

What is a Flume Tank?



Paul Winger from The Center for Sustainable Aquatic Resources (CSAR) at the Marine Institute at Memorial University, Newfoundland poses in front of the Center's model flume tank

The Center for Sustainable Aquatic Resources (CSAR) at the Marine Institute at Memorial University, Newfoundland operates the world's largest flume tank. Constructed at a cost of \$8.5 million (cad) and first opened in 1988, the Marine Institute flume tank provides the physical environment required to:

- carry out performance evaluations, gear tests and other observations on newly developed or existing fishing gears and other related equipment in simulated underwater and near surface conditions;
- provide consultancy and technical services for fishermen, fishing equipment manufacturers/suppliers, other fishing industry groups and public and private organizations
- demonstrate the operations and behavior of fixed and mobile fishing gear in water to members of the fishing industry and the general public.

The tank which is 13 feet deep by 26 feet wide by 72 feet long and circulates some 450,000 gallons of water at up to six feet per second through a complex system of propellers, pumps and pipes to mimic the flowing ocean.



Until recently, the tank was used to help gear designers create nets aimed at catching more fish. Today the tank is used primarily to aid the industry in developing selective, energy efficient and environmentally friendly fishing gear designed to reduce bycatch. Bycatch is captured fish that cannot be sold because they are either too small or the wrong species.

Since the Magnusson-Stevens Act of 1996, fishermen are under increasing pressure to reduce bycatch. Government regulations achieve this reduction in bycatch by decreasing the number of days fishermen can fish, increasing mesh size and closing areas to fishing. However, these measures have had devastating effects on fishing communities. The flume tank allows gear designers, scientists and fishermen to test new gear which is designed to be more selective by harvesting specific species and sizes of fish and thereby reducing bycatch and conserving the resource.

The Marine Institute's 750 gallon flume tank is on display at this year's festival on Steamship Pier through a partnership between the Marine Institute, Massachusetts Division of Marine Fisheries and School for Marine Science and Technology at UMass Dartmouth. Local net designer Tor Bendiksen of Reidar's Manufacturing has designed model nets for use in the tank. Stop by to see a demonstration of scale model nets in the tank and talk with net designers, fisheries scientists and fishermen.

Sources: Memorial University website: www.mi.mun.ca/csar/flume_tank.htm, You Tube Video: www.youtube.com/watch?v=M80-Lw9K6Wo, "Newfoundland Flume Tank is World's Largest" (Working Waterfront News, February 2004).