



AGRICULTURAL BUSINESS PROFILE ON LAND-BASED FISH FARMING OF ARCTIC CHAR

July, 2000

This profile has been compiled as a source of information for those who may be considering the growing of Arctic char as a commercial venture. The reader is cautioned that the information should be considered as a starting point only. It does not substitute for a business plan; a business plan incorporates specific information unique to the investor. The preparation and evaluation of a business plan are critical steps that must be taken before any significant investment is made.

While every effort has been made to ensure the accuracy of the information provided, the reader is further cautioned that information critical to his or her business plan should be verified. Particular attention should be paid to information that may become dated.

A more intensive consultants report is also available from either the provincial Department of Agriculture and Forestry or the Department of Fisheries, Aquaculture and Environment.

Abstract

Diversifying agriculture to include various other commodity areas such as aquaculture presents the entrepreneur with opportunities and challenges. The Arctic char (*Salvelinus alpinus*) species, has several characteristics which make it an attractive candidate for freshwater aquaculture in Atlantic Canada. Arctic char thrive in cold-water conditions and demonstrate a better growth performance than rainbow trout or Atlantic salmon. Arctic char also grows well at high densities and are an extremely hardy fish, doing well in intensive culture situations. Fresh, farmed Arctic char is considered a speciality item, warranting a higher price than other commercialized salmonids. With some creativity, aquaculture may integrate well with established agricultural operations.

Background

Arctic char (*Salvelinus alpinus*) is a northern anadromous fish species that lives world wide in Arctic and sub Arctic waters. The species is cultured in Europe, Canada and Iceland. In Canada the raising of Arctic char as a commercially cultured product is a relatively new venture

which began in earnest in the early 1980's. The strains of Arctic char currently being raised in Canada originated from several wild egg collections from the Fraser River in Labrador and from Nauyuk Lake in the North West Territories. Currently, the majority of Canadian cultured Arctic char is produced in Prince Edward Island and the North West Territories, with some production in New Brunswick, Newfoundland, Nova Scotia and Quebec.

There are three main types of farming operations involved in Arctic char aquaculture:

(1) Hatcheries which hold brood stock to produce Arctic char eggs and grow juveniles for their own use or for sale to growout facilities; (2) Land-based growout farms which use tanks to grow juveniles to a marketable size; and (3) Net-Cage Farms where juveniles of a specific size are placed in enclosed structures in open water areas. (*Net-Cage Farms are not permitted on PEI as Arctic char is considered an exotic species to PEI and escapement must be minimized.*)

This agricultural business profile will focus on a land-based growout farm. Most information will be based on a 25 tonne per year facility or a capability of marketing 225 kg per week. Three water systems will be considered:

1. Flow-Through System - water (surface or ground) makes one pass through the holding units.
2. Re-Use System or Partial Recirculation - from 25% to 50% of the water is reused. The solid waste is filtered from the water but ammonia is not removed.
- Recirculation System - in full recirculation, 90% or more of the water is reused. Solid waste and ammonia are removed from the water in this system.

The majority of operations in Prince Edward Island currently use a flow-through system. There are a few facilities using some form of water re-use in the culture of finfish. There are several Arctic char operations in the Atlantic province operating with a recirculation system which is more recent technology.

The growth rate of Arctic char depends to a great extent on the water temperature and consequently on the type of water system used. Each finfish species has an ideal temperature range for premium growth. For Arctic char the optimum temperature range is 10 °C to 12 °C.

In a typical flow-through system, water can be 11 °C in summer months and 3 °C during the winter. A 15 - 20 cm fingerling introduced to this type of growout facility in March or April, can grow to a size range of 450 - 900 g, eighteen months later. (An Arctic char, 15 - 20 cm fingerling is approximately 12 to 14 months old and weighs 50 - 90 g) In May of the second growout year, grading for market begins based on size.

Production

Optimum commercial production of farmed Arctic char requires a delicate balance of all biological, physical, management, and economic parameters.

