ALASKA LEGISLATURE COMMITTEE FILES 1981-1982 8672/195

1958 SRES HB 313

STATEMENT FROM REP. TERRY GARDINER
FISH CENTER HB 313

House Bill 313 establishes a fishery center. We have spent many years searching for goals and objectives to guide us in the renewable resouce area, but I think it would be more productive to instead focus attention on the means for achieving those goals.

One of the key elements which has been missing is a coordinated technical development and research effort. Perhaps the most important means for ensuring greater coordination, would be the establishment of a comprehensive joint fisheries facility, encompassing technical development and research.

Alaska produces as much as 80% of the nation's groundfish resources, it the largest producer of salmon and is a major source of shellfish, Alaska should have a major center for fisheries activities.

THE NEED

The need for a consolidated Alaskan Fisheries Research Facility is based upon four major factors.

1. There is a need to have a scientific and research basis to provide the technical support to state and federal agencies which have the responsibility to manage the Alaska fishery.
2. The State of Alaska and the federal government both have a legitimate interest in protecting and developing the Alaskan fisheries resource. Knowledge gained through research can provide the state and the federal government with the capability to develop improved regulatory practices aimed

at more effectively acheiving the desired balance between allowable harvest levels and stock protection.

3. By any standard Alaska's fishery resource in enormous. Consider these statistics:

* Alaska's 1978 harvest of 80 million salmon amounted to 85 - 90% of the entire U.S. harvest and about 40 - 50% of the world harvest of salmon.[1]
* The 1978 harvest of Alaskan shellfish (shrimp and crab) of 300 million pounds amounted to approximately 40% of the entire U.S. harvest of these species.[1]
* The annual harvest level of 3 to 4 billion pounds of bottomfish within the North Pacific Fisheries Conservation and management zone places Alaska in the top 12 among countries in world production of fisheries resources.[1]
* Currently the combined annual wholesale value of all Alaskan fisheries resources exceeds 2 billion dollars. By way of comparison this level of sales would rank the Alaskan fishery among the top 150 of the fortune 500 corporations.

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[1] Contractor estimates developed with assistance of NMFS personnel and fisheries information.

4. A substantial amount of Alaskan fisheries research is currently being largely independently conducted by a number of different organizations including:

The Alaska Department of Fish and Game

The National Marine Fisheries Service

The University of Washington

The University of Alaska

The U.S. Fish and Wildlife Service

Alaska Fisheries Development Corporation

The U.S. Forest Service

The North Pacific Management Council

Alaska Sea Grant Program

Alaska Office of the Governor (Fisheries Council)

Alaska Seafood Foundation

Alaska State Legislature

Private Non-Profit Aquaculture

Notwithstanding the significant involvement of Alaska organizations in conducting research on Alaskan fisheries, a significant portion of the research staffing and expenditures are not being made in Alaska. The economic benefits form this employment and expenditures accrues to other states and it is expected that less than full benefit is received by Alaskan's from this off-site research activity.

There is a need. But for whom should research be done and what directions will the technical and research work take? These are the difficult questions.

An analysis of the make up of the industry may shed

some light on the subject. There are approximately ten major elements to the fishing industry, some larger and more complex than others. But lets examine the progression of a fish through the industry.

First the resource, under the scope and purview of nature generally, and ADF&G is assigned to monitor natures progress and report back. In some cases ADF&G cautiously intrudes into the natural cycle with a fish hatchery, enhancement program, or fertilization. But for the most part reacts to natures whims. We spend almost 90% of ADF&G's budget on this monitoring effort.

The second element is marine survival. This is an area we know little to nothing about. Since it seems to be the area where the greatest loss of the resource occurs, even a small improvement would have a tremendous impact on the harvest.

The third element is the allocation of the resource. There are two areas: one, the resource itself, to ensure sufficient brood stock survival, secondly allocation amoungst user groups. It seems that most of the problems are in this area. We are all aware of most of these issues so I won't dwell on them. Except to point out that the greater the pressure on user group allocations, the more the need for accurate, reliable information is realized.

The fourth state is the actual harvest. Both the methods of harvest and the time and place is set by the government. But again, the policy decisions are based on the technical data regarding the resource.

The fifth element if the onboard handling of the resource. Only lately has much attention been paid to this area. This is the first time in the process that the resource comes under 100% control of people. Although we expose quality control and preservation of quality we have done very little. The assumption is that from the minute the fish is removed from the water is starts to deteriorate. That process of deterioration must be slowed down as much as possible until the product is consumed in order to maximize its value.

Again, one of the goals is to develop and improve the economy of the industry and one good way is to increase the value of the product.

There are very few places where ice is available to fishermen outside of Southeast Alaska. Boat design for efficient handling of fish on board can be improved.

This is an area which can use a lot of help.

The sixth element is transporting the fish from the harvesting site to the processing facility. Again the goal is to increase the value of the product and decrease the cost of delivery. To deliver a higher quality product at a lower cost. This is particulary true in the fresh fish market. A timely efficient delivery is essential.

Basically, the elements are handling, storage and delivery time. The rising costs of energy is a major factor in the transportation portion.

The seventh element is processing the product for consumption. Generally, this is the highest capital investment in the industry. Innovations in the area are urgently needed.

In the groundfishery, there is a need for machinery to handle the smaller size pollock. New techniques for preserving the fresh fish quality for a longer period. New product forms for fidderent markets need to be developed. And many more challenges exist.

The eight element is storage of the processed product, either fresh, frozen or canned, controlled atmosphere.

The ninth, tenth, and eleventh are transportation to market, marketing, and actual consumption. The average American ate 13.3 pounds of edible meat in 1979, down from 13.6 pounds in 1978.

I only want to go through this process to emphasize the diversity of the fishing industry. It seems only too often, we only look at the resource and allocation issues and not at the economic values.

The problem we are challenged with is to help develop a coordinated effort to effectively interact with the industry.

WHERE DOES A FISHERIES CENTER FIT IN

If the State were to proceed with a plan to establish a fisheries facility, a logical concern is, who would manage the facility?

There are several alternative management plans which could be implemented.

The center could be an independent entity, or operated by a State agency (ADF&G), a federal agency (NMFS), or the University of Alaska. Each agency (federal & state) who assigns research personnel to the research center, would be

responsible for paying and providing benefits to their own employees. Space assignments, priority use of laboratory equipment could be resolved by a operations officer or committee composed or representatives from the various agencies performing research at the center. Research policies and programs under this concept would be subjected to the review and approval of a Research Policy Committee.

These issue and others need to be discussed and thoroughly evaluated. To be successful the center must have a close coordinated role with the Department of Fish & Game, the University of Alaska, the industry, and the federal government.

It is my intention to hold hearings on this bill and use it as a vehicle to discuss the issue of research and development in the fisheries area.

Alaska State Legislature

House of Representatives

Committee on Resources

Terry Gardiner, Co-Chairman
Fred F. Zharoff, Co-Chairman
465-3715

Pouch V
State Capitol
Juneau, Alaska 99811

MEMORANDUM

TO: The Honorable Senator Parr
Chairman, HESS Committee

FROM: Representative Gardiner T.D.

DATE: 27/May/1981

RE: CS HB 313 - technical amendments

CS HB 313 has been referred to your committee. On review of the bill after it had passed from the House Finance Committee and across the floor, there was an inadvertent drafting error made in some of the transitional language. I would appreciate it if your committee would consider the following amendment.

The intent of the bill was to provide for a Board of Trustees which would consist of nine (9) members. See page 2, line 29. The Board is to be divided in three (3), groups of three (3) - each to serve three (3) year terms on a staggered basis. The language which provided for the staggering of the terms was provided in the bill in *Sec. 6, page 8 under transitional duties. An amendment to Section 6 to provide that the first Board of Trustees would only sit for one (1) year while putting together the plan for presentation to the legislature during the 1982 session deleted the language which provided staggered terms for the permanent Board. The following language would take care of that problem.

Page 8, line 16. Add new Section 6.

"Sec. 6. APPOINTMENT OF THE BOARD OF TRUSTEES OF ALASKA'S FISHERIES CENTER. The governor shall designate the terms of the members of the Board of Trustees of the Alaska Fisheries Center appointed under AS 16.12.030, and shall appoint the first members of the Board within thirty (30) days of the effective date of this Act. Of the nine (9) members first appointed

(1) three (3) shall serve a term of one (1) year;
(2) three (3) shall serve a term of two (2) years;
(3) three (3) shall serve a term of three (3) years."

Page 8, line 16. Delete the word "FIRST", replace with the word "Transitional".

rec 5-7-82
HESS

Testimony Concerning HB 313

Senate Health, Education and Social Services Committee

March 10, 1982

Persons Testifying:

Donald H. Rosenberg
Office for Fisheries, University of Alaska

Dr. Keith Jefferts
President, Northwest Marine Technology

Dr. Ronald O. Skoog
Commissioner, Alaska Department of Fish and Game

Bob McVey
Director of the Alaska region for the National Marine Fisheries Service and representing the Northwest and Alaska Fisheries Center in Seattle

Jack Helle
District Director for Alaska of the American Institute of Fishery Research Biologists

Don Bevan
Director of School of Fisheries, University of Washington

Representative Terry Gardiner
Alaska State Legislature

George West
Vice-President for Academic Affairs, University of Alaska

Testimony Concerning HB 313

Senate Health, Education and Social Services Committee

March 10, 1982

Testimony of Donald H. Rosenberg, Director, Office for Fisheries University of Alaska

Don Rosenberg - My name is Don Rosenberg. I am with the University of Alaska, Director of the Sea Grant Program. I'm here today as chairman of the Alaska Fisheries Center Study Group. The Study Group was assembled at the request of the Legislature through the Office of the Governor for the purpose of examining the fisheries center proposed in HB 313, for feasibility and to propose a structure of such a fisheries center. In the audience, there are some of the Study Group members; not all of them could be present. Stan Moberly, representing the Department of Fish and Game is here; Mr. James Brooks, of the National Marine Fisheries Service [is present]; Mr. Keith Jefferts, a private businessman, is here; and Mr. Tom Lane, our Executive Director, is present. What I will do today is just briefly summarize the findings and recommendations of the Study Group. Our findings and recommendations are presented in a report, which I believe you have, and supported by a rather extensive study that we had done by the consulting firm of Dames and Moore. I believe that it is very clear to those of us who are involved in the Alaska fisheries that the fisheries resources of this state, both those within our state waters and within our land mass and those that lay adjacent to our state, are very important to this state and its economy. We attempted to quantify the importance of that and found that that is really an impossible task. These fisheries resources really play an important role in not only the economy of the state but also in the livelihood of many of our citizens. They support a large recreational industry, tourist industry, and a very large commercial industry and they also represent a source of food for a good portion of our population. Most Alaskans, we find, expect to be able to experience the opportunity to go fishing with their children as a recreation. The very large commercial industry expects the resource to be available each year for harvest and a good portion of rural population expects to go out and harvest this food and put it directly on their table. Truly, the Study Group found that the state does have a responsibility to insure that these fisheries resources are present and utilized wisely and provided in a conservative manner which insures their continuing existence for generations to come. The demands we find on these resources are becoming greater and greater. There is an increased tourist industry being encouraged. We are encouraging an expanding commercial fishery and as the local resources come back more and more of our citizens are looking to the resources for subsistence. We find major conflicts beginning to develop between these various users and the resource's ability to support those various users as they develop. The Study Group reviewed all

of the state and federal programs and university programs which are providing information and techniques which the state and the federal government are using to mitigate these increasing demands and conflicts. We have identified three specific needs: First, we find that there is an urgent public need for increased economic, social and biological knowledge and understanding about these fisheries resources so that both the public and governmental sectors can develop appropriate development and conservation programs. Second, there is a need to increase the knowledge and understanding of, and to strengthen our state's ability to manage these resources properly. And third, there is a need that exists to expand the communication and coordination between all the users of these fisheries resources. To address these identified needs, the Study Group analyzed various alternatives, all of which were designed, to some degree, to address and solve these identified needs. These alternatives ranged all the way from expanding and reorganizing existing research capabilities in the state to the establishment of a fully independent fisheries research center. I want to make it clear that this analysis of these alternatives was done in light of the existence of an inventory of research groups; that we did not look to destroy what already exists in the state. From this analysis the Study Group selected for its recommendations combinations of pieces of alternatives which we felt would best serve the state and which most effectively and economically addressed those identified needs. Our recommendation is that the state establish a fisheries research center with a goal to provide the information and to build a foundation upon which fishery management programs can be developed and executed. You will note that the Study Group's recommendations limits the scope of activities from what is in the original House Bill 313. The scope of the center's activities are to be related to the acquisition and dissemination of information in the development of methodology required for wise management of our fisheries resources. The Study Group feels that the immediate management needs for collection of fisheries statistics are already being handled by our department of Fish and Game and NMFS and our other resource management agencies. Likewise, the research and training which will be a necessary ingredient for Alaska to expand its commercial fishing industry will be carried out under the newly formed Fishery Industrial Technology Center of the University. The research center that the Study Group recommends is designed to fill an important gap in our structure: that of providing fundamental approaches to fisheries management to fill basic information gaps and to understand the problems of multi-use of these resources and the impact of man on these resources. Once again, I would like to stress that this research center and its funding, from the Study Group's perspective, must come over and above the existing agencies, both from their budgets and their programs. The activities of these existing agencies must be maintained and expanded as required by the mandates of those agencies. Additionally, the Study Group did not find that there was a great lack of coordination among the existing research

agencies but instead we find that a great deal of coordination does exist. Our recommendation, very quickly, is that (1) the center should be established and that that center should be administratively assigned under the University of Alaska; (2) that it be administered by a board of trustees; (3) that it should have two advisory-type groups (first, one which represents the users of the resource and second, one that represents the scientists of the state); (4) that when this center is fully operational, we estimate that its size should be that of being able to support approximately 40 professionals plus an associated support staff. We estimate that this will cost around 14-15 million dollars annually. As to a location of any of the capital facilities that might come along with such a center, the Study Group has recommended a series of criteria to be used by the agency to which the center is assigned, (in this case we are recommending it to be the University of Alaska) when they develop the plans for such a capital facility. I think with that I would be happy to answer any questions that the committee has.

Sen. Fischer - In the packet is something entitled Alaska Fisheries Center Study Group recommended substitute.

Don Rosenberg (D.R.) - Yes, in the back of our report we do recommend a substitute bill which takes into account our recommendations.

Sen. Fischer - I note that the principle change is that nothing is within in Department of Administration. What other changes are there between the two?

D.R. - Limiting the scope somewhat and spelling out the advisory committees. That is principally all the changes.

Sen. Fischer- I note that the fiscal note is larger for the University operation than what was estimated for the State operation. The FY83 [costs] would be 526 [thousand dollars] under the University instead of the 436 through the Department of Administration.

D.R. - We did not review the original estimate. I think that original estimate was to do some of what the Study Group has done in the first year under the Department of Administration bill. In other words, to look at a structure to recommend locational criteria, and so forth.

Sen. Fischer - Did that provide for an interim board?

D.R. - Yes. And I think that is what that funding was for.

Sen. Fischer - Yours is directly for an operational program?

D.R. - Yes, although the first year is to initiate 1) the start of an administrative structure, and 2) to get the program planning under way.

Sen. Fischer - How much less money could you do it with?

D.R. - As chairman of the Study Group or University of Alaska representative?

Sen. Fischer - As a realist. Forget it.

Sen. Parr - Mr. Rosenberg, I would like to start way down on ground zero. To my knowledge there is some sort of fisheries center in the state and federal as well out at Auke Bay; there was a bill through here last year about some fisheries technology center in Kodiak; there is something down in Seward. I assume, but I'm not sure, the Department of Fish and Game has some research going on; I'm not sure where that is conducted. I wonder if you could define for us what each of these facilities is now doing, whatever facilities they are and, I guess, in essence what [their functions are]?

D.R. - OK, out here at Auke Bay there are really two facilities: There is a federal laboratory, the NMFS Laboratory; and there are people in the room that can address those programs out there better than I can.

Sen. Parr - I would just like you to give me a brief summary. I'm sure the Study Group must have taken into consideration what is already being done.

D.R. - Yes. That center is directed towards fisheries research for mandated type programs.

Sen. Parr - What kind of research?

D.R. - They do basic fisheries research. Most of it is biological out there. It is an arm of a much larger center which is located in Seattle called the Northwest and Alaska Fisheries Center. It does provide, including the Seattle Center, fisheries research, information, fisheries data that is necessary under the Magnuson Fisheries Management and Conservation Act, which is better known as the 200 mile limit [act], for management of the fisheries resources off from 3 miles to 200 miles.

Sen. Parr - That is not biological.

D.R. - It is biological, social and economic. The second entity out of Auke Bay is the University of Alaska School of Fisheries Sciences. This is an educational program, primarily teaching programs designed for providing bachelor and master level individuals for employment either in the state management agencies or in the private industry. It does have a research component, most of which is primarily funded either through my program, the Sea Grant Program, or grants or contracts with the Alaska Department of Fish and Game.

Sen. Parr- What kind of research are they doing?

D.R. - They do primarly biological research and with that there is already an oceangraphic research center at Seward. Here they carry out research that is directed towards understanding the ocean environment. Some of that research does lean toward understanding the ocean environment as it relates to fishery resources of the state.

Sen. Parr - But not specific to fisheries research?

D.R. - It is not specific to fisheries. The bill which was before you last year and which is now in reality , has now created a fisheries industrial technology center in the University whose primary facilities will be in the community of Kodiak, [and which] was designed to address the technology, education, and research and development needs of the fishing industry itself, to allow the fishing industry to expand, to undertake the development of the fisheries which are currently harvested by foreign nations off our coast. Its research is not directed towards any management; it's aimed at processing and harvesting the fish.

Sen. Parr - The Department of Fish and Game research sites ?

D.R. - The Department of Fish and Game research has selected sites around, [with] no concentrated efforts, as I understand it, in any one place. They do operate some basic research labs such as their stock separation laboratory which is used to determine various populations of a particular species of fish. Their main research emphasis is directed towards gathering and analyzing information necessary to make the day-to-day decisions of management.

Sen. Parr - In other words you are talking about opening, closing seasons and gear limits and things like that?

D.R. - That's right. There is some limited effort on their part to do long-term research but their main emphasis is directed towards what is needed today to make those decisions.

Sen. Parr - Are there any other fisheries research sites around the state besides ones that we mentioned?

D.R. - There are certain field stations that support certain rather important programs in this state. For example, Little Port Walter Field Station here in Southeast is very important to the state's salmon enhancement program. The University of Alaska is currently operating what is called the Kasistna Bay Biological Laboratory. It is a NMFS laboratory and is designed for shellfish type research; and the NMFS operates, at Kodiak, a resource utilization laboratory and their basic shellfish management type people are there. There is one other important component that should be mentioned here (the fishery research units that support Alaska) and that is the University of Washington. Through their Fisheries Research Institute, they spend a tremendous amount of effort in Alaska.

Sen. Parr - I guess it was my understanding that the center proposed in this bill would both coordinate research and also do some of its own.

D.R. - What we would look forward to with this center is that it would provide for a cooperative type effort in research whereby researchers which are already in existence, either in these existing laboratories or elsewhere in the nation, or the world for that matter, could be brought together to address identified problems that require long-term type research. By long-term I mean where we may require funding for two, three, four or five years.

Sen. Parr - I guess I didn't make my question clear. My understanding was that this center was going to have a two-fold mission: [the first one is that it would] act as a coordinating agency to research that is already going on, and the other one is that it would act as a research agency just like the rest of these research agencies.

D.R. - If you establish it in the manner it's proposed with the board of trustees, the coordination and the advisory groups, the coordination would take place, that's correct. As I said earlier in my testimony, the Study Group didn't find that the coordination doesn't exist. Many of the individuals in this room, my collegues here, meet almost daily or weekly to coordinate and carry out planning of joint research. What the center would do is enhance that through this board of trustees and advisory groups and it would then provide a mechanism for carrying out some of this research which we now can identify but which we have not resources to undertake. I don't think it was a real plan of the Study Group that the center should have a large permanent staff that lasted indefinitely and went on through the whole tenure process.

