies.

INDIGENOUS STEWARDSHIP

Much of the work Guardians do is unique to Indigenous stewards but benefits everyone: from the communities they serve to all British Columbians and Canadians. Their local and traditional knowledge help with everything from knowing where to look for vessels in distress, to where to find different species for monitoring and research, and to identifying environmental changes. The long-term perspective of Indigenous Guardians also ensures that resources are stewarded in perpetuity rather than in short cycles at the mercy of shifting political leaders and agendas.



FIGURE 30: Guardians on the job (photo credit: Roger Harris).

“Nations have been in these places for millennia. As a result, they have a very long-term perspective on resource management within their territories – that’s important when managing to achieve conservation outcomes, where it may take years to see the results you’re looking for. Provincial and federal governments, on the other hand, can be limited by shifting agendas and mandates and may not be as well-positioned to manage for those long-term outcomes.”

– **Kristin Worsley**, Manager of the Marine and Coastal Resources Unit FLNRORD

⁶⁹ Including Ban et al. (2017), Frid, McGreer, and Stevensen (2016), Hensen et al. (2021), Service et al. (2017), among others

The knowledge passed down through generations also enables Indigenous stewards to avoid *shifting baseline syndrome*, which is “the failure of successive generations to witness and understand the former abundance of ecosystems.”⁷⁰ Non-Indigenous stewards may accept the state of an ecosystem as ‘normal’ because they do not have the knowledge of what it was like generations ago. In contrast, for Indigenous stewards such as Guardians, such knowledge is held within their ancestral teachings, passed down through generations.

INTEGRATED STEWARDSHIP

Guardians are uniquely positioned for environmental conservation and management because their work is integrated throughout all aspects of stewardship, rather than being limited by the jurisdictions of provincial and federal agencies. This integrated approach is evidenced by the Dungeness crab closures with Guardians involved in the enforcement of Indigenous laws and research simultaneously (Box 5), as well as in spill response and salmon stewardship (Box 15), and stewardship of bears (Box 16).

These are people who really care for what they do. They bring all of themselves to the job, including their knowledge that has come from years of living in those places and having knowledge passed down to them.

– **Natalie Ban**, Associate Professor, School of Environmental Studies, University of Victoria



FIGURE 31: Sea lions spotted on Traditional Use Study in Metlakatla (photo credit: David Leask).

70 Frid, Alejandro & Atlas, Will, September 18, 2020.

BOX 15

An Integrated Response to Stewardship

WHOSE RESPONSIBILITY IS IT ANYWAYS?

Environmental management and emergency response are big responsibilities, and many provincial and federal agencies have a role to play. Each agency has its own mandate and legislation dictating what is and isn't within their jurisdiction. Meanwhile, Coastal Guardian Watchmen are often mandated by their Nations to take responsibility for environmental management and emergency response in their territories. Their work is integrated across both land and sea.

EMERGENCY SPILL RESPONSE

Poor communication and coordination amongst government agencies delays spill response in BC.⁷¹ The responsible agency is not the one who is best equipped to respond, but the one who has been formally mandated to do so. Meanwhile, Coastal Guardian Watchmen focus on the goal of cleaning up, without a second thought to whether it's their responsibility or not. As internationally recognized emergency response and spill expert Elise DeCola stated "the Guardian Watchmen are first responders. Whether it's their job or not, it's what they do. They are going to help... It's all instinctive."



FIGURE 32: Guardians deploying oil spill containment equipment (photo credit: Roger Harris).

71 The Royal Society of Canada, November, 2015.

KEY POINTS



25

Fragmented responsibilities of government agencies slow down spill responses



Jurisdictional issues limit management of salmon



Guardians save money by not working in silos

"The Canadian federal regime for spill response is source-based. If oil hits the water from a ship it [is the responsibility of] the Coast Guard. But if it hits the water from a tank on land, it is not Coast Guard. It's a very fragmented response... But when you are in a community and oil hits the water, you don't care where it came from – you are going to do the same thing."

– **Elise DeCola**, oil spill preparedness and response expert, Nuka Research

ENVIRONMENTAL MANAGEMENT

Distinctions between jurisdictions may seem simple; the province is responsible for forestry, and the federal government is responsible for salmon populations. But ecosystems don't follow these jurisdictional boundaries. For example, salmon spawn in the streams of the Great Bear Rainforest, bringing nutrients from the ocean to feed the bears and nurture the trees. Rebecca Martone, a biologist working with the Ministry of Forests, Lands, and Natural Resources Operations and Rural Development (FLNRORD), has experienced limitations from the jurisdictional issues and the benefits of Guardians' integrated environmental management.

JURISDICTIONAL EFFICIENCY

The integrated work of Guardians in diverse matters across their territories is cost effective. From the minute Guardians are out in the territory, they take responsibility for the land and sea around them. When they travel to a site to observe forestry or fisheries operations, they may simultaneously collect data for bear research or cultural feature inventories. For example, since 2010, during their regular patrols, Guardians have observed and recorded 60,000 marine mammals. Done as stand-alone surveys, these observations would cost DFO **\$4.3 million** in wages and human resource costs, but the Guardians are able to do it while they're already out on the water.⁷²



FIGURE 33: Guardians observing whales (photo credit: Phil Charles).

