

**ALASKA DEPARTMENT OF FISH AND GAME**  
**DIVISION OF**  
**FISHERIES, REHABILITATION, ENHANCEMENT AND DEVELOPMENT**



**REPORT**  
**on**  
**AQUATIC FARMING ACTIVITIES**  
**in 1991**

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## THE MARICULTURE PROGRAM

### Background

The Aquatic Farm Act (Section 19, Chapter 145, SLA 1988) was signed into law on June 8, 1988, authorizing the Commissioner of ADF&G to issue permits for the construction or operation of aquatic farms, and hatcheries to supply aquatic plants or shellfish to aquatic farms. The intent of the program was to create an industry in the state that would contribute to the state's economy and strengthen the competitiveness of Alaska seafood in the world marketplace, broadening the diversity of products and providing year-round supplies of premium quality seafood. The law limited aquatic farming to shellfish and aquatic plants. In 1990 CSHB 432 became law, prohibiting farming of finfish in the state.

Regulations to administer the aquatic farm program were developed by the resource agencies during 1988 and 1989. The Department of Natural Resources (DNR) divided coastal Alaska into eleven districts. The law required that each district be opened annually for 60 days for farm site application. Permits for farm or hatchery sites not located on state land may be applied for at any time.

The ADF&G, FRED Division Mariculture Program, in cooperation with the department's fisheries management and Habitat Divisions, carries out the statutory and regulatory responsibilities of the department pertaining to aquatic farming in Alaska.

The Mariculture Program responsibilities include:

- in cooperation with ADF&G Habitat Division, coordination of the permitting process for aquatic farms and hatcheries
- review of aquatic farm and hatchery permit applications for site suitability and technical and operational feasibility
- issuing and administering the department aquatic farm and hatchery permits
- interdivisional coordination of the aquatic farm program
- administration and coordination of aquatic stock acquisition permits for the purpose of supplying brood stock and seed stock to aquatic farms and hatcheries
- administration and coordination of the shellfish and aquatic plant transport permit system
- administration and coordination of research permits for aquatic farming and hatchery activities
- provide technical assistance to other divisions, agencies and the public sector
- coordinate aquatic farming and hatchery research activities statewide

## Program Implementation

The FRED Division Mariculture program continued to evolve in 1991. Budget constraints eliminated the research program and reduced technical assistance provided to the industry. The administrative work load associated with the large number of permittees continued to grow.

Considerable interaction with the other resource agencies, including the Department of Environmental Conservation (DEC), DNR, Division of Governmental Coordination (DGC) and Federal agencies was required to review and revise the permitting process and insure coordination of effort. The Interagency Mariculture Workgroup (IAMWG) ceased to formally exist with the change of administration. An informal group of agency representatives met several times to review and revise the aquatic farm permit application form and to discuss applications. FRED Division and Habitat Division continued to coordinate the farm permitting process. FRED Division coordinated the overall department program, reviewed permit applications, and issued aquatic farm permits. Habitat Division coordinated the department Alaska Coastal Management Program (ACMP) and statutory review, providing that information to DGC.

Permitting and administration responsibilities for aquatic stock acquisition, shellfish and aquatic plant transport and Scientific or Educational Permits were administered. One clerical position was assigned to the program to assist with administrative functions.

Forty eight aquatic farm permit applications were received and processed this year. Thirty one farm operation permits were issued. Three permits were closed at the request of the respective permittees. Scientific/educational (research) and acquisition/transport permit applications were at levels consistent with the number of permitted farms (table 11.1) and are expected to increase again in 1992, reflecting the increase in active farms.

A statewide opening of all aquatic farm districts is again scheduled for March/April, 1992.

