



	<b>We All Take Care of the Harvest (WATCH) Project:</b> Safe and secure harvesting of marine foods in the context of climate change
<b>Prepared By:</b> <b>Holly Clermont,</b> <b>WATCH Project Lead</b>	<b>Purpose of Briefing Note:</b> Administration of WATCH Environment Contaminants Program (ECP) project
<b>Prepared For:</b> <b>Island Marine Aquatic Working Group</b>	The ECP project will support the continuity of WATCH, as the end of the pilot project is imminent (2023-03-31).
<b>Date: February 5, 2023</b>	

**Issue:**

WATCH is a seafood and climate change pilot project led by the First Nations Health Authority (FNHA) Environmental Public Health Services (EPHS). Over the past two years, the FNHA, BC Centre for Disease Control (BCCDC), and four ‘pilot’ communities (Klahoose, Malahat, Tseshaht, and Gitga’at Nations) have been co-designing:

- 1) a network of community-based monitoring programs<sup>1</sup> to track Harmful Algal Blooms (HABs) and the environmental conditions that influence them,
- 2) alert systems that quickly warn community members and health care providers when certain seafoods may be unsafe to eat, and
- 3) a health risk assessment and adaptation plan to help communities navigate seafood safety, security, and sovereignty challenges and opportunities in a warming world.

These efforts have been supported by a WATCH network (Advisory Teams, Communities of Practice (CoPs)).

In 2023-24, we plan to continue this and other important work (see Objectives below) and develop a longer-term, hopefully sustainable program with a mandate, scope and delivery model that best serves coastal First Nations. For this transition year, FNHA has offered funding for new monitoring and training specialists through the FNHA’s Environmental Contaminants Program <https://www.fnha.ca/what-we-do/environmental-health/environmental-contaminants-program>. This offering comes with a caveat that the funding be administered by a First Nation or First Nations organization. This note is a formal request to IMAWG to administer \$188,880 held in reserve by FNHA for the WATCH Project during the 2023-24 fiscal year.

**Background:**

In a warming world, seafood safety and security challenges take on new dimensions. For example, some teachings suggested that shellfish harvesters could avoid deadly shellfish poisoning by harvesting in the months with an “r” in them. Now, HABs are possible year-round. They are often larger and last longer. With biotoxins accumulating in shellfish in months when they are typically clean, there are greater opportunities for Paralytic, Amnesic and Diarrhetic Shellfish Poisoning (PSP, ASP, and DSP). We can also expect HABs that are new to us. In recent years, phytoplankton associated with Azaspiracid and Neurotoxic Shellfish Poisoning (AZP and NSP) were discovered across from Vancouver Island in Washington State. Freshwater cyanobacteria/blue-green algae (not actually algae but often lumped in with other HAB

<sup>1</sup> The WATCH *Project* refers to the entire FNHA-led Project, WATCH *Programs* refer to in-community monitoring programs that are connected through the WATCH Project.

species because they produce toxins) have been discovered in Washington’s Puget Sound and are believed to be largely overlooked in our marine waters.

First Nations are more likely to be exposed to biotoxins in shellfish, yet have less access to CSSP services such as water quality monitoring and shellfish tissue testing. This was the focus of a hybrid online and in-person WATCH event co-hosted with Vancouver Island University in November 2022. For approximately 100 attendees (including representatives from at least 17 First Nations), collecting robust, defensible data and developing safety systems that lessened reliance on federal agencies were urgent priorities (see Objectives 1-3, below).

Unusual climate conditions and extreme weather are also leading to more frequent outbreaks of illness from seafoods contaminated with human waste (e.g., norovirus in prawns and oysters, *Vibrio cholera* in herring eggs). Wildfires and atmospheric rivers are introducing a host of known and unknown runoff contaminants into marine waters. Pilot and prospective WATCH communities are keen to explore a wider range of contaminants in 2023-24, including additional harmful algae and microbes like norovirus and *Vibrio*, as well as microplastics, tire compounds, unknowns associated with waiting cargo ships, and more. There is a resolve across the WATCH network to better understand climate stressors and mitigate the harmful effects of contaminants for community members and All Our Relations (see Objectives 4-5).

