

BELUGA BULLETIN

VOL 2 — ISSUE 2
FALL 2015

prepared by
Sonja Ostertag &
Simon Farla



INSIDE
THIS
ISSUE

2
Traditional knowledge
and local observations
in beluga monitoring at
Hendrickson

2
Health assessment of
the Beaufort Sea beluga
whale in the Inuvialuit
Settlement Region

3
Community-
based monitoring
in action

3
Beluga diving
and feeding
study

4
Youth perspective:
Our trip to Hendrickson
Island

Introduction *Lisa Loseto & team*



Lisa Loseto, Émilie Couture, Corrine Bullock and Sonja Ostertag dissect a beluga whale lung on Hendrickson Island. photo credit: Oksana Schimnowski

WELCOME TO OUR FALL UPDATE ON BELUGA AND ECOSYSTEM RESEARCH THAT TOOK PLACE THIS SUMMER IN THE INUVIALUIT SETTLEMENT REGION. The success of this field season resulted from the strong partnerships that have developed between the FJMC, HTCS, communities, government agencies and

universities. In this bulletin, we provide updates on the beluga research that is taking place in the region that supports the TN MPA and ANAOI in Darnley Bay. There are many additional projects led by the DFO and FJMC that will not be covered in this issue.

Belugas made their way into Mackenzie Delta earlier than usual this year, due to the early breakup of the ice bridge. Whales were spotted as early as June 18th in Kugmallit Bay. The DFO and NRCan are collaborating to collect data to map the seafloor and characterize the summering habitat of beluga in Kugmallit Bay. For this project the habitat research team travelled to East Whitefish shortly before ice break up to complete their third and final year of fieldwork. Hydrophones were placed in the bay in mid-June to collect both beluga vocalizations and background noise during the summer. The hydrophones were paired with equipment to measure water temperature, salinity and turbidity (siltiness).

Several community meetings were held this summer: beluga focus groups occurred in Inuvik, Paulatuk and Tuktoyaktuk with participants selected by the HTCS and an FJMC community tour provided the chance for research updates to be shared with Ulukhaktok, Paulatuk and Inuvik. These meetings helped us prepare for a very busy July field season.

In partnership with the FJMC, beluga research and monitoring occurred at multiple whale camps during July, with more intense efforts taking place at Hendrickson Island. This year we engaged in a new partnership with a veterinarian team to examine beluga health as well as assess parasites that may be of concern for people eating prepared beluga (see article in this bulletin). Lastly, the continuation of fish and ecosystem research (ACES program) occurred at Shingle Point as a joint effort with the Dolly Varden project. For updates on whale harvest counts please see the FJMC fall newsletter.

Traditional knowledge and local observations in beluga monitoring at Hendrickson

Sonja Ostertag, Central and Arctic Region, Freshwater Institute, Fisheries and Oceans Canada



Sonja Ostertag, John Noksana Sr., Jimmy Carpenter, Frank Wolki, Rex Noksana, John Tedjuk, Anthony Pokiak, Verna Pokiak, Molly Nogasak and Kayla Nuyaviak participate in a focus group in Tuktoyaktuk. photo credit: Carie Hoover

Some of the questions that we are trying to answer are:

How do the Inuvialuit know if beluga whales are healthy and “good to eat”?

Where are beluga observed? How do they use the different coastal areas in the ISR?

How can local observations be included in beluga monitoring?

BELUGA MONITORING IN THE ISR HAS ALWAYS RELIED ON COLLABORATION BETWEEN RESEARCHERS AND HARVESTERS. Over the past few years, I have been working in Paulatuk, Inuvik and Tuktoyaktuk to look at how local observations and traditional ecological knowledge about belugas can become a regular part of beluga monitoring in the ISR.

This was the third year that we collected local observations and included Traditional Ecological Knowledge in the beluga monitoring program. I held focus groups with community experts that were chosen by the HTCS. We reviewed the beluga health indicators and the beluga habitat maps from previous years. In the summer, local observations were collected about harvested and migrating whales, at Hendrickson Island, East Whitefish, Tuktoyaktuk, Darnley Bay, Paulatuk and Ulukhaktok.