Sen. Parr - What are we talking about, 40 researchers?

D.R. - We believe that the optimum number that the state should be looking towards is about 40 professionals working on various problems at any one time.

Sen. Parr - I guess the reason for my line of questioning is just to try to find this out: if we have the number of agencies (and it looks like we do) already doing numbers of kinds of research and they are already coordinating their activities, as you said before (that was the note I made); so, I guess why do we need a coordinating agency if they are already coordinated? The second thing is, if the center is going to be doing its own research, then what are the gaps in research that are not being taken care of? We are researching, essentially (I'm using layman's language) how to catch fish and how to process them. We are doing biological research--basic research going on at Auke Bay. We have got research on salmon enhancement, oceanographic stuff (not specific to fisheries but on which fisheries research is based). We have research towards management. We have a resources utilization lab, and that's not counting what the University of Washington does. So where are

the gaps in our research not now being addressed that this institute will see get addressed?

D.R. - I think the Study Group's feelings on this was that the order of the magnitude (and in our report this is covered): the State, the Federal and the universities are spending about 30 million dollars annually on research.

Sen. Parr - Let me interrupt a moment, just to make sure I understand. The universities, the State and the Federal government are spending 30 million dollars on research which is directed to Alaska?

D.R. - Yes, directed to Alaska. The Study Group feels that that is really insufficient; not anywhere near the order of magnitude that is required to properly provide for protection of the resources. To make sure of their long-term viabilities to the state, we feel that there is a need for an expanded effort in fisheries research.

Sen. Parr - You need more than 30 million dollars a year just for fisheries research? Is that what you are saying?

D.R. - I think that if you put this in perspective of the magnitude of the value of the resource to the State and what it provides in the way of employment, you will find the State's investment in the basic research as used for management is pretty dismal, pretty small. There is a House Research Agency report that was just released on the Alaska fishing industry (and this only dealt with the commercial industry; it did not deal with the recreational or subsistence type of industry). It points out that the State of Alaska is only funding about 2.6 cents per dollar of value of its commercial fisheries resource towards the management, research (and investment in that management and research) of its fishing resource, whereby states such as Oregon and Washington are magnitudes greater. And I can't remember the figures exactly but Washington was something like 47 cents per dollar and Oregon was something like 30 cents.

Sen. Parr - In a range like that you start to wonder whether it pays off or not. I mean after all it isn't all profit. The State of Alaska invests an awful lot of money into their fisheries right now. I don't know how much goes to research but an awful lot of money is going into fisheries and has been ever since I've been down here.

D.R. - Not nearly as much as the magnitude of the industry that is built on it or that could be built on it.

Sen. Parr - Here is something that you should take a look at. I have seen a report not too long ago. I'll dig it out...

D.R. - It's a very good report..

Sen. Parr - I don't mean the report you are talking about, it's another report done that shows the cost benefit ratio to the fishing industry as far as the State is concerned.

Sen Stimson - I'm curious about the decision to shift the center from the Department of Administration to the University of Alaska and maybe you could explain how you envision the board of trustees functioning within the University structure.

D.R. - The board of trustees was recommended as a principal policy and planning body for the center because we felt that you really had to have those people who are responsible for the management of the resource be giving the policy and program guidance. This will be something new to the University--having such a board that would report say to the President--and I think the University may wish to speak offically to that; I don't think I should. We have a University representative here.

Sen. Stimson - Well that's fine, I'll address my questions to them.

Sen. Colletta - Mr. Chairman, I've got a couple of questions. I think the first one is how come we have the bill in HESS? [inaudible] tongue in cheek...but anyway, I notice on the both of these fiscal statements the Executive Director sure took a jump in a hurry. $4500/month to $6000/month.

D.R. - I suspicion that some of that is a result of when they somewhat changed the scope of the activity and I was not involved in the first fiscal note which was developed. This recommended budget has come not from the University but [was] by the Study Group from their contractors report, although I do believe it is probably within closer [range] to what it would cost. The reason for the very high salary for the Executive Director is you certainly want someone who is a world class leader.

Sen. Colletta - I don't have any quarrel with the amount of money that ... the change in six to seven months makes different interpretations as to what the center wanted to do. But on this new one that was prepared by you... I'm still confused. It goes with what the Chairman was suggesting: what are you going to do? I envision without [reviewing] the bill in detail, that this would become a depository for all the research activities going on, and probably, putting it together in some reasonable order. It seems that you said they are going to do that; and in addition to that you have got 15 researchers, and then each of those researchers have some additional technicians with them and then, on the contractual level you are going to have some more researchers budgeted some $200,000 for each of the scientists that you contract with. To do what?

D.R. - This operational research budget is to support research projects to gather information. It is literally to address certain

problems dealing with the information needs of the resources. Let me give you an example of the type of research problem that might be addressed by this center. Apparently the herring resour of Bering Sea are increasing, becoming a very important part or segment of the economy of western Alaska. And yet our State's ability to manage those is fairly weak. They do the best they can with their knowledge of that resource. We have no idea wheth they are separate stocks of herring out there; whether this is an artificial high we see coming; or that the thing is going to crash in two to three years. We know very little about that resource. So what you might see is that the board of trustees would define a five year program to look at that resource to develop better techniques for management which our management agencies, whether it be National Marine Fisheries Service or Alaska Department of Fish and Game, can use to manage that resource. And then that is what this money would be spent for, to use for scientists coming in to address just that type of problem. The values, the dollar amounts that are here are based on the experience of the existing management agencies and existir research agencies. They were developed by our consultants based on the experience primarily of the Northwest and Alaska Fisheries Center.

Sen. Colletta - I still find a missing ingredient because you enumerated all the different agencies that are doing some type of research and now you have offered a specific case at hand, currently. I guess that would be just special projects as they arose.

D.R. - They would be the long-term type of research that would be identified that is needed. That is only one of a list that we could list off here that would fill a book. Just the separat for example, of the stocks of king salmon off the coast of South Alaska is very important: management decisions are going to be made with very limited research ongoing on that. Just why did the king crab resources go down--can we expect this to happen every five or ten years?

Sen. Colletta - So if we fund this, literally we might be in a position to reduce Fish and Game's budget?

D.R. - No, I do not believe so at all. As a matter of fact, as the fisheries expand as a result of either encouragement of increased tourism or an encouragement of increased commercial fisheries, you are going to need to expand your management agenc programs. And those are the people that are going to have to make those year-by-year decisions and use this information that this type of center would provide.

Sen. Colletta - Yes, but that is my understanding that they currently were engaged in accumulating that very type of information.

D.R. - They do not have the man-power or the money to address those problems that I have laid out, such as long-term type of things. They are restricted by their budget constraints and by their personnel constraints to having to deal with research that is on a really short-term basis to gather this information, analyze it and hope they did the right thing.

Sen. Parr - Wouldn't it make more sense, then, to, if that's the case, to beef up the budget of Fish and Game and let them do this job? They would be just as capable of coordinating the operations of other agencies. I understand there was a great deal of discussion in the Study Group where this center should be located and I don't know what the overriding consideration was in saying that it should be with the University. After all, the Fish and Game has the responsibility to the Governor and to the people for the fisheries What would be... why not just give them more money so they can do the kind of research on the Southeast salmon stocks that you were talking about?

D.R. - I think it better that I don't really try to answer that one. I think there is a representative, Commissioner Skoog is here, who can address that question.

Sen. Parr - Let me ask you one more question then that would be in your bailiwick for sure: What is going to be the relationship between the board of trustees and the Board of Regents/President? This draft bill says that the trustees will provide policy and planning guidance to the University. So, does that mean that they are strictly advisory and that the Regents or President may override their guidance and make their own decision?

D.R. - Obviously, the Regents have definitely and (the president being their chief employee) certainly do have the right to override any decisions that any organization that is under the University would have. That is the intent. That is why (if placed there) there is a feeling that the board of trustees should administer the center for the University.

Sen. Parr - I see. Have the Regents gone along with that?

D.R. - This has not been brought to the Regents. It has been brought to the University's Administration and they are prepared to talk to that.

Sen. Parr - OK. Is someone here to speak from the University?

D.R - Dr. West is here.

Sen Parr - Then there could be something said for doing away with the board of trustees and simply having a director for the center (who would then have advisory committees, of course) and then the director of the center would get his orders from the President?

D.R. - That actually was one of the alternatives that we looked at--to have a center under Fish and Game or the University of Alaska that had just a director. It was the feeling that, for this center to be fully supportive of the resource management agencies, the Commissioner of Fish and Game and the Regional Director of National Marine Fisheries Service needed to have a very strong say in the direction that the center took, and it was the Study Group's recommendation that that strong say be done through such a thing as the board of trustees or board of governors.

Sen. Parr - Thank you Mr. Rosenberg. Mr. Jefferts.

Testimony of Dr. Keith Jefferts, President, Northwest Marine Technology

Keith Jefferts (K.J.) - Mr. Chairman. My name is Keith Jefferts. I am President of Northwest Marine Technology, Inc. and I serve on the Governor's Study Group for this study. I would like to speak very briefly to matters of investment and research from the thesis that the investment in research in fisheries in Alaska at the present time is inadequate, in spite of the fact that a lot of money is being spent for that. Dr. Rosenberg just made one point already which is clear (and out of one of your studies which he quoted): the State of Alaska reinvests only about three percent, less than three percent, of the values of its fisheries landing in fisheries research. Three percent is a lot of money--one can't fault that--but by looking further south, in fact, one notes that the State of Washington reinvests forty-three percent of the values of its fisheries landings in research associated with management of fisheries and the State of Oregon about twenty percent. I'm not about to suggest to you that they are doing it right, but at least there are a lot of wise people down there who seem to think that the factor of ten or twenty larger reinvestment is justified than is being carried out here. That at least should be food for thought and I would like to proceed on the matter a little bit. I contend that fisheries management is a high technology industry in the sense that it is charactized by large marginal rates of return on the investment. That is not only so apparent in the positive sense that you can spend another dollar and get thirteen back but it's absolutely true in the negative sense, and I would like to follow on one of Dr. Rosenberg's example and tell you a little more about herring in another place, not so long ago: There is another herring resource about the same size as the one in the Bering Sea but it's in the North Sea and it's an old and well understood fishery that is exploited by eleven member nations under the auspices of the International Commission of the Exploration of the Sea. They proceeded to harvest that stock, they have done it historically for over five hundred years, and they harvested it intensively in the early 1970's essentially without enough information. They didn't do their research. Well, even that needs to be qualified, there were experts around who knew the truth but they couldn't speak clearly enough in the political arena to make it heard. And what they did simply was to overharvest the resource by a factor of two for about five years. They ate their seed potatoes. The result, predictably, was that the resource collapsed. They had to terminate the fishery on it. The economic hardship was large, large numbers of fishermen went home and went on welfare with the balance of them setting off on other kinds of fishing efforts. That fishery is still closed. It is now five years later. Is the fishery recovering (and one must state that there is no guarantee that the fisheries will recover after such a mistake)? In this case it is. The fishery is recovering, and probably next year a commercial fishery will resume. The broadest

sense that one can suggest is that it will proceed at about half the optimum level for the next five years. As one turns the envelope over and writes down the numbers that stem from that scenerio, you discover that mismanagement of that fishery to that community costs no less than a billion dollars--and probably in excess of that. A billion dollars is a conservative estimate for the failure to do that job right. That scenerio has been repeated in some sense or other in every well developed marine fisheries in the world and I suggest to you that the Bering Sea resource that Dr. Rosenberg referred to is a very likely candidate for some more. The price being that of inadequate research which means gathering of knowledge to manage correctly. That is the negative s e of large marginal rate of return. If you don't do it, yo lose your resources and there is no guarantee that you will recover after that kind of an ...

I have to qualify my remarks a little bit: I'm not a fisheries biologist, I used to be a research physicist and I turned to investing in research, successfully, I might add, to the point where I can now afford to do things like sit on the Governor's Study Group fo- things like this. I do that by reinvesting something like twenty percent of the gross income of the corporation in research. The point is, you don't do it for your motherhood or any broad social virtues, the point [is that] ultimately the State expects to make a profit or at least to avoid a loss. And that fact is overriding. You make an investment because you want something back from it and there is every reason to expect that you get it. I can support this whole idea of a fisheries center most intensely from that point of view. There is inadequate investment of that kind being made here. There is incredible opportunity to make it and this is the time it needs to be carried out. That's the essence of my comments. I'd be happy to answer any questions that I can.

Sen. Parr - Let me ask one question. We just got this House Research Agency report you referred to and I haven't had time to go through it except here in the summary of findings in the front. That forty three percent it says is on management programs for every dollar of wholesale fisheries value. It doesn't say for research. Washington is forty three percent and Oregon is nineteen percent, but the way this is worded here, it's for management programs and not research. Are we talking about two different things?

K.J. - Well, no I don't believe we are, sir. I believe we are talking about the same thing: that boiled down to gathering adequate information to carry out catch limitation to manage the catch of stocks at an optimal level. The bulk of that problem is the one of gathering information. And that I certainly lump into research. You really need two kinds to manage a simple stock and one of them is the biological information that relates to the rate at which creatures grow and multiply and the other one is the size of the stock out there so you can control the catch at an optimal level. So you can eat the surplus but not the seed potatoes.

Sen. Parr - What is your estimate, Mr. Jefferts, as to how much we should be spending on research? I mean there is thirty million on research devoted to Alaska related fisheries, what should that figure be?

K.J. - Well, I'm in agreement with my collegues on the Study Group's board. I think, if anything, the proposal is a lower limit of a wise investment in Alaskan fisheries. There is another example that one can state: If a single corporation owned the Alaskan fisheries resources, I think that one could make powerful arguments that they would invest no less than ten percent and probably twenty percent of the value of the landing of the resource, because they expected to get their money back quickly. And that translates to one hundred million to two hundred million dollars a year. I'm not suggesting that I think that's a good idea, but that argument is still valid.

Sen. Parr - So you'd invest ten percent of the value of the landings?

K.J. - Yes sir.

Sen. Parr - Are there any more questions for Mr. Jefferts? OK, thank you. Commissioner Skoog.

Testimony of Dr. Ronald O. Skoog, Commissioner, Alaska Department of Fish and Game

Comm. Skoog - Mr. Chairman, I'm Commissioner Ron Skoog, head of the Alaska Department of Fish and Game. I'm not sure, coming in late, exactly what you have covered or what you wish to cover, but I would like to speak in support of this concept that's presented here: this idea of establishing a fisheries research center. I am in full accord with its being established, as proposed, attached to the University of Alaska. I think that is the best environment for the fisheries institute. I presume that a lot has already been said about the value of our fisheries and I will not repeat that. In looking ahead now--the reduced revenues we are facing now and (I presume) in the future--certainly the State is going to depend a lot more, in the future, upon our renewable resources of which most of the commercial fisheries are going to be the mainstay. We have a great potential in Alaska, offshore, for developing a lot of fisheries that haven't even been touched yet. The potential revenue there is very great and I think we need, as best we can, to maintain an aggressive and effective management program to insure that these stocks will be perpetuated, as well as to use those stocks in the most effective manner possible for the best cost benefit ratio we can attain. What we have been lacking over the years is ... good biological information about the various fisheries stocks that we have been harvesting. The coasts of Alaska, the many streams that we can utilize, as well as the vast offshore area, are simply too great for us to cover adequately in being able to assess what those populations are and particularly what the various population dynamics are that control the population. All of which is basic to establish an optimal type of harvest for fisheries. The kind of research that the department is involved in is short-term, immediate type of research, for the most part: the kind of assessment that we need to manage our fisheries on a day-by-day or week-by-week basis. We determine what might be coming back next year or what is happening this particular season. There is a need for a longer term kind of research that can answer some of those gaps in the knowledge that we haven't been able to address. For instance, ocean survival or productivity of some of our lakes in production of the red salmon smolt. There are a lot of these areas that we just don't have the knowledge on and can only get through intensive research programs. I think this kind of research best sits in a university environment, apart from the Department of Fish and Game. I think the Department needs to stress the management responsibility that we have; providing the fishermen whatever we can of the surpluses that are available and be sure that they are not overharvested. We do need a short-range, short-term research capability as well, which really isn't research in my mind, it's more assessment, investigation and this kind of thing. The proper arena for longer term research and the answer to some of these problems, is what is being proposed now as the fisheries research center. I think

the State ... obviously this State has made its fishery really [the best] in the world when you come down to it. The potential is there and certainly, I think it warrants an extensive fisheries program in the Univesity of Alaska as well as a fisheries research institute to go beyond what is the academic side of fisheries education. As I view this, this proposal really sets up a basic facility for the institution as well as a core staff of administrative and service staff, including data processing, library facility and so forth, with a core group of scientists that will be permanent to the institute. Presumably a lot of work will be done by visiting scientists from a variety of universities or disciplines that would come through the institute supported by various kinds of grants that would be outside State appropriations--some from Federal grants and private grants from industry or wherever they may be identified. I think the bulk of your effort would probably be related to a standing program that would incorporate the large... of scientists. I guess that's all I have to say, Mr. Chairman.

Sen. Parr - Commissioner, a key question that was asked before you came, I suppose, which no one wanted to answer until you got here: You are responsible to the Governor who, in turn, is responsible to the people for the management of fish and game for the State of Alaska; so one of the key questions might be why the additional funding required for research which is not now being done shouldn't be properly placed in your department? What you said is what you are presently doing is short-term research, you are not doing long-term, you are doing short-term for the management decisions essential to us. But what would be the reason that your department could not handle longer term research well and why shouldn't it be in the Department instead of the University?

Comm. Skoog - I think one good reason in my mind for being attached to the University is simply the availability of the kinds of resources at a university, including a variety of good help from the various disciplines that might be involved. You've got an array of different kinds of professors at a university, that can help you in the program. It is a good idea to be able to consult the people on the spur of the moment, so to speak, when you are discussing these ... involved with a lot of research problems. The academic environment is a little better environment, I think, for more pure research then what the Department is involved in. I think there is a much broader facility, generally, at the university environment, including the very extensive data processing capability the University has. All of these kinds of things provide a great incentive for such a research [center]. It could be within the Department, but then I doubt whether we would be able to staff it in the same manner that the University can. The University can draw a higher caliber scientist simply because a lot of these scientists are oriented towards academia as opposed to a line agency. There is a certain resistance among a lot of academic scientists to a management department. It doesn't have the same attraction. Also I doubt whether, fiscally, the Legislature would

be able to support it. We would have a lot of additional requests. We would have to have data processing capacity, more than we have now, I think, as well as other kinds of facilities. In view of the Legislature's attitudes in trying to reduce government, this would be [seen as] trying to increase our Department. I doubt whether we have the right climate for it. As one of the Department's divisions, Division of Research, let's say, it would also be competing with the rest for funds in the Deparment, and I know that if it ever comes to a crunch, our priorities nearly always have to go towards management. Our feeling is that our priority responsibility is to maintain the resource, and a large part of that effort is simply trying to manage the fishing activity so we can prevent overharvestingand make sure that the ... What we will find, I think, with such a competing arrangement is research will always suffer when it comes to making the final decision. I don't know, does that answer your question?

Sen. Parr - [Inaudible]... Now the prime fishery is salmon and that's a migratory fish. Do we have an arrangement with Washington and the rest of the ...? They do extensive research activity and, I suspect in this case, with each fish. Do we exchange this information with state agencies?

Comm. Skoog - Oh yes. We have a close relationship with the University of Washington. Dr. Bevan over here, has been an awful lot of help to our people in Alaska and takes part in a lot of analysis that goes on in our fisheries in Alaska. We have utilized their modeling technology...

Sen. Parr - Thank you Commissioner Skoog. Mr. McVey.

Testimony of Bob McVey, Director of the Alaska Region for the National Marine Fisheries Service and also representing the Northwest and Alaska Fisheries Center in Seattle.