Selection of a Site

Selection of the best possible farm site is one of the most important business decision a prospective char farmer will ever make. A good site is one which has an appropriate blend of prime assets: sufficient water, low development costs, proximity to all required services (ie. telephone, electrical power, and transport) and high suitability for continuous low-cost operation for the life of the facility. The ease at which the operator is able to carry out the day to day operation of the site must also be considered.

Site - Water Quantity and Quality

Water supply is one of the most important factors to consider when selecting a site suitable for Arctic char. The quantity and quality of water will determine the type of production system utilized. Engineering advice should be sought when evaluating a site.

Ground water and surface water may be suitable for the culture of Arctic char. Ground water may either be free-flowing (natural springs) or pumped from wells. Surface water is normally made available by diverting the required quantity from streams, rivers, ponds or lakes. Costs of pumping and/or temperature control will influence the economic viability of the operation.

Water quality is a collective term for all the physical and chemical parameters which impact on the performance of the species being cultured. Compared to other species of cultured finfish, Arctic char requires the highest quality water.

A number of factors should be considered in determining water quality, e.g. temperature, dissolved oxygen, nitrogen, carbon dioxide, acidity, alkalinity, hardness, total suspended solids, and nutrients. If a salt water well or salt water estuary is being considered as a water supply, consistent salinity will also be a factor which will have to be assessed. Arctic char do not perform well in high salinity conditions.

Water Systems

1. Flow-Through System

In a fully developed flow-through system water makes one pass through the tanks. Large volumes of water are required for intensive fish density, and to flush away wastes. Based on a 25,000 tonne production model, the volume of water required would be 9,000 litres per minute.

There is opportunity to control conditions such as shelter, temperature, oxygen, and light.

Environmental regulations must be considered in disposing of the waste. This system requires a high level of management to maintain water quality, and prevent the build-up of ammonia, or suspended solids.

2. Re-Use System

In a re-use system, 25% - 50% of the water is recycled. The advantage of this system over a flow-through system is that a smaller volume of water is required and water temperature can be controlled easier. Water quality must be controlled in the reused water. Oxygen must be maintained above a level of 7 milligrams per litre for optimum feed utilization and growth. Oxygen may be added by introducing pure oxygen or by adding ambient air to the water. Solid waste such as fecal material and uneaten food is removed through filtration or settling areas. In a re-use system the amount of makeup or new replacement water used must be sufficient to dilute the ammonia level to a non-toxic level.

3. Recirculation System

In a full recirculation system, over 90% of the water is reused. At least 5% makeup water is always required to supplement for the water lost in the system. A full recirculation system must provide all of the conditions needed to support the health and growth of the Arctic char.

The fish are housed in tanks and a series of pipes and pumps move the water between the different components of the system. The system is large enough to hold all mature fish and the water needed. There must be a means of providing supplemental oxygen and filtering the water to remove waste food and feces. Metabolic by-products are stripped from the water; ammonia in a biofilter, and carbon dioxide by aeration. In the biofiltration process the water passes through a fluidized bed containing two types of bacteria which change ammonia into non-toxic forms.

Carbon dioxide is removed by vigorous aeration. Other pathogens are controlled either by ozonation or ultra-violet light treatments. The pH must be maintained. A good recirculation system also allows for precise temperature control through the use of heating, cooling or mixing systems.

It is important to maintain optimal water quality conditions for the growth of Arctic char, therefore, continuous monitoring becomes vital. This can be done using either a manual water quality monitoring system or an automated unit.

Monitoring of Fish Health

It is important to establish a monitoring program for changes to the health of the fish. It is necessary to become educated about fish diseases and how to diagnose and control disease outbreaks. Accurate records on the fish stock will provide a valuable reference for future investigations concerning the health status and well being of the fish.

