

Environmental Concerns: The Anti-Salmon Farming Lobby in British Columbia

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Introduction

“**Environmental Concerns**” in the title refers to the ubiquitous chant used by the critics of salmon farming in British Columbia. Their letters to the media and the opening paragraphs of their newsletters and other public relations material often begin with the sentence - “We have grave concerns about the effects of salmon farming on the environment, especially the use of...” now take your pick: Atlantic salmon, dangerous antibiotics, toxic chemicals, dangerous hormones...whatever.

“**Environmental Concerns**” also refers to the special interest groups opposed to salmon farming, as these really are “going concerns”. The anti-salmon farming movement has spawned (pardon the pun) a large group of critics each with something negative to say about the salmon farming industry. I venture to say that the anti-salmon farming industry has done better than the salmon farming industry in BC.

I will discuss the growth of the anti-salmon farming movement in British Columbia from 1985 up to the present, with reference to the recently completed Salmon Aquaculture Review and its outcome.

The message I want to deliver is that the anti-salmon farming lobby grew out of a fear by the commercial salmon fishing industry - a fear that they would be replaced by this new industry.

Due to the convergence of a number of factors between 1985 and 1989, a mythology with negative connotations developed regarding salmon farming which the industry was unable to effectively counter at the time.

In time, the public's perception of salmon farming became distorted as the special interest groups used this mythology to create a series of controversial issues or “concerns” which were manipulated to suit a number of agendas. These “concerns” were also used to force the provincial government to initiate a number of reviews.

The recently completed Salmon Aquaculture Review was, in fact, just another in a long series of reviews instigated by the salmon farming critics to prevent the industry from growing and taking its legitimate place in the BC economy.

Industry Evolution

The evolution of BC's salmon farming industry can be divided into four distinct phases - The Investigative Phase, 1970-84; The Entrepreneurial Phase, 1985-89; The Restructuring Phase, 1989-92; and The Maturing Phase, 1993-97.

The Investigative Phase, 1970-84

Salmon farming in BC began in 1972 with one farm in Sechart Inlet. As new farms appeared, they located primarily on the Sunshine Coast, north of Vancouver, and on the east coast of Vancouver Island.

See Figure 1: Map of Vancouver Island & Lower Mainland (not included in this file)

There were 5 farms by 1976 and 10 farms by 1984. Production went from 0 to 100 metric tonnes (mt) during this period, composed primarily of pan-sized coho and some chinook, which started to appear in the early 1980s.

Table 1. BC Salmon Farm Sites, Companies and Landed Production, 1972-1997

Year	# Farm sites	# Companies	Landed Production (mt)
1972	1	1	0
1973	2	2	n/a
1976	5	5	n/a
1984	10	10	100
1985	n/a	n/a	n/a
1986	82 *	60	400
1987	119 *	70	1,930
1988	125 *	102	6,600
1989	140 *	75	12,400
1990	135 *	52	13,500
1991	130 *	55	19,200
1992	128 *	36	20,000
1993	125 **	19	22,000
1994	121 **	17	23,700
1995	120 **	17	24,800
1996	122 **	16	26,700
1997	121 **	16	32,500

* total farm sites, including speculative tenures which were never developed.

** total farm sites, including 80-100 active and 25-45 fallow or undeveloped.

There was no government infrastructure to deal with the new industry, nor any industry support services to provide the trained human resources, capital, and biological and physical inputs. These salmon farmers were pioneers on a new frontier.

Federally, the Department of Fisheries and Oceans, and provincially, the Ministry of Crown Lands and the Ministry of Environment, became the reluctant overseers of salmon farming. Their failure to adopt appropriate aquaculture policies and developmental guidelines during this phase created serious impediments to the growth and responsible development of the industry in the mid-1980s.

This investigative phase can be characterized as a trial-and-error learning experience. The Coho and Chinook stocks were unproved as culture species. Salmon farming experience was limited or non-existent. There was little understanding of fish stocking density, nutrition, disease detection and treatment, fish husbandry, and fish farm management in general. Consequently, industry growth was slow.

