Across the Oceans

Why North Carolina USA
over
New Zealand for Aquaculture ?

By Robert Bishop
President Aisa Pacific Chapter of
World Aquaculture Society

Why leave New Zealand for North Carolina

The answer is, choice and opportunity.
New Zealand has a central system of government which is one size fits all.
Taxes, education, ministry policies, fuel cost and it goes on.

Look at the difference

Avg income 32k at 28%
Goods & service tax 12.5%
Fuel tax $1.00 per lite
Tax to pay for Auckland roads
No business tax write off at 33%
Home interest rates between 12-17%
Each man, women and child now owes 37k
And when you retire you receive only $156.00 per week no matter how much you made.

USA and North Carolina

- Be able to participate in an area where people are proactive in aquaculture industry.
- No place has all the answer but NC is willing to work to find them.
- Different species help the long term future of the industry
- Willing to take on new ideas and people
- Very good overall demagraphics and economical
- Educational opportunities for family and ourselves
- Much lower cost of living
- Good local, state and closer international market connections

Some of the big issues in NZ aquaculture.

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Aquaculture in New Zealand and some of the issues

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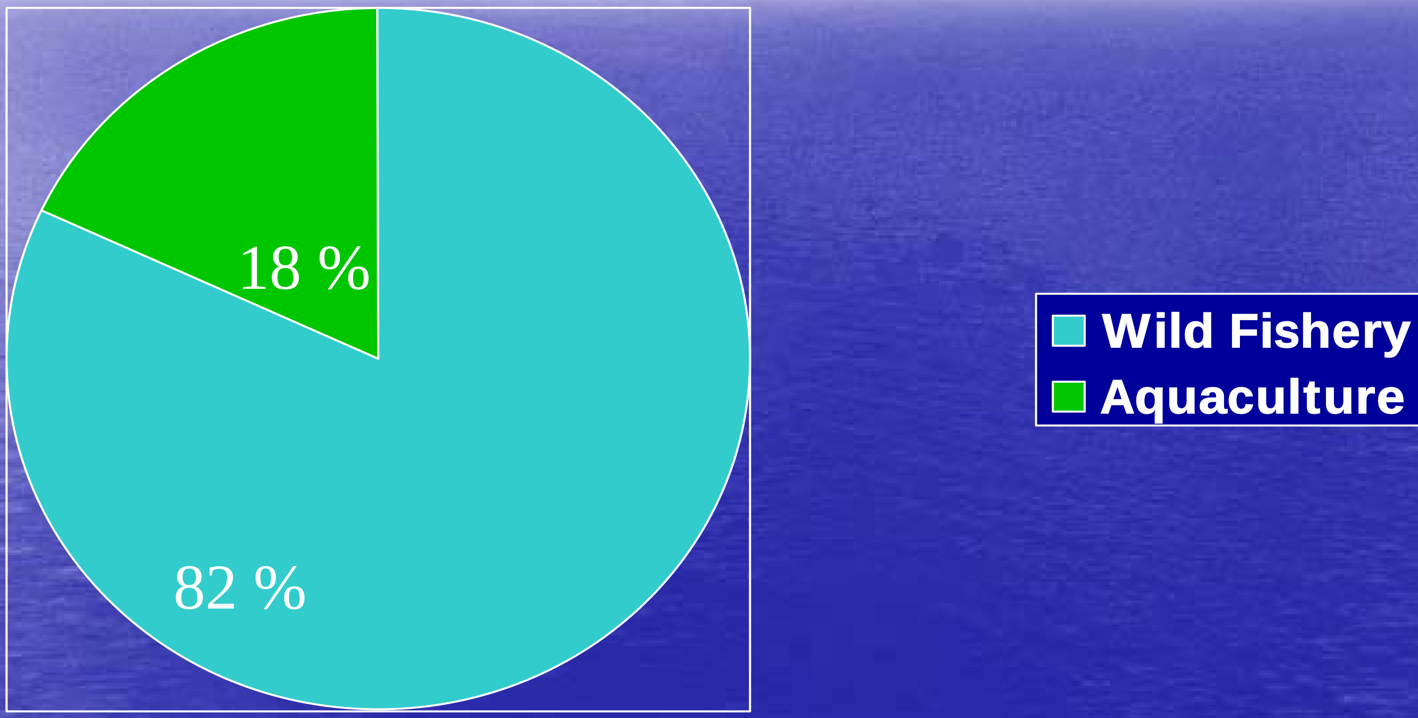
New Zealand's Seafoods Exports



