

SCOMM

126:21

HOUSE COMMITTEE REPORT

Date Referred to Committee: March 23, 2001

FURTHER REFERRALS: Resources
Finance

Date of Committee Action: 3/4/02

The HOUSE SPECIAL COMMITTEE ON FISHERIES Committee considered:

HB 208

HOUSE BILL NO. 208

AQUATIC FARMS FOR SHELLFISH

"An Act relating to aquatic farming of shellfish; and providing for an effective date."

Recommends it be replaced with CS HB 208 (FSH) ☒ Same Title ☐ New Title
For Senate Bills with new title: ☐ Technical Title ☐ New Title: HCR _____

☐ attach amendments
☐ add new referral to _____ Committee
☐ Letter of Intent _____ Committee

List of Abbrev. For Depts.:
ADM
CED
COR
CRT
EED
DEC
DFG
GOV
HSS
LAA
LAW
LWF
MVA
DNR
DPS
REV
DOT
UA

[illegible][illegible]

Signing with recommendations	Printed Last Name	DP	DNP	NR	AM
<i>John Coughlin</i>	Coughlin				✓
<i>John Deane</i>	Deane	✓			
<i>Bernie Blittler</i>	Kerthula				✓
<i>Mary Kapsner</i>	Kapsner				✓
Chair: <i>[Signature]</i>	STREY	✓			
Chair:					

FISCAL NOTE

STATE OF ALASKA 2002 LEGISLATIVE SESSION

Fiscal Note Number: _____

Bill Version: _____

HB 208

() Publish Date: _____

Revision Date/Time (Note if correction): _____

Dept. Affected: _____

Natural Resources

Title: Aquatic Farms for Shellfish

BRU: _____

Minerals, Land & Water Dev

Component: _____

Claims, Permits and Leases

Sponsor: Rep. SCALZI, Chenault, Lancaster, Harris, Hudson, James

Requester: (H) FSH

Component Number: _____

2460

Expenditures/Revenues

(Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Personal Services	116.6	155.6				
Travel	5.0	10.0				
Contractual	2.5	325.0				
Supplies	1.0	1.0				
Equipment	7.0	0.0				
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	132.1	491.6	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES

CHANGE IN REVENUES ()	0.0	58.5+	58.5+	58.5+	58.5+	58.5+
------------------------	-----	-------	-------	-------	-------	-------

FUND SOURCE

(Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	132.1	491.6				
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type)						
TOTAL	132.1	491.6	0.0	0.0	0.0	0.0

Estimate of any current year (FY2002) cost: _____

none

Check this box (X) if funding for this bill is included in the Governor's FY2003 budget proposal: ☐

POSITIONS

Full-time	3	3				
Part-time						
Temporary						

ANALYSIS: (Attach a separate page if necessary)

Figures shown here are only preliminary estimates.

This bill creates a one-time disposal program of at least 90 aquatic farmsites; changes the criteria of determining fair market value of a site where culture of indigenous shellfish is proposed; and requires DNR to condition leases for sites that culture wild stocks of indigenous shellfish to restore the wild stock upon termination or expiration of the lease to the population level that existed prior to issuance of the lease. It expands DNR's current aquatic farm program, which operates on program receipts with one employee and brings in approximately \$48.0 a year.

Operating expenditures for HB 208 could increase for FY 2004 if leases are issued for longer than 10 years, which would necessitate cadastral surveys of each site (AS 38.04.045). [CONT.]

Prepared by: Bob Loeffler

Division: Mining, Land and Water

Approved by: Pat Pourchot

Agency: Natural Resources

Phone 269-8600

Date/Time 1-Mar-02

Date 1-Mar-02

ANALYSIS: (continued)

This analysis assumes that under Sec. 3 of the bill, it would take a full year to prepare for the one-time disposal of 90 farmsites at auction. A new unit consisting of one Natural Resource Manager I, one Natural Resource Officer II, and one Natural Resource Technician would be required. (Additional appraisal services would also be required, but would be done under contract.) Because it would take approximately three months to establish and fill the positions, only nine months of personal services costs are shown for FY 2003. Once hired, the unit will need approx. 12 months to develop timelines and procedures; give public notice to solicit nominations; write preliminary disposal decisions; evaluate nominated sites and conduct the coastal consistency review and agency/public comment period (including limited hearings); review comments/resolve conflicts; write final decisions listing approved sites; inspect sites with ADF&G and DEC to determine suitability and whether indigenous shellfish are present; contract for appraisals (\$50.0) that consider the value of existing harvestable shellfish and site productivity; give public notice of the auctions; conduct auctions; and issue final leases. The auctions would likely not be held until the fall of 2003.

Total estimated costs for DNR's portion of one-time mariculture disposal: \$351.2

As part of the disposal, the bill requires the amount of sustainable harvestable shellfish to be determined so that a value could be placed on the resource. This information is outside DNR's expertise and would likely be obtained by a Reimbursable Services Agreement with ADF&G. Costs for this item were estimated by ADF&G and are shown as a contractual item for FY04.

Total estimated costs for DNR's RSA to ADF&G to evaluate site suitability, estimate populations of wild stock consistent with sustainable yield management and the potential productivity of the site: \$272.5

Changes in revenue: +\$58.5

If all 90 sites were leased, the possible revenue of \$58.5 annually would begin in FY04. This estimate is based on an average 3-acre suspended culture site x 60 sites = \$33,000 and an average of 5-acre on-bottom culture site x 30 sites = \$25,500 (plus the additional value placed on the amount of harvestable shellfish and the potential productivity of the site; these are unknowns at this time). However, it is not known whether the market could absorb such a large number of sites at once.

Personal Services New Position Detail

DRAFT

Department of Natural Resources

Scenario: DNR FY2003 Fiscal Notes - for Positions (2481)

Component: Claims, Permits & Leases (2460)

BRU Name: Minerals, Land, and Water Development (330)

PCN	Job Class Title	Time Status	Retire Code	Barg Unit	Location	Salary Sched	Range & Steps	Budgeted Months	Split / Annual Count	Annual Salary	COLA	Premium Pay	Annual Benefits	Total Costs
10-#075	Natural Resource Off I	FT	A	GG	Anchorage	2A	14 C	9.0		26,538	426	0	11,193	38,157
Justification:							Funding Detail:							
HB208							1004	General Fund Receipts					100.00%	38,157
Total Funding:												100.00%	38,157	
10-#076	Natural Resource Off II	FT	A	GG	Anchorage	2A	16 D	9.0		31,656	509	0	12,242	44,407
Justification:							Funding Detail:							
HB208							1004	General Fund Receipts					100.00%	44,407
Total Funding:												100.00%	44,407	
10-#077	Natural Resource Tech II	FT	A	GG	Anchorage	2A	12 C	9.0		23,247	373	0	10,519	34,139
Justification:							Funding Detail:							
HB208							1004	General Fund Receipts					100.00%	34,139
Total Funding:												100.00%	34,139	

Component Summary:

Total New Positions: 3

Fund Description	Fund Percent	Fund Amount
1004 General Fund Receipts	100.00%	116,703
Total Funding:	100.00%	116,703

Note: If a position is split, an asterisk (*) will appear in the Split/Count column. If the split position is also counted in the component, two asterisks (**) will appear in this column.

