

At the Crossroads

The World Aquaculture Industry and...



Alaska's Response

Why We Are Here



The State of Alaska and the Alaska seafood industry face new policy questions.

- NOAA is preparing legislation that would expand aquaculture in the Exclusive Economic Zone (EEZ).
 - Congress will address recommendations from the US Commission on Ocean Policy to expand aquaculture in the EEZ.
 - The Magnuson-Stevens Act is up for reauthorization in this Congress and will likely address aquaculture in the EEZ.
 - Global aquaculture production had a significant impact on the Alaska salmon industry.
- ⇒ What is in store for other producers of wild Alaska seafood?
- ⇒ What is the appropriate response by industry and the State?

Current Alaska Position



The current State of Alaska position on aquaculture in the EEZ is:

- Five-year moratorium on all EEZ permitting, leasing, or development of aquaculture until:
 - environment concerns of marine aquaculture are addressed, and
 - related socio-economic impacts to fisheries-dependent communities are researched.
- States be given a substantial role in the decision making about what types of aquaculture activities take place off of their shores.
- Regional Fisheries Management Councils be tasked with evaluating information gathered and research conducted in order to assess the potential impacts and benefits of fish farms in federal waters under their jurisdictions.

Alaska Seafood Economy

The Alaska seafood industry is a vital part of Alaska's political, economic and social landscape.



Alaska Politics in the Fisheries



Alaskans made the State of Alaska a major force in the Alaska seafood industry

- Statehood founded in part over a battle for salmon resources.
- Fish traps are banned through a resident initiative designed in the Alaska Constitution.
- Finfish farming is prohibited through Alaska Statutes.
- The Department of Fish & Game manages the world class sustainable Alaska salmon fishery.

Alaska's Fisheries... a huge economic engine!



- From family trollers to factory trawlers, it's all about *wild!*
- Alaska seafood industry total economic output = \$4.6 billion annually.¹
 - \$2.3 billion direct economic output
 - \$2.3 billion more in secondary economic output



1. Economic Impact of the Seafood Industry on Alaska's Economy / Northern Economics, Inc., for Pacific Seafood Processors Association (PSPA); Anchorage, AK, 2003; p. 4. Figures are for 2001.

2001 breakdown...

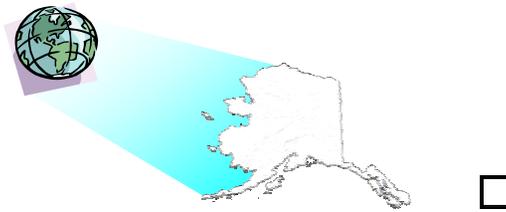
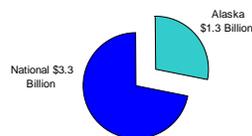


\$2.3 billion Direct Economic Output - first wholesale or export value of seafood products from Alaska.

- \$974 million ex-vessel value
- \$1.3 billion processing sector output

\$2.3 Billion Secondary Economic Effects - goods, services and labor

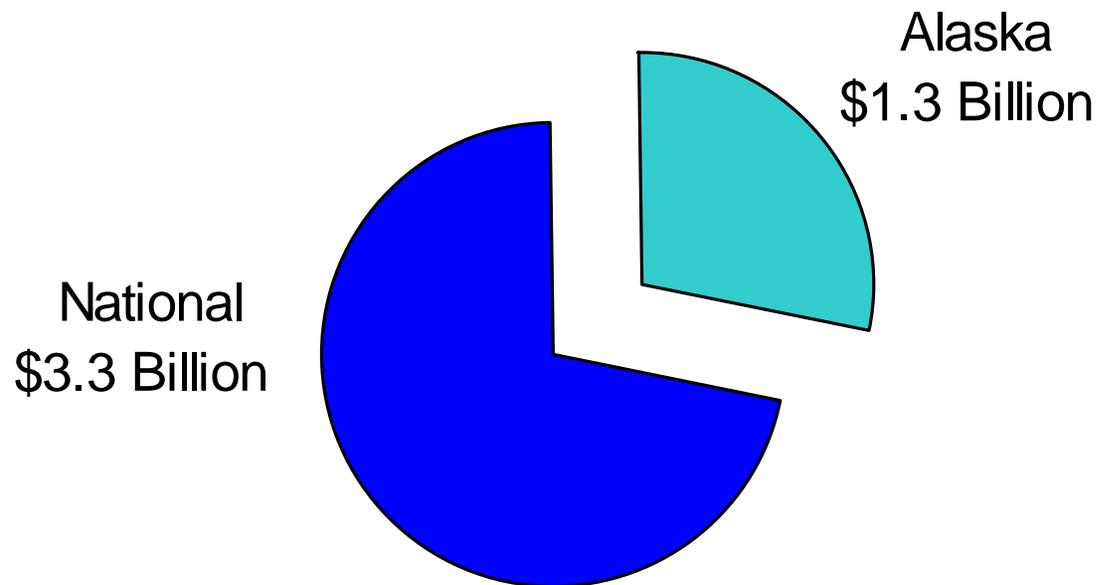
Seafood Industry Contribution to National and Alaska Economy



2001 breakdown...



Seafood Industry Contribution to National and Alaska Economy



National (less Alaska)

- \$575 million ex-vessel
- \$1.15 billion processing
- \$1.6 billion secondary

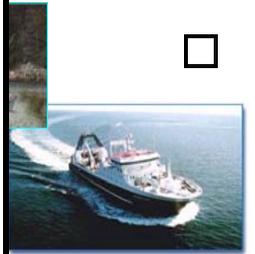
Alaska

- \$400 million ex-vessel
- \$160 million processing
- \$700 million secondary

2001 World Fisheries Production

Source: UN, Food & Agriculture Organization (FAO)

Rank	Country	Capture	Aquaculture	Total
1	China	16,529,389	26,050,101	42,579,490
2	Peru	7,986,103	9,404	7,995,507
3	Japan	4,719,152	801,948	5,521,100
4	Indonesia	4,203,830	864,276	5,068,106
5	Chile	3,797,143	566,096	4,363,239
6	India	3,762,600	2,202,630	5,965,230
7	Russia	3,628,323	89,945	3,718,268
8	Thailand	2,881,316	724,228	3,605,544
9	USA (ex-Alaska)	3,545,814	460,998	4,006,812
10	Norway	2,687,303	512,101	3,199,404
11	Alaska*	2,237,501	68	2,237,569
12	Korea (S)	1,988,002	294,484	2,282,486
13	Iceland	1,980,715	4,371	1,985,086
14	Philippines	1,945,217	434,657	2,379,874
15	Denmark	1,510,439	41,573	1,552,012
16	Viet Nam	1,491,123	518,500	2,009,623
17	Mexico	1,398,592	76,075	1,474,667
18	Malaysia	1,234,733	158,158	1,392,891
19	Myanmar	1,166,868	121,266	1,288,134
20	Spain	1,084,820	312,647	1,397,467
21	Morocco	1,083,276	1,362	1,084,638
22	Canada	1,049,508	152,447	1,201,955
23	Taiwan	1,005,199	297,428	1,302,627
24	Bangladesh	1,000,000	687,000	1,687,000



Or

On the World Scene...



2001 World Fisheries Production

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If Alaska was a nation it would rank 11th among the world's capture fisheries by volume, and 13th overall including aquaculture.

In closely competitive fisheries we are ahead of countries like South Korea & Iceland, and substantially ahead of Denmark, Spain & Canada.

Alaska's hatchery production is captured wild and reflected in the capture fishery numbers.

Fisheries is Alaska's Social Fabric



Coastal Alaska, particularly Native Alaska, has a long cultural connection with marine resources. Abundance is critical for:

