



Global Conference on Aquaculture 2010

Farming the waters for People and Food

22-25 September 2010, Phuket, Thailand

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 **Global Conference
on
Aquaculture 2010**

**Session 2: Regional and global reviews
on aquaculture**
Regional Review on Aquaculture for North America

Presenter: Dr. Paul Olin (USA)

Authors: Paul Olin, James Smith, Rashed Nabi

22–25 September 2010, Phuket, Thailand

North American Region



1. Social and Economic Background of the Region

335 Million people	- Canada - 33 million - United States of America - 302 million
Urban oriented	Canada - 61% in Ontario & Quebec - 45% in six major cities United States of America - 7 states >10 million 250 million urban dwellers
Young - 20% <15 years, 12% >65 years	
Educated - Post secondary	- Canada - 60% - United States of America - 54%
University degree	- Canada - 23% - United States of America - 24%

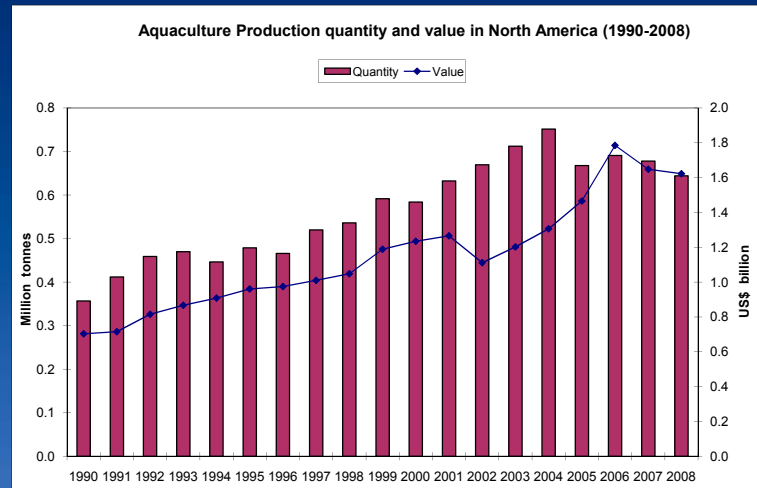


Social and Economic Background of the Region - 2007

	Canada	United States of America
GDP	\$1.3 T	\$13.4 T
GDP Growth	2.7%	5.2%
Fertility rate	1.5	2.1
Household income	\$66,000	\$50,000
Unemployment	6%	4.6%
Aquaculture	5% (\$155B)	<1% (\$276B)



2. General characteristics of the sector



NA production - 644,213 tonnes , APR 1.85%

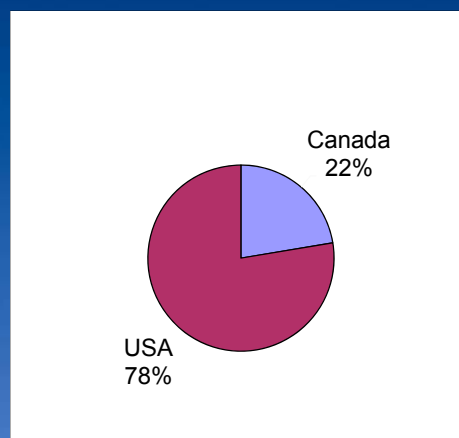
2008

NA Value - US\$1.6 billion. APR 4.5%

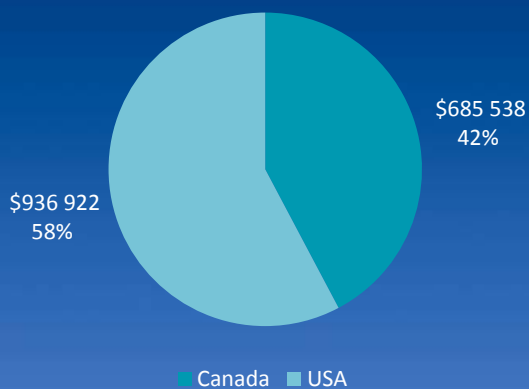


Aquaculture production quantity by country in North America (2008)

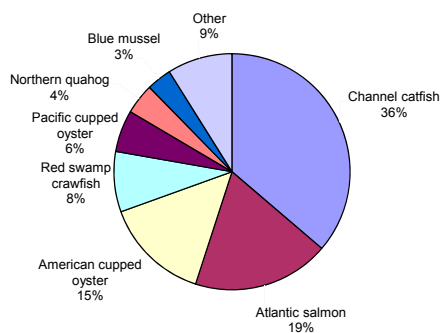
(Metric Tonnes)