NZ Salmon Farming

- 60 ha total

≅ 8,000 T pa
≅ $100 M pa
≅ 700 FTE

- NZ SALMON CO

≅ 43 ha seabed
≅ 6 ha surface structures
> $60M pa production value

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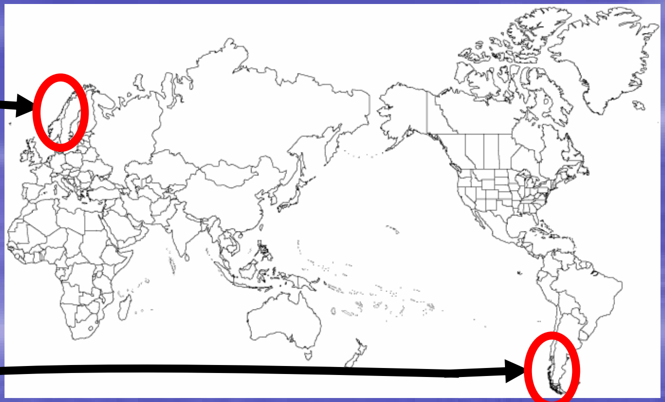
World Production Growth



Metric Tonnes Harvested	1996	2002	
Norway	280,600	480,000	25.4%
Chile	135,300	454,400	24.0%
Scotland	74,700	141,000	7.5%
Faroe Islands	-	56,000	3.0%
British Columbia	25,000	49,000	2.6%
New Brunswick	15,500	34,000	1.8%
Ireland	11,500	26,200	1.4%
Australia	7,500	15,000	0.8%
New Zealand	6,300	9,066	0.4%
Iceland	-	4,100	0.2%
United States	5,000	3,200	0.2%
Total Farmed	**561,400**	**1,271,966**	67.2%
Wild	730,000	620,000	32.8%
All salmon/trout	**1,291,400**	**1,891,966**	100.0%

Production by type	**1996**	**2001**
Atlantic Salmon	450,100	958,000
Chinook	13,500	13,100
Coho	44,200	124,100
Rainbow Trout	53,600	174,500
Total	***561,400***	***1,269,700***

