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SB 364 "An Act relating to the Executive Council" SB 365-79-80

Introduced 1-24-80
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Referral - Finance
Comm Meeting 2-13-80
" Action passed - taken Senate Secy.

Bill Thompson to furnish F/N.
He called back - no F/N needed
per Bill Thompson.



STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

February 4, 1980

Our office would like to see Fisheries Education a major component of the State's present educational system.

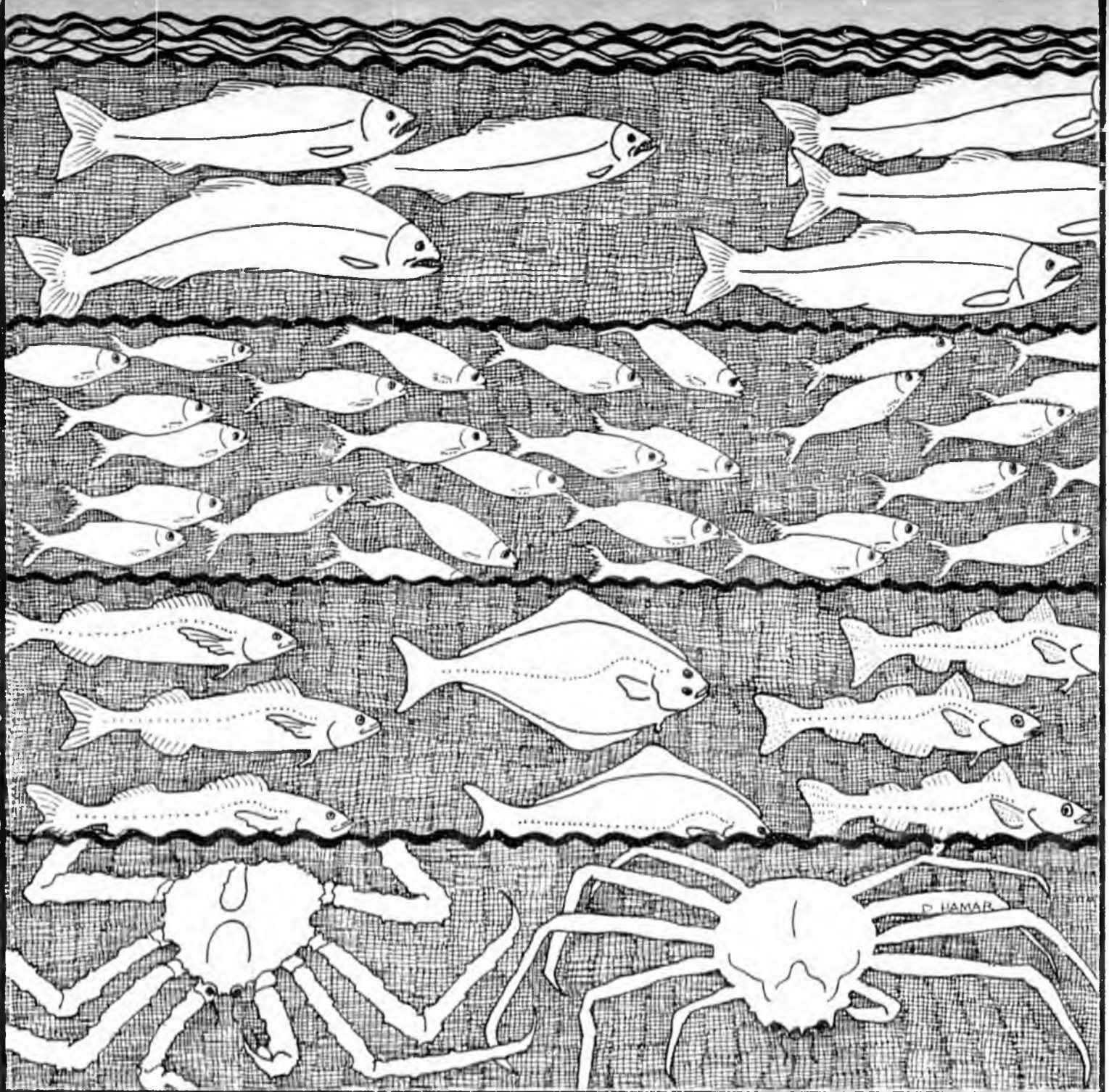
This report will give you a brief description of the current fisheries education programs in the State.

Sincerely,

A handwritten signature in cursive script that reads "Jim Edenso".

Jim Edenso
Bottom Fish Coordinator

Enclosure



A Plan for the Organization of Vocational and Technical Fisheries Education for the State of Alaska

A Plan for the Organization
of Vocational and Technical
Fisheries Education
for the State of Alaska

Submitted to:
The State of Alaska
Office of the Governor
Bottomfish Coordinator
and the
Alaska Department of Education
Juneau, Alaska
October 19, 1979

By:
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PREFACE:

This report provides a brief overview of some of the problems of fisheries education in the State of Alaska. A complete analysis with a set of fully developed scenarios is, due to constraints of time, beyond the scope of this project. This is a brief outline of a possible organizational and communication network with which the State may maximize the efficiency of current efforts and resources and direct additional future development. It should be emphasized that no current efforts should be abandoned, but should be more fully developed in a coordinated fashion.

The material used in this report came from many sources. Much of it is the result of the author's impressions during four years as an Education Specialist for the Alaska Marine Advisory Program and from conversations with many people vitally interested in Alaska fisheries education. A letter signed by Ms. Marilou Madden (Department of Education) at the outset of this project elicited a wide variety of responses which have proven to be of great value in compiling this document. Funding for this report was provided by the Office of the Governor, through the Department of Commerce and Economic Development and the Department of Education.

Particular credit is due to Jim Edenso, Bottomfish Coordinator, Office of the Governor; Tony Mecklenberg and Richard Reynolds (Department of Commerce and Economic Development); John Doyle and Hank Pennington (Marine Advisory Program); and Jerry Hiley (Department of Education) for their help.

I. INTRODUCTION

The fishing industry in Alaska is of prime importance. Since fisheries are renewable resources, they supercede the long-term value of even oil and gas, which will eventually be depleted. The advent of the 200 mile limit law helps to insure the future conservation and proper management of our fish stocks through the foreseeable future. At the present time, Alaska is dependent on traditional fisheries for a very few of the potentially marketable species. The white fish resources have traditionally been harvested and processed only by foreign interests. Many other resources are currently underutilized or not harvested at all. However, the state's fishermen and processors, as well as investors, are carefully examining the white fish resource and other domestically underutilized resource fisheries to insure Alaska's status as a major producer of the world's seafood.

One of the major factors hindering, or at least slowing, the development of Alaskan fisheries, is the lack of a statewide coordinated fisheries education and training program. The past and current efforts at education and training in this vital field have been either sporadic or redundant, and often marred by an inability to satisfy the needs of the fishing industry.

