



Every year Bamfield Marine Sciences Centre (BMSC), located on the west side of Vancouver Island, British Columbia, offers world-class, university-level courses on a variety of topics including biological oceanography. This summer this course was taught by Dr. Jennifer Putland and Dr. Louis St. Laurent of the University of Washington. As part of the course, ASL staff member Julek Chawarski was invited to teach students about hydroacoustics and how to analyze complex oceanographic data. Prior to this course an [ASL Acoustic Zooplankton Fish Profiler](#) (AZFP) was deployed to collect data on krill and fish in the Barkley Sound area (Figure 1).



Figure 1. ASL's Julek Chawarski, returning from Trevor Channel, Barkley Sound, BC after recovering the AZFP mooring from BMSC's research vessel MV *Alta*.

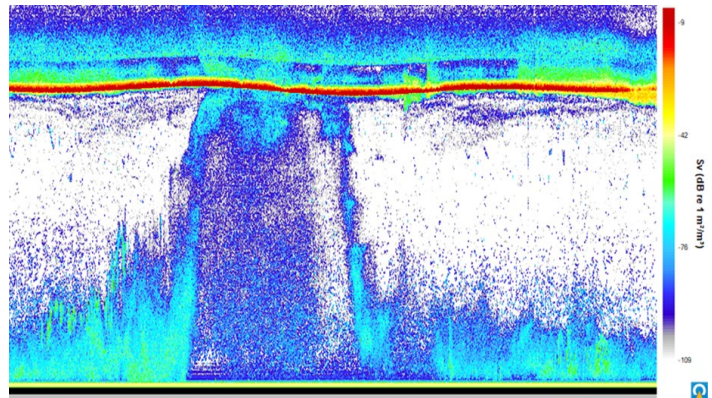


Figure 2. Echogram showing the diel vertical migration of krill over a 24-hour period in Trevor Channel, Barkley Sound, BC.

Krill are key mediators of energy flow in marine systems, providing an important food source for migrating Pacific salmon. Like many planktonic species, krill are also diel vertical migrators—they rise each night from the seafloor to feed on the phytoplankton, protected from predators by the cover of darkness. They're also great at scattering sound, their backscatter can be measured using hydroacoustic instrumentation such as the AZFP (Figure 2).

Students taking this course were provided with mentorship and given access to a 40-day time series of AZFP data for their research projects. During the course, students also participated in real-time profiling work where Julek and several students were able to join the BMSC team as they sampled various sites around Barkley Sound. This provided an opportunity to investigate krill abundance and migration patterns during peak biologically productive months in Barkley Sound. For more information contact Julek Chawarski, Biological Oceanographer (jchawarski@aslenv.com)



Figure 3. Scientists and students at BMSC, awaiting sunset to begin net sampling for krill and other zooplankton with Bongo nets.