Bob McVey - Mr. Chairman, I'm Bob McVey, Director of the Alaska Region for the National Marine Fisheries Service, and I'm also representing the Northwest and Alaska Fisheries Center in Seattle which [operated] fisheries research facilities here in Alaska and we spend something like eighteen million dollars annually on Alaska fisheries research. I'm also a member of the North Pacific Fisheries Management Council. We received our new 200 mile law just a few years ago, the Magnuson Fisheries Conservation Act, and we were immediately put into the position of developing fisheries management plans in accordance with that law. The law required that we use the best available scientific information. As soon as we embarked on that effort, we could see that there were many information gaps in our knowledge about fisheries. And so, we were immediately impressed with how short we were in the kind of information we needed to develop good fishery management plans. Those gaps occurred not only in the biological area; but also, under the law, we were required to consider economic and social efects; and some of our greatest gaps were in the areas of economics and sociology. The gap was critical in many cases and funds were squeezed out or bootlegged to carry on short-term studies, (that other agencies couldn't) in attempts to fill, on a very short-term basis, critical needs. In no sense was the full requirement of the act or the full intent of the act fullfilled with regard to a factual basis on which fishery management plans should have been developed. In addition to the gaps that were evident then, funds for federal fisheries research had been either level-funded over a period of years or in some cases reduced. At this time, of course, in accordance with the present budget proposals, there are prospects for substantial additional cuts to federal fisheries research. One example is the Auke Bay Laboratory here in Juneau. The cuts now proposed in the present budget proposal contemplate a reduction of 74% of the laboratory funding and would require elimination of 60% of the professional staff. The outlook is poor for additional federal funds to come into fisheries research and help fullfill those information gaps we see relative to our 200 mile law. . [END OF FIRST TAPE]... and to help fullfill those information gaps that we have all been so aware of in recent years. It would upgrade coordination. We have all agreed, in discussing the study report that coordination has not been nearly as bad as indicated in the report. Really, our researchers are in regular and steady contact with one another; so, coordination between researchers is excellent. Many times the public is not aware of the research that is under way; the center would assist the public in knowing what research is going on. So, it is not just coordination between researchers but also with the public. The center would also allow better prioritization of research. There would be a lot of people, agencies, involved in those deliberations and discussions between those participants.

We would end up with a better priority listing of what the needs are for research. We've had a fair amount of discussion about long-term and basic and I think that in the State's arena that there is almost no long-term basic research under way. There is some by our agency, National Marine Fisheries Service, and some by the Fisheries Research Institute but it's very specific and narrow in scope. Some examples of long-term basic information that we lack: We really cannot identify the larval stages of some of the important species, especially in our ground fish stock. We really don't know what a larval cod looks like or some of the rock fish. We know very little about the relationship of one species to another. That's a ball park that would be extremely helpful in formulating fishery management plans. We simply lack that information and it would be a major research undertaking to obtain it. Our management now is basically single species management. We see the glimmerings of relationships between species but our management really isn't based on it because we don't have the information that would be required. Those are some of the long-term basic types of information that the center would help us achieve. We endorse the concept of the fisheries center as proposed by the Study Group and we'd be willing and eager to assist in any further development of that concept. Mr. Chairman, I'll try to answer any questions.

Sen. Parr - Thank you. Any Questions? Mr. Helle.

Testimony of Jack Helle, District Director for Alaska of the American Institute of Fishery Research Biologists.

Jack Helle - My name is Jack Helle and I'm here representing the American Institute of Fishery Research Biologists and I'm the District Director for Alaska. Our organization has 75 Alaskan members. Personally, I have been involved in long-term research in Alaska for about twenty-four years. I just want to be very brief and say that we strongly support the concept of this Alaska Fisheries Research Center and we think it's needed very badly and I think that most of the things that I might say might be duplications that Mr. McVey has said and others before me. But I would like to say a couple of things that are pertinent: One is that we're seeing at the present time some very incredible returns to our fisheries resources, particularly our salmon. And this is due to two things: due to good management but also due to a favorable marine environment at the present time. And, in spite of good management, if your marine survival start going down, you are not going to see the kinds of runs that you have. Now is the time when you should be doing research on this resource. I don't have to tell most of you that the life cycle of a king salmon is about seven years That's long-term to just get one life cycle study on king salmon; chums have four years; sockeye six years; and so on. This is long-term research. For genetic research on these populations you certainly need more than one cycle to look at. That is definitely long-term research. Most of the agencies that have been involved in long-term research up here, are now changing their roles and are becoming more responsive to immediate management needs of the 200 mile limit. I think the Auke Bay Lab, in particular, is one who's role is changing. I would just like to end this by saying that I think that research is a very strong investment in the future and I think that now the time is right to do it. I'd be glad to answer any questions.

Sen. Parr - What did you mean, Mr. Helle, when you said that salmon runs are good now and it depends on two things, management and also better marine environment? What did you mean by good marine environment?

Jack Helle - Well, I oversimplified this, but the management of our resources has definitely been getting better. No question we've learned more on how to manage our resources, the State's been doing a good job. On top of this, we are presently seeing extremely warm marine conditions in the North Pacific Ocean and this is, I feel, one of the major reasons we are seeing such an incredible survival coming back to certain areas like Bristol Bay. Prince William Sound has had three record years of returns. They are expecting the all time record return this year. Southeastern is expecting a huge amount of pinks expecially in the southern area and this primarily due to the very favorable marine conditions. But, of course, you can have favorable marine conditions and if

you don't have the fish going out you won't have the fish coming back. So, management is a very strong part of it. I have been involved in long-term research on the effects of marine environment on the survival of salmon and some of the data that I've been looking at indicate that we are starting to slide off of this warm period and we may be going back to a period of more austere survival.

Sen. Parr - You are saying that, in layman's terms, that when the ocean is warmer you get better survival rates and when it's colder you get worse survival rates. And we have both cycles from warm to cold; so, even if we did the best job we could, we would have a drop in runs if it turned colder?

Jack Helle - Yes, but management can help compensate for that.

Sen. Parr - I am oversimplifying a great deal. Any questions you want to ask Mr. Helle? Thank you sir. Mr. Bevan.

Testimony of Don Bevan, Director of the School of Fisheries, University of Washington.

Don Bevan - Thank you Mr. Chairman. My name is Don Bevan and I am a member of the North Pacific Fisheries Management Council and Director of the School of Fisheries and Professor of Marine Studies at the University of Washington. I would like to share just a few words with you based on my experience of about 35 years of doing research in Alaska and being a part of the University Center such as the one that they have proposed. As you might guess, I happen to be a strong advocate of something that I've spent my life at. I believe in that approach. I don't think there is any question more pointed than yours: Couldn't we take the money and put it in the Alaska Department of Fish and Game and do a better job? Again,...

Sen. Parr - I don't think I said a better job. I asked why we shouldn't do it.

Don Bevan - I think we could. We could put some more money in the Auke Bay Laboratory and do a better, more effective job for the State of Alaska. We could send some more money down to the University of Washington and we would do a better job. I think that is the first point we all recognize, that there is a lack of resources on these problems. I don't think we are going to add much in the way of money to the Alaska Department of Fish and Game. I think they made their case before this body (not this particular committee, but certainly appropriate committees here). I suspect it's like my own state fisheries department. They have their own responsibilities. The statement with them [is that they] support some of best that they can. I want to be careful in choosing my words in what I say about the University of Alaska because I don't want to be overly critical but I have to be a little critical because the State of Alaska has not devoted resources in making the University of Alaska a fisheries research institution. I guess I can charge that the University can do things, not everything obviously, universities do some things very poorly; however, I think Commissioner Skoog made a very good point that there are cetain kinds of people that we have around universities that we can take advantage of. I will give you a couple of examples: the whole basis for forecasting most of our pink salmon runs in Alaska is based on the simple little hydraulic tool that samples eggs in the gravel, which was developed (I remember very well--I was there when it happened around the lunch table in the faculty club) because there was a hydraulic engineer interested in catching steelhead. He had an idea about sampling eggs in the stream. That kind of interaction probably wouldn't take place in a fishery agency that would be charged with solving the sort of next fire fighting problem that comes in because some fishery has gone wrong. I don't want to dwell on that in any great length. I would like to add one other comment in regard

to trustees and regents. I have a visitors committee made up of people around the country, a number of them from Alaska, who tell me how best we ought to do our research program. They are not my boss. They give me advice and counsel. The president of the University and the regents certainly are my boss. They give me direction on policy and they tell me how much resources I'm going to have to work with. But I don't think in any university, the regents are going to tell you how to teach or how to do research. So, I think there is really no conflict there: the regents are charged with running the organization and they do, but I don't know of any institution where there would be a conflict between setting a program and the kind of overall university policies and resources you need to carry that out. One thing that I think is clear: while I can always say that coordination is always important, I don't think that we should set up a center of this kind because there isn't a very good job being done; because I think there is. But, I think there are additional things that need to be done and the University is a very fine place to do some of those things. Coming out on Mr. Jeffert's point: How much investment are you going to put into this? I guess that's the decision only you gentlemen can make. I can't help but make that my point of view: investment and research and the opportunities for development of Alaska fisheries are minimal at best. If there are any questions, I would be happy to answer them.

Sen. Stimson - Do you have a structure similar to what is proposed here with a board of trustees within your University?

Don Bevan - We don't have a board of trustees, we have what is called a visitors committee, that's made up of the Director of Game of the State; the Director of Fisheries; Mr. Walt Yonker head of the Seafood Processing Association in Seattle; Mr. John Peterson who is a member of this Study Group and President of Ocean Beauty Seafoods; Mr. Ken Olsen who is the head of the Fishermen's Union--Much the same kind of board that is being suggested here. I think it's a bit larger. I think mine is ten or eleven.

Sen. Parr - Dr. Bevan, I raise this question to make sure, because for example, the Geophysical Institute of the University of Alaska has had a visitors group of some sort like you are talking about for as many years as I've known anything about it. They don't swing any weight because they give an outside evaluation of how well the institute is doing... That's quite a different thing from having trustees unless you discuss, really, what their scope of authority is. What is the budget of, you are Head of the School of Fisheries I believe, what is the annual budget of that school of Fisheries?

Don Bevan - School of Fisheries budget at the present time is about seven million. About 15% from the State of Washington, mostly federal but some private industry and some from the states of California and Washington.

Sen. Parr - Fifteen percent of that comes from the State, roughly--of that seven million?

Don Bevan - Yes, and that's including our teaching program as well.

Sen. Parr - Do you offer ... what degrees do you offer?

Don Bevan - We offer Bachelor of Science in Fisheries, BA with a major in Fisheries, BA of Science in Food Science, a Master of Science in Fisheries and a PhD in Fisheries. I'd be happy to provide you with a copy of our annual report, if that would be of use to you.

Sen. Parr - It certainly would, sir. We are looking at a real cost of three and three-fourths million dollars the second year and almost eleven million the year after that. The way the price of oil is going down, I think we are going to have to take a very careful look because when the pie is a certain size, the dollar that goes in that part of the pie is not going in the other part of the pie. Ideally, in the ideal world, when you have all the money to invest in research that is needed--it's ideal. We are, unfortunately, not living in that ideal world. So anything that would be available to me from you would be much appreciated.

Don Bevan - I think it's anticipated and I haven't been a part of the Study Group and as I read their report, certainly they have a willing volunteer from our side that would be enthusiastic about taking part in a center of that kind, much as we do with the WAMI project that the University cooperates with.

Sen. Parr - Is any money contributed to your school by the ... you said one of the members of your board of your visitors committee was the head of the fishing division, I believe...

Don Bevan - The industry supports presently about a level of three hundred thousand dollars a year. My personal research on Kodiak Island is supported, continually since 1948, by seafood processors. I would have to go back and add up the numbers but I suspect we are getting close to two million dollars over that period of time.

Sen. Parr - In this typical seven million budget you are now getting three hundred thousand from the processors? Are you getting anything from the fishermen themselves?

Don Bevan - Yes. There have been some contributions along with the industry from the Bristol Bay. Sorry, I don't remember the exact details about that.

Sen. Parr - How about the fishing industry of Washington?

Don Bevan - I think the only contribution from fishing in the State of Washington is for scholarship funds, not for research.

Sen. Parr - Any more questions? Thank you very much. That is all the names I have listed of people who want to speak. Rep. Gardiner.

Testimony of Representative Terry Gardiner.

Rep. Gardiner - Mr. Chairman, I would like to testify on this bill. It was introduced last year and came over from the House. I think the report that's been done and a lot of the details that have been worked out probably provide a much better framework to implement what was originally envisioned in HB 313. It's been subject to comment and research by a lot of different people and I think they've come up with a pretty good product that I'm very supportive of. To some extent a big difference is reduction in scope and that is probably more appropriate and accomplishable. One of the things I've been interested to see [is the concensus] on this. Fisheries is like many interest group areas in the sense that you bring up an idea and half the people are for it and half the people are against it. Another half are undecided. I know you can't have three halves but sometimes it seems that way with fisheries. This idea, as it has become more developed and some of the details have been worked out, seems to spark a very universal support from many quarters. It's pretty spontaneous from various agencies that might otherwise have some interest in having it in their bailiwick, or what have you, or other political jurisdictions; but, I've been pleasantly surprised to see the unanimous support that has grown up from different people looking at ideas, contributing their efforts towards this and refining the idea to support something that is more workable. I think the process will continue because these people have volunteered their time and their agencies' efforts to be involved and it's resolved some of the questions that were brought up last year and that are being brought up here now.

In terms of my own support for the concept--it grows out of looking at the world fisheries scene and the American fisheries scene. And one of the things that we have spent a lot of time in the State (myself included) giving a lot of political rhetoric about is this great fisheries resource off the coast of Alaska that is being harvested by foreign countries and why aren't we out there and, of course, we thought of political solutions. We have a political solution now but we are still not out there. In looking personally at the fisheries in Northern Europe and in Japan, I was surprised to see quite a bit different effort. There is a very fundamental support of the industry (the industry, its processors and the fishermen and other people involved in the industry), at the research and university level. Basically, looking at this State, I find that absent. I don't find the fishing support through the University or through the research entities that you find in other jurisdictions. In looking at the great fishing powers of the world, you find that their industry, as a total makeup of all the components of it, differs from ours, in that we do not have any real fisheries program in our University education, or fundamental institutions that do basic research. I think that is why we are partially faced with the problem of somebody else capturing our resource and I think until we give the support to industry and management of this kind we are not

going to be in the same league as these other countries and other states and provinces. To do this, to some extent, we will be [playing] out another act of maturity of becoming a state. We, as a State ... before we were a state we didn't have all that much to do with the fisheries. We took over the management and we have increased our efforts in management much more than what they were when we took over statehood. They have shown many signs, and actual dollar returns, of successes. I think we have to do the same thing with our University and research efforts. One of the things I think is a real positive reason for having this in and associated with the University is that the University has the desire; and I think many people in the Legislature expressed it over the years about it: why isn't the University doing more about fisheries? Why do we have fisheries as a big industry and the University of Alaska isn't renowned throughout this country or any place else as a big place to go to get a fisheries education or any kind of degree in fisheries? We do not have that reputation. I think many people hoped for that and we plowed money into the beginnings of programs in the University and in the last couple of years the University has put a lot of planning efforts into trying to come up with this. I think we could proceed ahead with this but I think we will be much more successful if we have the type of high level and first class fisheries research center within and associated with the University. I think we could argue over the details of the most efficient relationship between that [and other institutions], but I think you will see a lot of back and forth [movements] as you do in other university research systems between the university and research center graduate students working over there, professors here, teaching over there and people moving back and forth between the research scene and the education scene or being involved in both. I think that is going to be real important in terms of developing a good university fisheries program to have this type of research institute and I think we only have to look at our sister states and other foreign jurisdictions to see this kind of relationship. They have organized it in different technical ways but the fundamental components of research and education have been there and have been intertwined in their efforts to generate information to help us wisely utilize our resources. One of the issues that I think is appropriate, it has sort of come up here, and I want to answer that question: What is this thing going to do that isn't being done now? There are some real fundamental problems that a lot of us are aware of that are involved in the fisheries from maybe different aspects, and some of these may involve our fisheries agencies themselves. Some of these involve economics of fishermen beyond biological things because there really are ... it's hard to separate things a lot of times. An example I would give is in a fisheries I'm familiar with (and I use it because I'm more familiar with the details): In Southeast Alaska we have a lot of mixed stock fisheries and these are mixes not only of the same species headed to different streams--there are 2,000 or more salmon streams in Southeast--but they are mixes of different

species of salmon. So, there are some real fundamental management problems (no matter how good the data is) on how many fish are out there, and how much fish the fishermen are catching, and how many got up the stream, and how much we need up the stream, about how to effectively get the right amount of fish into each stream and not wipe out one stock or one species while you are doing it. I think we need to devote some fundamental research efforts figuring out better management systems to do that. I think that kind of thing needs this type of agency or program to do it, though I think it's pretty hard for the Department to do in terms of their day-to-day activities of trying to do the job. Also, there may be the question of conflict of interest, in that, maybe, part of their present management policies are the problem and an independent agency could help them see the solution better than they could from the inside themselves. I think you will find a lot of the other examples may have the same aspect to it, because somebody in some agency is managing every fishery--not to say the reason that we are setting up an independent agency is to analyze every other agency, but I think an independent effort with support from all the agencies and involvement through the University could supply those elements of objectivity. Again, I see another issue that this Legislature, at least the House Finance Committee, is wrestling with: What is the appropriate role of State involvement in supplemental production of salmon? We have the FRED Division that is out, through direct State funds, building hatcheries; and other developmental and supplemental programs for salmon. We have a system of regional, private non-profit hatcheries. There is a lot of debate over what is the best economical system for the State: [whether] to do this; and who should run what; and what have you. Again, I think this is the kind of thing that has some economic questions to it, some financial questions to the State, as well as biological and management considerations that all have to be looked at to help the State policy makers draft the best answers to that question; and we are involved in that question now. We really haven't had any high level group of people (that may require something besides biologists or financial aid from the Legislature) to figure out the answer. This kind of institution we could turn to to help us find the answer to that rather than having to feel our way through with some budget ... filler or that kind of approach. I think those are some of the examples that I would see; and maybe I have more of a little bit of a [particular outlook], being a fisherman type--some of the people from the biology and management side might put a little bit different emphasis than that on some of the types of problems. But, the basic thing is to provide that information, [and furnish everybody] with an equal ability to make better decisions. I think this has been the best suggestion as to where to put it [the center] to do that. I'd be happy to answer any questions.

Sen. Parr - Anyone else want to speak on this?

Testimony of George West, Vice-President for Academic Affairs at the University of Alaska.

George West - My name is George West. I'm Vice-President for Academic Affairs at the University of Alaska. I'm feeling in somewhat of an awkward position here because the Study Group has recommended the establishment of this center, all of a sudden, so to speak, within the University of Alaska's system and it's really something we didn't lobby for in the first place. Nevertheless, we are very pleased because we do see the need for long-term basic and applied research in fisheries in Alaska, and we certainly want the University to be deeply involved in that research. We have reviewed this report, which you all have I'm sure, and concur with the direction that has been proposed by the Study Group, and as expressed by the Substitute Bill which is a part of that report. We believe that the center would have to be implemented in such a manner within the University so that it can be a cooperative research entity involving other research agencies, both within the University and the others that have been mentioned--Alaska Department of Fish and Game, National Marine Fisheries Service and the private entities as well. In that regard, the University would have to modify, somewhat, it's plan currently underway for improvement of fisheries programs to take into account this expanded responsibility. The University could only accept the center's program, of course, after review and approval of the Board of Regents and could implement the proposed center within the University's fiscal and facilities constraints--and you are all aware of the problems that the University has there with our priority programs that have been presented to the Legislature by the Board of Regents. We would not, as other agencies would not want, this or anything like this to be in competition with our original proposals. We concur with the Study Group's recommendations that start-up funding would only be provided this year. The University would, under such funding, provide a plan by next year for the full integration of the proposed center into the structure and programs of the University. I don't see any problems, as has been addressed by Dr. Bevan, of a reporting of the Board of Trustees to the President and Board of Regents. As he indicated, the Board of Regents is really involved with policy matters which are implemented by the President. Senator Parr mentioned the advisory panel of the Geophysical Institute, and though I do not feel quite the same that they are not really [effective]: it is a national advisory panel; it does set the long range actions and directions of the Geophysical Institute; and it does report to the President. There are some similarities there so I really don't see it is that much of a problem. Are there any questions?