Global Farmed Salmon production risen 2¼ times in 6 years

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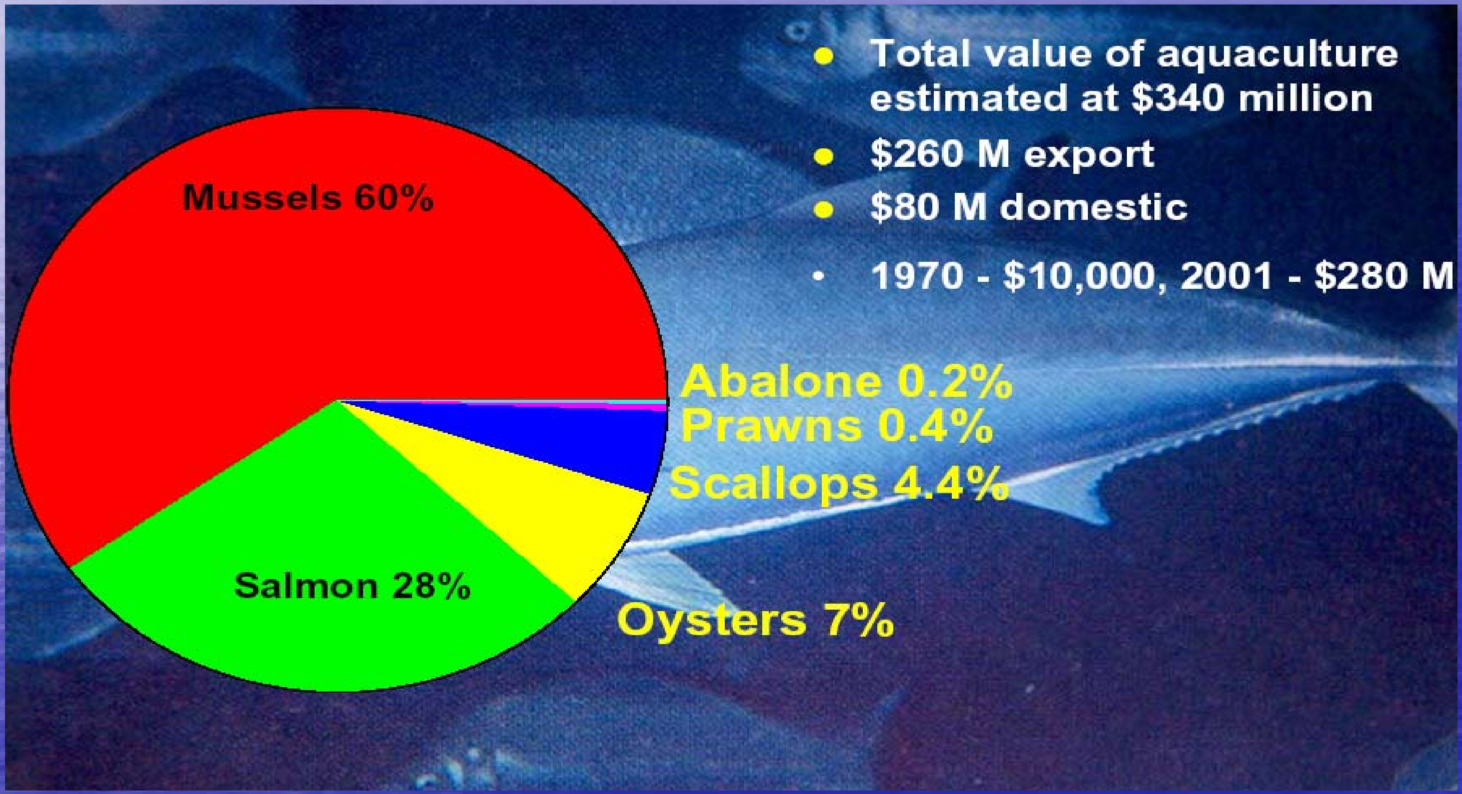
NZ Aquaculture Production Growth

NZ$ million	1981			2002		
	Domestic	Export	Total	Domestic	Export	Total
Mussels	5	3	8	37	184	221
Salmon	<1	-	<1	32	59	91
Oysters	2	1	3	17	15	32
Abalone	-	-	-	1	<1	1
Other Finfish	-	-	-	-	-	-
Other Misc	-	-	-	1	<1	2
Total	**7**	**4**	**11**	**88**	**258**	**347**

Notes:

- <1 represents less than $1million
- Figures are ex factory gate
- Sources: NZFIB, SeaFIC.
- Other Finfish includes kingfish, snapper, turbot, tuna and others
- Other Misc includes other shellfish, kina, eels, seahorses, seaweeds, sponges and others