In the early 1980s, the federal and provincial governments of the day started to encourage salmon farming as a new business opportunity for Canadians. Norwegian salmon farmers and investors were encouraged to visit BC and to apply for farm sites. Local entrepreneurs were attracted to the potential profits that salmon farming could produce. This led to the next phase of the industry's evolution.

The Entrepreneurial Phase, 1985-89

From 10 farms in 1984, the industry grew to 119 farms in 1987 and to 140 farms in 1989. Not all of these farm sites were active or developed, however. At its peak, the industry was comprised of 102 companies. Total industry production went from 100 mt in 1985 to 12,400 mt in 1989.

The government of the day had a "laissez-faire" attitude toward the industry. It failed to give the agencies involved the mandate to formulate appropriate regulatory tools and the agencies themselves did not take the initiative to develop a strategy or put regulatory tools into place.

A "gold rush" mentality blinded many investors and entrepreneurs to the realities of salmon farming. Existing farmers were still in a learning stage and unprepared for large volume production. Too few experienced biologists, farm managers and technicians were available to fill the growing number of jobs created by the boom in new companies. No domesticated strains of Coho or Chinook existed. Industry infrastructure was still inadequate. Public and private R&D was limited. Salmon feeds were still in development and feed mills were few.

The largest number of farms was located on the Sunshine Coast and Lower Mainland (47) with the next largest group being in the Campbell River / Desolation Sound region (32).

See Figure 1: Map of Vancouver Island & Lower Mainland (not included in this file)

The Sunshine Coast was preferred because farms were close to established business and transportation networks within proximity of Vancouver, a major commercial center. Labour was readily available. University and government research facilities could be readily accessed. However, the presence of farms in such a populated area created resource user conflicts.

Unlike the Atlantic salmon, Coho and Chinook were still unproved performers in farm situations. Their sensitivity to high-density containment caused stresses that resulted in disease outbreaks. Early sexual maturity presented management problems with respect to harvesting and marketing. Grading, as a means to deal with this problem, stressed the fish even more and only compounded problems.

Access to adequate supplies of eggs created a smolt supply problem. The insatiable demand resulted in the sale of poor quality smolts, leading to higher production costs because of poor growth and survival.

Diseases, mainly BKD, vibriosis and marine anemia, took large tolls on the Coho and Chinook during this period. Attempting to maximize returns on capital investment by holding fish at high densities only served to maximize stresses for the Pacific salmon, resulting in severe disease outbreaks. The industry averaged losses of 33% of production per year.

Lack of trained farm staff with skills in fish health and fish husbandry, combined with a severe shortage of experienced fish veterinarians, exacerbated the problems. Antibiotics were applied in feeds to stem the losses but were ineffective because sick fish stop eating.

In addition to diseases, the Sunshine Coast was prone to annual plankton blooms that killed the farmed salmon in great numbers. The large volumes of dead fish produced by the diseases and blooms created a

waste handling crisis and a negative public image for the industry. Salmon farmers were completely unprepared for the volumes of mortalities that occurred. Municipal landfills were used until public protests prevented access. Some farmers dumped dead fish into the ocean or buried them in private landfills. More public protests ensued.

It was the blooms that eventually caused salmon farmers to leave the Sunshine Coast, beginning in 1987 and accelerating through 1988-89. Most went north, to the Campbell River / Desolation Sound area while others went to the west coast of Vancouver Island, particularly Clayoquot Sound.

See Figure 1: Map of Vancouver Island & Lower Mainland (not included in this file)

In addition to the cooler summer water temperatures, the new areas were less populated, reducing the opportunity for user conflicts.

Ultimately, the industry could not make the Pacific salmon species fit into the Norwegian fish farming model that had worked so well for the Atlantics, at least not within the given financial cycle. The huge amounts of financial, biological, and physical resources consumed in the effort impaired the industry's growth and slowed its progress relative to other salmon farming areas of the world.

