

Aquastats

2000

Ontario Aquacultural Production in 2000

UNIVERSITY
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INDUSTRY SNAPSHOT 2000

Major Species Produced	- rainbow trout
Minor Species Produced	- tilapia, Arctic charr, brook trout, smallmouth and largemouth bass, cyprinid baitfish
Total Trout Production	- 4,000 tonnes
Farm-gate Value of Trout	- \$16.5 million Cdn.
Economic Contribution	- \$60 - 65 million Cdn.
Job Creation	- 230 person-years of direct and 250 person-years of indirect employment
Projected Production of Trout	- 4,100 tonnes in the year 2001

SUMMARY

In 2000, the Ontario aquaculture industry produced approximately 4,000 tonnes (8.8 million pounds) of rainbow trout primarily for human consumption, with an estimated farm-gate, wholesale value of \$16.5 million. Limited quantities of tilapia, Arctic charr, brook trout, smallmouth and largemouth bass, and walleye were also produced. The industry generated approximately 230 person-years of direct employment plus another 250 person-years of indirect employment. The total economic contribution of the food aquaculture industry to Ontario's private sector economy is estimated at \$60 to \$65 million. We predict that annual production of rainbow trout for human consumption should exceed 4,100 tonnes in 2001. Tilapia and Arctic charr output is expected to rise to approximately 300 tonnes next year from the current levels of 200 tonnes.

This factsheet summarizes data collected through our ongoing annual surveys of Ontario aquaculture production conducted since 1988¹. We present data to quantify the production output, economic value and employment generated by the food-fish sector of the Ontario aquaculture industry. Other important components of Ontario's aquaculture industry also exist, such as pond stocking, recreational fee-fishing, baitfish farming and the substantial aquarium-fish trade, but these are not included in our surveys due to the significant difficulty in collecting data from these sectors.

ANNUAL PRODUCTION

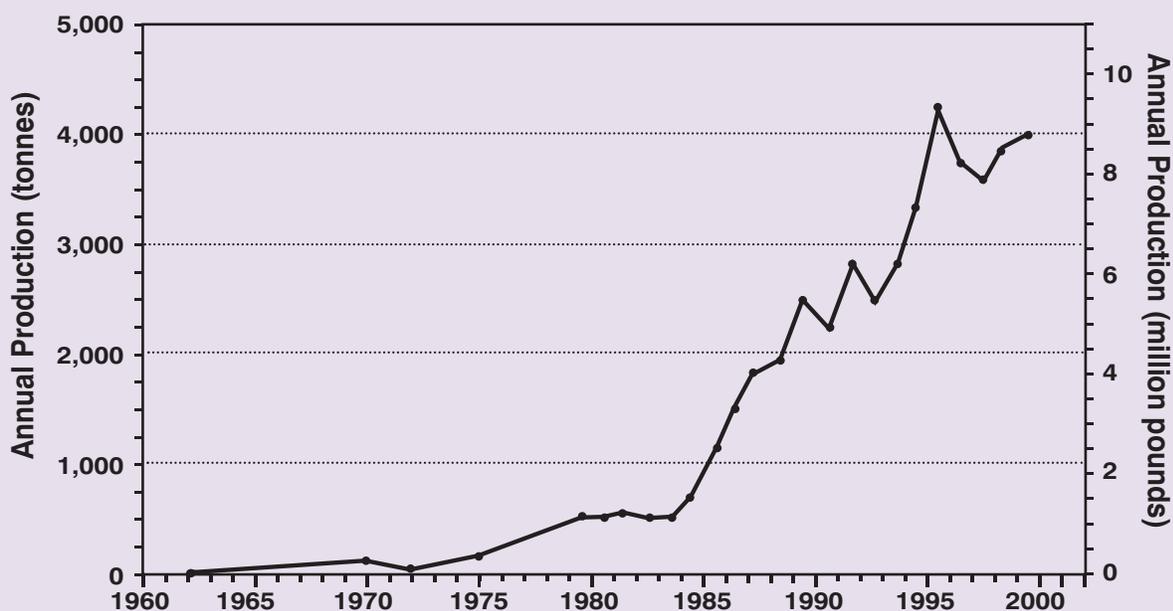
A total of 193 private-sector fish production facilities were identified from in-house records. Sixty-nine facilities were surveyed between March and October 2001. These facilities were selected to include only those farms believed to produce more than 5,000 kg or \$10,000 of sales per year. Thirty-two (46%) facilities returned their questionnaires, although not all contained complete information. Responses from these surveys were combined with other quantitative and qualitative information obtained from farm owners and service providers to establish the estimates reported here.