New Zealand Aquaculture Exports



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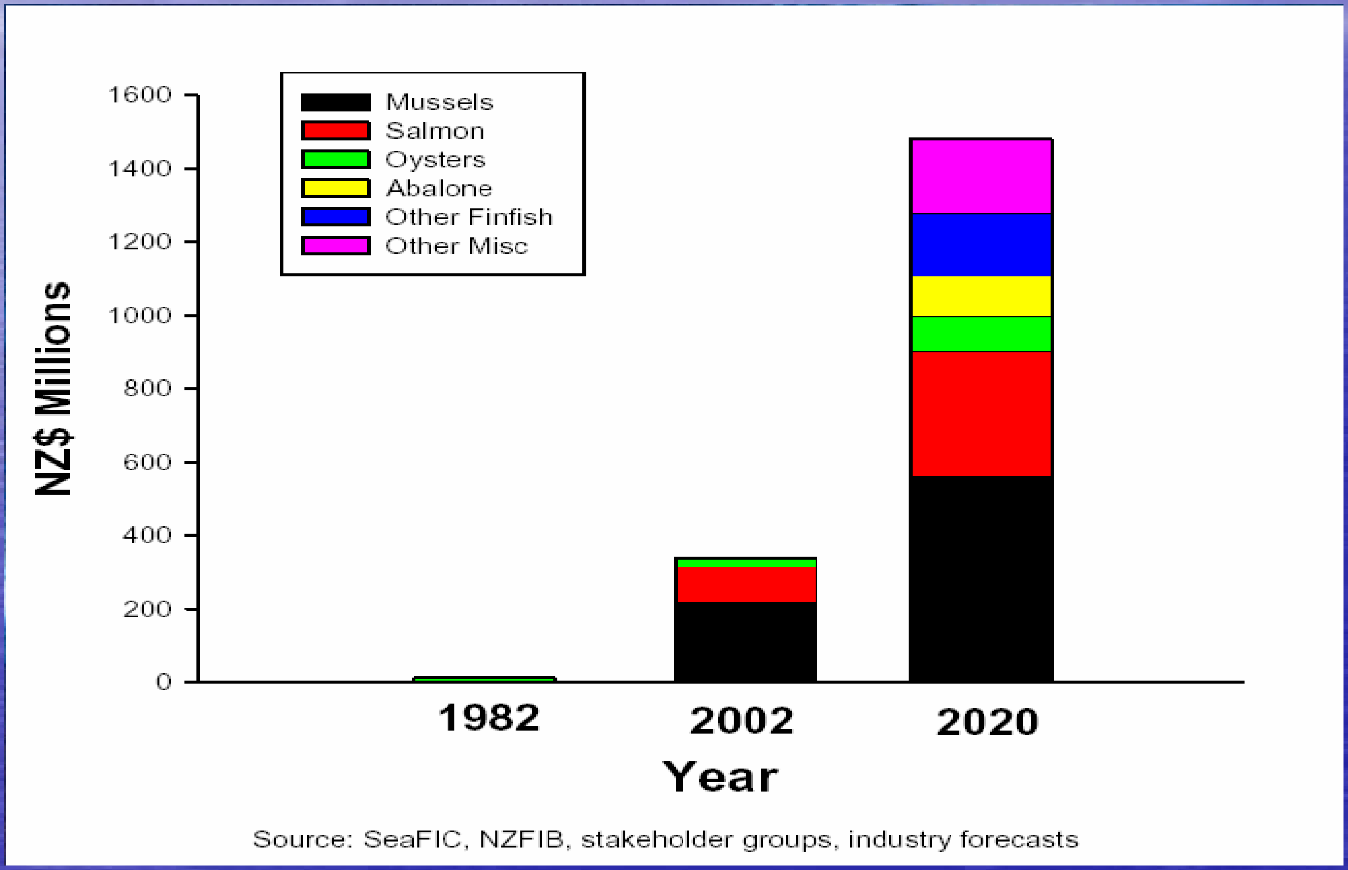
Historic and Projected Aquaculture Production



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New Zealand Aquaculture

Commercial Challenges

- Diversify species & products

3 species = 95% of industry

5 species = 95% of industry in Australia

- Move to higher value species & products

N.Z. - 160,000 tonnes = NZ $280M i.e.. $1,750/t

Australia – 30,000 tonnes = A $680M i.e.. $22,667/t

- Increased value from coastal space

Finfish - $1-2,000,000/ha

Oysters - $100,000/ha

Mussels - $20,000/ha

- Growth in existing species

New Opportunities
Others

Farm and enhance other species e.g.