FISCAL NOTE

STATE OF ALASKA
2002 LEGISLATIVE SESSION

Fiscal Note Number: _____
Bill Version: HB 208
() Publish Date: _____

Revision Date/Time (Note if correction): _____
Title An Act Relating to Aquatic Farming of Shellfish
Sponsor Representative Scalzi
Requester House Fisheries

Dept. Affected: Environmental Conservation
BRU Environmental Health
Component Food Safety and Sanitation
Component No. 2343

Expenditures/Revenues

(Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	0.0	0.0	0.0	0.0	0.0	0.0
Supplies	0.0	0.0	0.0	0.0	0.0	0.0
Equipment	0.0	0.0	0.0	0.0	0.0	0.0
Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES						
-----------------------------	--	--	--	--	--	--

CHANGE IN REVENUES ()						
-------------------------------	--	--	--	--	--	--

FUND SOURCE

(Thousands of Dollars)

1002 Federal Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	0.0	0.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1037 GF/Mental Health	0.0	0.0	0.0	0.0	0.0	0.0
Other (Specify Type-Do not abbreviate)	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2002) cost: 0.0

Check this box (X) if funding for this bill is included in the Governor's FY 2003 budget proposal: ☐

POSITIONS

Full-time	0	0	0	0	0	0
Part-time	0	0	0	0	0	0
Temporary	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary)

This fiscal note was developed using information from testimony on the Senate companion bill (SB 141). During this testimony, it became clear that "suitable" did not mean already certified as a growing area under the National Shellfish Sanitation Program (NSSP), therefore the department does not expect any increased costs during the years covered by this fiscal note. Certification under the NSSP normally takes place shortly before commercial harvesting begins. Currently the industry pays for part of the cost to certify growing areas and we would expect that to be the case if this bill passes. However, even with industry support for some of the certification costs, there will be an increased cost to the department when any of the growing sites permitted under this legislation need to be certified under the NSSP.

Prepared by: Janice Adair, Director
Division: Division of Environmental Health
Approved by: Kurt Fredriksson Deputy Commissioner
Agency: Department of Environmental Conservation

Phone (907) 269-7644
Date/Time 2/28/02 3:49 PM
Date 2/28/2002

HB208

FISCAL NOTE

STATE OF ALASKA
2002 LEGISLATIVE SESSIONFiscal Note Number: _____
Bill Version: CSHB 208 (FSH)
() Publish Date: _____

Revision Date/Time (Note if correction): _____

Dept. Affected: Fish and GameTitle Aquatic Farms For ShellfishBRU Commercial FisheriesSponsor Representative ScalziComponent Fisheries DevelopmentRequester House ResourcesComponent No. 1942

Expenditures/Revenues

(Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Personal Services	40.0	25.0	*	*	*	*
Travel	10.0	5.0	*	*	*	*
Contractual	30.0	10.0	*	*	*	*
Supplies	5.0	3.0	*	*	*	*
Equipment	5.0	2.0	*	*	*	*
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	90.0	45.0	*	*	*	*

CAPITAL EXPENDITURES						
-----------------------------	--	--	--	--	--	--

CHANGE IN REVENUES ()						
-------------------------------	--	--	--	--	--	--

FUND SOURCE

(Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	90.0	45.0				
1005 GF/Program Receipts						
1037 GF/Mental Health						
TOTAL	90.0	45.0	*	*	*	*

Estimate of any current year (FY2002) cost: 0.0Check this box (X) if funding for this bill is included in the Governor's FY 2003 budget proposal: ☐

POSITIONS

Full-time						
Part-time						
Temporary	2					

ANALYSIS: (Attach a separate page if necessary)

ADF&G is required to provide consultation to DNR regarding the suitability of various sites before they are offered for lease. The Mariculture Program Leader and Assistant will lead and coordinate, in conjunction with industry nominations, the selection of sites to survey as well as field activities with ADF&G regional staff, and staff from other participating agencies. To accomplish site surveys for suitability, ADF&G will conduct dive surveys on potential sites. Personnel costs include funding for a seasonal Fisheries Biologist I, certified divers associated with dive surveys and inspections at proposed aquatic farm sites, and laboratory testing of samples taken from the sites. Travel costs include per diem and transport of department staff, including certified divers, to proposed and existing farm sites. Contractual costs include vessel time to conduct surveys and

Prepared by: Doug MecumPhone 465-6100Division DirectorDate/Time 3/5/02 3:15 PMApproved by: Gordy Williams for Commissioner Frank RueDate 3/5/2002Agency Fish and Game

(over)

FISCAL NOTE

STATE OF ALASKA
2002 LEGISLATIVE SESSION

BILL NO. CS HB 208 (FSH)

ANALYSIS CONTINUATION

inspections of proposed farm sites, and laboratory work for the analysis of water quality samples and PSP and Domoic Acid analysis for growing area certifications. Supplies include materials necessary for dive surveys, scientific supplies and data processing supplies, and assistance with regional mariculture plan development.

Additional time and funding needed to complete the work associated with identification of new areas in FY 2004 are roughly estimated at 50% of the FY 2003 costs.

* There will also be increasing costs associated with any large increases in mariculture permitting and support. Many services, such as water quality and product testing, currently provided at little or no cost to aquatic farm operators by various state facilities, resources, and personnel, will probably not be fiscally possible as the number of mariculture operations increases, unless funding is provided. These are essential to meet statutory requirements. Since such impact is completely contingent on the number of new farms and the size of the farms, these costs are impossible to estimate. This fiscal note merely identifies the likelihood of additional long-term costs.

NOTE: ADFG Division of Habitat and Restoration has also submitted a fiscal note.

PH

HB 208

FISCAL NOTE

STATE OF ALASKA
2002 LEGISLATIVE SESSION

Fiscal Note Number: _____
Bill Version: CSHB 208 (FSH)
() Publish Date: _____

Revision Date/Time (Note if correction): _____ Dept. Affected: ADF&G
Title Aquatic farms for shellfish BRU Habitat and Restoration
Component Habitat
Sponsor Representative Scalzi
Requester House Resources Component No. 486

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Personal Services	65.5	33.0	*	*	*	*
Travel	5.0	2.5	*	*	*	*
Contractual	2.0	1.0				
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	72.5	36.5	*	*	*	*

CAPITAL EXPENDITURES						
----------------------	--	--	--	--	--	--

CHANGE IN REVENUES ()						
------------------------	--	--	--	--	--	--

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	72.5	36.5	*	*	*	*
1005 GF/Program Receipts						
1037 GF/Mental Health						
Interagency Receipts from DNR						
TOTAL	72.5	36.5	*	*	*	*

Estimate of any current year (FY2002) cost: 0.0

Check this box (X) if funding for this bill is included in the Governor's FY 2003 budget proposal: ☐

POSITIONS

Full-time	1					
Part-time						
Temporary	2					

ANALYSIS: (Attach a separate page if necessary)

CSHB 208 (FSH) creates a one-time offering of at least 90 aquatic farm sites for lease.

In addition to the requirements in the bill, the requirements of other State and Federal statutes may affect sites that could be offered. These may include, but are not limited to, the Alaska Coastal Management Plan, District Plans, legislatively designated areas statutes and regulations, and 16.40.100-199 which requires that the physical and biological characteristics of a site be suitable for shellfish farming, that a farm site not require significant alterations in traditional fisheries or other existing uses of fish and wildlife resources, and may not affect fisheries, wildlife or their habitats [cont]

Prepared by: Chip Dennerlein Phone 465-3065
Division: Habitat and Restoration Date/Time 3/5/02 12:30 PM
Approved by: Gordy Williams for Commissioner Frank Rue Date 3/5/2002
Agency: Fish and Game

(over)

FISCAL NOTE

STATE OF ALASKA
2002 LEGISLATIVE SESSION

BILL NO. CSHB 208 (FSH)

ANALYSIS CONTINUATION

in an adverse manner. ADNR aquatic farm statutes and guidelines have specific requirements for such things as avoidance of eagle nests, marine mammal and seabird rookeries, and commercial seining areas. ADF&G maintains this information.