A cage aquaculture farm in Georgian Bay, Lake Huron.

R.D. MOCCIA

Figure 1. Ontario trout production from 1962 until 2000



With all data available we estimated that in 2000, Ontario fish farms produced 4,000 tonnes (8.82 million pounds) of rainbow trout, primarily for human consumption (Figure 1). This is a 4 % increase over the 3,850 tonnes produced in 1999. Reported production accounted for 1,808 tonnes (45 %). Lake-based cage production continues to dominate other land-based trout production systems, accounting for 3,074 tonnes, or approximately 77 % of the total provincial production of fish for human food.

ECONOMIC VALUE

Twenty-one farms, accounting for 1,808 tonnes (45 %) reported data on wholesale and retail price structure of product sold. The total farm-gate, wholesale value of the 4,000 tonnes produced was thus estimated to be \$16.5 million. The reported farm-gate price of trout less than one pound averaged \$2.77/lb (\$6.10/kg); 1 to 2 ½ lbs. trout averaged \$1.72/lb (\$3.79/kg); and trout over 2 ½ lbs. averaged \$1.82/lb (\$4.00 /kg).

JOB CREATION

In 2000, the Ontario aquaculture industry is estimated to have generated a total of 230 person-years of direct, on-farm employment. This consisted of 164 person-years of

full-time employment (40 hours per week for 12 months) and 66 person years of part-time employment. Indirect employment is conservatively estimated at 250 person-years.

SITUATION OUTLOOK

Cage-aquaculture production of trout is expected to remain steady in 2001, with some potential for growth depending on the acquisition of licences pending for a few proposed new facilities. By 2002, a 10 % increase in cage-production is expected as several existing farms are projecting expansion and should reach their full capacity by the end of this year. Tilapia output is expected to reach 200 tonnes in 2001 and those involved are guardedly optimistic about further growth over the next few years. Unfortunately, and in spite of its many attributes as a candidate species for Ontario, Arctic charr production remains low, with only a few farms involved. Certain technical constraints and legislative pressures continue to affect the development of charr culture in Ontario.

Issues Affecting Sector Growth

Ontario's aquacultural production of food-fish exhibited only a nominal growth of 4% in the year 2000

compared to 1999. This was due to a wide variety of complex factors. These factors include:

- legislative and regulatory issues,
- environmental challenges,
- marketplace volatility,
- international competition primarily from the salmon industry,
- continued negative reports in the media concerning the environmental and food safety impacts of farmed fish,
- increasing costs of feed, labour and energy etc.

In concert, these pressures, as well as others, have led to a marginal profitability for many of our fish farmers which has constrained the sector's growth.

Many of these challenges have led, either directly or indirectly, to various initiatives by government to implement reform in a number of legislative Acts of law used to regulate the industry. The provincial Water Resources Act, Environmental Protection Act, Environmental Assessment Act, and the Fish and Wildlife Conservation Act in particular, have all undergone recent changes in interpretation or application which have effectively slowed the industry's growth. Furthermore, other Federal Acts have become increasingly important in Ontario, and still other Acts are being proposed such as Ontario's Nutrient Management Act and Food Safety legislation, which will impact aquaculture. The result of all this reform is that there is significant time and resources required from this small agrisector to be effectively represented on the numerous 'working groups' involved with these issues. While this representation is largely a positive thing, it has diverted energy away from other industry initiatives which would have enhanced the markets for our products and enabled more growth. So regulatory and legislative issues continue to dominate the activities of the aquaculture sector.

