

# Arctic Landscape Conservation Cooperative

## Shorebird Demographics and Climate Change

### The Big Picture

Arctic shorebirds are declining and climate-associated habitat change could further impact population levels. The goal of the Arctic Shorebird Demographic Network is to better understand the causes of shorebird declines by studying their demography (e.g., nest success, and adult survival). This information will help managers develop conservation strategies that tackle the most pressing problems facing these species.

**Project ID:** ARCT2010-11

**Year Funded** – 2010

**Start** – July 2010

**End** – June 2012

**Budget** – \$187,787

#### Research Partners:

Manomet Center for  
Conservation Sciences  
Kansas State University  
Simon Fraser University  
USFWS  
Environment Canada  
Wildlife Conservation Society  
Trent University  
Cornell University  
University of Quebec

### Enhancing our understanding of how shorebirds may respond to a changing Arctic

#### Project Description

The Arctic Shorebird Demographic Network (Network) is an international collaboration dedicated to gaining a better understanding of why arctic-nesting shorebirds are in decline and determine which life history stage (i.e., breeding success vs. adult survival) is limiting shorebird population growth or driving declines.

#### Why We Are Interested

This work will enhance our understanding of how shorebirds may respond to climate-driven changes, such as changes in food resources, snow cover, surface water, and availability coastal habitats. This knowledge is critical to development of contemporary species-habitat association maps and models that allow managers to explore projections of future shorebird distribution under different climate scenarios.



Long-billed Dowitchers (*Limnodromus scolopaceus*) foraging for invertebrate prey. Photo by USFWS.



KANSAS STATE  
UNIVERSITY



Cornell University



SFU

Environment  
Canada



TRENT  
UNIVERSITY

UQAR

## What Will Be Done

Researchers established a network of sites (figure 1) where they collect information on shorebird breeding success and a suite of environmental variables, such as distribution of surface water, phenology of invertebrates, and air temperature, that may influence shorebirds and are likely affected by climate change. These parameters will be correlated with measures of shorebird distribution, ecology, and demography.

## Expected Outcomes

This work will enhance our ability to target conservation activities in the places and for the species in which the need is greatest. The accompanying habitat studies will allow us to integrate the long-term climate-change outlook into these activities.

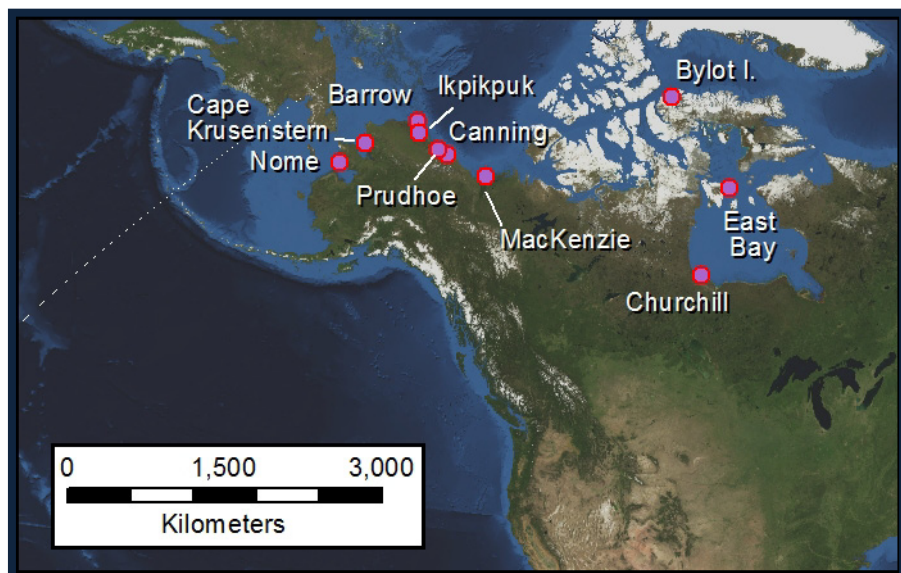


Figure1: Location of Network sites in 2010. The Nome site is operated by Kansas State University & Simon Fraser University; Cape Krusenstern & Barrow sites are operated by the USFWS; Ikpikpuk and Prudhoe Bay sites are operated by the Wildlife Conservation Society; Canning River site is operated jointly by the USFWS & Manomet, Inc.; Mackenzie Delta site is operated by the Environment Canada; East Bay site is operated by Environment Canada & Paul Smith Consulting; Churchill site is operated by Trent University & Cornell University; Bylot Island is operated by the University of Quebec at Rimouski.

## Timeline

Summer season 2010 –2012: Field work and data synthesis. The Network hopes to continue work at least through 2014.



The mission of the Arctic LCC is to identify and provide information needed to conserve natural and cultural resources in the face of landscape scale stressors, focusing on climate change, through a multidisciplinary program that supports coordinated actions among management agencies, conservation organizations, communities, and other stakeholders.

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Data collected by the Network and their collaborators will allow researchers to assess the potential impacts of climate change on shorebirds breeding in the Arctic.

June 2011

To learn more about this project and other Arctic LCC projects visit: [arcticlcc.org](http://arcticlcc.org)  
or contact Greg Balogh, Coordinator at [greg\\_balogh@fws.gov](mailto:greg_balogh@fws.gov)  
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