- Commercial fisheries
- Subsistence activities
- Personal use
- Sport fishing

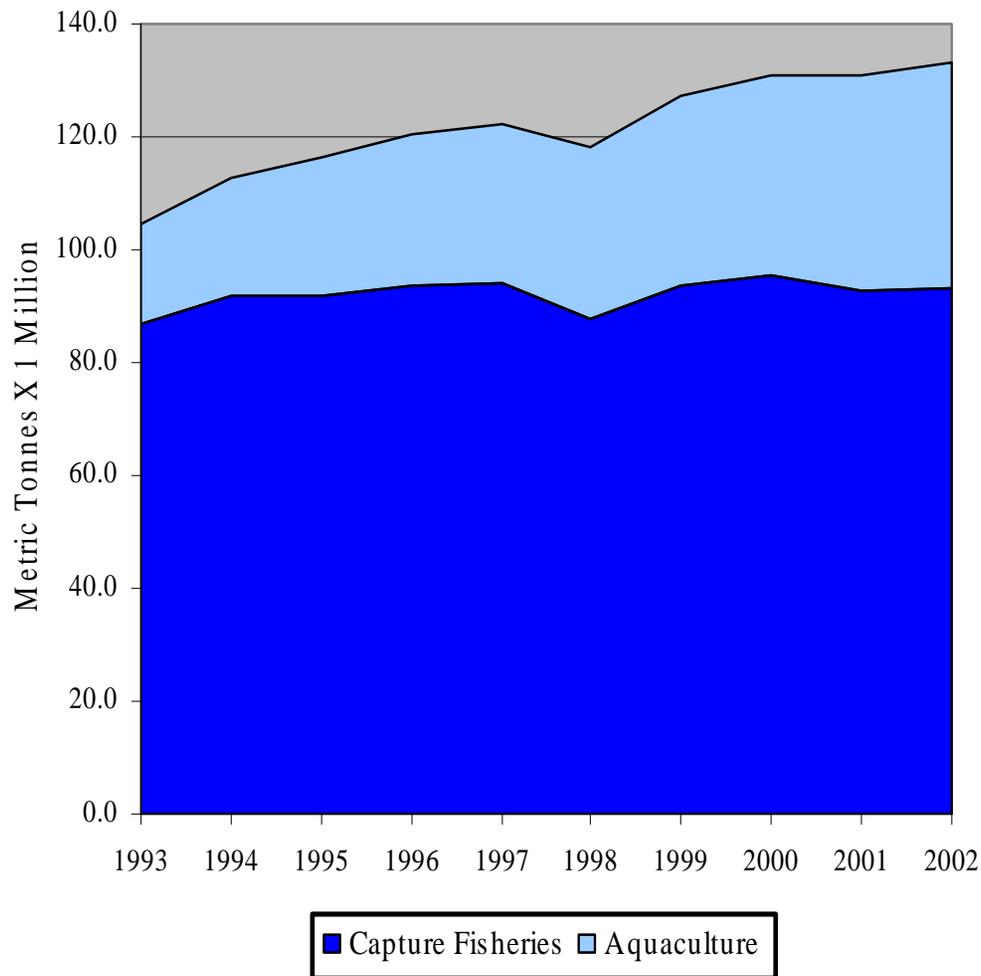


Global Aquaculture Overview



-  Volume
-  Value
-  Key Species

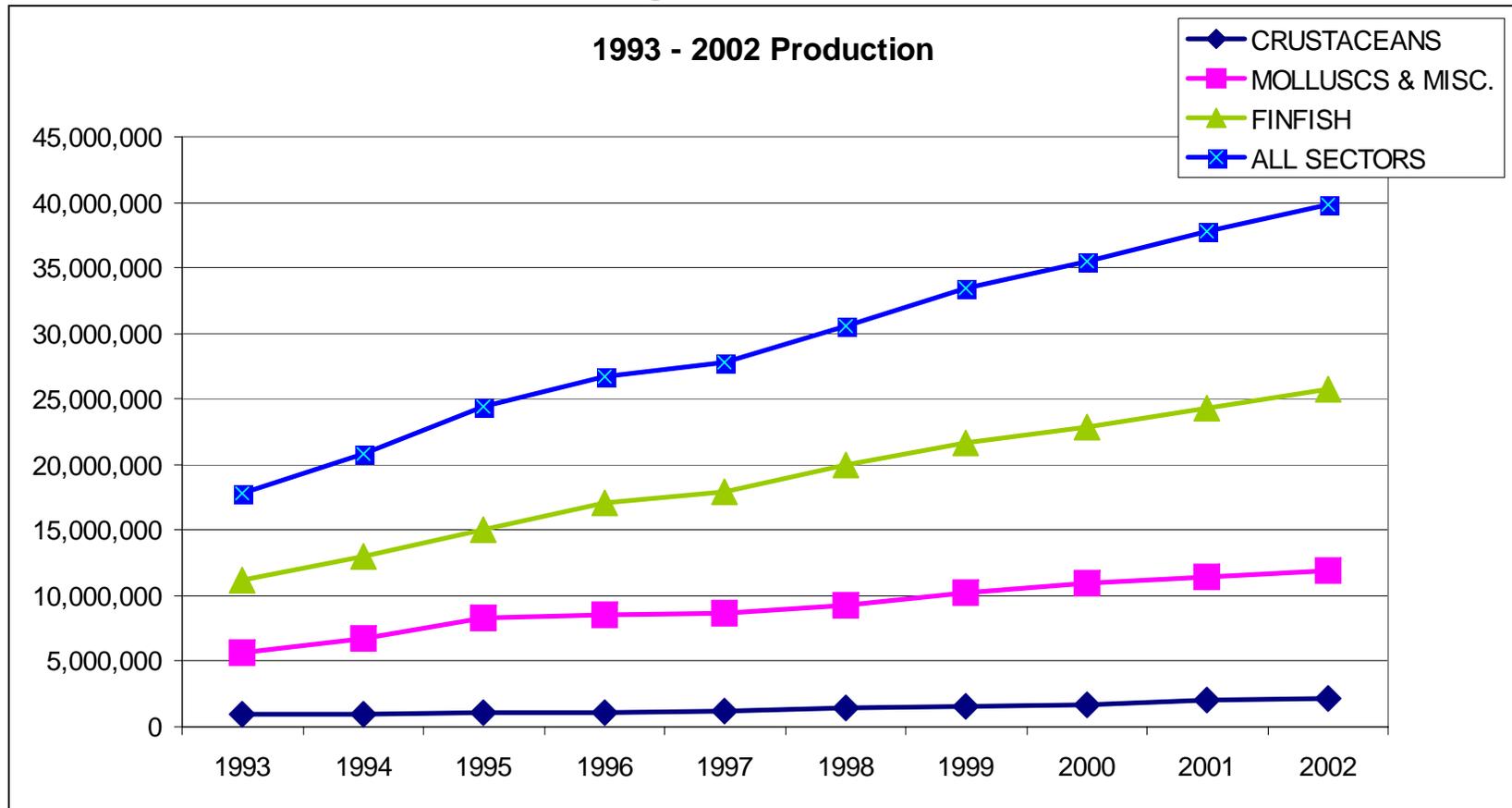
Aquaculture's Increasing Share of World Fisheries Production



- From 1993 to 2002 aquaculture increased total world share of fisheries production from 17% to 30%.
- With capture production static, all future production increases are expected to come from aquaculture.

Global Aquaculture Volume

9% Average Annual Growth



Global Aquaculture Volume - Trends

In 10 years world aquaculture production increased 123% - from 17.8 to 39.8 million tonnes

Growth in all sectors was strong

→ 128% in shrimp & other crustaceans

→ 111% oysters & other shellfish

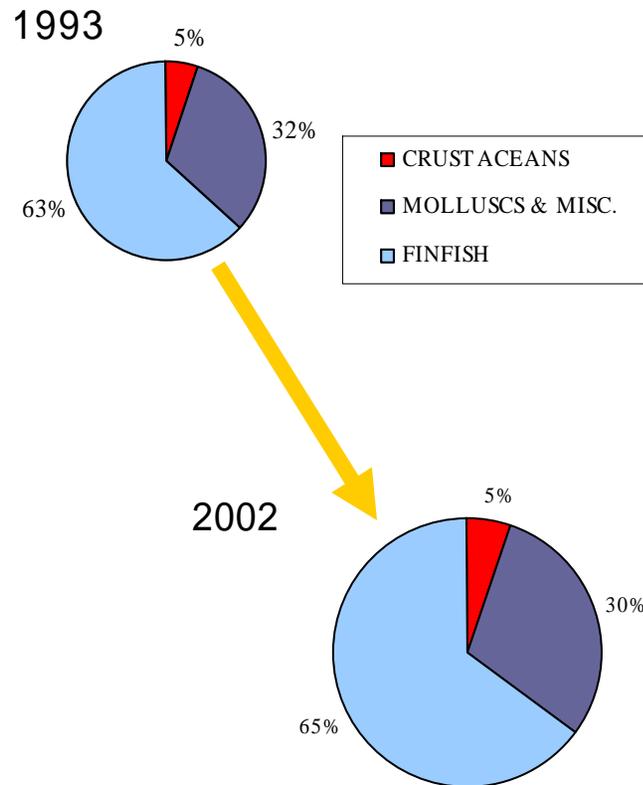
→ 129% in finfish

Growth trends in all sectors remain strongly upward



FAO Statistics for Aquaculture Production, 1993 - 2002										
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
CRUSTACEANS	934,186	1,005,055	1,101,694	1,130,557	1,242,639	1,389,060	1,535,756	1,729,720	1,995,923	2,130,984
MOLLUSCS & MISC.	5,652,781	6,783,242	8,285,903	8,550,813	8,640,734	9,251,215	10,284,451	10,898,910	11,443,269	11,928,976
FINFISH	11,218,795	13,053,604	14,997,360	17,027,288	17,907,327	19,922,370	21,626,542	22,867,621	24,349,902	25,728,576
ALL SECTORS	17,805,762	20,841,901	24,384,957	26,708,658	27,790,700	30,562,645	33,446,749	35,496,251	37,789,094	39,788,536

