



S/V Arctic Tern I - 2014 Expedition Report

World Wildlife Fund



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Crew & Passengers

Crew

Grant Redvers, Captain

Pascale Otis, First Mate & Communications Manager

Samuel Richard, Second Mate & Science Support Manager

Scott McDougall, Replacement crew

Passengers

Graham May, Student

Kieran O'Donovan, Canadian Wildlife Service

Christie MacDonald, Canadian Wildlife Service

Kristin Westdal, Oceans North

Christopher Paetkau, Oceans North

Trevor Gill, Oceans North

Crystal Nutarak, Student from Pond Inlet, Nunavut

Savanna Killiktee, Student from Pond Inlet, Nunavut



Samuel Richard at the bow of Arctic Tern I, sailing into Ilulissat, Greenland.

Arctic Tern I and WWF

In the summer of 2014, Arctic Tern I successfully completed another expedition in the eastern Canadian Arctic, contributing to the wider collaborative work toward a holistic assessment of the biodiversity in this important and changing part of the world.

We hope that the work of Arctic Tern I will contribute to constructive and collaborative solutions for Canada's North. Whether it is science, education, or film-making, these projects will serve to support Inuit and other partners, and raise awareness and understanding.

We are grateful to the World Wildlife Fund for being such an important partner to this project. The following report outlines the highlights and benefits of the Arctic Tern I's summer 2014 Arctic expedition.



Sailing through the fog in Greenland.

Positioning cruise: sailing north

Grant Redvers (Captain) and Pascale Otis (First Mate) have been the core crew aboard Arctic Tern I since 2012. This year, Samuel Richard joined them as third crew. Samuel was also part of the team in 2013, helping with the bird surveys at sea, in Greenland and Bylot Island. It was with a lot of enthusiasm that our team got together at the start of the season, looking forward to heading north for another summer in the Arctic. Once again, many exciting projects (from social studies to scientific data collection to film assignments!) were going to keep Arctic Tern I busy for the summer.

Sailing vessel Arctic Tern I departed Lewisporte, Newfoundland, on June 20th, 2014 after a short preparation period in the yard. The delayed departure, due to an unusual amount of sea ice along the coast in the spring, did not delay the summer's projects in any way. We arrived in Nuuk, Greenland, on June 27th where Graham May started his work.



Departing Lewisporte in June. An unusual amount of sea ice could be seen along the coast of Newfoundland this year.



Registered in Iqaluit, Nunavut, Canada, Arctic Tern I is a polar expedition sailboat – strong, safe, nimble, and equipped to go just about anywhere.

Greenland: a study of resource management in northern communities

Graham May, currently an undergraduate student at Mount Allison University, joined Arctic Tern I from June 6th until July 26th. The objective of his research was to do a comparative study of resource management between Greenland (West Coast) and Northern Canada (Iqaluit). The following communities were visited in Greenland to allow Graham to interview locals on the subject:

- Nuuk (June 27-July 3), including a visit with Greenland's Prime Minister
- Sisimiut (July 4-6)
- Aasiaat (July 6-7)
- Ilulissat (July 9)
- Uummannaq (July 11-14)
- Upernavik (July 16-23)

After disembarking Arctic Tern I, Graham flew to Iqaluit, where he spent a month working with the community at the Arctic Children & Youth Foundation. He will produce a report of his research as part of his undergraduate program.

"In Greenland, the main concerns are mineral development and how communities can get involved in deciding which projects go ahead and which don't, how they benefit from those projects, and how they can alleviate negative impacts. My research is looking at how communities can interact with local decision makers and governments."

- Graham May



Left: Graham May, interviewing a local in Uummannaq.

Right: At the helm, sailing across Baffin Bay, between Greenland and Bylot Island.

Cape Graham Moore, Bylot Island: bird banding and tagging

Thick-Billed Murres nesting on the cliffs of Cape Graham Moore on Bylot Island, Nunavut, are very significant to biodiversity in the area. The importance of this area has already been recognized by the establishment of Sirmilik National Park.

In 2013, work supported by the Arctic Tern I allowed a first assessment of the breeding colonies in the area (Cape Hay and Cape Graham Moore). Photo bird surveys allowed scientists working for the Canadian Wildlife Service to estimate the extent of both colonies and geolocator tags were attached to 20 birds to track where they went during the winter before returning to the breeding colony.



