

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILES 8672

6.11 SCOMM 5A: AQUACULTURE POLICY STUDY GROUP, 1978-1979

CORRECTION

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Chapter II - SOURCES AND METHODS FOR FINANCING
SALMON AQUACULTURE PROGRAMS

Mandatory Assessments

Prior to discussing some of the other considerations involved with developing a stable financial basis for salmon aquaculture, the most critical financial issue currently pressing on the regional aquaculture associations is the recent Superior Court ruling in Wayne Alex et al., v. Southern Southeast Aquaculture Association et al. in which the court held that Alaska Statute 16.10.530, which establishes the funding mechanism for private aquaculture, is unconstitutional.

In a letter to Governor Hammond, as a result of the court ruling, the State Attorney General identified five "potential legislative alternatives to the now-unconstitutional statutory scheme for your consideration." These are as follows:

1. Regional aquaculture association programs could be funded through direct appropriation. We believe there would be no legal difficulties with this approach.
2. A statewide tax on the sale of salmon could be imposed, with proceeds of the tax deposited in the state's general fund and regional aquaculture association programs funded through annual appropriations in amounts based on the amounts collected in each region. While such a scheme conceivably could be challenged on the basis that it

violates the constitutional prohibition on the dedication of state tax revenues, we believe such a statute could be drawn artfully enough to pass constitutional scrutiny.

3. Regional taxes could be imposed on the sale of salmon to become effective only upon a majority vote of commercial fishermen in each region, proceeds of the tax would be deposited in the State's general fund and the regional association's programs would be funded through annual appropriations in amounts based on the amounts collected in the region. In addition to the dedicated fund problem, such a scheme could be challenged on the ground that it violates equal protection (treating commercial fishermen differently depending upon the region in which they are fishing) and on the ground that it constitutes an unconstitutional delegation of the power to levy a tax. While there are good arguments that such a program does not violate equal protection and does not constitute an unconstitutional delegation of the power to tax, we cannot predict with certainty how the issue would be resolved by the Alaska courts.
4. The program could be restructured to take advantage of the constitutional authorization of "service areas" -- in effect, utility districts. This approach would require agreements between the state and municipalities in each region, but would avoid the dedicated fund problem and (probably) the delegation problem as well.
5. The Fisheries Rehabilitation and Enhancement Division (F.R.E.D.) in the Department of Fish and Game could be restructured and directed to be more responsive to the concerns of the user groups in the various

regions. Under this scheme, the Department of Fish and Game (through F.R.E.D.) would have primary responsibility for implementing any aquaculture program established for any given region. There are no legal obstacles to such an approach to the problem.

The following comments are directed at each of the alternatives suggested.

1. It would be possible to fund the regional associations for a limited period of time through direct appropriations. The use of this approach must be regarded as a short term measure for several reasons. One of the major policies of Alaska state government is to require that programs which benefit primarily a group of resource users shall become, to the extent possible, economically self-sustaining. If the regional aquaculture programs, and the fishermen who benefit from the expanded harvests, are to operate in a manner which is consistent with this policy, some alternative means of financing fisheries development projects must be found. We discuss further the problems related to this option in Chapter III.

2. A statewide mandatory tax on the sale of salmon could be imposed with the proceeds from the tax appropriated to each region in proportion to their contribution to the taxes collected. A major problem with such a course of action is that one of the major fishing areas now operates in a satisfactory manner on voluntary assessments. Others would vigorously oppose the tax. Whether or not such tax

receipts could be dedicated raises serious legal questions. To subject the program to further legal uncertainties at this time should be avoided at all cost.

3. Again, the legal complexities of alternative number three present risks which may not be necessary or appropriate to take.

4. Alternative #4, suggests that regional associations might be restructured into service districts based upon agreements between the state and the boroughs. This alternative seems to find considerable constitutional support and is discussed in detail in Chapter III.

The implementation of special service districts for regional aquaculture has several attractive features. Regional aquaculture, if it is to grow and make a significant contribution to the fishery, requires two characteristics which are not now present in their organizational make-up. The regional associations need a stable source of financing and a stable organizational structure.

The inherent financial structure of private non-profit corporations has several characteristics which severely limit the use of this form of organization for fisheries development. First, because the corporations are non-profit, they have little capability to raise private venture (risk) capital which is vitally needed to meet reasonable production goals. While it is true that the non-profit corporations can borrow substantial sums from government,

unless that government is very knowledgeable about the investment risks, is willing to undergo long periods of initial start-up costs without a pay back, and is very committed to maintaining its support, the non-profit corporations will not have an adequate financial structure upon which they can develop and grow.

Secondly, just as the non-profit corporations have none of the financial strengths of a private sector for-profit corporation, such as the capability to attract risk capital, neither do they have any of the financial strengths of a unit of government such as an assured tax base. They must now depend upon voluntary contributions for their subsistence.

The private non-profits not only suffer from the lack of a stable source of financing, they also suffer from the lack of a stable organizational structure such as those structures found either in the private sector or in government.

