ANGUNIAQVIA NIQIQYUAM MPA 2017 ANNUAL

The Anguniaqvia niqiquam Marine Protected Area (ANMPA) was named in memory of Nelson Green's hunting grounds, and is Canada's first MPA with a conservation objective based solely on traditional and local knowledge (TLK) (Fig. 1). The ANMPA was establish in 2016 to monitor the ecologically important habitat for Arctic char, cod, seals, polar bears, sea birds, beluga and bowhead whales.

Part of the ANMPA surrounds the Cape Parry Bird Sanctuary, home to the only thick-billed murre colony in the Western Canadian Arctic.

ANMPA Conservation Objectives

Science Objective

"To maintain the integrity of the marine environment offshore of the Cape Parry Migratory Bird Sanctuary so that it is productive and allows for higher trophic level feeding"

Traditional & Local Knowledge Objective

"To maintain the habitat to support populations of key species (such as beluga whales, Arctic char, and ringed and bearded seals)"

http://www.beaufortseapartnership.ca/initiatives/tarium-niryutait-marine-protected-area/

ANMPA Field Season 2017

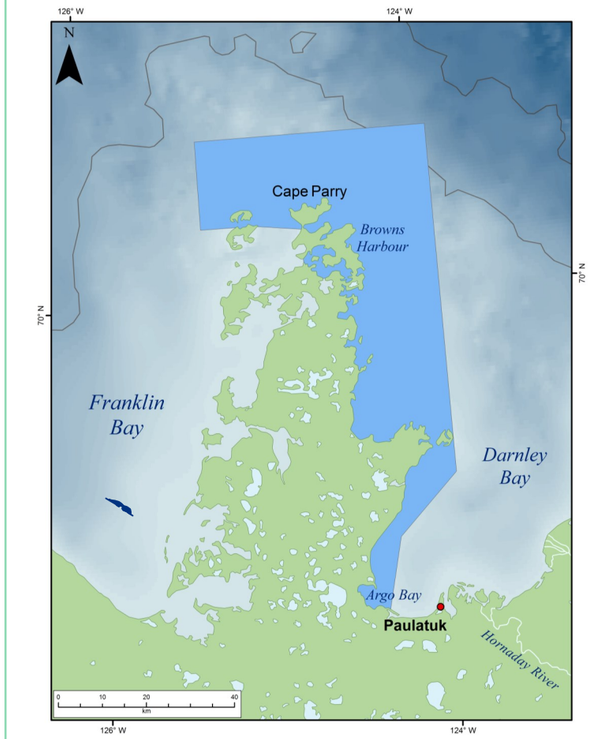

Figure 1. *Map of the newly designated Western Arctic marine protected area Anguniaqvia niqiqyuam*

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Special points of interest:

- Ocean's Day and ANMPA Celebration
- John Day continues as Chair of WAMPA Steering Committee
- The creation of the ANMPA Working Group was added to the WAMPA Terms of Reference

2017 ANMPA Supported Projects

Below are current and on-going research and monitoring activities that occurred in the ANMPA.

Research/Monitoring:

- **Darnley Bay Nearshore Fish Survey: led by DFO**
- **Beluga Harvest Monitoring; led by the Paulatuk HTC**
- **Seal diet and Acoustic Monitoring Study: led by Steve Insley (Wildlife Conservation Society)**
- **Blue Char Harvest Study: led by DFO**
- **Hornaday Char Monitoring Program (supports ANMPA)**

Monitoring:

- **Monitoring and Management plans in preparation for future monitoring of the ANMPA**
- **Activity Plans are now in place.**

Summer Tourism:

- **C3 education and tourism cruise**

Large Vessel Traffic

2017 large vessel (≥300 gross tonnage) traffic in the ANMPA. This data was captured and made possible by the Automatic Identification System (AIS).

The development of small vessel tracking is ongoing.

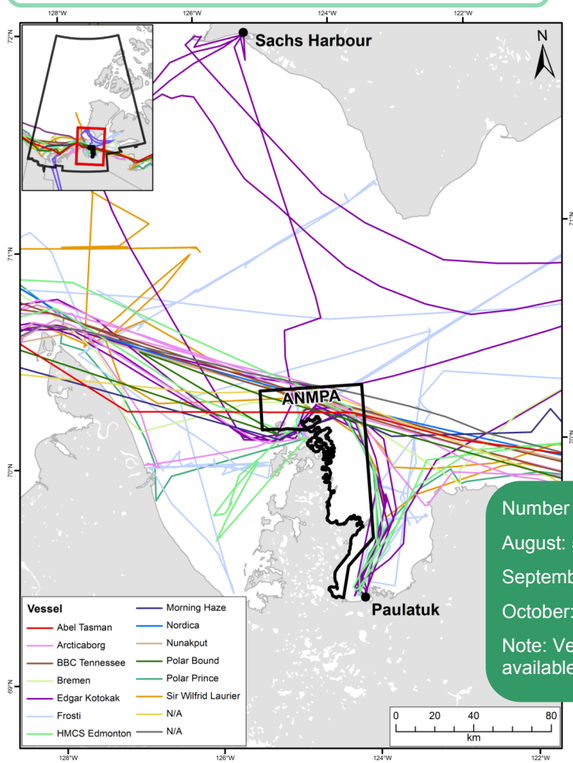

Figure 2. *Map of large vessel routes with the ANMPA in 2017*

Number of Vessels / Month

August: 5

September: 9

October: 1

Note: Vessel tracking only available from August onward

Surveillance and Compliance

Two open water patrols and one aerial patrol by DFO Conservation and Protection officers (C&P) were done this year in ANMPA .