This year, the main focus of the work was the following:

(a) Retrieve the geolocator tags deployed in 2013 and download the data. 12 of the 20 tagged birds were recaptured, of which 7 still had their geolocators. Data is currently being processed. This is the first set of data of its kind ever recorded for the colony of Cape Graham Moore.

(b) Use remote-downloadable GPS tags to track the feeding patterns of Thick-Billed Murres (both males and females) while they are feeding their chicks. The advantage of these tags is that the birds don't need to be recaptured. The data can be download remotely within a range of 1 km. The tags that have not be retrieved simply fall off after a few weeks, leaving the bird unharmed. This type of tag proved to be extremely valuable on site, since it gave us access instantaneously to the data when the birds flew back to their nest sites every day.

(c) Non-remote downloadable GPS tags. These tags recorded the same data as the previous ones (see point (b)), but the birds had to be recaptured to download

the data. The advantage of these tags is that they are less expensive than the remote downloadable ones. But the disadvantage is that some of the data was lost since not all birds were recaptured.

Work schedule on the bird cliffs:

- Arrival of the scientists (26 July)
- GPS tagging (27 July)
- Geolocator retrieval - day 1, (28 July)
- Geolocator retrieval - day 2 (29 July)
- Evening check of the GPS tags - first remote download (29 July)
- Recovery of GPS tags (3 August)
- Hike to top of the cliffs to locate a good campsite for summer 2015 (4 August)
- Departure of the scientists (6 August)



"We came up this year specifically to deploy a number of GPS transmitter tags that give us information about where Thick-Billed Murres are going to forage from the colony. This information is very important right now because this area is undergoing new developments with respect to the Baffinland mine at the Mary River site. What this mine is going to be doing is shipping their minerals out through Eclipse Sound and right past Cape Graham Moore next to where the Thick-Billed Murre colony is."

- Kieran O'Donovan

"What we want to understand is the maximum foraging range of the colony so that we know if there's a oil spill, for example, what areas of the marine area will be affected and how that is going to impact the birds. This summer's data shows that these birds travel at least 85 km from the colony to feed, so we now know that any oil spill within 85 km of Cape Graham Moore will have an impact on the birds."

- Christie MacDonald

Filming with Oceans North: August 9-16

The team from Oceans North joined Arctic Tern I in Pond Inlet, Nunavut. Between August 9th and August 16th, we sailed in Eclipse Sound, Milne Inlet and Tremblay Sound, visiting historic sites, interacting with local hunters and filming wildlife.

The highlight of their time onboard was undoubtedly the participation of two young teenage girls from Pond Inlet, Savanna and Crystal. At 15 years of age, they taught us about their connection to the land through visits to local hunting camps. This type of interaction with the locals has always been an important part of every trip and a great opportunity for us to learn more about how the people living in the north view the changes that are occurring in their communities and surrounding environment.

Schedule:

- Arrival of the team in Pond Inlet (August 9)
- Filming Narwhal in Fairweather Bay, Milne Inlet (August 10)
- Visiting Baffinland's Mary River mine staging post, Milne Inlet (August 11)
- Hunting camp, Milne Inlet (August 12)
- Wildlife filming in Tremblay sound (August 13)
- Hunting camp, Milne Inlet (August 14)
- Historic site, hunting camp, Cape Hatt (August 15)
- Team disembarks in Pond Inlet (August 16)



The team making plans for the next few days with the group from Oceans North.



Sailing in Milne Inlet. This is an important place for the locals. There are many hunting camps.

Positioning cruise: sailing south

On the 22nd of August, the Arctic Tern I started its journey south, along the coast of Baffin Island and Labrador, to reach its final destination in Lewisporte, Newfoundland, on the 27th of September.

Throughout the expedition, Arctic Tern I acted as ambassador for the World Wildlife Fund. Our goodwill visits in the Eastern Canadian Arctic included remote hunting camps in Milne Inlet, Pond Inlet, Qikiqtarjuaq and Nain. On every occasion, we sought out locals for both casual and formal visits.

The Students on Ice Foundation is very grateful for the support of the World Wildlife Canada for Arctic Tern I's 2014 expedition. Once again, it was a successful field season, and we believe that the data gathered and the community visits will make important and meaningful contributions to the understanding of biodiversity in these important and changing parts of the Canadian Arctic. We look forward to the next adventures!