At the same time, many of the negative events of this period, such as the high losses to diseases, blooms, predators and escapes; the widespread use of antibiotics; the resource user conflicts, and all the associated bad press remained in the minds of many and continued to haunt the industry, even to the present day.

The Restructuring Phase, 1989-92

Salmon farming experienced significant growth worldwide during the latter half of the 1980s. Prices for salmon in the global market began to soften in the latter months of 1988 and continued to fall in 1989. The combined supply of salmon from farmed and wild sources was more than the market could absorb and prices fell sharply, dropping more than 30% worldwide.

The impact of the lower prices on the BC industry was especially severe because of its relative newness. The majority of operations brought in their first sizable harvests in 1989. Many were highly leveraged with debt financing and had high production costs associated with the start-up husbandry challenges of raising Coho and Chinook. With prices dropping 30-40%, many companies were unable to cover their costs of production and were forced into bankruptcy.

From approximately 75 operating salmon farming companies in August of 1989, the industry shrank to 52 in 1990 and to 36 by 1992.

The results of the industry's restructuring were an increase in foreign ownership, primarily Norwegian, and more vertical and horizontal integration. Ownership mix shifted from small independent operators to corporate enterprises which were better equipped to survive in the more competitive global salmon farming industry.

At the same time, the geographic distribution of the industry shifted from the Sechelt area to the Campbell River and Northern Vancouver Island regions.

Throughout the rationalization phase, salmon production continued to grow, from 12,400 tonnes in 1989 to 20,000 tonnes in 1992.

Due to the poor performance of the Pacific species, Atlantic salmon eggs were imported in 1986 but smolts were not produced in sufficient quantity from domestic broodstocks until 1989.

The industry shifted to Atlantics because of their superior growth, better feed conversion, and ease of husbandry. Some farms continued to refine their Chinook culture strategies but these operations relocated to the West Coast of Vancouver Island where conditions appeared to suit this species.

At this time, the large environmental groups began to wage a campaign against salmon farming, using much of the earlier negative publicity arising from between 1985 and 1988. Their ability to get media coverage and the salmon farming industry's seeming inability to counter the attacks left the public with the impression that salmon farming should be more tightly controlled.

The Maturing Phase, 1993-97

Emerging from the restructuring phase, stronger and leaner, the industry was poised to grow. The remaining companies, managed by knowledgeable and experienced staff, were focused on cost-effective production through careful husbandry and the application of sound agribusiness principles.

The trend to larger, vertically integrated companies continued. Declining from 36 to 19 operating companies in 1993, the industry was reduced to 16 companies by 1996, of which 6 produced 80% of total production. The number of fish farm sites remained fairly constant during most of this period at about 80-100.

Total industry production during this period leveled off at 22,000 tonnes in 1993, 23,700 tonnes in 1994, 24,800 tonnes in 1995, and 26,700 tonnes in 1996. Farmers continued to prefer culturing Atlantics due to the overall lower cost of production. The value of farmed salmon more than doubled that of the commercial salmon fishery in 1995 and farmed salmon became BC's largest agricultural export.

The industry continued to seek improvements in its production practices, both to be more competitive and to address environmental concerns.

High-energy salmon feeds accelerated fish growth and shortened the production cycle by 1-2 months. Improved feed conversion reduced waste and sedimentation below grow-out sites.

Diseases were much less of a problem due to better husbandry, and vaccination strategies drastically reduced the need for antibiotic treatment.

However, the industry stagnated because it could not get access to new sites. This was directly related to the activities of the anti-salmon farming lobby which had convinced politicians and some of the public that salmon farming was a serious threat to the marine environment.

It is the growth of the anti-salmon farming lobby and its impact on the industry that I will now discuss.

Anti-salmon Farming Movement

The anti-salmon farming lobby had its genesis in the years between 1985 and 1989. The initial opponents were residents of the Sunshine Coast. With the arrival of the large number of fish farms, conflicts developed between the residents and the farmers over noise, increased traffic, shooting of seals and birds, and other practices that acted as social irritants. Some residents felt that the salmon farms were ruining their property values by being located there.