Identifying and evaluating 90 permittable lease sites will require intensive effort and additional staff will be needed. A Habitat Biologist III is needed to work with ADNR, ADEC, and ADF&G CFMD to identify potential lease sites. Existing fish and wildlife, habitat and public use data on sites will be collected and evaluated. Potential lease sites will be identified and surveyed in the field to determine suitability. The biologist will: review land use plans, coordinate with ADF&G Wildlife Conservation and Subsistence Divisions, ADNR, ADOL, local governments, and federal agencies; prepare site reports; attend public meetings and hearings; and issue Special Area permits as necessary. A 3-month FT III will aid in habitat site evaluations in the field, and one month of Cartographer 2 time will be needed to enter data into the GIS system.

* Costs for administration and oversight of additional levels of mariculture activity in subsequent years may be significant, but are difficult to quantify at this time.



Official Business

Alaska State Legislature

REPRESENTATIVE DREW SCALZI

**State Capitol
Juneau, Alaska 99801-1182**

(907) 465-2689; (800) 665-2689

FAX: (907) 465-3472

Representative_Drew_Scalzi@legis.state.ak.us

HB 208

Aquatic Farms for Shellfish

"An Act relating to aquatic farming of shellfish; and providing for an effective date."

The mariculture industry has the potential to increase the availability of fresh seafood to Alaskans, strengthen the competitiveness of Alaskan seafood products in the world marketplace and provide a premium product year-round.

Mariculture is new to Alaska. The permitting process is complex due to the number of agencies that oversee aquatic farming, i.e., Fish and Game, Environmental Conservation, Natural Resources and Governmental Coordination. With cooperation from these entities, this industry, which has proven extremely successful in other states, can certainly enhance economic development in our coastal communities with year-round employment for farmers and processors.

In a good faith effort to encourage good relationships between government agencies and the industry, HB 208 is being introduced as companion legislation to Senator John Torgerson's SB141.

HB 208 requires the Department of Natural Resources to offer public leases on 60 suspended shellfish sites, 20 clam sites and 10 geoduck sites. These lease sites are in addition to those already permitted. Security bonds must be posted according to the value of the product on-site and will be returned upon termination of the lease. Farmers must abide by the sustained yield principle of management when harvesting the wild stock. The Commissioner of DNR must solicit nominations from industry for sites that do not interfere with established commercial, subsistence or personal use.

HB208 is the means for encouraging the state to develop another resource that will add economic diversity to our coffers -- while protecting the right of Alaskans to harvest a common property resource.

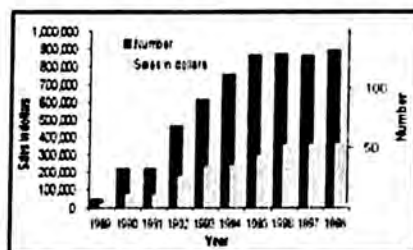
Shellfish Mariculture in Alaska: Economic Opportunity for Coastal Residents

Rodger Painter - ASGA
 Bob Hartley - KSMA
 Ron Long - Qutekac Shellfish Hatchery
 Jon Agosti - Qutekac Shellfish Hatchery
 Raymond RaLonde - UAF/Marine Advisory Program
 February 21, 2001

Where are the farms located?



Production of Alaskan Oysters



Constraints to Aquatic Farming in Alaska

- Negative regulatory climate
- High cost of doing business in rural Alaska
- Lack of infrastructure
- Slower growth rates than competitors
- Lack of investment capital
- Research and development hampered by lack of governmental support

Examples of ADF&G Regs

- Applicants must file a development plan showing by quarter over a ten-year period the amount of seed planted, number of shellfish harvested, gear deployed and number of employees.
- Farmers must demonstrate to ADF&G "increases in productivity" over natural levels before harvesting a crop including natural recruitment.
- Standing stocks of native shellfish must be harvested under common property fisheries before a site is transferred to an aquatic farmer even if there are no fisheries for the target species.

Where Alaska's Aquatic Farm Dollars Go?

(as a percentage of gross annual revenue)

Local Economy (Prince of Wales Island)	53%
Region (Southeast, including POW)	74%
State Treasury (lease fees, taxes, licensing)	3.5%
Alaska	96.5%

Source: Based upon 2001 expenditures of Tenase Pass Shellfish Company, an oyster and clam farm located on Prince of Wales Island

Economic Spin-offs of Shellfish Farms

- Services (Fuel, groceries, supplies, welding, outboards, etc.)
- Shellfish Nurseries (\$12,000 net profit/million seed)
- Processing (Provides year-round flow of product)
- Air Service (My farm backhauls 900-1,500 lbs/week)
- Revenue Sharing (Farms pay Fisheries Business Tax)
- Employment (My farm employs 4 on a year-round basis)

Economic Impact

\$20,000 gross revenues per acre for Alaska oyster and clam farms

(Based upon performance of 8-acre S.E. and 1-acre Kachemak Bay farms over a five-year period.)

At this rate, Alaska would require only 5,000 acres of coastline to create a \$100 million industry!

Kachemak Shellfish Growers Cooperative

- Cooperative provides
 - Shellfish nursery for optimum size and quality of seed for farmers.
 - Security for fishermen while absent from the farm.
 - Cooperative marketing assures year around market for those who need a flexible harvest schedule.



Commercial Fishermen and Farming

- 16 Active farms in Kachemak Bay
- 12 farms operated by current or form commercial fishermen
 - 8 active



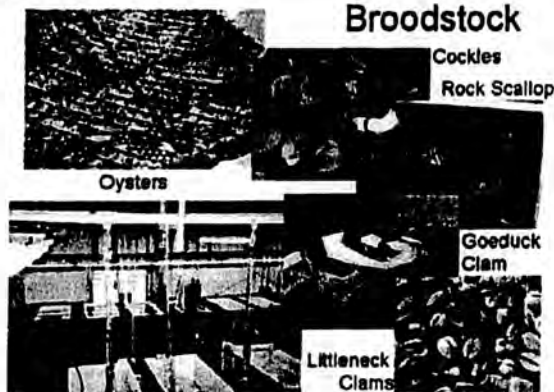
Qutekcak Shellfish Hatchery

The nuts and bolts

- Hatchery (background)
 - State-of-the-art
 - 9,370 ft² capacity
 - Highly treated water
 - Easy access
 - Integrated plumbing
 - Heat recovery
 - Sterilized effluent
- MTC research center
- Nursery pond (foreground)
 - Initial seed rearing



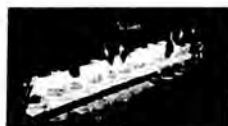
Broodstock



Algae Culture

Live algae needed to feed

- Broodstock
- Larvae
- Seed



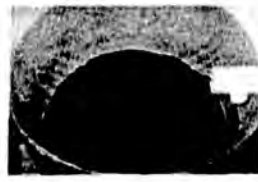
Shellfish Larva Culture

- 16,000 liter larva tanks hold in excess of 40 million larva
- Larva fed live cultured algae for three weeks



Larva Setting

- Larva placed in upwelling tanks at ~ 0.25 mm
- Larva set and develop into adult form
- Reared in tanks to 2-3 mm
- Removed to nursery



Seed "Spat"



Qutekcak Shellfish Hatchery An Investment for the Alaskan Economy

- \$3.2 million facility
- Produces seed of oysters and indigenous species
- EDD study 1993 primary goal identified to control seed supply.
- Five year bumpy startup exceptional for a hatchery
- Non-state investment over 5 years of \$1.4 million



What the Hatchery Needs to Succeed

- Bottom line: We need customers in the form of permitted farms!
- Enhancement opportunities for depleted stocks
- Technology does not pay the bills.
- Supporting statutes and regulations.
 - SB-141/HB-208