Past problems have been addressed primarily at the local level. The needs of the fisheries community (e.g., fishermen, processors, etc.) have been approached most consistently by the Alaska Sea Grant Program through its subsidiary, the Alaska Marine Advisory Program, with aid from other state-supported programs. Since funds, personnel and time are limited, these programs are severely over-extended at present. Several of the state's community colleges have made various attempts to develop vocational or technical fisheries programs. In terms of investment of funds and effort, the most notable has been the Kodiak Community College. Both Juneau-Douglas and Prince William Sound Community College are either actively pursuing fisheries programs or are attempting to organize them. Sheldon Jackson, a private two-year college which is located in Sitka, has developed a successful vocational aquaculture program and is looking toward possible expansion in other areas of fisheries education.

Various rural high schools in the state have attempted to establish vocational or technical programs in either fisheries or aquaculture, but their rate of success has been rather low. There are several reasons for the lack of success in these programs. A high rate of teacher turnover, lack of involvement by local fishing community members, and academic ability of students, are among the reasons for a low rate of success in these programs.

The University of Alaska, through Sea Grant and other University branches, is also involved with fisheries education. Other than the extension oriented Marine Advisory Program, the University's efforts are primarily aimed at the more esoteric aspects of management and basic or applied marine and fresh water research - topics that are outside the scope of this report.

II. REVIEW OF EXISTING EFFORTS

A. Alaska Sea Grant Program

The University of Alaska Marine Advisory Program, under joint funding from the National Office of Sea Grant and the Cooperative Extension Service, has historically been the leading agency in fisheries education within the state. Sea Grant's effectiveness is limited in meeting the statewide demands because of underfunding and understaffing. While the Marine Advisory program represents an excellent effort (certainly the best in the state to date), it is severely limited both geographically and topically. The vast areas of southwestern, western and arctic Alaska are represented by only one agent supported on a nine-month contract. It is also of interest that he is the only member of the program staff that is fluent or even conversant in both English and any of the native languages.

The inevitable result of this understaffing is difficulty in focusing on the development and maintenance of long-range programs. Much of the effort must be expended in answering immediate and often unforeseen problems. Those workshops and fisheries institutes that have been carefully planned over an adequate time period have usually been effective and relevant. The biggest drawback is that there has not been enough of them.

It does not appear that the problems associated with underfunding and understaffing will be solved in the near future. As an example, for several years one of the greatest needs in the state fisheries has been for a gear specialist; associated, ideally, with the Marine Advisory Program. Yet, funding for this position has been impossible to secure. One answer to this problem could be the development of much broader cooperation and coordination with all other fisheries education entities within the state which would insure a more effective approach.

The Sea Grant Program outside of the Marine Advisory efforts, is also involved with pertinent fisheries education. Their mission is to perform applied research on scientific problems that impinge on any aspects of marine resource utilization, including, but not limited to, fisheries.

An example, is the on-going research program of Drs. Nishiyama and Niebauer and their students relative to the problems of the Kodiak shrimp populations. The information produced by this study will have strong implications both in shrimp management and more effective methods of shrimp fishing.

Much of the Sea Grant effort (as well as most of the other University efforts) is aimed at the higher education level with little relevance to vocational education for the average fisherman. Education of this sort is outside the realm of upper division university course work. The role of the Alaska Sea Grant Program (ASGP) is more appropriately in the training of research and management personnel.

B. Community Colleges

1. Juneau-Douglas Community College: JDCC is deeply committed to a fisheries technology program. Their current curriculum includes the following courses: small boat construction and repair; repair and maintenance of gas and diesel engines; and an assortment of regular classes and clinics (short courses). Courses are offered in welding, which stress repair and fabrication using all common techniques (e.g., oxy-acetylene, arc). Hydraulics maintenance and repair are also offered, and self-help programs on such topics as navigation and marine electronics are planned. (M. Metty, Personal Communication).

In preparation for future development of their fisheries education program, JDCC has purchased a shoreside facility, formerly known as the "Northern Commercial Property." Although plans for its use are still undefined, it seems clear that this property will house JDCC's entire marine and fisheries programs. It is ideally located with a ways and a small boat yard for repair and maintenance of smaller commercial fishing vessels. It will be the only such facility in Alaska that is tied to an educational institution and thus presents some ideal and unique educational opportunities. One other similar facility is planned for Alaska, the Alaska Skill Center at Seward on the southcentral coast, discussed elsewhere in this report.

In planning for future fisheries education, JDCC has advertised two openings for "gear specialists": one in the area of white fish fisheries; and one to be more of a generalist. The effort is constructive, but the needs do not seem well articulated. More appropriate at this juncture would be the creation of a single position of "fisheries education coordinator", whose primary function would be to clearly plan both present and future curriculum and facility needs relevant to the fishing industry. The fisheries education coordinator could then work to build the program around the two positions advertised at this time.

2. Prince William Sound Community College: PWSCC's efforts are still at the proposal stage, although the course outline is certainly impressive and comprehensive. The course descriptions indicate a strong attempt toward the development of a technical fisheries program similar to that found at the Rhode Island School of Fisheries. Dr. John Devens, Campus President, has told me that students are already signed up for this program; however, other than a fisheries coordinator, faculty and facilities are not in place. The PWSCC effort requires extensive funding, with both federal and state support. Two factors are even more important than funding to insure the ultimate success of this program: (1) patient and long term time allotment and (2) very careful selection of instructors for the program. Judging from the experience of the Rhode Island School of Fisheries, seven to ten years may be required to successfully establish and demonstrate the merits of a fisheries technical school. Without the exact combination of familiarity with the region fisheries and fishermen and the ability to communicate and teach on the part of every member of the faculty, the program cannot succeed.

3. Kodiak Community College: An ambitious program in fisheries technology was established at KCC in 1972. The program was expanded in 1974 to include a two-year course in seafood processing (Atkinson, 1974). Kodiak was envisioned by the University to be the ideal location for this program. There were indications of strong support for the concept throughout all phases of the industry, yet by 1978, the program was virtually dead. In my discussions with various representatives of the industry and the community college, the reasons for this appear to be: (1) the program was not structured to meet the needs of the industry in terms of format or content; (2) not enough time was allotted to bring the program to fruition; and (3) while the instructional staff was well qualified, in terms of their experience and academic ability, they were evidently unable to build a rapport with the various segments of the industry and to take direction from them in structuring the program. This last is of extreme importance, but it is also necessary to be able to go one step further and intuitively anticipate needs that the industry does not express.

KCC has not lost its determination to take a strong lead in Alaskan fisheries education. A recent grant proposal has been submitted and funded to reimplement the program on a different level. The approach is to develop a multi-agency cooperative effort on an island-wide basis.

This will involve not only KCC, but also Kodiak High School's existing fisheries program, and all the region's village high schools. Much of the effort will be devoted to the development of modular material that can be used in or out of the classroom. Emphasis will not be restricted to the harvesting end of the fisheries but will also stress the many ancillary skills needed by today's modern fishermen to compete successfully in the business world. In conjunction with the University's Criminal Justice Center, a strong multi-level fisheries law component is being built-in. If the new Kodiak program lives up to its promise, it could serve as a model for all regional fisheries education development programs throughout the state.

