

**Maintenance of Ontario's Aquaculture Statistics Program:
AQUASTATS**

Final Report submitted to:

Ontario Ministry of Natural Resources

Submitted by:

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Aquaculture Centre



7th April 2014

Introduction

The primary objective of this project was to conduct a survey of the geographical distribution and production output of commercial aquaculture operations in Ontario for the calendar year 2013, in order to maintain our well-established industry database which has been under development since 1988. This database is utilized on an on-going basis to evaluate the performance characteristics of the industry, with the ultimate goal of assisting with the orderly development of aquaculture in this province. The information collected provides the content for the ongoing factsheet series AQUASTATS – Ontario Aquacultural Production Statistics. OMNR will use the data to support the Canadian Council of Fisheries and Aquaculture Ministers (CCFAM) aquaculture development initiatives. More specifically, the data will support the Aquaculture Sustainability Reporting Initiative (ASRI) led by Fisheries and Oceans Canada (DFO) to report to Canadians and Ontarians on progress made toward the shared objective to set the conditions for an aquaculture sector that is environmentally sound, socially responsible and economically competitive. Additionally, some of the compiled information will be forwarded to Statistics Canada as a part of the national aquacultural statistics summary.

Methods

A survey questionnaire has been developed to collect information on:

- type of facility
- species raised
- employment
- annual production
- value of production

The survey frame was determined from previous surveys and knowledge of the industry participants. The frame was divided into two sections based upon expected scale of production. Facilities that were expected to produce more than approximately 5,000 kg or \$10,000 of sales per year were sent a detailed questionnaire (Long Format Questionnaire). All others were sent a simplified version (Short Format Questionnaire). A total of 154 surveys were distributed on Jan 16th 2014 (see Appendix I – III).
2) The OMNR Aquaculture Licence provides additional data with respect to the DFO Provincial Aggregate Estimates:

- number of licences and leases by environment and species
- area under lease by environment and species
- number of aquaculture companies by activity and species
- fish escapes by cause of escape

INDUSTRY SNAPSHOT 2013

Major Species Produced	- rainbow trout
Minor Species Produced	- Arctic charr, brook trout, smallmouth & largemouth bass cyprinid baitfish and tilapia
Total Rainbow Trout Production	- 3,580 tonnes
Total Other Fish Production	- 210 tonnes
Farm-gate Value of Rainbow Trout	- \$18.0 million
Farm-gate Value of Other Fish	- \$1.2 million
Economic Contribution	- \$60 million
Job Creation	- 172 person-years direct and - 150 person-years indirect employment
Projected Production of Rainbow Trout	- approximately 4,100 tonnes in 2014

Results

In 2013, we estimate that Ontario fish farms produced 3,580 tonnes (7.89 million pounds) of rainbow trout, primarily for human consumption. This is a 3.2% decrease from the 3,700 tonnes produced in 2012. Survey questionnaires were received from 47% of the facilities surveyed accounting for 95% of the total production. Estimates for non-reporting facilities were based on prior surveys and personal experience.