"Seeding" a Clam Plot

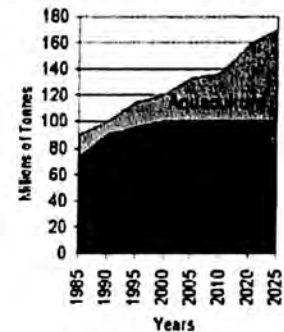


Mussel Shellfish Aquaculture

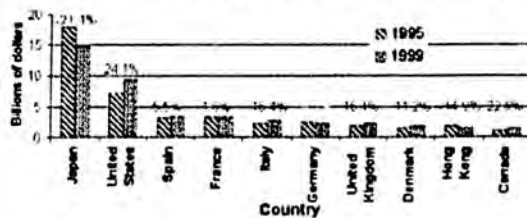


An Aquaculturist View

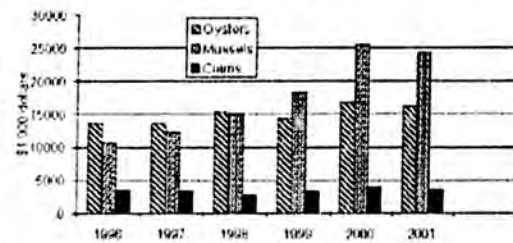
- Captured fisheries are at or near their maximum level
- Consumer demand will continue to increase
- Aquaculture is required to make up the difference
- Aquaculture is the US fastest growing agriculture sector



Seafood Imports By Country

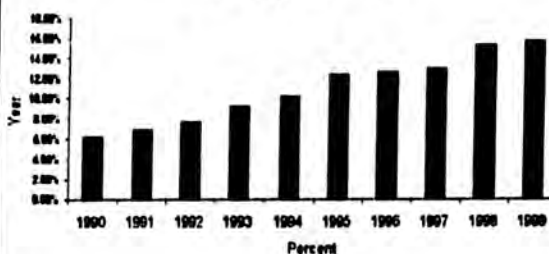


Imports of Bivalve Shellfish Into the United States

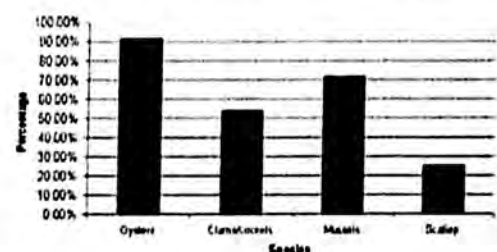


Total US production in 1998 \$89 million

Percentage of Farmed Marine Fish Compared to the Commercial Fishery Harvest

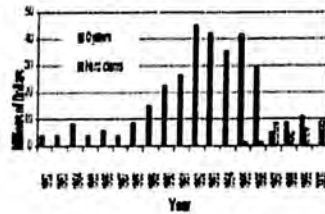


Farmed Shellfish as a Percentage of the Commercial Fishery Harvest



Connecticut

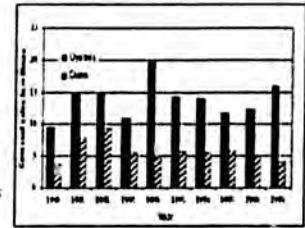
- \$60 million farmgate
- 600 jobs
- 52,000 acres of oyster farms
- Using the standard multiplier \$200 million contribution
- Challenges with disease in recent years
 - Prospects good for future
 - Clam production added



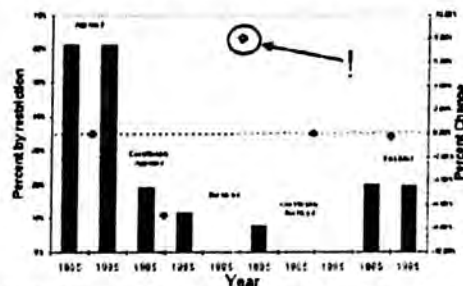
The massive upswing 1982-1992 was due mainly to 5.4 million investment public funds

Washington

- Production has leveled
 - Little room for expansion
 - Concentration on shucked oyster meat
 - Water quality concerns that reduce rearing areas
 - Seasonality of sales
 - Few off-shore areas for growing high valued halfshell oysters



Water Quality



Alaska has zero (0) acres of restricted shellfish growing areas

Florida Clam Farming

Statewide in 1998

- 1,440 acres of farms
- 50 nurseries
- 300 growers

Cedar Key Florida

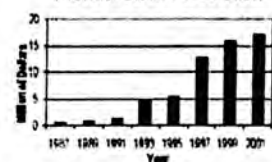
- 50 million clams
- Average farmer clears \$30,000 annually
- \$7.5 million annually to the local economy



Partnerships That Work



Florida Clam Production



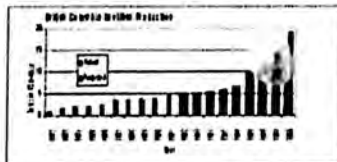
British Columbia

British Columbia's Shellfish Farming Initiative

Coastal Aquaculture

Western Economic Diversification Canada
Department of Fisheries and Aquaculture
Science and Technology Division

Aquaculture
By Sea for
British Columbia's
Coastal Industry



Goal
\$100 Million Dollar Industry
By 2006

Significant Developments in Alaska

Oyster Broodstock

Nursery production



Growout research

Education and Training Conferences



Shellfish Quality, Marketing, and Safety Program

- USDA/CREES grant "Alaskan Shellfish Quality, Safety, and Markets"
 - \$132,712 over two years
- Support of alternative PSP testing research
 - In-kind sampling for ASTF projects
 - Conferences in 1996, 1999, 2001
 - Current Sea Grant project \$45,000 over two years
 - ASTF funded marketing program



What Alaska Has to Offer

- Impressive biological advances
- Alaska's pristine environment
- We have tidelands available
- Expertise is growing
- Reputation for exceptional quality and safety
- University with fisheries and oceanography
- Consumer demand far greater than supply.

What Alaskan Shellfish Farming Needs

- Regulatory relief with permit application and review
 - Shellfish farming is diligent use of tidelands
 - Shellfish aquaculture is environmentally responsible
 - Policies and regulations must be developed that
 - Reduce conflict
 - Clarify regulations
 - Modify the application
 - Increase efficiency
- Develop partnerships
 - University of Alaska - Research
 - Investment capital that comes with regulatory reform
 - Cooperative regulatory agencies
 - Support of Alaskan economic interests

Summary Of Current and Future Initiatives

Funded (\$425,000)

- November 2001- Conference (Environmental effects of on-bottom aquaculture) (ADF&G, PAC, SEA GRANT, MAP, ASGA)
- 2000-01- Littleneck clam culture field research (ASTF)
- 2000-02- Environmental codes of practice (Alaska Conservation Foundation)
- 2002-04- Scallop culture field research (Sea Grant)
- 2002-04- Cockle culture research (SBIR)
- 2001-2004- Prince of Wales Island aquaculture development program (CES, PRF, Sea Grant)
- 2002-03 Shellfish marketing study USDA/CREES

Proposed (\$260,000)

- 2002+ - University of Alaska Initiative



Rodger Painter, vice president
P.O. Box 20704 Juneau, AK 99802
Phone/Fax: (907) 463-3600
rodgerpainter@hotmail.com

Payback of Fiscal Notes for SB141/HB208

Lease fees

Aquatic farmers pay DNR \$350 for the first acre and \$250 for each additional acre in annual lease fees. For a five-acre farm this equates to \$1,350 per year. For 90 5-acre farms, this would amount to \$121,500 in annual revenues.

Fisheries Business Taxes

Aquatic farmers are subject to the Fisheries Business Tax. If each of the 90 farms were to generate \$100,000 in gross sales per year, the tax liability per farm would be \$3,000. For 90 farms, the total would be \$270,000.

Other Annual Licensing and Permitting Fees

Fisheries Business License = \$25 per farm. Shellfish shipping permits from DEC = \$100. Growing area certification (DEC) = \$300. Total per farm = \$425. Total for 90 farms = \$38,250.

Total Annual Lease Fees, Taxes and Licensing Fees

Per 5-acre Farm = \$4,775. Annual total for 90 Farms = \$429,750.