This year, we had an exceptional team at Hendrickson Island including youth and one Elder from Tuktoyaktuk, veterinarians, scientists and beluga monitors. We worked together to sample the whales, and record observations about harvested and migrating whales in the Estuary this summer. We tried a new ‘online app’ this summer to record environmental observations as well, with the goal is for all community members to be able to easily share what they are seeing while out on the land or traveling by boat.

I would like to thank all of the participants in this project and the HTCS for administering this project in their communities. *Quyanainni!*

Health assessment of the Beaufort Sea beluga whale in the Inuvialuit Settlement Region

Emilie L. Couture and Stéphane Lair, Canadian Wildlife Health Cooperative (CWHC), Faculté de médecine vétérinaire, Université de Montréal
Emily Jenkins, Western College of Veterinary Medicine, University of Saskatchewan (U of S),



Beluga sampling as a team on Hendrickson. From L-R; Sonja Ostertag, Tameqaw Pokiak, Kathleen Snow, John Noksana, Verna Pokiak, Stéphane Lair, Lionel Kikoak, Jimmy & Vernon Carpenter. photo credit: Emilie Couture

THE BEAUFORT SEA BELUGA WHALES ARE AN IMPORTANT SENTINEL SPECIES FOR THE HEALTH OF THE ARCTIC ECOSYSTEM. Changes in this ecosystem could impact the health of these valuable animals for ISR communities. This potential issue brought together DFO, HTCS, FJMC, U of S and the CWHC to perform a baseline health assessment of the ISR beluga population. In July 2015, 16 whales that were landed on Hendrickson Island were completely sampled with consent from the hunters. CWHC and DFO staff performed the sampling in collaboration with whale monitors, as well as with community youth and hunters. The harvested belugas were carefully examined by a team of veterinarians and biologists. This year we were able to obtain a full body weight on some of the beluga.

Overall, the belugas appeared to be in very good health. A few parasites were noted in some animals. In the coming weeks we will perform microscopic evaluation of organs taken as well as screening tests for *Trichinella* and *Toxoplasma*, two parasites of importance for human health.

The veterinary team was impressed by the level of community involvement in this project. We hope to continue this survey next year in order to increase the number of whales examined.

Community-based monitoring in action

Diane Ruben, Paulatuk Hunters and Trappers Committee

IT WAS A GREAT YEAR FOR THE COMMUNITY'S BELUGA HUNT. Of course the belugas arrived in late July in our area. First, they started to arrive in small groups of 2-5, by late August a group of over 100 came from Northward, which puzzled us. The only year that happen was when Killer whales were known to be in our area, but stayed further outside.

The importance of monitoring our beluga is becoming greater each year, as our climate changes, our feeding areas become different, either good or bad. New plants and fish are being recorded by the Darnley Bay Fish Survey team, which tells us that a new story is beginning. There's always room for monitoring more, but it's the funding that is needed to help with continuing as we go forward.

The Anguniaqvia Niqigyuam Area of Interest is a community driven effort with the assistance of the PHTC, which one day will become a marine protected area.

17 whales were harvested and 15 were fully sampled, with one partially sampled by the harvester (Harvester Incentive Program funded by FJMC).

Sonja Ostertag (DFO) visited and spent time in Darnley Bay working with monitors, learning and training. She spent the majority of her time with the Monitors out on the field and held a Beluga focus group meeting with members of the community. Danny Swainson (FJMC) had the opportunity to sample some whales harvested at Tippi area during his field trip, where he spent time with the Beluga and Char Monitors.



Brandon Green, Dennis Illasiak, Diane Ruben, Joe Illasiak, Melanie Wolki, Sonja Ostertag, Glen Ruben, Tony Green, Jody Illasiak and Mary Green at Tippi. photo credit: Sonja Ostertag

Some belugas were observed at Billy's creek and Sugvuk area that looked like they were herding Capelin and sandlance, as they were observed in the area. Some harvesters were also fishing for char and whitefish in the area at the time of the whale observations. The program in Darnley bay was linked with the observations being collected in Kugmallit Bay. Thank you to the Beluga Team for another great, successfully season!

