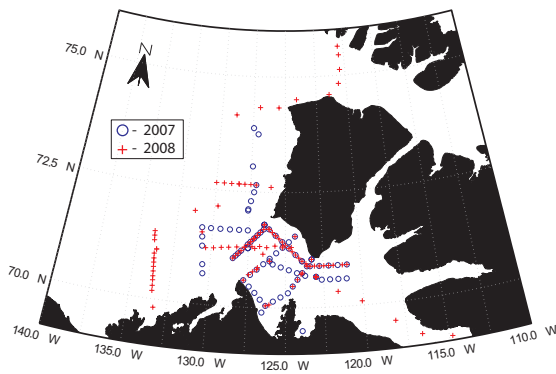


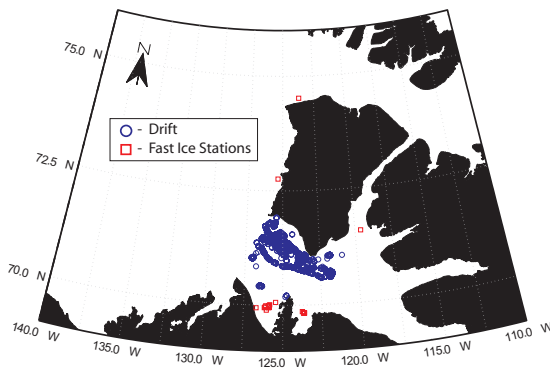
The circumpolar flaw lead occurs each year when the central pack ice moves away from the coastal fast ice creating an area of open water called a flaw lead. Because of reduced ice cover, these regions are very sensitive to atmosphere and ocean changes. They are unique and valuable areas to study the effects of climate change.

The objective of the CFL project is to examine how physical changes affect biological processes in the flaw lead. The Canadian Research Icebreaker (CCGS Amundsen) spent an entire annual cycle from October 2007- August 2008 within the Cape Bathurst flaw lead. The ship was used as the point of research for the project.

A Traditional Knowledge study was also conducted, as well as Inuit – science knowledge exchanges, towards facilitating the “Two Ways of Knowing” concept which include using both western science and local knowledge.



Open-water sites sampled in fall of 2007 and summer of 2008



Drift stations and fast ice stations sampled in the winter and spring of 2007-2008



Some early themes and results coming from researchers include:

- **Sea ice:** Record low levels of sea ice in 2007 led to changes in the marine ecosystem, which is increasingly becoming dominated by first-year sea ice.
- **Cyclones:** Late season cyclones bring more snow onto the sea ice, insulating it from growing, resulting in thinner ice.
- **Ice edge upwelling:** More open water is resulting in more “upwelling” events, which bring nutrient-rich water from the ocean floor to the surface, which provides food to the base of the food web.
- **Eddies:** Pulses of water mass from the Bering strait were detected in the form of large eddies for the first time in the flaw lead area during the winter months. Eddies transport heat, salt, nutrients and zooplankton.

As a result of the CFL project, scientists are getting a better handle on current state of the arctic marine ecosystem and how climate change may affect the ecosystem in the future. Data has also been collected that will help the accuracy of computer models towards predicting future conditions.

The CFL project also had an extensive outreach component including local, national and international media, community visits with the Amundsen icebreaker, Schools on Board programs, an Arctic Climate Change Youth Forum, an Inuit policy workshop, artists, conferences and books.

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