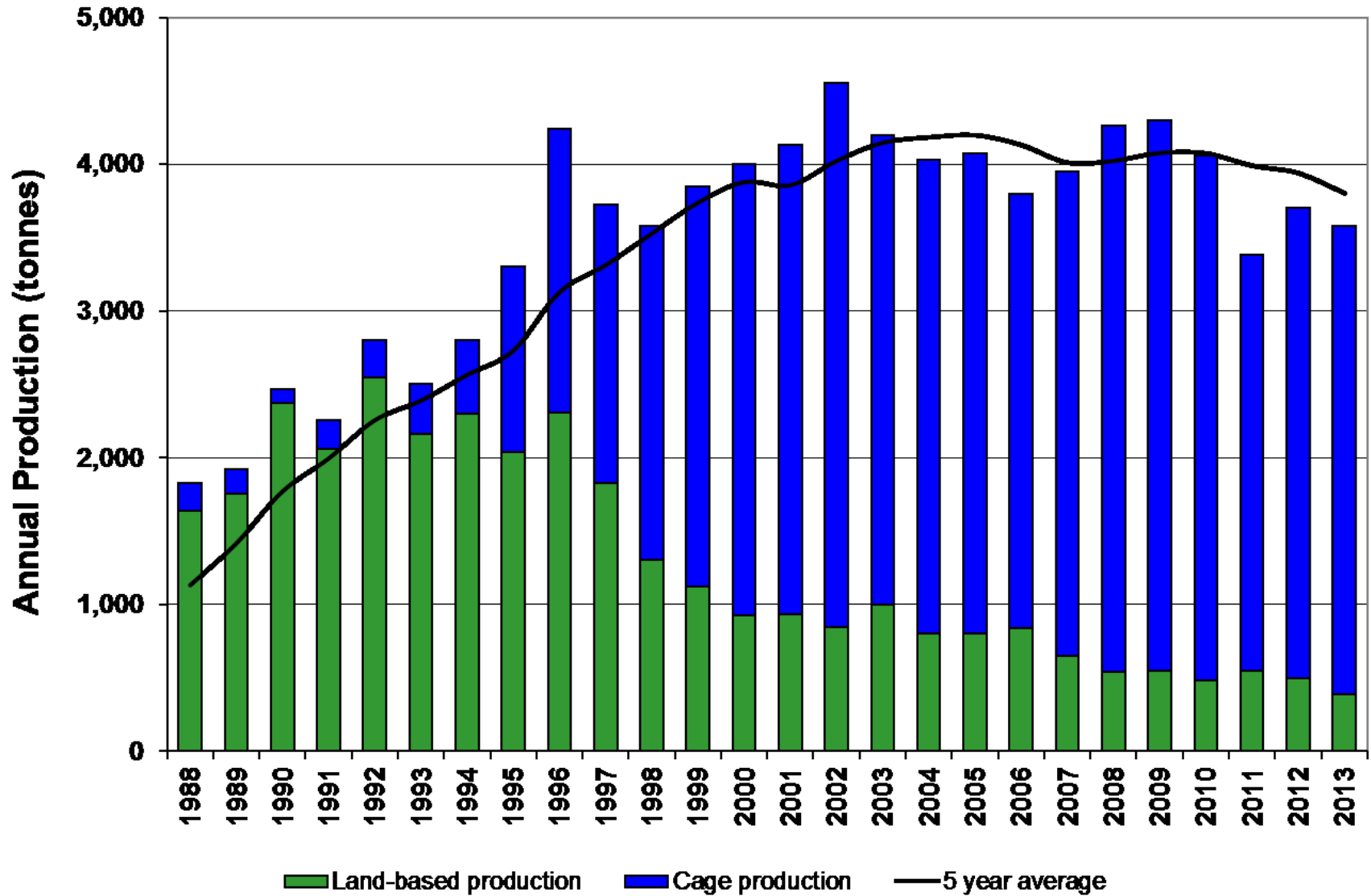
Lake-based cage production of rainbow trout in the Georgian Bay area continues to dominate other land-based production systems, accounting for 89% of the total production (Figure 1). Land-based production of Arctic charr and tilapia is limited to a few facilities in southern Ontario. The production of brook trout, bass and other species is primarily geared towards pond stocking and recreational purposes. These operations provide an important diversity to the industry although quantifiable information is scarce. Our records suggest that approximately 55-60 facilities culture Arctic charr, tilapia, brook trout, bass and other species, with an estimated total production of 210 tonnes in 2013.

The total farm-gate value of the 3,580 tonnes of rainbow trout produced is estimated to be \$18.0 million, with an average price of \$2.28/lb (\$5.02/kg). The sale of Arctic charr, tilapia, brook trout, bass and other fish species is estimated to be an additional \$1.2 million. More than 40 facilities are involved with pond stocking, typically rainbow trout, brook trout and bass. The value of this aquaculture sector is conservatively estimated to be \$1.5 million annually.

In 2013, the Ontario aquaculture industry is estimated to have generated a total of 172 person-years of direct, on-farm employment. This consisted of 107 person-years of full-time employment (40 hours per week for 12 months) and 65 person years of part-time employment. Indirect employment is conservatively estimated at 150 person-years.

The total annual contribution that aquaculture makes to the Ontario economy is estimated to be \$60 million, with additional economic value realised via the recreational and aquaria trade.

