

## **Maximizing Arctic char growth in seawater**

Arctic char are closely related to Atlantic salmon and rainbow trout. While it is a delicious fish with a high market value, the worldwide Arctic char aquaculture industry is still relatively small.

When farmed in seawater, Arctic char may grow fast during the summer, but there have been instances of high mortality during the winter. This is a serious problem for the aquaculture industry, and growing Arctic char year-round in seawater may only be feasible under certain environmental conditions.

Jenny MacPherson, a graduate student at Nova Scotia Agricultural College (NSAC), is part of a large five-year research project that is looking at ways to develop the Arctic char aquaculture industry in the Maritimes. Her supervisor, Dr. Jim Duston, is one of several researchers and private partners involved project that is supported by the Atlantic Innovation Fund.

Jenny wants to maximize Arctic char growth in seawater. To do this she is looking at how day length, water temperature and salinity affect their growth and sexual maturation. The ideal Arctic char is large (about 1-3kg) and sexually immature. Maturation is bad since it affects the flavour and texture of the flesh and reduces their survival in seawater. This is where Jenny's research comes in.

In a 2006 experiment, Jenny tested different day lengths and found that an increased day length in early winter reduced maturation by half. Jenny is also looking at how different temperatures affect growth and maturation, and has found that lower temperatures reduce maturation, particularly in females. She's currently investigating why.

Jenny's keen interest in aquaculture led her to the graduate studies program at NSAC. She took her first course in Aquaculture while doing her biology degree at St. Francis Xavier University and was hooked. Now at NSAC, she has great praise for the aquaculture facilities and instructors.

"The aquaculture facility at NSAC is phenomenal," says Jenny. "My graduate advisor, Dr. Jim Duston, was doing exactly the kind of research I was interested in and wanted to continue with."

Jenny also received full-funding for her graduate studies through the Graduate Research Training Initiative (GRTI) Scholarship Program. The GRTI program is an initiative under the federal-provincial-territorial Agricultural Policy Framework (2003-2008), funded by Agriculture and Agri-Food Canada and the Nova Scotia Department of Agriculture.

The purpose of this initiative is to provide financial support to graduate students at the NSAC whose research will benefit the Nova Scotia agriculture and agri-food industry. This initiative is intended to encourage qualified students to undertake graduate studies, thus building a professional capacity to meet the future needs of Nova Scotia's agri-food industry.

Almost two years into her program and hoping to graduate in May 2008, Jenny has some sound advice for keeping her program on track and staying focused.

“Definitely do a project you’re interested in and work hard on your Admission to Candidacy. It will help you during your literature review and thesis writing,” says Jenny. “But remember, you still need to take a break every now and then and refresh yourself.”