Sen. Parr - Commissioner Skoog testified that, of course, the Department head, say the Division of Research, would be competing for those funds going into the budget, et cetera. It appears

that such a center in the University would also be competing with other University needs when it comes into the final budget.

George West - That depends on how the Legislature [views] their budget; whether it becomes a line appropriation for this center independent from the rest of the University's budget. Otherwise, I guess, to be honest, yes, in all cases, if it's all in the same pot then you have to list your priorities and the Regents do [list] such priorities as advised by citizenry, the faculty and so forth on through the President and there would be the potential of a problem there possibly.

Sen. Parr - You also mentioned, of course, that this would be subject to acceptance and approval by the Regents. We have had a couple of cases in the last couple of years in which the Legislature gave the Regents something and the Regents didn't really want it. When would it be possible to find out at least an informal expression of the Regent's attitudes towards being given such a center that they didn't ask for?

George West - Informally, we could probably do that very fast. The Regents are in town tomorrow, in a work session and a board meeting on Friday. I expect it might be possible to have some [informal expression of interest to you, tomorrow].

Sen. Parr - Dr. Barton has been going around the State, as you know, beating the drums to the fact that the Legislature shouldn't be telling the University what to do and the Regents should be making the decisions on a statewide basis. I know the Legislature has given the Regents institutes before and given them some other things that they didn't ask for too. If they don't ask for it, we really don't want to give it to them.

George West - I can't, of course, speak for the Board of Regents but such a plan as this seems to me [something that they would be interested in].

Sen. Parr - What were you referring to when you said you would need to modify your current plans?

George West - The University has a plan already established for the future of fisheries in the statewide system. There is the marine fishery research going on in Juneau ... those kinds of things that are going on will probably have to be modified somewhat...

Sen. Parr - Anymore questions? Does anyone else want to speak on HB 313? Meeting adjourned.

LEGISLATION SUMMARY

CSCCSHB 313 (HESS): "An Act establishing the Fisheries Research Center in the University of Alaska; and providing for an effective date."

Sec. 1: Establishes state policy to provide facilities, improvements, and services to use, develop, and conserve fisheries resources for the maximum benefit to Alaskans and the nation.

Finds that long-term research is essential to management of fisheries resources; that investments in long-term research are not made because of the common property nature of the fisheries and the structure of the U.S. fishing industry; that a Fisheries Research Center will fill the needs of long-term research and coordination. Finds that there are at least 19 Alaska fisheries research organizations; that a Research Center is needed; and that a Center would reduce state reliance on out-of-state sources for fisheries management.

Sec. 2: Adds a new chapter regarding a Center to the Fish and Game Title.

16.12

.010 Establishes the Center.

.020 Establishes the purposes of the Center: (1) conduct research and manage scientific information on fishery resources in-state and offshore that will encourage wise management for subsistence, commercial and recreational purposes; (2) improve communications among appropriate parties; (3) serve as the principle state center for fisheries research; (4) encourage cooperation among agencies, the University, and fishery research organizations.

.030 Establishes the Board of Trustees, consisting of the commissioner of fish and game or a representative; the University president or a representative; the director of the National Marine Fisheries Service or a representative; four members recommended by the governor and appointed by the University president.

Requires that at least 4 members of the Board be Alaska residents.

Establishes 3-year terms for the Board members and allows for their reappointment.

Sec. 2: (cont.) .040 Establishes the primary functions of the Center as conducting research and providing fisheries information services.

Requires the Center to conduct general and applied research; provide information services to interested parties; provide support services to cooperating organizations and agencies.

.05. Requires the Board to establish a Research Advisory Committee, to advise the Board on the Center's scientific activities; encourage cooperative research programs; report on fisheries research needs to the Board.

Requires the Board to establish a User Advisory Committee, to advise the Board on fisheries user groups' information needs, and assist in the Center's goals and progress review, encourage cooperative research programs, and to report to the Board on new fisheries information needs.

.060 Requires tha University Board of Regents to annually prepare a report on the Center activities, to be submitted to the Legislature by the 20th day of each session.

.180 Definitions.

Sec. 3: Immediate effective date.

PRIME SPONSOR: HESS ORIGINAL SPONSOR: Gardiner

The Alaska Fishing Industry

An Overview of State Expenditures and Economic Benefits

House Research Agency
Alaska State Legislature
January 1982

House Research Agency Report 81-4

THE ALASKA FISHING INDUSTRY

An Overview of State Expenditures and Economic Benefits

Jack Kreinheder
David Teal
House Research Agency
Alaska State Legislature
January 21, 1982

House Research Agency Report 81-4

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INTRODUCTION

The Alaska fishing industry in 1979 employed over 44,000 people, more than any other industry. The value of 1979 fisheries harvests to the fishermen was $654 million, with a wholesale value of $1.12 billion. The 1981 salmon harvest is forecast to be the largest in history -- 135 million fish. In addition to providing employment and income to fishermen and processing workers, the fishing industry also provides jobs to workers in transportation, the services industry, and other segments of the economy.

Taxes and fees levied on the fishing industry generated over $28 million in State revenues in FY 81, plus revenues to local governments in the form of property and sales taxes. In recent years, the value of the fishing industry has been eclipsed to some extent by Prudhoe Bay petroleum development and corresponding increases in State revenues and expenditures. However, the rapid economic expansion resulting from oil development has also highlighted the value of the fishing industry, particularly in future years, as a renewable and sustainable source of revenue, income and employment.

In an effort to expand Alaska's renewable resource base, the legislature has made substantial appropriations for a number of fisheries programs in the past several years. The Governing Committee of the House Research Agency directed the agency to prepare the following report in order to document State expenditures related to commercial fishing, and to evaluate the benefits provided to Alaska's residents by the fishing industry.

The expenditures addressed in this report include those for:

- Fisheries management and regulation enforcement;
- Aquaculture and fisheries rehabilitation and development projects;
- Fisheries development and seafood marketing programs;
- Loan programs for vessels, permits and hatchery construction; and
- Capital appropriations (including general obligation bonds).

Among the economic benefits of the fishing industry are:

- Employment and income from fish harvesting, processing, support industries, and multiplier effects.

- Tax revenues to State and local governments (raw fish tax, corporate income taxes, property and sales taxes).

The report includes expenditures for fiscal years 1978-1982 and fisheries production and value statistics for calendar years 1977-1981, where available. Employment and income information, which is not recorded on a regular basis for all sectors of the fishing industry, is presented for the most recent year(s) available, primarily 1979.

SUMMARY OF FINDINGS

Commercial Fisheries Expenditures

State appropriations for programs related to commercial fishing totalled about $120 million in FY 1982. This represents a 195 percent increase from the FY 1978 expenditures for these programs of $40.8 million. Based on the grouping of fisheries programs into four broad categories, FY 1982 appropriations were distributed as follows:

- Fisheries Financing Programs - $56.3 million
- Management and regulation - $30.5 million
- Fisheries Development and Marketing Expenditures $24.1 million
- Capital improvements - $ 8.8 million

The operating budget for fisheries programs increased by about 145 percent from FY 78 to FY 82, from about $22.3 million to $54.6 million. This increase is nearly identical to the 142 percent increase in the total State operating budget over the same period. Fisheries expenditures therefore remained a similar fraction of the total budget -- about 2.2 percent.

The substantial growth in commmercial fisheries expenditures over the past five years is a result of both the establishment of new programs and the expansion of existing ones. The most significant new fisheries programs created since 1978 are in the financing, and development and marketing categories. These include the Commercial Fishing and Agriculture Bank, the Alaska Renewable Resource Corporation, the Fish Processing Loan Guarantee Account, and the Alaska Seafood Marketing Institute. Expenditures and appropriations for these four programs totalled nearly $100 million from FY 80 to FY 82. Among fisheries programs existing as of 1978, the ones which account for the largest share of the total increase in expenditures through FY 82 are the Division of Commercial Fisheries, the Division of Fish and Wildlife Protection, and the Division of Fisheries Rehabilitation, Enhancement, and Development (FRED).

State Revenues

State revenues from taxes and fees levied on the fishing industry totalled about $28.2 million in FY 1981. Nearly 75 percent of these revenues, or $20.7 million, were generated by the fisheries business tax levied on the sale of raw fish to processors. Permit, vessel, and license fees contributed an additional $3.9 million, and the marine fuel tax, corporation income tax, and other taxes made up the remaining $3.6 million. Municipal property and sales taxes derived from the fishing industry and the municipal raw fish taxes in the Bristol Bay Borough

and Unalaska are also an economic benefit, but these taxes have not been calculated here.

Fisheries revenues were less than one percent of total State receipts in FY 81, with oil revenues providing nearly 90 percent of the total. In terms of non-petroleum income, fisheries revenues were about 7 percent of the total, and were the third largest revenue source, behind investment earnings and the corporation income tax. The percentage of total State receipts contributed by fisheries revenues has declined with the expansion of the Alaskan economy and the recent influx of oil revenues. However, fisheries revenues have risen by 107 percent since FY 1978, as a result of tax increases in 1979 and the increasing value of fisheries harvests.

The $28.2 million collected in fisheries revenues in FY 1981 obviously covers only a small part of the $132 million expended for fisheries programs in that year. However, simply comparing the expenditure and revenue figures does not provide an accurate or meaningful measure of the value of State fisheries programs. For one thing, nearly $73 million, or more than half of the FY 81 appropriations were for loan programs. All or nearly all of these funds will be repaid to the State, though some cost is incurred in the form of foregone interest earnings on low-interest loans. It is also important to consider the revenues generated by other industries benefited by State expenditures, the income and employment benefits of the fishing industry, and other factors.

Many State programs have been enacted to stimulate or develop Alaskan industries which provide little if any direct revenues to the State treasury. The rationale for such expenditures has generally been the creation of jobs for Alaskans and/or the development of a broader and more self-sustaining economy, rather than the establishment of a source of State revenues. The fishing industry is actually somewhat unusual in that a significant portion of State expenditures for the industry are covered by taxes and other fees levied and collected by the State.

Many of the State's fisheries expenditures, such as the aquaculture program, marketing efforts, and some fisheries loans are investments to increase future harvest levels and product values. It can therefore be somewhat misleading to compare present expenditures to current State revenues, harvests, and employment levels. A thorough evaluation would require an assessment of projected increases in fisheries benefits in future years for each program, relative to current expenditures.

An additional consideration is that Alaska's fisheries management expenditures are substantially lower relative to the value of its fisheries and State revenues than for other states. Washington and Oregon spent about 43 cents and 19 cents, respectively, on management programs for every dollar of wholesale fisheries value in FY 81, while

Alaska spent only about 3 cents. Alaska meets roughly 90 percent of its management expenditures through fisheries revenues, while Washington covers about 25 percent of its expenditures from fisheries revenues and Oregon 20 percent.

A thorough benefit/cost analysis of Alaska's fisheries expenditures is beyond the scope of this report, but these points demonstrate that it is important to consider more than just the balance between revenues and expenditures in evaluating fisheries expenditures.

Fisheries Employment and Income

Combined peak employment in seafood harvesting and seafood processing was over 44,000 in 1979, which made the seafood industry Alaska's largest private sector employer in terms of peak monthly employment. The seafood industry's characteristic seasonal fluctuations in employment reduced average monthly employment in 1979 to 15,500, which made the seafood industry Alaska's third largest employer in terms of average employment.

Peak monthly employment in seafood harvesting in Alaska was over 29,000 in 1979. Salmon fishing accounted for roughly 75 percent of harvesting jobs, other finfish harvesting for 17 percent, and shellfish for the remaining 8 percent. In terms of peak monthly employment, seafood harvesting was the third largest private sector employer behind the service and trade sectors.

Monthly employment in the seafood processing industry ranged from 2,700 to 15,000. The Cook Inlet region reported the highest peak employment in the state -- 3,678 jobs, or about 25 percent of total statewide peak processing employment -- although the Aleutian and Kodiak regions had higher annual average employment because of fall and winter shellfish processing operations. Much of the Cook Inlet employment, particularly in Anchorage, is a result of the transportation of fish from Bristol Bay, Bethel, and other areas to Anchorage and Kenai Peninsula processors for freezing and fresh fish shipments. The importance of this processing pattern is shown by the fact that only 5 percent of the total value of the 1979 statewide harvest was landed in the Cook Inlet region, yet the region had 15 percent of the statewide processing payroll and 25 percent of the peak employment. About one-quarter of the Cook Inlet processing jobs were in Anchorage, with the remainder located primarily in Kenai, Seward and Homer.

Statewide average annual employment in seafood processing was 7,272 in 1979, or 4.4 percent of total employment. About 25 percent of harvesting employees provided permanent addresses outside the state. Based on unemployment insurance data, approximately 47 percent of processing workers reside outside Alaska.

The 1979 harvest value to fishermen for all fisheries was $654 million, with a first wholesale value of about $1.13 billion. Ex-vessel values for 1980 and 1981 were estimated to be in the $600 million range. Net income in the seafood harvesting sector in 1979 is estimated at over $300 million, or approximately nine percent of all wages and salaries reported in Alaska in 1979. Approximately 60 percent of harvesting income went to fishermen and crew members who claimed a permanent address within the state.

The average earnings of seafood processing employees was $6,150 in 1979. More than half of processing workers earned under $4,000 and over 80 percent of processing workers reported no other income outside the processing industry. Total income in the seafood processing industry was about $110 million in 1979, or three percent of total income in the state.

A computer model of the Alaskan economy, maintained by the Division of Budget and Management in the Office of the Governor, shows that about 28 additional jobs in other sectors result from each 100 jobs created in the processing industry. Sectors most affected by increases in processing employment are services (which include fuel and maintenance facilities), transportation, and government. The model also shows that each $100 of additional income in the seafood processing sector produces $84 of income in other sectors of the Alaskan economy. These employment and income multipliers are long-term factors, and assume a developed infrastructure base. Major expansions or new development of processing plants in small communities may require additional support facilities, and therefore result in higher short-term multiplier effects.

Future Development Prospects

The future trends in fisheries harvests and values are a matter of some debate, with projections ranging from substantial declines in values, to equally substantial increases. The fishing industry is presently facing a number of serious problems, including high interest rates, poor markets and prices for seafood products, and increasing production costs. These problems may continue to impede the development of the fishing industry in the future. However, there are a number of mid- to long-term prospects for substantial increases in the size of the fishing industry. Among the most significant of these possible developments are the following:

1. Increased harvest levels, primarily of salmon, through the further development of aquaculture facilities and improvements in propagation techniques, disease control, and other factors.

2. Greater demand, and higher prices for Alaskan seafood products through marketing efforts of the Alaska Seafood Marketing Institute and other programs.

3. Higher levels of participation by Alaskans in groundfish harvesting and the utilization of presently unfished species.

4. Increases in harvests resulting from improved management capabilities, based on advances in technology and/or higher funding levels, thus allowing more accurate control of harvest and escapement levels.

5. Higher employment and value added from increased in-State processing and cold-storage capabilities.

The House Research Agency is the permanent, non-partisan research support arm of the Alaska State House of Representatives. The agency performs research at the request of legislators. A bipartisan governing committee composed of the House Speaker and Minority Leader and the ranking House member of the Legislative Council (i.e., either chair or vice-chair), oversees the agency's work. While the legislature is in session, most research is of a discrete scope. During the interims between legislative sessions, projects of larger scope are undertaken.

STATE EXPENDITURES FOR COMMERCIAL FISHERIES PROGRAMS

The State of Alaska funds a number of programs which affect various aspects of the commercial fisheries, ranging from education to marketing of fish products. The most significant programs, in terms of expenditures, are for fisheries management, regulation, and enforcement; fisheries development; financing programs; and infrastructure development. Table 1 on the following page shows the primary current functions of the State government with respect to commercial fishing, and the programs or divisions responsible for these functions.

Historical Overview

During the early years of Statehood, expenditures for commercial fishing functions were directed almost entirely to management and regulation of the fisheries. Fisheries management under the federal government before Statehood was generally perceived as inadequate, and the new State government increased funding for stock management purposes in an effort to improve control over escapement and harvest levels. The Fish and Wildlife Protection budget was also increased substantially to improve the enforcement of fisheries regulations.

Figure 1 displays territorial and State expenditures from FY 1959 to FY 1981 for the Division of Commercial Fisheries and the estimated portion of the Division of Fish and Wildlife Protection budget targeted to enforcement of commercial fisheries regulations (about 42%, based on current expenditure breakdowns). This graph is intended to provide an indication of general expenditure trends for these commercial fisheries programs, rather than a precise tabulation of actual expenditures. More detail on these expenditures in recent years is provided later in this section.

The increased emphasis of the new State government on commercial fisheries management and regulation enforcement is readily seen in the difference between the territorial and State expenditures in Figure 1. State expenditures for these programs in FY 1960 were $664,000, over five times more than the $125,000 expended by the territorial government in its last year of operation. The State continued to increase expenditures gradually for management and enforcement purposes during the 1960's, but even these basic expenditures were constrained by the limited financial resources of the State. As the State's financial position improved in the late 1960's and early 1970's, expenditures for fisheries management and protection increased and new programs were begun to further develop the fisheries and to improve fishing employment and income opportunities for Alaska residents.

TABLE 1

STATE OF ALASKA COMMERCIAL FISHERIES PROGRAMS*

FUNCTION	MAJOR PROGRAMS
Management and regulation of stocks	Division of Commercial Fisheries Fish and Game Vessels Board of Fisheries
Enforcement of regulations	Division of Fish and Wildlife Protection
Fisheries development (biological) and habitat protection	Division of Fisheries Rehabilitation, Enhancement and Development Division of Habitat
Management of participation levels and licensing/permit renewal for fishermen, vessels, and crew	Commercial Fisheries Entry Commission Department of Revenue
Financial Assistance	Division of Business Loans Commercial Fishing and Agriculture Bank Alaska Renewable Resources Corp. Fish Processor Pack Loans
Infrastructure Development	Department of Transportation and Public Facilities Department of Community and Regional Affairs
Fisheries planning, research, marketing, technical assistance and education	Office of Fisheries Development (Dept. of Commerce and Economic Development) Alaska Seafood Marketing Institute State of Alaska Asian Office Sea Grant Program and Marine Advisory Program (University of Alaska) International Fisheries and External Affairs (Governor's Office)

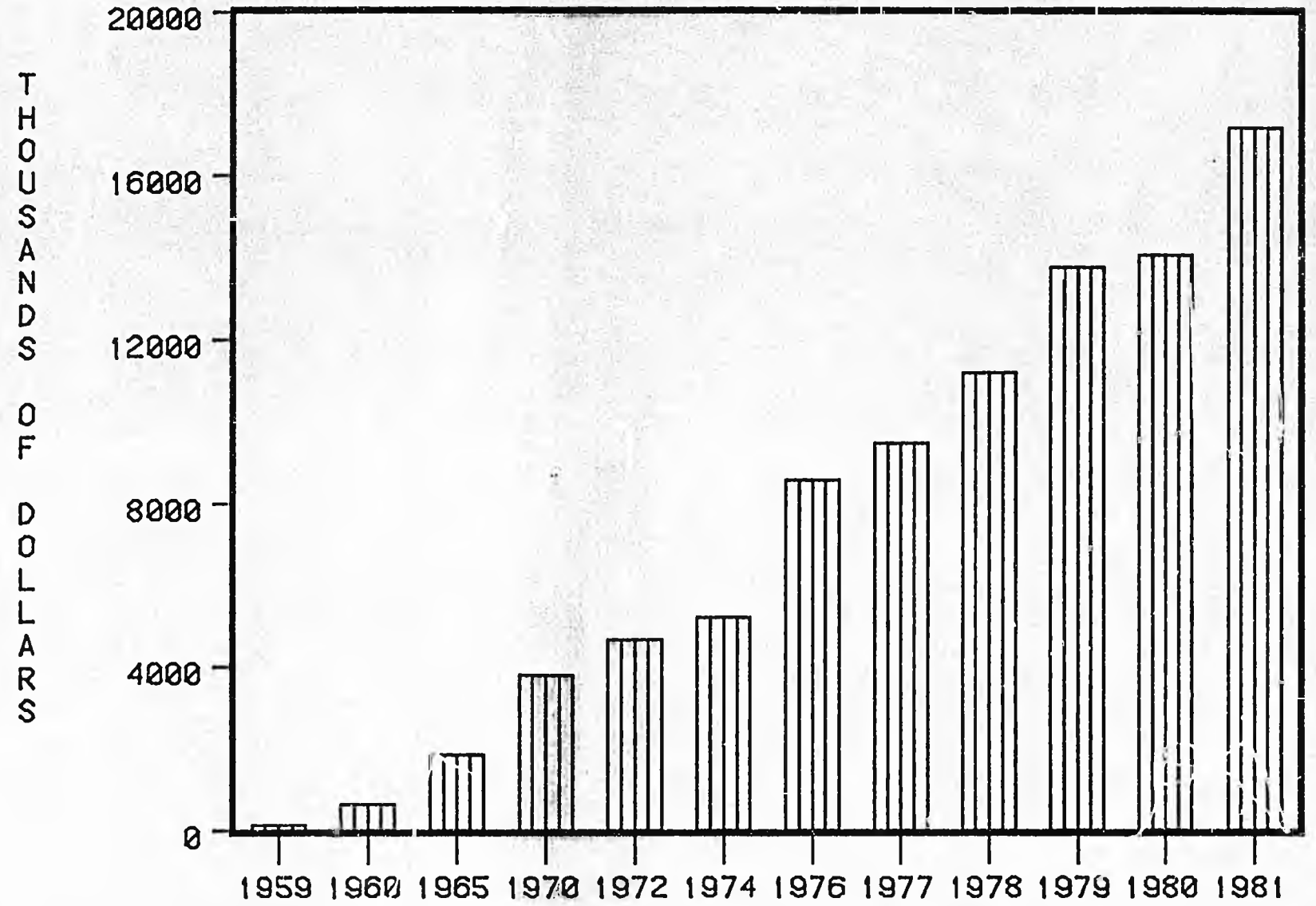
* A number of other State programs do some fisheries-related work. For a more complete program listing and additional detail on program responsibilities, see appendix A.