Figure 1 Comparison of Ontario land-based and cage aquaculture between 1988 and 2013



Appendix I. AQUASTATS Survey Introduction Letter



ONTARIO AGRICULTURAL COLLEGE
Department of Animal and Poultry Science

January 13th 2014

Ontario Aquaculture Statistics Survey - 2013

Dear Producer,

This is our 24th **AQUASTATS** survey of fish production in Ontario, made possible with a lot of support from you, the producer.

Over these 20+ years **Ontario aquaculture has evolved into a valuable component of the economy**. There have been several major milestones over this period. Open-water cage culture is now the dominant production method, the end product is primarily boneless fillets, several industry associations have evolved and legislative issues continue to dominate expansion opportunities.

This year we need your assistance once again. The enclosed questionnaire addresses four main areas: 1) quantity produced, 2) value of production, 3) employment and 4) structure of the industry. **Please report information for the calendar year January 1st to December 31st, 2013.**

If you feel that the questions do not apply to your situation, please return the questionnaire and indicate the reasons. We need to have all the questionnaires returned - either complete or incomplete to establish a true picture of the industry today. If you have any questions or comments about the questionnaire, please do not hesitate to contact us. **Please return the questionnaire before February 14th 2014.**

As previously, **all information will be treated in the strictest of confidence** and only composite industry statistics will be released.

Please accept our thanks for assisting us with this ongoing project.

Yours truly,

A handwritten signature in black ink, appearing to read "R. Moccia".

Richard D. Moccia
Professor
Tel. 519-824-4120 ext. 56216
Email: rmoccia@uoguelph.ca

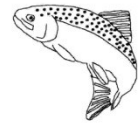
A handwritten signature in black ink, appearing to read "David J. Bevan".

David J. Bevan
Research Assistant
Tel. 519-824-4120 ext. 52689
Email: dbevan@uoguelph.ca

Appendix II. AQUASTATS Questionnaire (Long Format)

AQUACULTURE CENTRE

University of Guelph
Guelph, Ontario N1G 2W1



ONTARIO AQUACULTURE SURVEY

January 1st to December 31st, 2013

1. **YEAR BUSINESS STARTED:** ID Number

2. **FEE-FISHING PRESERVE - exclusively:** Yes [] No []

3. **EMPLOYMENT:** 2013 (2014)

a. Full-time person-year(s)

b. Part-time person-year(s)

4. **SPECIES RAISED:**

1. Rainbow trout [] 3. Arctic charr [] 5. Cyprinid bait-fish []

2. Brook trout [] 4. Tilapia [] 6. Other

	Number Sold	Selling Price (\$/1000)	Total Sales
5. EGGS SOLD	\$
6. FRY, UNDER 2 inches SOLD	\$
7. FINGERLINGS, 2 - 6 inches SOLD	Not applicable	\$

8. MARKET FISH PRODUCTION	2013	(2014)	lbs	kg	No.
8.1 10 - 16 oz (live weight)	[]	[]	[]
8.2 1 - 2½ lbs (live weight)	[]	[]	[]
8.3 Over 2½ lbs (live weight)	[]	[]	[]

9. MARKET FISH VALUE	Selling Price		\$/lb	\$/kg	Total Sales
	Ave.	Min.				Max.
9.1 10 - 16 oz (live weight)	[]	[]	\$
9.2 1 - 2½ lbs (live weight)	[]	[]	\$
9.3 Over 2½ lbs (live weight)	[]	[]	\$

10. **SUMMARY OF PRODUCTION AND SALES** - do NOT include sales of eggs, fry and fingerlings

	lbs	kg
10.1 Total Weight of 'Market Fish' Rainbow Trout Sold	[]	[]
10.2 Total Value of 'Market Fish' Rainbow Trout Sold	\$	CONTINUED OVER

The Aquaculture Centre is partly funded by the Ontario Ministry of Agriculture and Food

ONLY COMPLETE QUESTIONS 11 TO 16 IF PRODUCING FISH OTHER THAN RAINBOW TROUT

2013 PRODUCTION and SALES of OTHER SPECIES

SPECIES:

	Number Sold	Selling Price \$/ 1000	Total Sales
11. EGGS SOLD	\$
12. FRY, UNDER 2 INCHES SOLD	\$
13. FINGERLINGS, 2 - 6 INCHES SOLD	Not applicable	\$