Source of Stock

It is assumed for the purpose of this business profile that stock will consist of 12 - 14 month old, 15 - 20 cm fingerlings, weighing from 50 - 90 g. Stock is available from Island producers or it can be imported. Stock must be ordered at least one year prior to the date needed.

PEI has maintained an excellent history of disease free status for cultured fish stocks. It is essential that producers wishing to import stock follow guidelines in place so that the Island's disease free certification status is not compromised.

Feed, Feed Storage and Feeding Methods

Feed is the highest operating cost. Efficient operation requires maximizing feed conversion ratios without wasting feed by knowing the average weight of Arctic char, and the water temperature. Feeding rates and specific daily growth rates can be predicted. Arctic char feed is commercially available. A cool, dry space is required for feed storage. Feeding can be done by hand or by automated feeding systems. Hand feeding is labour intensive and must be weighed against the capital expenditure associated with the purchase of automated feeders. Hand feeding does allow the farmer to observe the health status of the fish on a daily basis. Fish which are off-feed can alert the farmer to potential problems.

Fish Husbandry and Disease Control

There is currently very little disease problem with the cultured Arctic char on PEI. It is a relatively hardy species but can be susceptible to diseases when inappropriate farm conditions are imposed. Appropriate health management practices such as correct diet, suitable water quality and temperature, stocking density, and good hygiene should minimize the risk of disease outbreaks on the farm.

It is important that the fish farmer establish a monitoring program to chart the health of the fish. A successful grower must be knowledgeable about fish diseases, their diagnoses and managing disease outbreaks. Some common problems are bacterial gill and/or kidney disease, cold water disease, and enteric redmouth. Accurate records on the fish stock will provide a valuable reference for future investigations concerning health status. Veterinary services may be available through the Atlantic Veterinary College, some private veterinarians, and some feed companies. Industry representatives are one of the best resources available to the new entrepreneur. Aquaculture staff at the provincial Department of Fisheries, Aquaculture and Environment are also able to provide advice and information on husbandry practices.

Processing

A Grower Has Two Options

Arctic char are marketed when they reach 900 - 2,200 g (head on and gutted or dressed). The fish can be processed either by an existing licenced fish processor or the producer can establish

their own facilities. If a grower contracts to process and package the product the expected costs are approximately \$1.30/kg. To set up a facility with processing, ice making and cold storage capabilities, the typical costs are approximately \$60,000. This cost is based on a minimum capacity of 225 kg per week. The major capital costs are the building, stainless steel tables, a gutting machine, a scale, an ice maker and cold storage. A third option would be for a group of Arctic char farmers to establish and cost share a registered facility.

Secondary Product Forms

Value-added products such as packaged fresh and smoked char fillets are an option, however, this profile considers only the head on gutted form. Further investigation will be required by anyone considering marketing other products.

Regulatory Requirements for a Processing Facility

A fish farmer setting up a processing facility must consider the following regulatory requirements.

Provincial Fish Processing License - must be obtained annually from the PEI Department of Fisheries, Aquaculture and Environment to process fish in this province.

Certificate of Registration - is required annually to export fish across provincial and international borders, the fish must originate from a federally registered fish processing establishment. The facility must provide on a yearly basis an acceptable Quality Management Program Submission detailing how operational control will be maintained.

Export Certificate - issued by the Fish and Seafood Production Division, of the Canadian Food Inspection Agency. The importing country and the purchaser may also require that an export certificate be issued. Selling dressed fish within the province does not require an export certificate. For further information contact the Canadian Food Inspection Agency, Charlottetown District Office.

Marketing

A viable marketing strategy must be in place before any capital is invested.

Product

The preferred size in the marketplace for the Arctic char is 900 - 2,200 g, however, there is presently a market for almost any size because of the limited quantity being raised.

Price

Arctic char is a white tablecloth product and sells in the marketplace for \$8.00 - \$10.00/kg, packaged and delivered. The current cost for processing and packaging are approximately \$1.30/kg. Freight costs are additional and vary between \$0.15 - \$0.65/kg, depending on the destination and quantity shipped. Shipping costs may be reduced through coordinated marketing with producers of other types of seafood.