“We are very siloed in Crown government organizations. For salmon we (FLNRORD) focus on the freshwater and aspects of the estuarine environment, but we can’t actually work on salmon populations because that is in the jurisdiction of DFO. So, it becomes harder to even act or collect information related to that. So having that holistic perspective of the Nations can be a real benefit.”

– **Rebecca Martone**,
marine biologist,
Tula Foundation
(previous FLNRORD
marine biologist)

⁷² CFN Guardians have recorded 38,964 hours of patrolling with the RMS since 2010. During these patrols, Guardians work on a variety of projects and simultaneously systematically record mammal sightings into the RMS. \$4.3 million is the approximate wages and HR costs DFO would spend to have 2.5 DFO employees patrolling for 38,964 hours. This is estimated with today's wages and HR costs rather than using real costs from previous years and adjusting for inflation. The cost savings is limited to wages and HR costs and does not include travel costs. The estimation assumes an average of 2.5 staff per patrol.

BOX 16

Integrated Stewardship of Bears

STEWARDSHIP OF THE GREAT BEAR RAINFOREST

Coastal First Nations have stewarded and lived with their bear neighbours, including grizzlies and Spirit Bears, since time immemorial. Today, these ancient stewardship traditions are carried forward with the integrated bear stewardship by Guardians and their Nations. When provincial laws and management were failing public values and compromising ecosystem health with the senseless hunting of bears, Nations pushed back by enforcing Indigenous laws, publishing research, and economic development.

KNOWLEDGE AND POLICY GAPS

The provincial government was permitting trophy hunting of grizzly bears, even though the majority of British Columbians were not supportive. Of those polled in 2015, 91% disapproved of trophy hunting⁷³, and by 2017, 78% favoured an all-out ban.⁷⁴ The province was also determining how many bears could be sustainably hunted each year without monitoring the number of bears.

THE TROPHY HUNT BAN

In 2012, CFN announced a ban on trophy hunting for bears across all of their territories, and Guardians enforced the Indigenous law, by patrolling known hunting hotspots and following up on leads from concerned members of the public to verify compliance. In 2017, the provincial government followed the lead of the Nations and passed laws to end the trophy hunting of grizzly bears and stop all hunting of grizzly bears in the Great Bear Rainforest. However, hunting of black bears continued at an unsustainable rate.



FIGURE 34:
Trophy hunting sign
(photo credit: CFN).

73 Insights West, 2015. https://d3n8a8pro7vhmx.cloudfront.net/bearsforever/pages/42/attachments/original/1447201778/Insights_Poll_2015.pdf?1447201778

74 B.C. government ends grizzly bear hunt. BC Gov News. December 18, 2017

KEY POINTS



91%

The proportion of British Columbians polled who disapproved of trophy hunting in 2015



5 YEARS

Guardians enforced Indigenous trophy hunt bans 5 years before the province passed a Crown ban



IMPACT

Policy reform to take on creekwalker roles

“For thousands of years Indigenous people have been out monitoring resources to inform decisions... the Guardian program is one modern manifestation of those governance systems. It is really exciting, and the contributions are absolutely enormous.”

– **Chris Darimont**,
Professor at UVic,
and scientist with the
Raincoast Conservation
Foundation

BEAR RESEARCH

Despite coastal First Nations' wealth of local and ecological knowledge indicating the amount of bear hunting in the Great Bear Rainforest was unsustainable, the provincial government would not adapt their regime, so the Nations got involved in research. Guardians have been involved in various research that supports stewardship and informs evidenced based policy:

- Monitoring bears with DNA from bear hair to reveal abundance, distribution, behaviour, foraging requirements and seasonal use pattern of bears.⁷⁵
- Prevalence of grizzly bears on islands the province assumed they were not on to inform conservancy management.⁷⁶
- Bear DNA research into the connection between bears and humans.⁷⁷
- Innovatively researching bear behaviour during the COVID-19 pandemic when tourism was suspended, to inform policy about group size for bear viewing tourism.



FIGURE 35: Spirit and black bear (photo credit: CFN).

75 For example, by the Gitga'at Guardians: <https://coastfunds.ca/stories/using-science-to-safeguard/>

76 Service et al. (2014)

77 Hensen et al. (2021)



Observing grizzly bear (photo credit: Philip Charles).

COMBINING THE BEST OF LOCAL AND REGIONAL SCALES

A unique characteristic of Coastal Guardian Watchmen is that they combine local stewardship and research for their respective Nations with the unity of the Coastal Stewardship Network across the coast. This position allows for a regional perspective paired with highly detailed local data. Ross Wilson, former Stewardship Director of the Metlakatla Stewardship Society, commented on the strength of the Network, how it enables the Nations to do similar work to provincial and federal agencies, and also the need for this work to be fairly compensated through financial contributions or fee for service payments.