C&P work in the ANMPA in 2017 included:

- marine vessel patrols, including patrols on board Navy vessel HMCS Edmonton and CCG Vessel Sir Wilfrid Laurier
- aerial surveillance flight of ANMPA onboard Transport Canada Aerial Surveillance plane

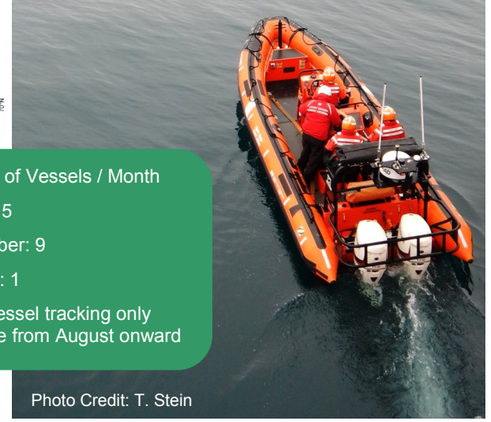

Photo Credit: T. Stein

On the Horizon

- Development of ANMPA Monitoring and Management Plans are underway
- New ANMPA and TNMPA Working Groups are being formed to support WAMPA

BEAUFORT SEA PARTNERSHIP

The community of Paulatuk has shown great leadership in monitoring the ANMPA. Photo Credit: J. Brewster

Siglit Beluga Names

Qilaluqag: toothed whale

Nalungiait: newborn calves (grey whale)

Tunguvyuit: young whales (light grey)

Nalungialiit: adult females

Anguhalluit: adult males

We're on the Web!

Beaufortseapartnership.ca

Thank You

DFO Oceans would like to thank the following:

- Paulatuk HTC for leading and providing guidance on projects in the ANMPA
- Our partners at the FJMC who work so hard on the ANMPA
- Community members from Paulatuk for biological data collection
- Contributors from DFO Science who collect the ecological data
- DFO C&P for supporting the MPA

Flying over the ANMPA during for C&P Surveillance..

Photo Credit: Jasmine Brewster

Marine Protected Area Coordinator

Kayla Hansen-Craik was hired as the new MPA Coordinator

KHansen-Craik@inuvialuit.com

Activity Plans

All research and monitoring, tourism, and educational activities must fill out an Activity Plan prior to conducting proposed activities. For more information please contact: anmpa@dfo-mpo.gc.ca

Questions?

Contact: Jasmine Brewster
MPA Biologist, Oceans Management/DFO
Phone: 867-777-7516

Char Monitoring at Tippi

Collin Gallagher

Project Objective

Characterize the harvest of Arctic char in ANMPA and investigate the 'blue char' captured at Tippi, which are morphologically different than Arctic char associated with the Hornaday River and are of unknown origin. Fisheries data has been collected annually from Tippi since 2012 .

Table 2. *Numbers of blue char and River/regular Arctic char captured at Tippi*

Year	Blue char	River/ regular char
2017	34	2
2016	8	5
2015	45	29
2014	19	2
2013	48	14
2012	5	3

Tony Green working with the blue char program
Photo Credit: PHTC

Seal Diet and Shipping Impact

Steve Insley and PHTC

Project Objectives

The goal of the seal diet study is to maintain a long-term, locally run, diet and condition program focused on ringed seals and bearded seals in the Amundsen Gulf based on harvested seals. This will help us understand the well being of these species and the broader ecosystem

The goal of the shipping impact study is to assess the potential impacts of increased shipping and sea-ice loss on marine mammals in the Beaufort Sea. For this, we use passive acoustic monitoring in order to learn what the current background noise levels underwater are, how the local marine mammals use different areas, and how ship noise might change things.

Instruments: Shipping Impact Study

- Recovered and redeployed acoustic recorder that overwintered near Sachs Harbour and Ulukhaktok
- Deployed remote recorders near Cape Parry and in Prince Wales of Strait

Hank Wolki setting acoustic recorder off of Browns Harbour in July 2017. Photo Credit: S. Insley

Oceans Day 2017

This years Oceans Day was held in Paulatuk NT in conjunction with the annual Iqalukpik Jamboree and inauguration of the Western Arctic's second MPA *"Anguniaqvia niqiqyium"*

Ocean's Day logo winners (Billy Ruben, Joel Thrasher, Skye Green, Rihanna Ruben) for the 2017 sweater and cake highlighted the talent of Paulatuk youth.

