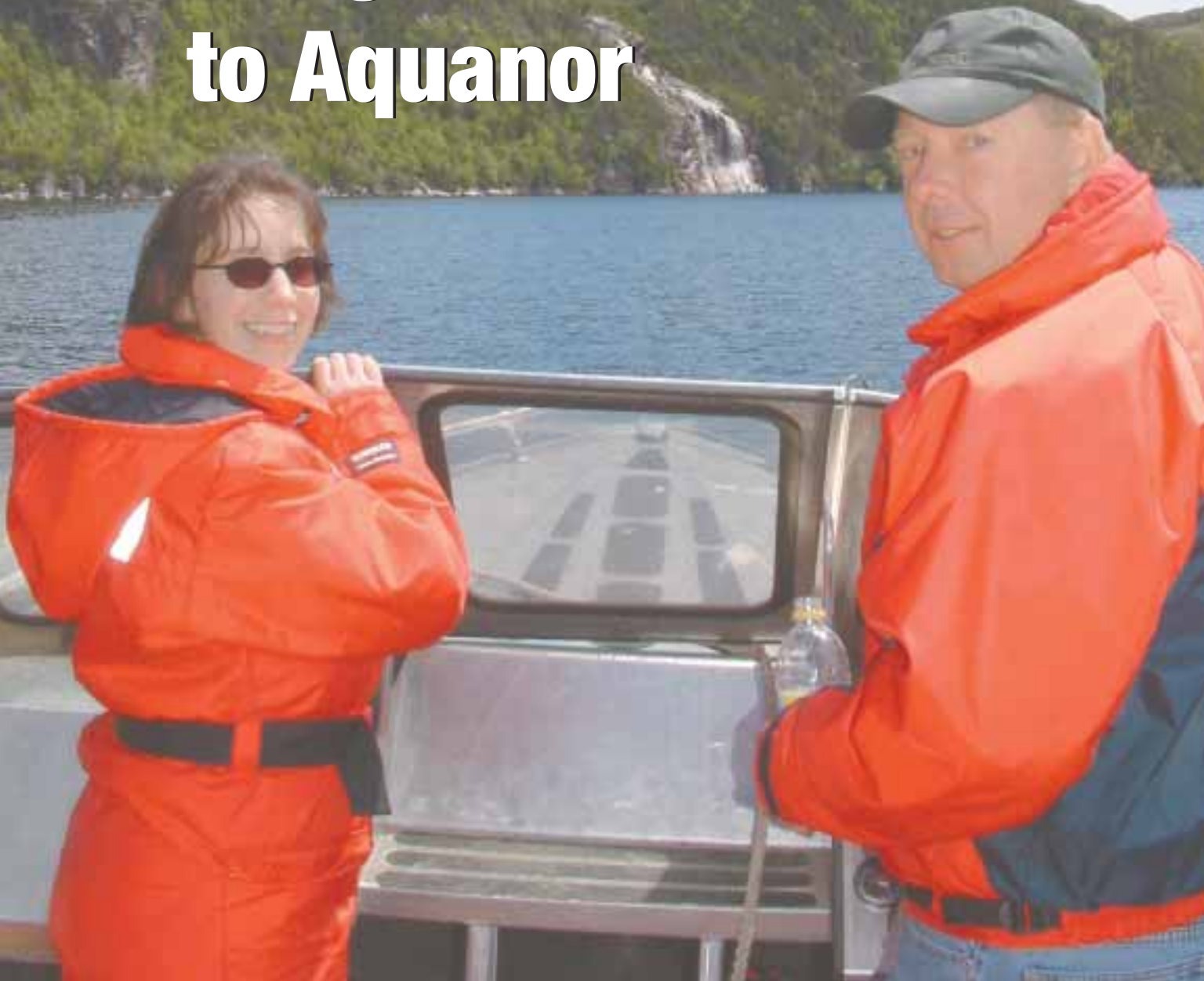




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NAIA Executive Director

MIKE ROSE

Canada's eastern coast and Norway share a long, adventurous past. Over a thousand years ago Leif Ericson sailed eastward in search of new land where families might settle and thrive. He succeeded and lived for a time in a place called Vinland. Nearly a thousand years later it took another persistent Norwegian explorer and adventurer, Dr. Helge Ingstad, along with his wife Anne Stine, to discover the remains of Viking settlements at l'Anse aux Meadows on Newfoundland's Great Northern Peninsula. It is with such spirit of industry and discovery that a large group of Atlantic Canadian aquaculturists will visit Norway in August 2003.

Indeed, it is a great pleasure for the Newfoundland Aquaculture Industry Association (NAIA) to publish this special edition of our magazine — *The Cold Harvester* — marking the attendance of a highly qualified contingent of Atlantic Canadian companies at AquaNor 2003. Under the leadership of the Atlantic Canada Opportunities Agency (ACOA), over 25 companies are represented in this business and technology group comprised of just under 50 people. While in Norway delegates will attend the AquaNor 2003 tradeshow in Trondheim, as well as a series of aquaculture site and institution tours in Bergen and Stavanger. The mission offers invaluable opportunities for Atlantic Canadian companies to network with key industry players and research specialists from Norway and, considering the size of AquaNor, from around the world.

This trade and technology mission would not be possible without commitment and dedicated effort from a number of organizations and individuals. On behalf of delegates, NAIA wishes to thank Minister Gerry Byrne and ACOA for the vision and leadership that underlies this ambitious program. We also praise the National Research Council – Industrial Research Assistance Program and the Department of Fisheries and Oceans for their significant levels of support. And a special word of thanks goes out

to the other industry associations across Atlantic Canada who helped the organizational effort immensely. On behalf of delegates, thank you and we look forward to making this a success for you all.

While it is always difficult to single out individuals for their efforts, I would be remiss if I did not provide a note of thanks to the following three people: Gilles Gaudet, Senior Trade and Investment Officer (ACOA); Gerard Dominic, Logistics Consultant (NAIA); and, Tor-Eddie Fossbakk (The Aquaculture Communications Group). Success is rarely an accident and usually involves dedication and hard work, often behind the scenes. In that regard, these three individuals are mainly responsible for weaving together the various aspects of the mission on both sides of the Atlantic. Many thanks for a job well done.

Sincere congratulations are also in order for the Atlantic Canadian aquaculture companies participating on the mission. The decision to participate was certainly not taken lightly, particularly considering how busy our companies are this summer. We truly hope the program helps you fulfill your most pressing goals and that you all discover many new "take home" ideas in your travels. And here's to the new business relations and friends you'll meet along the way.

For those discovering Atlantic Canada for the first time, we hope this special edition of Newfoundland's industry magazine provides some sense of the aquaculture expertise and opportunities that exists here. Our region is positioned for growth in salmon, steelhead trout, mussels, cod, halibut, and a number of other commercially viable species. Furthermore, our industry support sector is highly advanced and offers extremely competent technological and business advice and services.

Atlantic Canadian company representatives are eager to meet with you to exchange ideas. Please call us at any time ... Atlantic Canada is eager to partner, trade, and prosper.

AN OPEN LETTER FROM

Honourable Gerry Byrne,
Minister of State for the
Atlantic Canada Opportunities Agency



Aquaculture is one of Atlantic Canada's growing industries. As part of the mission, the Atlantic Canadian delegates will participate in the Aqua Nor 2003 aquaculture conference, as well as visit aquaculture farms and research institutions.

Aqua Nor is the world's premier aquaculture event. Held every two years, it attracts more than 20,000 visitors from at least 50 nations. Three-hundred exhibitors, representing more than 600 manufacturers and suppliers, will be showcasing developments in the fields of aquaculture technology, fish feed, fish health, quality assurance, research, training, insurance, grading, processing, packaging and distribution.

Atlantic Canada's participation in this show testifies to the region's growing sophistication in the field of aquaculture. According to the Department of Fisheries and Oceans, total annual fish production in the Atlantic Provinces has increased to more than 125 million tonnes, from 99 million tonnes only ten years ago.

Within this context, aquaculture products have doubled their share of total fish production to 26.3 per cent, compared with 13.3 per cent in 1990. In fact, Fisheries and Oceans predicts that aquaculture will dominate fish and seafood production in the region by the 2030; less than half of all production will originate from traditional capture fisheries.

These advances strongly suggest that the Atlantic region is more than ready to become an international leader in aquaculture; and a good fit with other leaders, such as Norway, where more than 20,000 people are employed either directly or indirectly by the industry in the farming of salmon, trout, and a variety of shellfish.