“The data from the Guardians [in MaPP] is something that you can’t get everywhere, that coordinated collecting of information that allows you to disentangle something that might be happening everywhere rather than something that might just be happening locally is a huge benefit.”

– Rebecca Martone, Marine Biologist, FLNRORD



FIGURE 36: Guardians using the CoastTracker which is a custom mobile application used across the Coastal Stewardship Network to collect standardized field data (photo credit: CFN).

7. Discussion and Conclusion

The research presented in this report responded to the question: Is there a Case for Investment in Coastal Guardian Watchmen programs – specifically from the perspective of the general public and other government agencies? The findings chronicle the many contributions and benefits of Coastal Guardian Watchmen, lending insight into this driving question. There is no doubt the work of Guardians provides many public benefits and aligns with the mandates of the provincial and federal governments – and the following three key benefit areas underscore this fact:

1. Filling in the gaps of provincial and federal agencies, specifically with contributions to:
 - Compliance and enforcement;
 - Emergency response and ensuring public safety; and,
 - Conservation and environmental management.

1. Contributing to improved knowledge and public understanding.
1. Providing opportunities to meet commitments of reconciliation.

Guardian initiatives result in outcomes like saving lives, protecting and enhancing ecosystems and places of ecological, cultural, spiritual, and economic significance, and advancing relations between Indigenous and non-Indigenous governments and individuals. This analysis also found that because of their location and cross-jurisdictional mandates, the Guardians' work often provides cost savings in comparison to government agencies. Some examples of costs savings in Guardians doing this work are summarized in *Table 1*. Guardians also provide unique value through their role as Indigenous stewards with an integrated approach and the unity of their network.



(Photo credit: Nicole Robinson)

TABLE 1: Summary of cost savings of Guardian work included in this report. Note that this is limited to the cost savings of select Guardian activities and does not reflect the total cost savings of Guardian initiatives.

ACTIVITY	COST SAVINGS
Monitoring Dungeness crab traps in Kitsoo Xai'xais territory (Box 3)	\$412 per trip
Rivers Inlet diesel spill response (Box 6)	\$19,129 for the one incident
Rescuing a marine mammal in distress (Box 7)	\$2,865 per incident
Whale disentanglement (Box 7)	\$14,010 per incident (potential cost savings)
MaPP EBM monitoring (Box 11)	\$197,645 annual cost savings
Marine mammal sighting research (Box 13, Box 15)	\$2.3 – 4.3 million since 2010 ⁷⁸
Compliance and enforcement with BC Park Ranger authority (Box 14)	\$660 per incident

The Guardian contributions outlined in this report are limited to current contributions. However, many interviewees including provincial and federal government employees, NGOs, and academics commented on the future potential of Guardian initiatives. Their responses ranged from enhancing the current role of Guardians to expanding that role (Table 2). Many interviewees also emphasized the importance of resourcing Guardians adequately before expanding their work.

TABLE 2: Interviewee comments on the future potential of Guardians.

CATEGORY	POTENTIAL NEW, ENHANCED, OR EXPANDED ROLE OF GUARDIANS
General	More coordination with federal and provincial agencies
	Planning roles
	More year-round work
Compliance and Enforcement	Enforcement authority
	Increased role in public education
Emergency Response	Increased role in search and rescue
	Whale disentanglement
Environmental Research and Management	Research – data collection (expanding current role)
	Research – data analysis (expanding current role)
	Increased role in invasive species management

78 The lower estimate assumes that Guardians recording whale sightings incurs the cost of their full patrols (Box 13), whereas the higher estimate assumes that because Guardians are already in the territory for other work, recording whale sightings does not incur additional costs so the cost savings compared to DFO are higher (Box 15).

Many interviewees for this project commended the capacity of Guardians but also recognized that there are barriers limiting the initiatives from reaching their full potential. These barriers include:

- **Inconsistent and short-term funding:** Accessing funding from multiple sources takes time and resources from the Nations because “they are always busy writing reports to access funding.”⁷⁹ Inconsistent and short-term funding is also a barrier to collaboration with other governments because roles and availability of Guardians shifting with funding limits long-term, ongoing collaborative efforts.⁸⁰
- **Training:** Although Guardians receive a lot of training, their capacity is limited by a lack of training for some roles. For example, training may be required to expand some seasonal Guardian positions into year-round positions with data analysis and research when fieldwork is suspended seasonally.⁸¹
- **Seasonal employment:** Many Guardian positions are not year-round, which creates barriers to retention. Decreased retention leads to institutional memory loss within the initiatives and requires more resources for training.⁸²
- **Enforcement authority:** Guardians do not have enforcement authority under provincial and federal laws, so although the capacity for Guardians to observe and recognize non-compliance is well-proven, their actions in response to non-compliance are limited.
- **Awareness:** Public and political awareness of the capacity of Guardians limits their funding and their roles.⁸³

The results of this report demonstrate that by undertaking work as mandated by their Nations, Guardians benefit their communities, the general public, and the provincial and federal government agencies who serve the public. There is also significant potential to expand these benefits building on the Coastal Guardian Watchmen’s coordinated efforts, consistent presence, technical skills, territorial knowledge, and conservation-based values.