- Dredge oysters
- Sponges
- Ornamentals
- Eels
- Abalone
- Crayfish

- Marine species with bio-actives
- Aquaculture live feeds
- Tertiary aquaculture products
- Refined products from aquaculture waste

Summary

- NZ Aquaculture exports > $250m pa 2002 (< $5m 1982) and local market sales now worth $80m pa
- 1:1 knock on of indirect economic benefit
- New Zealand has expertise and infrastructure and growing market demand
- New Zealand has excellent potential for aquaculture growth
- Some key issue is the formulation of an adequate legislative framework to allow the industry to develop to its potential

So why is NZ not moving forward? Its called Aquaculture Law Reforms

- Employment Relations Act
- Health & Safety
- Inland Revenue
- Companies Act
- Regional Council Regulations
- Resource Management Act
- Ministry of Agriculture and Forestry
- Ministry of Fisheries
- Department of Conservation
- Ministry for the Environment
- Bio security Act
- Environmental Risk Management Authority
- Maritime Safety Authority
- Freshwater Fish Farming Regulations
- Marine Mammals Protection Act
- Marine Farming Act
- New Zealand Food Safety Authority

Projecting the Time Line

"Join the Discussion" August 2000

Moratorium announced November 2001

RM (Aquaculture Moratorium) Bill enacted March 2002

Aquaculture Reform Legislation

- Anticipated First Reading July 2002
- Then changed to November 2002
- Then changed to March 2003
- Then changed to April 2003
- Then changed to August 2003
- Then changed to Dec 2003 – March 2004
- Then changed to 2004 ?

Moratorium lifted October 2005

No trust in the system and therefore investment is at all time low

RM (Aquaculture Moratorium) Act (2001) expires March 2004

RM (Aquaculture Moratorium) Act (2004) expires December 2004

RM (Aquaculture Moratorium) Act (2005) expires now unknown

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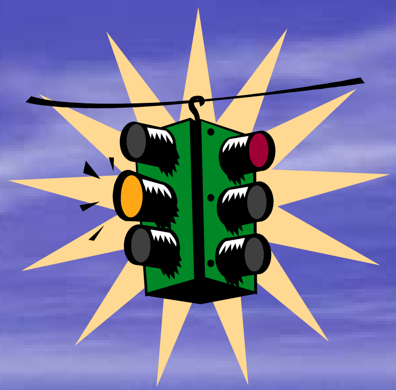
Road Blocks



- The reforms/environments = delays and uncertainties:
  - 3+ years of Moratoriums
  - Loss of confidence and capital value
  - Flight of expertise and capital
- Reforms appear to have lost sight of the objectives Over Prescriptive Proposals:
  - Years more of “Moratorium” for AMA plans to be written, made operative and consents issued
  - No incentives to promote nor fund new development

Review of ALR Model for Aquaculture

Significant issues e.g.:

- Lack of incentives for New Aqc Development
  - Few Councils developing an AMA model
  - Even fewer providing for new aquaculture
  - Tender profits to Government
  - No new finfish farming water
  - Allocation at end is key disincentive for Industry
- Delays for New Aqc Development
  - Existing applications held up by > 3 years by Moratoriums
  - AMA process 5+ years
  - 2+ years for resource consent processes and M.Fish processes
  - Early uplift provisions not working
- Transitional Proposals
  - Delay for Decade+ before new model takes effect

It's a competitive world, but in NZ:

• Variation of consent to establish Fin fish	***BANNED*** ***(Moratorium Act)***
• Fin fish farming in key regions	***BANNED*** ***(except some Ha in Marlborough, Araroa & Big Glory Bay)***
• NZ Trout farming	***BANNED***

Other issues

- Lack of population caused 95% export.
- Long distance transport issues and air & shipping space.
- Cost verse time to market
- Aquaculture controlled by fishing industry
- No self control aquaculture system or government
- Government SITO will not move past NC L 4 aquaculture therefore no career path for further farmers
- Funding issues for R&D controlled by government and there bobbies causing duplications in systems.

Thanks for giving me the opportunity to speak today.
Tomorrow I will talking obout abalone farming
In a recirulation seawater system.

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