2.18 Aquaculture Program

Introduction

The mandate of the Department of Fisheries and Aquaculture is to promote and support professional and sustainable fisheries and aquaculture industries which produce high quality and high value products. With respect to aquaculture, the Department is responsible for supporting and monitoring industry development, issuing site licences and conducting site and facility inspections.

Aquaculture means the cultivation of aquatic plants or animals. In Newfoundland and Labrador, aquaculture activity relates mainly to finfish and shellfish cultivation. Finfish includes such species as Atlantic Salmon, Steelhead Trout and Atlantic Cod. Shellfish includes such species as Blue Mussels and Scallops.

Responsibility for licensing and regulating the aquaculture industry within the Province was assigned to the Government of Newfoundland and Labrador in February 1988 under the Canada/Newfoundland Memorandum of Understanding on Aquaculture Development. The *Aquaculture Act* governs the aquaculture industry in the Province. The purpose of the *Act* is *"…to govern the conduct of aquaculture in the province…"* and in particular, to *"…promote, in consultation with the private sector, the prudent and orderly development of an aquaculture industry."* The *Aquaculture Regulations* were introduced in 1988.

The Canada-Newfoundland Economic Renewal Agreement was signed in 1996 to *"…increase opportunities for economic development in Newfoundland…"*, primarily in the areas of tourism, aquaculture and advanced technology. The cost shared agreement expired on 31 March 2002 and a total of $21 million was spent on aquaculture development in the Province, under the terms of the Agreement. Furthermore, the Canada-Newfoundland Comprehensive Economic Development Agreement was signed in 1997 to *"…improve opportunities for economic development in the province…"*, and targeted strategic sectors offering the best opportunity for economic growth. An Aquaculture Sector Development Program was established under the Agreement and the Program expired on 31 March 2004. A total of approximately $1 million was spent on aquaculture development in the Province under the terms of the Agreement.

Within the Department of Fisheries and Aquaculture, the Aquaculture Branch is responsible for the regulation and development of the aquaculture industry in the Province. The Aquaculture Branch has three divisions: Aquaculture Development; Aquaculture Policy and Programs; and Licensing and Enforcement. The main Aquaculture branch office is located in Grand Falls-Windsor with regional offices located in St. John's, St. Alban's and Corner Brook. A total of 21 positions are assigned directly to the Aquaculture Branch with inspection support provided by fisheries

inspection officers from the Fisheries Branch of the Department. Total expenditures for Aquaculture Development within the Department for the year ended 31 March 2004 were $1.4 million (2003 - $1.2 million).



Steelhead Trout Aquaculture Site

Aquaculture licences are issued annually and expire on 31 December of the year in which they are issued. As at 31 December 2003 there were 199 licences issued. There are three classes of licences available:

- Commercial - for use by bona fide aquaculturists who are harvesting and marketing aquaculture products and who have determined that their site is suitable for commercial development. Of the 199 licences at the 2003 year end, 106 related to the commercial class.

- Developmental - for use by prospective commercial aquaculturists in assessing site potential prior to entering a full scale commercial operation. Of the 199 licences at the 2003 year end, 73 related to the developmental class.

- Research - for use by research institutions of government or companies, for the non-commercial culture of any species. Of the 199 licences at the 2003 year end, 20 related to the research class.

During the past 5 years, there has been no significant fluctuation in the quantity and type of licences issued.

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In March 2000, a Newfoundland Aquaculture Strategic Plan was developed in response to needs identified by the Newfoundland Aquaculture Industry Association (NAIA), the Department of Fisheries and Aquaculture, the Federal Department of Fisheries and Oceans, and other government departments and agencies involved in the Provincial aquaculture industry. The plan established production objectives for certain species of fish and provided numerous recommendations to address industry and species development concerns.

A five year history of aquaculture production in Newfoundland and Labrador is shown in Figure 1.

Figure 1

Aquaculture
Annual Production (tonnes)
Year Ended 31 December

	1999	2000	2001	2002	2003
Salmonid	2,477	1,512	2,811	2,870	2,600
Mussels	1,700	1,051	1,452	1,700	1,300
Cod	105	155	207	227	30
Total	**4,282**	**2,718**	**4,470**	**4,797**	**3,930**

Source: Department of Fisheries and Aquaculture Website

Scope and Objectives

We completed our review of the Aquaculture Program in November 2004. Our review covered the period 1 January 1999 to 31 March 2004 and included an analysis of aquaculture development, licensing and inspection activity.

We reviewed the Newfoundland and Labrador Aquaculture Strategic Plan and whether the recommendations stated in the plan were actually carried out. We also reviewed a sample of aquaculture files and reviewed licensing documentation and inspection reports for compliance with the *Aquaculture Act* and *Regulations* and established policies and procedures. We also held discussions with Departmental officials.

2.18 Aquaculture Program

Our objective was to determine whether the Department was ensuring that the aquaculture industry was developing in accordance with objectives stated in the strategic plan, whether the Department was complying with licensing and inspection requirements, and whether the deficiencies identified in our 1998 report were addressed.

Conclusions

The Province is not doing a good job supporting the development of the aquaculture industry and there has been no successful development of the industry since 1999. In 2003, a Report of the Federal Commissioner for Aquaculture Development indicated that aquaculture benefits when *"government guides the sustainable development of aquaculture"*.

In March 2000, the Province, the Newfoundland Aquaculture Industry Association (NAIA), the Federal Government and other agencies produced a Strategic Plan. The Plan was developed to focus the industry to develop species which provided the best opportunity for "success". The implementation of the Plan was left with NAIA and the Province played only a supporting role. Therefore, the Province had little involvement in ensuring the Plan was implemented on an overall basis.

The Plan provided recommendations to deal with a number of significant issues that needed to be addressed in order to strengthen the industry. For example, it identified the issues of debt load, lack of capital, and the high cost of production. However, the Provincial Government only carried out a review of debt load relating mainly to mussel farmers who had debts with the Province. Little debt funding was provided to these farmers. The Department did not review the debt load of all aquaculture farmers to determine whether assistance would be required. Officials indicated that the Department was apprised of a number of large salmonid aquaculture companies in the Province which were in financial difficulty and owed approximately $15 million to a feed supplier. Two of these companies were placed in receivership in 2004. Furthermore, discussion with Departmental officials indicated that recommendations to deal with the lack of capital and the high cost of production were not fully addressed.