4. Other Community Colleges: Kuskokwim Community College is in the process of organizing a land resources program, including fisheries and wildlife management, leading to an A.A. degree. The nucleus of their fisheries program will encompass the river fisheries of the river country of Western Alaska. Ketchikan Community College, Sitka Community College as well as others about the state, have expressed interest in various aspects of technical programs. Most offer some sort of marine technology programs, including small engine repair and maintenance as well as related courses.
5. Sheldon Jackson College: While Sheldon Jackson is a private college, and thus lies outside the domain of the community college system, it is practical to consider it within that province, for the purposes of this report. Since it is a two-year college, SJ's interest in fisheries are currently limited to salmon aquaculture, although both the staff and the administration have expressed interest in expanding into a much broader program, possibly including, training for the white fishery. (Charles Bovee, Personal Communication).

In its speciality, SJ provides the only upper level academic aquacultural training within Alaska. It is a successful program, but limited in potential by a rather small and defined job market available to graduates from the program. SJ draws students from all over the state, as well as from the lower 48 states. Courses include not only the standard fish husbandry and fish biology offerings, but also a strong "hands-on" approach to the hatchery work, and courses in mechanical equipment operation and maintenance, emergency medical care, and fish pathology. (Mel Sieffert, Personal Communication).

Due to the restricted job market, it is impractical for other two-year programs in the State to try and duplicate the aquacultural curriculum offered by SJ, unless, for some unforeseen reason, their program was to be discontinued.

C. Secondary Schools:

Secondary schools have expressed strong interest in both fisheries and aquaculture programs, but with few exceptions, most attempts at these programs have met with limited success.

In looking at these programs, one can find several common denominators that contribute to the lack of success: lack of experienced teachers; high rate of teacher turnover; and lack of information resources. Inadequate funding and lack of community support are also cited as reasons. Complicating the situation are factors unique to rural Alaskan schools such as poor communication within and between interested districts and individual teachers. Too often mistakes made in one region are simply repeated by other districts because there is no forum of interested parties that can initiate an exchange of ideas, experience and information.

Yet the secondary school fisheries picture is not entirely bleak. Several schools have made strong, sustained and successful efforts. For example, Ketchikan and Kodiak have long been leaders in the field of fisheries. Kake, Ketchikan and Sand Point have established hatchery programs that show good potential.

These specialized programs at the secondary level often miss a valid point. Too often competency in writing, reading and computation is slighted in favor of special interest courses. If we are going to train young Alaskans to take over our resources and industries, we cannot afford to slight their ability to communicate and to develop mathematical skills. They must be competent in these areas before they can enter the specialities. This does not preclude the use of fisheries as a vehicle to approach the basics. Indeed, every rural teacher should be encouraged to use all the resources at hand to individualize his or her curriculum and materials to local relevancy.

Another problem that may contribute to the failure of fisheries programs at the secondary level lies in the selection of student participants. If they are not highly motivated toward the fishing industry, they will be unable to extract the maximum benefit from the program. Ultimately, the program is apt to become a holding pen for students who are merely passing time.

D. Alaska Skill Center:

The Alaska Skill Center in Seward is a unique institution in the state. Although it presently does not offer fisheries courses, parts of the curriculum (e.g., welding, diesel, mechanics) are strongly applicable to the fishing industry. Many of the courses are open entry/open exit and all have definite practical orientation.

ASC is currently looking at participation in the development of the shipyard at the mouth of the 4th of July Creek. If implemented, this facility will directly influence the Alaska fishing industry as a training facility for future boatwrights and repairmen. However, it will not, and cannot, meet all the vocational or technical education needs in this area for the state. There will always be a strong need for the dissemination of this knowledge at the village level. For many rural residents it is impractical or undesirable to travel to Seward for their education. At the recent Aleutian-Pribilof Bottomfish Conference at St. Paul (September 1979), this idea was expressed by many of the Aleut representative attending the meeting.

E. State Government:

In addition to the University system and the State Department of Education, the state government is becoming increasingly interested in fisheries education.

In the past year, the State Department of Commerce and Economic Development and the Office of the Governor have sponsored projects of an educational nature, including several white fish harvesting demonstration projects, fishing trials, and jointly sponsored with the Marine Advisory Program a class on white fish processing. The latter was held last in Kodiak in April 1979, involving personnel from Scandinavia and conveyed up-to-date information on all phases of white fish processing. A processor's training manual (in press) has resulted from this course.

In the FY '81 budget request recently submitted by DCED are two line item requests directly relevant to fisheries education. The first is entitled Bottomfish Production Trials/Demonstration and requests monies from the general fund to provide demonstration projects in cooperation with the Alaska Fisheries Development Foundation. The second budget request deals with three phases of fisheries education: (1) to establish a fisheries education coordination committee; (2) to implement the training of a "cadre of qualified resident instructors"; and (3) direct involvement in fisheries education at the community college level. This is exemplary of the support needed to provide the impetus for an organized fisheries education and training effort within Alaska, which in turn, will allow future generations of Alaskans to be masters of their own resources.

- F. Alaska Fisheries Development Foundation has proposed a \$90,000 budget for a training component in their planned ground fisheries demonstration project. In cooperation with the Marine Advisory Program, an on-board training program will be implemented. This program will be limited, by restricted bunk space on existing Alaska fishing vessels, and the rigors of utilization of new and unfamiliar fishing gear, economic constraints, etc. (AFDF, 1979). Yet even with all these restrictions, AFDF does offer a sound, if modest, start on this problem of training in this emerging field. The on-board efforts will be supplemented by workshops and media development and presentations in the primary fishing ports. This will include extensive news coverage and the development of specialized audio visual materials which may be used as a foundation for future training efforts.

III. ALASKAN FISHERIES EDUCATION NEEDS

The needs in Alaskan fisheries education can be viewed from several standpoints. Regional needs are quite diverse and these should be considered if one is establishing or bolstering fisheries in coastal or river-based fisheries. For example, the fishing communities of Southeastern Alaska and Kodiak can expect to harvest, process and market a much broader range of resources than the communities of the Arctic-Yukon-Tuskokwim regions. Yet certain common themes are prevalent throughout the state. One of these themes was best summed up by James Branson, Executive Director of the North Pacific Fisheries Management Council, during a recent conversation, "Our job would be many times simplified if the fishermen had, somewhere in their background, some strong knowledge about the resources." The state is embarking on a new bottomfish enterprise, one which is capturing the imagination of everyone from fishermen to bureaucrats. The question "what is a bottomfish?" remains very difficult for most to answer. The herring fishery is emerging as a very profitable operation in the Southern Bering Seacoast villages and other districts but many fishermen know little of the basic biology of the resource. Throughout the state, salmon has been the richest of the traditional fisheries. However, the life histories of the five species are poorly understood by the average fisherman. In all schools, at all levels, one of the greatest needs is basic resource information. This may be approached in the schools by abandoning the textbooks which are traditionally oriented toward terrestrial botany and zoology, and training with a local marine ecosystems approach. This involves much greater innovative effort on the part of the teacher, but would prove more effective in the long run. An excellent example of this sort of program is that instituted by Ms. Lucile Holden of Ketchikan High School about nine years ago, and with which she is still working.