Market Demand

The market looks good for the next 5 to 10 years depending on the success of advancements being made with technology (ie. recirculation systems for growout). To establish and hold a North American market, a producer will need to supply a minimum of 225 kg a week. With a quality product there is a good opportunity to expand these markets. A small volume of product is sold in Europe, however, by marketing cooperatively with a number of growers, this would facilitate a supply to guarantee quantity, quality, and control.

Competition

Iceland and Canada are the leading producers of Arctic char. France, Norway, and Sweden have been steadily increasing their production in the past five years. Worldwide production in 1998 was less than 2,000 metric tonnes.

Reaching the Market

There are a number of ways for the product to reach the marketplace.

- Selling directly to a broker.
- Selling to a licenced export producer.
- Contracting with another licenced fish processor to prepare and package the product but retain ownership and sell directly to a broker.
- Contracting with the fingerling supplier to growout the Arctic char and then sell back to the supplier once it has achieved marketable size.
- There may also be opportunities for a number of growout facilities to combine marketing efforts and thus be able to guarantee quality product year round.

It is important that a new Arctic char farmer become known in the business. This can be done by contacting brokers and communicating with other growers currently in the market place. The new producer should also take advantage of opportunities to attend trade shows, workshops, and conferences to increase awareness of the finfish marketplace and improve knowledge of the industry. The PEI Aquaculture Alliance, Charlottetown is an excellent source of information. Success in the industry depends on the grower being able to produce a consistent supply of quality product on a year round basis.

Environmental and Regulatory Issues

Establishing a land-based growout facility for Arctic char in this province requires that a number of environmental and regulatory issues, both provincial and federal, be addressed. The following licenses and permits must be obtained:

Fish Farm Permit - available from the Department of Fisheries and Oceans, Canada,(DFO) is issued under section 56 (a) of the General Fisheries Regulations pursuant to the Fisheries Act and gives an individual the right to operate a fish farm as a commercial entity. The permit is site specific and indicates the species of fish permitted, and the types of controls required. For more information contact this department.

Environmental Impact Assessment - must be filed with the PEI Department of Fisheries, Aquaculture and Environment (PEIDFAE) outlining a description of the undertaking, location, construction, and operation. Establishment of a fish farm facility will require an environmental assessment and approval pursuant to Section 9 of the Environmental Protection Act. Flow through water may go directly to a settling pond.

Water Course Alteration Permit - required from the PEIDFAE, if any of the following apply:

- the fish farm within 10 metres of a water course
- there is pumping from a water course
- there is discharge into a water course

When the proposal is reviewed under the Environmental Impact Assessment, the project will be referred to the Water Resources Division, PEI DFAE, as well as Fish Habitat with regards to the Federal requirements, therefore eliminating the requirement to submit a separate application to DFO.

Well Water Regulations - if water is going to be obtained from a well, a permit is required from PEIDFAE. An application is made for an Exploratory Permit which gives permission for an exploratory well to be drilled and a pump test performed. Depending on the results of the test a Water Withdrawal Permit may be issued. This permit will indicate how much water can be withdrawn from the well for commercial purposes.

Building Permit - if construction is required a building permit must be issued by the PEI Department of Community Services and Attorney General. Provincial plumbing and electrical standards must also be met.

Canadian Environmental Assessment Act - under certain conditions, such as receiving federal funding for the undertaking, a review may be required under the Canadian Environmental Assessment Act.

Provincial Introduction & Transfers Committee Permit - if stock is imported rather than

sourced on PEI, the stock must be certified under the Canadian Fish Health Protection Regulations. A permit should also be obtained from the Provincial Introduction & Transfers Committee certifying that the stock meets all specifications. For further information contact DFO.