14. MARKET FISH PRODUCTION		2013	(2014)	lbs	kg	No.
14.1	10 - 16 oz (live weight)	.....	.....	[ ]	[ ]	[ ]
14.2	1 - 2½ lbs (live weight)	.....	.....	[ ]	[ ]	[ ]
14.3	Over 2½ lbs (live weight)	.....	.....	[ ]	[ ]	[ ]

15. MARKET FISH VALUE		Selling Price					
		Ave.	Min.	Max.	\$/lb	\$/kg	Total Sales
15.1	10 - 16 oz (live weight)	.....	.....	.....	[ ]	[ ]	\$ .....
15.2	1 - 2½ lbs (live weight)	.....	.....	.....	[ ]	[ ]	\$ .....
15.3	Over 2½ lbs (live weight)	.....	.....	.....	[ ]	[ ]	\$ .....

16. SUMMARY OF PRODUCTION AND SALES - do NOT include sales of eggs, fry and fingerlings

16.1	Total Weight of 'Market Fish' Sold	.....	lbs	kg	[] []
16.2	Total Value of 'Market Fish' Sold	\$			

COMMENTS:

.....

"I authorize and consent to the disclosure and use of the information below to the University of Guelph, Aquaculture Centre only for the purpose of general analysis on an aggregate basis as long as individual confidentiality is maintained."

Signature Date

Appendix III. AQUASTATS Questionnaire (Short Format)

AQUACULTURE CENTRE

University of Guelph
 Guelph, Ontario N1G 2W1
 Tel: (519) 824-4120 Ext 52689
 Fax: 519-837-8867

Ontario Aquaculture Survey: 2013

NAME: LAST, First

Company

Address

City

Province

Postal code

Farm Statistics

1. Facility Type	2. Species Raised
Hatchery <input type="checkbox"/>	Rainbow trout <input type="checkbox"/>
Stocking <input type="checkbox"/>	Brook trout <input type="checkbox"/>
Food Producer <input type="checkbox"/>	Arctic charr <input type="checkbox"/>
Recreational Fee-fishing <input type="checkbox"/>	Bass <input type="checkbox"/>
Other <input type="checkbox"/>	Other <input type="checkbox"/>

3. Employment	4. Total Production
	Check units Lbs <input type="checkbox"/> or No. <input type="checkbox"/>
Zero <input type="checkbox"/>	Zero <input type="checkbox"/>
Less than 1 <input checked="" type="checkbox"/>	Less than 5,000 <input type="checkbox"/>
1.0 to 3.0 <input type="checkbox"/>	5,000 to 25,000 <input type="checkbox"/>
More than 3.0 <input type="checkbox"/>	More than 25,000 <input type="checkbox"/>
Actual number <input type="checkbox"/>	Actual production (optional) <input type="checkbox"/>

Comments _____

"I authorize and consent to the disclosure and use of the above information to the University of Guelph, Aquaculture Centre only for the purpose of general analysis on an aggregate basis as long as individual confidentiality is maintained."

Signature _____ Date _____

The Aquaculture Centre is partly funded by the Ontario Ministry of Agriculture and Food

ONTARIO AQUACULTURE SURVEY

Covering the Period:
January 1st to December 31st, 2013

Guidelines to Questions

Question:

1. **FACILITY TYPE:**

Please tick **all** relevant boxes.

2. **SPECIES RAISED:**

Please tick **all** relevant boxes.

3. **EMPLOYMENT:**

Full-time is defined as a person working 40 and over hours per week for 12 months of the year. Part-time includes all other work schedules.

e.g. owner and one assistant employed full-time throughout the year is reported as:
FULL-TIME = 2 person-years, and

two seasonal assistants employed March - November (9 months) is reported as:
PART-TIME = 1.5 person-years
(2 persons x 9 months = 18 person-months, divided by 12 = 1.5 person-years).

4. **TOTAL PRODUCTION:**

Please report **all** fish sold:- e.g. for processing, wholesale, restaurant, farm-gate, pond-stocking and fee-fishing etc.

Report production in terms of either live **weight** or **numbers** of fish.

If you have any questions, please call us at (519) 824-4120 ext. 52689.

Please mail the form in the enclosed self addressed envelope before 14th Feb. 2014

Thank you