Economic Contribution

If each farm generated \$100,000 in gross revenues, 90 farms would contribute \$9 million to the economy. If farm supports two jobs, a total of 180 new jobs would be created.

Proposed conceptual language SB141

(a) Upon an aquaculture lease site applicant meeting consistency requirements of ACMP and upon a positive best interest finding by the Department of Natural Resources, the Department of Fish and Game shall issue an operation permit to an aquaculture site applicant at a site where aquatic farming of the shellfish species would not interfere with an established commercial, subsistence, or personal use fishery (1) within thirty days if an indigenous population of the shellfish species to be cultivated is not present, (2) within 150 days in the case of the presence of an intertidal harvest species with the following provisions: the department shall give public notice for sixty days that the proposed area shall be open to harvest for a period of ninety days to (a) the public or (b) to limited entry permit holders if the species are subject to limited entry or (3) within 90 days in the case of the presence of subtidal dive harvest species with the following provisions: the department shall give public notice for sixty days that the area shall be open to harvest for a period of thirty days to (a) the public or (b) to limited entry permit holders if the species are subject to limited entry. Following the harvest period, the remaining standing stock shall be available for cultivation and harvest by the aquaculture site lease holder and the area shall be off limits to further commercial harvest except by the lease holder for the term of the lease. These provisions shall apply to applicants who have already met the ACMP and DNR requirements and to those that meet them in the future.

(b) Upon the expiration or termination of the lease, a person who holds a lease for an aquatic farming site where wild stocks of shellfish indigenous to the site are cultured and are subject to limited entry provisions shall, as a condition of the lease, restore the wild stock of shellfish, as consistent with sustained yield management of the wild stock, to the population level that existed on the site when the lease was initially issued.

Intent: it is important to put on the record of committee deliberations on this section of the law, that by adopting this legislation it is the legislature's intention to establish a practical method for aquaculture operations to move forward while still respecting the common property and sustained yield provisions of Alaska's constitution. While the open harvest period may exceed normal sustainable yield levels, the legislation requires the aquaculture site leaseholder to restore the area to original population levels at the end of the lease, at which time the area would once again be available for open commercial harvest, or for a new lease application. Therefore, this temporary use of the site and the marine resources thereon would not be seen as a violation of the sustained yield principle or the common property clause of the Alaska Constitution.

While this legislation is intended to reduce litigation, if the issue is litigated, it is important for the courts to understand the thinking of the legislature in adopting this measure.

Submitted by Paul Fuhs
(907) 351-0407

QUTEKCAK SHELLFISH HATCHERY

PO Box 369
101 Railway Avenue
Seward, AK 99664
907-224-5181 fax 224-5282
qshatch@arctic.net

February 28, 2002

Dear Representative Scalzi,

On behalf of the Qutekcak Native Tribe and the hatchery, I would like to express our support for HB-208, and our appreciation for your sponsoring this important legislation.

The economics of coastal communities have been negatively impacted in the recent past for a variety of reasons too numerous to recount here. What's important is to look for possible solutions, and we feel the shellfish farming industry has demonstrated the potential to bring needed economic diversity to these communities. That potential is enhanced due to the fact that many of the individuals who have been hardest hit are commercial fishermen who already possess many of the necessary skills and equipment.

Over the past few years we have witnessed an increased awareness of this industry's potential in Alaska, and have managed to dispel some perceptions that draw inaccurate parallels between finfish farming and shellfish farming. We have not been as successful in streamlining the permitting process in a way that will allow the industry to reach the "critical mass" necessary to support the hatchery as our research nears completion and the funding for that research needs to be replaced by marketing the developed product.

We recognize that there is no magic wand, and that the proper course for our industry is incremental and steady improvements in regulation and understanding, and in further demonstrating the economic benefits of the industry. This legislation represents an important step along that course of improvement by making available sites that will increase our customer base. We are cognizant that some investment in the form of agency budgets will be necessary on the State's part to make this legislation work, but are confident that we can provide returns over time on that investment many times over.

Thank you for your support and best regards,

Ron Long,
Director



Rodger Painter, vice president
P.O. Box 20704 Juneau, AK 99802
Phone/Fax: (907) 463-3600
rodgerpainter@hotmail.com

February 20, 2002

**Honorable John Torgerson
State Capitol, Suite 427
Juneau, AK 99801-1182**

Dear Senator Torgerson:

Your efforts to create a "bank" of aquatic farm sites are greatly appreciated by aquatic farmers throughout the state. The committee substitute for SB 141 you have developed has made good bill even better, and we are enthusiastic about working with you to move it through the process this year.

We are particularly grateful for the changes in the committee substitute. We believe SB 141 represents a wise investment in creating new economic development opportunities in coastal Alaska with the use of one of the state's most abundant natural resources. What a better way to bolster the sagging economies of coastal regions than promote an environmentally friendly industry supporting year-round jobs.

We believe this approach to aquaculture development may become a model for the rest of the country. We again thank you.

Sincerely,

**Rodger Painter
Vice President**



Rodger Painter, vice president
P.O. Box 20704 Juneau, AK 99802
Phone/Fax: (907) 463-3600
rodgerpainter@hotmail.com

February 11, 2002

Senator John Torgerson
State Capitol, Room 427
Juneau, AK 99801-1182

Dear Senator Torgerson:

After carefully considering your comments on our proposed "aquaculture development zone" concept, we have decided that your approach on Senate Bill 141 is superior. We'd like to work closely with you and Rep. Scalzi in getting the legislation approved this session.

There is one amendment to SB 141 that we believe is vital to accomplishing the intent of the legislation: removal of the section on lease valuation. Here's the language we'd like to have deleted:

In determining the fair market value of a lease for an aquatic farming site where shellfish indigenous to the site are cultured, the department shall consider the value of the harvestable shellfish resource on the site and the potential productivity of the site for cultured shellfish.

Here's our rationale for removal of the language:

- Adoption of regulations by ADF&G subsequent to development of SB 141 has effectively rendered this section moot. Under current ADF&G procedures, the harvestable "standing stock" of native shellfish on an aquatic farm site must be harvested under commercial fishing permits prior to transfer of the site to the applicant. In addition, ADF&G policies prohibit applicants from obtaining sites with significant numbers of wild geoducks. Insertion of this language could confuse the validity of these practices.
- SB 141 also contains language codifying current ADF&G regulations and permit conditions requiring growers to replace standing stocks prior to relinquishing the site. The practical effect of putting both sections into law would be to require growers to pay for standing stocks twice, in addition to paying the state the same fisheries business tax rates of commercial fishermen AND lease fees for use of state land and waters.
- The existing language could create concerns for growers attempting to farm mussels and other species not subject to commercial fisheries. If the shellfish is not subject to commercial fisheries and we have a great abundance of the species, the state shouldn't create disincentives for utilizing surplus natural resources.
- The final clause of the section includes "potential productivity of the site" as a reason for increasing lease valuations. ASGA has objected strongly to this

language in ADF&G regulations and we will seek to have it removed when a more friendly administration takes office. The "potential productivity" of a site is an extremely elusive concept that is extremely troublesome for the industry.

- Alaska already has some of the highest tidelands lease fees for aquatic farm sites of any jurisdiction in North America, and we have been attempting to convince DNR to bring them more in line with our competitors. The existing language in SB 141 has the potential for increasing existing lease fees and moving us away from our goal.

After discussing your intent behind SB 141, we have become convinced it is a very good approach to moving the industry forward. DNR confirms the sites will remain "in the bank" following the initial offering and that it is possible to obtain annual offerings or even an over-the-counter approach. DNR also says it will be possible to divide a large site between two or more applicants.

We were unaware of these attributes of the state's land disposal process. We appreciate your vision in putting together this package and apologize for taking so long to get solidly behind the legislation. We look forward to working with you and Rep. Scalzi in getting SB 141 approved during this legislative session.