Development Costs

It is important to remember that every farm is unique and that the assumptions used in the forecast statements may not reflect every investor’s situation. The assumption is that the farmer already owns the land where the land-based growout facility will be established. The farm may also have existing capital items which can be utilized by the aquaculture operation to decrease the initial investment costs. Examples include existing high capacity wells, buildings, a pick-up truck, a tractor, available power, generators, alarm system or a dugout pond which could be used as a settling pond. Potential side benefits may include the utilization of the enriched water from a flowthrough system to irrigate crops by using the waste products as land fertilizer.

The following are some of the major capital investment categories. Please refer to the detailed report, Business Profile On-Farm Fish Farming Of Arctic Char, which gives a forecast of financial statements for various land-based grow out facilities. Refer to the information on the following figure one.

LAND-BASED GROWOUT (25 MT) FLOW THROUGH SYSTEM FORECAST
DEVELOPMENT COSTS-Fig.1

<i>Tanks (12 - 10m x 2m circular.)</i>	<i>\$80,000</i>
<i>Aeration System</i>	<i>35,000</i>
<i>Well digging</i>	<i>20,000</i>
<i>Backup Generator</i>	<i>15,000</i>
<i>Piping</i>	<i>15,000</i>
<i>Landscaping, Settling Pond, etc.</i>	<i>10,000</i>
<i>Pumps</i>	<i>6,500</i>
<i>Engineering Services</i>	<i>5,000</i>
<i>Demand Feeders</i>	<i>5,000</i>
<i>Dissolved Oxygen Meter</i>	<i>2,500</i>

<i>Starve Tank</i>	1,500
<i>Insulated Tanks</i>	1,000
<i>Grader</i>	500
TOTAL	\$197,000

NOTE: These costs are estimates and each growout facility can vary considerably.

The forecast financial statements assume that all of the capital costs are incurred in the first year of operation, however, the portion of the capital costs associated with purchase and installation of the tanks for the second stocking of Arctic char could be deferred to year two. When making this decision, the farmer should also consider any savings which may be lost on volume discounts as a result of splitting the purchase of equipment and landscaping costs into two separate years. Economies of scale may be realized on larger production volumes when utilizing a re-use or recirculation system.

Building

The size and type of building required will vary depending on the type of water system being utilized and the volume of Arctic char produced. In a flow-through system, a building will be required for feed storage and pumps.

A larger building is required for a recirculation system as every part of the operation must be enclosed. Some considerations for building size are: room to accommodate grow-out tanks, floor space and elevation to accommodate mechanical operations, and an area for feed storage and office.

The size of building required for re-use will depend on whether or not temperature control is a consideration. If this is not a concern then the tanks will not need to be enclosed. The two most common types of buildings are pole barns and greenhouses. In some circumstances, existing buildings may be available for renovation.

Rearing Systems

The two types of fish rearing or growout systems available are: circular and raceway. A circular rearing tank is often preferred because the properties complement the principles of recirculation by allowing the waste to settle to the bottom. Circular tanks also have the advantage of requiring less water flow than raceways and allow the fish to distribute themselves more evenly throughout the tank. Tanks are available in a variety of materials including fibreglass, reinforced concrete or galvanized steel.

Raceways can consist of brick, concrete or vinyl lined steel sheet metal frames, up to 100 m long

and 2-4 m wide and 1m deep. Large quantities of water are required to ensure a homogeneous water quality across the width of the unit, and at low cost, i.e. without pumping. Raceways lend themselves more readily to disease control through chemical flushing. They also can be quickly drained, and the grading or herding of fish is undertaken more conveniently.

Oxygen Saturation System

Dissolved oxygen is a critical factor in the culture of any fish species. As a general rule oxygen levels should be kept close to saturation. Levels lower than 7 milligrams per litre are unacceptable. There are two methods to increase the dissolved oxygen in water; aeration and oxygenation. Aeration involves the mechanical addition of air to water, either by agitation or by blowing in air. Oxygenation involves the introduction of pure oxygen by the use of oxygen generators or purchased (tank) oxygen.