Total production levels have declined over the last five years. In 2003, production totalled 3,930 tonnes, an 8.2% decline from the 1999 total production level of 4,282 tonnes. During this period, three other provinces (PEI, NB and BC) reported an increase in their total tonnage from 86,255 to 120,879, an increase of 40%. There were a total of 43 companies holding 106 commercial aquaculture licences throughout the Province at 31 December 2003. We found that 37 of the 43 companies holding 78 licences contributed less than approximately 20% of total production.

2.18 Aquaculture Program

The Department is issuing new aquaculture licences without always ensuring they have sufficient information to determine whether the applicant has the financial capability to carry out aquaculture operations.

Aquaculture sites are operating without valid licences because the Department is not ensuring aquaculture licences are renewed in a timely manner. As at October 2004, 64 aquaculture sites with licences which had expired on 31 December 2003 were operating without a valid aquaculture licence. The Department is renewing aquaculture licences without always ensuring compliance with requirements of the *Aquaculture Act* and *Regulations*. We found licences were being renewed when no inspections were carried out and when it was not clear whether aquaculture sites were being properly utilized.

The Department is not performing regular inspections to determine whether aquaculture sites are complying with the *Aquaculture Act* and *Regulations*. We found that, on average over a five year period, 16 of the 20 sites examined were not subject to an annual inspection. Furthermore, for 12 of the 20 sites, there was no evidence to indicate that any annual inspection was performed at any time during the five year period. The Department indicated that resources were not available to carry out all the required inspections. The Inspection Report being used by inspectors is not adequate to support the inspection activities for which the inspector is responsible as the report does not address all of the key areas that the inspector is responsible for assessing. The aquaculture inspector does not sign the report attesting that all the required procedures were carried out and whether there was compliance with the terms and conditions of the licence, the *Aquaculture Act* and Aquaculture Policy.

The Department is aware that there are four aquaculture sites with improper shore fastened moorings which are a potential public safety hazard. Two of these sites are still operating and two were ordered closed by the Department in 2004. The two sites ordered closed in 2004 continued to operate without a licence despite being ordered closed by the Department. At the time of our review, the Department hadn't checked the two sites which had been ordered closed to determine whether the moorings had been removed. The Department indicated that there is no authority under the *Aquaculture Act* for it to remove shore fastened moorings in cases of non-compliance. The Department has indicated that legislative changes are currently being drafted to address this issue.

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Findings and Recommendations

Compliance with Legislation

Section 4(2) of the *Aquaculture Act* states that *"a person shall not carry on aquaculture without first obtaining from the minister an aquaculture licence for each site at which he or she wishes to carry on aquaculture."* Our review indicated that 199 aquaculture licences expired on 31 December 2003 and all aquaculture sites continued to operate for a period of time during 2004 without a valid licence. As at 20 October 2004, 64 aquaculture sites were still operating without a valid aquaculture licence.

Section 4(6)(a) of the *Aquaculture Act* states that the Minister shall not grant an aquaculture licence unless *"the proposed licensee owns, leases or otherwise has a right to occupy the parcel of land comprising the site at which the proposed licensee intends to carry on aquaculture."* Our review of ten new licences issued in the five year period ended 31 December 2003 indicated that two licences were issued when there was no lease or right to occupy in place.

Section 11.2(a) of the *Aquaculture Act* states the Minister may make regulations *"respecting optimal resource utilization and sustainable development"*. Our review indicated that the Minister has not made any regulations in this important area. The 2003 Report of the Federal Commissioner for Aquaculture Development indicated that aquaculture benefits when *"government guides the sustainable development of aquaculture"* and this has been proven in countries such as Norway. The Department indicated that in most countries, it is the Federal Government that has primary responsibility for supporting aquaculture, however, this has not happened in Canada and the Province has assumed the role for Newfoundland and Labrador.

Aquaculture Licensing Information System

The Department records and maintains aquaculture licence, inspection, production and other statistical data in an electronic information system. Our review indicated that production data recorded in the information system does not agree with the production data reported by the Department in its website. Production data reported in the Department's website is provided by fish processors when product is sold. Production data recorded in the Department's information system is provided by aquaculture farmers when product is harvested. The Department indicated that they have a number of concerns with respect to the completeness and accuracy of production data provided by farmers and they are currently working with farmers to address this problem. The Department indicated that it does not reconcile production data recorded in its database with the production data reported on its website.

2.18 Aquaculture Program

Aquaculture Development

1. Newfoundland and Labrador Aquaculture Strategic Plan

In March 2000, the strategic plan stated that the Provincial aquaculture industry should be in a more advanced stage of development and that a "success story" was needed. Four species were identified as offering the best opportunity for "success" and therefore should receive the most investment and R&D support. The four strategic species identified were Atlantic Salmon, Steelhead Trout, Blue Mussels and Atlantic Cod.

In November 2002, the strategic plan was reviewed by NAIA, Government and other industry stakeholders and there were no significant amendments to the original plan developed in 2000.

Our review of the strategic plan indicated that numerous recommendations were made to address industry wide and species development concerns. We had difficulty determining who was responsible for carrying out all the recommendations. Initial discussions with Department officials indicated that, unless specified otherwise, NAIA was primarily responsible for implementing the recommendations stated in the strategic plan. Subsequent to these discussions, the Department provided a copy of an agreement among the Federal and Provincial governments and NAIA to support the implementation of the plan by NAIA. The Department also provided a copy of a report from NAIA highlighting activities it performed in relation to implementation of the strategic plan. However, our review indicated there was no clear connect between activities performed by NAIA and recommendations stated in the strategic plan.

With respect to industry wide recommendations, we found that many of the recommendations were general in nature and performance indicators were not always established. Also, timeframes for implementing recommendations were not clearly defined. As a result, we found it difficult to determine whether all the recommendations were being carried out and whether goals were achieved.