Global Aquaculture - Volume Industry Composition Stable

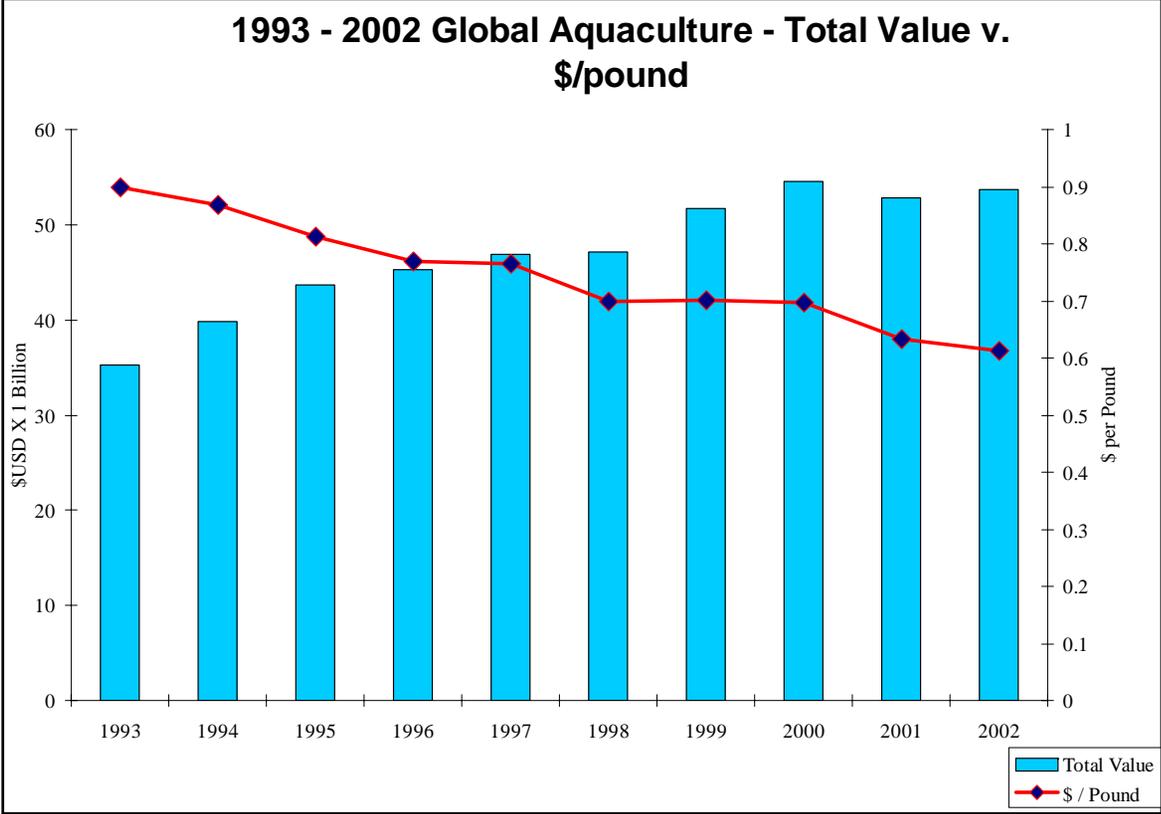


The aquaculture industry has grown rapidly...

but the relative composition by major sector has changed little.

Global Aquaculture - Value The New Food Commodity

Total Revenue “Up” Per Unit Values “Down”



Value figures are inflation corrected to 2002 using the US Producer Price Index

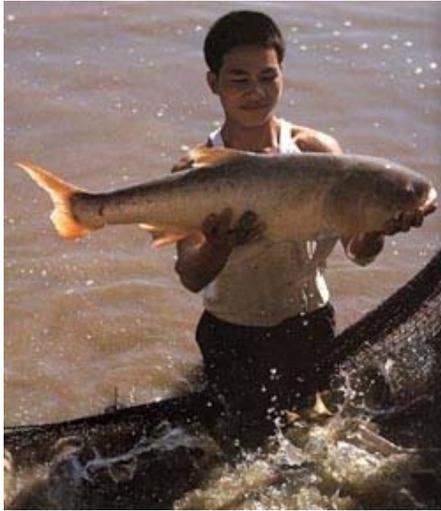


Global Aquaculture - Value

The New Food Commodity

- From 1993 to 2002, total value of world aquaculture increased 52.3 %
- Total value increased \$35.3 billion to \$53.7 billion
- ↙ Per pound value decreased by nearly a third, from \$.90 / lb. to \$.61 / lb.
- The producer “price squeeze” reflects strong competition in all sectors of the industry & puts great pressure on both capture & aquaculture businesses.
- Aquaculturists have countered downward price pressure with major gains in productivity & cost containment.

In China it's "carp" (e) diem!



- At 27.7 million metric tonnes, China accounted for 70% of all aquaculture production in 2002.
 - Carp is king, typically accounting for about 45% of all freshwater & marine aquaculture in China.
 - Carp are the top 5 finfish aquaculture species worldwide.
-
- World carp production totaled 16.7 million tonnes in 2002, worth \$14.8 billion - 65% of all finfish aquaculture by volume, & 46% by value.
 - Despite its already huge volume carp production continues to grow at rates comparable to high value species like salmon.

Global Aquaculture - Key Species Challenge Species

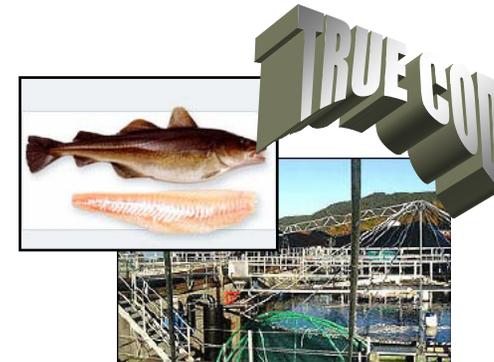


A narrow segment of the aquaculture industry is of immediate concern to Alaska fishermen and policy-makers.

Species that compete directly with Alaska capture fishery products & businesses:

- ★ **Farmed salmon** - which now dominates the world market
- ★ **Halibut, sablefish & cod** - emerging aquaculture species
- ★ **Tilapia** - competing with pollock in surimi

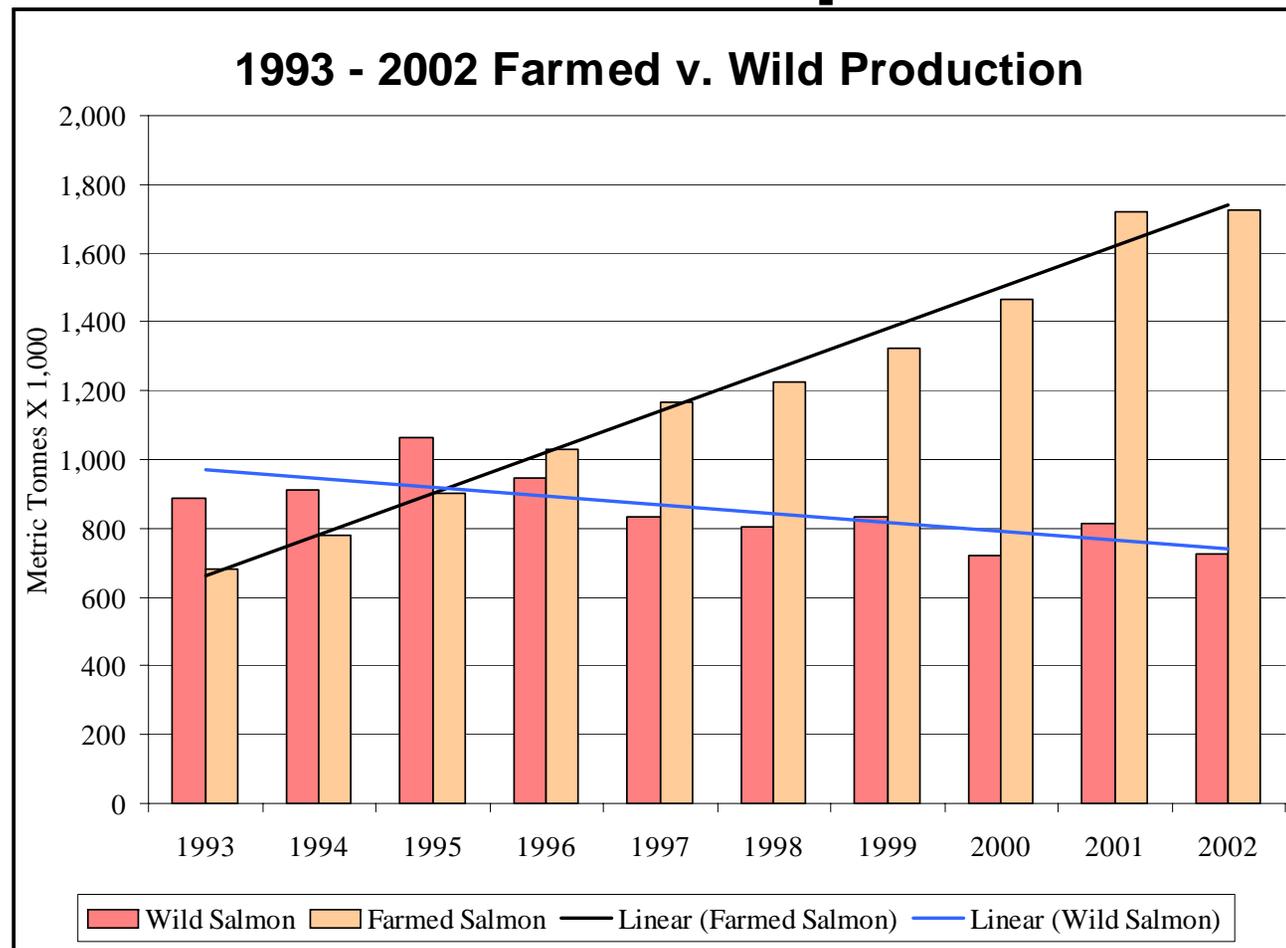
But, what about species
of concern to Alaskans?