Competition from other food-producing sectors has also impacted Ontario's aquaculture growth. World salmon production has evolved to the point where it is now traded as a commodity in many markets. The cost of production of salmon has continued to decline in recent years, largely through increased efficiencies in that sector, leading to a retail price which is often at, or below, that for farmed trout. The poultry industry also

continues to challenge all other meat-producing sectors for the consumer's dollar by offering a very wide variety of high quality products at an affordable price. Indeed, farmed trout is often one of the more expensive premium foods on a per kilogram basis at the retail grocery store level. Short shelf-life of fish products and low-level awareness by many consumers for proper handling and food preparation techniques also reduces the competitive 'edge' of fish in the marketplace. This situation is not unique to Ontario aquaculture, but these factors have slowed the expansion of our provincial industry.



Harvesting fish from cages near Manitoulin Island.

As with most other forms of livestock agriculture in Ontario, the aquaculture sector is facing escalating challenges and confrontation from many non-farming groups. These include various environmental lobby groups, cottager's and tourism associations, animal welfare societies and other users of the province's water and land resources. The result has been a diversion of time and energy by both individual farmers and the Ontario Aquaculture Association, the main industry lobby group, in dealing with these issues.

Every form of animal agriculture in Canada has endured its fair share of negative media coverage in recent years, but aquaculture must surely lead the pack in the amount of coverage given to opponents of the industry. From environmental impacts, food safety concerns, antimicrobial use issues, genetic engineering and not-in-my-backyard (NIMBY) confrontations, aquaculture receives more negative than positive press these days, and this challenges even the most passionate fish farmer's desire to expand in this atmosphere. The



Retail promotion of seafood provides growth opportunities for Ontario's aquaculture industry.

paradox for Ontario's aquaculture sector is that in reality it has very few, and only minor, environmental problems, and there are no genetically engineered fish used here or anywhere else in Canada for that matter. Furthermore, antimicrobial use in Ontario is very low, and then only for therapeutic purposes, and never for prophylactic treatment or as a growth promotant tool. And finally, many of the NIMBY confrontations are based on problems with poor communication and unfounded fears of the impacts of fish farms to nearby neighbours. So although much of the media coverage is negative towards aquaculture and dissuades investor confidence, the true severity of the issues bear little resemblance to the image developed in the minds of the general public who read the popular press. This is clearly an area where the industry must take more leadership in presenting the other 'positive' face of the industry.

Ontario's Aquaculture Assets

Ontario has many positive attributes which are complimentary to the expansion of the aquaculture industry. For example, there is a well developed infrastructure for the supply of various goods and

services to the industry, as well as a high level of technical competence of our existing farmers and an acute regard for environmental protection by these individuals. There are also ample land and water resources with which to expand the industry in a sustainable manner, and a large, diverse and affluent domestic population base which has been under-exploited as a market opportunity. Farmed fish, and trout in particular, is a high quality food item and its consumption is increasingly associated with numerous health benefits. Enhanced visual and intellectual acuity, plus mitigation of cardiovascular disease, diabetes, depression and Alzheimers disease are just a few of the benefits of fish consumption which are emerging in the medical literature. These benefits provide opportunities to improve the market image of farmed trout which should lead to increased consumption patterns enabling more rapid industry growth. Finally, Ontario is also fortunate to have a well-established research and educational system which can support various aspects of the industry and help contribute to its expansion.

FUTURE SUMMARY

In summary, Ontario's aquaculture industry continues to expand slowly each year but languishes in an atmosphere of negative public image, regulatory constraints and marginal profitability. Although it possesses many of the essential ingredients which should enable sustainable growth, there are still many active challenges to the future success of Ontario aquaculture. However, we remain optimistic about the potential opportunities for the aquaculture sector here, and recognize that the many issues confronting the industry are simply part of the normal growing pains encountered by agribusiness in the complex society in which we live today.



- 1 Moccia, R.D. and D.J. Bevan.
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Aquastats-1990 (FS91-050); Aquastats-1991 (FS92-150);
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Aquastats-1997 (FS98-025); Aquastats-1998 (FS99-002);
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