

EAST BAY ISLAND



2019 FIELD SEASON REPORT

ENVIRONMENT AND CLIMATE CHANGE CANADA

PROJECT OVERVIEW

Our studies at East Bay Island were initiated in 1996 in response to concerns that northern common eider ducks were being overharvested on their wintering grounds in west Greenland. Since then, many new issues have emerged and our long-term dataset has allowed us to expand our research to respond to concerns raised by northern communities and environmental assessment initiatives. Many of the emerging issues that we are currently researching include the influence of climate change and resource development on arctic marine birds. Increasingly, our findings related to bird movements and their habitat use are contributing to the planning of marine protected areas in Northern Hudson Bay.

Our research objectives include:

1. Investigating direct effects of variable annual weather conditions and changing sea-ice conditions on eider reproduction and population dynamics.
2. Investigating and forecasting relationships between polar bears and eiders as diminishing sea ice influences bear predation of eider nests.
3. Identifying key seabird marine habitats in an effort to identify potential issues related to northern industrial development, particularly year-round shipping.
4. Understanding the physiological mechanisms linking climate variability, reproduction, and survival of arctic breeding migratory birds.
5. Tracking birds using GPS technologies to quantify their use of coastal and off-shore marine habitats. These findings are contributing to the design of marine protected areas currently proposed in Northern Hudson Bay.

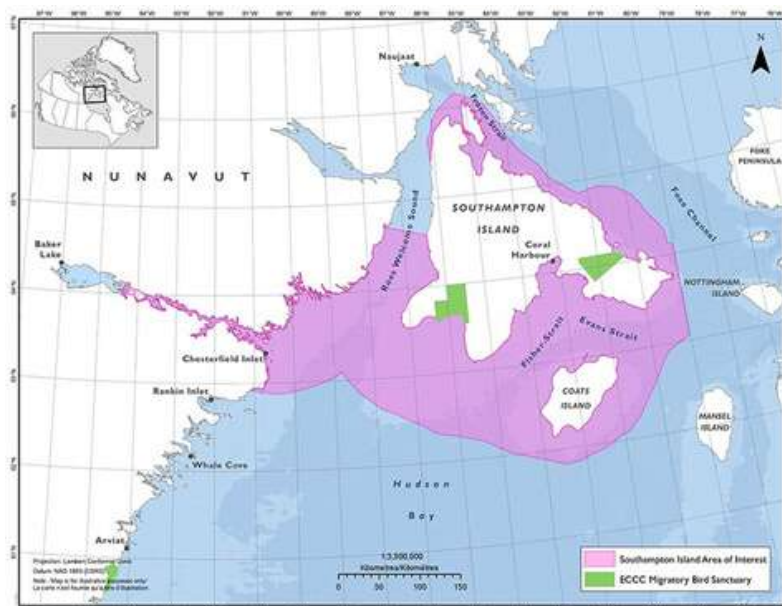


CONTRIBUTING TO MARINE PROTECTED AREAS

The formal protection of the Marine Environment is a national priority. In the Arctic, Government Departments and local communities are working together to identify areas worthy of protection. The spatial use of the ocean by wildlife is one element that considered when designing marine protected areas.

Our team is contributing seabird spatial tracking information which will be useful in the design of 'The Southampton Island Area of Interest'. This area encompasses the nearshore waters around Southampton and Coats Island in the Kivalliq Region of Nunavut. This site comprises 93000 km² within the Hudson Bay Complex Marine Bioregion, and is approximately 1.6% of Canada's ocean territory.

Southampton Island is the largest island in Hudson Bay, near the confluence of Hudson Bay and Foxe Basin waters; making it an area of high marine productivity. The area is important for key marine species including narwhal, beluga whales, and bowhead whales. It also contains walrus haul-out sites, polar bear dens, and foraging habitats of seabirds. This new protected area will encompass two Environment and Climate Change Canada (ECCC) Migratory Bird Sanctuaries: The Harry Gibbons (Ikkattuaq) Migratory Bird Sanctuary, and the East Bay (Qaqsauqtuuq) Migratory Bird Sanctuary.