Farmed Salmon

Production exploded





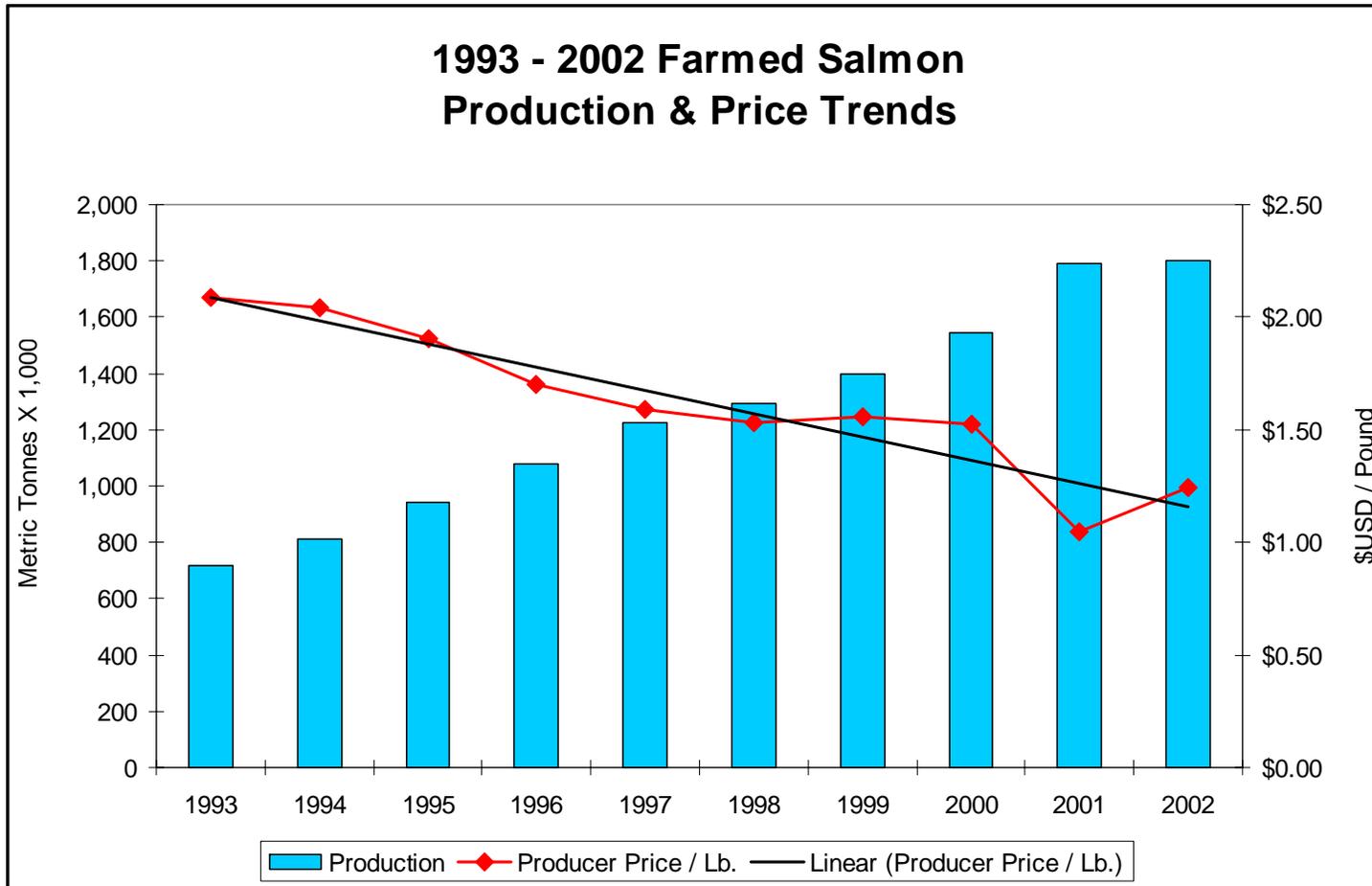
Farmed Salmon

- By 2002, world salmon market was 4X its pre-farming level
- By 2002, farmed salmon grew 2.5X its 1993 production level
- In 1993 farmed salmon was 43.5% of total production.
 - By 2002, it was more than 70%.
- Capture production declined 18% in that time.

Farmed Salmon



Farmed prices “tank”



Impacts

Farmed Salmon



Impacts from falling farm salmon prices

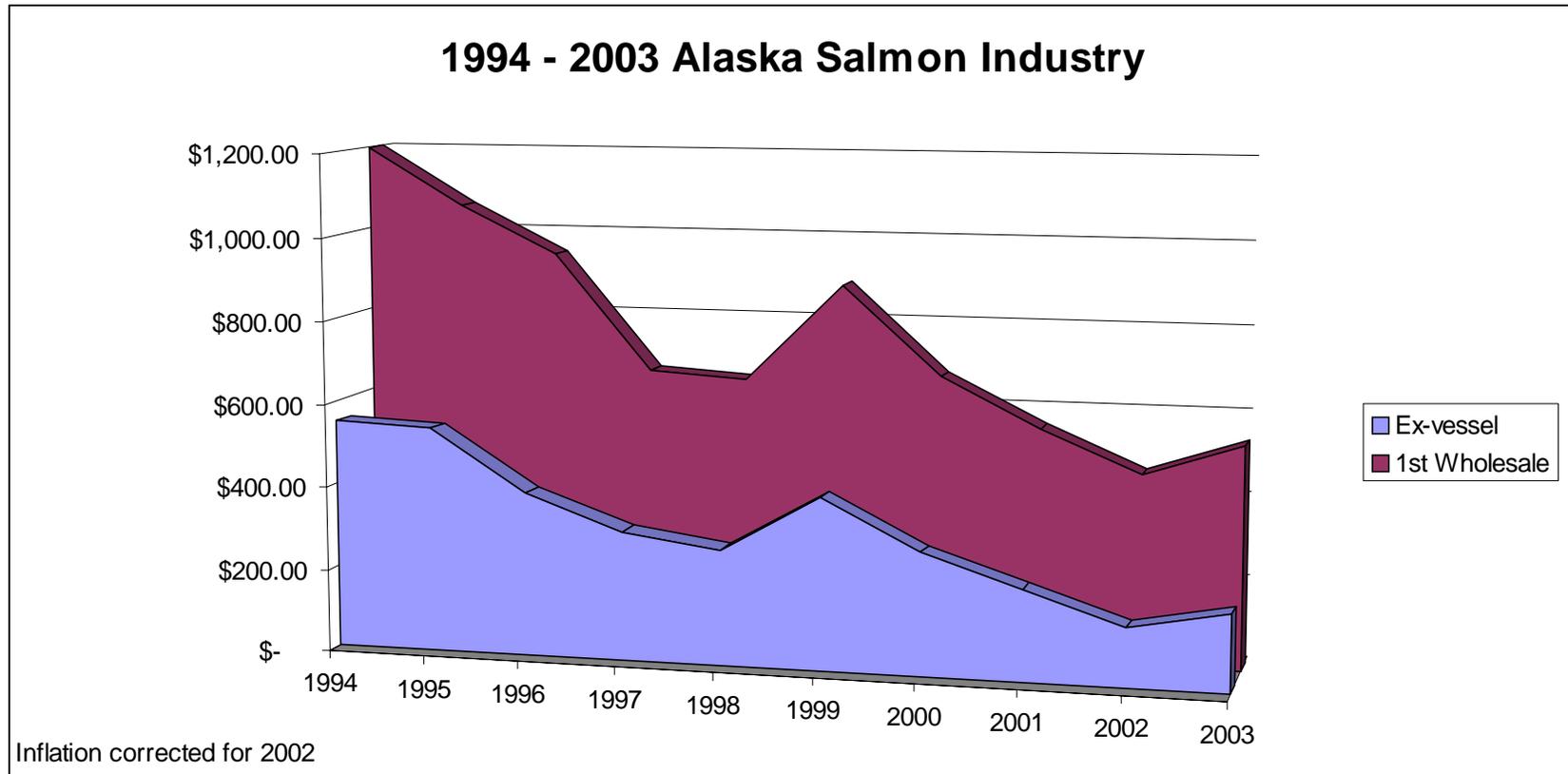
Rapid production growth hasn't been all good news for some farmers

- Unit prices fell more than 40%
- Faltering profits resulted in government bail-outs
- Industry consolidation put an end to early dreams of “small is beautiful” coastal community development.
- Salmon farming is big “aquabiz” and farmed salmon is a commodity product

With commodity status have come other problems:

- Environmental concerns
- Real & perceived quality concerns
- Consumer perception that farmed is bland & boring

Effects on the Alaska salmon industry have been grim...



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Ex-vessel	\$ 552.00	\$ 541.60	\$ 393.00	\$ 311.70	\$ 276.30	\$ 413.40	\$ 294.20	\$ 218.50	\$ 140.60	\$ 185.10
1st Wholesale	\$1,199.00	\$1,059.00	\$ 946.70	\$ 668.20	\$ 650.90	\$ 886.90	\$ 673.80	\$ 557.80	\$ 457.90	\$ 533.20

Effects on the Alaska salmon industry have been grim...