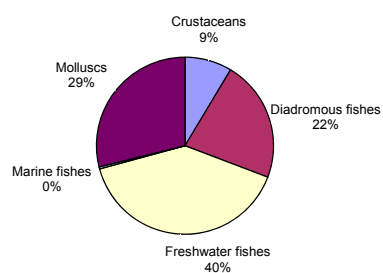
Aquaculture production value by country in North America (2008) (US\$ 1,000)



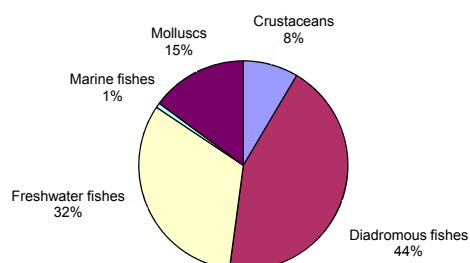
Major species of aquaculture production in North America in (2008)



Aquaculture production in North America by Division Quantity (2008)

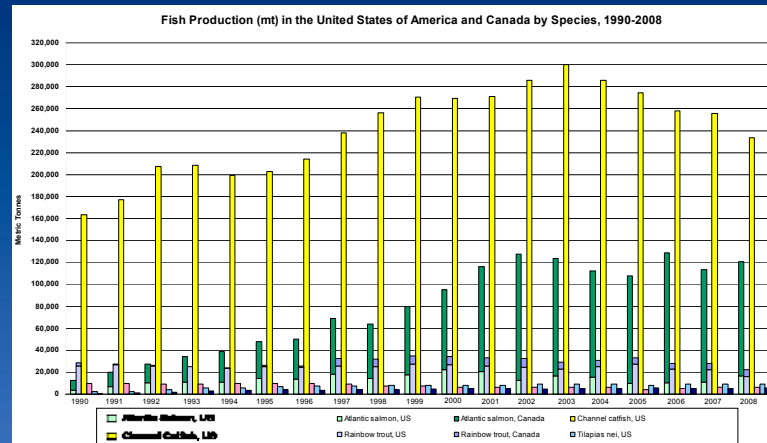


Aquaculture production in North America by Division Value (2008)



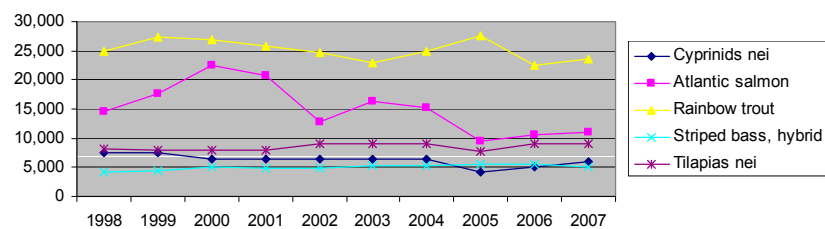
Note - ISSCAAP – International Standard Statistical Classification of Aquatic Animals and Plants

Fish Production (mt) in the United States of America and Canada by Species, 1990-2008

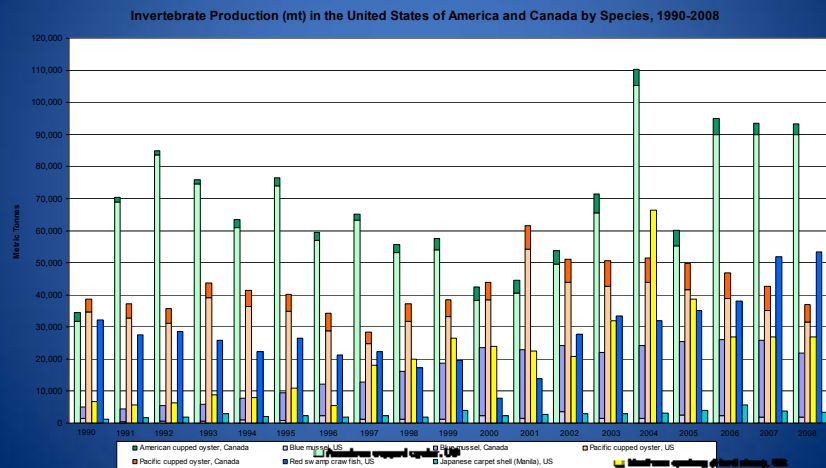


United States of America Minor Finfish Production Trend

Figure 15. United States of America finfish volume production trend 1998-2007 (MT)