Indeed, in February, AquaNet, the Canadian Network of Centres of Excellence in aquaculture and the Norwegian Fiskeriforskning, a leading internationally recognized institute in fisheries and aquaculture research, signed a formal agreement to collaborate and jointly support the exchange of critical research.

The Atlantic Canadian seafood producers who are traveling to Norway will be exposed to a host of partnering and technology exchange opportunities. I wish to congratulate the mission organizers and participants and assure them of my continuing support for this key Atlantic industry sector.

The Hon. Gerry Byrne, P.C., M.P.
Minister of State
Atlantic Canada Opportunities Agency

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President, Newfoundland Aquaculture Industry Association (NAIA)

GARRY HARTLE

When compared with global aquaculture industries, ours in Newfoundland and Labrador is in its infancy. It is only since the 1992 moratorium that the sector has received any significant attention or investment. However, it has experienced noteworthy growth in recent years. From 1995 to 1998 total aquaculture production in Newfoundland has increased from 1,029 tonnes to 2,694 tonnes, a rise of 162 percent. Production in 1999 reached over 4,300 tonnes, an increase of 59 percent over 1998 and a 317 percent increase over 1995. The increase in production value was from \$3.5 million in 1995 to \$18 million in 1999, a 414 percent increase. In 2001, production value exceeded \$20 million dollars and that number will rise again in 2002, and will continue doing so thereafter.

There is a message to governments, investors and the general public alike: Newfoundland and Labrador's aquaculture industry has tremendous potential. Here is a very brief examination of our strength and opportunities. This is by no means an exhaustive list, but it may provide some insight into current environmental factors affecting the industry.

Geography/Location. Newfoundland has a natural advantage with 17,000 kilometers of coastline that host clean, cold water. Along with its inherent strength in location and geography, growing conditions make this province highly suited to the aquaculture industry. Food quality, purity and safety are assured. In particular, the south coast of Newfoundland is relatively ice-free in winter, creating highly suitable conditions for aquaculture. Perched between Europe and North America, our geography is an overall strength.

Resources. Newfoundland has an excellent scientific and technology infrastructure through centers of excellence such as the Marine Institute, NAIA, NRC, C-CORE, and Memorial University. The province has stores of fishing knowledge built up through the generations and much of that can be transferred to the aquaculture industry. Through NAIA, the industry has a valuable voice that provides leadership and support to the industry. Finally, there are our people — young and old — eager and qualified to become leaders of tomorrow.

Government Relations. To date, Newfoundland has a shorter time frame for site approvals than anywhere else in Canada (months versus years). The local industry has developed a highly respectful and businesslike rapport with the various government departments and agen-



Protected Newfoundland waters, near Harbour Breton on the south coast.

cies. Through the development of area management plans and codes of conduct, industry has earned the trust of government to proceed with orderly development.

Environmental. Due to the abundance of coastline, aquaculture farms are often miles apart, which significantly reduce any possibility of localized pollution. Additionally, the Newfoundland industry has voluntarily adopted a system of extensive site fallowing that ensures localized operating areas are regularly flushed. The industry has actively developed management plans that dramatically lessen the possibility of fish escapements. Government regularly monitors those plans. Many aquaculturists and traditional fishermen co-exist remarkably well with some fishermen who have reported increased catches in and around aquaculture sites.

Product Quality and Growing Conditions. Newfoundland has very good growing conditions with, for example, some of the best water available in the world to grow steel head trout. It is accepted by knowledgeable large-scale buyers that Newfoundland Blue Mussels are among the best in the world. Market feedback indicates that Newfoundland's salmon aquaculture product is of high quality with regard to flavour and colour. Newfoundland cod is now finding its way to the finest dining rooms in America.

Investment and Investors. Newfoundland is one of very few places in Canada with aquaculture space avail-

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able. This makes it an attractive investment option. Various international investors have already recognized this and are currently partnering with Newfoundland interests to grow our industry. Recent European and Asian investment in Bay d'Espoir, for example, is sending a strong signal around the globe. The bottom line on the Newfoundland aquaculture opportunity is that we have the potential for a new industry worth hundreds of millions of dollars per year, every year, on a sustainable basis indefinitely into the future.

Do It Right the First Time. As a new aquaculture jurisdiction, Newfoundland is learning from others and is making every effort to do things right the first time. In addition to designing area management and environmental protection plans, the industry can develop a 'seal of approval' that defines expectations and standards for the growth and production of quality foods. This will be attractive to investors, food brokers, governments and consumers. A seal of approval will be a useful marketing tool for demonstrating industry transparency, especially when dealing with consumers.

Competitive Advantage. A significant competitive advantage lies in the development of cod aquaculture. The future market potential for cod aquaculture looks very promising and Newfoundland is among the world's leaders in the development of this new aquaculture species. Other comparative advantages exist for mussels, salmon, and steel head trout.

Community Economic Support. Farms, with direct and indirect economic impacts, can be located in small rural communities. As our aquaculture industry matures this will provide the human resource needed to maximize wealth.

Government Policy. The Newfoundland and Labrador government recognizes the significant long-term benefits of developing our aquaculture industry. Effective incentive and taxation policies will ensure that current gains from non-renewable resources, i.e., oil and gas and minerals, are reinvested toward sustainable industries such as aquaculture.

Threats to the Wild Seafood



Among Newfoundland's many virtues are experienced and skilled aquaculturists such as Clyde Collier, seen here surveying Bay D'Espoir.

Industry. The wild seafood fishery has more uncontrollable factors than aquaculture. By comparison, the aquaculture industry offers more continuity and control of product and delivery.

Collaboration with Wild Seafood Industry. The wild seafood industry has well-developed infrastructure for marketing, distribution, government relations, production, etc. Through effective cooperation, aquaculture can benefit from this already established infrastructure. For example, the two groups could lobby for common marketing campaigns to eat healthy Newfoundland Seafoods. Alternatively, aquaculture could be positioned as somewhat of an alternative in the event of a downturn in the crab sector. Many crab fishermen have large boats such as seiners that could be refitted as harvesting boats in the aquaculture industry.

Research and Development. Research and development will play a role in productivity and innovation. For example, innovative farming approaches can cut costs and prevent losses. There are opportunities to bring scientists and biologists into site approval processes earlier to reduce the possibility of setting up in areas not suitable for aquaculture or to ensure effective environmental practices are in place.

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Here Gilles Gaudet leads an informal planning meeting for AquaNor in St. Andrews. He is joined by Loius Jaillet (ACOA), Gerard Dominic (NAIA), and Tor-Eddie Fosbakk (ACG).

Leading the charge: Gilles Gaudet

Gilles Gaudet assumed the responsibilities of Senior Trade and Investment Officer on September 9, 2002, in the Trade and Investment Unit at the Head Office of the Atlantic Canada Opportunities Agency (ACOA).

Mr. Gaudet began his public service career in 1987 with the Department of National Revenue in Halifax, Nova Scotia. He subsequently held several positions within the Department, including Senior Desk Auditor and Problem Resolution Officer, and Programs Officer as well as a Senior Project Officer, Business Returns and Payment Processing Directorate, at Headquarters in Ottawa.

He returned to New Brunswick in 1999 to assume the position of Assistant Trade Commissioner at the International Trade Centre of Industry Canada. In September 2002, he left Industry Canada as a Trade Commissioner to assume the position of a Senior Trade and Investment

Officer at ACOA.

A native of New Brunswick, Mr. Gaudet was educated in Moncton, and

is a graduate of the Université de Moncton with a Bachelor Degree in Business.



The map of Atlantic Canada featuring its four provinces: New Brunswick; Nova Scotia; P.E.I.; and, Newfoundland and Labrador.

NAIA's 'Cold Harvest' stands for Seafood Quality and Excellence

Newfoundland aquaculture food products are well-known for their high quality, taste and safety. And it is no accident. Great care is taken to ensure quality practices and processing. Very soon the Newfoundland industry association – NAIA – will be promoting that fact through the use of its “Cold Harvest” seal of excellence.



Mike Rose, Executive Director of NAIA says. “Our symbol of excellence was very carefully crafted to symbolize the quality and nutritious aspects of aquaculture seafood from Newfoundland. The logo depicts the guiding hand of devoted aquaculturists carefully harvesting from our clear blue, nutrient-rich, iceberg-cooled waters.”