This research also identified barriers to realizing the potential of Guardians – many of which can be alleviated with consistent, core funding. If Guardian initiatives were sustained with multi-year funding, more resources could go into training, year-round employment, advancing formal enforcement authority and increasing public awareness. Overcoming these barriers could translate to increased capacity to collaborate with other governments, improved economic stability in communities, and ultimately to a healthier and safer coast for the benefit of all.

79 Sally Cargill (FNLNRD) in interviews for this project

80 Denise Blid (FLNRD), in interviews for this project

81 Natalie Ban (UVic), Rebecca Martone (FLNRD) in interviews for this project,

82 Natalie Ban (UVic), in interviews for this project

83 Dan Cardinal (Lands Program Policy Advisor and Program Manager at CFN), in interviews for this project



(Photo credit: CFN)

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Appendix A: Research Methods

LITERATURE REVIEW METHODS

We conducted a conceptual literature review⁸⁴ to gather information about Guardian contributions, providing a foundation to develop the interview questions. We found relevant recent literature through non-systematic web and database searches. The literature review included the following works:

- Earnscliffe, September 22, 2020. Nature United Stakeholder Audit.
- EcoPlan Internal Inc. (EPI), 2016. Valuing Coastal Guardian Watchmen Programs: A Business Case.
- The Indigenous Guardians Toolkit, 2021. <https://www.indigenousguardianstoolkit.ca/>
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- West Coast Environmental Law, 2018. Guardian Watchmen: Upholding Indigenous Laws to Protect Land and Sea.

INTERVIEW METHODS

We conducted 17 semi-structured interviews of provincial employees, federal employees, academics, and researchers from the non-profit sector (outlined in *Table 3*). Interviewees were selected with the following criteria: must have direct or indirect experience working with the Guardians and must be available for an interview during the research period.

TABLE 3: Summary of external interviewees.

NAME	AGENCY/ORGANIZATION	POSITION
Dan Curtis	DFO	Program Head (Treaties and reconciliation frameworks agreements group, strategic science initiatives, DFO science)
Danielle Dickson	DFO	Fishery Officer
Mark Beisel	DFO	Bella Coola Field Supervisor

84 Conceptual literature reviews are designed to show the current understanding of a topic and suggest research gaps. Conceptual literature reviews do not include systematic data extraction techniques.

NAME	AGENCY/ORGANIZATION	POSITION
Max MacDonald	DFO	Detachment Commander for Haida Gwaii
Geoffrey Carrow	CCG	Senior Officer for the Indigenous Community Response Training Project
Steven Hodgson	BC Parks	Indigenous guardian pilot coordinator, parks and protected areas section head Bella Coola, planning, conservation officer
Ernie Gladstone	Parks Canada	Field Superintendent at Gwaii Haanas
Denise Blid	FLNRORD	Natural Resource Officer Supervisor
Kristin Worsley	FLNRORD	Manager of the Marine and Coastal Resources Unit
Sally Cargill	FLNRORD	Marine Planning Specialist
Rebecca Martone	FLNRORD & Tula Foundation ⁸⁵	Marine Biologist
Patrick O'Hara	ECCC	Seabird Conservation Scientist
Chris Darimont	UVic, Raincoast Conservation Foundation	Professor in the Department of Geography, Scientist
Natalie Ban	UVic	Associate Professor in the School of Environmental Studies
Will Atlas	Wild Salmon Center	Scientist
Elise DeCola	Nuka Research	Internationally recognized oil spill preparedness and response expert
David Bradley	Birds Canada	Director

The interviews were guided by a semi-structured interview tool. The tool shown below was for government employees, and it was adapted for non-government interviewees by removing mentions of government mandates.

Semi-Structured Interview Tool

Background

1. What is your name?
2. What agency do you work with?
3. What is your position?
4. How many years have you worked with this agency?

Experience with Guardians

5. Do you have direct experience with the Guardians? If yes, how long have you been working with Guardians?
6. (if the person has direct experience working with Guardians) What do you think are comparable positions in your agency to Jr. and Sr. Guardians?

⁸⁵ Rebecca Martone was a biologist at FLNRORD at the time of interview and has since moved to a position at the Tula Foundation

Compliance and Enforcement

7. We understand your agency's mandate includes compliance and enforcement. How would you describe the level of time and effort your agency puts into fulfilling this mandate on the ground?
 - Very Good – more than enough time and effort
 - Good – enough time and effort
 - Acceptable – just barely enough time and effort
 - Poor – an inadequate amount of time and effort
 - Very Poor – a very inadequate amount of time and effort
8. Do you have systems in place to track patrolling presence? Is this data available?
9. What barriers does your agency face in fulfilling the compliance and enforcement mandate on the ground?
10. How do Guardians enhance or complement your agency's commitment to compliance and enforcement?