The division proposed a Mariculture Technical Center (MTC) for inclusion in the Governor's capital projects budget for fiscal year 1993. The Commissioner supported the request and prioritized it in the top 1/3 of projects submitted by the ADF&G to the Governor for consideration. If funded, the MTC would be a central facility providing assistance to the industry through practical research and development, providing indigenous seed stocks not available from commercial sources, and space for private mariculture development projects. The Alaskan Shellfish Grower's Association (ASGA) voted unanimous support of the project and elected sub-committees to work with the department during project development. A committee composed of the FRED Division Mariculture Coordinator and University of Alaska staff met to initiate the site selection process. Considering only technical criteria, locations were ranked according to physical and biological variables that would not compromise facility operations for any species of potential value to the industry. Two locations, Seward and Juneau, were determined to meet the criteria defined. Other sites (Sitka, Seldovia area) were determined to have features that would compromise the facility. Two sites, Kodiak and Yakutat, could not be evaluated because of insufficient information. A conceptual design and detailed cost

estimate were prepared. Further work on the project was deferred awaiting a determination on facility funding.

### **Aquatic Farm Operations**

1991 was a pivotal year for the aquatic farm industry in Alaska. With the implementation of the Aquatic Farm Act, farmers could acquire a farm site permit from DNR that was a property right revokable only for breach of permit conditions. The initial permit is for a three year period, during which the permittee must attain goals agreed upon in the farm's development plan. Once the goals are attained the permittee may apply for a ten-year lease which is assignable. This added stability to the industry and should provide some remuneration for the effort and investment of developing a farm site. A number of farms reached their development plan goals in 1991. The first applications for conversion of DNR permits to leases are expected in 1992.

Aquatic farmers aggressively pursued operations in 1991, even though the Southcentral permits were issued late in the spring. Thirty seven of the 56 permitted farms reported inventory in the water at the end of 1991 (table 11.2). At market size, this inventory was valued at over \$2.7 million. Aquatic farm sales for 1991 were again slightly less than \$100,000. Production was dominated by oysters, with a small amount of mussels produced in southcentral Alaska. This was expected because no new farms had received permits by beginning of the growing season and the existing farms had taken a conservative approach to seed purchases and acquisition in 1989 and 1990.

Southeast farmers received an average of \$0.28/oyster, up slightly from the \$0.27 received in 1990. The Southcentral value was, as last year, higher at \$0.42/oyster. This was down from \$0.48 in 1990. The average price received for mussels was \$1.73/lb. The amount of product sold was small, though, and probably does not reflect the price farmers are likely to receive for mussels as production increases. One farmer harvested wild, adult mussels and cycled them through his farm for periods of several weeks to a few months. Though legally definable as farm product, this "semi-farmed" product represented a quality question for the industry. For purposes of blue mussel value projections, \$1.50/lb seemed attainable. (table 11.2) All prices were based upon landed value at the farms and did not take into account production or transportation costs.

A growing facet of the aquatic farm industry was employment opportunities provided by farm operations. Excluding owner-operators and non-resident managers or consultants, 94 individuals were employed by the farm industry this year, working over 3600 person-days (table 11.2). No figures for jobs in the processing sector were available.

### **Industry Projections**

Though 1991 production was low, the end of year inventory of farm product was encouraging. Over 5.5 million oyster spat were purchased by Alaskan farmers. Production was regional in nature, attributable to successes of farms within the regions. The picture will change in 1992, though, primarily due to active native corporation farms in Southcentral. Southeast Alaska will cease to be the state's largest producer of farmed shellfish. Oysters

available from the farms should increase significantly, statewide. Mussel production is not expected to increase. No other species of shellfish or aquatic plants will contribute to farm sales.

Large-scale aquatic farm industry development was again constrained in 1991 by the lack of government assistance (loan funds, grants, etc.) and the general lack of loans or other sources of investment capital from the private sector. Out-of-state businesses did not show interest in investing in the industry this year. This is almost certain to change. Nationwide, shellfish production is constrained by pollution and competition for limited coastal resources. The major eastern U.S. production areas, such as Chesapeake Bay, have ceased to be a major factor in shellfish production. For the first time, Washington state became the largest oyster producer in the United States. There, increasing effects of pollution, upland development and user conflicts are occurring and will limit growth of the industry. Washington has approximately half the number of permitted aquatic farms that Alaska has, though they are larger. British Columbia's industry is growing, receiving considerable support from the public sector. Alaska, with its clean waters and large amount of protected coastline, has immense potential of becoming a major aquatic farming area. Investment capital, the logistics of producing and selling product, and lack of a vertically integrated industry are major constraints that will have to be addressed before this can occur.