There is a definite, world-wide trend for the industry to consistently demonstrate that it follows the highest possible quality and safety standards in food production. One way that industry associations have chosen to demonstrate such commitments is to provide a recognizable *seal of approval* to growers and processors who consistently meet minimum standards. Such seals are often in the form of a logo which qualifying producers can use on their packaging. In turn, the industry association markets the logo as a symbol of trustworthy food quality and safety excellence. These days this is more than simple marketing and promotion. In some cases, it is the level of care that is demanded by some governments, buyers and consumers.

Rose clarifies by saying, “NAIA’s doesn’t intend to create an independent brand. The *Cold Harvest* logo will be discretely placed on Newfoundland aquaculture product packaging, whether the product is Newfoundland salmon, mussels, steelhead trout, or cod.” He adds, “The advantage here is that our member companies can pursue independent branding initiatives.”



Newfoundland aquaculturist's are seen here discussing quality and fish health issues with Daryl Whelan, Newfoundland's Provincial Veterinarian.



Newfoundland's aquaculture products are destined for fine dining rooms around the world, such as the Fairmont Newfoundland overlooking St. John's Harbour.

At this time, the *Cold Harvest* logo (other than generic advertising controlled by NAIA) is not being used on product packaging. NAIA is currently distinguishing standards to ensure matters such as full traceability are enforced. Following standards development and any required training, a certification and approval-for-use process will follow. When those critical steps have taken place, NAIA will adopt an appropriate strategy to promote the logo as a seal of excellence synonymous with high quality, safe and nutritious Newfoundland seafood.

The Mission's Norwegian connection

ACG – The Aquaculture Communications Group, LLC

Business Concept

Aquaculture is the fastest growing food production sector in the world today, averaging 11% per year since 1984. This growth is highly dependent on the transfer of scientific and technical information, new and evolving technology and business information to where it can be best applied. The need for an aquaculture information provider that can supply a wide variety of relevant information and knowledge resources to the global industry has been identified. ACG has recognized this need and is responding.

Mission

Our mission is to be the world's number one facilitator for the exchange and retrieval of information – scientific, technical, business news, opinion and analysis – about the aquaculture industry, allowing users of our services to be up-to-date and well informed.

Knowledge is power. ACG will give you the power – to make decisions, to meet challenges, to innovate and to compete.

We will accomplish this by employing the most up-to-date and appropriate information technology (IT) available and by providing accurate and timely information delivery. We will build a reputation of integrity and excellence.

Web Based Communications

ACG's Web based aquaculture information network will deliver news, information and knowledge from a wide variety of sources to the aquaculture industry worldwide. It will be a one-stop website for information on aquaculture and related subjects.

Using New Media and other rapidly developing technologies, ACG will provide information in the form of text, audio, digital video and animation to enhance information transfer and understanding. This multimedia approach will facilitate industry development through better information dissemination. It will also serve as a powerful tool in public education and issues awareness.



Norwegian consultant Tor-Eddie Fossbakk.

Public Relations and Communications

ACG is focused on developing a communications vehicle for industry participants such as associations and federations, producers, suppliers, and related groups.

The Web is becoming the primary means for gathering current news and information because of its speed and global reach. More importantly, the Web offers the aquaculture industry the opportunity to present itself to the

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The Aquaculture Communications Group, LLC

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world without bias or interference from mainstream media or special interest groups.

A Website is not a virtual printing press, it is a virtual broadcasting station.

By using ACG's multimedia capability, the industry has the means to present its messages, its activities and its perspective when confronted by special interest groups and industry critics.

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Tor-Eddie Fossbakk, President

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Prior to founding ACG, served in the following positions:

- 3 years as aquaculture editor (US) at FIS.com,
- 2 years as a business communications consultant (Norway),
- 1 year as editor of Kontali's "Monthly

Salmon Report" (Norway), and 7 years as Commercial Officer at the Canadian Embassy (Norway), responsible for the fisheries and aquaculture portfolio.

Holds Bachelor of Science and Master of Public Administration degrees.

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Newfoundland's Ocean Science Centre

BY DANNY BOYCE

The Ocean Sciences Centre (OSC) is a cold ocean research facility operated in conjunction with Memorial University of Newfoundland. Located in Logy Bay, NF, Canada, the Centre houses laboratories where research is conducted on the North Atlantic fishery, aquaculture, oceanography, ecology, behaviour and physiology.

Scientists at the OSC have been conducting aquaculture research to support the development and commercialization efforts of our industry partners over the last number of years. The long-term track record of the OSC and its industry partners, and the ability to conduct research through AquaNet (a nation wide Network of Centres of Excellence for Aquaculture), positions us to do the research needed to bring marine species such as Atlantic Cod to commercialization.

The Aquaculture Research and Development Facility (ARDF) housed at the OSC provides state-of-the-art facilities.



Here ACOA official Georges Lambert tours the Ocean Science Centre at scenic Logy Bay Newfoundland.

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Lisa Bruce of the Ocean Science Centre cares for young cod at the Ocean Science Centre.



Halibut comfortably swim in tanks at the Ocean Sciences Centre.

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ties designed to support research, training, pre-commercial production, and small-scale commercial trials, on alternative species for marine aquaculture. A critical component of the new 1,300 m² facility is a sea water system designed to deliver high quality, temperature controlled, flow through and re-circulating water. There are areas for broodstock conditioning, hatchery and nursery operation, first feeding, and on growing. Live food production facilities have daily production capabilities of 1,000 L algae, 1 billion rotifers, and 500 million *Artemia*.

The Aquaculture Research and Development Facility carries out research in collaboration with industry partners. The aquaculture potential of various finfish species is being evaluated through the study of broodstock biology and the development of larval rearing techniques. Currently under investigation are: Atlantic halibut, Atlantic cod, yellowtail flounder, witch flounder, wolffish and Atlantic salmon.

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AquaNeuve Solutions Inc. is a management consulting company offering professional services to the aquaculture industry. The company offers project development and management services in all aspects of aquaculture production. These skills include strategic planning, strategy implementation and business development.



Andrew Coldford

The core business of AquaNeuve is the emerging issues of food safety and traceability. New international legislation regarding food law and recent trends in food production relating to food safety has provided a niche market for the company. In addition, new technologies offer exciting business opportunities for specializing in the area of food safety and traceability. The company services and supports the food production industry with solutions in traceability, food safety and food production quality. AquaNeuve provides business solutions for cost effective food quality programs.

The managing director of AquaNeuve is Andrew Coldford. Andrew has recently completed a Master of Business Administration from the University of Stirling, in Scotland. His graduate research was specific to strategic planning for information systems. The research extensively analyzed the development of traceability systems for a fully integrated salmon farming operation. Prior to completing postgraduate studies, Andrew achieved a Bachelor of Business Administration from Memorial University of

Newfoundland and Labrador. Most recently Andrew worked in business development with the Newfoundland Developers Group of Companies and as part of the senior management team within its aquaculture division, Northern Aquaculture Corporation.

AquaNeuve is headquartered in St. John's, Newfoundland Canada. Contact information is available on the company website at www.aquaneuve.com.

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Boyd Pack, founder of Newfoundland Aqua Services is joined by NAIA's Gerard Dominic and Ann Strickland. Ann is representing Newfoundland Aqua Services on the AquaNor mission.



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Successful Aquaculture seminar and study tour in St. Andrews

BY LORI WOLOSHYN

Project Manager, NTC, Toronto

In June 2003, the Norwegian Trade Council in cooperation with the Norwegian Embassy held an aquaculture seminar entitled 'Collaboration in Research and Technologies Between Canada and Norway' in St. Andrews, New Brunswick. The all day seminar with over 100 participants addressed several pertinent issues including new species, fish health and consumer perceptions. The goal of the seminar was to share information, develop international contacts and gain feedback on how to decrease obstacles in the path of the aquaculture industry.

In their welcome remarks, both the Norwegian Ambassador to Canada, Ingvard Havnen, and Yves Bastien, Canadian Commissioner for Aquaculture, highlighted the importance of increasing cooperation between the two countries. Mr. Havnen noted that both countries have their own unique strengths in aquaculture – Canada with shellfish pro-

duction, and research on salmonid culture and Norway with advancements in salmon production, new species research and the on-going development of aquaculture based technologies – but he believes "for [aquaculture] to prosper it becomes essential to increase collaboration beyond our borders." Mr. Bastien pointed out that although participating in the seminar was an occasion to exchange information it was also "an opportunity to share our passion for what we are doing, and to share the great adventure that we are all participating in – the adventure that is aquaculture."