Emergency Response and Public Safety

11. We understand your agency's mandate includes emergency response and ensuring public safety. How would you describe the level of time and effort your agency puts into fulfilling this mandate on the ground?
 - Very Good – more than enough time and effort
 - Good – enough time and effort
 - Acceptable – just barely enough time and effort
 - Poor – an inadequate amount of time and effort
 - Very Poor – a very inadequate amount of time and effort
12. Do you have systems in place to track amount of time and effort spent on emergency response and public safety? Is this data available?
13. What are the barriers your agency faces in responding to emergencies and ensuring public safety on the ground?
14. How do Guardians enhance or complement your agency's commitment to emergency response and public safety?

Conservation and Management

15. We understand your agency's mandate includes environmental conservation. How would you describe the level of time and effort your agency puts into fulfilling this mandate on the ground?
 - Very Good – more than enough time and effort
 - Good – enough time and effort
 - Acceptable – just barely enough time and effort
 - Poor – an inadequate amount of time and effort
 - Very Poor – a very inadequate amount of time and effort
16. Do you have systems in place to track amount of time and effort spent on environmental conservation? Is this data available?
17. What are the barriers your agency faces in ensuring environmental conservation and management on the ground?
18. How do Guardians enhance or complement your agency's commitment to conservation and management?

Public Education and Research

19. We understand your agency's mandate includes public education and research. How would you describe the level of time and effort your agency puts into fulfilling this mandate on the ground?
 - Very Good – more than enough time and effort
 - Good – enough time and effort
 - Acceptable – just barely enough time and effort
 - Poor – an inadequate amount of time and effort
 - Very Poor – a very inadequate amount of time and effort
20. Do you have systems in place to track amount of time and effort spent on public education and research?
Is this data available?
21. What are the barriers your agency faces in ensuring public education and research on the ground?
22. How do Guardians enhance or complement your agency's commitment to public education and research?
 - Is that work unique to Indigenous stewards?

Opportunities to Meet Commitments of Reconciliation

23. How is your agency working towards meeting commitments of reconciliation?
24. Do you see a role for Guardians in supporting your agency's commitment to reconciliation?
If so, what does this role look like?

Other Guardian Work

25. In addition to what we have talked about already (compliance and enforcement, emergency response, public safety, conservation, public education, research, and reconciliation), how else do Guardians enhance or complement the work of your agency?
26. Beyond the work that enhance and complements the work of your agency, what else do you think the Guardians do?
27. (if not already mentioned) How do you think Guardians contribute to academic knowledge?
28. (if not already mentioned) How do you think Guardians contribute to industry accountability?
29. How important do you feel the Guardians are for the health of the Coast?
30. What would happen if Guardians weren't there?
31. What is your understanding of who Guardians work for, and how they are managed?

The Future

32. What role do you see for Guardians in the future?
33. What efficiencies do you think Guardians could provide in that role? (e.g. being on the ground, local knowledge)
34. The GW are challenged with securing consistent, core funding that is not project-based. Do you have any thoughts or ideas to help address this challenge?
35. Do you have any closing thoughts on how Guardians contribute now, or have the potential to contribute in the future, to the public good?

Appendix B: Comparable Agency Positions

To determine the comparable positions to Guardians at provincial and federal agencies, we compared the mandates and job descriptions at the agencies to a comprehensive list of Guardian activities in eleven categories. We also asked employees at the government agencies what they think the comparable positions are. Most interviewees we asked did not know the difference between junior and senior Guardian Watchmen, so their answers, summarized in *Table 4*, are for Guardians in general. The responses of the interviewees are consistent with the results from our comparative analysis, which is summarized in *Table 5* on the following pages.

TABLE 4: Comparable positions to Guardians at provincial and federal agencies.

AGENCY	COMPARABLE POSITION(S) TO GW FROM INTERVIEWS WITH PROVINCIAL AND FEDERAL EMPLOYEES
BC PARKS	Senior park ranger, park ranger
COAST GUARD	Deck hand
DFO	Fisheries officer, summer student (comparable to Junior Guardians only)
FLNRO	Natural Resource Officers, C&E within the Archaeological Branch
PARKS CANADA	Senior park ranger, park ranger

TABLE 5: Descriptions of positions at provincial and federal agencies comparable to Guardians. Refer to the footnotes for more information and data sources.