Sincerely,

Rodger Painter

c.c. Rep. Drew Scalzi
Sen. Robin Taylor
Rep. Lesil McGuire

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

**DIVISION OF ENVIRONMENTAL HEALTH
DIRECTOR'S OFFICE
555 CORDOVA STREET
ANCHORAGE, ALASKA 99501
<http://www.state.ak.us/dec/deh>**

**Telephone: (907) 269-7644
Fax: (907) 269-7654
e-mail: Janice_Adair@envircon.state.ak.us**

February 28, 2002

The Honorable John Torgerson
Chairperson, Senate Resources Committee
Room 427, Capitol Building
Juneau, AK 99801

Re: SB 141, Shellfish Growing Areas

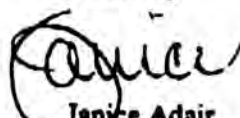
Dear Senator Torgerson:

I have had a chance to discuss the above-referenced legislation with Rodger Painter with the Alaska Shellfish Grower's Association. As you know, we did include a fiscal note on this bill because we interpreted "suitable" to mean certified under the National Shellfish Sanitation Program (NSSP).

While the definition of "suitable" was not discussed in any of the testimony on the bill that I heard, Rodger did point out some very legitimate problems with certifying an area so early in the process. Therefore, I will be submitting a zero fiscal note on the committee substitute when it arrives in the Senate Finance Committee. Certification under the NSSP normally takes place shortly before commercial harvesting begins. Although the industry currently pays for a part of the cost to certify growing areas and we would expect that to remain the case, there will be an increased cost to the department when certification of growing areas is required. However, from talking with Rodger, I believe those costs will be incurred after the time frame covered by the fiscal note form.

I hope our misunderstanding of the bill and the resultant fiscal note did not cause you any undue problems in moving this legislation, and please accept my sincere apologies if it did.

Sincerely,


Janice Adair
Director

cc: Michele Brown, Commissioner

Safe Food, Safe Water, Healthy Communities

Why Clam Farming?

Alaska has enormous potential as a supplier of littleneck clams, often called steamer clams, to the seafood market. Past and current efforts to develop a commercial fishery on the abundant clam resources of Alaska have resulted in limited harvest caused by logistics and economic problems associated with managing the fishery. At present, only Kachemak Bay has a commercial harvest of littleneck clams, and because of depleted stocks, the fishery is limited to only 25,000 pounds annually.

The topic of clam farming in Alaska first appeared as an agenda item at the 1987 4th Alaska Sea Grant Aquaculture Conference. With high worldwide consumer demand for steamer clams and short supply of littleneck clams for the Alaska seafood market, new and existing farms are eager to pursue clam farming.

In 1991, Alaska's original clam farmers were allowed to harvest clams only under commercial fisheries regulations of the Alaska Department of Fish and Game (ADF&G). The first official clam farms were permitted in 1993. Expecting broader interest in clam farming a conference, titled Broadening Shellfish Farming Opportunities in Alaska, was sponsored in 1996 by the ADF&G, the Alaskan Shellfish Growers Association, and the University of Alaska Marine Advisory Program. The purpose of the conference was to begin development of a regulatory program for on-bottom aquaculture in Alaska. At the conference, ADF&G representatives issued a clear statement that the department did not have the resources to manage a commercial clam fishery beyond that existing in Kachemak Bay and favored development of clam farming.

By the end of 1997, three aquatic farmers have obtained tidelands leases to farm littleneck clams in southeastern Alaska. Their combined 1998 harvest was 35,014 pounds of clams worth nearly \$87,535.

What is Clam Farming?

Farming clams requires application of well established farming practices to an existing clam population that will increase the beach productivity and allow for a sustained harvest of the enhanced clam population. In Alaska, farming activities include:

1. Regular inventories of standing stock and determination of the size composition of the clams.
2. Optimizing growth and production of clams by controlling their density by harvest planning, redistribution of seed from overstocked parts of the bed, and/or planting hatchery produced clam seed.
3. Reducing clam mortality by appropriate use of predator exclusion netting.
4. Maintaining the beach free of major deposits of large debris and improving the substrate quality.
5. Harvesting clams to maximize their value and marketability.
6. Complying with the required Alaska Department of Environmental Conservation water quality testing program, and marine toxin certification of farmed product.

Performance of these farming activities, is far beyond what is required of a commercial clam harvester.

What is a clam farm? A pictorial tour



Clam farming may require application of predator exclusion netting. In this picture, a trench has been dug to anchor the margins of the net.



Predator exclusion netting is rolled out over the prepared plot.



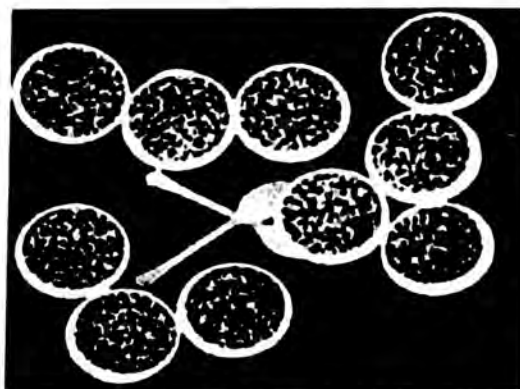
Predator netting is about 1" square mesh. It is not intended to exclude all predators. Crabs and starfish are the farmers primary concern. Birds can feed through the netting



Predator nets anchored and ready for seeding clams.



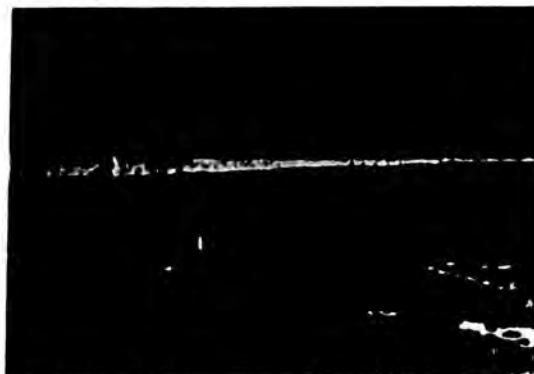
The farm plot after a few months. Predator netting is partially covered by sediment and algae growth.



Measured quantities of clam seed ready for planting the farm.



Planting clam seed over the netting. Clams are smaller than the net mesh and will dig themselves in as the tide covers them.



In Alaska, clam harvesting is done by hand.

Impacts of clam farming

Environmental (Statements in parenthesis are editorial comments needed for clarification).

Mojica, R. and W.G. Nelson. 1993. Environmental effects of a hard clam (*Mercenaria mercenaria*) aquaculture site in the Indian River Lagoon, Florida. Aquaculture. Volume 113, page 326.

- "Measurements of water column nutrients and chlorophyll concentrations gave no indication of changes..."
- "sediment differences were not associated with significant changes in benthic dwelling organisms."
- "Differences in mobile macrofauna were minimal ..." (between aquaculture and natural sites)

Spencer, B.E., M.J. Kaiser, and D.B. Edwards. 1997. Ecological effects of intertidal Manila clam cultivation: observations at the end of the cultivation phase. Journal of Applied Ecology. Number 34. Page 451.

"Our results suggest that the biotic and abiotic changes caused as a result of clam cultivation are relatively benign compared to other forms of marine cultivation..."

Kaiser, M.J., I. Laing, S.D. Utting, G.M. Burnell. 1998. Environmental impacts of bivalve mariculture. Journal of Shellfish Research. Volume 17. Number 1. Page 63.

"...the benthic community within dredged plots was indistinguishable only 3 months after harvesting regardless of the scale of disturbance..."

Brooks, K. 1996. Intensive clam culture and the environment. Proceedings of the conference: Broadening Alaska's shellfish farming opportunities: A conference and workshops focusing on public issues involved with the development of on-bottom culture of indigenous shellfish. University of Alaska Marine Advisory Program. Anchorage, Alaska. Page 41.