A major component lacking in Alaska is a hatchery industry to provide a dependable supply of seed to aquatic farms. No shellfish or aquatic plant hatcheries exist in-state. All oyster seed must be imported from Washington. Collection of indigenous stock seed is susceptible to the vagaries of nature. To help address this problem, the North Pacific Rim, representing native people in the southcentral Alaska area, committed to construction of an oyster hatchery in Seward. This facility is intended primarily to produce seed for native-owned farms in the area. If funded, the MTC will also help provide a consistent supply of shellfish and, possibly, aquatic plant seed until other commercial hatcheries come on-line.

The benefits of aquatic farming as a source of income and economic stability is of interest to a number of rural Alaskan communities. In 1991 development and site suitability research was conducted near Angoon in Southeast and Chenega Bay in Southcentral. Active farms were being operated by the Klawock Heenya Corporation and Yak-Tat Kwaan in Southeast, and the Tatitlek Native Corporation in Southcentral. Considerable interest in aquatic farming was shown by villages on Kodiak Island, Prince William Sound and the Kenai Peninsula. Even the educational community was involved, with Petersburg High School operating a for-profit farm.

Table 11.1. 1991 Aquatic Farm Program Permit data.

	<u>Southeast Districts</u>	<u>Southcentral Districts</u>	<u>TOTAL</u>
<u>OPERATIONS</u>			
Permit applications	10 <sup>1)</sup>	38	48
Permits issued	2	29	31
Permits withdrawn	2	1	3
Permits pending or still in process	6	19	25
Permitted farms as of 12/31/91	26	30	56
Farms operating in 1991 that reported inventory	20	17	37
Farms in certified growing areas <sup>2)</sup>	17	22	39
<u>RESEARCH</u>			
No. permit applications received	5	4	9
Permits issued	4	2	6
Permits pending	0	1	1
<u>SHELLFISH AND AQUATIC PLANT ACQUISITION/TRANSPORT</u>			
Permit applications received	39	68	107
Permits issued	33	64	97
Permits pending	6	1	7

1) Includes 3 applications for significant permit amendments

2) More than one farm may be located in a growing area as defined by the Department of Environmental Conservation

Table 11.2. 1991 Aquatic Farm Operations Data.

	<u>Southeast Districts</u>	<u>Southcentral Districts</u>	<u>TOTAL</u>
<b><u>SALES</u></b>			
Oysters (ind.)	160,376 <sup>1)</sup>	61,380	221,756
Value \$44,440	\$25,780	\$70,220	
Mussels (lbs)	0	17,076	17,076
Value \$0	\$29,628	\$29,628	
	Total Aquatic Farm Sales		\$99,848
<b><u>END OF YEAR INVENTORY</u></b>			
Oysters (ind.)	4,933,600 <sup>2)</sup>	2,849,655 <sup>1)</sup>	7,783,255
Value (\$0.35/ind)	\$1,726,760	\$997,379	\$2,724,139
Mussels (lbs)	3,600	45,800	49,400
Value (\$1.50/lb)	\$5,400	\$64,566	\$69,966
	Total Aquatic Farm Inventory Value		\$2,794,105
<b><u>EMPLOYMENT SUMMARY</u></b>			
No. employees	31 <sup>3)</sup>	63 <sup>3)</sup>	94
Days worked	1,921	1,700	3,621
No. volunteers	16 <sup>4)</sup>	0	16
Days worked	55	0	55

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1) One active farm did not report production data in 1991. 1990 information used to extrapolate estimate in this table.

2) One active farm did not report end of year inventory.

3) Does not include farm owner or non/resident manager

4) Includes participants at school owned site