The first session began with presentations on collaboration for a sustainable aquaculture industry by Dr. Ivan Burkow, Managing Director of Fiskeriforskning (Norwegian Institute of Fisheries and Aquaculture Research) and Mr. David Rideout, Chairman of Aquanet, the Canadian network of centres of excellence in aquaculture research. In February 2003 a Memorandum of Understanding was signed in Ottawa between the two research institutes. This initiative prioritizes the collaboration in research in aquaculture, not only in terms of information sharing but also personnel exchange. These two organizations are leading examples of how the two countries can work together, and both speakers highlighted progress in this area.

The new species session was of particular interest among the salmon growers in the audience. With turbulent salmon markets, and increased risk of disease many salmon producers are looking for product diversification. Mr. Magnus Skretting of Nutreco gave comprehensive overviews on both cod and halibut development in Norway. As the first company to open a land based juvenile commercial plant under the name of Cod Culture Norway AS, Nutreco has a lot of experience in overcoming obstacles in cod production. Located in Kollsnes (near Bergen) the plant has a current capacity of 10 million juveniles per year and a future capacity of 25 – 30 million juveniles per year.

Further new species speakers included Mr. Chris Duffy, of Great Bay Aquaculture, who examined cod production challenges in North America. He presented several components of cod production including land based versus sea farming and dual harvest strategies. Mr. Brian Blanchard of Scotian Halibut gave an overview of halibut developments in Canada. With over 370, 000 juveniles in production this year, Canada is a major contributor to halibut production and research. Dr. Nathalie Le François at L' Université du Québec à Rimouski presented her work on wolffish cultivation. Wolffish is already in commercial production in Norway, and several universities and research institutes from both Canada and Norway are working very closely together on both research and public education.

New technologies, fish health and consumer education were examined in the afternoon session. Mr. Jamie Young of Storvik, presented his company's automatic feeding systems



Trade Commissioner, Yrjar Garshol, and Market Manager, Lori Woloshyn, take five during their busy day at the St. Andrews aquaculture workshop.

➤ Please see page 15



Jamie Young of Storvik, and Klaus Edward Høseth of Stranda, entertain questions from the floor.

“An opportunity to share our passion for what we are doing, and to share the great adventure that we are all participating in – the adventure that is aquaculture.” – Yves Bastien

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for marine species while Mr. Klaus Edward Høseth of Stranda focused on the issue of preserving the quality of fish meet in processing.

Mr. Ragnar Thorarinnsson, of Alpharma gave two presentations on health related issues facing both countries - ‘Development and Future Prospects in Managing ISA in Europe and Eastern Seaboard of North America – A Review’ and ‘The Effect of Vaccine Potency, Disease Risk and Market Price on the Economic Value of Fish Vaccination’. Dr. Larry Hammell at the Atlantic Veterinary College shared his work on sea lice, and Dr. Erling Sandsdalen of Fiskeriforskning gave an overview of diseases common among farmed salmon and cod, and developments in vaccines to protect them.

The day ended with a brief look at consumer perception of aquaculture. Ms. Laurie Jensen, at The Society for the Positive Awareness of Aquaculture (SPAA), spoke about what her organization is doing to offset the negative perception presented by the environmental groups in British Columbia and Dr. Frode Nilssen of Fiskeriforskning gave an overview of consumer perceptions of farmed salmon in Europe.

In addition to the seminar the Norwegian delegates had the opportunity to visit St. Andrews Biological Station, Huntsman Marine Centre, Friars Head aquaculture site, and True North Salmon’s processing facilities. The tour was positively received by the group and gave them a good overview of the New Brunswick growing aquaculture industry.

As a result of the seminar, interest in ACOA’s trade mission to Norway on August 12th – 20th has grown significantly. The mission held during AquaNor, the bi-annual aquaculture trade show in Trondheim, has recruited over 40 companies and organizations, and will include visits to several research institutes, hatcheries and finfish farms (including Cod Culture Norway) in the Trondheim, Bergen and Stavanger areas.

The June 11th seminar presentations and participation list can be found on the Norwegian Trade Council’s website at www.ntc.no/toronto.

The Norwegian Trade Council is actively involved in promoting the Norwegian aquaculture industry worldwide, including in Canada. Continued initiatives and cooperation between Norwegian and Canadian aquaculture players ensures a long and profitable relationship between the two countries. For further information please contact Lori Woloshyn at lori.woloshyn@ntc.no

Flétan St-Laurent Halibut Inc.

Flétan St-Laurent Halibut Inc. was incorporated in fiscal 2000 by four (4) private companies with extensive investments in the marine seafood processing industry and who wish to diversify into land based aquaculture.

After numerous trade missions to Iceland, Europe, United States and other Canadian provinces the group chose Atlantic Halibut as the species with the most promise for rearing success in Northern New-Brunswick. Based on the hydrology and the natural geological formations along the Bay of Chaleur it was decided to apply leading edge well drilling technology to access large quantities of salt water having a constant temperature, free of pathogens and other ideal characteristics to grow halibut.

In the fall of 2001, the company drilled its first inclined salt water well starting at the cliffs edge and terminating approximately 250 feet offshore



Julien J. Albert with a prize catch.

beneath the ocean floor. Large quantities of salt water were obtained with good success, however, small concentrations of manganese and iron were present and which were deemed to be harmful in the grow-out of halibut and

other marine fish species.

During fiscal 2002 in collaboration with biologist and scientists from the Shippagan Marine Centre and the Marine Products Research and Development Centre the group designed and engineered salt water filtration equipment using known ozone technology which not only removed the undesirable manganese and iron concentrations but also all suspended solids and nitrogen residues.

This pilot project has positively demonstrated that with good innovative technology perfect salt water with all the desirable characteristics (ie) a constant year-round temperature of 7°C, pathogen free, no undesirable metals or suspended solids and in large quantities to successfully grow marine species, could be achieved at a very low cost.

During fiscal 2003, two (2) sepa-

➔ Please see page 17

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From page 16

rate year classes of Atlantic Halibut in the same water column were grown at high stocking densities with growth curves exceeding both proven land based and cage culture models. No mortalities were encountered due to pathogens, viruses, stress etc from high stocking densities. The water quality, clarity and temperature was not compromised despite the high stocking density and the 95 – 97 per cent re-circulation levels achieved.

The company is now studying various scenarios to commence a pre-commercial phase (50 – 100 MT) land based re-circulation grow-out or nursery facility using their salt water well technology. At the same time, Flétan St-Laurent Halibut Inc. has associated itself with various groups of salmon farmers in the Bay of Fundy who wish to diversify into new marine fish species (halibut, had-dock & cod) by determining the right size of fish to introduce into cage culture and which should yield the highest return without disturbing the present salmon growth cycle.

Contacts:

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– AND – Flétan St-Laurent Halibut
Inc.

P.O. Box 5607
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E1W 1B7
Tel: (506) 727-5465
Fax: (506) 727-4255
E-mail:

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Mr. Jean Robichaud, Vice-President
c/o St-Paul Fisheries (1989) Ltd
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COMPANY PROFILE



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Fax.: (506) 456-2229	Fax.: (250) 758-2651	Fax.: 56-65-431-920

Website: www.cardsaqua.com

Profile

Established in 1986, Cards Aquaculture Products Ltd. has experienced steady growth and is one of the largest full service aquaculture equipment suppliers in North and South America. The company's commitment to Quality and Innovation and the desire to work with our customers to develop solutions and increase the value of our products has been and will continue to be our primary objective. Cards Aqua provides a full range of products and services to the finfish and flatfish aquaculture industries from our manufacturing facilities in New Brunswick and British Columbia, Canada and Puerto Montt, Chile.

Aqua Research / Technology

Cards Aqua reinvests 3% of all aquaculture equipment revenue in research and development of new products and processes. Cards Aqua has recently completed a three project to create an enterprise management information system. The company also completed a two-year project that included researching, designing and constructing an antifoulant application machine. This state of the art process has improved the quality of our product and the work environment for our employees. Improvements in cage and net design and construction techniques are constantly researched and applied.

Aqua Products or Services

- Mooring system design and construction services.
- Custom cage design and construction.
- Cage maintenance services.
- Custom net design and construction.
- Net maintenance services.
- Anti-fouling net treatments.
- Custom fabrication services, specializing in HDPE.
- Custom Tarp construction.
- Retail stores with full line of aquaculture and marine related supplies.
- Cards Aqua buoys for use in shellfish aquaculture.
- Full range of shellfish aquaculture equipment.
- Financial services including Export Financing, Leasing, Fi-

ancial Assistance applications, Systems Development.