- Hundreds of boats “on the beach”
 - Economic disasters declared
 - Processors’ & fishermen’s margins squeezed
 - Industry value halved
- 2003 and 2004 - some improvement after 3 years of steep decline**

...pushing wild prices down



King



Sockeye



Pink



Chum



Silver

Falling farmed salmon prices exert strong downward pressure on wild salmon prices

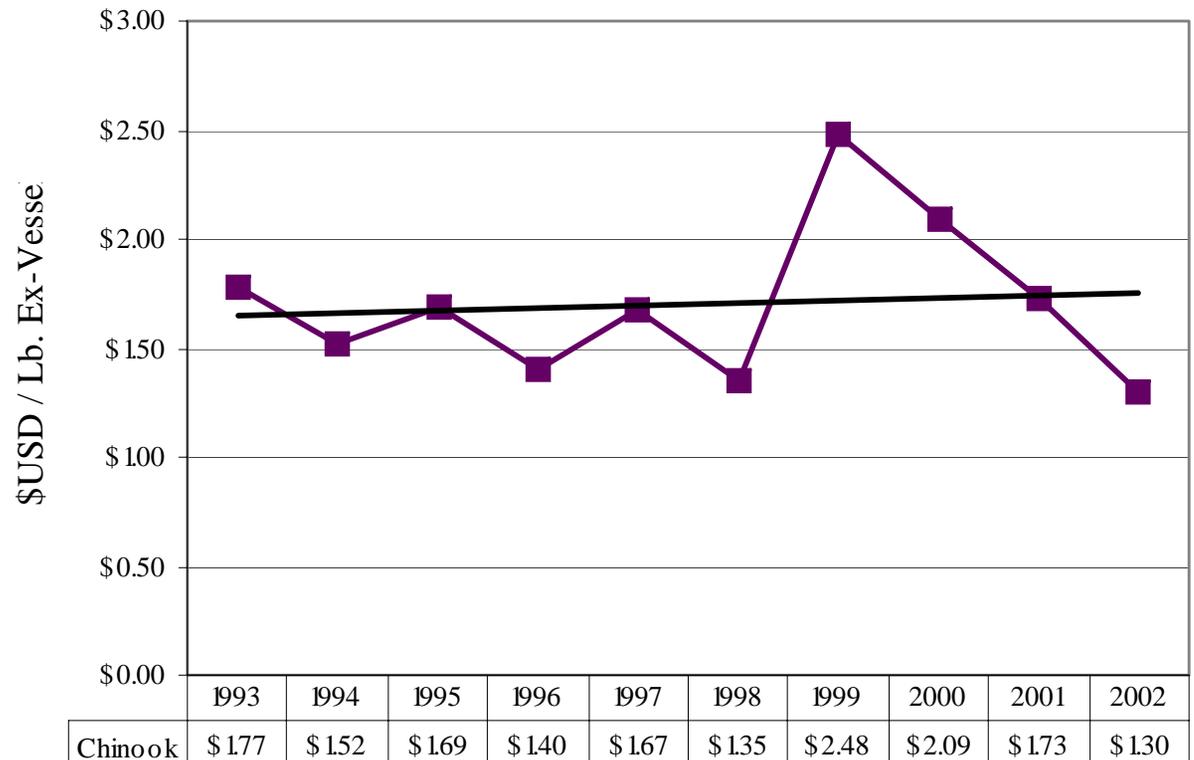


...Chinook ...



Chinook Prices
Hold Stable

Alaska Statewide Average Chinook Price



Inflation Corrected to \$2002



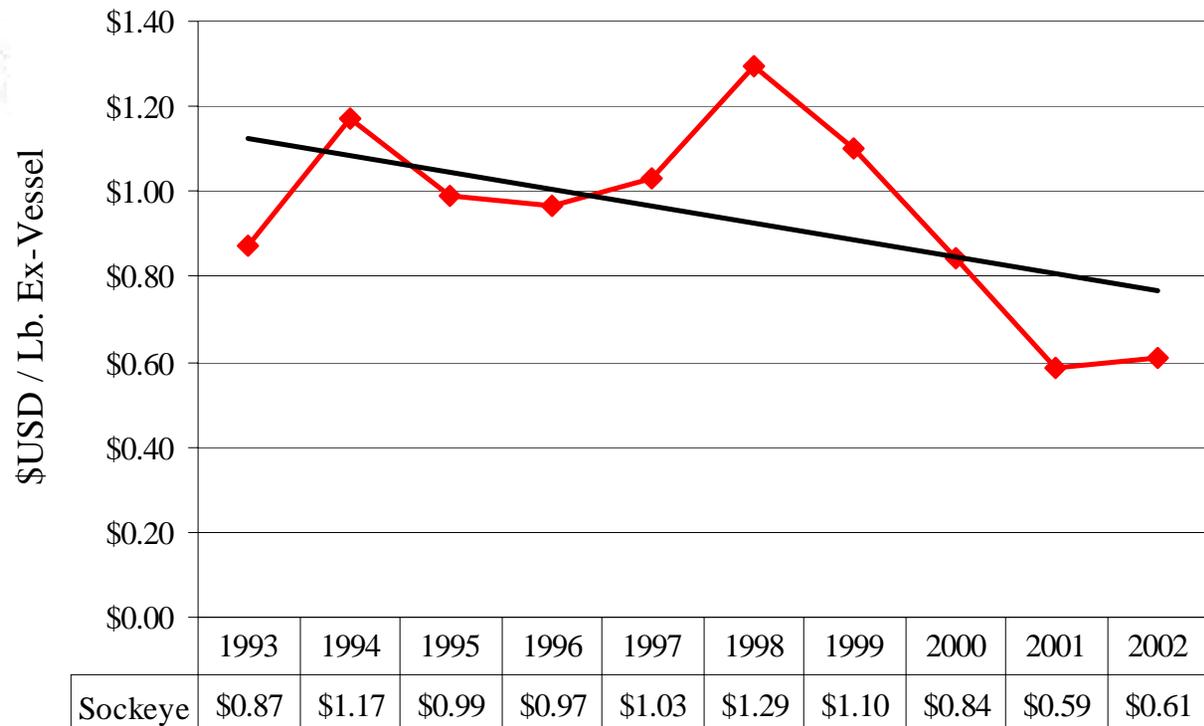


... Sockeye ...



- Sockeye strongly linked to farm salmon prices through Japanese market

Alaska Statewide Average Sockeye Price



Inflation Corrected to \$2002



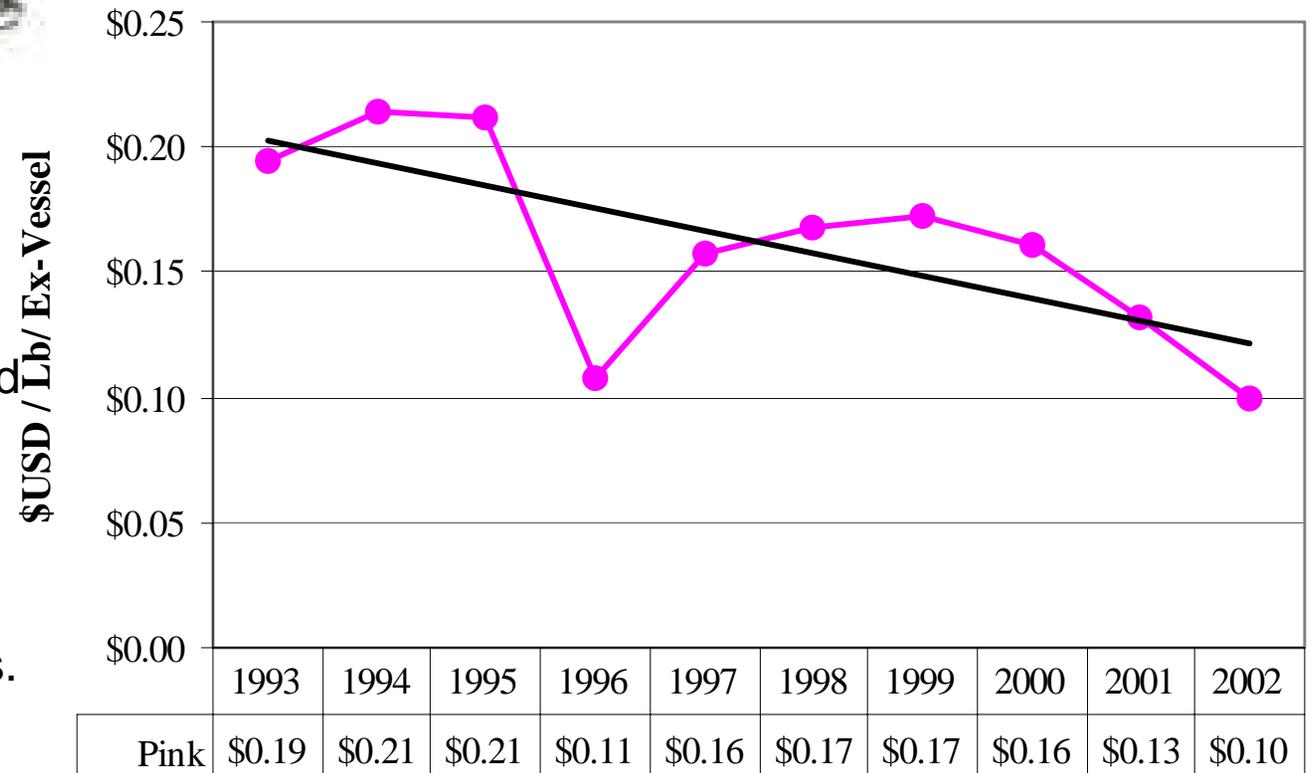


... Pink ...



