Beaufort Gyre Exploration Project: Dispatch 13: The Second Ice Station
Hugo Sindelar
September 19, 2018

Location: 78° 21' N 140° 15' W

Weather: -6°C (21°F), Mostly sunny, seas ice covered, Southwest winds at 19 knots, seawater temperature -1.2°C (29.8°F)

Sea Ice: Variable from complete coverage to mostly covered.

First off, I wanted to thank Cassie DeFrancesco for writing a guest dispatch yesterday! You can expect a few more guest writers as we enter the second half of the cruise. It gives the scientists on board a chance to discuss their work in detail and share it with you. In my defense, however, I wasn’t napping. I was working with the deck crew to get some unique shots for my upcoming film!

As promised, today I spent the second ice station with the JOIS crew as they did snow and ice surveys. Kazu Tateyama from Kitami Institute of Technology is the science lead for this work. While WHOI installs their ITP, JOIS scientists lay out a transect (a long line that they sample along) on a different part of the ice. On this transect, they measure ice thickness, drill ice cores, and dig small snow pits. The ice thickness and cores shed light on both the ice’s age and characteristics. Scientists want to know whether the ice is first, second, or multi-year ice, and its salinity, density, and temperature (which is measured as soon as the core is taken.) This information is used for two primary reasons. First, the JOIS program has been tracking ice characteristics on this cruise for many years. Having this information helps scientists determine how the ice is changing in response to climatic shifts.

Secondly, Kazu and his team are performing field validation measurements for ice thickness models he is developing using satellite information. Kazu’s model takes satellite imagery and data and estimates ice thickness in the Arctic. To know how well his model is performing, he needs field data. So, he and his team take the measurements they make on this cruise and compare it to his model estimates. This helps him make changes to the model to improve its performance. Ice thickness modeling is important because it is impossible to actually measure ice thickness across an area as expansive as the Arctic. Satellite data is the only way to estimate it across such a large area.

We continue to have favorable weather and ice conditions, and as a result, tomorrow we are aiming for ice station three! This has been an unusual occurrence in recent years as it has been hard for the WHOI team to find enough ice to deploy three ITPs in distinctly different locations across the Beaufort Sea.

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