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**CCGS Henry Larsen Cruise Report - Aug. 15 - 22, 1998**

**Barrow Strait Flow-Through Study**

Investigators from the Bedford Institute of Oceanography joined the CCGS Henry Larsen at Resolute to carry out the second year of field work in an extended study looking at the transport of heat and salt between the Arctic Ocean and the Northwest Atlantic.

A total of nine sub-surface moorings were recovered at  $91^{\circ}$  W; 5 on the southern side and 4 on the northern side of the Strait. Instrumentation consisted of ADCPs (Acoustic Doppler Current Profilers), "pole compasses" for measuring current direction at high latitudes, and CTDs (conductivity, temperature, depth recorders). See Figure 1 for a conceptual representation of these moorings.

A preliminary look at the data indicate that all instruments performed well over the 1 year deployment, with the exception of the loss of a single instrument due to a corrosion problem. The comprehensive data set obtained is the start of what hopefully will be an extended time series of physical properties in Barrow Strait.

The recovered array was replaced with another set of 9 moorings of similar design, although improvements to the instrumentation and measurement strategy were incorporated. The deployments went very smoothly.

CTD work repeated the lines done in the 1998 survey from the CCGS Louis S. St. Laurent. These lines include a line across Barrow Strait at  $91^{\circ}$  W, one across the Strait further west at about  $94^{\circ}$  W, and a third across Wellington Channel at  $74^{\circ} 50'$  N. See the attached map (Figure 2) for the location of these CTD lines, and the mooring sites. There were 29 CTD stations completed in all.

This field work was successfully completed thanks in no small part to the efforts and cooperation of the captain, officers and crew of the CCGS Henry Larsen. We look forward to returning next summer.

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