Our review of the industry wide recommendations indicated the following:

- *"It is recommended that commercial public sector investment be targeted toward the commercial development of* (the four strategic) *species".*

The Department indicated that public resources in the area of research and development, extension services and investment have almost exclusively been directed to the four strategic species. However, the aquaculture industry has not developed the "success story" identified as being urgently needed in the strategic plan. Figure 1 clearly indicates that there has been no consistent or successful development of any of the strategic species since 1999.

- *"It is recommended that a comprehensive cost reduction working group be established to implement* (cost reduction) *guidelines."*

  The Department indicated that a comprehensive cost reduction working group was not established and no documented cost reduction guidelines were provided. The Department indicated that this task was the primary responsibility of NAIA; however, we are concerned that the Department was not involved given the importance of this recommendation. The strategic plan states that industry wide cost reduction measures are necessary to ensure farmers are able to achieve profitability and withstand fluctuations in pricing and supply. Furthermore, the strategic plan recognized that additional capital investment needed for industry growth will not likely happen until profitability is firmly established in the Province. The Department indicated it funded NAIA and also provided some assistance to companies in their cost reduction efforts.

- *"It is recommended that Government review the industry debt situation and evaluate the options."*

  The strategic plan indicated that many farmers in the Province have accumulated significant levels of debt making them ineligible for further financial assistance. The Department advised NAIA in December 2002 that the Province was unwilling to write off outstanding loans to aquaculture farmers, but that farmers interested in discussions with respect to restructuring debt should contact the Department of Innovation, Trade and Rural Development (ITRD). The Department reviewed the industry debt situation in conjunction with ITRD; however, the review was limited to mainly mussel farmers who were in debt to the Province. ITRD officials indicated that at the time of our review, some of these farmers were no longer operating. It was also indicated that farmers owed more debt to the Federal Government than the Provincial Government. The Department was unaware whether a similar debt review was carried out by the Federal Government.

Officials of ITRD indicated that the debt review was completed in 2004 and that assistance was offered to farmers indebted to the Province in the form of settlements, write-offs and repayment restructuring. However, we found that little debt funding was provided to these farmers.

At the time of our review, the Department indicated that a number of large salmonid aquaculture companies were in financial difficulty because they were approximately $15 million in debt to a feed supplier. In addition, we found that two of these companies were placed in receivership in 2004.

Government offered assistance to all salmonid aquaculture companies in November 2004 when it announced the Aquaculture Working Capital Loan Guarantee Initiative. To date, the Department indicated that there has been one application in connection with the loan guarantee program; however, this application was refused because the company did not meet the eligibility criteria.

- *"It is recommended that a targeted investment prospecting program be put in place to match investors with willing industry players"*.

The strategic plan indicated that industry growth is stymied by a lack of private investment. In 2003, the Department indicated that it carried out an investment prospecting initiative which was mainly focused on the salmonid industry. Our review indicated that the Department did not establish any investment prospecting targets for the salmonid industry as were clearly outlined in the strategic plan. The Department indicated that three investors from outside the Province are currently establishing themselves in the provincial salmonid industry and that there are plans for increased investment from these companies in the next few years.

At the time of our review, the Department had not carried out any investment prospecting initiatives which focused on the mussel and cod industries. As a result, the Department has been unable to attract any investment for the mussel and cod industries.

The Department was unaware as to the extent of any investment prospecting that may have been carried out by NAIA.

- *"It is recommended that continued public funding support be provided to the Newfoundland Aquaculture Industry Association".*

  The strategic plan recognized that NAIA plays a key role in the development of the aquaculture industry and that the industry was not in a strong financial position to properly support NAIA. The Department indicated it ceased providing core funding to NAIA on 31 March 2002 when the aquaculture component of the Economic Renewal Agreement expired. The Department indicated that NAIA has since been receiving core funding from the Atlantic Canada Opportunities Agency.

  The Province does not provide core funding to NAIA and is not a member of the Association. Given the prominent role that NAIA is playing in the development of aquaculture in this Province, we are concerned that the Department is not working closely enough with the Association in its activities, including the implementation of recommendations in the strategic plan.

2. Aquaculture Production

Aquaculture production in Newfoundland and Labrador in the past five years has been concentrated on the species identified in the strategic plan as providing an "opportunity for success". We reviewed aquaculture production for each species in connection with specific recommendations and projections contained in the strategic plan. In addition we compared the Province's production with the rest of Canada. We found the following:

(a) Salmonid Production

Salmonid aquaculture in Newfoundland and Labrador includes Atlantic Salmon and Steelhead Trout. As of 31 December 2003 there were a total of 36 commercial salmonid licences issued in the Province. All 36 commercial licences were held by a total of 7 companies, with one company holding 50% of all licences. In 2003, this company accounted for approximately 43% of the total salmonid production.

Figure 2 shows that salmonid aquaculture in Canada occurs in four provinces with over 97% of production coming from New Brunswick and British Columbia. Since 1999, salmonid production in these two Provinces has increased 45% from 71,700 tonnes in 1999 to 103,600 tonnes in 2003. Salmonid production in Newfoundland and Labrador has increased just 5% in the same period.

Figure 2

Aquaculture
Annual Salmonid Production (tonnes)
Year Ended 31 December

	1999	2000	2001	2002	2003
Newfoundland & Labrador	2,477	1,512	2,811	2,870	2,600
Nova Scotia	4,715	8,106	5,600	2,385	-
New Brunswick	22,000	29,100	33,900	38,900	33,100
British Columbia	49,700	49,000	67,700	89,900	70,500
Total (Canada)	78,892	87,718	110,011	134,055	106,200

Source: Statistics Canada

The Department indicated that a lack of financing and investment was the main reason for the slow growth in the salmonid industry in the past 5 years. In addition, the Department indicated that the sale of the Province's largest salmonid production facility in 2000 affected production because the new owner of this facility refocused production from Steelhead Trout to Atlantic Salmon.

The strategic plan stated that while conditions in the Province are suitable to growing both Atlantic Salmon and Steelhead Trout, a decision had to be made as to which species to grow. Otherwise, long-term market development initiatives would be difficult. The plan recommended "*…that industry proceed with a strategy of growing both steelhead and salmon...that the greatest focus be placed on steelhead production because…environmental conditions are better suited for steelhead and Newfoundland could develop a marketing advantage...*". Our review indicated that since 1999 the production of Steelhead Trout has fallen from 2,078 tonnes to 1,150 tonnes in 2003, while the production of Atlantic Salmon has increased from 399 tonnes to 1,450 tonnes in the same period. This is contrary to the recommendation made in the Strategic Plan.