"Of all the forms of aquaculture, intertidal shellfish culture is undoubtedly the most benign. If you minimize encroachment on eel grass beds and find effective methods of predator control, the several hundred pages of literature reviewed in preparing this talk suggest only positive environmental affects associated with either intensive clam or oyster culture."

Economic Impacts

The current commercial harvest limit for littleneck clams in Kachemak Bay is 40,000 lbs. Local management has set the commercial harvest at 25,000 lbs having a market value at \$2.50/lb or \$62,500. Actual 1998 harvest was less than 20,000 lbs.

An aquatic farm can produce, with predator protection and seeding, about 10 times the biomass of clams as a natural population. By any definition, this level of production increase would be considered enhancing the clam population of the beach.

Aquatic farming in can produce an estimated conservative production of 12 harvestable clams per square foot per year. From a 10 acre plot, the annual harvest would be 435,000 lbs. worth approximately \$1.1 million.

What is the market?

Homer

- Lands End during the summer buys 6,000 lbs and had indicated that they could sell more than 20,000 lbs if more clams were available.
- His Catch Seafood, Homer, Alaska indicated a sales potential of over 40,000 lbs. annually.

Anchorage

- Favco, Anchorage's largest seafood wholesaler, estimates the Anchorage market demand for littleneck clams at over 1,000,000 lbs. annually.

Western Region of U.S. (Aquaculture situation outlook, Western Regional Aquaculture Center)

- "In 1997, it is estimated that over 5.4 million pounds of clams were produced at an estimate of over \$13.7 million." Farmers are converting oyster production into clam farms, and by 2002 production will increase to 7.7 million pounds

United States

- The long term trend (1988-1998) for clam landings showed an overall decrease, however, imports have increased.

Export market

- The long term trend of clam exports (1988-1998) have shown an increase of 196.16% from 661 metric tons to 1,958 metric tons.
- Recently, exports of clams have been somewhat variable depending on the economic circumstances in Asia. In 1998 exports rose 8% while in first half of 1999, exports declined by 15%. We do know, however, that water quality in Asia is a great concern, and shellfish grown in clean water will have an economic advantage.

Effect clam farming on other clam fisheries in Alaska

- There is no littleneck clam fishery outside of Kachemak Bay
- The Kachemak Bay clam commercial fishery is very limited
- In a hearing before the Alaska Legislature: House Resources Standing Committee Mr. Kevin Duffy, acting deputy director of the ADF&G Division of Commercial Fisheries Management and Development was asked by Representative Harris.

Rep Harris: "Is there anything about this industry that has a negative effect on any other seafood industries that it works around or that it's processed around?"

Kevin Duffy: "The clear answer to that is no."

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF ENVIRONMENTAL HEALTH
DIRECTOR'S OFFICE
555 CORDOVA STREET
ANCHORAGE, ALASKA 99501
<http://www.state.ak.us/dec/deh>

Telephone: (907) 269-7644
Fax: (907) 269-7654
e-mail: Janice_Adair@envircon.state.ak.us

March 1, 2002

The Honorable Drew Scalzi
Alaska House of Representatives
Room 13, Capitol Building
Juneau, AK 99801

Re: HB 208, an Act relating to aquatic farming of shellfish

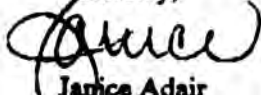
Dear Representative Scalzi:

Enclosed please find a copy of a letter I recently sent to Senator Torgerson regarding SB 141 which, as you know, is the companion bill to yours referenced above.

Although the Department of Environmental Conservation (DEC) has now submitted zero fiscal notes on both pieces of legislation, it is important that everyone understand that any shellfish sites must be certified by DEC under the National Shellfish Sanitation Program (NSSP) before the product can be sold in commerce. We are required by both state law (AS 17.20.005(6)) and federal law to comply with the NSSP. There are significant costs associated with certification, some of which are currently borne by the farmers themselves. The rest is covered in DEC's operating budget. Should either of these bills pass, down the road there will be increased costs to DEC for this certification. In the interest of full disclosure, I wanted you and the rest of the committee members to know that.

I do not plan to be on line for the hearing on HB 208 unless you'd like me to be available to answer questions, which I would be happy to do. You or your staff can reach me at 269-7644 or via email at Janice_Adair@envircon.state.ak.us to let me know.

Sincerely,



Janice Adair
Director

Enclosure:

- Letter to Senator Torgerson dated February 28, 2002

Safe Food, Safe Water, Healthy Communities

The Honorable Drew Scalzi
March 1, 2002
Page Two

cc: The Honorable Gary Stevens, Co-Chair, House Special Committee on Fisheries
The Honorable Peggy Wilson, Co-Chair, House Special Committee on Fisheries
The Honorable John Coghill
The Honorable Fred Dyson
The Honorable Mary Kapsner
The Honorable Beth Kerttula
(all with enclosure)

Shellfish Mariculture in Alaska: Economic Opportunity for Coastal Residents

Presented to

Alaska Fish Caucus

Presenters

Rodger Painter

Alaskan Shellfish Growers Association

Bob Hartley

Kachemak Shellfish Mariculture Association

Ron Long

Qutekcak Shellfish Hatchery

Jon Agosti

Qutekcak Shellfish Hatchery

Raymond RaLonde

University of Alaska Marine Advisory Program

February 21, 2002

Shellfish Mariculture in Alaska: Economic Opportunity for Coastal Residents

Rodger Painter - ASGA

Bob Hartley - KAMA

Don Loma - Governor's Fisheries Advisory

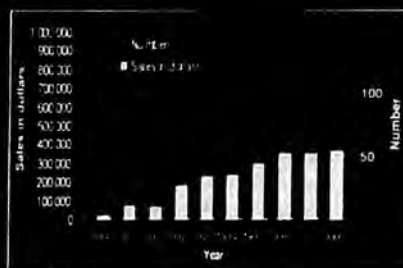
John Aguiar - Alaska Shellfish Growers

Regional Director - DAFWAS - Alaska Division

Where are the farms located?



Production of Alaskan Oysters



Constraints to Aquatic Farming in Alaska

- Negative regulatory climate
- High cost of doing business in rural Alaska
- Lack of infrastructure
- Slower growth rates than competitors
- Lack of investment capital
- Research and development hampered by lack of governmental support

Examples of ADF&G Regs

- Applicants must file a development plan showing by quarter over a ten-year period the amount of seed planted, number of shellfish harvested, gear deployed and number of employees
- Farmers must demonstrate to ADF&G increases in productivity over natural levels before harvesting a crop including natural recruitment
- Standing stocks of native shellfish must be harvested under common property fisheries before a site is transferred to an aquatic farmer even if there are no fisheries for the target species

Where Alaska's Aquatic Farm Dollars Go?

(as a percentage of gross annual revenue)

Local Economy (Prince of Wales Island)	53%
Region (Southeast, including POW)	74%
State Treasury (lease fees, taxes, licensing)	3.5%
Alaska	96.5%

Source: Based upon 2001 expenditures of Tenax Pass Shellfish Company, an oyster and clam farm located on Prince of Wales Island

Economic Spin-offs of Shellfish Farms

- Services (Fuel, groceries, supplies, welding, outboards, etc.)
- Shellfish Nurseries (\$13,000 net profit/million seed)
- Processing (Provides year-round flow of product)
- Air Service (My farm backhauls 900-1,800 lbs/week)
- Revenue Sharing (Farms pay Fisheries Business Tax)
- Employment (My farm employs 4 on a year-round basis)

Economic Impact

\$20,000 gross revenues per acre for Alaska oyster and clam farms

At this rate, Alaska would require only 5,000 acres of coastline to create a \$100 million industry!

