



EXPEDITION REPORT TO THE WORLD WILDLIFE FUND SUMMER, 2013

Ocean biodiversity is the foundation for the health – ecological, human, and cultural – of the North. Understanding that biodiversity is fundamental to understanding Canada’s Arctic.

Operated by the Students on Ice Foundation, Arctic Tern I is a polar-class sailboat on a five year mission to explore and document this wonderful and important polar ocean biodiversity.

With our partners - Inuit, government, scientific, private-sector – Arctic Tern I delivers science, film-making, education and community engagement. She is a uniquely versatile and flexible platform for research and media related to the biodiversity – plankton to polar bears, benthics to bowheads – of our northern ocean.



We are grateful and proud to have WWF as a partner in this work. This report, exclusively for WWF, describes the highlights and benefits of Arctic Tern’s Summer 2013 Expedition.

POSITIONING CRUISE

Arctic Tern I had wintered at Gananoque, Ontario for various refits, maintenance and upgrades necessary for safe work in the far North. These projects all contribute to the unique capacity of Arctic Tern I as a nimble, inexpensive, and versatile platform for science research. The work included an engine replacement and upgrade, new ground tackle, and electronics updating. Positioning the vessel north and south each season is costly and time-consuming, but it is a necessary element of safe and practical Arctic expeditions.

For the our 2013 program, Arctic Tern I was under the control of Captain Grant Redvers, and carried a crew complement of between three and five people. This complement is necessary for the safe passage of the vessel while simultaneously completing the research tasks.

Vessel and crew departed Gananoque on May 22, 2013 bound for Québec City for additional crew, engine service, and final preparations. On June 15, 2013 she departed Québec City to sail north and east up the Canadian coast as far as Black Tickle, Newfoundland and Labrador. From Black Tickle, she crossed to Greenland and cruised north on that coast until ice conditions allowed the crossing to Pond Inlet.

PELAGIC SEABIRD RESEARCH

On every open ocean passage this summer, we undertook formal observations of the seabirds encountered en route. In particular, this work was focused on the Gulf of St. Lawrence, Strait of Belle Isle, Labrador Sea, Davis Strait and Baffin Bay. This work was undertaken with the support and collaboration of the Canadian Wildlife Service (CWS). Using the “Eastern Canada Seabirds at Sea (ECSAS) standardized protocol for pelagic seabird surveys from moving and stationary platforms” (Gjerdrum, D., Fifield, D., Wilhelm, S. April, 2012) we recorded regular observations throughout the passage.

This method is summarized by Gjerdrum et al:

A survey consists of a series of 5 min observation periods, which are exclusively dedicated to detecting birds. As many consecutive 5 min observation periods are conducted as possible, regardless if birds are present or not, and consistent coverage throughout the day is encouraged. The transition between observation periods may take one or two minutes, in order to record the vessel's position and any conditions that may have changed since the last 5 min observation period (see Section 5.1 on recording observation period information). Transits longer than two hours may need to be broken up to avoid observer fatigue.

This, we learned, can be trying and difficult while at sea in difficult conditions, battling seasickness and stability! Nevertheless, throughout the day (and night, once days grew longer) we made these observations systematically of every bird within 300 metres of the boat. The resulting data sheets were delivered to the Canadian Wildlife Service on our return south in the fall.

GREENLAND COMMUNITY VISITS

Between June 28 and until July 11, while waiting for ice to clear out of Pond Inlet, Arctic Tern cruised up the west coast of Greenland making goodwill stops at Sisimiut, Aasiaat, Uummannaq, and Maniitsoq.

In Uummannaq we were hosted by Ann Andreassen who founded and manages the Children's Home as well as the Uummannaq Polar Institute. We visited the Children's Home and found a very cozy and warm reprieve that welcomes local children that are in need of care. We also joined a *kaffemik* at Ann's own home.