1/20/82

FIGURE 1

STATE FISHERIES EXPENDITURES*

FY 1959 - 1981



* Includes only expenditures for the Division of Commercial Fisheries and Div. of Fish and Wildlife Protection.

FISHERIES EXPENDITURES

Most of the increase in expenditures since 1970 shown in Figure 1 is attributable to a combination of expanded program functions for the Division of Commercial Fisheries and the Division of Fish and Wildlife Protection, and a high rate of inflation. The value of the dollar decreased by more than 50 percent between 1970 and 1981, so that the FY 81 expenditures of $17.2 million shown in Figure 1 would only be about $7.9 million in terms of 1970 dollars. In other words, about $9.3 million of the increase over the decade has been for cost increases resulting from inflation.

Management Programs

The establishment of the Division of Fisheries Rehabilitation, Enhancement, and Development (FRED) in 1971 marked the beginning of a major effort to increase the population stocks of salmon and other fish species in Alaska. The construction of fish hatcheries has been the principal technique employed to meet this objective, but additional programs, including fish ladder construction, rehabilitation and enhancement of spawning habitats, and lake fertilization have also been undertaken. Operating expenditures for the FRED Division and the related hatchery program have increased from $1.1 million in FY 72 to $9.7 million in FY 81 as the program expanded. Roughly 75 percent of FRED operating and capital expenditures have been targeted to commercial fisheries development, with 25 percent benefitting sport fishermen, and to a minor extent, subsistence users.[1]

The limited entry program was enacted in 1973 through the creation of the Commercial Fisheries Entry Commission (CFEC). The program was begun in response to rapidly increasing numbers of fishermen, the resulting decline in adequate economic returns to fishermen, and the difficulty of managing the fisheries properly with the increasing levels of participation. All of the state's salmon fisheries have now been placed under limited entry, together with several herring fisheries. Expenditures for CFEC functions increased from $566 thousand in FY 74 to $1.6 million in FY 81. Part of this increase reflects the transferral of vessel licensing responsibilities from the Department of Revenue to the CFEC in 1978.

Development and Financing Programs

In addition to these fisheries management programs, a number of development-oriented programs were established in the 1970's. These include the Commercial Fisheries and Agriculture Bank, the Alaska Renewable Resources Corporation, the Alaska Seafood Marketing Institute, and

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[1]Source: Estimate by Robert Roys, Director of FRED, Personal Communication, 1/4/82

several financing programs administered by the Division of Business Loans.[2] The first of these programs was created by the Commercial Fishing Loan Act in 1972 (AS 16.10.310), and was established for the purpose of financing the repair or upgrading of vessels, the purchase of limited entry permits, and the construction and purchase of new vessels. Under this program, a loan of up to $500,000 may be obtained for a term of 15 years, at an interest rate of 9.5 percent.

The Fisheries Enhancement Loan Program (AS 16.10.500) was enacted by the 1976 legislature and subsequently amended in 1977, 1979 and 1980. This program was established to provide long-term, low interest loans for the planning, construction, and operation of fish hatcheries and for other fisheries enhancement activities. Loan amounts may be up to $6 million for regional aquaculture associations and $1 million for other nonprofit hatchery corporations, with an interest rate of 9.5 percent and a term of 30 years. The statute also authorizes the payment of grants to qualified regional aquaculture associations for organizational and planning purposes.

In 1980, the Fishermen's Mortgage and Note Program (AS 16.10.550) was created to make financing available to fishermen who are economically dependent on commercial fishing and do not qualify for other state or private loan programs. The purposes for which loans may be used under this program are similar to the Commercial Fishing Loan Program described earlier; however, this program operates through the purchase by the State of mortgages or notes financed by private lending institutions, rather than direct State financing. Loans can be up to $200,000 in value and 15 years in duration.

The Commercial Fishing and Agriculture Bank (CFAB) was created in 1978 (AS 44.88.010), but did not begin public operations until April of 1980. CFAB was designed as a cooperative bank to provide loans to Alaska residents engaged in agriculture and fishing, including harvesters, processors, suppliers, and marketers. The bank was originally established as a public corporation within the Department of Commerce and Economic Development, but was redesignated in 1981 as a private cooperative bank which also serves a public purpose. This change was made in order to clarify the bank's status and to improve CFAB's access to loan funds.

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[2]More detailed information on fisheries financing programs than the brief summaries given here can be found in Summary of Reports Submitted by State Loan Programs, House Research Agency, April 1981; and Summary of State Lending and Investment Programs, Division of Legislative Audit, March, 1981.

The Alaska Renewable Resources Corporation (ARRC) was also established by the legislature in 1978 (AS 37.12.010). ARRC was intended to provide a source of capital for Alaska-based firms engaging in renewable resource development or utilization, including research and marketing efforts. ARRC may either loan funds directly to borrowers or guarantee loans made through private lending institutions. In the 1981 session, the legislature appropriated only operating expenses for maintaining existing investments to ARRC; no funds for new investments were appropriated. The future of the corporation appears uncertain at this point.

The primary purpose of the Alaska Seafood Marketing Institute (ASMI), established in 1981, is to promote the sale and consumption of all types of seafood harvested in Alaska's commercial fisheries. ASMI was originally created as a private, nonprofit organization in 1980, called the Alaska Seafood Foundation, but was redefined by the 1981 legislature as a public corporation of the State under the Department of Commerce and Economic Development. Initial funding was primarily from State appropriations, with some federal funds and processor dues; in FY 83 and subsequent years, marketing assessments on seafood processors are to fund at least part of the Institute's activities.

Recent Expenditure Trends - FY 1978-82

Before discussing in detail the recent trends in State fisheries expenditures, it is important to point out that some of these expenditures are difficult to isolate. A number of programs provide benefits to other industries, groups, or individuals in addition to the commercial fishing industry, and the program budgets do not separate the expenditures by industry or group served. For example, the hatcheries operated by the FRED Division release fish which are caught by sport and subsistence fishermen, as well as commercial harvesters. The Division of Fish and Wildlife Protection enforces not only commercial fishing laws and regulations, but also those for game hunting and other fish harvesting. Other programs which involve functions not entirely related to commercial fishing include the Division of Habitat, the Board of Fisheries, CFAB, ARRC, and the State's foreign offices.

In spite of these difficulties in separating commercial fishing expenditures from some program budgets, we were able to obtain reasonable estimates of fisheries expenditures from program administrators or staff. While useful for the purposes of this report, these estimates are approximate and should not be misconstrued as actual expenditures.

Capital projects such as harbor developments are particularly difficult to evaluate with respect to commercial fisheries benefits. While fishermen and processors are major harbor users, nearly every resident of a community or region may benefit to some extent from improved freight transportation or recreational boating advantages resulting from such developments. In addition, the cost of such capital improve-

ments represents benefits to users throughout the life of the project, not just in the year of completion.

No reasonable means of allocating the benefits of all capital projects to the commercial fishing industry could be determined in the scope of this study. Therefore, those capital appropriations which are clearly targeted to commercial fishing, such as hatcheries and patrol vessels, have been separated in Table 6 from more general projects such as harbors and airports.

The total commercial fishing spending figures in Table 2 include only appropriations for hatcheries and other fisheries-specific projects. The more general appropriations for harbors, airports, etc. have not been included in Table 2. These more general capital expenditures benefit other users as well as commercial fishermen, so including them in the total spending figures would overstate fishing expenditures. The general capital appropriations are listed in Table 6 simply to provide an indication of recent expenditure trends for such projects.

In this section, State expenditures for commercial fisheries purposes are divided into four broad groups: (1) regulation and management; (2) fisheries development and marketing; (3) State financing assistance; and (4) Capital project expenditures. Table 2 summarizes State expenditures (or appropriations) for each of these program categories. Detail on the specific program expenditures for each of these categories is provided in Tables 3 through 6.

Expenditure Summary

Total commercial fisheries expenditures for all program categories increased from $40.8 million in FY 1978 to a peak of $132 million in FY 1981, and declined to $119 million (appropriated) in FY 1982 (see Table 2, following page). The largest budget increases were for the fisheries financing and fisheries development expenditure categories, as shown numerically by Table 2 and illustrated graphically by Figure 2. Regulation and management expenditures increased over the five-year period at a fairly even rate, while capital appropriations, including general obligation bonds for aquaculture and other fisheries facilities and equipment, were highest in FY 1979 and declined in subsequent years.

TABLE 2

SUMMARY OF COMMERCIAL FISHERIES EXPENDITURES
FY 1978 - 1982
(Thousands of Dollars)

Program Category	1978	1979	1980	1981	1982
Regulation and Management Expenditures	$14,900	$18,074	$19,290	$24,227	$30,519
Fisheries Development and Marketing Expenditures	7,361	11,091	12,283	17,049	24,114
OPERATING BUDGET SUBTOTAL	22,261	29,165	31,573	41,276	54,633
Fisheries Financing Programs	15,909	30,680	56,263	72,772	56,345
Capital Appropriations (Fisheries-Specific)	2,652	38,268	484	18,073	8,817
TOTAL EXPENDITURES	$40,822	$98,113	$88,320	$132,121	$119,795

In terms of total expenditures, both over the five-year period and in FY 82, fisheries financing programs were the largest spending item, comprising about $231 million, or 35 percent of the $658 million five-year total (see Table 2). Although this $231 million will be returned to the State treasury through loan repayments, it represents a real cost to the State in terms of foregone earnings and the dedication of revenues to revolving loan funds. Management expenditures ranked second, followed by development and marketing expenditures and capital appropriations. The capital appropriations figures would be substantially higher if it were possible to include the additional expenditures listed in Table 6 which also benefit the fishing industry.

Figure 3 illustrates how the State's fisheries dollars were divided among the different program categories in FY 82. Major programs have been broken out from each category to demonstrate their significance.

FIGURE 2

COMMERCIAL FISHERIES EXPENDITURES

FY 1978 - 1982

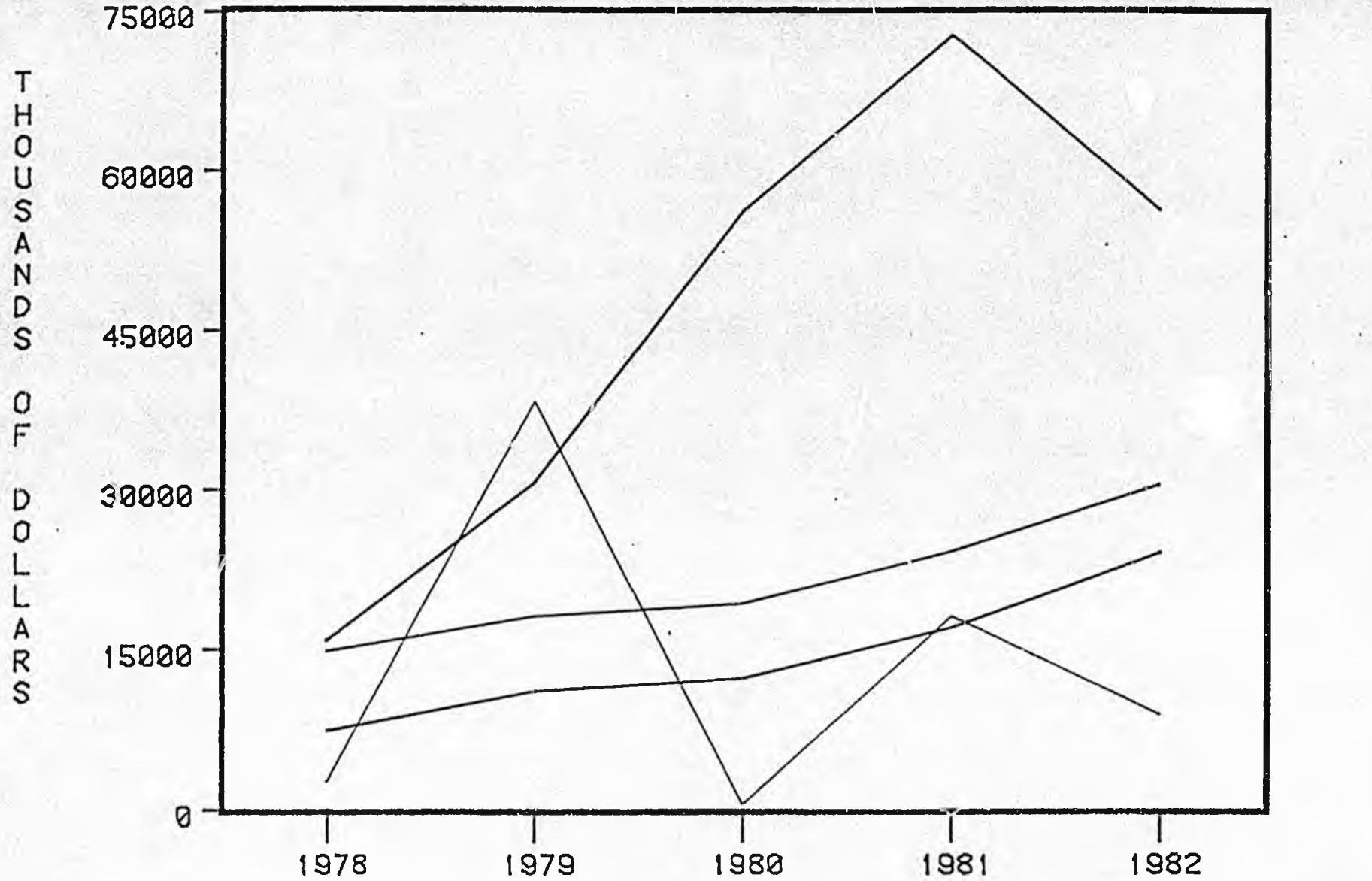
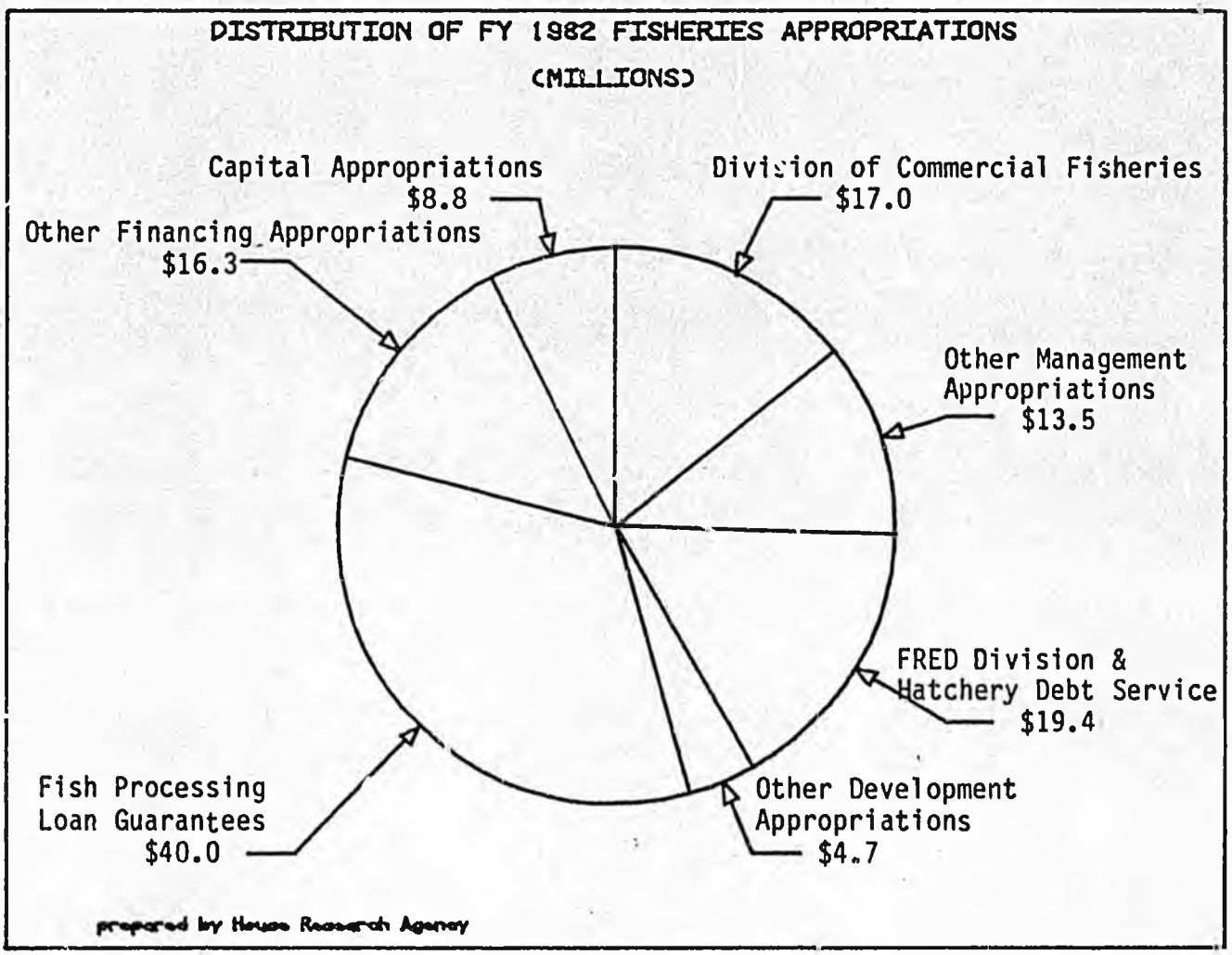


FIGURE 3



Operating Expenditures - Tables 3 and 4

The operating budget for commercial fisheries programs increased by about 145 percent between FY 78 and FY 82, from $22.3 million to $54.6 million. For purposes of comparison, the total State operating budget rose from about $1.0 billion in FY 78 to $2.4 billion in FY 1982, for an almost identical increase of 142 percent. Thus, commercial fisheries operating expenditures remained approximately the same fraction -- 2.2 percent -- of the total State budget over this five-year period.