As noted above, this change was largely the result of a business decision by the new owner of the largest production facility in the Province to change the focus from Steelhead Trout to Atlantic Salmon. We note that Steelhead Trout continues to be the focus of other commercial aquaculture companies in the Province, as per the recommendation in the strategic plan.

The strategic plan indicated that salmonid production in this Province would not likely exceed 3,000 tonnes annually until infrastructure and capital investment increased. The plan also stated that a profitable industry was necessary before this increased investment would occur. A comprehensive cost reduction working group was not established to implement cost reduction guidelines that would help with profitability, as recommended in the strategic plan.

The strategic plan indicated that Government should review the salmonid industry debt situation and evaluate options. We found that the debt review carried out by the Province was limited to farmers who were in debt to the Province and did not include most salmonid farmers. At the time of our review, officials of ITRD indicated that a number of large salmonid aquaculture companies were in financial difficulty and owed approximately $15 million to a feed supplier.

(b) Mussel Production

As of 31 December 2003 there were a total of 52 commercial mussel licences issued in the Province. The 52 commercial licences were held by a total of 26 companies; with no one company holding more than 10% of all licences. In 2003, 3 companies accounted for approximately 60% of the total mussel production.

Figure 3 shows that mussel aquaculture in Canada occurs in five provinces with over 80% of production coming from Prince Edward Island. Since 1999, mussel production in Prince Edward Island has increased 21% from 13,890 tonnes in 1999 to 16,826 tonnes in 2003. Mussel production in Newfoundland and Labrador has decreased 24% in the same period.

Figure 3

Aquaculture
Annual Mussel Production (tonnes)
Year Ended 31 December 2003

	1999	2000	2001	2002	2003
Newfoundland & Labrador	1,700	1,051	1,452	1,700	1,300
Nova Scotia	945	1,252	1,619	1,073	1,439
New Brunswick	665	750	750	637	453
Prince Edward Island	13,890	17,895	17,506	16,785	16,826
Quebec	197	339	339	345	492
Total (Canada)	17,397	21,287	21,666	20,540	20,510

Source: Statistics Canada

The Department indicated that the main reason for the decrease in mussel production in this Province was because of ineffective marketing. Mussel processors focused production and marketing efforts on value added mussels rather than fresh mussels. The Department indicated that it provided support for the marketing of value added mussels but also wanted processors to continue marketing fresh mussels, which did not happen. While the market for fresh mussels remained strong, the market for value added mussels did not develop as expected. As a result, processors would not purchase mussels from farmers that they couldn't sell.

The strategic plan projected mussel production would increase by approximately 1,000 tonnes per year to 5,000 tonnes by 2003. However, mussel production in 2003 was 1,300 tonnes, just 26% of the 5,000 tonne target. The Department indicated that in most years, mussel farmers grew quantities of mussels in line with projections in the strategic plan, but could not harvest them when processors would not buy them.

The strategic plan indicated that the Province has a good marine environment for culturing mussels and has potential for expansion that is much greater than any of Atlantic Canada. The plan noted that the mussel industry is driven by volumes and that economies

of scale would be required for the mussel industry to succeed. The plan recommended that *"Policy development strategy focus upon maximizing the utilization of existing tenures, currently estimated at less than 30%."* The Department's Site Utilization Policy supports this recommendation when it states that *"Where site development or expansion does not occur within two years of the date the licence is issued and/or development does not occur in accordance with the approved business/development plan…"* the licence may not be renewed.

We found that the Department is supporting unproductive mussel farms contrary to the Department's site development and utilization policy, and contrary to the recommendations made in the strategic plan. Our review indicated that there were 67 mussel licenses (52 commercial and 15 developmental) issued as of 31 December 2003. We found that:

- 9 of the 52, or 17% of commercial mussel licences issued in the Province were held by three companies that contributed approximately 60% towards total production during 2003. A total of 23 companies hold the remaining 43 licences and contributed approximately 40% towards total production. We are concerned that the required volumes and economies of scale identified in the strategic plan as being necessary for success in the mussel industry, is not being achieved.

- 9 of the 15 developmental licences were new licences issued contrary to statements in the strategic plan that the industry should focus more on *"maximizing the utilization of existing licensed sites rather than licensing new entrants"*. We found the remaining 6 development licences have been operating more than 5 years contrary to the Department's own site development policy that requires developmental licences, in normal circumstances, to turn commercial within 5 years or be made inactive.

The strategic plan indicated that the mussel industry was undercapitalized and recommended that a targeted investment prospecting program be carried out. The Department indicated that its investment prospecting program has not yet placed a focus on the mussel industry and no investment capital has been raised. The Department also did not know the extent of any investment prospecting initiatives carried out by NAIA.

The strategic plan also indicated that mussel farmers had accumulated debts making them ineligible for additional financing from banks and government programs and recommended that Government review the mussel industry debt situation and evaluate options. We found that the debt review carried out by Province was limited to farmers who were in debt to the Province. In these cases, ITRD indicated that it offered assistance in the form of settlements, write-offs and repayment restructuring. Our review indicated that little debt funding was provided.

At the time of our review, officials at ITRD indicated that the vast majority of mussel farms in the Province are not profitable.

(c) Atlantic Cod

Declining wild fishery stocks have increased interest in cod aquaculture worldwide. Cod aquaculture in Newfoundland and Labrador occurs in two forms: seasonal grow-out of captured wild cod which is dependent on wild fishery quota and full cycle cod culture which is not dependent on wild fishery quota. Atlantic Cod aquaculture is currently in the development stages in the Province. As of 31 December 2003 there were a total of 59 Atlantic Cod licences issued in the Province (7 commercial, 49 developmental and 3 research). In 2003, cod production totalled 30 tonnes, mainly from seasonal grow-out. Production in 2003 decreased significantly from prior years due to a moratorium imposed by the Federal Government on the harvesting of Atlantic Cod on the northern and western coasts of the Province.