Invertebrate Production (mt) in the United States of America and Canada by Species, 1990-2008



General characteristics of the sector

Salient issues and success stories

- Need for supportive government framework
- Canadian industry expands 54 percent, 1997-2007
- American industry expands 17 percent, 1997-2007
- Channel catfish producers meeting competition
- Atlantic salmon production sees rapid increase
- Blue mussel industry established in Atlantic Canada



General characteristics of the sector

The way forward

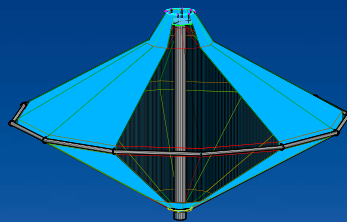
- Canadian production potential
 - Increase
 - 8 percent to 214, 000 tonnes by 2013
 - Farm-gate value of US\$1.2 billion
 - By 2020, production could exceed 308,000 tonnes
 - Farm-gate value of US\$1.6 billion
- United States of America production potential
 - Increase
 - From 0.5 to 1.5 million tonnes per year by 2025
 - Value increase from US\$1 billion to US\$3 billion
 - Additional production
 - 760,000 tonnes from finfish, (590,000 tonnes marine finfish)
 - 47,000 tonnes from crustacean production
 - 245,000 tonnes from mollusc production



General characteristics of the sector

The way forward

New Technologies



General characteristics of the sector

The way forward
New Culture Species



California Yellowtail



Cobia



Hawaiian moi



Atlantic cod



Kahala

General characteristics of the sector

The way forward
Promising Species



Halibut



Sablefish



Basket Cockle



Bluefin Tuna



Yellowfin Tuna

3. Resources, Services and Technology

Canada

- 10 million km², 243,792 km coast
- 16% of world's freshwater

United States of America

- 9.6 million km², 19,924 km coast
- Limited freshwater



Feed

- Domestic production for salmon, catfish and trout
 - > 800,000 tonnes
 - Alternate feeds initiative
 - Nutrition research



Seed

Domestic production

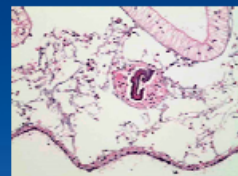
- >400 finfish hatcheries
- 62 shellfish hatcheries



Resources, Services and Technologies

Aquatic Animal Health

- Canada has a National Aquatic Animal Health Program
- United States of America is finalizing a National Plan



Capital

Commercial limited for all but large operations
Government programs



Farm Credit Canada (FCC)
Atlantic Canada Opportunity Agency (ACOA),
USDA Farm Service Agency (FSA)
Small Business Innovative Research (SBIR)



Resources, Services and Technologies

Salient issues and success stories

- New feeds reduce pollution, increase growth, survival
- Research reduces fish meal and oil content
- Hatchery production fills needs



The way forward

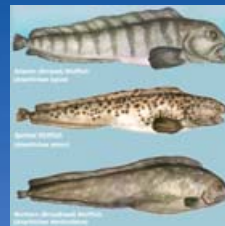
- Alternative Feeds Initiative explores options
- New species with culture potential
- Continue research support



Geoduck Clam



Red Drum



Wolffish



4. Aquaculture and Environment

Salient Issues and success stories

Challenge of objective and value based beliefs

Need for education

Offshore installations

Many species and locations

Catfish, shellfish industry success

Salmon – work in progress



The way forward

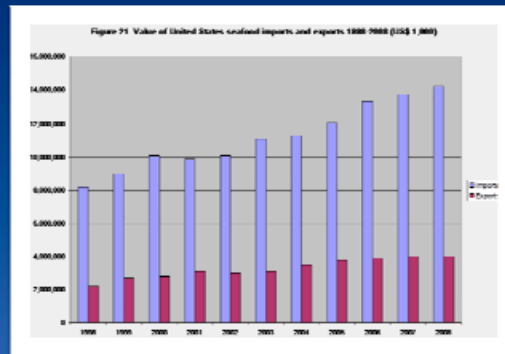
Continue proactive environmental management

