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# Beaufort Gyre Exploration Project: Dispatch 12: Recovery of BGOS Mooring B (78 N, 150 W)

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The furthest north of the three BGOS moorings (Mooring B) was recovered today in a region of 9/10th ice cover and under mostly clear skies; temperatures on deck were around freezing with about 15 knots of wind.

Using acoustic ranging, Rick Krishfield located the mooring 190 m north of where it was deployed last October. Following the acoustic survey, the Captain and officers on the bridge maneuvered the ship for about an hour to break up and clear ice in the area to reduce the risk of the top of the mooring surfacing under an ice floe. About half a minute after the acoustic command to release, the top buoy surfaced approximately 10 meters off the starboard side of the ship. Seaman Barney Noseworthy hooked the buoy from the basket suspended from the crane. As is standard recovery procedure, Winchman Edward Bridgeman used the crane to maneuver the sphere under the ship's A-frame so that the mooring load below could be transferred to the A-frame. The recovery proceeded as usual, with John Kemp (WHOI) and Boatswain Rico Amamio at the rail, until after the single MMP on this mooring (measuring temperature, salinity and currents down to about 2000 m) was brought aboard and secured on deck.

With the sediment trap, dual releases and bottom-pressure recorder still to recover, the wire rope became caught in a particularly resistant ice floe. This situation is precisely the reason for the placement of backup flotation (the glass balls in yellow hard-hat protection) on the mooring. Flotation at the bottom of the mooring affords the option that the instruments can be recovered from the bottom end should intermediate sections get snarled in ice floes. The glass balls had appeared at the surface, nestled in broken chunks of ice, several tens of meters away from the ship. John Kemp cut the wire coming on deck with bolt cutters to free the mooring from the ice. After the Captain had maneuvered the ship into position near the glass balls, Barney, hook in hand, was hoisted over the side in the basket one more time. He hooked the cluster of balls so the mooring could be recovered from the bottom end, and the remaining instruments were brought safely aboard. The entire recovery operation took about 4 hours to complete.

Daniel Montlucon's (ETHZ, formerly WHOI) early assessment of the sediment trap cups (which close every two weeks storing the particles captured over that time) supports the idea that, compared to the mid-latitudes, there aren't very many particles sinking in the deep Arctic water column. Covered by ice for most of the year, the Arctic is not as biologically productive as ice-free oceans. Nor is particle re-suspension from the bottom, caused by storms over the shelf regions for example, as common in the Arctic where the sea-ice buffers wind penetration to the ocean.

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