In 2000, the strategic plan indicated that a commercial cod hatchery is necessary to advance the commercialization of cod aquaculture in Newfoundland and Labrador. Department officials indicated that the industry has made significant progress towards the construction of a cod hatchery in Bay Roberts; however, it is still not completed.

Aquaculture Licensing and Inspections

1. Licensing

(a) New Licences

In applying for an aquaculture licence, there are certain requirements that must be met before a licence may be issued. These requirements are included in the Department's Aquaculture Policy and Procedures Manual and are summarized in the

Aquaculture Guide distributed to potential applicants by the Department.

General requirements include: the availability of technical competence, an analysis of financial capability (which includes a business plan, cash flow projections, production and marketing information) and site location documentation. In addition, all applications for a new licence are subject to review and approval from various agencies and departments (referral agencies) of government to ensure such things as environmental protection, navigation safety and public health are maintained.

The Aquaculture Policy Manual states "*In addition to the aquaculture application, applicants must…prepare a business, research or developmental plan".* Such plans are necessary in order for the Department to determine whether the applicant has the technical and financial capability to develop and sustain aquaculture operations. The Policy Manual also states that existing operators need not submit a full business plan when the *"…addition of new sites will not materially affect financial operations and the species cultured does not change.*" In these instances, the Department will accept "*…projected statements of cash flows for the first twelve months of the operation and financial statements for the last two (2) years."*

Ten aquaculture applications in connection with new licences issued during the five year period ending 31 December 2003 were selected for review. Our review of the licence applications indicated the following:

- In 7 of the 10 applications the required information was provided which the Department found to be satisfactory.

  One of the 7 applications was for a company that was applying for numerous aquaculture site licences in connection with the business plan submitted. Our review indicated that the Department had difficulty connecting the business plan with the application and had to request additional information from the company. The Department indicated that the company subsequently provided the requested information which was found to be satisfactory. However, the Department was unable to locate this additional information at the time of our review and, therefore, could not demonstrate whether the company had the financial capability to carry out

additional aquaculture operations. This company was subsequently placed in receivership.

- In 1 of the 10 applications, the Department indicated it had waived its requirement for a business plan and granted a commercial scallop licence as a "hobby farm". As a result, we were unable to determine whether the applicant demonstrated technical and financial ability to carry out additional aquaculture operations. We note that the granting of this type of aquaculture licence is not consistent with the primary objective stated in the Aquaculture Strategic Plan because scallops are not considered a species with an opportunity for success. Aquaculture licences granted to operations such as this one place a strain on licence and inspection resources within the Department's Aquaculture Branch.

- In 1 of the 10 applications, the application was from a new company that had purchased the aquaculture operations of an existing company. The Department indicated this was a change in ownership and that a business plan was not required from the new applicant. However, we are concerned that the Department did not ensure the new applicant had the technical and financial capability to conduct aquaculture operations in a situation where it would appear important to do so. In addition, the Department has no policy that indicates a business plan is not required when there is a change in ownership. This company was subsequently placed in receivership.

- In 1 of 10 applications, the Department determined that projected cash flows and financial statements were required. We found that this information was not provided by the applicant. As a result, we were unable to determine whether the applicant clearly demonstrated the financial ability to carry out additional aquaculture operations.

(b) Renewal Licences

Aquaculture licences expire on 31 December each year. In order to continue operating an aquaculture facility, licensees are required to: complete a renewal application, pay a renewal fee, provide annual production statistics, comply with the terms and conditions of the expiring licence, and comply with the *Aquaculture Act* and *Regulations.*

2.18 Aquaculture Program

The Aquaculture Policy Manual outlines procedures the Department must follow to ensure licensees meet the requirements noted above prior to licence expiry on 31 December each year. These procedures include mailing a licence renewal application package to the licensee by 1 October each year. This is necessary to ensure that the licensee has adequate time to prepare and submit all the required documents associated with the licence renewal, and to give the Department sufficient time to carry out site compliance and site development review procedures in connection with the information.

Our review indicated that all 199 aquaculture licences expired on 31 December 2003 and all aquaculture sites continued to operate for a period of time during 2004 without a valid licence. There were 17 licences which were not renewed for the 2004 calendar year because the aquaculture facility was voluntarily closed by the licensee. The remaining 182 licences were not renewed for the 2004 calendar year by 31 December, as required. Our review of the 182 expired licences indicated the following:

- The Department mailed the licence renewal package to the licensee on 23 November 2003, not on 1 October 2003 as was required. As a result, only 27 of the 182 licensees submitted all the information necessary for their licence renewal by 31 December 2003. Most of the remaining 155 licensees provided the required information in January and February 2004.

- All 182 aquaculture sites were operating without a valid licence up to 24 February 2004 when the first licence renewal was completed by the Department. As of 20 October 2004, the Department completed 118 of 182 licence renewals with the majority of the 118 renewals occurring during the period May 2004 to July 2004. The remaining 64 expired licences have not been renewed by the Department and continue to operate without a valid licence. The Department indicated that, with the exception of a few cases, they have received all the required information from the 64 licensees.

Following the receipt of licence renewal information, the Department carries out procedures to determine whether aquaculture facilities associated with expired licence are in compliance with the *Aquaculture Act* and *Regulations.* The Department also carries out procedures to determine whether aquaculture sites are being adequately utilized and developed.

2.18 Aquaculture Program

The Department's site utilization policy states that where aquaculture *"site development or expansion does not occur within (2) years of the date the licence is issued and/or development does not occur in accordance with the approved business/development plan…the licensing committee may recommend to the minister that the licence not be renewed."*

We reviewed 30 licence renewals in connection with six aquaculture sites over the five year period 1999-2003. Our objective was to determine whether there was sufficient information in the files to support the compliance and utilization/development reviews required each year by the Department. Our review indicated the following:

(i) Compliance with the *Act* and *Regulations*

- For 28 of the 30 licence renewals, there was insufficient evidence on file to ensure the licensee was in compliance with the *Act* and *Regulations* before the licence was renewed.

- For only 2 of the 30 licence renewals did the Department indicate that the licensee was in compliance with the *Act* and *Regulations.*

(ii) Site utilization and development

- For 6 of the 30 licence renewals, there was no evidence in the file indicating that a review had been carried out to determine whether the licensee was utilizing/developing the site in accordance with the Department's site utilization policy.