Transport vehicle (with tank)

Most suppliers of certified stock deliver to the site. When it is time to sell the grown-out fish, all that is required for many operators are several insulated tanks, access to ice and a pick-up truck for transportation.

Filtration Equipment

In a flow-through system, filtration is not required as the water with its suspended solids and ammonia content flows out of the system and is not reused.

A re-use or recirculation system will require filtration equipment. In both systems the water from the upper portion of the tanks go directly to a filtration system where the suspended solids are removed. The water from the bottom portion of the tank is periodically flushed out into a settling area for heavy solids. In a recirculation system the biofilter removes ammonia and nitrite from the water after it has gone through the first part of the filtration system.

Backup Generators

A backup generator is required in both a reuse and recirculation system to ensure that water flow, oxygen levels, and in some cases water temperature are maintained in the event of a power failure. A gravity flow-through system may not be dependant on a generator.

Alarm System

A short response time is required to prevent major problems occurring in the production system. An alarm system covering critical points is a sound investment.

Engineering Services and Project Management

Some engineering services may be available from equipment suppliers and will be built into the cost of equipment. The farmer should also consider obtaining advice from an independent engineer in the planning stage. Project management should also be considered, depending on the size of the investment. Engineering and project management fees are usually 10% to 15% of the capital investment.

Potential Returns and Expenses

The forecast financial statement summarized in the following figure 2 is based on a 25 tonne, land-based flow through growout facility which produces Arctic char in the 900 g to 2,200 g range. The time required to produce a product in this size range from the purchased fingerling may span from fifteen months to two years, with a flow-through or partial reuse water system (allowing for harvest on a continuous basis during the latter part of this time period.) With a recirculation system that is temperature controlled, fish growth rate may be improved.

Operating costs include stock, feed, electricity, processing, freight and other miscellaneous expenses incurred in the production process. For the purpose of this profile it is assumed that the producer has not established a processing facility and will contract the processing. The success or failure of a land-based growout operation will depend primarily on the cost of feed and stock which are the major inputs. Projected financial statements for a land-based growout facility utilizing a flow through type of water system are available from the following table.

Revenues

Arctic char currently wholesales for \$8.00 to \$9.90 per kg (\$3.80 to \$4.50 per lb.) in the marketplace for a processed, head on, gutted product, packaged and delivered.

FORECAST DEVELOPMENT COST Fig.2

	<i>Year 1</i>	<i>Year 2</i>
Revenue	<i>\$ no sales</i>	<i>\$ 234,239</i>
Expenses		
<i>Stock</i>	<i>33,750</i>	<i>33,750</i>
<i>Feed</i>	<i>20,000</i>	<i>44,550</i>
<i>Processing</i>	<i>-</i>	<i>33,000</i>

<i>Freight</i>	-	10,450
<i>Labour</i>	10,000	10,000
<i>Electrical</i>	3,000	3,000
<i>Miscellaneous</i>	6,675	13,475
<i>Depreciation</i>	17,300	34,000
<i>Interest on Debt</i>	7,300	5,900
	98,025	188,125
Net Income (Loss)	\$(98,025)	\$46,114

NOTE: Gross revenue of approximately \$235,000 in year two and beyond, are assumed based on annual sales of 25 tonnes per year. This assumes a price of \$8.40 per kilogram for dressed Arctic char, and based on normal operation loss factors. Processing, freight, increased feed costs, and depreciation contribute about \$80,000 to \$90,000 additional expense annually. Please refer to the report, “Business Profile On-Farm Fish Farming Of Arctic Char”, for more details.

Key Management Issues

Knowledgeable Husbandry Practices

Optimum commercial production of farmed Arctic char requires a delicate balance of all biological, physical, management, and economic parameters. In order to be successful, the fish farmer must be knowledgeable in all relevant parameters. The chemistry and temperature of the water provided to the fish must permit good growth.