As things progressed and the industry began to experience the huge losses from diseases and blooms, escapes from poor management and cage breakups during severe storms, and other bad PR such as the dumping of dead fish in public landfills, the media began to publish the more sensational stories. This was the public's first widespread introduction to salmon farming, and it was not pretty.

It was during this period that the commercial salmon fishing industry began to voice their concerns about the growth of salmon farming because of its perceived threat to their industry, which was already seeing the erosion of prices for wild fish in the market place. However, the global salmon market was undergoing

a fundamental change that the commercial fishing sector was powerless to deal with - the move from wild to farmed fish.

The fishing organizations started lobbying the government. They also took advantage of the media to relay their concerns to the public. Unfortunately, the salmon farmers did not counter these media campaigns, preferring to keep a low profile in hopes that everything would blow over. And with all the problems of just keeping their farms going, most farmers did not have the time or resources to deal with this new threat anyway.

Many of BC's aboriginal peoples opposed salmon farming because they felt slighted at not being consulted prior to the issuance of farm tenures by the government. There were also unresolved land claims issues at stake, which would gain greater prominence in the 1990s.

In response to concerted lobbying, the provincial government instituted a moratorium on the issuance of fish farm tenures lasting from October 1986 to March 1987. At the same time a Commission of Inquiry into Finfish Aquaculture was ordered. David Gillespie, a lawyer specializing in mediation and consensus building, was appointed to chair it. His report examined fish farming's effect on commercial fishery operations and markets, its effect on the environment and on wild fish stocks, government approval and monitoring procedures, and the involvement of local governments and interest groups in awarding of fish farm tenures.

Gillespie Recommendations

The Gillespie Report contained 52 broad recommendations covering:

- 1) Government support for the aquaculture industry;
- 2) Protection of the marine environment;
- 3) Aboriginal involvement;
- 4) Government approval systems;
- 5) Marketing and processing;
- 6) Resolution of user and siting conflicts; and
- 7) The need for better information and extension services.

Acting upon the recommendations of the Gillespie Commission, a number of government initiatives were undertaken to assess and manage the environmental effects of marine fish farming. These initiatives focused on prediction, prevention and mitigation of impacts through better site selection, environmental monitoring and development of acceptable farm management practices.

In 1988, a delegation of BC commercial fishermen visited Norway to observe the salmon farming industry there. Shortly afterwards, a report appeared - "Journey to the Future: The Report of the Suzuki Foundation Fact-Finding Tour on Fish Farming in Norway." This document became one of the primary sources of propaganda and misinformation that was used to manipulate public perception and gain access to politicians. It should be noted that it was funded by the T. Buck Suzuki Foundation, associated with the United Fishermen and Allied Workers Union (UFAWU), and not the David Suzuki Foundation.

Despite the many initiatives undertaken by the government, they continued to receive letters of concern from special interest groups regarding resource use planning, the tenure granting process, environmental safety and conflict resolution.

In response, BC Ombudsman, Stephen Owen, examined these issues and released his report - "Aquaculture and the Administration of Coastal Resources in British Columbia" in December of 1988.

Owen Recommendations

Owen had three major recommendations:

- 1) Enactment of a separate Aquaculture Act, or amendments to existing statutes to improve aquaculture administration;

- 2) A legislative framework for integrated management of coastal resources and activities;
- 3) Consensual dispute resolution techniques for the resolution of aquaculture related disputes.

By taking these steps to resolve the concerns about salmon farming, the provincial government implicitly recognized that salmon farming might be the most economically sustainable and environmentally benign use of the public resource.

The environmental movement began opposing salmon farming about 1989. Several environmental organizations that had established their presence in BC saw salmon farming as another issue to add to their fund-raising drives. Over the next several years, these environmental activists aligned themselves with the commercial fishing groups and aboriginal groups to form a vocal opposition to the growth of salmon farming in BC.

The industry's critics used the provincial election in 1991 to highlight their opposition. The New Democratic Party (NDP) made a campaign promise to stop the expansion of the salmon farming industry if elected. When they were successful in forming the new government, they fulfilled this promise by establishing an unofficial moratorium on the granting of new farm licenses, effectively blocking the industry from any growth into new areas.