### Considerations:

- **Research:** WATCH is a research project approved by a harmonized Research Ethics Board. The central research question is, “How can climate preparedness processes and community-based surveillance of the marine environment be used to safeguard the health and well-being of First Nation communities and community members who wish to consume seafood?” Important sub-questions for 2023-24 include:
  - When and where are HABs and man-made contamination events occurring?
  - How do environmental conditions and climate-related hazards influence the local and regional presence of these?
  - How are contamination events identified, documented, communicated, addressed, and otherwise managed, and how are First Nations involved in these processes?
  - How can health risks to First Nation communities be mitigated?
- **New communities:** Six new communities are ready to participate in WATCH training scheduled for March 6-7 (including 5 IMAWG communities). To participate in WATCH, communities are asked to provide Letters of Support from leadership, their Health Director, and the department that will be overseeing the WATCH Program in their community. They are also required to sign a Collaborative Research Agreement. If a community will receive funding from the FNHA ECP (through IMAWG), FNHA WATCH will prepare an Agreement with objectives, activities, and reporting requirements. If a contractor will receive funding from the FNHA ECP (through IMAWG), FNHA WATCH will prepare direct award contractor agreement outlining services, deliverables, reporting, and fees for services.
- **Equipment** for basic monitoring will be provided by FNHA (gift, not loan) through a Gifted Equipment Transfer Form. This agreement will state that if a community no longer wishes to participate in the WATCH Project, the equipment will be returned to FNHA WATCH for use by another community or gifted to another community for their participation in the WATCH Project (or similar wording).
- **Venues:** In-person group training will be held in Vancouver Island University facilities (Deep Bay, Nanaimo, or Duncan). (VIU is a project partner.) Other group training, meetings and workshops will be online. Further training and monitoring will be community-based, in the lab or at key shellfish harvest sites.
- **Regulatory:** In addition to project meetings and events, WATCH has been taking steps to better understand and address gaps and barriers in the CSSP, with a lab feasibility study (to enhance lab capacity for testing common shellfish biotoxins), a first-ever trend analysis of biotoxin closures with climate data, and continued discussions with regulators. (The WATCH External Advisory Team includes DFO and CFIA representatives.) In support of community alert systems, WATCH developed a decision support tool for monitors, “Toxic Shellfish” bulletins for

community members <https://www.fnha.ca/Documents/FNHA-WATCH-Project-What-You-Need-to-Know-About-Shellfish-Toxins.pdf> and health care providers <https://www.fnha.ca/Documents/FNHA-WATCH-Project-Toxic-Shellfish-Bulletin.pdf> , and created an article to inform communities <https://www.fnha.ca/about/news-and-events/news/the-critical-role-of-phytoplankton-monitoring-for-seafood-safety-and-security>.

## 2023-24 Key Objectives

1. Develop a community-based monitoring network among at least 10 coastal First Nations, with an emphasis on harmful phytoplankton, environmental factors that influence HABs, and unusual observations;
2. Develop an alert system for shellfish harvesters similar to shellfish safety programs in Washington State and Alaska that track HABs with phytoplankton monitoring and test shellfish at the same or nearby sites until closures are lifted;
3. Advocate for and advance shellfish program policies and initiatives that recognize and protect First Nations' interests;
4. Examine how sanitary and chemical contaminants of concern (CoC) affecting traditional seafoods are identified, documented, communicated, addressed and otherwise managed, and how First Nations are involved in these processes; Identify priority CoC; Co-design and trial monitoring processes for priority sanitary and chemical CoC;
5. Facilitate seasonal sharing and learning about traditional seafood, climate and health issues<sup>2</sup>;
6. Enhance online "harmful phytoplankton monitoring" curriculum and learning resources for adult monitors; Develop curriculum and learning resources for and with secondary school-aged youth focused on climate change and traditional seafoods; and Work with knowledge and language keepers to include traditional teachings and language in both adult and youth resources

## How WATCH will benefit IMAWG

- WATCH is community-driven by multiple communities with different needs, priorities, capacities, and a range of exposures to environmental contaminants and climate hazards. (See FNHA Directives <https://www.fnha.ca/about/fnha-overview/directives>.) WATCH activities, research findings and tangible project outputs can be used by IMAWG and its communities to promote seafood safety, security, and sovereignty. Training resources, literature reviews, and event summaries on relevant topics (e.g., contaminants and/or climate-related threats to marine food species and ecosystems) are just some of the products that may add value to IMAWG efforts.
- IMAWG will be invited to contribute to decisions regarding the mandate, scope, and delivery model of a longer-term WATCH *Program*.
- IMAWG communities will be invited to attend online WATCH seasonal workshops and other open sessions. IMAWG members and designates may attend other WATCH events on request (e.g., training, Monitoring Community of Practice).
- The WATCH Project Lead will act as a liaison between IMAWG and the WATCH Project, sharing project updates with IMAWG and relaying ideas, concerns, and knowledge to the WATCH Project.

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<sup>2</sup> Seasonal workshops will include (but not be limited to) unusual sightings, record-breaking weather and climate anomalies, similar to webinars hosted by One Health Group in Alaska <https://onehealth.leonetwork.org/en/posts/show/A72D50C6-FCDF-427D-9E61-FE4E24B8147E>).