Alliances.

Canadian distributor of Ace Aquatec Seal Attack prevention systems; Canadian agent for Flexabar Aquatech anti-fouling products; Master dealer for Stright MacKay marine supplies.

Key Contacts:

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 Vice President, Finance David Cassidy, C.A.
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 General Manager (Canada) Darren Cheney
darren.cheney@cardsaqua.com
 General Manager (Chile) Marcos Jofre
mjofre@aquacards.cl

Aquatech Sectors

Design and engineering.
 Custom construction of nets and cages.
 Anti-foulant research.

Corporate Data

Established	1986
Ownership	Private
Employees	175
Aqua Staff	173
Aqua R&D	2
Mfg. Facilities	Yes
Lab Facilities	Out-sourced

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MARKLAND SEAFOODS LTD.

Producer of salmon trout and salmon

Markland Seafoods Ltd. is dedicated to the healthy growing of Steelhead Trout/Salmon trout, and Atlantic salmon in Newfoundland. We are operating our sites from the region of Bay d'Espoir having our head quarter situated in Conne River. We are a Canadian/Norwegian enterprise who is combining knowledge about fish farming from both Canada and Norway. Our management and crew have several years experience within fish farming both for salmon trout as well as for salmon. Our production is highly competitive and we produce around 2000 MT of farmed fish per year.

Our company is operating through a group of farms as a kind of vertical integration. We have, through our partners, full access to locally produced trout fingerling and salmon smolt in the number sufficient for today's production as well as future expanded production.

Our fish is processed by local plants in the area, where they do our fresh products as well as frozen products. Our sales are organized/coordinated through Newfoundland Marine Farms, a local company that does all the sales on behalf of the farming group. Due to excellent farming conditions we are able to supply the market with fresh products all year round.

General infrastructure like roads, access to harbour, transportation systems (both local and world wide), supply of feed and equipment are all up to international standards.

Our Products

We produce mainly fresh filet and HOG steelhead for the Canadian and US market. We are trying continuously to keep a high and foreseeable quality on our products in accordance with the demands from the market. To ensure that our products are as fresh as possible we have a very close co-operation between our farm, the processing plant, the sales company and the trucking company. By working the whole chain neatly together the products is shipped into the market without any unnecessary delays. Quality and developing of new products is an ongoing process and we are currently



Clyde Collier of Markland Seafoods, along with technician Vince John, on their Roti Bay site along the south coast of Newfoundland.

working on several new products for both the fresh market as well as for the frozen market.

Sales of our products

Newfoundland Marine Farms Ltd, a

medium-sized sales company located in St. Alban's, conducts all our sales. Newfoundland Marine Farms Ltd currently does all the sales for three of the major Steelhead producers in the region as well as sales of imported fish products accessed worldwide. For information regarding top quality, fresh or frozen Newfoundland farmed Steelhead Trout please contact:

Newfoundland Marine Farms Ltd. P.O. Box 378

St. Alban's, NF
AOH 2E0

Email: nmfl@nf.aibn.com

Our products are mainly sold to Canada, USA, and Europe.

Markland Seafoods Ltd.

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Harold Murphy's Industry Support Services Inc

Industry Support Services Inc. (ISSI) is a consulting company registered under the Newfoundland Corporations Act and located at 25 Birchwynd Street, St. John's, Newfoundland. It offers a wide range of management and technical services mainly in support of economically sustainable developments in fisheries, aquaculture and other natural resource developments, as well as related environmental protection and management requirements. ISSI associates with other consulting firms which provide the capability to draw on expertise depending on project requirements.

Harold Murphy is principal of Industry Support Services Inc., which he established to provide a wide range of services related to logistics, research, information, and business assistance. He has worked in various levels of the Federal and Provincial Governments and was appointed to the position of Assistant Deputy Minister, a position he held for a twelve-year period. This has provided him with an in-depth knowledge of government and its role in resource and economic development. His interactions and partnerships with the industry and communities have provided him with an excellent knowledge of commercial operations and with the importance of planning and conducting activities for profitable results.

He has experience in policy and program planning as well as in planning and implementing resource development projects. His supervisory and management skills enable him to handle a wide variety of responsibilities. His international travels, for market development and technology transfer purposes, have enhanced his knowledge of other countries, international trade, the global economy and its relevance to Canada.

This background, combined with a strong interest in social, economic and resource development, enables him to provide top quality services to a wide range of development, commercial, and public activities.

Program/Project Experience Summary:

Fishery Resource Surveys

Examples:

Lumpfish "Roe" Fishery - Placentia Bay

Scallop Fishery - Nain Area, Labrador

Labrador River Surveys - Fish Habitat Inventory,

Cataloguing and Physical Characteristic Descriptions

Reid Brook, Voisey's Bay Fish Counting Fence Project

Salmon Studies

Salmon Migration Studies/Tagging Program Sand Hill River, Labrador

Aquaculture in Newfoundland

Daniel's Hr. Hatchery

Development Projects, Connaigre Peninsula

Cod Grow-Out - Province wide

Mussel Aquaculture, Connaigre Peninsula

Salmonid Aquaculture, Bay D'Espoir

Literature Review - Aquaculture Impact on habitat in Newfoundland [member]

Infrastructure Assessment for the South Coast Finfish Aquaculture Industry

Site selections and licensing assistance.

Traditional Fishing Industry Research and Development

Review Plans by Torngat Fish Producer's Co-operative Society Ltd. to establish a Shrimp Processing Plant in Rigolet.

Fishing Vessel, Development and Operations

Fishery Facilities Development and Operations Management

Examples: Fish Plants - Northern Labrador
25 Marine Service Centres

Government Regulation Development and Enforcement

Involved with drafting 1st NL Aquaculture Act & MOU with Federal Government

Public Consultations

Environmental Baseline Study Nickel /Smelter Refinery Argentina; Socio-Economic Component

Regional Fisheries Planning

Conducted a survey in the Coast of Bays Region to identify the issues and determine the interest in an Integrated Coastal Zone Planning Committee.

Purpose on Norway Mission:

ISSI is representing Norsk Salmon Inc. with the main objective to observe waste utilization technology as it applies to salmonid aquaculture and to determine its commercial use in Newfoundland.

ISSI Contact Information:

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Website: www3.nf.simpatico.ca/hmurphy/

E-mail: hmurphy@nf.sympatico.ca



ITAqua was created in June as a division of Sweeney International Management Corp. in St. Andrews, New Brunswick. Our goal is to provide high quality and user-friendly Information Technology (IT) services for companies in the aquaculture industry. Along with the experience to handle the implementation and management of existing systems, ITAqua also has expertise in developing custom IT solutions for companies.

ITAqua offers services in all aspects of the IT development cycle from initial planning and consulting to deployment. Web pages, web applications, graphics, and database applications can be custom built to any client's specifications using a number of different technologies.

With the Internet becoming such an important selling tool, many companies are now looking to ITAqua for web page development, web page hosting and web applications. Our clients are currently able to view digital recordings of their products, whether they are above or below

water, and use those recordings on the Internet to attract prospective buyers. Through innovative thinking, ITAqua is helping both small and large companies develop a presence on the web.

Corporate and individual training can also be provided to clients on specific software packages. Whether a client is looking to train employees on company procedures or train the public on their products, ITAqua can deliver classroom training and/or provide custom training materials via the Internet. Training materials can be created in a digital format on cd-rom or can be set up to run on a web page.

ITAqua is very excited about announcing its plans to move into the role of distribution and service for other vendors. Many vendors have products that are available in Eastern Canada, but do not have any contacts in this area. With its many contacts in the industry, ITAqua can distribute and service products for these companies.

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The Newfoundland Aquaculture Industry Association (NAIA) offers a constructive and personalized approach to help you develop positive relationships with experienced, reputable local partners. Please contact NAIA to learn how we can help.

For more information contact: Mike Rose, *Executive Director*
Newfoundland Aquaculture Industry Association, P.O. Box 23176, St. John's, NL A1B 4J9
mike@naia.ca Tel 709.754.2854 Fax 709.754.2981

www.naia.ca

AANS: Leading the way in Nova Scotia

The Aquaculture Association of Nova Scotia was formed in 1977 to support the fledgling fish and shellfish farming industry. In its early days, the association, which was operated by volunteers, lobbied governments for improved programs for aquaculture, organized meetings and workshops and served as the focal point for technology transfer.