- For 24 of the 30 licence renewals, the Department recommended licence renewal because the site was either being adequately utilized, or, there were satisfactory reasons to support less than adequate utilization. However, there was no documentation on file to support the Department's conclusion regarding site utilization, e.g. an assessment of the licensee's performance against objectives stated in the business, development or research plan, as would be required to properly assess compliance with the Department's site utilization policy.

Since 1999, the Department has reviewed 1,007 licence renewal applications and in only 10 instances has it refused to renew a licence because the licensee had failed to adequately utilize or develop the aquaculture site. Our review indicated the following:

- The Aquaculture policy manual states that Research and Development licences are normally renewable for a maximum of 5 years. After 5 years, it is generally expected that the licensee would have completed all necessary research and development work associated with the site and/or species and apply for the next classification of licence. Our review indicated that 4 of the 20, or 20% of research licences and 18 of the 73, or 25% of developmental licences as of 31 December 2003, had been renewed for a period longer than 5 years.

- There were a total of 43 companies holding 106 licences throughout the Province at 31 December 2003, with 37 companies holding 78 licences contributing approximately only 19% of total production.

Inadequately utilized and developed aquaculture sites place a strain on Departmental resources. We are concerned that the Department is not properly monitoring the utilization and development of licensed aquaculture sites and applying its site utilization policy as required.

2. Inspections

Aquaculture inspections are scheduled and carried out by inspectors in the Fisheries branch of the Department who also carry out inspection duties in connection with the wild fishery. Fisheries branch inspectors perform aquaculture inspections in accordance with the Department's Aquaculture Policy and Procedures Manual and the recently approved Aquaculture Inspection Program Procedures Manual. These manuals are designed to ensure aquaculture facilities comply with Department policies and procedures and the *Aquaculture Act.*

Aquaculture inspections in connection with fish containment are carried out by the Department's Salmonid Aquaculturist in accordance with a Federal/Provincial risk management approach to minimizing the escapement of fish. The Federal/Provincial Code of Containment targets areas of cage culture that have the greatest potential for escapement of fish. The Code of Containment requires regular inspections of all net, cage and surface mooring components, as well as periodic audits of cage systems and net testing procedures/results.

Fish health is the responsibility of the Department's Aquaculture Veterinary Specialist who carries out scheduled site visits to conduct disease surveillance. In connection with finfish, the Veterinary Specialist also carries out disease risk analysis and monitors bio-security measures undertaken to control risks that are identified. Aquaculture inspectors assist the Veterinary Specialist by performing basic procedures that determine fish health.

Specialized inspection activity carried out by the Department's Salmonid Aquaculturist and Aquaculture Veterinarian in the areas of fish containment and fish health are not part of this review.

(a) Inspection Strategy and Activity

The Aquaculture Policy and Procedures Manual requires that the Licensing and Inspections Division of the Aquaculture Branch prepare an annual inspection strategy document outlining *"plans for inspecting aquaculture sites during the coming year, and identify items and/or areas of special concern"*. Our review of inspection strategy documents for the five year period 1999 to 2003 indicated that the Department's primary inspection strategy is to ensure compliance with the *Aquaculture Act* and Department policies and procedures. In order to determine compliance, the Department requires that all existing aquaculture sites be inspected at least once annually. Follow-up inspections are required to ensure identified deficiencies are corrected within required timeframes.

Commencing in 2003 the Department began listing aquaculture sites not inspected in the previous year as a special concern and indicated that approximately 60% of all aquaculture sites received no inspection in 2002. We found that the inspection strategy documents were weak because there was no inspection schedule in place to ensure that all aquaculture sites were inspected annually in a manner that was representative of year round operations. In addition, the inspection strategy documents did not include a plan to address inspections as they relate to fish containment and fish health which are the primary responsibility of the Salmonid Aquaculturist and Aquaculture Veterinary Specialist, respectively.

We reviewed the files of 20 aquaculture sites for the 5 year period 1 January 1999 to 31 December 2003 to determine whether the files contained an aquaculture site inspection report indicating that an inspection had been carried out at least once each year as required. This represents approximately 10% of all aquaculture sites licensed each year. We found that for each of the five years

examined an average of 16 of 20 sites were not inspected at all during the year. Furthermore, for 12 of the 20 aquaculture sites, there was no evidence to indicate that any inspection was carried out in five years. The Department indicated that there was no inspection carried out in 125 of the 199, or 63% of the aquaculture sites in 2003. The Department has not achieved its aquaculture site inspection objectives for the five year period 1 January 1999 to 31 December 2003.

Furthermore, when inspections are carried out, they are not carried out in a manner that is representative of year round aquaculture operations. Discussions with Department officials indicated that aquaculture inspections are generally carried out during a four month period in late summer and early fall since inspectors have other inspection priorities in connection with the wild fishery. In addition, aquaculture inspections are considered impractical during the winter months due to many sites being frozen over. Department officials also indicated that it is not possible to inspect all aquaculture sites during the year because there are insufficient inspectors to carry out all the necessary inspections during a four month period.

Department officials indicated that, since our last review in 1998, fish health and containment controls have improved. However, we found that the general inspection program has deteriorated considerably since 1998, e.g. the Department does not ensure sites are properly located and marked and that shore fastened moorings are not being used.

(b) Inspection Report

The inspection report is not adequate to support the inspection activities for which the inspector is responsible as the report does not address all of the key areas that the inspector is responsible for assessing. As a result, we were unable to determine whether certain key responsibilities assigned to inspectors were being carried out. These responsibilities are clearly stated in Section 6(3) of the *Aquaculture Act* which states that the aquaculture inspector shall have regard to following when carrying out inspections:

- *"…the presence of disease or parasites and the likelihood of either disease or parasites developing;"*

  Department policy requires inspectors to assist the Aquaculture Veterinary Specialist by performing general procedures during inspections that would detect fish health issues at an aquaculture site. These procedures include examining fish behaviour, water quality and marine traffic. Our review of inspection reports during the five year period 1999 to 2003 indicated that the inspection report was amended in 2003, removing all references to fish health. Prior to this, we found that inspectors were not always completing the fish health section of the inspection report. As a result, we were not able to determine the results of any fish health inspection procedures which were being carried out.