A report released by the Ministry of Agriculture, Fisheries and Food in 1991 entitled - "Aquaculture Legislation in British Columbia: A Comparative Legal Analysis," revealed that salmon farming was far from being an unregulated activity in BC. The authors, who were lawyers with professional interests in maritime and fisheries law, stated that salmon farming was in fact over-regulated in light of their investigations.

In March of 1992, the Minister's Aquaculture Industry Advisory Council (MAIAC), which was created after the Gillespie Report, was given two tasks by the Minister of Agriculture, Fisheries & Food:

- 1) To provide direction to a consultant to complete a report on the salmon farming industry that would provide information and background on key issues, and
- 2) Based on the information from the report and other sources, to develop specific recommendations on needs for further research, policy clarification, and regulatory or procedural changes.

The ensuing report, titled "Review of Salmon Farming in British Columbia," was published in January 1993. The document assessed the status and prospects for growth of the salmon farming industry and identified and assessed critical biological, economic, social, and administrative issues associated with salmon farming. It also reviewed administrative and regulatory procedures with respect to the issues mentioned, and examined existing literature and recent research, and evaluated communication efforts by industry and government.

MAIAC Recommendations

Following review of the consultant's report, MAIAC made public its recommendations, which centered on:

- 1) Wild and farm fish interactions;
- 2) Lake cage culturing of farm fish;
- 3) Aboriginal involvement in salmon aquaculture;
- 4) Communications and education;
- 5) Clarification and coordination of various government policies;
- 6) Coastal zone management;
- 7) Environmental monitoring, research, compliance and enforcement;
- 8) Health and safety of wild and farm fish and farm workers;
- 9) Interactions with other coastal interests such as commercial fisheries interest.

Agency staff then reviewed the recommendations and developed an action plan to guide the government's response.

At about the same time, staff from the Department of Fisheries and Oceans (DFO), Ministry of Environment, Lands and Parks (MELP) and Ministry of Agriculture, Fisheries and Food (MAFF) completed

a discussion paper titled “Wild and Farmed Salmonid Interactions: Review of Potential Impacts and Recommended Action”. The document recommended strategies and mitigative measures resulting in research and monitoring activities being initiated.

Throughout 1993, MAFF was extensively involved in the preparation and review of the Vancouver Island Land Use Plan and other related initiatives, which had significant implications for the salmon farming sector in that it was recognized as a legitimate activity for specific coastal areas.

Late in 1993, approvals for new salmon farms and amendments to existing farms were delayed pending an internal government review precipitated by environmental concerns voiced by various interest groups.

By June 1994, the government had completed an assessment of interactions between wild and farmed fish, signed a Memorandum of Understanding (MOU) between the Province and the aboriginal peoples regarding management of aquaculture and aquatic resources in the area of the northeast coast of Vancouver Island, and given approval to the National Policy Goals for Canadian Aquaculture.

Finally, the government accepted the Vancouver Island Land Use Plan which included the designation of some of the aquatic areas within its boundaries as “Cultivation Use Areas,” essentially identifying aquaculture as a priority use in those areas.

Still, the salmon farming critics pressed the government for another industry review and the government obliged with the announcement in the spring of 1995 of an Action Plan for Provincial Salmon Aquaculture, which would include a Salmon Aquaculture Review.

An interesting sidebar to what was happening in BC is that in the summer of 1994, one of Canada’s leading polling companies, Angus Reid, published the results of a national survey about “Canadians and their Environment”. The Department of Fisheries and Oceans (DFO) had submitted several questions to establish a baseline reading of public opinion on the subject of aquaculture. Highlights of the survey revealed that: 69% of respondents were familiar with the concept of aquaculture; 72% were in favor of aquaculture; 69% agreed that aquaculture was an environmentally sound use of resources; 74% believed that aquaculture contributed to regional economic growth; and 76% felt that government should encourage aquaculture development in Canada.