Kaffemik is a traditional communal meal and gathering, an opportunity to share stories and catch up on news and gossip. Or to celebrate; in this case, the school graduation of Ann's daughter. There was a great diversity of visitors: locals, short-term visitors, long-term workers, young and old. Workers from the Feroe Islands, visitors from the United States, a music teacher from Venezuela, and the crew of Arctic Tern I, proudly representing the World Wildlife Fund and Students on Ice.



It is also characteristic of the Kaffemik that the food is traditional. In this case, we were offered polar bear stew, pilot whale meat, maktak (piece of skin and blubber from narwhal), dried whale meat, and even narwhal intestine. Some raw and some cooked. Ann specifically reminded us that it is very important for them to use local food and resources, and largely without any transformation or processing. “The seal is our chicken, the whale is our cow.” she explained.



COASTAL MONITORING

While awaiting ice to clear out of Pond Inlet itself, Arctic Tern sailed transects along the coasts of Bylot Island and as far north as Dundas Harbour, on the southeastern coast of Devon Island. In collaboration with the Canadian Wildlife Service, the objectives of this work were to:

- 1) Undertake seabird at sea surveys in the area delineated as being important to marine birds off the southeast coast of Devon Island.
- 2) Undertake repeated seabird at sea surveys of potential routes of incoming or departing ore carries between Milne Inlet and out into Baffin Bay out to a maximum of the edge of the continental shelf.

In addition to the seabird observations, other wildlife observations were made and geo-located records were delivered to the Canadian Wildlife Service.

SEABIRD BREEDING COLONIES - PHOTOGRAPHIC CENSUS

Seabird nesting colonies at Cape Hay and Cape Graham Moore on Bylot Island are very significant to biodiversity in the area. More than 10% of the entire Canadian population of thick-billed Murres nest and breed at these sites. The importance of this area has already been recognized by the establishment of Sirmilik National Park.

Nevertheless, there is an absence of reliable data on the size and makeup of these colonies. Since this area will be subject to considerable change and development in the near future (for example, the Mary River Iron Mine project will have port and working facilities based at Milne Inlet), an understanding of the ecological baseline is essential if potential impacts of development are to be mitigated and managed.



In July of 2013, Arctic Tern I was in position off of these colonies to undertake research photography. In collaboration with the Canadian Wildlife Service, photography was conducted according to standard methodology that will allow researchers to count the number of individual nests and birds on each cliff face.. The digital images, and field notes to accompany and contextualize those images, were delivered to Environment Canada.

GEO-LOCATOR BIRD BANDING

On July 26, the vessel was positioned off the Thick-billed Murre breeding colony at Cape Graham Moore. A crew of two remained aboard, two went ashore for the banding work, and one remained in the inflatable tender to shuttle crew to and from. Despite difficult landing, the shore crew successfully spent the day scaling the cliffs, and capturing and band birds according to the protocols provided by the Canadian Wildlife Service.

All of this work had been approved by the Canadian Wildlife Service in permit number NUN-SCI-13-05 issued to Pascale Otis, the field supervisor for this project, as well as all other required permits from other agencies.



BAFFIN ISLAND COMMUNITY VISITS

Throughout the expedition, Arctic Tern acted as ambassador for the World Wildlife Fund. Our goodwill visits included remote hunting camps in Milne Inlet and Admiralty Inlet, and on the south coast of Devon Island. We also were ashore in the communities of Pond Inlet, Qikiqtarjuaq, Arctic Bay, and Nain. On every occasion, we sought out locals for both casual and formal visits.

In Qikiqtarjuaq, for example, we hosted Joannassie and his grandson Issac aboard the boat. Joannassie is an elder of 70 to 80 years old. He is still an active hunter and, although he lives in town he maintains a very traditional life. Over tea he studied our charts and shared his memories and perspectives on coastal environments and navigation.



On other occasions our visits were more formal, including the RCMP in many communities, and Parks Canada in Nain, Labrador.