- Pink price strongly impacted by large harvest volumes saturating static demand in canned market.
- Canned farm salmon is now competing directly with Alaska can pink salmon in retail markets.

Alaska Statewide Average Pink Price



Inflation Corrected to \$2002



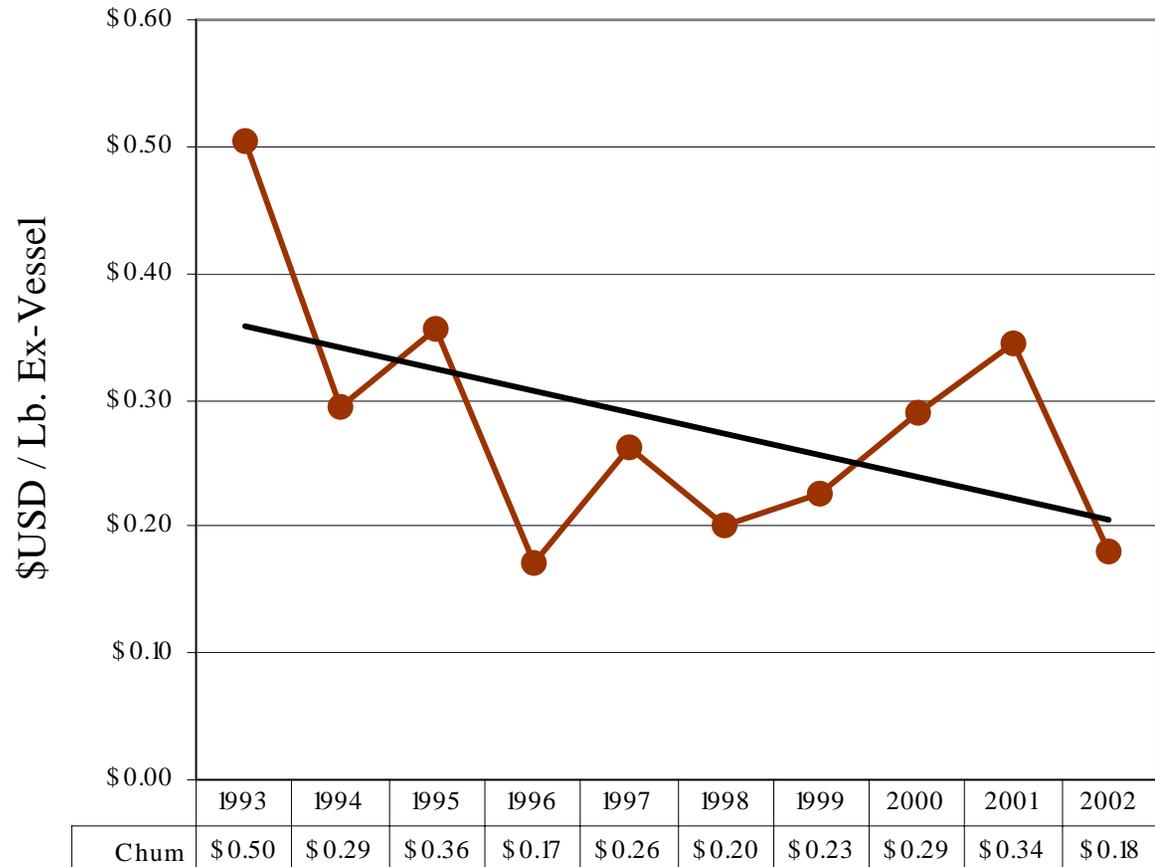


... Chum ...



- Chum prices, assisted in part by a strong ikura market, nonetheless were caught in the downward spiral of farm salmon prices.

Alaska Statewide Average Chum Price



Inflation Corrected to \$ 2002



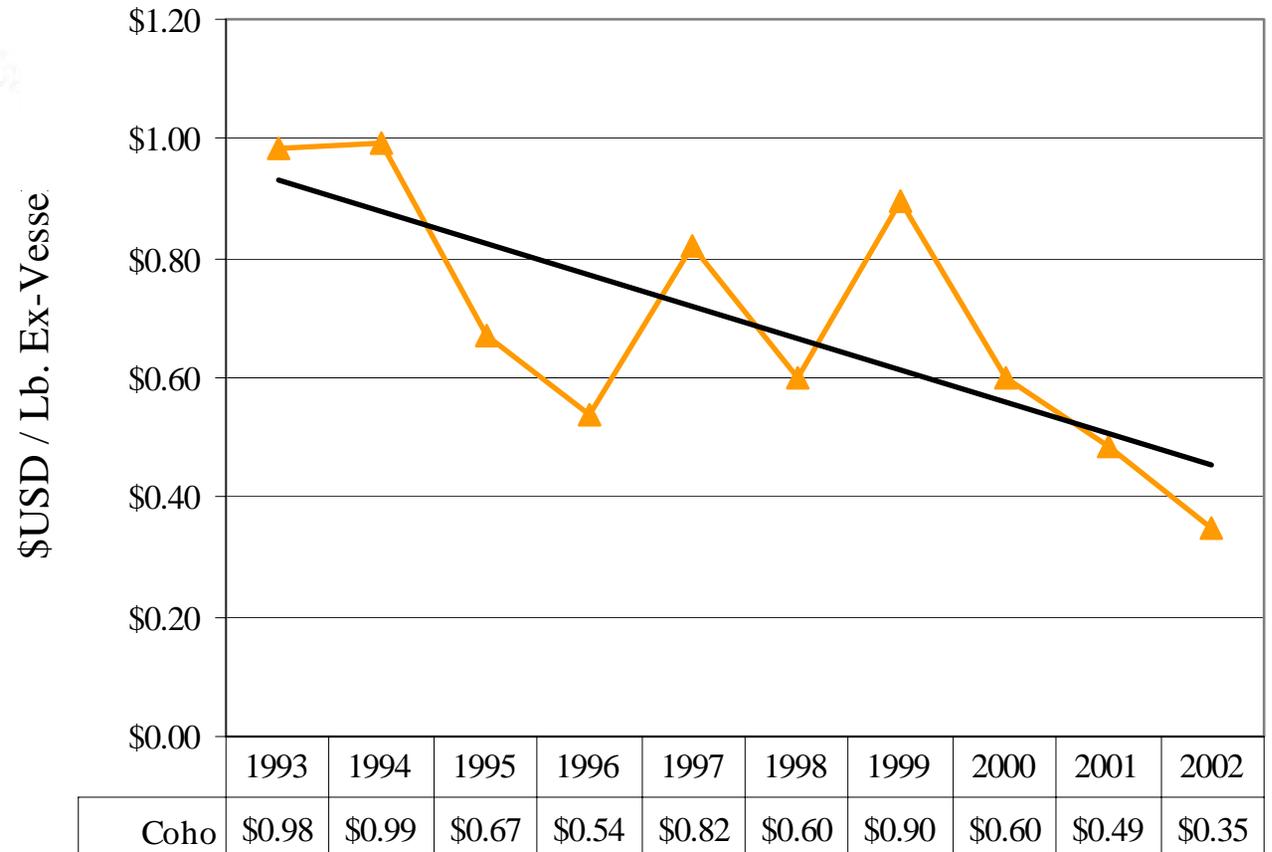


... Coho ...



- Silver salmon was hammered in the domestic and Japanese market by farm salmon products.

Alaska Statewide Average Coho Price



Inflation Corrected to \$2002



Opportunities created...



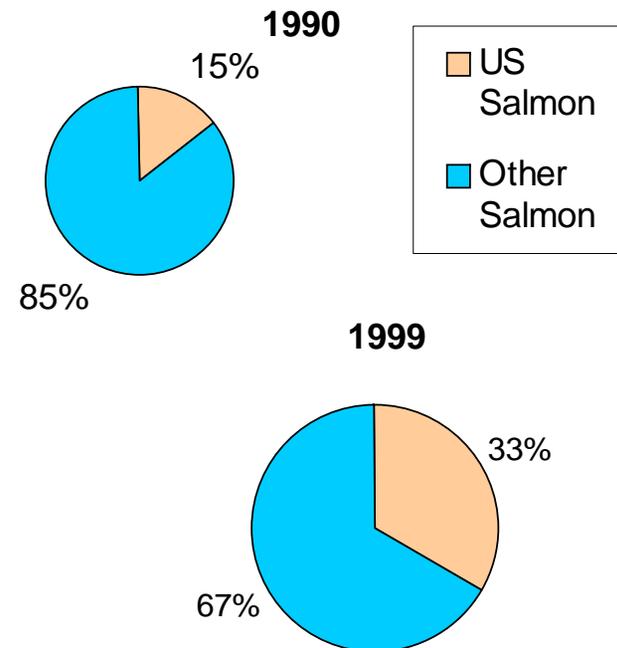
Global Salmon Consumption

- Enormous growth- total world salmon consumption increased four-fold.