For example, members of the boards of directors of private sector corporations often have a major financial interest in seeing the corporation succeed, and offer considerable expertise relevant to the fixing of sound corporate policy. It is difficult for the regional associations to educate their boards while at the same time expecting them to fix sound policy. Moreover, many of the associations are organized on the foundation of an active board. The goals and programs of the associations are ambitious and there

have been frustrations. It may be difficult for enough fishermen to maintain such an active role or interest without adequate remuneration or status.

Neither the financial rewards associated with service on a board of directors of a for-profit corporation, nor the status conferred in an elective public position are currently present in the regional association. Currently, members of the boards of directors of regional aquaculture corporations regard their service on the board as a "civic duty" or because of a personal commitment to the fishery. Few board members expect to see any significant financial return to themselves as a result of the aquaculture program for a long time, if ever. In essence the sense of "civic duty" or sense of personal commitment to the fishery must be strengthened so that increased organizational stability can be achieved for the regional aquaculture associations.

The use of the special service district could provide a means for achieving both a stable financial base and a more stable organizational base than presently exists. For a further discussion of this option, see Chapter III.

5. The fifth alternative means of resolving the loss of the mandatory assessment would be to restructure the F.R.E.D. division of ADF&G into a regional aquaculture program.

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somewhat improved financial base (presumably through state appropriations), the same long-term financial problems that are present in alternative #1 are present in #5. That is to say, if one of the major policies of Alaska state government is for the users of government service to pay their fair share for the service and for programs to become economically self-sufficient, ultimately a fair share of the cost of operating a regionalized F.R.E.D. division will have to be shifted to the user groups. Many of the pros and cons of the state's assumption of an active role in funding the program are addressed in detail in Chapter III.

The F.R.E.D. division will have in operational status by the mid-1980's, hatchery production capacity in excess of 600 million eggs being incubated. At some point in time, it is possible that the significant costs incurred in operating these state salmon production facilities will need to be offset by an adequate income stream (e.g. terminal harvest or user assessments). In essence, selection of alternative #5 would be inconsistent not only with current Alaskan state policy, but would mean ever greater costs to the state in the future for operation and maintenance of facilities, this at a time when state revenues (e.g. oil taxes) may be on the decline.

6. A sixth alternative not suggested by the Attorney General would be an Amendment to the Alaska Constitution expressly providing for such regional economic develop-

ment as aquaculture. The drafters of the Alaska Constitution eliminated the junior taxing districts which "plague" government operations in most of the lower 48 states. They limited the general taxing powers to the state and boroughs and expressly authorized boroughs to set up special service districts to provide for services required in the borough. If the state legislature acting on behalf of the unorganized boroughs and the boroughs acting on behalf of themselves, are unable to create a special service district whose boundaries encompass areas included in both the organized and unorganized boroughs, as suggested in alternative number 4, then it would be impossible to create a regional aquaculture association with boundaries comparable to those which currently exist. If we accept the argument that broad regional areas are a logical geographic feature required by regional aquaculture associations, a constitutional amendment may be required to provide the associations with a taxing authority which encompasses a service district which includes area in both the organized and unorganized boroughs (or perhaps two boroughs).

While the framers of the Alaska Constitution expressly intended to avoid the nuisance of junior taxing districts, it may be time to reassess the wisdom of a policy which entirely eliminates any mechanism for infrastructure development in Alaska except as it might exist in an organized borough or through state appropriations. If special service

districts cannot be created to extend beyond the boundaries of the organized borough, a constitutional amendment could be offered to allow this type of infrastructure development. The difficulties of obtaining necessary constitutional amendments are addressed in Chapter III.

In summary, the loss of the capability to have mandatory assessments by several of the regional aquaculture associations is a severe shock to their already inadequate financial structure. Six alternative methods of making up for the financial loss have been discussed. Two alterations, the creation of special service districts or an amendment to the Alaska Constitution allowing for junior taxing districts or service districts to be created which extend into adjacent boroughs or the unorganized borough, are the most attractive alternatives. Both of these alternatives can be consistent with the goal of ultimate economic self-sufficiency of the program. Secondly, these alternatives provide the opportunity to create a more stable regional aquaculture organization as well as provide a more stable source of financing.

Other Financing Issues

Through a series of legislative acts, beginning in 1971, the Alaska Legislature has established a number of mechanisms for supporting or financing the Salmon Resource Development Program (ASRDP). These are each separately discussed as follows:

1. Creation and State Tax Support of the F.R.E.D. Division of ADF&G (1971).

As indicated earlier, one of the expressed purposes of the F.R.E.D. division is to rehabilitate Alaska salmon runs through enhancement or propagation of hatchery runs. By the mid-1980's the F.R.E.D. division will have a salmon egg rearing capacity in excess of 600 million eggs. Major facilities at Klawock (78 million egg capacity), Hidden Falls (65 million), Main Bay (65 million), Snettisham (73 million) Prince Williams Sound (39 million), Kodiak Island (50 million), Cold Bay (52 million), and Moose Pass (84 million) will become operational within the next few years. The State of Alaska will incur a heavy financial burden during the entire decade of the 1980's as these facilities go through expensive start-up periods and achieve stable production. Current state tax revenues from the fishery as well as revenues which could be derived from a terminal area harvest may not equal operating and maintenance costs, in the aggregate, until very late in the decade. The question which will soon confront the citizens of Alaska and the State Legislature, is, who should ultimately pay the operating costs of these facilities? If the strong, current state policy for economic self-sufficiency is continued, either a higher tax would have to be imposed or a terminal area harvest implemented with the proceeds of either or both used to pay the costs.

