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INTERTIDAL SHELLFISH AQUACULTURE IN ALASKA

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FIRST THINGS FIRST A HISTORY LESSON

- Fisheries Controlled by outside interests
- Unmanageable fish traps
- Fishery depletion
- Federal management
 negligence
- Alaska Native village displacement



STATEHOOD ACTION

Alaska State Constitution Article VIII Natural Resources

SECTION 3. COMMON USE. Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use.

THE REALITIES OF DOING AQUACULTURE IN ALASKA

- Environmental protection America's last frontier
- Commercial fisheries 52% of US catch
 - The state's second most important income producer and Alaska will continue to assure its sustainability
- Common property governs use of state fisheries land and water.
 - Tidelands are state land, very little private land
 - Uplands are mostly federal, state, & Native corporation
 - Must acquire state leases for tidelands and uplands leases for land-based structures
 - Affects access to wild stock aquaculture opportunities because shellfish are common property

SHELLFISH FARMING HISTORY

- 1910-61 Early efforts for oysters
- 1970s Struggling oyster farms
- 1985 Geoduck clam dive fishery
- 1988 Aquatic species import ban
- 1988 Aquatic Farm Act
- 1996 Broadening Alaska's Shellfish Farming Opportunities
- 1996 Littleneck clam fishery closure
- 1997 Shellfish hatchery
- 2000 -Permitting denials over common property provisions



Aquatic Farm Act 1988 "It is the policy of the state to encourage the establishment and responsible growth of an aquatic farming industry ..."

INITIAL PROPOSALS TO RESOLVE COMMON PROPERTY ISSUE

- Develop a way to grow benthic shellfish in suspended culture.
- Farm at site where there are no shellfish resources.
- Differentiate your farmed shellfish from the native species on the farm site.

DEALING WITH THE COMMON PROPERTY PROVISION

- What about a native species that will not be a common property harvest?
- What about a species with a density too low to undergo a common property harvest?
- When does a species become eligible for a common property harvest?
- What is aquaculture and when does it happen on a common property species?

DEFINITION OF AQUACULTURE

- Positive control
- Increase in productivity above that of the wild population
 - Very controversial How can this be reasonably measured
 - Solution Employ aquaculture techniques that are known to increase productivity
 - Predator exclusion
 - Stocking the farm plot
 - Extensive management

TWO CASE STUDIES

- Littleneck clam
 - Intertidal
 - Limited commercial fishery
 - (~ 17,000 lbs)
 - Active sport and subsistence fisheries
- Geoduck clam
 - Subtidal
 - Extensive commercial fishery
 - in southeast Alaska



- No sport or commercial fisheries

CLAM HARVEST AND SALES



LITTLENECK CLAM

- Common property solution
 - Farm receives operational permit
 - Common property harvest to removed harvestable standing stock
 According to size regulations
 - All undersize clams are now
 - property of the farmer

 Now under positive control to reach
 market size



	G	EC	DDL	JC	K CL	AM	
 Common property Determination of s Under 12,000 lbs p average per acre) farmer can harvest Security deposit – - \$1.25 per geod In the back with 	solution ignificant er 6 acres is insignific standing s For farm re uck harvest n 20 days a) (2,00 ant a stock eplan ted fter h	ck size 00 lb ind ting arvest	F	Photos from SAR	DFA	
Six acre farm site	3.00 lb ave	erage	e per ge	odu	ck		
Harvest sales	5000 lb	\$	4.00	\$	20,000		
Certification of deposit	1667	\$	1.25	\$	2,084		
	Net profi	t bv f	armers	\$	17.916		

PACIFIC OYSTERS

- Recently applied technique
- Common property solution
 - No common property issues
 - Non-native species
 - Does not reproduce in Alaska
 - Entirely hatchery produced seed
 - No wild or personal harvest







TIDELANDS LEASING CONSTRAINTS AND OPPORTUNITIES

- Tidelands permitting
 - Application every odd year (Jan-April)
 - Nine month to years of reviewConfrontation
 - Restricts growth unnecessarily
- · Pre-approval of lease sites
 - Community bases program



TOTAL SITES STATEWIDE = 162 TOTAL ACREAGE AVAILABLE= 1346 CURRENTLY LEASING = 27 SITES

ENVIRONMENTAL RESPONSE Supporting environmental organizations Blue Oceans Monterey Bay Aquarium Environmental Defense fund

- Environmental codes of practice
- Conference
- Regulations
 - Protect critical habitat
 - Protect eel grass impacts
 - Regional shellfish transport
 - Disease certification
 - Posting a bond
 - Protects traditional use



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AGE, GROWTH, AND SURVIVAL OF LITTLENECK CLAMS



GEODUCK CLAM GROWOUT

First attempt – Tamgas Bay Planting 9/02 sampled 9/04 Very high mortality – High crab predation



Average shell length 18 months Canoe Cove – 45.20 ± 5.48 mm Puget Sound, WA – 57.5 mm



- Planting 6/04 sampled 6/06
- Lower predation (21/41 at least one show)
- Project ongoing

WHERE WE ARE GOING

- Oceans Alaska
 - Write a strategic business plan
 - Create research, development, and training program
 - Garner support
- Economic modeling
 - Identifying, measuring, and addressing constraints
- Risk management
 - Financial management training for farmers
 - Funding for this project was provided by the Washington State University Western Center for Risk Management Education, the USDA Cooperative State Research Education and Extension Service (CSREES),



http://oceansalaska.org

Even if you're on the right track, you'll get run over if you just sit there. - Will Rogers