US Salmon Consumption

- From 1990 - 2000, salmon consumption increased from 100,000mt to nearly 250,000mt.
- US produced salmon - mostly Alaska - increased more than 5 times, from about 15,000mt to more than 80,000mt.*

US Consumption



*Gunnar Knapp, Professor of Economics, University of Alaska, 2000

What about halibut, cod & sablefish?

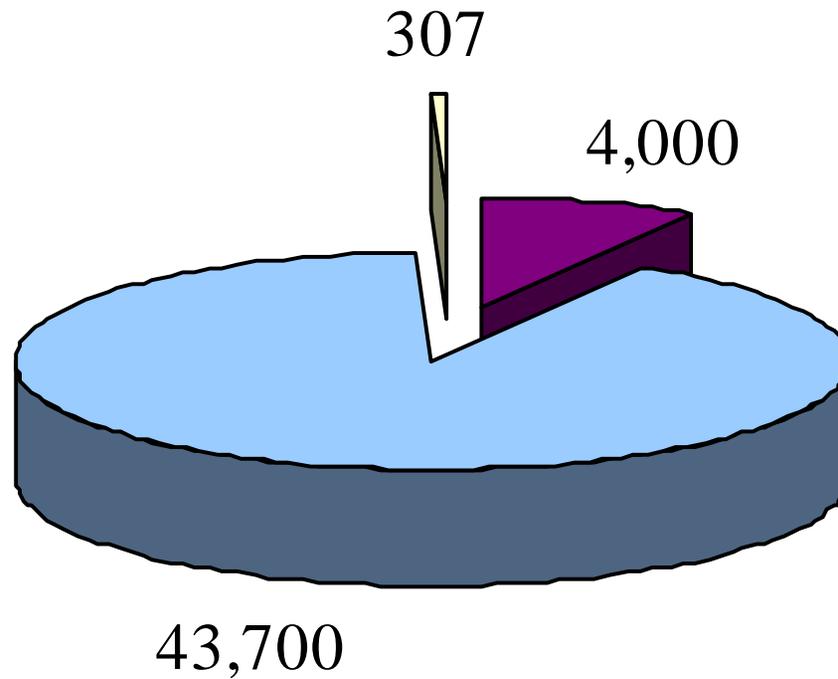


- ⚡ All are under active development by aquaculture interests.
- ⚡ Their economic potential is widely touted.
- ⚡ Each has its own particular development problems.
- ⚡ All are impacted by the financial condition of the farmed salmon industry.

Halibut...



2002 Halibut Production

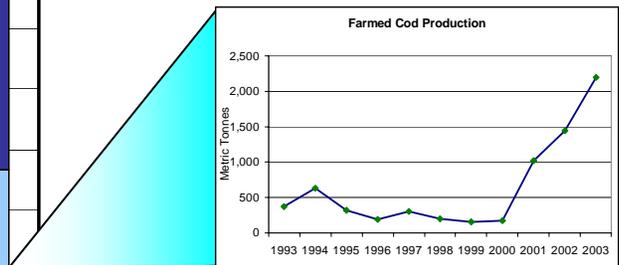
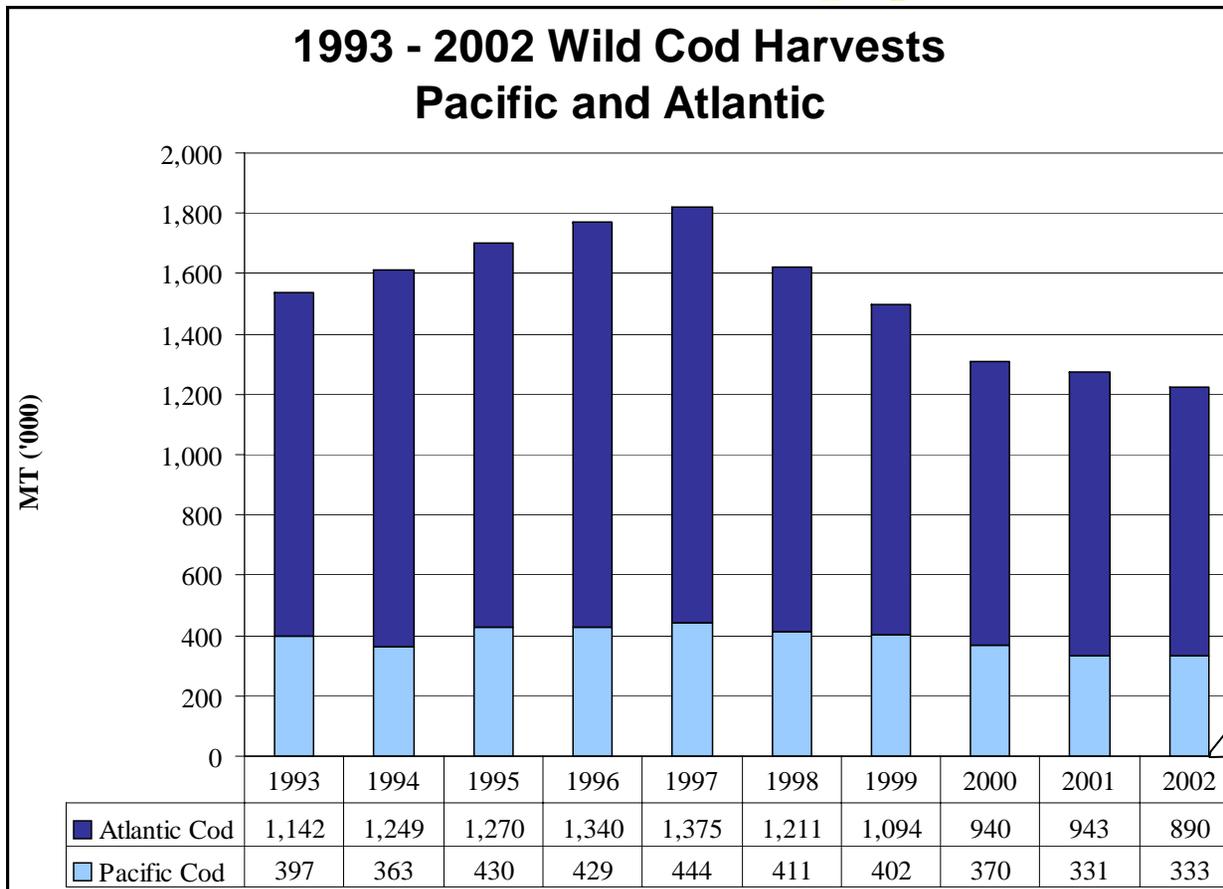
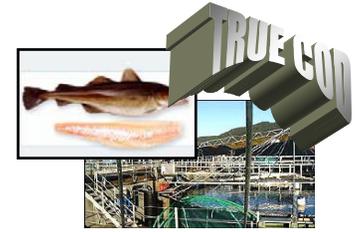


Halibut Aquaculture



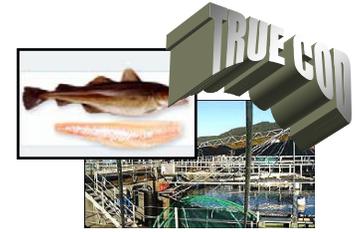
- Active work since 1985
- Production locations - Canada, Iceland, Scotland & Norway
- Production is “ramping up” - 2003 estimate 550 - 600 MT, about double 2002
- Several attributes make halibut attractive for farmers
 - adaptable to farm conditions
 - disease resistant
 - efficient feed conversion
 - high meat yield

