

Acoustic Zooplankton Fish Profiler Food Web Study of Keystone Arctic Marine Species

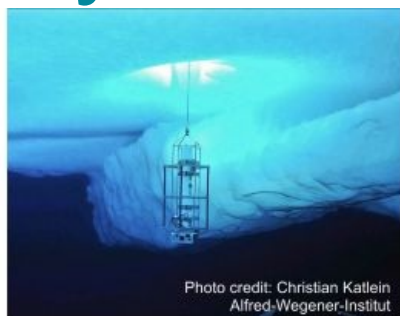
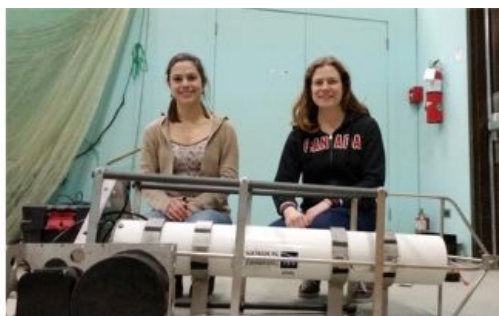


Photo credit: Christian Katlein
Alfred-Wegener-Institut



The Central and Arctic Division of Fisheries and Oceans Canada has plans to deploy an array of three multi-frequency (38, 125, 200 and 455kHz) [Acoustic Zooplankton Fish Profilers](#) (AZFPs), manufactured by ASL Environmental Sciences, in the Amundsen Gulf in 2018. Data retrieved from the array will be used in conjunction with winter and summer net sampling programmes to better

understand the early life history of Arctic cod (*Boreogadus saida*) and the zooplankton copepod *Calanus* spp., both of which are keystone species in the Arctic marine food web.

Because the instruments are battery powered and enclosed in pressure cases, they can be deployed and record data continuously for a year. These long-term datasets will allow for the detection of fish and zooplankton movements during the data-poor winter spawning season.

Cape Bathurst moorings

Two AZFP moorings were successfully deployed at Cape Bathurst in 2017 at depths of 50 and 300m. The AZFP and CTD data from these moorings will be recovered in the summer of 2018. The Cape Bathurst moorings will be redeployed and a third mooring will be added in Franklin Bay. In addition to the multi-frequency AZFPs, the moorings will be equipped with CTDs, hydrophones and receivers to record the presence of tagged fish.

Prior to the summer deployments, a newly purchased AZFP was tethered to the ice near the Canadian Forces Station Alert, Nunavut, Canada (latitude ~82.5°N) for a short-term (four weeks) deployment. This instrument was oriented to look downwards from the ice to detect the presence and movement of fish and zooplankton below multi-year sea ice. This instrument has been recovered successfully.