ICYCLER:
Energy-efficient ocean surface layer profiler moored under mobile pack ice

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ASOF Moorings

Mooring programs

- CASES
- CATS
- DAVIS Strait
- Nwld shelf
ICYCLER Design:
- yearlong provide daily surface 50m profiles
  - avoid ice ridges up to 30m thick
  - currents up to 60cm/sec

and for future considerations
- 250m profiles for iceberg avoidance
  - wave avoidance
- data link under calm sea conditions
CATS/BIO
Canadian Archipelago
Mooring and CTD
study area

X-Yearlong moorings
1998-99 to 2000-01

CTD transects

program supported by
Can. Coast Guard
Icebreakers

Work area for the Barrow Strait Flow-through Study. The X’s denote the northern and southern mooring sites. The red lines represent the CTD lines completed.
Summer 1998

Geostrophic currents across Lancaster Sound at mooring transect (looking west to Arctic) as derived from CTD profiles with positive currents to Baffin Bay.
Net Buoyancy = 137 N (30 lbs)

Datasonics Altimeter

Seabird 19+ CTD

Wetlabs Fluorometer
Buoyancy Tank (welded S.S.)

Winch Drums

Linear Bearings

Fairlead

Static Leadscrew

Winch Drums

Fairlead

Length = 3 m (10 ft)
Weight = 3000 N (700 lbs)
23 Watts Power Consumption
Transports through Lancaster Sound

seasonal weighted
2/3 southern site data and
1/3 northern site data
Data and Results on BIO’s web-site

Data reports
- Simon Prinsenberg (program - BIO) at 902 426 5928

J. Articles
- Jim Hamilton (Field survey - BIO) at 902 426 3638
- George Fowler (ICYCLER - BIO) at 902 426 3717
- Greg Siddall (ICYCLER - BIO) at 902 426 3223

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