# ANNUAL REPORT

2023

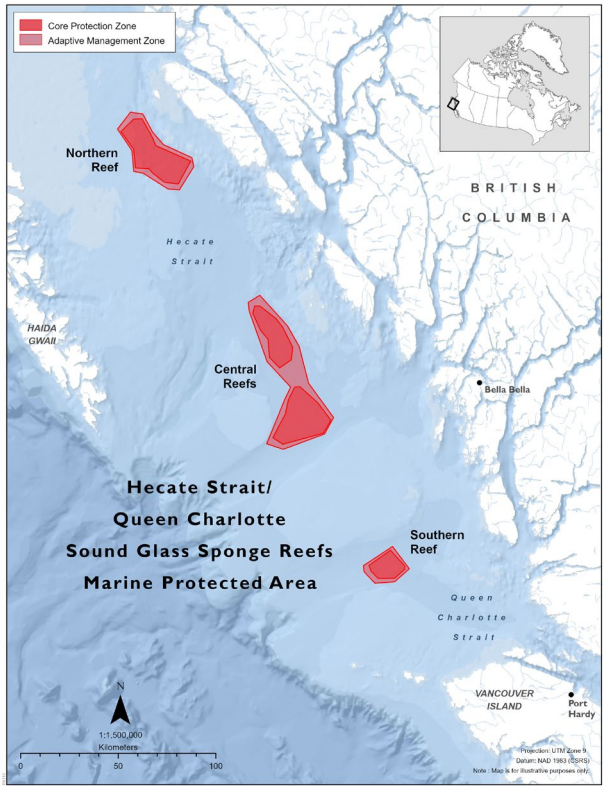
## Hecate Strait/Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area

Fisheries and Oceans Canada | Pêches et Océans Canada

Canada

# Contents





# At-a-glance

**Date of designation:**
2017

**Size:**
2,410 km²

**Contribution towards the marine conservation targets:**
0.04%

**Location:**
This MPA is located in the Northern Shelf Bioregion, Pacific Ocean. There are 3 separate areas, including the:

1. Northern Reef
2. Central Reefs
3. Southern Reef

**Co-managed by:**
This MPA is co-managed by two main Working Groups. The Kitselas Hecate Working Group includes DFO and Kitselas First Nation, and the Pacific North Coast Hecate Working Group includes members from:

- Fisheries and Oceans Canada (DFO)
- Gitga'at
- Gitxaala
- Heiltsuk
- Kitasoo Xai'xais

**Acknowledgement:**
This MPA is within the statement of intent area of several First Nations, as stated above.

**Zones:**
This MPA has 3 management zones:

1. Core Protection Zones (CPZs) include the seabed, the subsoil to a depth of 20 metres, and the water column above the seabed.
2. Vertical Adaptive Management Zones (VAMZs) include water columns right above the CPZs that extend from that boundary to the sea surface.
3. Adaptive Management Zones (AMZs) consist of the seabed, subsoil, and waters that are not a part of the CPZs or VAMZs.

# Key highlights

In 2023, DFO, Gitga'at, Gitxaala, Heiltsuk and Kitasoo Xai'xais agreed (in principle) to a draft terms of reference to guide the development of a management plan for the MPA. In doing so, the Pacific North Coast Hecate Working Group was established.

In 2023, DFO and Kitselas First Nation agreed to a draft terms of reference to guide the development of a management plan for the MPA. In doing so, the Kitselas Hecate Working Group was established.

DFO and partner First Nations have started the development of ecological and human pressure monitoring objectives, which will provide the foundation for a future monitoring plan.

# In the spotlight: benefits

| Ecological | Socio-cultural | Economic |
|---|---|---|
| Glass sponges are exceptionally fragile, with skeletons made of silica or glass. Sponges are easily broken on impact and increased suspended sediments can permanently smother or inhibit their filtration process. Each sponge may live for over 200 years, and the slow growth and vulnerability of the sponges suggests that recovery from damage may take hundreds of years.<br><br>To protect the glass sponges from physical contact, the MPA is closed to all fishing activities that use gear which targets the seafloor. In addition, the AMZ serves as a buffer around the reefs to prevent fishing-induced suspended sediment from reaching the glass sponges. | The MPA provides research opportunities to increase knowledge and understanding about this unique ecosystem. It also supports environmental awareness and educational opportunities for marine ecosystems.<br><br>Collaboration among DFO and First Nations on the development of the terms of reference to guide the development of a management plan for the MPA fosters opportunities for trust building and communication across governments. The MPA has increased opportunities for capacity building, skills development and experience-based training for partners and involved parties. | The MPA protects habitat and nursery grounds for commercially important aquatic species, including:<br>• rockfish<br>• prawns<br>• other finfish and shellfish species<br><br>The protection of these habitats may potentially benefit fisheries taking place outside the MPA via spillover, which could improve food security and provide more opportunities for food, social and ceremonial fishing and commercial fishing. In addition, water filtration is another ecosystem service provided by the glass sponge reef ecosystem, which contributes to nutrient cycling. |

# Education and outreach

During the spring and summer of 2023, a huge glass sponge specimen was on display in the North Coast Ecology Centre in the Lax Süülda Container Market in Prince Rupert, British Columbia. Although the glass sponge reef was behind glass (they're very fragile), the centre provided visitors with an educational poster and video highlighting the unique ecology of glass sponge reefs and the importance of the MPA. For particularly keen patrons, Ecology Centre volunteers were on site and happy to answer questions. Overall, the Ecology Centre provides an important learning opportunity for the community by highlighting the rich and diverse ecology of the terrestrial and marine environments of the North Coast. Thanks to the dedicated staff and volunteers, the Ecology Centre's upgrade into a 40' shipping container was a big success.


