

Subproject: Sea ice motion in the Beaufort Sea through the fall transition

Actual field dates: August 15-September 25, 2014

Field site: Beaufort Sea

Number of man-days in the field: 42

Summary:

Five on-ice met towers were deployed on multiyear sea ice in the Beaufort Sea during this field program. Unfortunately the ice pack was heavily deteriorated and finding solid floes that would support the autonomous equipment through the fall freeze up was difficult. Due to constraints on ship time we were also unable to move deep into the pack ice so the towers were deployed along the periphery of the pack ice where ice floes are increasingly susceptible to wave action and melt along the floes bottom and lateral interfaces. The towers transmitted data for only a few weeks so we are unable to study the seasonal evolution of atmospheric forcing on ice drift, however we did capture a storm event where wind speeds reached 50 km/h and ice drifted rapidly in a state of free drift. We are beginning to analyze the short time series of in situ wind speeds and ice drift that the towers provided. We will use this to characterize ice drift during the summer period and to contrast it with previous observations of ice drift during winter. This will reveal how the annual cycle in ice strength dictates ice drift characteristics and the ice packs response to external forcing mechanisms.

Photos:

Fig. 1: 2014 CCGS Amundsen Cruise Path Leg 2a. Credit: Keith Levesque

Fig.2: Researchers Lauren Candlish (CEOS) and Sergei Kirillov (CEOS) deploying an ice met tower from the CCGS Amundsen on multiyear sea ice in the Beaufort Sea. Credit: David Babb

Fig.3: 2014 CCGS Amundsen Cruise Path Leg 2b. Credit: Keith Levesque

Fig.4: An on-ice met tower deployed on multiyear sea ice within the Beaufort Sea. Credit: David Babb

Participants:

David Babb (CEOS); Lauren Candlish (CEOS); David Barber (CEOS)

Acknowledgements:

ASP, CERC and CRC programmes, the captain and crew of the CCGS Amundsen. ArcticNet, ExxonMobil and NSERC. A special thanks to helicopter pilot Alain Roy for safely flying us to our sampling sites and on-ice reconnaissance flights.

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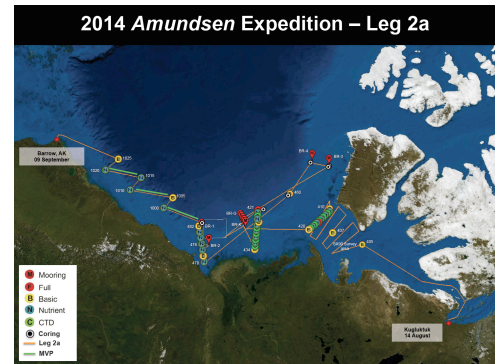


Figure 1

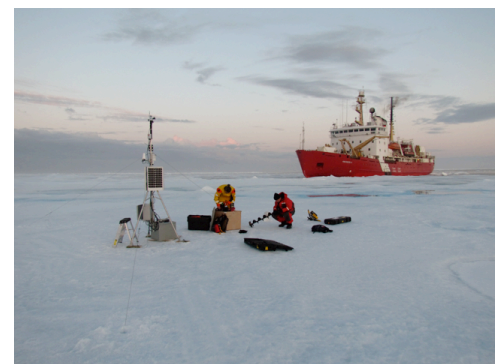


Figure 2

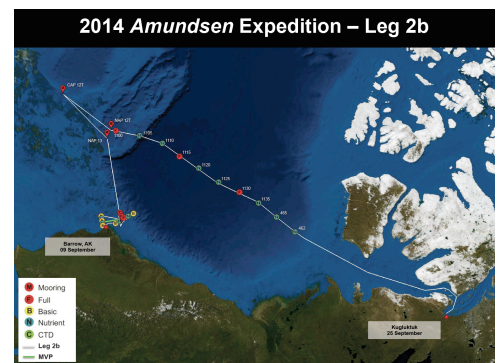


Figure 3

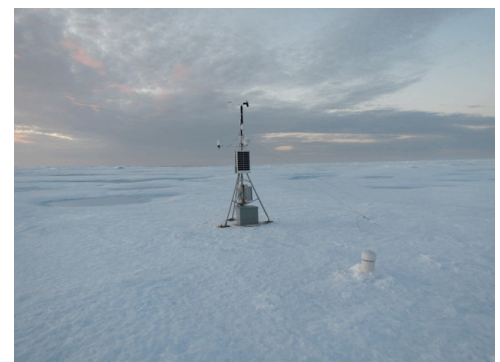


Figure 4