- The artificial environment provided must contain a replenishable oxygen supply at a constant minimum concentration.
- The biomass density at which the Arctic char is stocked must allow for an optimum growth rate.
- Nutritional requirements of Arctic char must be met through high quality feed.
- Disease prevention of Arctic char as they are susceptible when inappropriate conditions are imposed.
- Extensive record keeping of all aspects of fish husbandry such as all size samples, inventory, losses (mortality and harvest) and additions, feed consumption, water quality and water flow characteristics to predict when marketable fish will be available.

Preparation of a Business Plan

A business plan involving a 3 to 5 year time frame should be prepared. A business plan is a written summary of business objectives and the intended means to organize the resources and meet the goals. It is the road map for operating the business and measuring progress along the way. Only the research and planning that is involved in developing a business plan can lessen this uncertainty. Without a business plan, most funding agencies will not even consider a project.

Financing

Funding may be available from various sources for equity financing and marketing assistance. Sources of financing such as Atlantic Canada Opportunities Agency, PEI Business Development Inc., PEI Department of Fisheries, Aquaculture and Environment, and Farm Credit Corporation, should be researched by the potential producer. There is also a federal investment tax credit available for qualifying buildings and equipment in an amount of 10% of the capital cost. A refund of 40% of this amount may be obtained in the year of purchase. To be designated as a “qualifying property” it must be new and must be used primarily in farming and fishing.

Accessing Information

A key part of being successful is talking to other people in the industry and finding out what has worked for them and what has not and why. Arctic char is a very site specific species and a relatively new cultured species, so it is very important to work with others in the industry and share experience and knowledge which will lead to expansion of the industry. The new grower should also take advantage of seminars, workshops, short-term training courses, longer training programs, and literature available on the industry.

Supply of Product

The grower, to be successful, must be able to produce a consistent supply of quality Arctic char on a year round basis. If the producer can not supply the marketplace 52 weeks of the year, survival in the industry will be difficult.

Professional Services

Professional accounting and legal services should be obtained. There are many local accounting firms who have staff, knowledgeable about the aquaculture industry and can provide assistance in preparing both a business plan and proposals for financing or government assistance, in addition to providing accounting and tax services. As well, many local law firms have experience providing legal services to the aquaculture industry.

Risk Management

Insurance coverage for stock mortality, as well as, equipment and liability insurance can be acquired. Risk can also be reduced by proper design and installation of the system at the onset.

Stock Purchase

Stock or fingerlings must be ordered at the very least, one year in advance of delivery. PEI has maintained an excellent history of disease free status with DFO. It is essential that producers wishing to import stock to the province follow guidelines in place so that the disease free certification status on PEI is not compromised.

Resources

Atlantic Canada Opportunities Agency

100 Sydney Street
P.O. Box 40
Charlottetown, PEI C1A 7K2
1-800-871-2596

Business Development Bank of Canada

BDC Place
111 Kent Street
P.O. Box 488
Charlottetown, PE C1A 7L1
(902) 566-7454

Canada/Prince Edward Island Business Services Centre

75 Fitzroy Street
P.O. Box 40
Charlottetown, PEI C1A 7K2
1-800-668-1010

Prince Edward Island Department of Fisheries, Aquaculture and Environment

Fisheries and Aquaculture Division
11 Kent St
Charlottetown, PEI, C1A 7N8
(902) 368-5524

Prince Edward Island Business Development Inc.

Food Division
25 University Avenue
P.O. Box 910
Charlottetown, PEI C1A 7L9
(902) 368-6300

Canadian Food Inspection Agency

Fish and Seafood Production Division,
690 University Ave.
Charlottetown, PEI, C1E 1E3
(902) 566-7290

Farm Credit Corporation

420 University Ave., Suite 110
Charlottetown, PEI, C1A 7Z5
(902) 566-7065

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Endnotes

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