Another statewide need which has been expressed in almost all communities which I have visited is fiscal management; for business management, financial planning, taxes. Other fiscal matters are becoming increasingly important to insure the greatest rewards for their efforts. In today's increasingly complex and inflationary society, this will become even more important.

With the emerging white fish fishery, Alaska fishermen must learn to use modern and complex equipment and deal with non-traditional (for Alaskans) resources. Machines such as the new Mustad Autoline system, on-board heading and gutting equipment, and new advanced methods of on-board refrigeration must be mastered in order for the bottomfish fisherman to compete successfully on the world market.

Boat repair and fabrication, diesel mechanics, electronics and navigation all are becoming increasingly important to Alaska's successful fishermen. For the small boat fishermen, the skipper needs to be familiar with all of those skills, while on larger vessels, crew members with specialized skills in these fields are important, and at shore-based support facilities (such as the proposed Alaska Skill Center or the Juneau-Douglas Community College Boatyards), individuals with these skills will be in demand.

In examining Alaskan fisheries education needs, it is helpful to look at two possible "systems" approaches: vocational education and technical education. Ultimately, both approach the same goal of strong fisheries education and training for future members of the industry.

Vocational fisheries education may be best addressed by the community college system, the Alaska Skill Center and Sheldon Jackson College through a network which will be described later in this report. It should be directed toward specific needs, with materials which are modular in concept and format and suitable for delivery to either small audiences throughout a given region or on board a vessel for crew use. The new Kodiak Community College program can provide an excellent model for such a delivery system. The viability of this concept may be thoroughly tested with this program before implementation in other regions.

Technical education, on the other hand, should provide a resident a two or four year program leading to degrees in some aspect of commercial fisheries. An example of such a program is found at the University of Rhode Island Department of Fisheries and Marine Technology.

The technical approach to Alaskan fisheries education is highly desirable for Alaska. It does not, however, answer our immediate needs, due to the length of time required to put a technical school of fisheries into place and nurture it to success. Captain G.A. Motte, Chairman of Rhode Island's Department of Fisheries and Marine Technology, spoke of problems they encountered in getting started; at the outset, there was opposition from the skippers to hiring a classroom trained crewperson. It was difficult to convince students that it was a valid expense of time, money and effort to spend two, three, or four years in the classroom when he or she could be at sea, earning a paycheck.

In the ten years that the department has been in existence, the attitudes gradually changed. Now skippers demand that their prospective crew members have attended the URI program, and the waiting list calls for more candidates than the school can accept. As a result, they are highly selective in accepting students, though it has taken ten years to reach their present status.

Alaska needs to have a technical school of this type and caliber. It will not, however, answer our immediate problems. Even if all our fisheries education efforts were focused on this approach, we could not meet the immediate needs of our people and industry. This is not to say that we should not work toward this goal, but rather we should start today with a well-organized and strongly funded vocational education network. Even with an excellent, well-accepted technical school in place, the vocational network will still be extremely important. Because of Alaska's size and diverse needs, there should be no redundancy in ultimately approaching fisheries education from both directions. Besides, even the finest technical school can only answer the needs of a limited segment of future Alaskan fishermen. There will always be a majority of people who cannot afford, for one reason or another, to attend such a school, as well as people who need only courses on particular discrete topics. These people may be best served on an out-reach basis through the community college or other vocational programs.

The College of Fisheries, Navigation, Marine Engineering and Electronics in St. John's Newfoundland may serve as a useful example for Alaskans to consider. Newfoundland, located on the east coast of the continent, has much in common with Alaska. Fishing is a major industry; the ports are frequently small and remote and communication problems between population centers are similar to those of rural Alaska. While there is a strong on-campus program at St. John's, each year since the school opened in 1964 a third or more of the enrollment has been through the extension program of travelling schools.

While the majority of course offerings detailed in their "List of Programs" are offered principally at the St. John's campus, most of the courses are of one and two weeks duration and are designed to upgrade skills of people who are already in the industry.

It was not possible for Lee, Pennington and Associates' personnel to visit the St. John's campus due to the school's summer break. However, it would be highly desirable for us, or someone interested in Alaska fisheries education delivery systems to do so.

IV. ORGANIZING ALASKAN FISHERIES EDUCATION EFFORTS

Does Alaska's fisheries education effort need organization? In my mind, the answer is yes. We have too often seen programs attempted, only to watch them fail. We have witnessed duplicative efforts leading to redundancy because of poor communications. We have regions and schools which are unable to profit from mistakes or successes of other entities simply because they don't have knowledge of them. We have heard repeated requests from rural residents for stronger programs in fisheries, but no one seems to know where to find assistance to set up fisheries education programs, or how to maintain them at functional and efficient levels.

Currently, there are two major entities vitally interested in promotion of fisheries education within the State of Alaska: The Alaska State Department of Education and the University of Alaska. Other agencies and associations have also expressed interest and need. The various native associations and corporations, the Alaska Native Foundation, Alaska Fisheries Development Foundation, various state departments (e.g., Department of Fish and Game, Department of Commerce and Economic Development) and others, all have strong contributions to make. However, it would be an inefficient expense of effort and capital for all these entities to plunge into this effort without some form of organized coordination.

Since the two major organizations (DOE and U of A) in fisheries education approach this topic from rather different, or at least rarely overlapping approaches, it would be logical for representatives of their governing boards (the State Board of Education and the Board of Regents, respectively; as well as a representative from the Post-Secondary Commission) to form an oversight board to oversee the policy formulation for fisheries education. They, however, are not necessarily in touch with the needs of the industry, or the rural fisherman, and they haven't the time to follow up policy or delivery. To fill this role, a coordinating council, whose members would be appointed by the oversight board should be directly responsible for implementation at the state level. Members of this council should include at least one representative from the community college system, the Governor's Office, the Alaska Native Foundation, the Department of Education, the University of Alaska Sea Grant/ Marine Advisory Programs, and other interested groups.

The council should have a person in the role of secretary, to carry out the council's directives. It is desirable to have this person housed either within the community college system or the central office of the Department of Education. A major role to be carried out will be interfacing with the fisheries coordinators at the various community colleges and other institutions. A flow chart of this organization is presented. (Table 1).

On the next level fisheries coordinators should be responsible for developing and disseminating materials, not only within their own institutions, but also through the rural secondary schools of their region. In the village, it will be the role of the principal teacher or his or her designee to further disseminate the materials to skippers and other interested people.

Perhaps the most critical part in this scheme lies at the village level. It will require a great deal of grass roots effort to establish strong and effective liaisons between the village fishermen and the rest of the program. An accurate needs assessment for each village served within a region, with priorities for answering those needs, is extremely delicate and very important. It is essential, if this program is to work, that it demonstrates its ability to meet local needs very early in the program, and continue to do so. The proposed Kodiak Community College fisheries program offers an excellent opportunity to demonstrate this ability on a regional scale before the entire program is implemented statewide.

Needs at the village level may be communicated through the principal teacher and the coordinators, to the coordinating council. Furthermore, in this fashion, an effective talent bank system may be set up to operate on a statewide basis.