The average annual increase in commercial fisheries operating expenditures was about 25 percent. Regulation and management expenditures rose from $14.9 million to $30.5 million over the five-year period, an increase of 105 percent. Fisheries development and marketing expenditures grew by 228 percent, from $7.4 million to $24.1 million, as a result of the establishment of new programs and the expansion of existing development programs.

Most of the increase in fisheries regulation and management expenditures was for the Division of Commercial Fisheries and the Division of Fish and Wildlife Protection. In the fisheries development and marketing category, the most significant expenditure increases were for the FRED Division, debt service on FRED aquaculture facilities, and the establishment and expansion of the Alaska Seafood Marketing Institute.

Financing Programs - Table 5

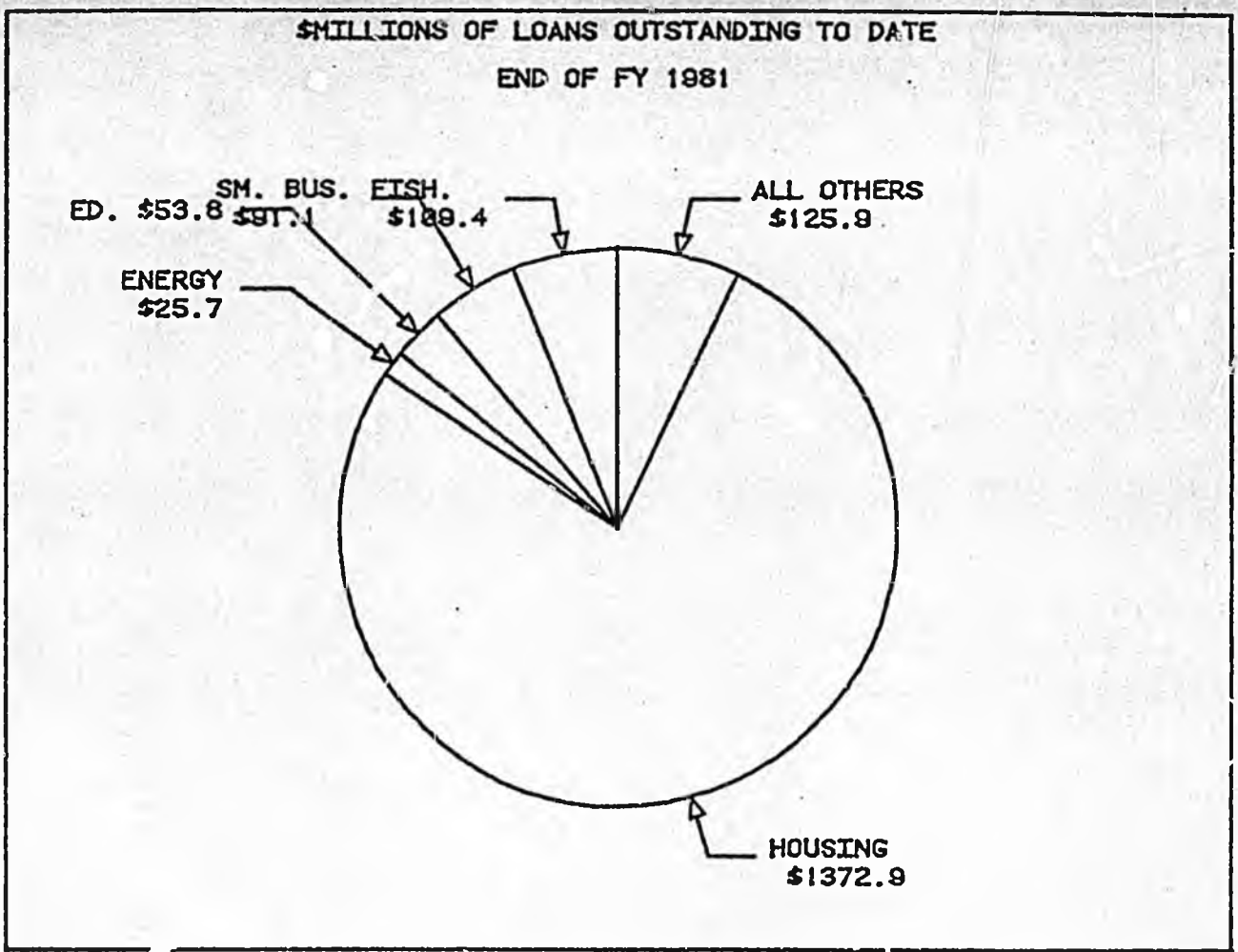
In FY 1978, the only State fisheries financing programs in operation were the commercial fishing loan program and the fisheries enhancement loan program. Expenditures for these two programs in FY 78 totalled about $15.9 million. In FY 80, about 17.1 million was appropriated for capitalization of the Commercial Fisheries and Agriculture Bank, with an additional $5.4 million for the Alaska Renewable Resources Corporation. Together with a large increase in the value of commercial fishing loans, these appropriations raised FY 80 spending for fisheries financing programs to about $56.3 million.

Financing appropriations reached a peak in FY 81 at 72.8 million, $15 million of which was for the newly established fishery product revolving loan fund in the Department of Revenue. In FY 82, CFAB and ARRC received no additional loan funds, and there was a substantial decrease in the commercial fishing loan program appropriation. However, the fish processing loan guarantee account received an appropriation of $40 million. Total fisheries financing appropriations for FY 82 were $56.3 million.

It is important to consider that the appropriations for these financing programs will eventually be returned to the State through repayment of outstanding loans. However, most of these programs are revolving loan funds in which money received from loan payments is recycled into new loans. Therefore, from the point of view of alternative uses of State funds, these loan appropriations are essentially committed for use in fisheries loans as long as the programs continue. The subsidized interest rates for several of the loan programs also represent a cost to the State in terms of foregone interest revenues. It is not possible to fully develop these points in this paper, but they are important considerations.

Figure 4 on the following page shows in pie-chart form the value and number of State fisheries loans outstanding as of June 1981, relative to other State loan programs. Fisheries loans of all types totalled about $110 million, or 6 percent of the total value of all loans of about $1.8 billion. In terms of the number of loans, fisheries loans were about 2.4 percent (1,569) of the 65,590 outstanding loans at that time.

FIGURE 4


$MILLIONS OF LOANS OUTSTANDING TO DATE
END OF FY 1981
ED. $53.8
SM. BUS. FISH. $109.4
ALL OTHERS $125.9
ENERGY $25.7
HOUSING $1372.9

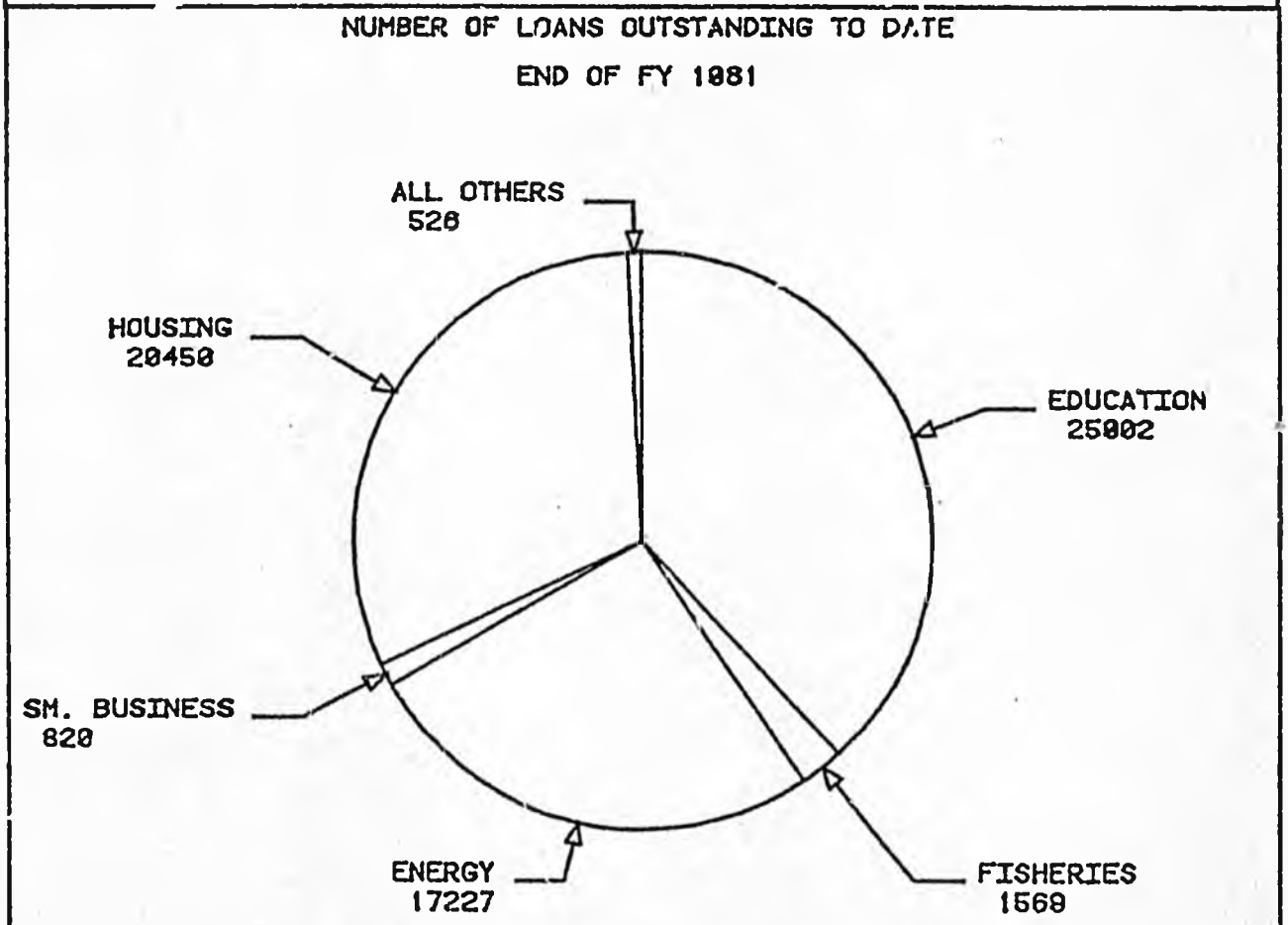

NUMBER OF LOANS OUTSTANDING TO DATE
END OF FY 1981
ALL OTHERS 528
HOUSING 20450
EDUCATION 25002
SM. BUSINESS 820
ENERGY 17227
FISHERIES 1569

TABLE 3

COMMERCIAL FISHERIES REGULATION AND MANAGEMENT EXPENDITURES[1]
FY 1978 - 1982
(Thousands of Dollars)

Program	1978	1979	1980	1981	1982
Department of Fish and Game					
Division of Commercial Fisheries	$8,363	$10,458	$10,638	$13,106	$17,003
Division of Habitat Protection*[2]	374	748	752	1,794	2,212
Commercial Fisheries Entry Commission	1,158	1,137	1,370	1,594	2,236
Fish and Game Vessels[3]	1,145	1,285	1,465	1,616	1,785
Board of Fisheries*[4]	74	148	150	227	247
ADF&G Administration and Support (prorated)*	1,134	1,154	1,341	1,491	1,278
DEPARTMENT TOTAL	12,248	14,928	15,716	19,828	24,761
Division of Fish and Wildlife Protection (Dept. of Public Safety)*[5]	2,577	3,041	3,432	4,110	4,978
Seafood Inspection Program (Dept. of Environmental Conservation)	75	105	142	289	780
TOTAL EXPENDITURES	$14,900	$18,074	$19,290	$24,227	$30,519

FY 1981 Funding Sources:

State General Funds	-	$20,589
Federal Funds	-	$ 1,953
Program Receipts	-	$ 663
Other Funds		$ 1,022

* Expenditures for these programs are estimated because of overlap between commercial fisheries work and other functions.

TABLE 4

FISHERIES DEVELOPMENT AND MARKETING EXPENDITURES
FY 1978 - 1982
(Thousands of Dollars)

Program	1978	1979	1980	1981	1982
Division of Fisheries Rehabilitation, Enhancement, and Development (ADF&G)*[6]	4,306	6,951	6,301	7,278	9,695
Fish and Game Facilities Debt Service[7]	1,848	2,791	3,974	6,313	9,695
King Crab Marketing and Quality Control Board	325	246	350	396	449
Office of Fisheries Development (Dept. of Commerce and Economic Development)*[8]	107	200	190	250	738
Alaska Seafood Marketing Institute	--	--	--	1,200	2,000
State of Alaska European and Asian Offices (DCED)*[9]	[illegible]	103	397	467	239
Fisheries Commissions (Governor's Office)	201	180	232	241	--
Sea Grant and Marine Advisory Programs (University of Alaska)[10]	519	620	839	904	1,298
TOTAL EXPENDITURES	$7,361	$11,091	$12,283	$17,049	$24,114

*Estimated expenditures.

TABLE 5

APPROPRIATIONS FOR FISHERIES FINANCING PROGRAMS
FY 1978 - 1982
(Thousands of Dollars)

Program	1978	1979	1980	1981	1982
Division of Business Loans[11]					
Commercial Fishing Loans	$13,044	$29,734	$32,548	$24,608	$4,680
Fisheries Enhancement Loans	2,865	946	2,210	6,152	8,321
Fishermen's Mortgage and Note Program (Div. of Bus. Loans)	--	--	--	6,165	1,872
Commercial Fishing and Agriculture Bank*[12]	--	--	16,116	14,100	--
Alaska Renewable Resources Corporation*[13]	--	--	5,389	6,747	1,272
Fishery Processor Assistance Loans (ARRC - 1980), Fish Processing Loan Guarantee Account(Dept. of Revenue - 1982)[14]	--	--	--	15,000	40,000
Fishermen's Fund (Dept. of Labor)[15]	--	--	--	--	200
TOTAL EXPENDITURES	$15,909	$30,680	$56,263	$72,772	$56,345

* Estimated Expenditures

TABLE 6

CAPITAL APPROPRIATIONS RELATED TO COMMERCIAL FISHERIES DEVELOPMENT[16]
FY 1978 - 1982
(Thousands of Dollars)

Fiscal Year	Appropriations: Fisheries Specific	Appropriations: Other	Major Projects
1978	$ 2,652	$ 4,865	Specific: Fish & Game Facilities, University of Alaska Facilities, Public Safety Vessel Repair. Other: Statewide Harbor Development & Repair, Western Region Harbors
1979	$38,268	$61,470	Specific: $20.2 million G.O. Bonds for Aquaculture Facilities, Fish & Game and Public Safety Vessels. Other: $28.8 million G.O. Bonds for Ports & Harbors, Statewide Harbors.
1980	$ 484	$ 8,549	Specific: Fish & Game Facilities, Fishery Industrial Technology Center. Other: Statewide Harbors, Dillingham Airport Paving.
1981	$18,073	$55,106	Specific: $6.2 million G.O. Bonds for Hatcheries and Patrol Vessel; Aquaculture Facilities, Bottomfish Development, Grants. Other: $48.4 million G.O. Bonds for Ports and Harbors; Southeast and Central Region Ports and Harbors, Unalaska Runway Extension.
1982	$ 8,817	$22,823	Specific: University of Alaska Marine Technology Facility & Fisheries Center, Aquaculture Facilities. Other: Southeast and Western Region Harbor Development & Repair; Homer Port & Harbor; Unalaska, Naknek, and King Salmon Airport Improvements.
TOTALS	$68,294	$152,813	

NOTES TO TABLES 2 - 6

[1] In Tables 2 - 4, the FY 81 figures are appropriations adjusted for changes in program funding; FY 82 figures are Free Conference Committee Appropriations, adjusted for Governor's vetoes; all other figures are actual expenditures as reported in the Executive Budget document.

[2] About 35 percent of the Habitat Section's FY 82 appropriation is for commercial fisheries purposes, based on approximate estimates for each budget category by Dick Logan, Chief of the section.

[3] Carl Lehman, Chief of the Vessels Section, estimates that 95 percent of the section's operations are commercial fisheries-related. This figure is therefore 95 percent of the section's total expenditures.

[4] Figures for the Board of Fisheries are 50 percent of the total expenditures for the Boards of Fish and Game, based on an estimate by the Executive Director.

[5] The commercial fisheries breakdown for the Division of Fish and Wildlife Protection is based on estimates by Lt. Rod Mills of the Division for FY 1982, and equal 42 percent of the total Division budget. Figures for earlier years assume that the same percentage holds true for these years.

[6] Approximate FRED Division expenditures for commercial fisheries were estimated at 75 percent of total expenditures by Robert Roys, Director of the Division.

[7] Fish and Game Facilities Debt Service includes payment of principal and interest on general obligation bonds sold for the construction or purchase of hatcheries, patrol vessels, and other capital expenditures. Because most of the debt service costs relate to fisheries development facilities, all debt service costs have been included in this table.

[8] The Office of Fisheries Development was created in FY 81; in earlier years fisheries development specialists were employed by the Division of Economic Enterprise. Fisheries expenditures for FY 1978-81 are based on estimates by Division personnel, as cited in Basic Issues in the Management of Alaska's Fisheries Programs, prepared by David Hoffman for the Lieutenant Governor's Office (May, 1981). The FY 82 appropriation figure includes several grants to non-profit organizations administered by the Office of Fisheries Development.

[9] Figures for the State Foreign Offices are 70 percent of total expenditures for the European Office and 50 percent for the Asian Office, based on personal communication with Shari Gross, former Director of the European Office, and House Research Agency estimates.

NOTES TO TABLES (Cont.)

[10] The Alaska Sea Grant Program is about two-thirds federally funded; therefore, these figures reflect only State expenditures, rather than the total budget (the Marine Advisory Program is entirely State funded).

[11] No direct appropriation was made for these loan programs before FY 1981. In previous years, loans were funded through purchases of loans by the Department of Revenue from General Fund moneys. The figures shown here for FY 1978 - 1980 represent the value of loans made in each year. All loans figures in this table include operating expenditures where applicable.

[12] These amounts are 94 percent of the total amounts appropriated by the legislature to CFAB. The remaining 6 percent was excluded because this was the approximate percentage of non-fisheries (agriculture) loans made as of July 1, 1981.

[13] The ARRC figures for FY 1980 are the amounts designated for fisheries programs by the legislature. The FY 1981 amounts are estimates by Dean Olson, an ARRC Trustee, as cited in the Hoffman paper. The 1981 figure is for operating expenditures only, as no new loan funds were appropriated by the legislature.

[14] An additional $60 million in processor loan guarantees was appropriated by the legislature in FY 81, but this amount is not included because it will only be expended in the event of major defaults on loans, which is not likely.

[15] The Fishermen's Fund, which pays for the treatment of injuries resulting from commercial fishing activities, is primarily supported by revenues collected from fish and game licenses. However, a shortfall in the fund in FY 1981 necessitated the $200,000 appropriation in FY 82 to meet the Fund's expected obligations. The need for future appropriations, if any, will depend on the number and size of injury claims submitted to the fund each year.

[16] Capital appropriation and G.O. Bond figures for aquaculture facilities are 75 percent of the total amount, based on an estimate by Robert Roys of the FRED Division. Portions of this table are derived from appropriations tabulated in the paper by David Hoffman.

STATE TAX REVENUES FROM THE FISHING INDUSTRY

Revenue Sources

The State of Alaska collects revenues from a number of different taxes and permit and license fees levied on the fishing industry. FY 1981 fisheries receipts totalled about $28.2 million. In terms of total State receipts, the commercial fishing revenues from these sources appear almost insignificant -- about eight-tenths of one percent of total revenues in FY 1981. The contribution of fishing revenues to the State treasury, like most income sources, is overshadowed by petroleum revenues, which comprised nearly 90 percent of total FY 1981 collections. However, fisheries tax revenues do offset some of the cost of commercial fisheries budget outlays, and represent a significant portion of the non-petroleum revenue category.

The major sources of fisheries revenue for the State, in order of the amount collected in FY 1981, are the following:

- taxes on cold storages and other processors - $11.0 million
- raw fish tax - $5.9 million
- permit, vessel and fishermen license fees - $3.9 million
- taxes on floating processors - $3.8 million
- marine fuel tax - $3.6 million (only part of which is from commercial fishing operations)

These revenues total about $28.2 million.[3] Less than half of the marine fuel tax is probably attributable to commercial fishing, with the remainder generated by marine transportation and sport boating/fishing. However, additional revenues from other sources appear to be more than the $2 million or so of the marine fuel tax which is not from commercial fishing activities. These additional revenue sources include the corporation income tax, the Alaska business license tax, and the aviation fuel tax.