- *"…whether the activities being carried on are authorized by and are in accordance with an aquaculture licence and whether there is compliance with the terms, conditions and provisions of the aquaculture licence, the* Aquaculture Act *and* Regulations*."*

  We found that the inspection report does not indicate whether important terms and conditions of the licence are being adhered to. We also found that the inspection report does not indicate whether there is compliance with the *Aquaculture Act* and *Regulations*. When the inspector signs the inspection report, there is no indication as to what he or she is attesting to. A conclusion should be made by the inspector on whether or not the aquaculture site is in compliance with the terms, conditions and provisions of the aquaculture licence and the A*quaculture Act* and *Regulations*.

There has been no improvement in this area since our last review.

(c) Shore Fastened Moorings

In 1998 the Department implemented a policy that disallowed the use of shore fastened moorings except in special cases. Shore fastened moorings are recognized as a safety hazard to boats and motor vehicles. The Department defines a shore fastened mooring to exist when an aquaculture facility uses mooring lines that are attached to the shore or anchored to the seabed at a depth of less than two (2) vertical metres below the low water mark.

2.18 Aquaculture Program



Shore Fastened Mooring

In March 1999 a fatal snowmobile accident occurred at an aquaculture site in Green Bay because a snowmobile struck a shore fastened mooring line. The operators of the aquaculture site were found guilty of conducting aquaculture without a licence. Following the fatality, the Department commenced inspecting aquaculture sites to ensure compliance with the shore fastened mooring policy.

In February 2000 another fatal snowmobile accident occurred at an aquaculture site in Notre Dame Bay. The Department indicated it was aware the site was operating with shore fastened moorings that were not in compliance with Department policy; however, attempts to ensure compliance were unsuccessful. Following this fatality, funding assistance was provided to help operators remove or modify shore fastened moorings that did not comply with Department policy.

The Department indicated that there are currently two aquaculture sites operating with shore fastened moorings and that since 1998 these two sites have repeatedly been identified as not complying with the shore fastened mooring policy. We note that the Department continues to renew the aquaculture licences in these circumstances.

In addition, the Department indicated that two aquaculture sites were ordered closed in February 2004 due to repeated instances of non-compliance with the shore fastened mooring policy. In July 2004, the Department wrote the site operators stating that they were aware the two sites were continuing to carry out aquaculture operations without a valid licence. In the letter, the Department indicated that they permitted the two sites to continue operations until 31 October 2004 with the understanding that all aquaculture gear was to be removed from the water as the product was harvested. At the time of our review in November 2004 the Department indicated that they did not know whether the shore fastened moorings and other aquaculture gear had been removed from these two aquaculture sites because of insufficient resources to carry out the necessary inspection. As a result, the Department is not able to properly monitor its shore fastened mooring policy.

The Department has indicated that they are unable to fully enforce their policy with respect to shore fastened moorings because they do not have the authority under the *Aquaculture Act* to remove shore fastened moorings in cases of non-compliance. The Department has indicated that legislative changes are currently being drafted to address this issue.

Recommendations

The Department should:

- *comply with the* Aquaculture Act *and* Regulations*;*
- *establish* Regulations *related to aquaculture development;*
- *reconcile production data recorded in its aquaculture licensing information system with the production data reported on its website;*
- *ensure that activities required to implement recommendations in the strategic plan are properly planned and carried out;*
- *work more closely with the Newfoundland Aquaculture Industry Association in the development of aquaculture in Newfoundland and Labrador;*

- *ensure that, in accordance with Departmental policy, new aquaculture licences are only issued when applicants clearly demonstrate they have the required technical and financial capability to sustain aquaculture operations;*

- *ensure aquaculture licences are renewed by 31 December each year;*

- *ensure that aquaculture sites are being utilized and developed in accordance with its site utilization policy before licences are renewed each year;*

- *inspect aquaculture sites to determine whether sites are in compliance with the* Aquaculture Act *and* Regulations *before licences are renewed each year;*

- *ensure aquaculture sites are inspected at least annually, as required by policy, to ensure compliance with the* Aquaculture Act *and* Regulations *and Departmental policy; and*

- *revise reports used by inspectors to clearly indicate whether aquaculture sites are complying with the requirements of the* Aquaculture Act *and* Regulations, *and Departmental policy.*

Government should consider the lack of remedy available to the Department in the Aquaculture Act *and* Regulations *regarding the use of unauthorized shore fastened moorings at aquaculture sites.*

Department's Response

Aquaculture Licensing and Inspection Program

Aquaculture License Renewals

The Department recognizes that the current licence renewal process means that all facilities are operating for a period of time without a new licence in place. Licencees are required to complete and return their licence renewal application by December 15th each year. Assuming that the renewals are submitted in a timely manner, this leaves a two week period available to process the renewals prior to the expiry of the existing licence. Currently, each renewal application is reviewed against the Department's files to determine compliance with legislation, policy and development plans. This and administrative aspects of the renewal process make it a certainty that renewals cannot be completed before the current licence has expired.

We are proposing amendments to the Aquaculture Act and Regulations *to be introduced in the near future will enable us to change the requirement that licences expire on December 31 of each year and allow the Minister to set alternate expiry date(s) of a licence. This will allow us to review the renewal process and make changes appropriate to address this issue. In consultation with industry, we will consider issuing multi year licenses, and/or staggering of renewal dates by species as means to address this administrative issue.*

Site Utilization

Utilization and development of aquaculture sites are reviewed, as part of the current renewal process; against the Department's site utilization policy, and plans submitted by the licencee as part of the initial application. Site development and utilization are often impacted by factors, primarily market conditions, and access to stock, which are beyond the control of the licencee. Current practice is to ensure adequate utilization of existing sites prior to issuing any new licences to a specific company. The department does take into consideration the challenges faced by a developing industry when reviewing development against submitted plans. In all cases, the licensee is required to explain reasons why the site has not been utilized, and the re-issuance of the license is subject to acceptance and rationale of the circumstances.