This talent bank would consist of a roster of people with definite skills for use throughout the State, much in the fashion of the present DOE Talent Bank. Funding for the fisheries education talent bank should be handled in a similar manner to or as a part of the DOE talent bank system.

While this organizational scheme would encompass most situations, demonstration projects and fishing trials conducted by the State and Alaska Fisheries Development Foundation are special cases. The need for projects of this nature can be communicated through the channels outlined above, and the coordination council and the local educational agency may be of great assistance in staging them. However, it may be more expeditious and advantageous to have them funded directly.

I believe, however, that one requirement must be written into each and every demonstration project: they must be designed to develop a local information core. Too often the Alaska fishing industry has had to (and will, in the future, have to) rely on out-of-state or foreign expertise, particularly in the white fish industry. Recognizing that we must take our expertise from whatever available resources, we should also be training a cadre of people within our own industry to not only use new equipment and fishing techniques, but also to pass this information on to other Alaskan fishermen, processors, and marketers. It is unlikely that we will ever be totally independent of out-of-state expertise. Indeed, it would not be in our best interest to become totally dependent on local expertise. It would, however, make good economic and educational sense to reduce this dependency gradually.

There is another possible approach to the reduction of dependence upon foreign and out-of-state expertise. This lies in the strengthening of the existing Marine Advisory Program, especially in the area of gear specialists. As mentioned earlier in this report, MAP has attempted to add a gear specialist to its staff, but funding has been unavailable. Most of the State demonstration projects include various specialized gear uses. Therefore, it would be in the best interest of the State and its fishing industry to directly fund at least one, and preferably three gear specialists for statewide service within MAP. While three gear specialists may seem extravagant, consider the expense in constantly importing outside knowledge to the vast reaches of the Alaska coastline. Again, the development of these specialists could be effectively aided by close involvement of the MAP with the coordinating council.

It should be realized, however, that merely adding to the Marine Advisory staff will not be sufficient to provide the needed fisheries education effort. This step should be regarded as a supportive measure to help fill the gaps while a completed and functional statewide fisheries education network is being developed. Subsequently, there will still be a need to maintain that Marine Advisory expertise throughout the state to supplement the proposed educational delivery system.

It is our recommendation that this proposal be implemented on a regional basis since Kodiak Community College has been awarded a grant to initiate a Regional Community College - community fisheries program, we suggest that Kodiak is the logical site to act as a model for future efforts. After one year of operation, the program should be expanded and initiated in another region, utilizing and adopting materials and experience developed in Kodiak. Further expansion could be accomplished step-wise each successive year.

The first year operating costs, though, partly depend on already appropriated funds (see attached Kodiak Community College project budget Table 2). The added funds needed will cover initiation of the state network, and preliminary work on needs assessment of individual regions to be served by the plan at a later date. These expenses should cover the selection of the five-member oversight board (Board of Education, Board of Regents, Post-Secondary Commission), as well as their attendant travel expenses; the selection, travel and meeting costs of a state fisheries education coordinator; and finally the costs of initial needs assessment and preparation for implementing the program in the successive regions. Possible funding patterns are outlined in Table 3.

V. PROPOSED BUDGET

1st Year Operation

1.	Oversight Board Expenses	\$ 3,000
2.	Selection and Operational Expenses-Coordinating Committee	5,000
3.	Travel Coordination Committee	6,000
4.	State F. E. Coordinator	
	a. Salary	36,000
	b. Secretary	20,000
	c. Fringe at 17.5%	9,800
	d. Travel	7,000
	e. Communication	5,000
5.	Subsequent Needs Assessment (to be contracted)	60,000
	Total First Year	\$151,800

2nd Year Operation

1.	Oversight Board	3,000
2.	Coordinating Committee	10,000
3.	a. State F. F. Coordinator salary	38,000
	b. Support	21,000
	c. Fringe at 17.5%	11,000
	d. Travel	8,000
	e. Communication	5,000

4. Subsequent Needs Assessment	60,000
5. Curriculum Development (contract)	60,000
6. Community College Coordinator Salary	38,000
7. Support	15,000
8. Fringe	9,000
9. Travel and per diem for regional teachers	4,000
10. Community College Coordinator travel	3,000
11. Supplies	11,000
12. Evaluation	16,000
13. Communication	4,000
14. Printing	5,000
Total Second Year	\$321,000

Beyond the second year the Kodiak Community College program must be refunded to continue it. As a rough prediction it will cost approximately \$200,000 a year to maintain the program. Using that figure in conjunction with the state advisors first year cost to estimate the total overall costs of running this program on a coastal statewide basis at the following locations: Ketchikan, Juneau, Prince William Sound, Kodiak, Kenai, the Aleutian Region, Bethel, Nome, and Barrow, one arrives at an annual cost of \$1,900,000.

There are, however, some problems with using this estimate. For example, there is currently no community college in the Aleutian Region. It has been suggested that a fisheries extension center be placed at Dutch Harbor to act in this capacity. Expenses of running this sort of program in the Aleutian Region may be perceptibly higher than in other regions, but this will also be offset by lower costs at other centers, such as Nome or Barrow where the commercial fisheries, while potentially very important, will probably always remain at a far lower intensity than those of the more southern centers.

VI. SUMMARY

The Alaskan fishing industry is of vital importance to the future of this state. It stands on the edge of great expansion into new fisheries, new processing techniques, new markets, and new regions of the state. No longer is it a local cottage industry, but, instead, is now a rapidly growing multimillion dollar investment in which all Alaskans share directly or indirectly.

To allow this industry to provide maximum benefit for all of our citizens, be they producers, processors, marketers, investors, or consumers, we must initiate a coordinated fisheries education program, designed to (1) reach every portion of the state concerned with fisheries; (2) produce readily usable educational materials for all segments of the fishing industry statewide; (3) tailor these materials to local relevance; (4) make use of all available means to transfer out-of-state expertise into our educational system.

To accomplish these ends, Lee, Pennington and Associates recommends the following:

1. Setting up an educational and communications network consisting of:
 - a. An oversight board consisting of two members of the Board of Education, two from the Board of Regents, and one from the Post-Secondary Commission;
 - b. A coordinating council consisting of representatives from the community college system and all pertinent public and private agencies; and
 - c. Developing a statewide coordinated vocational fisheries program which would be regionally specialized and associated with the community colleges, university extension centers or other suitable regional entities.
2. The materials developed by this effort be modular in nature, and be suitable for non-classroom teaching.
3. The Kodiak Community College Program be used as a model for this effort, and that this program be fully supported financially.
4. Using the Kodiak experience and materials, a similar program be instituted and fully supported in at least one other coastal community college during the following year. Thereafter, one or two new programs should be added each year.
5. Those agencies responsible for funding these programs should realize that, in order to be successful, there must be a long term commitment of time, funds and energy.
6. The Marine Advisory Program be strengthened by the addition of one to three gear specialists for statewide service.
7. Ultimately, the State should consider supplementing their vocational fisheries by the development of Technical Fisheries Education College, similar to Rhode Island's School of Fisheries.