Kachemak Shellfish Growers Cooperative

- Cooperative provides
 - Shellfish nursery for optimum size and quality of seed for farmers
 - Security for fishermen while absent from the farm
 - Cooperative marketing assures year around market for those who need a flexible harvest schedule



Commercial Fishermen and Farming

- 16 Active farms in Kachemak Bay
- 12 farms operated by current or former commercial fishermen
 - 8 active



Algae Culture

Live algae needed to feed

- Broodstock
- Larvae
- Seed



Shellfish Larva Culture

- 16,000 liter larva tanks hold in excess of 40 million larva
- Larva fed live cultured algae for three weeks



Larva Setting

- Larva placed in upwelling tanks at ~0.25 mm
- Larva set and develop into adult form
- Reared in tanks to 2-3 mm
- Reared to nursery



Broodstock



Seed "Spat"



Clam

Qutekcak Shellfish Hatchery An Investment for the Alaskan Economy

- \$3.2 million facility
- Produces seed of oysters and indigenous species
- EDD study 1993 primary goal identified to control seed supply
- Five year bumpy startup exceptional for a hatchery
- Non-state investment over 5 years of \$1.4 million



What the Hatchery Needs to Succeed

- Bottom line: We need customers in the form of permitted farms!
- Enhancement opportunities for depleted stocks
- Technology does not pay the bills
- Supporting statutes and regulations

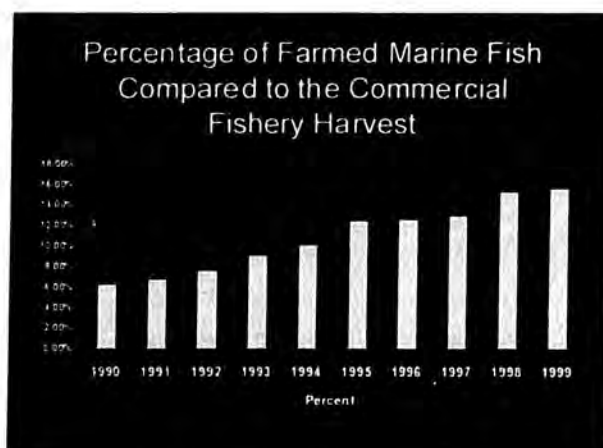
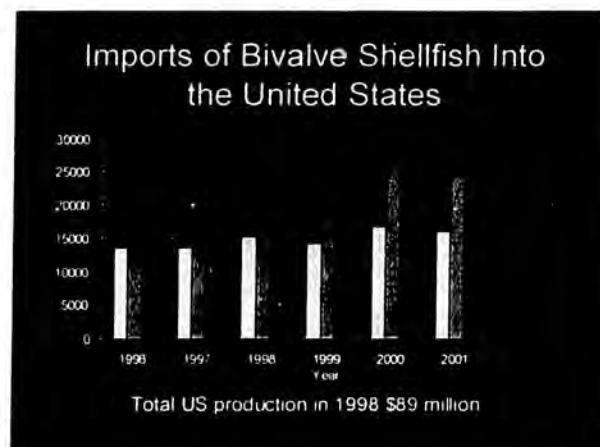
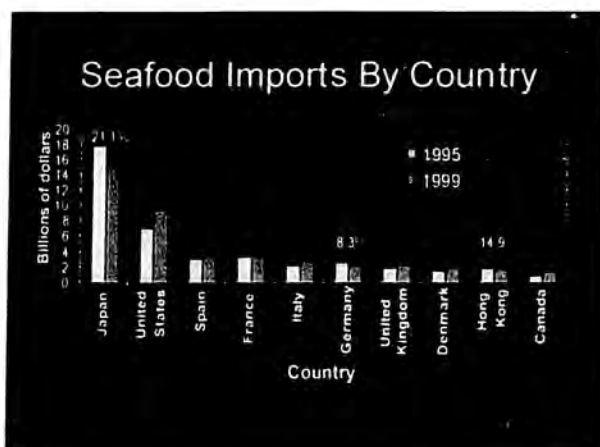
SB 14100, 2004



Qutekcak Shellfish Hatchery The nuts and bolts

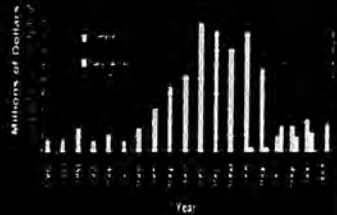
- Hatchery (background)
 - State of the art
 - 9,370 ft. capacity
 - Highly treated water
 - Easy access
 - Integrated plumbing
 - Heat recovery
 - Sanitized effluent
- MTC research center
- Nursery pond (foreground)
 - Initial seed rearing





Connecticut

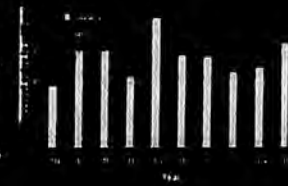
- \$60 million farmgate
- 600 jobs
- 52 000 acres of oyster farms
- Using the standard multiplier \$200 million contribution
- Challenges with disease in recent years
 - Prospects good for future
 - Clam production added



The massive upswing 1982-1992 was due mainly to 5.4 million investment public funds

Washington

- Production has leveled
- Little room for expansion
- Concentration on shellfished oyster meat
- Water quality concerns that reduce rearing areas
- Seasonality of sales
- Few off shore areas for growing high valued halfshell oysters



Water Quality



Alaska has zero (0) acres of restricted shellfish growing areas

Florida Clam Farming

- Statewide in 1998
- 1 440 acres of farms
- 50 nurseries
- 300 growers

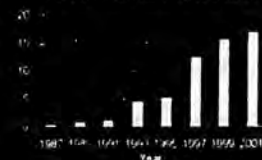
- Cedar Key Florida
- 50 million clams
- Average farmer earns \$30 000 annually
- \$7.5 million annually to the local economy



Partnerships That Work



Florida Clam Production

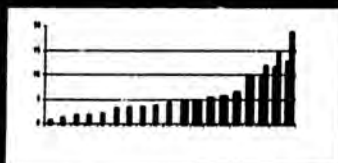


British Columbia

Coopers & Lybrand

Western Economic Diversification Canada
Economic Potential of the British Columbia Marine Aquaculture Industry Phase I - Draft
June 1997

Agreement of the British Columbia Marine Aquaculture Industry Phase I - Draft
June 1997



Goal
\$100 Million Dollar Industry
By 2006

Significant Developments in Alaska

Oyster Broodstock

Nursery production

Growout research

Education and Training Conferences



Shellfish Quality, Marketing and Safety Program

- USDA CREES grant: Alaskan Shellfish Quality, Safety and Markets
\$1.1M over two years
- Support of alternative PSP testing research
- kind sampling for ASTF projects
- conferences in 1996, 1999, 2001
- Current Sea Grant project \$48,000 over two years
- ASTF funded marketing program



What Alaska Has to Offer

- Impressive biological advances
- Alaska's pristine environment
- We have tidelands available
- Expertise is growing
- Reputation for exceptional quality and safety
- University with fisheries and oceanography
- Consumer demand far greater than supply

What Alaskan Shellfish Farming Needs

- Regulatory relief with permit application and review
 - Reduce conflict
 - Clarify regulations
 - Modify the application
 - Increase efficiency
- Develop partnerships

Summary Of Current and Future Initiatives

Funded (\$425,000)

- November 2001: Conference (Environmental effects of on-bottom aquaculture) (ADF&G PAC SEA GRANT MAP ASGA)
- 2000-01: Little Neck dam culture field research (ASTF)
- 2010-02: Environmental codes of practice (Alaska Conservation Foundation)
- 2002-04: Scallop culture field research (Sea Grant)
- 2002-04: Cockle culture research (SBIR)
- 2001-2004: Prince of Wales Island aquaculture development program (CES PRF Sea Grant)
- 2002-03 Shellfish marketing study USDA/CREES

Proposed (\$260,000)

- 2002+ : University of Alaska initiative