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Atlantic Cod Genomics and Broodstock Development

Status	Current
Competition	III
Sector	Fisheries
Genome Centre	Genome Atlantic
Project Leaders	Sharen Bowman & Ed Trippel

Project Description

Traditional fisheries provide an important basis of cultural and economic activity in Atlantic Canada, although the fisheries for some species such as Atlantic salmon and Atlantic cod have severely declined. The decline in Atlantic salmon stocks served as an incentive to develop today's aquaculture sector, which generates more than \$200 million of annual revenue in New Brunswick alone. One approach towards maintaining growth and stability of the aquaculture industry is diversification into rearing other species such as Atlantic cod. Current estimates show that cod farming in Newfoundland alone could generate more than \$100 million in new wealth while meeting consumer demand for a high quality food resource.

Cod breeding programs are being developed in countries such as Norway and Iceland. The Canadian aquaculture industry recognizes that broodstock selection is essential in order to produce superior cod stocks for farming. This program will be a partnership with industry, universities, government and Not-for-Profit organizations and will apply genomics technologies combined with family-based selective breeding methodologies to identify cod with traits of commercial importance, such as improved growth, delayed age of sexual maturation and resistance to disease and stress. The project will sequence genes in order to identify molecular markers that are associated with superior performance under farming conditions.