Alaska Fisheries
Education Organization
Flow Chart

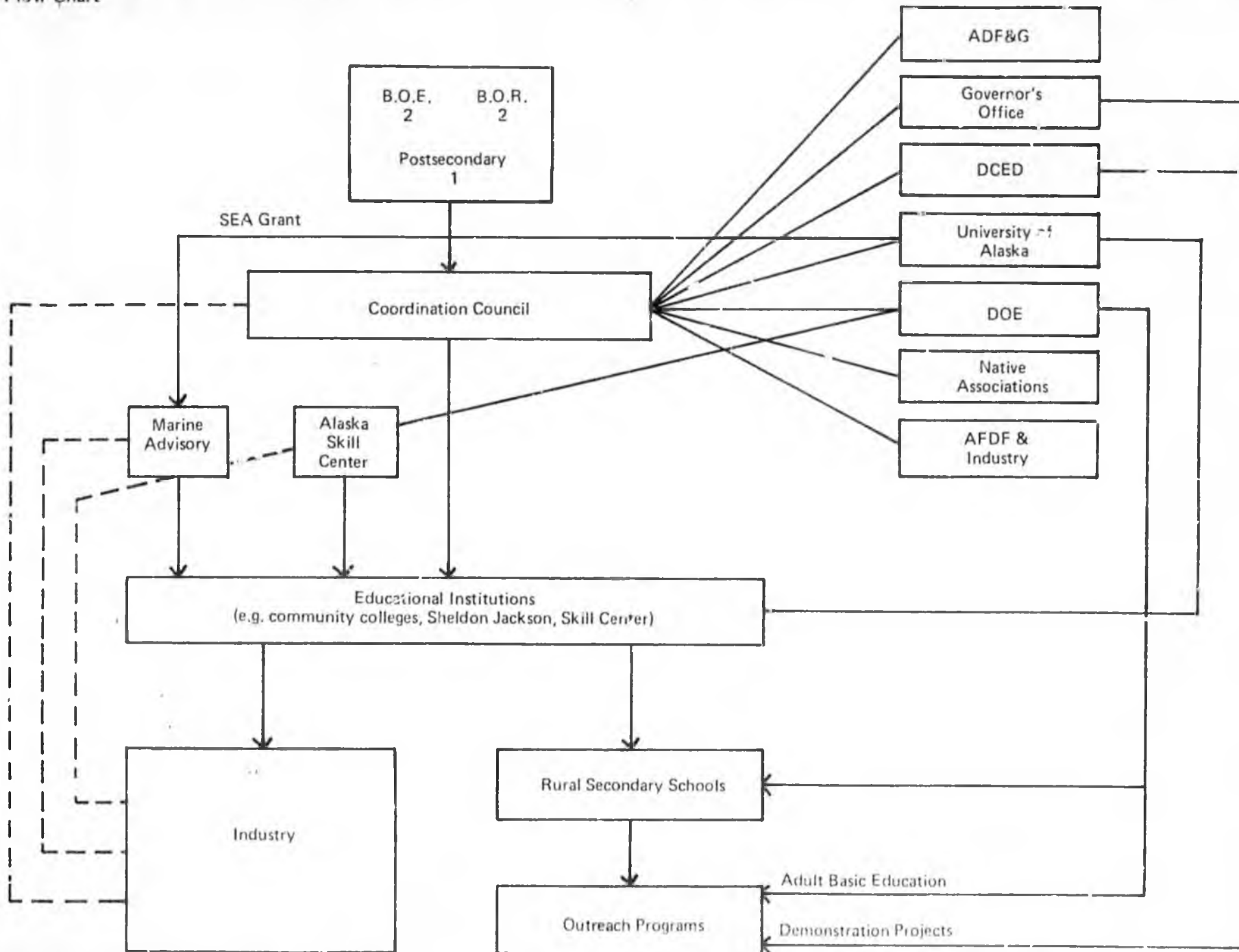
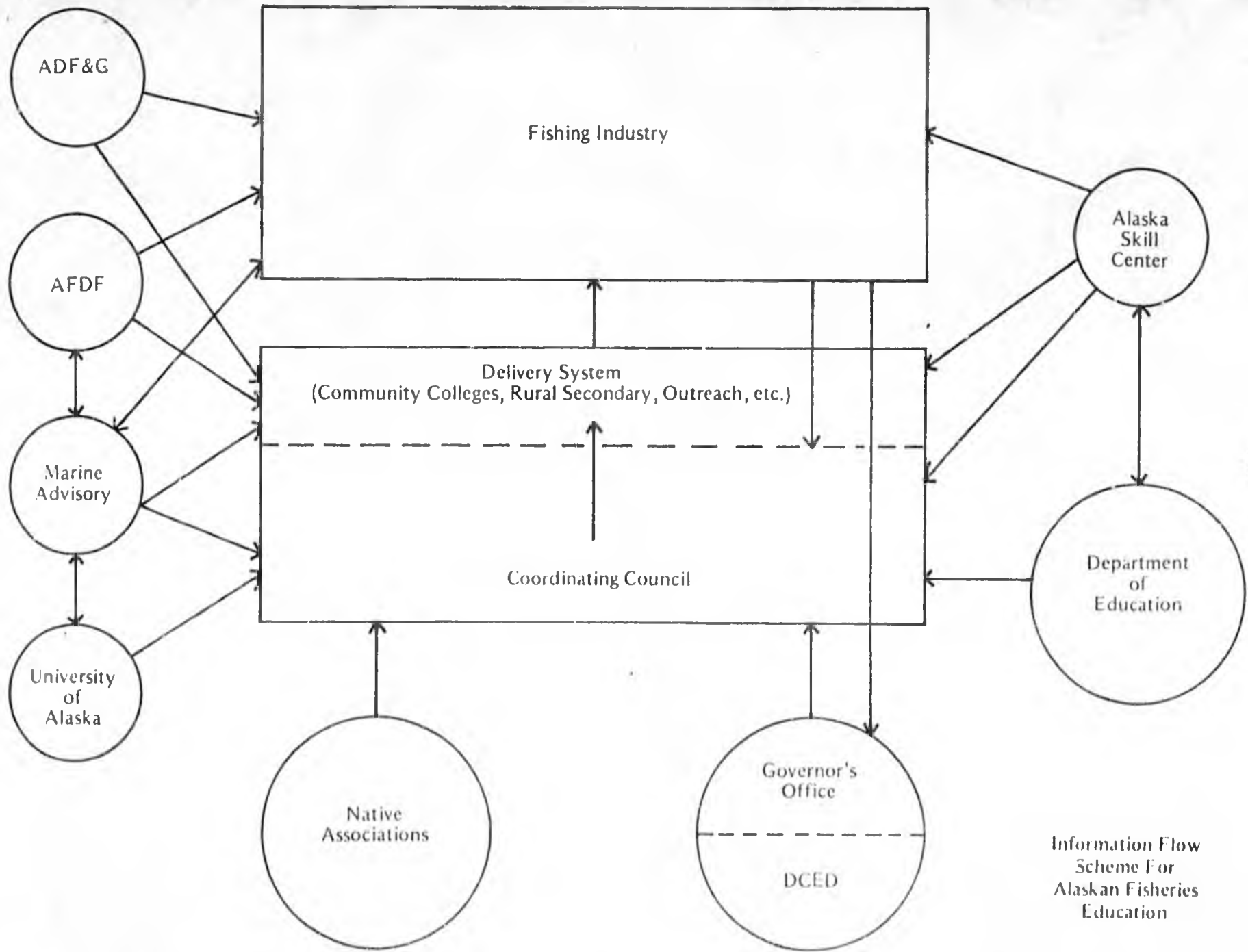