Fishermen no longer pay income taxes since the repeal of the individual income tax in 1980 (except for the relatively few fishing operations that are incorporated), but fish processors pay both corporate income taxes and the business license tax. In addition, some portion of the

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[3]Source: Statement of Licenses and Taxes Collected, Alaska Department of Revenue.

taxes paid by companies in transportation, services, and all the other secondary industries affected by commercial fishing is attributable indirectly to the fishing industry. Revenues from the corporation income tax and the business license tax for all companies in Alaska totalled about $40.2 million in FY 1981.

The aviation fuel tax (FY 1981 collections: $4.1 million) is also an indirect source of fishing industry tax revenues, through the transportation by air of fish, supplies, and industry workers, and the use of aircraft for fish spotting and patrols. The amount of commercial fishing revenues represented by these additional sources could not be quantified during this research effort, but it appears that they would total less than $5 million.

Fisheries Tax Structure

The primary elements of the State's current fisheries business tax (AS 43.75) were established in 1979. On June 1, 1979, the new tax schedule established by Chapter 79, SLA 1979, took effect. Under the new tax structure, the following rates are levied:

CURRENT TAX SCHEDULE

Shore Based Processors	Floating Processors
4.5% for canned salmon; 3% for all other fish except canned salmon or development fish; 1% for development fish.	5% for all fish except development or bottom fish; 3% for development fish.

Prior to June 1, 1979, fish processors were taxed as follows:

PRE-1979 FISH TAX SCHEDULE

Shore Based Processors	Floating Processors	Canneries (Shore Based and Floating)
1% of wholesale value for all fish processing except canning.	1% Herring (did not include roe).	3% salmon; 2% crabs and clams; 1% herring & butter clams.

The legislature noted in the statement of findings of the 1979 fish tax legislation that the State had funded and implemented several fisheries-related development programs, fishery loan programs, the limited entry program, and expanded the fishery protection and management program. The stated purpose of the legislation was threefold:

(1) to insure that the State is able to continue its efforts toward overall fisheries-related development programs by raising additional revenue to pay for the programs;

(2) to make the imposition of the fisheries tax more uniform among fisheries businesses; and

(3) to provide funding for the development of new fisheries.

The 1979 fisheries tax legislation increased tax rates considerably. The tax on frozen salmon and shellfish was tripled from one percent to three percent and the canned salmon tax was increased by 50 percent from 3 percent to 4.5 percent. Rather than raising taxes equally for all types of fish, the legislation levied a greater increase on frozen production in recognition of the increasing percentage and higher value of fish processed in this manner in recent years. Taxes on floating processors were also increased up to five-fold to account for the increased use of such processors and their generally lower production costs. The tax rates on development fish (to be administratively defined) were limited to one percent for shore-based plants and 3 percent for floating processors, so that developing fisheries would not be excessively burdened in the initial years of marginal profitability.

Although fisheries taxes were raised substantially by the 1979 law, the legislature did not intend for the tax increases to fully cover the cost of all fisheries programs, for several reasons. First, the tax rates were raised by up to five-fold as it was, and any greater increases were thought by many legislators (as well as the industry) to be an excessive tax burden. A second factor was the recognition that a number of fisheries expenditures, such as the FRED hatchery budget and the bottomfish program, were investments to increase future fisheries production. As such, these expenditures would be at least partly compensated by future increases in revenues resulting from an expanded fishing industry.

Another consideration was that many State programs, ranging from agricultural development to housing loans to energy programs, involve some level of subsidization from the State treasury. Expenditures for fisheries programs were therefore viewed as part of the general policy of the State to use some of its surplus revenues to expand employment opportunities and economic development in Alaska.

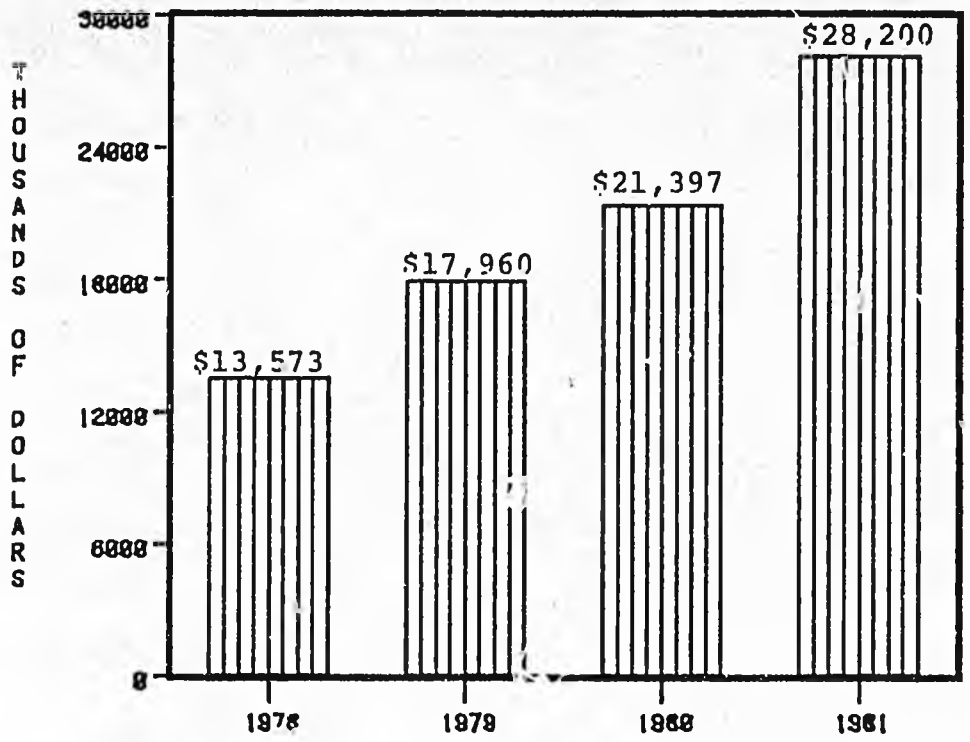
FISHERIES REVENUES

Recent Fisheries Revenue Trends

The effect of the 1979 fisheries tax increase can be seen in a comparison of fisheries revenues over the past several years. Figure 5, below, shows total State revenues from the fishing industry from FY 1978 to FY 1982.

FIGURE 5

STATE FISHERIES REVENUES
FY 1978 - 1981



Fisheries tax revenues increased by about 107 percent between FY 1978 and FY 1981, from $13.6 million to $28.2 million. The two principal reasons for the increase in revenues were the 1979 increase in fisheries tax rates, coupled with the growth in the value of fisheries harvests during the four year period.

As mentioned earlier, fisheries revenues in FY 1981 constituted about 0.8 percent of total State revenues. However, when compared only to other non-petroleum income, fisheries revenues were about 7 percent of the FY 81 total. Fisheries revenues ranked third among non-petroleum income sources, behind investment earnings and the corporation income tax. Over 50 percent of non-petroleum revenues were from investment earnings, which, although they are sustainable revenues, were derived almost totally from the investment of petroleum income. Excluding these investment earnings results in fishing revenues representing about 15 percent of non-petroleum revenues.

The percentage of total State revenues contributed by revenues from the fishing industry has declined as the State's economy diversified and expanded. In 1949, fish taxes and fees totalled one-third of the territorial budget and were the largest source of revenue. By 1953, the fisheries contribution had dropped to 17 percent, by 1966 to 8 percent, and by 1971 to 6 percent. The large influx of petroleum revenues beginning in the late 1970's was the major factor in reducing this percentage to its current level of 0.8 percent.

Comparison of Fisheries Revenues and Expenditures

In FY 1981, the State spent about $132 million on commercial fisheries programs, while direct revenues from the fishing industry totalled approximately $28.2 million. On the surface, these figures appear to suggest that the fishing industry does not pay for itself, and that the benefit/cost ratio and return on the State's investment from fishing expenditures is rather low. However, an accurate evaluation of State expenditures and revenues in commercial fishing requires more than just totalling the two sides of the balance sheet. One important point is that over $72 million of the $132 million appropriated in FY 1981 was for fisheries loan programs, and will therefore be returned to the State through loan repayments. The foregone interest earnings associated with the low-interest loans do represent a cost to the State, as explained earlier. It is also important to consider the functions of the different fisheries programs relative to the expenditures for each, as well as the additional benefits of the fishing industry in terms of employment and income to Alaska residents. While it is beyond the scope of this paper to evaluate the effectiveness

or overall value of the State's commercial fisheries programs, some observations can be made which provide a broader perspective on the State's fisheries expenditures.[4]

A number of fisheries managers and others associated with the industry stated that it is misleading to compare State fisheries revenues with all fisheries-related expenditures. According to this point of view, fisheries revenues are collected to pay for management and enforcement expenditures, and more than cover these costs. Expenditures for long-term fisheries development, such as the FRED hatchery program and market development, are investments and will be reflected in increases in future State revenues as a result of larger harvests, and so on. Other programs such as loans and fisheries education are viewed as serving other purposes besides fisheries development. For example, State loans for vessel or gear purchases in the salmon or shellfish fisheries do not increase the economic value of these fisheries, because the full allowable harvest can be easily taken with the existing vessels and gear. Therefore, such programs are considered as providing low-cost financing to Alaska residents, rather than fisheries development expenditures.

A second point to consider is that a larger percentage of fisheries expenditures is offset by State revenues from the industry than in several other areas of State development activity, including agriculture, hardrock mineral development, housing, and others. Although the generation of tax revenues is certainly a valuable benefit of development expenditures, it is usually secondary to the main objective of economic development.

A third perspective on Alaska fisheries expenditures and revenues can be had by comparing Alaska's situation with that of other states. In FY 1981, the State of Washington spent approximately $17.5 million on commercial fisheries management, while fisheries revenues totalled $4.4 million in that year. The value to fishermen of the 1980 harvest (the most recent year available) for all fish species was an estimated $59.3 million. Fisheries tax rates in Washington are, on average, somewhat higher than Alaska's, particularly for salmon, and are the highest of the three West Coast states.

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[4] For evaluations of individual fisheries programs, see reports prepared by the Division of Legislative Audit and the Division of Internal Audit in the Office of the Governor. Agencies reviewed include the Department of Fish and Game, the FRED Division, ARRC, CFAB, the Fisheries Enhancement Loan Fund, the Alaska Fisheries Council, and the Division of Fish and Wildlife Protection.

In Oregon, commercial fisheries management expenditures in FY 1981 were roughly $10.3 million; fisheries revenues were $2.1 million. The 1980 harvest value for all species was $54.9 million. Oregon's fish tax rates are relatively low, averaging about one percent of value to fishermen. The comparable management expenditures in Alaska in FY 1981 were about $34 million.[5] Fisheries revenues and harvest value, as mentioned earlier, were $28.2 million and $1.125 billion, respectively. The expenditure/revenue ratios in Washington and Oregon are clearly much higher than in Alaska. Alaska spent about 2.4 cents per dollar of wholesale fisheries value, compared to 43 cents for Washington and 19 cents for Oregon. It is important to note that Washington and Oregon do not have the extensive loan and capital project programs that Alaska does, but on a management basis, Alaska's expenditures are relatively small in relation to revenues and the harvest value of the fisheries.

The employment and income generated by the fishing industry are also important factors to consider in the evaluation of fisheries expenditures, as discussed in the last section of this report. An additional consideration not mentioned there is that the fishing industry is labor intensive relative to the value of sales. Research performed earlier by this agency indicated that in Alaska, seafood harvesting and processing provides an annual average of 14.2 jobs per million dollars of wholesale value.[6]

Although some industries have higher employment/value of sales ratios -- tourism is 20.1, building construction is 15.5 -- most others are lower, including mining at 10.4, paper mills at 7.8, and oil and gas extraction at 1.6 jobs per million dollars of sales. It is essential when evaluating State expenditures to consider not only these employment ratios, but also how much a given State investment is likely to increase the sales of the affected industry. However, these figures demonstrate that State expenditures which maintain or expand the value of fisheries production in Alaska do provide a relatively high number of jobs compared to other industries. Research into the actual sales and employment effects of specific fisheries (and other industry) development programs would be very valuable in evaluating the effectiveness of the programs and other development options.

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[5] For the purposes of this comparison, FRED Division and Debt Service expenditures have been considered as management expenses rather than fisheries development programs. The Washington and Oregon budget figures cited also include aquaculture expenditures, and are based on personal communications with budget officers in the two states.

[6] Source: House Research Agency Memoranda 80-106, Effect of State Expenditures on Unemployment and In-migration, 1980.

FISHING EMPLOYMENT AND INCOME

Although the development of Prudhoe Bay and the associated rapid growth in State revenues has reduced the significance of the fishing industry as a source of State revenues, the industry remains important in terms of employment opportunities and income. In 1979, more people were employed in the fishing industry than in any other sector of the Alaska economy[7]. An additional consideration is that the impact of the industry on many regional and local economies is greater than on the state as a whole. In many communities, fish harvesting and processing provide the primary opportunities for non-government employment. The overall economic contribution of the industry is limited in that it is by far the most seasonal sector of the economy, but available statistics suggest that for many people, fisheries work provided their only employment throughout the year.

A Note on Methodology

Commercial fishing is commonly considered as one of Alaska's major industries, but determining the actual employment and income generated by fishing has always been a difficult proposition, particularly for the harvesting segment of the industry. Good statistics are available on most industries in the state because they involve salaried or hourly wage employees covered by unemployment insurance (U.I.). In order to fulfill U.I. reporting requirements, employers must submit detailed information on the number of employees and wages paid. These reports form the basis for the employment and income figures published by the State Department of Labor.

Independent business operators such as fishermen, however, are not generally covered by U.I. and therefore don't show up in regularly published employment figures. Indirect indicators such as licenses, fish landing records, and estimates of crew size must be used in estimating employment. While relatively accurate records are available on the value of fishermen's gross earnings, much of these earnings go to pay fishing expenses. Net earnings are therefore much lower, and are difficult to determine because of the wide variability in expenses and profitability.

In this report, published information on the fishing industry has been combined with unpublished data and agency estimates to produce the employment and income estimates included in this section. Although

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[7] In terms of the total number of individuals who worked at some time during the year. Average employment was much lower because of the pronounced seasonality of the industry, as discussed later in this section.

additional research needs to be done in this area, the resulting figures appear reasonably accurate. It should be noted that much of the employment and income information for the fish harvesting sector has been derived from Department of Labor estimates. This employment series is no longer funded and no estimates of harvesting employment beyond 1979 will be produced unless additional funding is made available.

Types of Employment

In this section, employment and income benefits of Alaska's seafood industry are placed in three broad categories. Direct impact refers to employment and earnings in fish harvesting activities. Secondary impact refers to employment and income resulting from the processing of seafood products. Induced effects include employment and income in occupations such as repairing or maintaining vessels, selling goods to fishermen, and financing fishing operations. Also included as induced effects are the additional jobs and income resulting from goods and services purchased by those employed in harvesting or processing activities.[8] Each of these categories is discussed below. In each discussion, there is an attempt to distinguish between resident and non-resident employment and income.

Direct Impact--Fish Harvesting

Employment. Over 29,000 people were employed in fish harvesting in Alaska in 1979, based on peak employment. The actual number of people fishing was somewhat higher, because the peaks in different fisheries do not coincide -- salmon and crab, for example. In 1979, 15,683 vessel licenses were issued, and 25,210 crew licenses were purchased. Maximum fishing employment would therefore be 40,893; however, some licenses were probably unused, and actual employment would be slightly less than this figure.

Table 7 on the next page shows monthly low and peak employment as well as average monthly employment by region in fish harvesting during 1979. Salmon fishing accounted for roughly 75 percent of the fishing jobs in the state. Harvesting other finfish accounted for 17 percent of jobs and shellfish for the remaining 7 percent.

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[8] These categories differ from commonly used employment definitions, which usually consider fish harvesting and processing as direct or primary employment, support services as secondary employment, and the respending of fisheries income as induced employment effects. This change was necessary because the economic model used to analyze these employment relationships could not separate each of the different types of employment.

TABLE 7

ESTIMATED EMPLOYMENT & INCOME FROM SEAFOOD HARVESTING IN ALASKA

	SALMON				OTHER FINFISH				SHELLFISH				TOTAL				
	Mo. Employment			Value of Catch ($000's)	Mo. Employment			Value of Catch	Mo. Employment			Value of Catch	Mo. Employment			Value of Catch	%
	Low	Peak	Avg.		Low	Peak	Avg.		Low	Peak	Avg.		Low	Peak	Avg.		
Southeast	31	5,716	1,749	60,382	15	2,577	611	16,813	55	116	80	4,995	126	8,162	2,440	82,190	13
Prince William Sound	0	1,361	385	35,092	0	544	106	7,518	30	187	97	4,537	39	1,597	588	47,147	8
Cook Inlet	0	3,350	684	20,935	0	1,812	373	767	32	321	145	6,737	32	5,042	1,202	28,439	5
Kodiak	0	3,040	509	23,048	2	597	131	3,105	32	786	398	42,534	86	2,886	1,038	68,687	11
Bristol Bay	0	6,351	1,173	139,602	0	2,074	183	9,100	0	0	0	0	0	6,353	1,356	148,702	24
Aleutians	0	1,517	343	52,897	0	133	11	507	20	214	91	34,480	146	1,872	859	87,884	14
Rest of State	0	3,103	759	12,615	0	371	39	1,171	87	902	384	145,449	0	3,102	798	159,235	26
Total	31	23,637	5,605	344,571	29	5,464	1,480	70,206	256	2,321	1,196	238,732	1,155	29,015	8,281	653,509	

* Figures for low and peak employment may not add to totals either horizontally or vertically because the time at which peaks and troughs occur are different in various fisheries.

** Value of halibut is included in total value of catch but was not distributed among regions. Employment in halibut fishing has been included in the regional distribution.

Source: Department of Labor, Department of Fish and Game 1979 Catch and Production Statistics, House Research Agency.

More salmon fishermen worked at one time in Bristol Bay than in any other area, but the season in Southeast was longer so that average year-round employment was higher in Southeast. The Southeast region employed more people in other finfish harvesting as well, and again the longer season can be inferred from the relationship of peak to average employment.[9]

Fish harvesting is by far the most seasonal sector of Alaska's economy. An index of seasonality can be developed by dividing both low and peak monthly employment by the number of full-time equivalent positions as determined by the DOL formula for computing average monthly employment. Figure 6 on the following page displays this index for salmon, other finfish, and shellfish harvesting. Other sectors of Alaska's economy are included in the figure for the purpose of comparison.

Figure 6 shows that salmon fishing is the most seasonal fishery, with low monthly employment of only one percent of the annual average, and peak employment of 422 percent of the average. Shellfish harvesting is the least seasonal of the fisheries, with low and high employment of 47 percent and 194 percent of the annual average, respectively. Due to the high degree of seasonality, estimates of peak employment as well as average monthly employment are useful in determining the importance of fish harvesting to the Alaskan economy.