In 1994, the association and its government supporters decided that the time for professional staff had arrived and hired its first executive director and recently Sirje Weldon as Executive Director and Jason Mullen as Research and Development Coordinator. Since that time, the AANS has played a major role in the development of the aquaculture industry in Nova Scotia.

The association has spearheaded the creation of industry development strategies; has provided technical services through its field staff; has facilitated communication among members and with outside organizations including government departments/agencies; has liaised with industry in other provinces, countries, and with the research community and the public. The AANS has also taken proactive steps to develop environmental management guidelines and an environmental monitoring program for its members; has advocated for fair and effective environmental assessment guidelines; has facilitated industry involvement in product quality initiatives and food safety. The AANS provides continual training opportunities for the owners and employees of fish and shellfish farmers in the province. And, Scotian Pride, the annual conference of the AANS has become one of the premiere information-sharing opportunities for industry in the Atlantic region.

AANS BOARD OF DIRECTORS

Glen Brown: Cooke Aquaculture; AANS President; Doug Bertram; Innovative Fishery Products Inc.; AANS Vice President; Bruce Hancock; Country Harbour Sea Farms Ltd.; AANS Treasurer; Brian C. Muise; Brian C. Muise & Associates; AANS Secretary; Brian Blanchard; Scotian Halibut Ltd.; Peter Darnell; Indian Point Marine Farms Ltd.; Charles Doucette; Apaqtukewaq; Alec Forbes; Marshwinds Farm; Kaija Lind; Aqua Prime Mussel Ranch; Paul Merlin; Merlin Fish Farms; Rodney O'Neil; Cooke Aquaculture Inc; Sydney Raymond; R & R Finfish Development Ltd.; Robin Stuart; Ocean-Stuarts Consulting Services; Ken Tully; Atlantic Ova Pro; Sirje Weldon; Aquaculture Association of Nova Scotia; Executive Director; Andy Woyewoda; NRC – Industrial Research Assistance Program; AANS Technical Advisor



Nova Scotia's industry association executives joined by the Premier. L-R: Glen Brown, Cooke Aquaculture, AANS President; Jason Mullen, AANS, Research and Development Coordinator; Premier John Hamm; and Sirje Weldon, Executive Director.

The Aquaculture Association of Nova Scotia is governed by a volunteer board of directors; the current President is Glen Brown, Director of Operations for Cooke Aquaculture Inc.



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Corey Feed Mills

Corey Feed Mills Ltd. (Corey Aquafeeds) has been supplying the North American aquaculture industry with high quality aquafeed products since 1982. We have a full range of products for freshwater hatcheries to marine grow-out farms. We will continue to meet the challenges and opportunities of the aquaculture industry with new feed products, technologies and services. We add value to our customer's products and businesses with Better Feed...Better Fish!

Feed Products:

The Corey Aquafeed team has extensive background and experience in the animal science and nutrition. Our ongoing research in both nutrition and quality is not only key to our success, it's key to your satisfaction — leading to aquafeed products. These products include a full line of Hatchery feeds (HiPro) for salmonids, Freshwater floating and sinking trout diets (Vigor), and several lines of marine salmon and trout feeds to match your production objectives and feeds for emerging species. You can rely on our products to provide *Better Feed...Better Fish.*

Technologies:

Manufacturing fish feed is an advanced science. The feeds are very carefully formulated using time tested research and field data for protein, energy, vitamins and minerals similar to other animal production systems. The resulting high-density diets require intensive approaches to feed manufacturing; extrusion, fat infusion, counter flow driers and coolers. Corey Aquafeeds is using up to date technology to produce products that meet the challenging nutritional specifications of today's aqua feed customer for superior cost effective production. *Better Feed...Better Fish.*

Services:

Corey Aquafeeds has been in business since 1982. We started our business by meeting the needs of the local aquaculture market. Backed by quality ingredients and personalized service, we have grown — expanding our product line to serve an international clientele providing our customers with quality, service and value. We do not intend to compromise. We know that our customers demand the best, and our goal is to see that they get it. We provide extensive field services to our clients to make sure that they are getting the most out of our products. We do this with open and honest communication with our clients, with the goal being continuous improvement.

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Website: www.corey.ca

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Fredericton, New Brunswick

E3C 2G4 Canada

Bayshore Lobster/Guptill Halibut

Lobster pounds are unique structures that have operated for many years along the Bay of Fundy coast as excellent facilities to hold large quantities of lobster for sale later to markets worldwide. The pounds are intertidal facilities located between high and low water of the Fundy tides which have a range of approximately twenty-five vertical feet from low water to high water. The tides occur twice daily flowing over the pound walls completely exchanging the water, each tide providing naturally aerated and cleaned water to the system.

Our company realized our facility had potential for other uses in addition to lobster. As a result, three years ago we began experimenting with halibut juveniles to see how they would grow and mature in the pound environment.

Over the three years, we designed cages and support systems that work well in the pound, at low cost and high efficiency. Our experiences have illustrated that the future for halibut aquaculture in tidal pounds is promising as a nursery operation or as a grow-out facility.

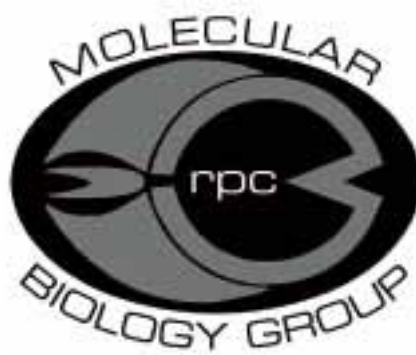


Atlantic Canada's Research and Productivity Council (RPC)

“RPC views the Trade Mission to AquaNor as an ideal opportunity to build upon existing relationships with Norwegian companies and institutions involved in aquaculture ...”

RPC is an independent contract research, development and technical services organization which serves industry and government clients in Atlantic Canada and elsewhere. RPC has developed a strong international reputation as a successful contributor to R&D initiatives leading to innovative products and services important to the aquaculture community. Many of our key achievements have resulted from partnerships and alliances formed with industry, governments, research institutes and academics in Canada and internationally. Notable contributions include the design and formulation of novel vaccines for the control of cold water vibriosis and bacterial kidney disease, the first isolation and identification of the *infectious-salmonid anaemia virus* (ISAV), as, as a pathogen of Atlantic salmon in Canada and the development of standardized molecular diagnostic techniques to permit large scale farm screening in support of New Brunswick's ISAV Surveillance Program. Our molecular biology laboratory features state-of-the-art instrumentation for DNA/RNA analyses, genetic analyses, gel electrophoresis and documentation, and protein characterization. Our facilities also include virology and bacteriology laboratory suites, as well as freshwater and marine fish quarantine units.

RPC will be represented at AquaNor by Dr Douglas McIntosh, a fish health microbiologist with 15 years experience in this area. Dr McIntosh is currently coordinating a project aimed at developing a probiotic based approach to address the problem of larval crashes in alternative finfish species such as haddock,



halibut and cod. Alternative, non-salmonid, finfish represent the a strong opportunity for diversification of Atlantic Canada's aquaculture industry. Understanding the reasons for larval crashes and how to avoid them will be central important to the

commercial development these of of these new species. The potential value of such an approach is reflected through the fact that this project is supported by the Atlantic Canada Opportunities Agency (ACOA), as, as part of the Atlantic Innovation Fund (AIF). RPC views the Trade Mission to AquaNor as an ideal opportunity for us to build upon existing relationships with Norwegian companies and institutions involved in aquaculture, and to establish new collaborations, particularly in the areas of disease diagnosis, host pathogen interactions and the development of disease control strategies, all with emphasis on problems of common interest to both Canada and Norway.



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Nova Scotia's Scotian Halibut

Scotian Halibut Limited is a private Canadian company, which was incorporated in April 1997 and commenced operations in October 1998. The joint venture business is the result of six years of work by Canadian and Icelandic business interests to develop world-class aquaculture facilities in Eastern Canada to produce Atlantic halibut juveniles and fresh Atlantic halibut for the North American market.