TABLE 2

KODIAK COMMUNITY COLLEGE FISHERIES PROGRAM BUDGET

State Budget Account Number	Account Title	Budget Amount	
		Initial	Revised Date
310	Coordinator Salary - 18 months	\$54,000.00	
330	Secretary Salary - 24 months	28,800.00	
350	Employee Benefits 17.5%	14,490.00	
400	Professional & Technical Services		
	Project Initiator - 3 months	3,000.00	
	Technical Writers for Modules		
	Curriculum Development	40,000.00	
	Contracted Service plus		
	travel & per diem - NWRL		
	& Criminal Justice Center		
	Substitutes for Teachers	1,350.00	
	Teachers Release Time (H.S.)	1,000.00	
426	Travel and Per Diem		
	6 villages on Kodiak Island	2,520.00	
	Teachers Training		
	Coordinator Travel -		
	Program Development	2,700.00	
	& Implementation	1,500.00	
451	Supplies	5,000.00	
140	Communications	2,400.00	
	Project Evaluation	15,000.00	
	Printing Costs	5,000.00	
	Administrative Overhead 10%	17,376.00	
	TOTAL REQUESTED	\$194,136.00	



Information Flow Scheme For Alaskan Fisheries Education

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December 1979

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REPORT OF THE ALASKA SENATE COMMITTEE ON QUALITY
ASSURANCE IN THE SALMON FISHING INDUSTRY
BY THE SUBCOMMITTEE ON EDUCATION

Background and Need

The Alaska salmon industry has undergone a major change in the last ten years. ~~This change consisted of a shift from a primary emphasis on canned salmon to a heavy emphasis on fresh and frozen salmon processing~~ (Fig. 1). This shift is as dramatic as, and is economically more significant than the development of the tanner crab fishery.

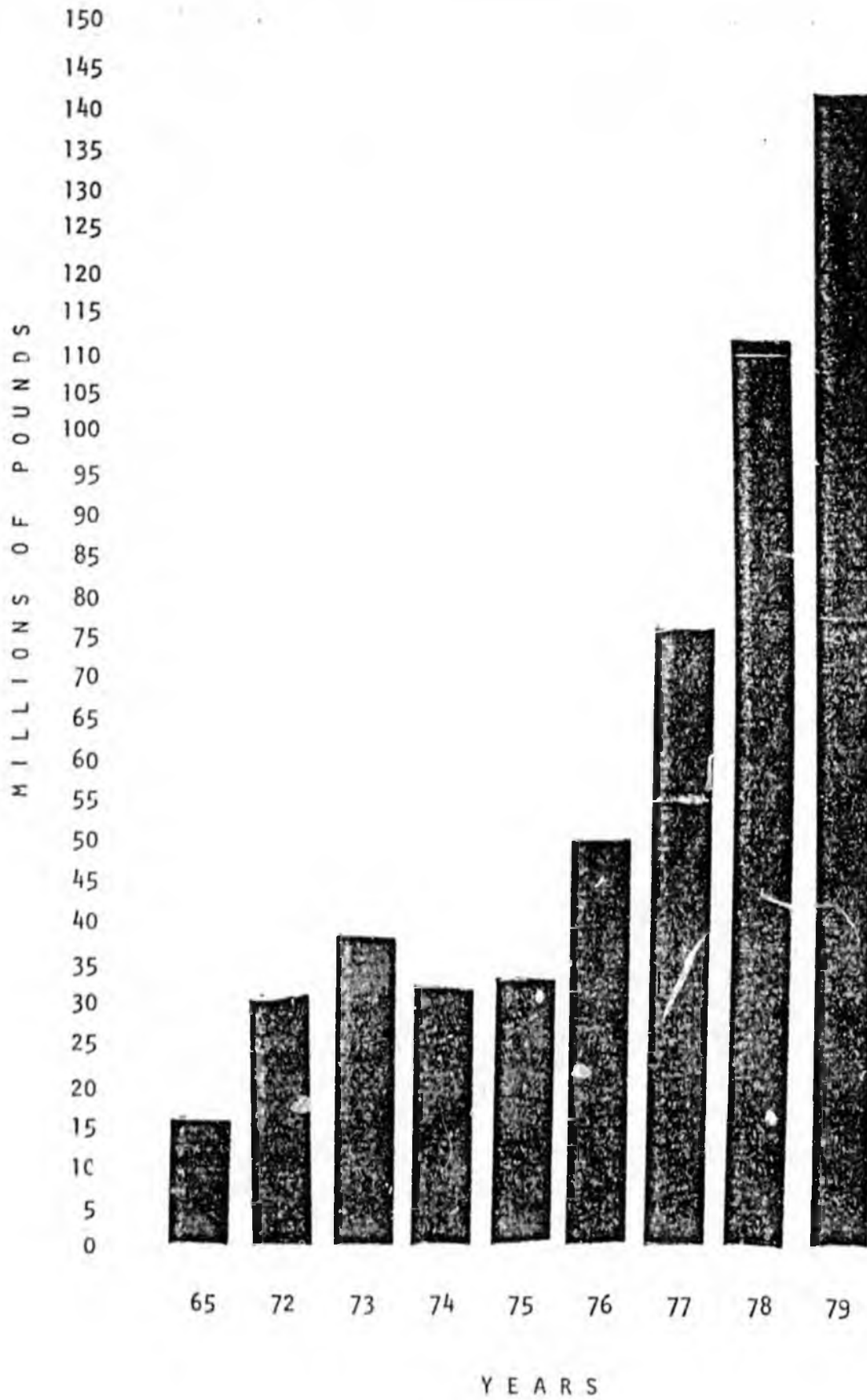
Traditionally, the fresh and frozen salmon markets were supplied by troll-caught salmon from Southeast Alaska and the Pacific Northwest. These were high-quality silver and king salmon, bled and dressed immediately after capture and iced within a short period of time. The supply was supplemented by gillnet-caught salmon, again principally silvers and kings.

As the market for fresh and frozen salmon expanded, it had to be filled with net-caught salmon. This move was accompanied by an increase in cold storage capacity in the Gulf of Alaska and air shipments from Bristol Bay and the AYK district.

During the last four years the growth has been dramatic (Fig. 1). In 1979 over 100 million pounds of salmon, including sockeye, chums and pinks that would previously have gone into the can, went to the frozen market. This is accomplished

*Jensen Douglas CC Ltd
Coursed.*

ALASKA FROZEN SALMON PRODUCTION



by "high grading" at the plant, which has resulted in an overall lowering of quality in both the canned and frozen product.