GUARDIAN POSITION	AGENCY POSITION	AGENCY POSITION HOURLY WAGE	AGENCY POSITION KEY ACTIVITIES	COMPARABILITY WITH GUARDIAN ACTIVITIES ⁸⁶
BC PARKS				
Jr. GW	Park ranger (Grid 11)	\$26.93 ⁸⁷	<ul style="list-style-type: none"> Monitoring and maintenance of facilities Delivering, monitoring, reporting on assigned recreation, conservation and extension services and activities within a park or group of parks Representing BC Parks as field contact to park visitors and contractors Enforcement of compliance to relevant statutes and rules 	<ul style="list-style-type: none"> Territory Patrol ✓ Resource Development Monitoring ✗ Scientific Research ✗ Cultural and/or Traditional Ecological Knowledge ✗ Community Engagement and Outreach ✗ Youth Engagement ✗ Public Engagement and Outreach ✓ Planning and Implementation ✗ Emergency Response/public safety ✗ Boat and other Equipment Maintenance ✓ Program Management ✗
Sr. GW	Senior park ranger (Grid 15)	\$30.09 ⁸⁸	<ul style="list-style-type: none"> Undertaking natural, cultural resource and recreation services management Supervising staff and volunteers to ensure parks are effectively monitored. Work closely with the public by providing information, carrying out emergency response duties and addressing health and safety issues Delivering facility maintenance, minor reconstruction and project management Ensuring that park, resource and recreation management plans are enforced successfully Undertaking liability and risk assessments and taking corrective action to protect the rights, property and interests of the government in parks, conservancies and recreation areas 	<ul style="list-style-type: none"> Territory Patrol ✓ Resource Development Monitoring ✓ Scientific Research ✗ Cultural and/or Traditional Ecological Knowledge ✗ Community Engagement and Outreach ✗ Youth Engagement ✗ Public Engagement and Outreach ✓ Planning and Implementation ✓ Emergency Response/public safety ✓ Boat and other Equipment Maintenance ✓ Program Management ✓
Admin	Admin Officer (Grid 15)	\$30.09 ⁸⁹		

⁸⁶ For each provincial/federal agency, we looked at job descriptions and interview data to determine which Guardian activities their work is comparable to. The category "cultural and/or Traditional Ecological Knowledge" is unique to the Nations. The categories of "community engagement and outreach" and "youth engagement" are unique to the Guardians because they are their own communities with which public agencies cannot have the same level of engagement. The category of "public engagement" is, however, common to the agencies and Guardians.

⁸⁷ <https://www2.gov.bc.ca/gov/content/careers-myhr/all-employees/pay-benefits/salaries/salarylookuptool/grids>

⁸⁸ <https://www2.gov.bc.ca/gov/content/careers-myhr/all-employees/pay-benefits/salaries/salarylookuptool/grids>

⁸⁹ <https://www2.gov.bc.ca/gov/content/careers-myhr/all-employees/pay-benefits/salaries/salarylookuptool/bcgeu-jobs/administrative-officer>

GUARDIAN POSITION	AGENCY POSITION	AGENCY POSITION HOURLY WAGE	AGENCY POSITION KEY ACTIVITIES	COMPARABILITY WITH GUARDIAN ACTIVITIES ⁹⁰
COAST GUARD				
Jr. GW	Ship's Crew	\$29.68 ⁹¹	<ul style="list-style-type: none"> Stand watch and steer ship or self-propelled vessel under the direction of the officer on watch Operate, maintain and repair deck equipment such as winches, cranes, derricks and hawsers Assist ship engineer officers in performing routine maintenance work and repair to ship's engine, machinery and auxiliary equipment Monitor engine, machinery and equipment indicators, record variables and report abnormalities to ship engineer officer on watch Lubricate moving parts of engines, machinery and auxiliary equipment Operate and maintain off-loading liquid pumps and valves Clean engine parts and keep engine room clean Clean, chip and paint deck surfaces Handle mooring lines, and splice and repair ropes, wire cables and cordage 	<ul style="list-style-type: none"> Territory Patrol ✓ Resource Development Monitoring ✗ Scientific Research ✗ Cultural and/or Traditional Ecological Knowledge ✗ Community Engagement and Outreach ✗ Youth Engagement ✗ Public Engagement and Outreach ✗ Planning and Implementation ✗ Emergency Response/ public safety ✓ Boat and other Equipment Maintenance ✓ Program Management ✗

90 For each provincial/federal agency, we looked at job descriptions and interview data to determine which Guardian activities their work is comparable to. The category "cultural and/or Traditional Ecological Knowledge" is unique to the Nations. The categories of "community engagement and outreach" and "youth engagement" are unique to the Guardians because they are their own communities with which public agencies cannot have the same level of engagement. The category of "public engagement" is, however, common to the agencies and Guardians.

91 <https://www.tbs-sct.gc.ca/agreements-conventions/view-visualiser-eng.aspx?id=24#rates-gl>

GUARDIAN POSITION	AGENCY POSITION	AGENCY POSITION HOURLY WAGE	AGENCY POSITION KEY ACTIVITIES	COMPARABILITY WITH GUARDIAN ACTIVITIES ⁹⁰
COAST GUARD				
Sr. GW	Chief Officer	\$40.21 ⁹²	<ul style="list-style-type: none"> • Command and operate coast guard vessels to provide ice-breaking and search and rescue services, and to maintain control over ships operating in Canadian waters • Board vessels at berth or from pilot boats to advise ships' captains on the course to steer for safe passage into and out of ports, seaways or other waterways under pilotage authority • Plan and execute safe navigational passage using navigational aids • Determine geographical position using navigational instruments, maps and charts • Guide vessels in rivers, canals, and other confined or hazardous waters and waterways • Maintain vessels' navigational instruments and equipment • Direct and oversee the loading and unloading of cargo • Supervise and co-ordinate the activities of deck crews • Record vessel progress, crew activities, weather and sea conditions in the ship's log 	<ul style="list-style-type: none"> Territory Patrol ✓ Resource Development Monitoring ✗ Scientific Research ✗ Cultural and/or Traditional Ecological Knowledge ✗ Community Engagement and Outreach ✗ Youth Engagement ✗ Public Engagement and Outreach ✗ Planning and Implementation ✓ Emergency Response/public safety ✓ Boat and other Equipment Maintenance ✓ Program Management ✓
Admin	Admin Services (AS-1)	\$28.14 ⁹³		