## Research and monitoring

**Research**

In 2023, DFO Science continued efforts to collect oceanographic data within the MPA in support of ongoing monitoring. Researchers deployed an oceanographic mooring in the AMZ of the Central Reefs. The instruments measure ocean currents and water properties at regular intervals and remained on-site for 1 year. During deployment, researchers also sampled zooplankton to characterize species and abundances within the MPA.

A team of DFO Scientists, led by Dr. Josephine Iacarella and supported by Dr. Anya Dunham, published a paper evaluating conservation areas effectiveness across Canada's 3 oceans, of which included the Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs MPA. Conservation area effectiveness was assessed through temporal and spatial comparisons of Automatic Identification System (AIS) fishing estimates of illegal and legal fishing activity. Comparisons were done before and after enactment dates and within and surrounding the conservation areas.

The team published another paper that applied and compared AIS and flyover vessel tracking methods to estimate fishing in Canadian Pacific marine conservation areas. They also examined how flyover and satellite vessel tracking methods can help monitor marine conservation areas effectiveness in Canadian Pacific waters. The methods that were developed in these papers are being used to summarize quarterly marine surveillance activities within Canadian Pacific marine conservation areas and will also be used to develop human pressure monitoring indicators for the MPA.

In addition, DFO and partner First Nations are currently developing ecological and human pressure monitoring objectives for the MPA. Subsequently, a monitoring plan will be developed.

## Collaborations and partnerships

DFO and partner First Nations continue to work in partnership on the ongoing management of the MPA.

Since 2017, DFO has continued its oceanographic monitoring activities within the MPA through the deployment and collection of 9 oceanographic instrumentation moorings in the AMZs. The instrumentation collects ongoing data on currents and water properties for a 1-year cycle, until the scientists retrieve the mooring and redeploy it at another location.

## Surveillance and enforcement

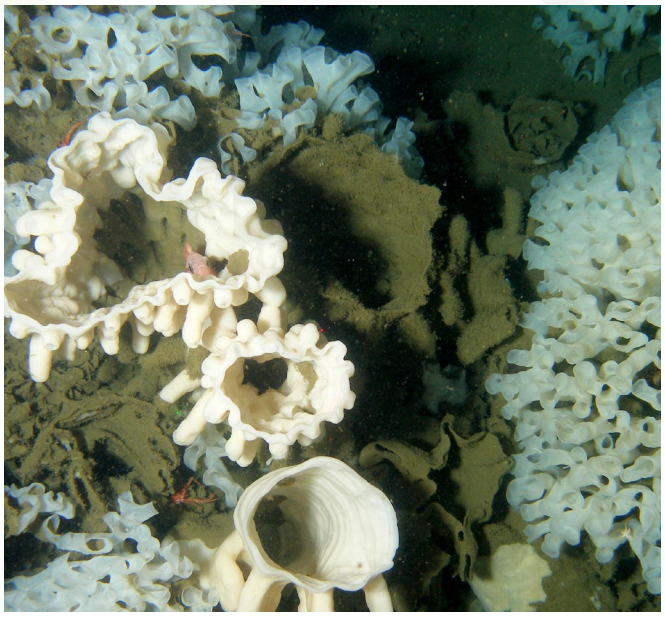
Conservation and Protection's Fisheries Aerial Surveillance and Enforcement Program was able to conduct numerous aerial surveillance patrols. In total, the surveillance aircraft was over the MPA for 69.16 hours with:

- 18 commercial vessels
- 3 foreign fishing vessels
- 2 domestic fishing vessels
- 9 unidentified targets detected during those flights

The Marine Security Operations Center monitors the MPA using Radar Satellite II and analyzes acquisitions and detections with any AIS associations. One detection is under investigation.

The Canadian Coast Guard patrolled the MPA once in both July and August 2023 and did not observe any violations.

Future monitoring efforts would benefit from the approval to leverage the Dark Vessel Detection program in domestic waters as it will specifically target coverage of Pacific Region MPAs.



## Management and governance

**Management**

In 2023, 2 MPA activity plans for scientific research and/or monitoring activities were reviewed and approved. One project did not occur for logistical reasons.

**Pacific North Coast Hecate Working Group**

DFO entered into grants and contributions agreements with each of Gitga'at, Gitxaala, Heiltsuk and Kitasoo Xai'xais Nations to support the ongoing co-management of the MPA.

In August 2023, DFO agreed to a draft terms of reference (in principle) and established the Pacific North Coast Hecate Working Group to guide the co-development of a management plan for the MPA. 4 meetings were held in 2023.

**Kitselas Hecate Working Group**

DFO entered into a grants and contributions agreement with Kitselas First Nations to support the ongoing co-management of the MPA.

In July 2023, DFO agreed to a draft terms of reference and established the Kitselas Hecate Working Group with Kitselas First Nation to guide the co-development of a management plan for the MPA. 2 meetings were held in 2023.

## Looking to the year ahead

DFO and partner First Nations are looking forward to making progress on the collaborative development of an MPA management plan. As a priority, we are working to define the ecological and human pressure monitoring objectives for the MPA. While we do not expect any research and monitoring projects to come from this foundational work, developing ecological goals and objectives will provide the necessary groundwork for research and monitoring programs in future years.

DFO scientists are planning an expedition to the southern portion of the MPA for the summer of 2024.

Published by:
Fisheries and Oceans Canada, Ontario K1A 0E6
Également disponible en français.

Cat. No. Fs1-103E-PDF ISSN 2818-7113

Correct citation for this publication:
Fisheries and Oceans Canada. 2025. Hecate Strait/Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area (MPA) annual report 2023. Annual report. Hecate Strait/Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area. 8 p.