Photo Credit: Peggy Jay

Kate Snow (DFO Inuvik), Paul Sokoloff (Canadian Museum of Nature Ottawa), Lianna Teeter (DFO Victoria) aboard the C3. Photo Credit: K. Snow

Canada C3

The Polar Prince Ice Breaker commemorated Canada's 150th birthday by sailing from the Atlantic Ocean, through the Northwest Passage, to the Arctic Ocean and concluding the journey by sailing the Pacific Ocean. Kate Snow (DFO Inuvik) participated on the Paulatuk to Tuktoyaktuk Leg 11, from September 06-10, 2017 where she described the ANMPA to the 20 other Canadians who participated on Leg 11. The participants enjoyed learning about the co-management effort to sustain a subsistence lifestyle and to protect a vibrant part of the Arctic Ocean.

Beluga Harvest Program

Paulatuk Hunters and Trappers Committee (PHTC)

Project Objective

To monitor and record beluga harvests in Darnley Bay and environmental conditions through a community-based monitoring program led by PHTC. Monitors are stationed at Egg island (Argo Bay) and Tippi, but also travel where and when needed (i.e. from the Hornaday River to Brown's Harbour) to measure and collect samples from harvested beluga whales (July 10 to August 16). Harvesters voluntarily record marine observations using journals and a mobile App when they are camping and travelling (June 15 to Sept 10).

2017 Field Season

This year no beluga were harvested or sampled through the beluga harvest program. Community members and monitors did observe whales, however weather prevented any whales from being harvested

Beluga harvest program led by the PHTC.
Photo Credit: PHTC

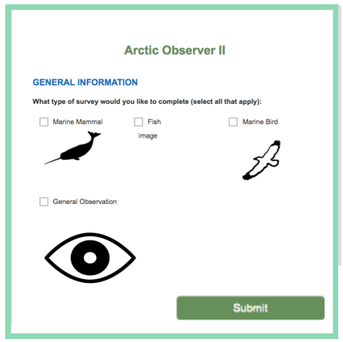

Figure 3. *Image of the Arctic Observer App.*

Arctic Observer App

This summer the app was launched and allowed for researchers and harvester monitors to record environmental and marine observations with their phones (Fig 3). This app works online and offline:

https://survey123.arcgis.com/share/fa672cf2088548f09f3411a0c9d24472

For more information contact: sonja.ostertag@dfo-mpo.gc.ca

This summer 26 crabs were collected, along with Thermisto amphipods in the spring.
Photo Credit PHTC

Invertebrate Project

This year benthic sampling was led by the PHTC and involved collecting invertebrates to identify which species are present within the ANMPA. The objective of this study is to build upon baseline information for invertebrate species in the area, as well as identify their importance in the marine system (i.e. predator/prey relationships)

Darnley Bay Nearshore Survey

Darcy McNicholl, Karen Dunmall, Jim Reist

Program Objective

To develop baseline knowledge for fish resources and characterize fish habitat. This program is designed to support community-based environmental monitoring, establish coastal linkages with the Canadian Beaufort Sea Marine Ecosystem Assessment (CBS-MEA; and BREA-MFP), and provide information relevant to the monitoring of the ANMPA

2017 Field Objectives and Highlights

- Collect fish to assess changes in biodiversity, size and condition and sub-sample for tissues (stomachs, muscle and otoliths)
- Examine the spawning ecology of Capelin and significance in the food web
- Collect invertebrates to assess biodiversity, prey for fish and support invertebrate project led by the PHTC
- Examine fish habitat associations by collecting temperature, salinity, turbidity and dissolved oxygen data

Capelin collected in the ANMPA.
Photo Credit D. McNicholl

Highlight

Capelin, prey to top predators return to ANMPA coasts to spawn

Table 1. *Number of species collected during the 2017 Darnley Bay Nearshore Survey*

Species	Total
Arctic Char	9
Arctic Cisco	7
Arctic Flounder	561
Arctic Shanny	1
Arctic Staghorn Sculpin	4
Broad Whitefish	62
Sculpin juveniles	5
Capelin	658
Fourhorn Sculpin	15
Pacific Herring	7
Saffron Cod	57
Shorthorn Sculpin	40
Starry Flounder	110
Rainbow Smelt (larvae)	14

Working Together

Table 2. *Management and community-based monitoring employment in the ANMPA for 2017*

Program	Name (Position)
Beluga Harvest Program	Brandon Green (summer student)
Darnley Bay Survey	Steve Illasiak
PHTC Invertebrate Study	John Green and Waylon Green (Technicians), Brandon Green (summer student)
Tippi Char Monitoring	Tony Green
Seal Diet and Shipping Acoustic Impact	Ryan Green and Joe Illasiuk (Monitors)