Beluga diving and feeding study

Emily Choy, Department of Biological Sciences, University of Manitoba & Central & Arctic Region, Freshwater Institute, Fisheries & Oceans Canada

BELUGA WHALES AND OTHER MARINE MAMMALS HAVE THE ABILITY TO STORE HIGH LEVELS OF OXYGEN TO ALLOW THEM TO PERFORM DEEP WATER FEEDING DIVES. Whales and seals can carry higher volumes of oxygen in their spleen, muscle, and blood. As such, to study the diving ability of belugas, we measured the levels of myoglobin protein (as measure of oxygen) in the main diving muscle of beluga whales called the longissimus dorsi, or the back strap. In this muscle we also measured the capacity of muscle to maintain function during prolonged dives.

Male belugas are larger than female belugas and have larger spleens, which may explain their ability to perform deeper foraging dives. This physiology research will provide insights into the relationships between specialized physiological adaptations and prey selection, to determine whether changes in prey availability or quantity may affect the feeding ability of the beluga whales.

Narwhals, the closest relative to beluga whales, have extreme physiological adaptations in diving for specific prey that live on the seafloor bottom and as a result have been labelled as vulnerable to climate change.

HIGHLIGHTS FROM 2015

A weather station was installed at East Whitefish to measure the wind direction, speed and air temperature. Information is available at: <http://dataservices.campbellsci.ca/nrcan/index.html>

The research program on Knowledge Co-Production for the Identification and Selection of Ecological, Social, and Economic Indicators for the Beaufort Sea has received funding from ArcticNet.





Stéphane Lair teaches Courtney and Lionel Kikoak about measuring the blubber thickness of a landed whale. photo credit: Sonja Ostertag

Youth perspective: Our trip to Hendrickson Island

Courtney and Lionel Kikoak, Mangilaluk School, Tuktoyaktuk

This trip was the best trip that we've ever been on out on the land. We enjoyed it so much and learned more about our culture. We also know how to cut up a whole whale now, the insides of it and all, which we are very proud to know and we are sure our parents are very proud of us too.

This experience is something we never imagined ourselves doing but were thankful we got this opportunity to do so. I think we will talk about this experience forever. For Courtney, the best part about this trip was sampling the blood and cutting off the muktuk. Lionel's favourite part was taking out the guts and the brain. We also enjoyed everyone's company and great hospitality.

We learned a lot from Sonja, Stéphane, Émilie, Verna, Kate and Rex. Their work was to take everything out of the whale to sample the body parts. We learned a lot from these guys, right from taking out the brain, ears, guts, lymph nodes and right up to the testicles. Now whenever our dad gets a whale we are sure we can do it no problem. We've always wanted to learn how to cut animals from around the Arctic. Now we know how to do a beluga whale and now we are eager to learn how to do the rest of the animals. I, Courtney, also got my first whale out at Hendrickson Island.

We were very glad to have shared this experience together. We've learned so much and really enjoyed being out on the land. We would definitely do this again. Thanks to the team for working so hard every day out at Hendrickson. Thanks to the cook Eileen for keeping us nice and fed and to John for telling us great stories.

CONTACT INFO

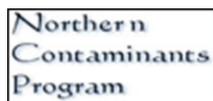
Lisa Loseto

Freshwater Institute,
Fisheries and Oceans
Canada
501 University Cres
Winnipeg, MB
R3T 2N6

phone 204-983-5135
fax 204-984-8403
email lisa.loseto@dfo-mpo.gc.ca

The DFO takes an ecosystem based approach toward research and management. DFO and FJMC partner to address the FJMC core mandate of measuring and monitoring the ecosystem status of both the TN MPA and the Large Ocean Management Area.

THANK YOU TO OUR SUPPORTERS



Visit the FJMC on Facebook



ArcticNet
ᐱᐱᐱᐱ ᐱᐱᐱᐱ ᐱᐱᐱᐱ



Fisheries and Oceans
Canada Pêches et Océans
Canada



Natural Resources
Canada Ressource naturelles
Canada