Aquaculture Site Inspections

The Department also recognizes the limitations of the current inspection program, and has taken positive steps to address this issue. In 2004, the department assigned one inspector, with full time responsibility for aquaculture inspections. This year we inspected sites on a priority basis, resulting in 115 of the 171 aquaculture sites being inspected.

These inspections occur during the period from May to December each year as inspections during the winter months are severely limited by ice and snow which, at many sites, would make it physically impossible to conduct an inspection.

Inspections related to navigation matters are also conducted by federal agencies. These complement provincial activities and address regulatory matters, many of which are safety related, for which the federal government has primary responsibility. Inspection information is shared between federal and provincial agencies.

In addition to the dedicated aquaculture inspector, the department, through its Aquaculture Veterinary Specialist, Salmonid Aquaculturist and other Aquaculture Branch staff, also plays an extensive role in ensuring fish health and containment issues are addressed. Each of the individuals noted is a designated aquaculture inspector and, due to their specialized expertise, has specific responsibilities related to the inspection mandate noted in the Aquaculture Act. *It is recognized that activities by these individuals may not be adequately documented to general licence files. The Department will address this deficiency and continue to work on improving the inspection program.*

Shore-fast Moorings

Amendments to the Aquaculture Act and Regulations *to be introduced in the near future will provide the Department with the appropriate regulatory tools to address the shore fastened mooring issue. These amendments will include a specific regulatory prohibition on shore fastened moorings and authority for the Department to remove such moorings if they are deemed to be an immediate public safety hazard. The relative hazard of a mooring that meets the definition of shore fastened varies considerably depending on its anchoring location. A mooring that extends above ground level (e.g. tied to a tree) is a serious public safety threat as evidenced by the tragedies of March 1999 and February 2000. The two sites identified still operating with shore fastened moorings do not contain moorings of the type involved in these accidents. They are moorings anchored at the low water mark and weighted to follow the bottom out to a suitable depth. They do, however, meet the definition of shore fastened and we've continued to work with the company to address them. Transport Canada, the regulatory agency responsible for navigation issues is also working with the company to address the matter. The moorings will be corrected as harvesting of the mussel lines occurs.*

The operator of two sites ordered closed was given permission to process mussels from the sites this year with the understanding that processing of product was in conjunction with gear removal required as part of the site closures. The sites were inspected in late November 2004. Gear and moorings are still present. It is our current understanding that the sites have been abandoned. We will be referring the matter to Transport Canada to address cleanup issues. As a navigation concern, Transport Canada has primary authority to remove gear from a site and recover costs from the licencee.

Production Statistics

Production data recorded by the licencing information system is not reconciled with data recorded on the web site since one records harvested product data and the other represents finished (processed) production data. The Department uses harvest data as a means of assessing individual licensees as well as providing this information to the federal government to be included in the national aquaculture statistics report. All provinces provide similar statistics for ease of comparison, i.e. total harvest weight and value as well as processed weight and value.

Compliance with Legislation

The Department has established policies to ensure that the industry is developing in a sustainable manner. The Branch has written, reviewed and continuously enforced policy documents related to specific management plans to ensure optimal resource utilization and sustainable development. These plans provide structure and direction to prevent overstocking, reduce the impact of escapes on the environment and maximize the marine resources. Industry compliance with these plans is mandatory through a Condition of License. As well, the Aquaculture Branch participates in at least 17 committees, boards and task groups that serve regulatory and development roles in aquaculture.

Strategic Plan

The Aquaculture Strategic Plan was commissioned by the NAIA with the support of both levels of government. The strategy has been the primary guiding document for aquaculture over the past three years and remains the basis of this departments programs and policies. The Department has completely adopted and furthered the approaches recommended by the strategy. The focus of staff, budgets and programming shifted completely to the development and continued commercialization of the four recommended species.

In addition, in consultation with the Newfoundland Aquaculture Industry Association (NAIA), a significant number of specific initiatives have either been completed directly by the Province or funded by the Province through federal / provincial agreements and the annual operating budget. All activities were directly consistent with the strategic recommendations of the Industry Strategic Plan including the areas of NAIA Core Support, Cost Reduction, Strategic Alliances and Market Development, Financing and Investment Support, Improvements to the Regulatory Environment, Human Resource Development, Extension Services, Research and Development, Grow-out and Expansion and the increase in Hatchery/Nursery and Processing Capability.

Cost Reduction

The Department has been heavily involved in this issue by establishing programs, in consultation with NAIA, to assist companies to evaluate and adopt technologies that would reduce costs through greater capacity or increased efficiencies and to develop employee skills to improve methods to reduce costs. The Province's Fish Health program focused on improving husbandry and stock health which reduces costs. Working with industry to reduce costs is a constant objective and programs are developed in consultation with the NAIA.

Debt Reduction

The Department committed to a review of the issue of industry debt owed to the province and, in consultation with the Department of Innovation, Trade and Rural Development, issued a letter to the Industry Association stating that DITRD would take the lead (as the financing Department) and review the issue on an individual basis as requested by individual companies. Seventy-five percent of the industry, representing all sectors, has taken advantage of the offer and met with DITRD officials.

Investment Prospecting

The Department has been actively working on attracting investment and created and implemented a campaign in 2003. The approach taken by the department, in consultation with DITRD, is designed to raise the profile of NL as the next and best destination for aquaculture development in North America.

Investment literature, highlighted cod and mussels as well as salmonids and indicated the opportunities for new site development, joint ventures and the proactive approach to aquaculture in the Province.

The Department has had good success with salmonids as a number of companies from outside the province have made substantial commitments to establishing operations. The Department plans to increase efforts in 2005.

Support Interaction with NAIA

Throughout the complete period of this audit, the Province either directly provided core support to NAIA or supported the federal Government to do so.

2.18 Aquaculture Program

Department staff has weekly contact with the Industry Association; the Minister meets regularly with the Executive Director and annually with the full board. The Department also ensures NAIA participation on committees / working groups relevant to industry development. All proposed policies, regulations as well as programming development or changes are completed in consultation with the NAIA.

We believe significant progress has been made in the delivery of aquaculture support programming in the past five years. My department is committed to continual improvement to our programs and service delivery and thank you for your comments.

2.18 Aquaculture Program