92 <https://emploisfp-psjobs.cfp-psc.gc.ca/psrs-srfp/applicant/page1800?poster=1556429>

93 <https://www.tbs-sct.gc.ca/agreements-conventions/view-visualiser-eng.aspx?id=15#toc993929946>

GUARDIAN POSITION	AGENCY POSITION	AGENCY POSITION HOURLY WAGE	AGENCY POSITION KEY ACTIVITIES	COMPARABILITY WITH GUARDIAN ACTIVITIES ⁹⁴
DFO				
Jr. GW	Ship's Crew	\$29.68 ⁹⁵	<ul style="list-style-type: none"> Stand watch and steer ship or self-propelled vessel under the direction of the officer on watch Operate, maintain and repair deck equipment such as winches, cranes, derricks and hawsers Assist ship engineer officers in performing routine maintenance work and repair to ship's engine, machinery and auxiliary equipment Monitor engine, machinery and equipment indicators, record variables and report abnormalities to ship engineer officer on watch Lubricate moving parts of engines, machinery and auxiliary equipment Operate and maintain off-loading liquid pumps and valves Clean engine parts and keep engine room clean Clean, chip and paint deck surfaces Handle mooring lines, and splice and repair ropes, wire cables and cordage 	<ul style="list-style-type: none"> Territory Patrol ✓ Resource Development Monitoring ✓ Scientific Research ✓ Cultural and/or Traditional Ecological Knowledge ✗ Community Engagement and Outreach ✗ Youth Engagement ✗ Public Engagement and Outreach ✗ Planning and Implementation ✗ Emergency Response/public safety ✓ Boat and other Equipment Maintenance ✓ Program Management ✗

94 For each provincial/federal agency, we looked at job descriptions and interview data to determine which Guardian activities their work is comparable to. The category "cultural and/or Traditional Ecological Knowledge" is unique to the Nations. The categories of "community engagement and outreach" and "youth engagement" are unique to the Guardians because they are their own communities with which public agencies cannot have the same level of engagement. The category of "public engagement" is, however, common to the agencies and Guardians.

95 <https://www.tbs-sct.gc.ca/agreements-conventions/view-visualiser-eng.aspx?id=24#rates-gl>

GUARDIAN POSITION	AGENCY POSITION	AGENCY POSITION HOURLY WAGE	AGENCY POSITION KEY ACTIVITIES	COMPARABILITY WITH GUARDIAN ACTIVITIES ⁹⁴
DFO				
Sr. GW	Fishery Officer	\$32.97 ⁹⁶	<ul style="list-style-type: none"> • Provide awareness, monitoring and enforcement services to Canadians for the conservation and protection of the fishery resources and fish habitat and for the protection of the public from the consumption of contaminated shellfish • Provide assistance to other enforcement agencies in coordinated efforts to enforce the law. • Patrols • Promote stewardship and public outreach • Compliance inspections • Investigation Activities • Enforcement of the Fisheries Act and Related Regulations • Ticketing • Arrest and detain offenders 	Territory Patrol ✓
				Resource Development Monitoring ✓
				Scientific Research ✓
				Cultural and/or Traditional Ecological Knowledge ✗
				Community Engagement and Outreach ✗
				Youth Engagement ✗
				Public Engagement and Outreach ✗
				Planning and Implementation ✓
				Emergency Response/ public safety ✓
				Boat and other Equipment Maintenance ✓
				Program Management ✓
				Admin

96 <https://www.dfo-mpo.gc.ca/career-carriere/enf-loi/training-formation-eng.htm>

97 <https://www.tbs-sct.gc.ca/agreements-conventions/view-visualiser-eng.aspx?id=15#toc993929946>