FAO National Aquaculture Sector Overview map collection

Need for coordinated marine spatial planning



5. Markets and Trade

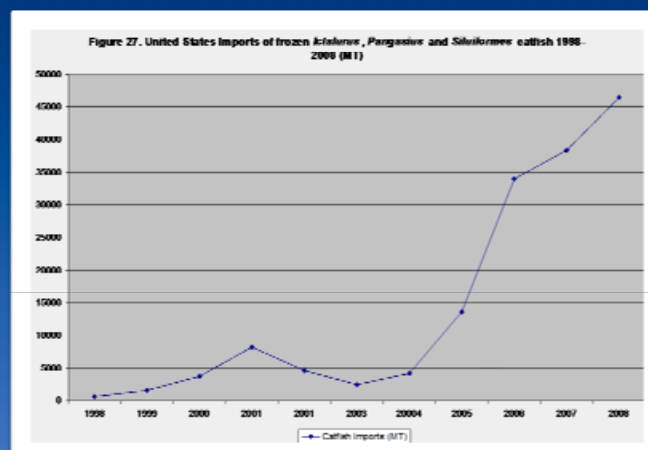


- USA** - Exports US\$4 billion, 2008
 - Imports US\$14.2 billion, 83% of seafood
Canada – Exports ~90 percent of products
 - U.S. imports 2007 ~ 96 percent of sales



Markets and Trade

American catfish imports



Markets and Trade

Salient issues and success stories

- Good market development
- Need sector expansion
- Excellent food safety and training
- HACCP programs



The way forward

- Expand domestic market
- Control production costs
- Aggressively market quality and health benefits
- Eating fish

- Lowers the risk of death from heart disease
- Enhances brain development and cognition in babies
- Low seafood intake 2nd largest cause of diet-related deaths in America

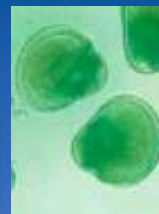
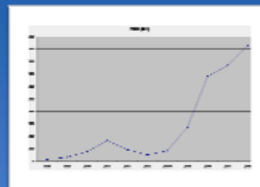
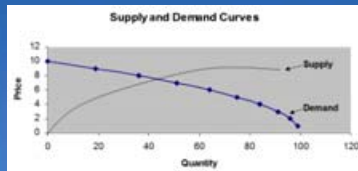
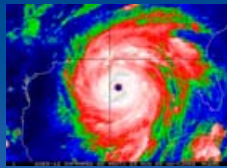


6. Contribution of aquaculture to food security, social and economic development

- **Little contribution to food security**
- **North American aquaculture employment - 2007**
 - 52,129, up from 40,212 in 1998, APR 2.9 percent
- **Benefits coastal and rural communities in Canada**
 - **Kitasoo/Xai'xais First Nation, Klemtu, BC**
 - 45 jobs, US\$1.6 million wages, , unemployment down >50%
 - US\$30 million revenue, unemployment down >50%
- **Farmed salmon**
 - Largest food export of British Columbia
 - Largest crop of New Brunswick agri-food sector
- **AR, LA, MS** - Generates 3,936 jobs
 - payroll of US\$56.4 million, 34% of nations total
- **Washington State** – 15% of total aquaculture payroll
 - US\$ 27.4 million, 1,284 positions



7. External pressures on the sector



- Pathogen concerns
- Climate change
- Sea level rise
- Severe weather
- Ocean acidification
- Competition



8. The role of shared information: research, training, extension, and networking

- **Research Training, Extension and Networking**
 - Supported by DFO, USDA, NOAA and a Network of Academic Institutions
 - New species development
 - Improved health management
 - Selective breeding improves broodstock performance
 - Improved seed quality
 - Enhanced growout technologies
 - Improved husbandry, nutrition and feeds
- **Industry sectors benefitting**
 - Salmon, catfish, trout, mussels, oysters, striped bass, sturgeon, abalone, shrimp and clams



9. Governance and management of the sector

• Governance

• Canada and the USA

- Working on national aquaculture policies
- Strategic plans to support expansion
- Identification of priority goals and research topics
- Working on national aquaculture legislation

• Aquaculture Management

• Federal, provincial, state and local authorities

- Concerted efforts to improve aquaculture management
- Increase financial support for research and development
- Compile statistics
- Support best management practices



10. Implementation of the 2000 Bangkok Declaration



- 10.1 Investing in people's education and training
- 10.2 Investing in research and development
- 10.3 Improving information flow and communication
- 10.4 Improving environmental sustainability
- 10.5 Applying innovations in aquaculture
- 10.6 Applying genetics to aquaculture
- 10.7 Applying biotechnology
- 10.8 Improving food quality and safety