The joint venture partners, Fiskeldi Eyjafjarðar hf. (Fiskey) and Cape Halibut Investments Limited (CHIL) have established a halibut hatchery with a capacity to produce approx. 600,000 juveniles and a "land-based" nursery and grow-out facility with a production capacity of approx 200 metric tons. The company utilizes proprietary hatchery, grow-out and water re-circulation technology developed by Fiskey, Scotian and its partners. The total capital investment in the project to date has been in excess of \$17-million

Scotian Halibut is a world-scale aquaculture business, based on proven technology resulting from years of research in Iceland and Canada. The management team is considered to be one of the most experienced aquaculture teams in Canada. Fiskey is one of the leading companies in halibut aquaculture in the world and has been at the forefront of pioneering this technology along with companies in Norway and Scotland over the past 16 years. Canadian shareholders include some of the most experienced fisheries and aquaculture entrepreneurs in Atlantic region.

Atlantic Halibut has been identified as a key alternate species for Atlantic Canada and is probably the best new candidate finfish species for local cold seawater aquaculture in the region. Atlantic halibut is also a traditional, highly valued,

regional fish species with established markets and pricing. Local and worldwide catches are currently static or in decline and growth in wild stocks is unlikely. Aquaculture research on the species has been underway for over 16 years in Norway, Iceland, Scotland and Canada. Halibut farming,



Scotian Halibut start feed tanks.

however, is still in the very early stages and production of juveniles is currently the major constraint to large-scale commercial development.

During its first three years of operation Scotian Halibut imported 150,000 halibut juveniles from Iceland to accelerate the development of its facilities. The company's nursery and grow-out has been developed around land-based tank systems and utilizes the very latest water re-circulation and feeding technologies to optimize growth economics. The company is now working with cage farmers to further optimize growth and integrate with ocean-based aquaculture. Marketing of fish began in the fall of 2001; marketing of juveniles began in 2002.

The hatchery was commissioned in December 2000 and juvenile production began in 2001. Hatchery production in 2002 was approx. 130,000 juveniles. Production level for 2003 is projected at approx. 250,000 juveniles. The hatchery has a broodstock of over 300 fish, which have been photoperiod conditioned for year round production. Work on a broodstock biodiversity and selective breeding program is expected to start this fall. The company is also developing operating protocols to have its hatchery certified disease free.

The company is commercially focused and its goal is to optimize the production of halibut juveniles and market size fish as quickly as possible and develop a leading position in the North American industry. Its development strategy supports that goal by allowing for the concurrent development of in-house facilities as well as the development of independently operated land-based and sea cage grow-out operations. The projected juvenile production levels from company's hatchery and nurseries will facilitate the growth of approx 3,000 tonnes of Atlantic halibut per year within three to five years.

Contact:

SCOTIAN HALIBUT LIMITED

P.O. Box 119, Clark's Harbour, Nova Scotia, Canada B0W 1P0

Tel: (902) 745-0180 / Fax: (902) 745-0181

e-mail: scotianhalibut@klis.com



Scotian Halibut's upper silos.



Scotian Halibut's egg room.



Sim Corp. staff pose for the camera (with Bob Sweeney on the far left).

SIM Corp

Since Sweeney International Management Corporation (SIM Corp) first opened their doors for business in January 2002, company president, Bob Sweeney says that he has been very pleased with the welcomed reception that his company has received from Atlantic aquaculturalists and government agencies.

Based on Canada's east coast, SIM Corp.'s business plan is based on the ever-growing demand for professional management services on a short and long-term basis. SIM Corp's experience in developing and executing governmental regulatory requirements and codes of practice is a real advantage for clients.

While SIM Corp. has completed several projects at an industry-wide level, the firm is also commonly contracted to perform client-specific management services. These services include project development and management, compliance strategies and implementation plans and administrative services to individuals and producers' buyers groups, to name a few.

Among the list of environmental management services that SIM Corp. offers is development of industry waste management plan templates. For example, in 2003, the NB Department of Environment and Local Government began issuing Approvals to Operate to marine aquaculture sites in the Bay of Fundy. In response to the department's action, SIM Corp. designed a template waste management plan that could be customized to specific sites or used at an industry-wide level. SIM Corp believes that the only way to minimize a site's environmental impact on the marine environment is to ensure that site crews are well educated on ways to minimize those risks and perform frequent follow-ups to make sure that crews continue to follow those rules.

Although New Brunswick has been an aquaculture pioneer, there are still many challenges that province's 17-year-

old industry faces. SIM Corp. works one-on-one with growers to find solutions to challenges in everything from the application process to site boundary expansions. The firm has also had the opportunity to assist farmers with their applications for species diversification as well as marketing the value-added plans.

SIM Corp. has positioned itself among New Brunswick aquaculturalists, both finfish and shellfish, as a key player in the industry's short and long-term management strategies. Sweeney International Management Corporation has worked very hard over the past year to identify the strengths and the weaknesses of New Brunswick's aquaculture industry. SIM Corp. plans to continue working with industry and government to bring about change and resolutions to some of the industry's most pressing issues.

SIM Corp.'s success is a result of dedication to its mission statement: *"To provide a range of services to both finfish and shellfish producers to ensure that growers can maximize their time and energies as they cultivate and bring to market their aquaculture products in the most efficient and cost-effective manner possible."*

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Canadian Halibut Inc.

Canadian Halibut Inc. (CHI) is a fully integrated company that was created with a goal of bringing the commercial production of Atlantic Halibut to eastern Canada. CHI was formed in early 2003 and is composed of a group (4) shareholders and includes Silver Harvest Ltd., Nantucket Seafarm Inc., Ocean Legacy Inc. and R&R Finfish Development Ltd. Two other companies, Scotian Halibut Inc and Fletan St-Laurent, are also closely involved with CHI and will be working with them on land-based hatchery and grow-out production.

Each company will continue to operate independently as well as within CHI. Ocean Legacy Inc. was the first of the companies to place halibut on one of its current sites used for salmon production. This will continue to be the trend for the other growers involved in CHI. The company is also currently looking at leasing a site to be dedicated to halibut and will focus on research and development for the species in the Bay of Fundy and throughout eastern Canada.

The ultimate goal of CHI and its partners is to produce upwards of 2,000,000 halibut. This will include sites operated by CHI and its shareholders located throughout New Brunswick, Nova Scotia and Newfoundland. The current hatchery production in Atlantic Canada is approximately 250,000 juveniles with a capacity to be as high as 700,000. It is believed that the best strategy to reach the goal is to include land-based hatchery production and juvenile nurs-

eries with seacage growout. This strategy is currently in use in Scotland and Norway and CHI will be following this growout model making any changes necessary required to make commercial production economically viable in Atlantic Canada.

Canadian Halibut Inc. is receiving support from provincial departments as well and various funding agencies that wish to see successful production of Atlantic Halibut take place in Atlantic Canada. This is in part due to the fact that CHI is fully integrated and brings a wealth of experience to the industry. Silver Harvest Ltd., Nantucket Seafarm Inc. and Ocean Legacy Inc. have many years of experience in the production of salmon, as well as processing both fresh fish and value added products. R&R finfish bring broodstock and hatchery experience to the company and when combine with Scotian Halibut will be supplying CHI with the bulk of its juveniles. Fletan St. Laurent is situated in an excellent location and will be building land-based nursery that will fit perfectly into CHI's production plans.

The complete package Canadian Halibut Inc. has put together combined with support from the surrounding industry and government departments has a very positive outlook. CHI hopes to have the companies first commercially produced halibut on the market by 2005 with many more to follow close behind.

Nantucket Seafarm Inc.

Nantucket Seafarm Inc. has been in the business of farming Atlantic salmon in the Bay of Fundy in southwestern New Brunswick since 1997. The company is based out of North Head on Grand Manan Island and has about 20 full time employees on staff. Both the company and its principals have proven themselves to be successful entrepreneurs, excellent fish farmers and are highly respected members of their local communities. Nantucket Seafarm Inc. not only own and operate two salmon farms in New Brunswick, in 2001 the company President, Mr. Harley Griffin, chose to explore opportunities for farming Atlantic salmon in Nova Scotia. The company eventually decided to work with Long Beach Farms Limited in Digby and began growing salmon on a site in Saint Mary's Bay along Digby Neck. The company produces approximately 1300 MT. of Atlantic salmon annually.

