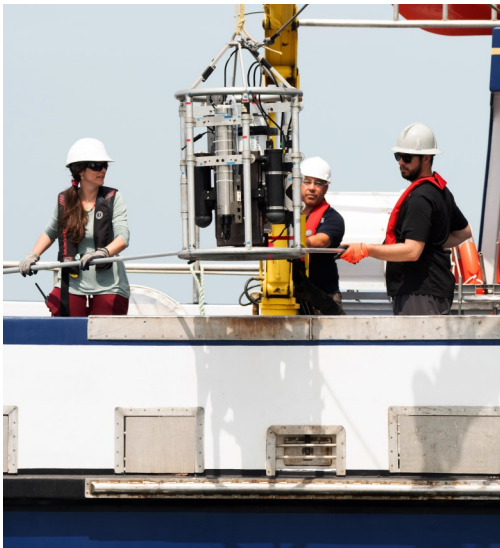


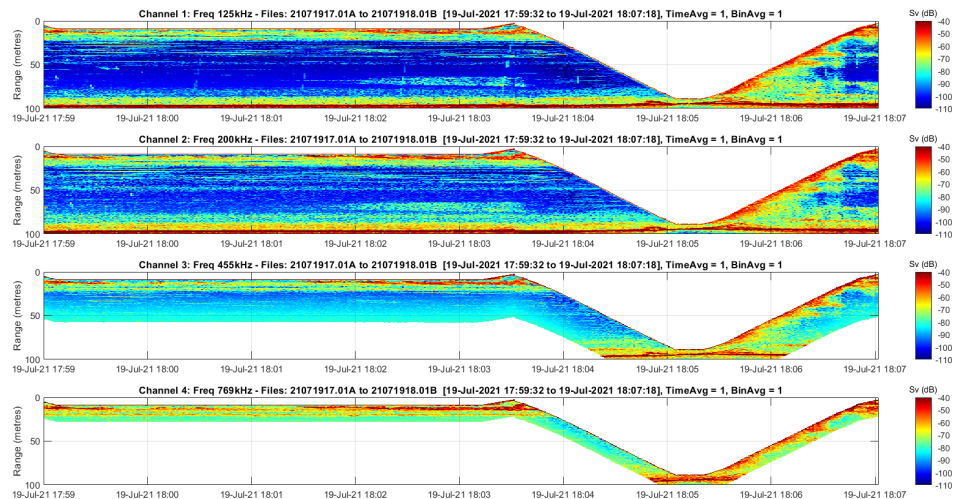
Once abundant throughout the North Atlantic, the North Atlantic right whale population has been reduced to fewer than 360 individuals and has been designated by the International Union for the Conservation of Nature as a critically endangered species. During the whaling era, these whales were exploited by the thousands for their plentiful oil and baleen. Now they face new challenges of ocean regime shifts linked to human-induced climate change. In the Gulf of Maine and the Scotian shelf regions, these regime shifts have resulted in less favorable foraging environments for the right whales.

To investigate the impact of these ocean regime shifts on the North Atlantic right whale, Kimberley Davies and her team from the University of New Brunswick along with collaborators that include the New England Aquarium, the Canadian Whale Institute, Dalhousie University and snow crab fishers in the Gulf of St Lawrence, have been deploying [ASL’s Acoustic Zooplankton Fish Profiler](#) (AZFP). The AZFP, along with other oceanographic instruments, are mounted to a cage which is lowered and raised to collect water column transects in two right whale habitats: the southern Gulf of St Lawrence, where right whales currently frequent, and the outer Bay of Fundy, where they used to be very abundant but have recently abandoned the area.

The AZFP is being used to quantify the distribution of right whale prey, namely the copepod *Calanus finmarchicus*. A key goal of this research is to try to understand what has changed in the oceanographic conditions in the Bay of Fundy that have caused the right whales to abandon this once-productive foraging ground. Also of interest is the characterization of the new habitat in the Gulf of St Lawrence where measurements are being made of diel variation in the distribution and abundance of right whale prey in the water column around foraging right whales.



Kimberley Davies, Captain Martin Noel and James Vlasic prepare instrument frame including AZFP for deployment (Photo credit Nick Hawkins).



Four frequencies (125, 200, 455, 769 kHz) AZFP plots showing AZFP backscatter data. The AZFP is being used to detect diel variation in the distribution and abundance of right whale prey.