

## Conducting multiple frequency acoustic work over-the-side of small vessel with ASL's autonomous scientific echosounder AZFP in Saanich Inlet for Salmon Research



**Figure 1:** Dr. Svein Vagle of Ocean Sciences Division, Institute of Ocean Sciences, Sidney, BC



**Figure 2:** The transducer mount swivels to allow the transducers to be lifted out of the water



**Figure 3:** Collecting data at 4 knots (7.5 km/hr) without interference from bubbles

The ASL Acoustic Zooplankton and Fish Profiler (AZFP) was originally developed in the late 1990's as an autonomous submersible scientific echosounder for observations of zooplankton and fish. Today, with minor accessories available from ASL such as the short pressure case and the modular mount, it is possible to use the AZFP from a small (or larger) boat when it is not used as part of a subsurface mooring.

Dr. Svein Vagle (figure 1) of Ocean Sciences Division, Institute of Ocean Sciences, Sidney, BC, V8L 4B2, Canada deployed a four-channel AZFP with 38, 70, 125 and 200 kHz channels over-the-side of a small vessel in Cowichan Bay, Saanich Inlet and Satellite Channel just off Saanich Peninsula on Vancouver Island, BC. The work was conducted to demonstrate the ability to conduct this kind of work for salmon research. The AZFP was operated autonomously and a small battery provided the necessary power.

The custom mount allowed the first-time installation of the equipment onto the vessel in about 45 minutes. The transducer mount swivels to allow the transducers to be lifted out of the water to travel quickly to the site (figure 2). With the acoustic transducers in the water, it was possible to travel up to 4 knots (7.5 km/hr) and achieve good results without interference from bubbles (figure 3). If desired, a fairing can be fitted to the transducer array to allow higher travel speeds. After the trip, the raw data was quickly loaded in Echoview 7.1 for viewing and analysis (figure 4). The over-the-side use of the multiple-frequency AZFP appears to be a cost effective instrument for use on small vessels.

**Figure 4:** Transect echogram at 38, 67, 125 and 200 kHz shown in Echoview version 7.1