Cod

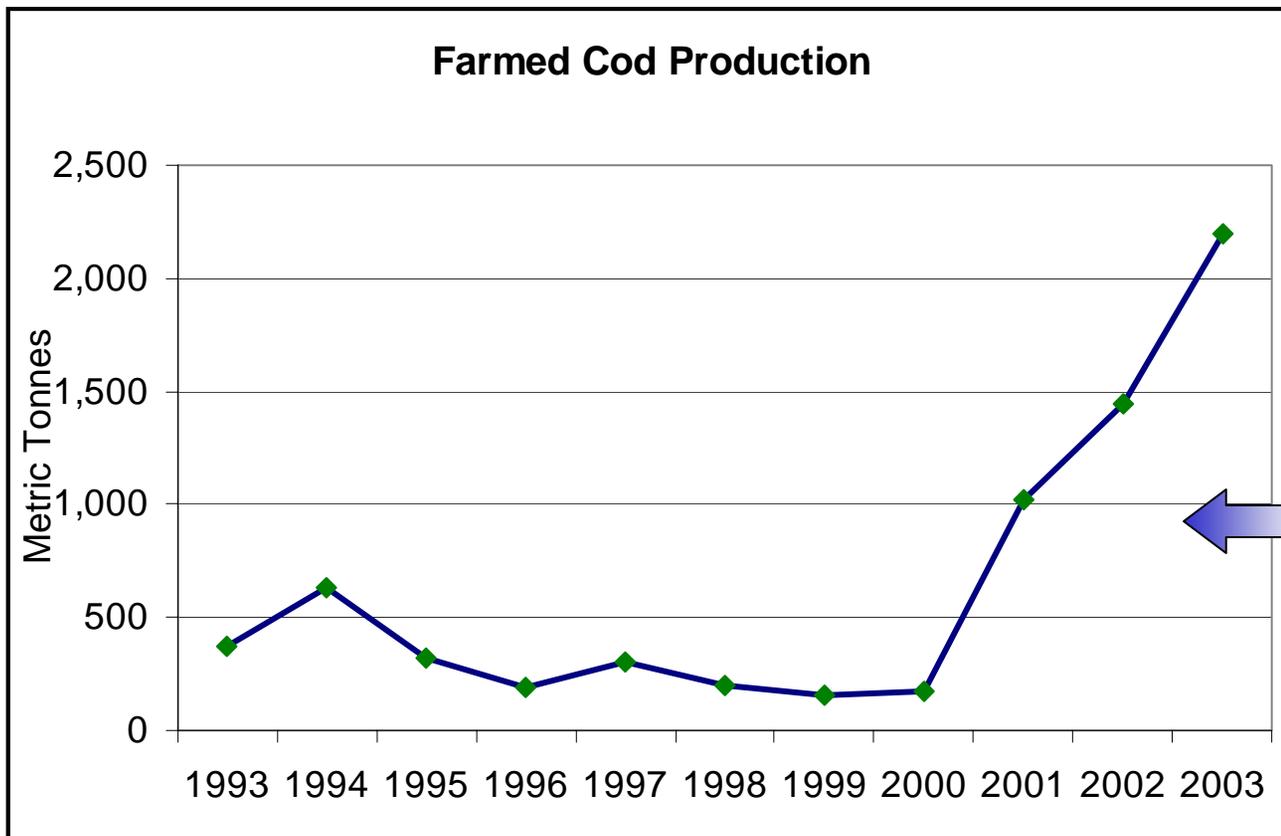


- Aquaculture cod too small to chart against wild production.

Cod - Aquaculture

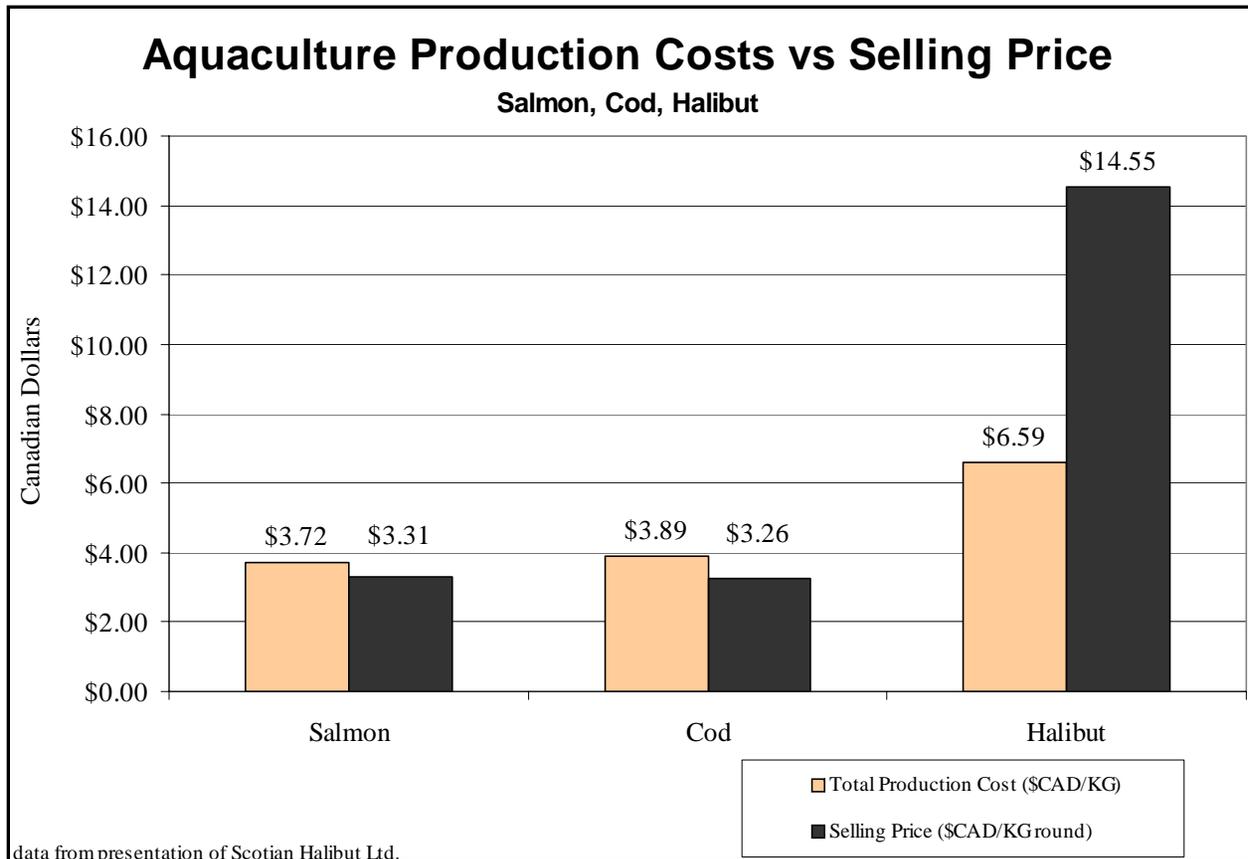


- Approx. 2,200 MT in 2003
 - (Wild production 2002 - 1,223,000MT)



But may be reaching “take off” point

Aquaculture Production Information - Salmon, Cod, Halibut



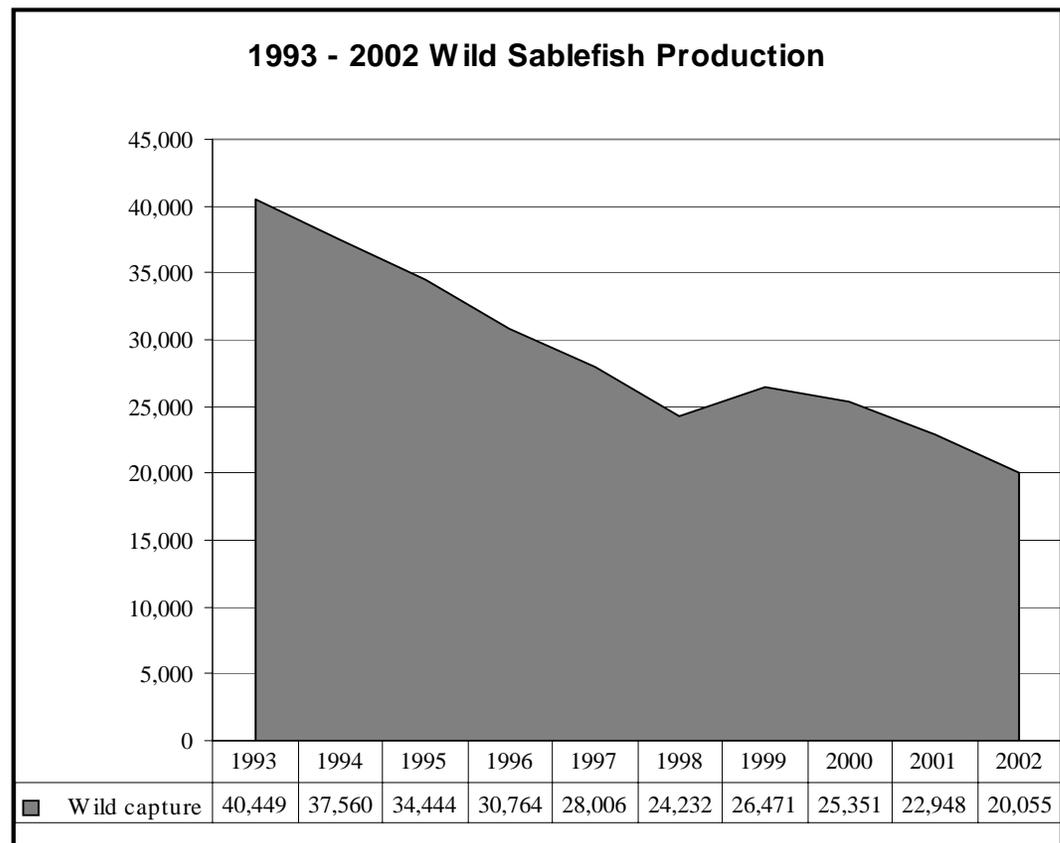
- Farmed halibut pricing significantly exceeds production costs.
- Whereas production costs for salmon & cod are currently not matched by selling price

Continued strong price for wild halibut is especially important

Sablefish Aquaculture



- No aquaculture production yet, but juveniles are in the water in British Columbia.
- High price, and declining wild production make blackcod an attractive species to farm.





Tilapia

- Tilapia makes acceptable surimi
- Competes directly with Alaska shore-based & factory trawler surimi product
- Total market impact unquantified, but could be substantial



Intensive Tilapia Farming
in Central America

Alaska's strategy to deal with farmed salmon



Legal responses

- Finfish farming unlawful in State waters
- State has asked for moratorium on aquaculture in EEZ

Market/Strategic Responses

- Improve Quality Assurance
- Wild, Natural & Pure
- Sustainable
- Product Diversification
- Market Diversification

*Alaska's strategy to deal
with aquaculture...*



...and for the FUTURE?