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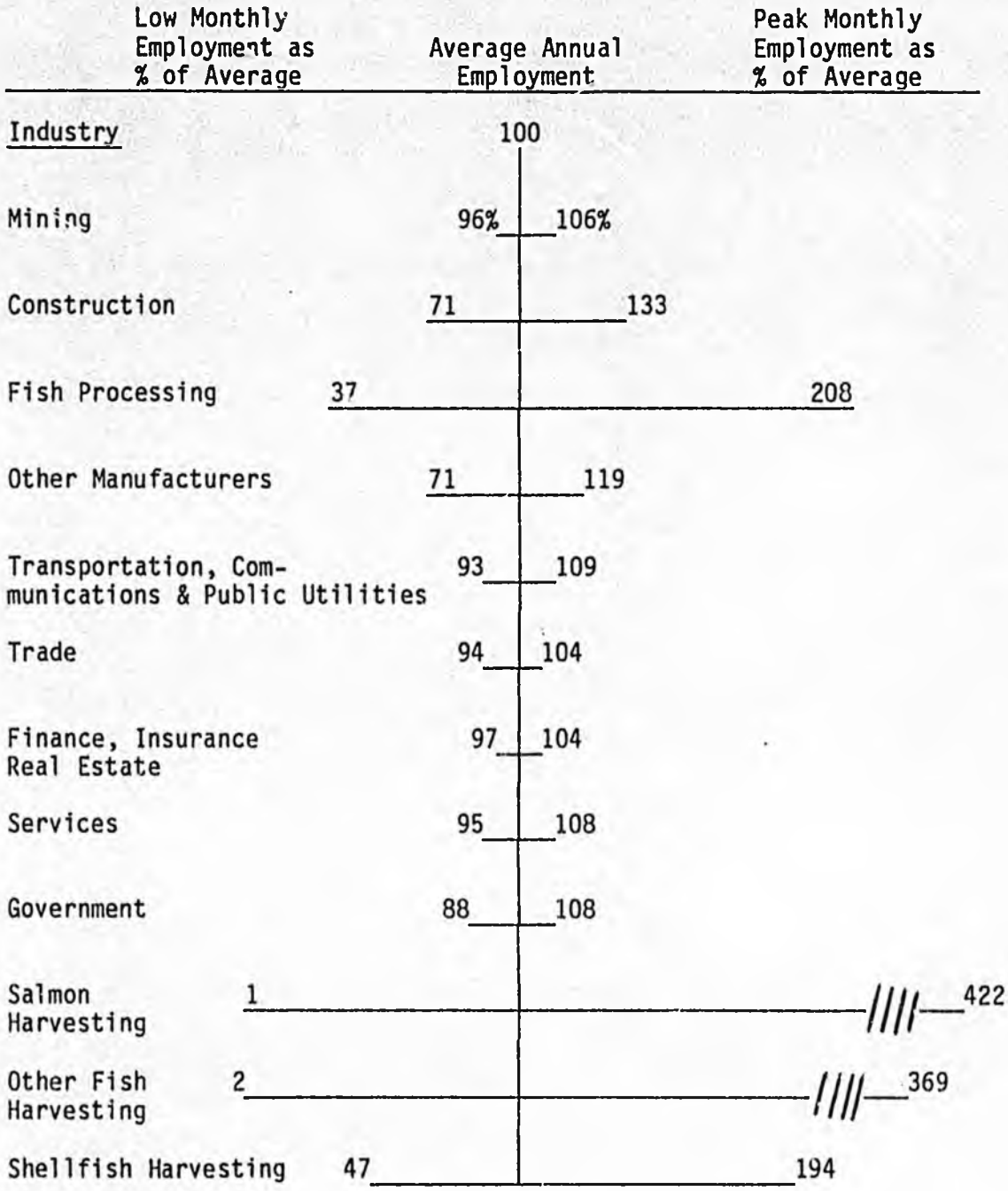
[9] These harvesting employment estimates are based on methodology first developed by George Rogers and Richard Listowski. In work for the Institute for Social and Economic Research (ISER), they calculated employment by counting the number of vessels landing fish in each fishery each month and multiplying by a crew factor appropriate to the type of gear used. The crew factors were based on consultation with fishery biologists, fishermen, and fish processors in each fishery. [Measuring the Socioeconomic Impacts of Alaska's Fisheries, George Rogers, et al., Institute of Social and Economic Research, April 1980.]

Barbara Baker, an economist for the Department of Labor, revised data on crew factors and used the ISER methodology to produce estimates of employment in Alaska's fish harvesting sector through 1979. Her (unpublished) estimates are used in this analysis. The estimates include only the captain and crew of fishing vessels. Tender and packer crew and onshore workers are categorized as processing, rather than harvesting employment.

FIGURE 6

AN INDEX OF SEASONALITY FOR VARIOUS SECTORS OF THE ALASKAN ECONOMY
1979



Source: Statistical Quarterly 79:4, Alaska Department of Labor, revised 12/15/81; House Research Agency.

Figures 7 and 8 on the following page show the distribution of employment in Alaska's economy during 1979. The distribution of peak monthly employment in Figure 7 shows that the fish harvesting sector ranked as Alaska's third largest private sector employer behind the service and trade sectors. Combined employment in fish harvesting and fish processing was 44,157, which made the seafood industry Alaska's largest private employer in terms of peak monthly employment. The distribution of average monthly employment in Figure 8 shows that the impact of the seafood industry is less pronounced in terms of full-time equivalent positions. Combined employment in fish harvesting and fish processing was 15,553, which made the seafood industry Alaska's third largest private employer in terms of full-time equivalent positions.

Income. Table 7 also gives approximations of income from fish harvesting. As with employment, 1979 data are the latest available and are used throughout this analysis. The values in Table 7 represent gross income to the fishermen; no account is taken of fishing costs, which may vary considerably between species, gear type, and area. The information in Table 7 does not allow conclusions to be made about the amount of income expended in a particular geographic area. Significant expenses -- such as crew share, boat payments, and operating expenses -- may be paid outside the area to which the income is allocated in Table 7.

Table 7 shows that gross income to fishermen was $653.5 million in 1979. Salmon accounted for $344.6 million (53 percent), shellfish for $238.7 million (37 percent), and other finfish for $70.2 million, or 11 percent of total gross fishing income. The fisheries of highest value were the Bristol Bay salmon run ($139.6 million) and the shellfish harvest in the Bering Sea ($145.5 million). Comparison of gross fishing income to income in other sectors is misleading because fishing costs--food, fuel, maintenance, equipment, etc.--vary widely and should be deducted to obtain a measure of fishing income comparable to income in other sectors.

Data limitations make accurate assessment of net fishing income for all fisheries impossible, but a rough calculation indicates that income from fish harvesting was approximately nine percent of total income in Alaska in 1979. The calculation is based on two fisheries income surveys, one a salmon and herring study performed by the University of Alaska Sea Grant Program[10], and the second a shellfish survey by the Commercial Fisheries Entry Commission.[11]

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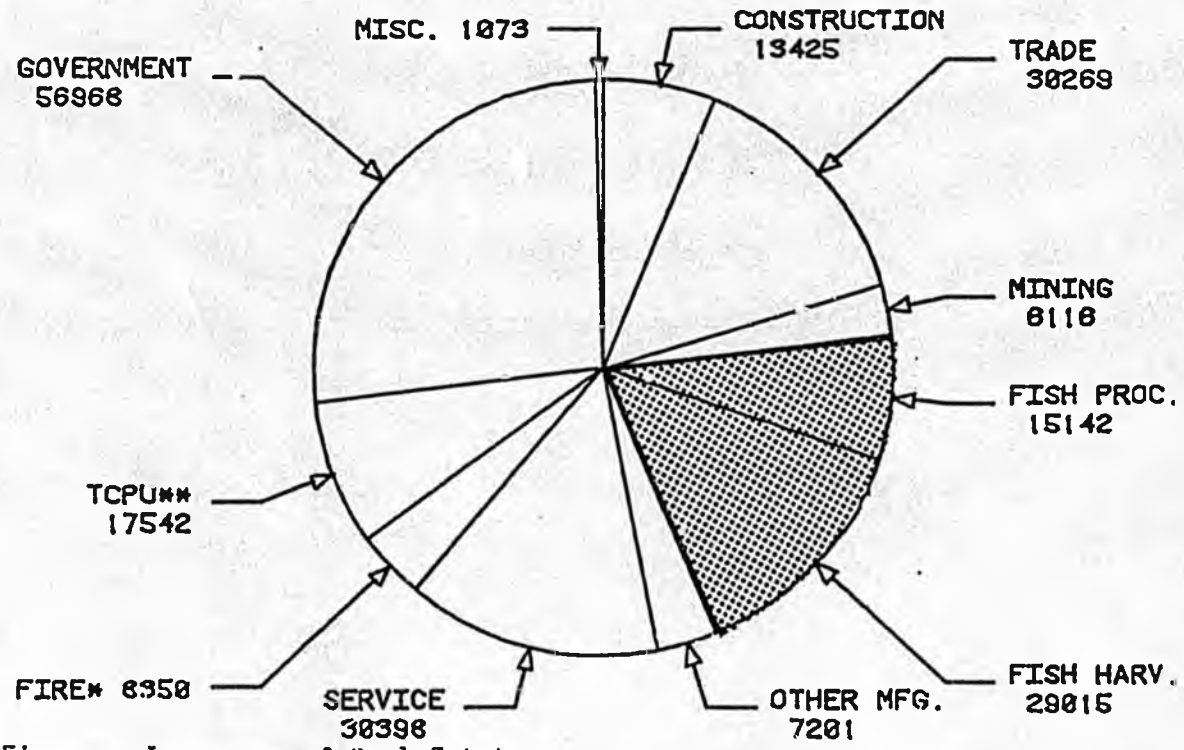
[11] 1979 Fisherman's Income Survey, Herring and Salmon Fisheries, Alaska Sea Grant Program Report 80-5, Compiled By Doug Larson.

[12] Alaska Shellfish Bio-Economic Data Base, Commercial Fisheries Entry Commission, by Lewis Queirolo, et al., February, 1979.

FIGURES 7 and 8

COMPARISON OF PEAK MONTHLY EMPLOYMENT

IN VARIOUS SECTORS OF THE ALASKAN ECONOMY—1978

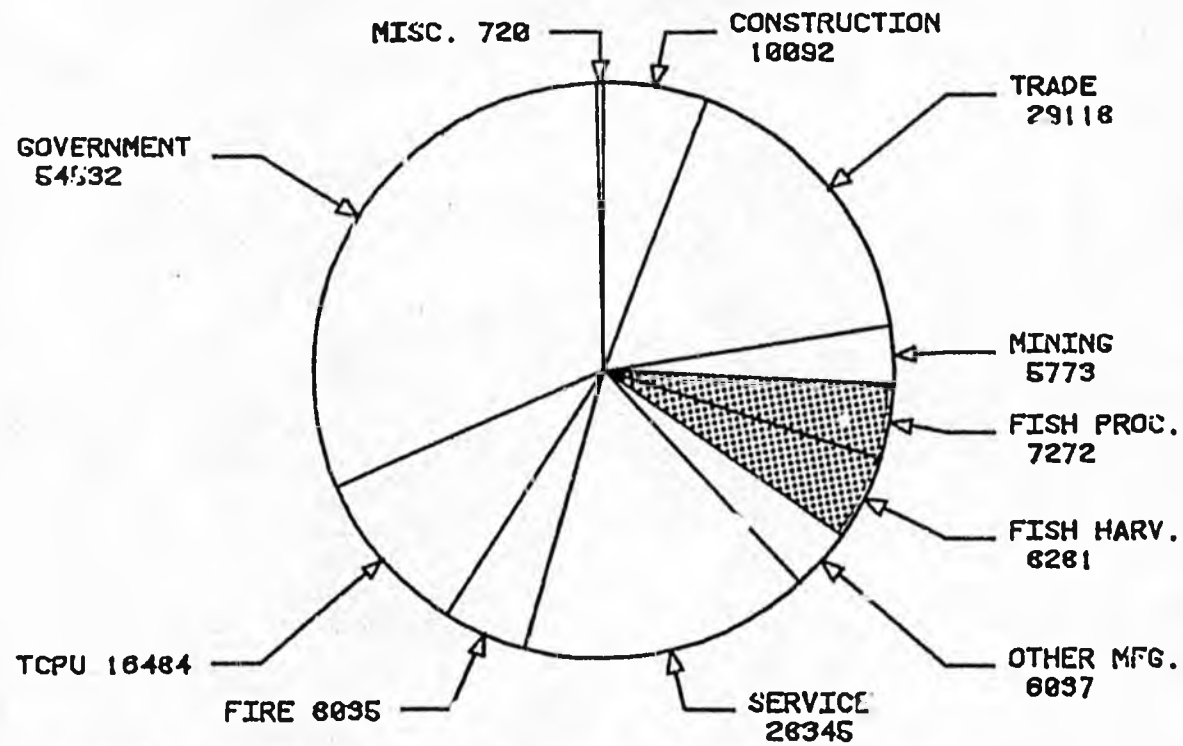


*Finance, Insurance, & Real Estate

**Transportation, Communications & Public Utilities

COMPARISON OF AVERAGE MONTHLY EMPLOYMENT

IN VARIOUS SECTORS OF THE ALASKAN ECONOMY—1978

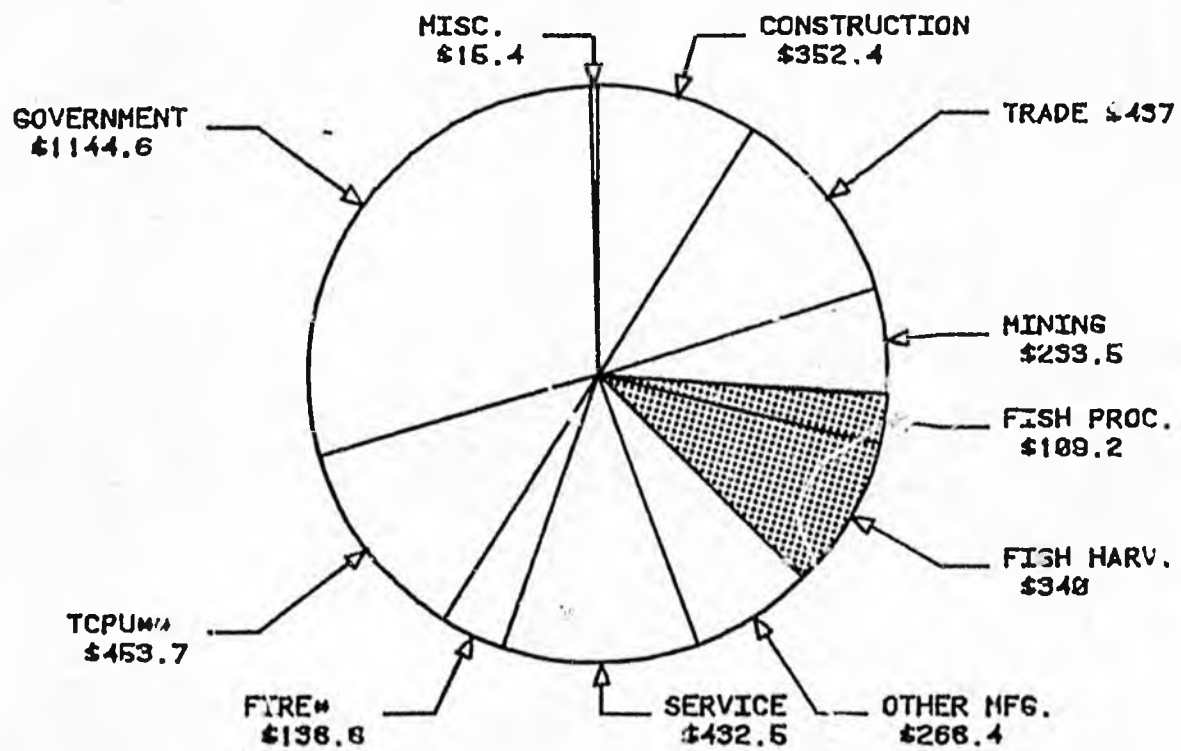


prepared by Human Research Agency

The Sea Grant study indicated that net income in salmon fisheries in 1979 was approximately 37 percent of gross income. The shellfish survey was based on 1976 data, and coincidentally found that net income for crab and shrimp vessels also averaged 37 percent of gross earnings. The net/gross earnings ratio can be expected to vary widely from year to year with changes in harvest values and gross earnings, but 1979 shellfish gross earnings were similar to 1976 earnings when inflation is considered. Crew shares vary widely among fisheries and vessels within fisheries, but for the purposes of this comparison, an average crew share (total crew) of 10 to 20 percent of gross income is assumed. Based on these assumptions, total net income for skipper and crew would be roughly 47 to 57 percent of gross earnings, or $310 million to $370 million. This range of net harvesting income is equivalent to 8.1 to 9.8 percent of total Alaska income in 1979 as reported by the Department of Labor. Figure 9, below, shows the relationship of this amount to income in other sectors of the Alaskan economy. The figure shows that fish harvesting produces more income than the mining, finance, and manufacturing (split into fish processing and other manufacturing) sectors, and is fifth among all private industries. When fish processing income is combined with harvesting income, the fisheries sector ranks second, after transportation, communications and public utilities.

FIGURE 9

COMPARISON OF INCOME FROM FISHERIES
AND OTHER ALASKA INDUSTRIES---1979
(Millions)



* Finance, Insurance & Real Estate
**Transportation, Communication & Public Utilities

Resident and Non-resident Employment and Income.[13]

A reasonable approximation of the number of fishing jobs held by Alaskans and the amount of fishing income that remains in Alaska can be made by combining information from the Sea Grant survey with information on licenses and permits from the CFEC.

The Alaska Department of Revenue reports that 16,525 (66 percent) of all commercial crew licenses sold in Alaska in 1979 were resident licenses. The 15,683 vessel licenses issued in 1979 by the Commercial Fisheries Entry Commission are not differentiated by residency, but fishery permits offer an approximation of the proportion of vessels operated by Alaskan residents. Data provided by CFEC show that about 81 percent of the total of 17,609 commercial fishing permits were held by Alaskans in 1979. If the ratio of permits per vessel is similar for resident and non-resident owners, these data imply that about 12,700 Alaskan vessels (.81 x 15,683 total vessel licenses) fished at some time during 1979.

Combined figures for vessel and crew indicate that as many as 29,200 Alaskans fished commercially in 1979. This figure is roughly 71 percent of all license and permit holders. If this 71 percent ratio is applied evenly throughout the year, about 20,700 of the 29,000 people employed at the peak of the harvesting season were Alaskans and roughly 5,900 of the 8,281 "full-time equivalent positions" in fish harvesting were held by Alaskans in 1979.

Table 8 on the following page shows the proportion of gross value of salmon caught by Alaskan fishermen in 1979. The Alaskan share ranges from a low of 50 percent in Bristol Bay to a high of 78 percent in Cook Inlet. The average Alaskan share of the total value of salmon fisheries was 59 percent.

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[13] Alaska residency is generally defined for the purposes of fishing licenses and permits as one year of continual dwelling in the state, with no registration to vote or permanent residence in another state.

TABLE 8

DISTRIBUTION OF SELECTED SALMON PERMITS AND GROSS EARNINGS AMONG RESIDENTS AND NON-RESIDENTS[1]

	Number of Permits[2]			Average Income per Vessel[3]			Value of Catch[4] ($000)	Estimated Value of Catch by Alaska Residents[5] ($000)	Estimated Proportion of Catch by Alaska Residents[5]
	Total	Alaska Residents	Non-Residents	Average	Alaska Residents	Non-Residents			
Southeast	1,816	1,245 (69%)	571	$42,622	$37,717	$53,538	$60,382	$36,632	61%
Prince William Sound	816	613 (75%)	203	42,573	41,575	45,565	35,092	25,670	73%
Cook Inlet	1,373	1,146 (83%)	227	25,232	27,717	19,148	20,935	16,306	78%
Kodiak	559	419 (75%)	140	59,438	56,685	67,268	23,048	16,339	71%
Bristol Bay	2,628	1,722 (66%)	906	70,263	61,823	81,452	139,602	69,893	50%
Rest of State[5]	--	--	--	--	--	--	65,307	38,652	59%
Total	7,192	5,145(72%)	2,047	--	--	--	$344,571	$203,492	59%

[1]Permit numbers in this table do not include fisheries in the Arctic-Yukon-Kuskokwim region, hand purse seines, beach seines, or these fisheries: Chignik purse seine, Peninsula/Aleutians purse seine, drift and set gill net, and Yakutat set gill net. The total number of salmon permits held statewide in 1979, including interim use permits, was 10,335, of which 8,135 (79%) were resident and 2,200 (21%) were non-resident.

Sources: [2]Commercial Fisheries Entry Commission 1979 Annual Report, [3]Sea Grant Report 80-5, [4]Department of Fish and Game Catch and Production Statistics, [5]House Research Agency

Revised 2/24/82