GUARDIAN POSITION	AGENCY POSITION	AGENCY POSITION HOURLY WAGE	AGENCY POSITION KEY ACTIVITIES	COMPARABILITY WITH GUARDIAN ACTIVITIES ⁹⁸					
FLNRO									
Jr. GW	Fish and Wildlife Assistant	\$24.58 ⁹⁹	<ul style="list-style-type: none"> • Help in various fish and wildlife data gathering and processing • Seasonal hatchery or wildlife checking station operations • Wildlife and fish enumeration • Tagging and certain field surveys 	Territory Patrol	X				
				Resource Development Monitoring	✓				
				Scientific Research	✓				
				Cultural and/or Traditional Ecological Knowledge	X				
				Community Engagement and Outreach	X				
				Youth Engagement	X				
				Public Engagement and Outreach	X				
				Planning and Implementation	X				
				Emergency Response/public safety	X				
				Boat and other Equipment Maintenance	✓				
				Program Management	X				
				Sr. GW	Natural Resource Officer	\$39.00 ¹⁰⁰	<ul style="list-style-type: none"> • Public Safety: Ensure that public safety is not compromised • Environmental: Ensure standards are met under legislation • Economic: Ensure legislative standards that govern land use and occupation, timber appraisal, removal and transportation of timber, marking, scaling, marine log salvage, etc. are being followed • Detect: Criminal offences (theft, arson, mischief, fraud) • Educate and maintain field presence • Conduct Investigations and inspections • Take Compliance and Enforcement Actions • Protection and Conservation of archaeological resources 	Territory Patrol	✓
								Resource Development Monitoring	✓
Scientific Research	X								
Cultural and/or Traditional Ecological Knowledge	X								
Community Engagement and Outreach	X								
Youth Engagement	X								
Public Engagement and Outreach	✓								
Planning and Implementation	✓								
Emergency Response/public safety	✓								
Boat and other Equipment Maintenance	✓								
Program Management	✓								
Admin	Admin Officer (Grid 15)	\$30.09 ¹⁰¹							

98 For each provincial/federal agency, we looked at job descriptions and interview data to determine which Guardian activities their work is comparable to. The category "cultural and/or Traditional Ecological Knowledge" is unique to the Nations. The categories of "community engagement and outreach" and "youth engagement" are unique to the Guardians because they are their own communities with which public agencies cannot have the same level of engagement. The category of "public engagement" is, however, common to the agencies and Guardians.

99 <https://www2.gov.bc.ca/gov/content/careers-myhr/all-employees/pay-benefits/salaries/salarylookuptool/bcgeu-jobs/fish-wildlife-assistant>

100 <https://www2.gov.bc.ca/gov/content/careers-myhr/all-employees/pay-benefits/salaries/salarylookuptool/bcgeu-jobs/sto-resource?keyword=natural&keyword=resource&keyword=officer>

101 <https://www2.gov.bc.ca/gov/content/careers-myhr/all-employees/pay-benefits/salaries/salarylookuptool/bcgeu-jobs/administrative-officer>

GUARDIAN POSITION	AGENCY POSITION	AGENCY POSITION HOURLY WAGE	AGENCY POSITION KEY ACTIVITIES	COMPARABILITY WITH GUARDIAN ACTIVITIES ¹⁰²				
PARKS CANADA								
Jr. GW	Resource Mgmt Tech (EG-01)	\$27.21 ¹⁰³	<ul style="list-style-type: none"> Providing logistics and technical support to the management program, monitoring, and Supervision Spending time with park visitor and supporting the visitor experience team Supporting visitor safety programs Resource management activities such as removing invasive plants Monitoring species at risk Office work including data entry, research, protocol writing, and impact assessment reports 	Territory Patrol ✓				
				Resource Development Monitoring ✓				
				Scientific Research ✓				
				Cultural and/or Traditional Ecological Knowledge ✗				
				Community Engagement and Outreach ✗				
				Youth Engagement ✗				
				Public Engagement and Outreach ✓				
				Planning and Implementation ✗				
				Emergency Response/ public safety ✓				
				Boat and other Equipment Maintenance ✓				
				Program Management ✗				
				Sr. GW	Park Warden (GT-04)	\$36.50 ¹⁰⁴	<ul style="list-style-type: none"> Implementing natural resource management, public safety, and law enforcement programs within Canada's national parks system Assisting scientists with research Monitoring wildlife Capturing and relocating animals when necessary, Making public presentations Liaising with visitors Providing first aid and search and rescue support Monitoring ecological concerns 	Territory Patrol ✓
				Resource Development Monitoring ✓				
Scientific Research ✓								
Cultural and/or Traditional Ecological Knowledge ✗								
Community Engagement and Outreach ✗								
Youth Engagement ✗								
Public Engagement and Outreach ✓								
Planning and Implementation ✓								
Emergency Response/ public safety ✓								
Boat and other Equipment Maintenance ✓								
Program Management ✓								
Admin	Admin Assistant	\$27.18 ¹⁰⁵						

102 For each provincial/federal agency, we looked at job descriptions and interview data to determine which Guardian activities their work is comparable to. The category "cultural and/or Traditional Ecological Knowledge" is unique to the Nations. The categories of "community engagement and outreach" and "youth engagement" are unique to the Guardians because they are their own communities with which public agencies cannot have the same level of engagement. The category of "public engagement" is, however, common to the agencies and Guardians.

103 <https://www.tbs-sct.gc.ca/agreements-conventions/view-visualiser-eng.aspx?id=25#toc11441211443>

104 <https://www.tbs-sct.gc.ca/agreements-conventions/view-visualiser-eng.aspx?id=25#toc11441211445>

105 <https://psjobs-emploisfp.psc-cfp.gc.ca/psrs-srpf/applicant/page1800?poster=1595859>



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