The Salmon Aquaculture Review

In April 1995, the government placed a moratorium on the issuance of new farm tenures and announced an Action Plan for Provincial Salmon Aquaculture which identified the need for a definitive review of environmental issues and of provincial salmon aquaculture policies by the Environmental Assessment Office (EAO).

The terms of reference for the Salmon Aquaculture Review were developed through public consultation, involving groups from both the industry and its opponents and the public at large. It called for examination of five issues that had been central in the controversy about salmon farming:

- 1) Impacts of escaped farm salmon on wild stocks,
- 2) Disease in wild and farmed fish,
- 3) Environmental impacts of waste discharged from farms,
- 4) Impacts of farms on coastal mammals and other species, and
- 5) Siting of salmon farms.

The terms of reference also provided for a review of socioeconomic considerations in assessing the industry. During the review, it was agreed to include an assessment of alternative technologies to the net-cage system.

The EAO established a Technical Advisory Team (TAT) of experts to prepare comprehensive discussion papers and make recommendations on each of the five key issues. In addition, a Review Committee

comprised of volunteer representatives from a wide variety of interests was created to provide information, advice and comment to the TAT.

The Review Committee held 8 working sessions in several coastal communities in 1996 and 1997, providing the public an opportunity to comment and present submissions to the TAT. Aboriginal representatives participated on the Review Committee and met independently with the TAT as a caucus, submitting papers on aboriginal perspectives on salmon farming.

Once the TAT papers were completed, the EAO evaluated the economic, social and administrative implications of their recommendations and prepared its final report for submission to the government.

The review process had a difficult beginning as all sides took exception to the terms of reference and wrote letters of concern attacking various parts and making recommendations on how their perspective would be best represented. It was quickly evident that the SAR would have a difficult time dealing with the five major issues identified when all parties involved had their own agenda to further.

The commercial fishing groups wanted to stop the salmon farmers from growing by presenting concerns that the industry was not sustainable, that it spread diseases to wild stocks, that the Atlantic salmon threatened Pacific species, and that fish farms polluted the marine environment.

The sport fishing groups shared similar concerns with the commercial fishing groups.

The aboriginal groups wanted a moratorium on the issuance of new tenures until all land claims negotiations in contested areas were settled. One of the goals of aboriginal groups is to gain control over freshwater and marine resources and opposition to salmon farming is a key element in their strategy to win these concessions from the government.

The environmental groups wanted to keep the public's attention focused on salmon farming, as it was an important fund-raising issue. One should be aware that environmental activism is an industry in BC. By aligning with other salmon farming opponents, such as commercial fishing groups and aboriginal groups, they were able to enhance their credibility. The most controversial tactic by this group was the strategic release of the report funded by the David Suzuki Foundation - "NET LOSS: The Salmon Netcage Industry in British Columbia" - prior to the start of the public meetings. This document gathered widespread media coverage and was quoted and debated extensively during the review.

The salmon farming industry wanted to settle once and for all, the many negative perceptions that had been allowed to go unchallenged for so many years. It was believed that science would support the industry's position and that this review may well be the opportunity to put the anti-salmon farming rhetoric to rest. The BC Salmon Farmers Association issued their rebuttal to the Suzuki Report in January 1977 with a document called - "NET GAIN: The Salmon Farming Industry in BC."

As the Review approached its conclusion in the summer of 1997, the anti-salmon farming lobby increased its profile by planting news articles, or rather "horror stories", in the major newspapers. The most infamous was the ad placed by the David Suzuki Foundation - "Is Your Salmon Dinner Laced With Drugs" - which indicated to what extremes the critics were prepared to go in their campaign to stop salmon farming.

The Review's Outcome

The Final Report of the Salmon Aquaculture Review (SAR) was presented to the BC government at the end of August 1997 and is available at the BC Environmental Assessment Office Web site: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_project_home_20.html in [EAO Generated Documents](#)

This report, 1,800 pages in length and containing 49 recommendations, is the most extensive review of salmon farming issues in BC to date. It is beyond the scope of this article to deal with it in any way except to briefly relate the general conclusions.