Nantucket Seafarm Inc. is well-known for their commitment to excellence and their dedication to the environmental and the socio-economic sustainability of their business operations. Mr. Griffin, is also personally involved in other aquaculture ventures which include a Giant Sea Scallop research and development project where feasibility studies are now underway. Those studies have been underway since June 2000 and are designed to assess the technical and economic feasibility of culturing Giant Sea Scallops in the Bay of Fundy. The project has only recently completed Phase 1 of



the growth trials where three different culture techniques tested which included the use of pearl nets, lantern nets and bottom trays. Phase 2 just got underway in June of 2003 and it will focus efforts on integrating two culture systems, lantern nets and bottom trays, to maximize the overall productivity of a production site. Those trials will take place over the next three years with the final goal of moving towards full scale commercialization in the year 2008.

Nantucket Seafarm Inc. was involved in some halibut production trials in collaboration with I.F. Growers Ltd. in 2000. Based on the results of those trials and with a firm belief in the future for halibut aquaculture, Mr. Griffin is now part of the Canadian Halibut Inc. venture, which is a collaborative effort of Atlantic Canada's leading producers of Atlantic halibut. In short, Mr. Griffin and Nantucket Seafarm Inc. are not only well-established in the business of farming Atlantic salmon, they are committed to the future of aquaculture and the development of alternate species to ensure the long term sustainability of farming the seas in our coastal communities.

Grand Harbour Cod Company Ltd.

Grand Harbour Cod Company Ltd. (GHCC) is a jointly-owned aquaculture company based out of Grand Harbour, Grand Manan Island, New Brunswick on Canada's East Coast. The company, comprised of hatchery producers Great Bay Aquaculture LLC (GBA), located in Portsmouth, New Hampshire and nursery producers I.F. Growers Ltd. in Grand Manan New Brunswick, is designed such that egg through to codling production is contained within the company while on-growing production is accessible to existing finfish producers wishing to diversify into Atlantic cod production.

Breaking new ground in Atlantic cod aquaculture development in North America and worldwide, GHCC placed 115,000 5g hatchery reared cod fingerling into two (2) nursery cages located on Marine Aquaculture Site #MP-0006 in Grand Harbour in the Spring of 2003. Anticipating a successful nursery production run, the fingerling will be graded at 25g in mid-July and again at 80g at the beginning of September prior to arranged on-growing site transfer. GHCC have had success in relating the phenomenal financial viability of cod aquaculture in Atlantic Canada in that at least five (5) major existing aquaculture producers have expressed interest or commitment in purchasing codling for growout in the Fall of 2003 while GHCC is confident that this displayed interest will only increase as more farmers see the positive benefits of this venture into the presently undersupplied cod market.

GHCC have taken the lead with the first Marine Aquaculture Site dedicated solely to Atlantic cod nursery and the company believes that the dedicated nursery site will be pivotal in the success of Atlantic cod aquaculture production as an alternative and quite possibly co-existing species with Atlantic salmon, especially in places like the province of New Brunswick where salmon saturation levels are at their peak. Says company co-founder Chris Duffy "Now is the time for Atlantic cod aquaculture in New Brunswick and worldwide. New



The Grand Harbour Cod squad.

Brunswick has the infrastructure, the existing producer-buyer relationships and accessibility to the North Eastern market and these facts coupled with a company with experience in producing cod fingerling and an established nursery site where production trials are already taking place, leaves GHCC in a healthy position for success during the growing years of this industry as a whole. While wild cod is presently demanding \$4.50 US a pound, it can only be predicted that this price will increase as the commercial fishery continues to be shut down over time while lucrative foreign live-haul markets for 1.0 kg Atlantic cod and the increase in availability and quality of farmed Atlantic cod will only provide even larger gains in the early years. This is much akin to the pioneer years of the Atlantic salmon industry in the late 70s and early 80s and that's where GHCC wants to be."

Although GHCC has met with success during their first cod production run in southwestern New Brunswick, they still continue to pursue improved methods of both hatchery rearing and nursery production with the eventual development of a land-based broodstock holding facility projected within

the next three (3) years. Current research is investigating areas such as moist feed vs. dry feed during nursery rearing, land-based nursery vs. ocean-based nursery with future research looking into temperature, tidal variation, light manipulation and disease resistance.



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La Maison BeauSoleil Inc.

La Shippagan



Léon Lanteigne holds a master's degree in aquaculture. His shellfish culture business, La ferme marine Lanteigne Ltd. has been in business since 1989.



Léon Lanteigne is president of La maison BeauSoleil Inc. a processing plant specialized in marketing oysters produced in suspension with the floating bag technique developed by the owners. He also operates a marine farm and a consultation firm.

Located in the Lamèque/Shippagan area in northeastern New Brunswick, La ferme marine Lanteigne Inc. is one of Canada's most northern oyster culture operations. It is established close to the species' northern distribution limit. In addition to producing oysters cultivated in suspension in floating bags, the company also farms blue mussels in suspension and produces mussel seed for other producers in the Maritimes.

SEnPaq Consultants specializes in the field of Aquaculture and Environment. During its professional activities the company has been involved in mechanizing oyster and mussel culture as well as developing and experimenting new farming techniques for scallop, soft-shell clam and hard-shell clam.

For more information of La Maison BeauSoleil, you are welcome to visit our web page at www.maisonbeausoleil.ca



MAISON BEAUSOLEIL

Fundy Engineering and Consulting Ltd.

Fundy Engineering is a broad based engineering, consulting firm with offices in Saint John, NB and Charlottetown, PEI. Fundy Engineering & Consulting first began offering consulting services in and currently employs 20 people. The company has a broad base of expertise and offers services in several engineering disciplines.

The company clientele consists of public sector, commercial, industrial, and private clients. To meet their objectives the company provides services in aquacultural, geotechnical, environmental, mechanical and electrical engineering. We maintain an in-house quality control program which specifies management procedures for designs, drawings and reports.

Fundy Engineering & Consulting Ltd. has built its foundation on diversity and innovation. We have a multi-disciplinary, holistic approach to technical problems which has led to innovative successes in the field. We take pride in our close association with its clients in Eastern Canada. Our principals have also had experience in offshore development projects. As such, the company feels it has a unique capabilities to offer to a broad market base.

For the past fourteen years, Fundy Engineering and Consulting Ltd. has maintained and developed an expertise base in relation to the fields of Aquaculture, Fisheries, Food Processing and Agriculture.

Within the aquaculture, fisheries, food processing and agriculture industries, Fundy Engineering and Consulting Ltd. has participated in many new developments. We can help with research and development, technology transfer, feasibility studies and preliminary enterprise planning. Further expertise is available in engineering design, waste management, environmental management. We can thus carry a project through from concept to construction to operation.

Some typical projects completed by Fundy Engineering and Consulting Ltd. are listed below:

- *Marine Containment Systems for Aquaculture - Background Paper*
- *Economic Model for Marine Finfish Culture*



Peter McKelvey of Fundy Engineering and Consulting Ltd.

- *Fish Net Washing Waste Treatment Design*
- *Assessment of Alternatives for Treatment of Salmon Processing Wastewater*
- *Design of Renovations to a Sturgeon Culture Facility*
- *Engineering Review of a Halibut Hatchery*
- *Design of Post Harvest Handling Facilities for Salmon*
- *Strategic Planning Study for an Enhancement Salmon Hatchery*
- *Marine Containment Systems for Aquaculture - Background Paper*
- *Feasibility Study for Food Trout Production*
- *Design of Aquaculture Pens in Both Plastic and Steel*
- *Condition Inspection of Sea Pen Installations*
- *Design of Steel Sardine Weir*
- *Design of Experimental Fisheries Research Laboratory*
- *Design and Testing of Mobile Gear for Sea Urchin Fishing*
- *Development of a Water Jet Pump for Harvesting Sea Urchins*
- *Study of Energy Use in Fish Processing*
- *Design of Fish Hatcheries*
- *Design and Installation of Fish Quarantine Unit*
- *Feasibility Study and Development Plan for Mussel Farming Operation*
- *Design of Improvements for Lobster Holding Facility*
- *Design of Recreational Trout Pond*

- *Preparation of Trout Farming Manual*
- *Study of Fish Hatchery Effluent Treatment Options*

As may be seen from the above information, Fundy Engineering & Consulting Ltd. has an established record of accomplishment in the Engineering Consulting field. These successes have been achieved in a broad range broad range of disciplines and expertise. We feel well qualified to be accepted as a supplier of services to the Aquaculture sector.

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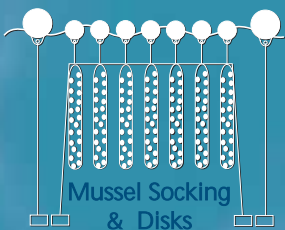
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