Many of the fishermen and processors who are now producing for the fresh and frozen market formerly canned all of their product. Therefore, they are not familiar with the proper methods of handling fish to attain a high quality frozen product.

In Japan and Europe the devaluation of the U.S. dollar has put salmon within the buying range of more people. The Japanese market is for high quality dressed salmon with the head on, which are sold whole on the retail market. In Europe, the demand is for frozen salmon which are thawed and split for mild curing and smoking. Both markets demand a quality fish with no external or internal blemishes or visible flaws. North America, too, is experiencing a shift toward fresh and frozen salmon for use as steaks and fillets and, to a lesser extent, the mild cure and smoking market.

European and Asian markets are looking to our competition for a high quality product. This includes Canada and Norway, both of whom have high quality standards set by government regulation.

Processors in Europe complain about bruises, soft flesh, belly burn, rancidity and poor butchering of the product they receive from the U.S., including Alaska. These are all caused by improper handling and processing.

*Needs
Education*

95% of seafood
packed by sailors members

Doyle
Marine Advisory
Program

Problem

The Alaska fish are as good as any when they come from the water, but several million pounds of frozen salmon were condemned by state and federal inspectors after the 1979 season. Quality loss occurs in the hands of humans.

The problem of salmon quality is statewide, but is more critical in areas where the production of frozen salmon is a relatively new form of processing.

Goals and Objectives

The goal of this project is to "Raise the quality of Alaska frozen salmon to a level that will meet or exceed that of any other country's product competing on a world market."

Our immediate objective is to improve the overall quality of Alaska salmon. Clearly, efforts need to be made in assisting the industry to improve the quality of salmon submitted to the world markets. Education is needed in proper techniques for handling salmon.

A committee has been appointed to determine these educational needs and the kinds of educational efforts the state should support. A broad-based educational program, directed at fishermen, tendermen and fish processors, is recommended by the committee.

Approach

A broad-based education program will be developed. This program must be delivered to the largest number of industry members possible. The project will reach fishermen, tendermen, processors and shippers of salmon; i.e., all segments of the industry. In order to reach most of the industry, a number of different audio and visual educational techniques will be employed. These will include, but not be limited to:

1. Seminars, workshops and conferences
2. Consultation services
3. Public service radio spots
4. "How-to" fact sheets
5. Slide series on handling salmon
6. 16-mm educational film on salmon handling and processing methods
7. Salmon handler's manual

In order to provide these educational services it will be necessary to employ a full-time specialist in the care, handling and processing of frozen salmon. This will need to be a long-term project. Current practices are ingrained and will take a number of years to change.

Outline of Education Activities

1. Seminars, workshops and conferences. Seminars and workshops will be conducted in fishing ports throughout the

state. These will be directed at fishermen and processing personnel. This mechanism is helpful in making industry members aware of the problem and will offer solutions to specific problems of each fishery and region. This has been demonstrated to be one of the best methods for provoking a desirable change.

A conference will be held to bring together the leaders of the fishermen's organizations with the objective of informing them of the problems poor quality has caused in the marketplace; to obtain their ideas for a long-range solution; and to enlist their support. A second conference will be held with the quality assurance personnel in the processing plants to inform them of the problems that occur in plants and to provide them with information and materials for training their in-plant workers.

2. Consultation services. In order to improve the quality of fish landed it will be necessary to do conversion work on many of the salmon vessels presently in use. This will include the installation of slush ice, refrigeration systems, or other types of cooling systems on the vessel. In some areas of the state the older or smaller vessels are not lined. Fish lay in the bilge or against hot engine room bulkheads. In some cases boxing may be justified. The specialist would be available to provide technical information on these and other specific problems. In many cases, the

fishermen or processors could make the necessary changes themselves with technical assistance made available through this program.

3. Public service radio announcements (PSA's). All radio stations make time available for public service announcements. Several stations have been contacted and have expressed a willingness to air educational spots relating to good handling practices for salmon. A series of PSA's will be produced and distributed to all radio stations in coastal communities. The PSA's will contain "how-to" tips as well as what not to do. They will each contain an educational message; however, their prime function will be to raise the general awareness of the necessity for good handling practices. Through personal contact with participating radio stations it is expected that the PSA's will be aired at a time most fishermen listen to the broadcast band--at the time of the marine weather forecast.

4. "How-to" fact sheets. A series of "how-to" fact sheets will be written. They will be developed for each fishery by region. It is necessary to develop them by fishery and region because of the differences in the harvesting methods employed and the different conditions existing in each region. Fact sheets will also be developed for in-plant handling. Subjects to be covered will include, but

not be limited to, effects of temperature; sanitation; use of ice; refrigeration; etc. These fact sheets will be given broad distribution to fishermen and processors and be used in workshops and seminars.

5. Slide series on salmon handling and processing. A series of slides is presently being assembled that shows the effect of poor handling and butchering practices. This series will be expanded to show proper methods. The series will be duplicated for use in workshops and seminars and will be available for fish processors to use in their own in-plant training sessions. These slides must be considered as a tool rather than standing on their own as an educational program.

6. 16-mm movie film/television tape on salmon handling and processing methods. A 16-mm educational movie film will be developed showing proper handling and icing and the processing of frozen salmon in the plant. Television tape copies of this film will be made available for circulation to schools and educational TV, and will be used in workshops, seminars, etc. A film will not be a complete educational program but will augment the other educational efforts.

7. Salmon handler's manual. The fact sheets will be completed and supplemented with additional materials to produce a salmon handler's manual. This manual will in-

clude the why as well as the how to. The major use of this manual will be for in-plant training by company personnel. It will also be used to train new quality control people in the plants.

Interactions

It is necessary that this project interact with present education efforts in salmon quality enhancement in both the private and public sectors. This would include the University of Alaska, the National Food Processors Association, fishermen's associations, and the state legislature.

It is recommended that a permanent advisory committee be appointed to monitor the program. This committee should meet on a quarterly basis to review progress and to identify problem areas.

Salmon Quality Education

BUDGET

SALARIES

Instructor 12 mo @ \$3000 mo	\$ 36,000	
Clerical assistance 1/2 time 12 mo	<u>8,000</u>	
	44,000	
Staff benefits @ 20.5%	<u>9,020</u>	
TOTAL		\$ 53,020

EQUIPMENT

Office equipment	1,500	
Audio Visual	<u>950</u>	
TOTAL		2,450

EXPENDABLE SUPPLIES

Re ording tape	480	
35-mm film	120	
Office supplies	<u>200</u>	
TOTAL		800

TRAVEL

7,800

CONTRACTUAL SERVICES

16-mm movie	40,000	
Printing (fact sheets, manual)	13,200	
Postage	1,100	
Communications	3,000	
Xerox and drafting	2,000	
Video tapes	400	
Reproduction of slide sets	500	
Subcommittee travel and per diem	<u>10,000</u>	
TOTAL		<u>70,200</u>

TOTAL DIRECT		134,270
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TOTAL INDIRECT @ 50.8% of S & W		<u>22,352</u>
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GRAND TOTAL		\$156,622
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