General Conclusions

The Technical Advisory Team concluded that salmon farming in BC, as presently practiced and at current production levels, presents a low overall risk to the environment.

However, the general finding was tempered by certain reservations which noted the need for more protective measures regarding localized impacts on benthic organisms, shellfish populations and marine mammals. It also noted the need for more monitoring and research in areas such as interactions of escaped farmed salmon with wild populations, identification and control of disease and disease pathogens, potential for disease transfer and impacts from antibiotic residues, and effects of waste discharges on water quality and seabed life.

Acknowledging that science rarely has the ability to reach definitive conclusions but that government still needs to make land and resource management decisions, it was stated that by using a variety of approaches including preventative management, adaptive management, and performance-based standards, it was possible for government to manage risks and still serve the public interest.

Regarding salmon farming, this means reducing risk by setting high standards for farm operations based on the best available knowledge, and rigorously enforcing the implementation of those standards. It also means that industry be prepared to alter management practices over time to take account of increased understanding of risk and different means of reducing it.

What does it all mean?

The government has been reviewing the Final Report and discussing the recommendations since last August. An announcement is expected shortly.

What is the probable direction to be taken by the government?

The moratorium on new salmon farm tenures will be lifted and the industry will be allowed to grow at a modest 8% per year.

New monitoring programs will be instituted and data collected and compiled in data bases of the federal and provincial regulatory agencies.

As the industry grows, funds will become available for R&D. Some funds will be used to address the issues of concern voiced by the industry's critics, while other funds will be targeted to technical innovation and alternative species development. The industry will continue to focus on reducing production costs while striving to produce the best product it can.

Where do we go from here?

Given a rational atmosphere, the industry expects to grow and provide economic benefits in coastal communities in need of diversified economies. The aquaculture service sector will grow in response and many opportunities for local businesses will be created. Processing plants for farmed fish will expand in size and employ more people. New plants will be built in areas where salmon farms will be allowed to expand, such as the mainland Central Coast, north of Port Hardy. Farmed salmon will grow in volume and in its contribution to the provincial economy.

See Figure 2: Map of the BC Coast (not included in this file)

It should be noted that salmon farm tenures currently comprise < 2 % of all aquatic land tenures in BC and that production occurs on 200 ha. of area, a mere 0.025% of the marine coastal nearshore area. The total area of salmon farm tenures is 1,200 ha., an insignificant 0.15% of the nearshore area.

Table 2. Salmon Farm Tenures in Area and as a Per Cent of the Marine Coastal Nearshore Area

	Area (ha)	% Marine Coastal Nearshore Area *
Active Farm Tenures	200 ^a	0.025
Total Farm Tenures	1,200 ^b	0.15

* Coastal nearshore is defined as 27,200 km coastline x 300 m out from shore, totaling 816,000 ha.

^a Area utilized by net-cages only, actual production area.

^b Area of tenures, including net-cages and surrounding waters.

Source: *BC Ministry of Agriculture, Fisheries and Food*

As the map in Figure 2 indicates, the area utilized by salmon farmers is extremely small in relation to the total coastline of BC. The opposition to salmon farming in BC is out of all proportion to its size.

What of the anti-salmon farming lobby?

The anti-salmon farming lobby is composed of people with an interest in keeping things as they are, or were, or who see their opposition as a means to expedite another agenda.

In the case of the commercial fishermen, it reflects an inability to come to terms with a shifting paradigm - the movement away from fishing and towards fish farming. Much of their opposition is based upon fear. This is a natural response to the unknown. But it is not a rational one.

The rhetoric of the salmon farming critics is typical fear-mongering, the last resort of those without a vision for the future. So they use misinformation to manipulate public opinion, in hopes that the "concerned citizen" will do the right thing and join their cause.

I would like to close with a quote by Alston Chase from his book - *In a Dark Wood: The fight over forests and the rising tyranny of ecology* -

"When the search for truth is confused with political advocacy, the pursuit of knowledge is reduced to the quest for power."

This is the situation that we are dealing with in British Columbia today.