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The International Polar Year (IPY) Circumpolar Flaw Lead (CFL) system study.

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The International Polar Year (IPY) Circumpolar Flaw Lead (CFL) system study supported a large multidisciplinary overwintering in the Banks Island (NT) flaw lead over the period September 2007 to August 2008. The CFL system is formed when the central pack ice (which is mobile) moves away from coastal fast ice, opening a flaw lead. The CFL forms in the fall and continues as thin ice or open water throughout the winter. The flaw lead is circumpolar, with recurrent and interconnected polynyas occurring throughout the Arctic. The overarching objectives of the CFL project were to contrast the physical and biological systems of the flaw lead open water and thin ice to the adjacent landfast ice cover. The Canadian Research Icebreaker (NGCC Amundsen) completed the first-ever overwintering of a research icebreaker in the flaw lead. She supported a total of 11,000 person days distributed across 295 investigators from 28 different countries, making the CFL project the largest single IPY effort in the northern hemisphere. The project obtained many first-ever measurements of a complete suite of physical, biogeochemical, contaminant and marine ecosystem variables across the open water - fast ice contrast. Throughout the project we recognized that Inuvialuit and western science have two different ways of understanding the dramatic changes that are occurring in this sector of the Arctic. This ‘two-ways-of-knowing’ saw the integration of traditional knowledge studies with the science teams onboard the Amundsen. We present information on the design of the project, an overview of the sampling program completed, highlight the scientific programs conducted, and provide some preliminary results. We conclude with an overview of the various outreach programs including a World Federation of Science Journalists (WFSJ) competition and ‘Schools on Board’ programs.