Proposed marine protected area.

BUILDING IN SAFETY

Our team of Government researchers, northerners, academic professors and students have benefited from the use of established field stations to conduct long-term ecological studies. Cabins provide a comfortable living and working space, electrified bear fences provide safe living conditions within their perimeter, and solar power has diversified the types of research that can be achieved as we apply new technologies to monitor the changing Arctic environment.

In 2019, Environment and Climate Change Canada provided our team with additional funds to construct a kitchen cabin on the East Bay Island. The cabin was constructed in early June by carpenters Keenan Peddie, Josiah Nakoolak, Jupie Angootealuk, and Mark Eetuk. The cabin will provide a safe structure for crew members to cook and eat and will help expand our research of polar bears at East Bay.



Cabin construction crew (from left to right; above) Mark Eetuk, Jupie Angootealuk, Keenan Peddie and Josiah Nakoolak.

NEW TO THE CREW

We are very excited to announce that Dr. Holly Hennin has recently taken the position as the Wildlife Research Technician of the marine bird program with Environment and Climate Change Canada. She joins the team at the National Wildlife Research Centre on the campus of Carleton University in Ottawa.

Holly is very well known and respected from her contributions to the marine bird program as a graduate student, Post Doctoral research associate, and most recently as the Wildlife Technician over the course of nearly a decade. If we were to add up all of the months she has spent in the field over the years, she has lived on East Bay Island for over 13 months.

Holly has published many articles in top scientific journals, represented the program nationally and internationally at conferences, and has won awards for her scientific findings and presentations. Her years of experience leading field teams in the Arctic as well as her contributions to delivering the complex and varied administrative tasks throughout the year, are a tremendous asset. More importantly, Holly brings a wonderful, energetic enthusiasm to everything she does which is greatly appreciated when you're sitting in the freezing rain waiting for eider ducks to arrive from the floe edge. Holly has recently moved to Ottawa with her family; Eric and son, Rowan (aged 1!).





RESEARCH PARTNERS AND FINANCIAL SUPPORT

Our research at East Bay Island is a combined effort of many people and organizations. Dr. Grant Gilchrist (Environment and Climate Change Canada; ECCC) leads the project together with Dr. Oliver Love (University of Windsor), Dr. Christina Semeniuk (University of Windsor), Dr. Joël Bêty (Université du Québec à Rimouski) and Dr. Evan Richardson (ECCC). The project coordinators in 2019 were Bronwyn Harkness and Holly Hennin (ECCC). Support in Coral Harbour was provided through the Aiviit HTO, and especially by Natasha Ottokie and Jupie Angootealuk.

The research at East Bay Island is logistically complicated and labour intensive, requiring a dedicated crew of students, biologists and Northerners. Our eider field crew in 2019 included Jupie Angootealuk, Christophe Boyer, Mark Eetuk, Erica Geldart, Grant Gilchrist, Bronwyn Harkness, Oliver Love, Josiah Nakoolak, Brandan Norman, Keenan Peddie, Lincoln Savi, Reyd Smith, and Russell Turner.

Research in Canada's north is expensive and funding for this work is provided by a network of partnerships that includes but is not limited to: Environment and Climate Change Canada (ECCC) Wildlife Research Division, ECCC Ecotoxicology and Wildlife Health Division, ECCC Canadian Wildlife Service, the PEW Charitable Trusts, Oceans North, Baffinland Iron Mines Corporation, Mitacs, Polar Knowledge Canada, ArcticNet, Nunavut General Monitoring Plan (NGMP), Carleton University, University of Windsor, Polar Continental Shelf Program (PCSP), Northern Scientific Training Program (NSTP), Northern Contaminants Program (NCP), Natural Sciences and Engineering Research Council of Canada (NSERC), the Garfield Weston Foundation, the Liber Ero Fellowship Program, and the Canada Research Chairs program.

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