While there is inadequate information to develop anything approaching reasonable cost standards for hatchery operations which cover all species, a very rough guide is that the cost of running a hatchery which is in full production, and does not require expensive off-site egg take or equally as expensive off-station plants, should be about equal to the harvest value of 1/3 of the run. (An analysis of current operating costs of existing regional facilities has been partially hampered because of the lack of information. Sufficient financial data was collected, however, to indicate that if such costs as Regional Association Administration, Administrative and Supportive Services, Technical Services and Start-up Costs which have been previously defined were only allocated to hatchery operations as would be appropriate, the cost of hatchery operations would be roughly 1/3 of the value of the run in Southeast Alaska. Because operating costs in Central and Western Alaska are as high or higher than those in the Southeast and because the ex-vessel prices paid to fishermen in these regions are much lower than those paid in Southeast, this ratio will not hold for hatcheries in Central and Western Alaska. However, if the changing patterns currently occurring in the marketing of salmon continue, regional price variations should diminish over the next few years and then this rough guide could also apply to these areas.)

If a tax of 33% (which would be the dollar equivalent of harvesting 1/3 of the run to pay hatchery operating costs) were imposed on state hatchery returns, it is unlikely that fishermen would choose to harvest hatchery runs if other choices were available. Given this likely circumstance, the most probable method of recovering the costs of F.R.E.D. division hatchery operations (and for the regional associations) will be through a terminal area harvest. If the choice is made to finance hatchery operations through such a mechanism, there would be little to distinguish between a state operated facility and those operated by regional associations (as long as they are reasonably successful producers).

It is also important to recognize that the F.R.E.D. division's responsibilities extend substantially beyond those of the regional associations, but to the extent that there is an overlap in duties with those of the regional associations as they pertain to the operation of facilities in full production suggests that consideration must be given to shifting the financial and management burden of operating these facilities from the state tax base to a user pay, regional association basis. (Other criteria besides financing must be considered including the managerial and technical capability of the regional associations to manage such facilities.)

The shifting of the cost of managing and operating state salmon production facilities to the regional associations should not be construed to mean that the State of Alaska should lessen its commitment of state financial resources to development of the fisheries. These state financial resources should be commensurately shifted to the far more pressing needs for a comprehensive fisheries research and development program and harvest management systems improvements. Additionally, there may be hatchery facilities, stream clearance and habitat improvement projects, and the like, which can or should occur for a variety of reasons, but which cannot be undertaken by the associations on an economic basis.

2. State Loans to Regional Aquaculture Associations.

Current legislation provides for 25 year loans to regional aquaculture associations of up to 3 million dollars per facility, with a maximum interest rate of 9 1/2%, with deferred payments for six years.

There are several problems with this legislation. First, the 3 million dollar loan ceiling can be artificially restrictive on the choice and size of the facility. Secondly, while returns on pink salmon may be achieved within the six year deferred payment period on the loan, there is little likelihood that this period will be adequate for other species. Difficulties in obtaining sufficient brood stock, initial production and similar problems can and should be expected. A ten year maximum deferment period would seem to

be much more realistic. Additional provisions should provide for an additional time extension of five years (with an approval procedure specified) as well as an early payment clause, should stable production be achieved earlier than the ten year period.

If a ten year deferment period were established, the loan repayment period should be set for a maximum of twenty years after the deferment period, otherwise the capital recovery period will be so compressed it will require an excessive terminal area harvest during the capital recovery period.

Finally, the loan should be for capital investment costs and should not include start-up costs. As will be discussed more fully later on, start-up costs should be expensed against the current period. This will help avoid the need for excessive terminal area harvests during the capital recovery period as well as avoid unnecessary interest expense associated with capitalizing these costs.

3. The Existing Assessment Program (if Re-enacted) Does Not Provide Sufficient Revenues to Pay Administrative Costs, Regional Technical Expertise and Hatchery Start-up and Operating Costs for More Than One Large Facility at a Time.

This financial issue has been partially addressed in a variety of legislative enactments. These include:

(a) The provision of organizational and planning grants to qualified associations of up to \$100,000 with a second \$100,000 to be matched on a 50/50 basis.

(b) The provision of an appropriation in the State FY 1980 budget to the F.R.E.D. division for allocation to the regional associations in the amount of \$400,000 for regional planning activities.

(c) The passage of Senate Bill 232 which provides that 20% of the revenues realized from the measure are to be allocated to the boroughs for local salmon enhancement and related projects; 60% of the revenues are allocated to the state general fund; the remaining 20% of the revenues are to be allocated to the Commercial Fishing and Agriculture Bank which in turn can be loaned or used as a loan guarantee for regional aquaculture projects.

(d) The establishment of the Renewable Resources Corporation of Alaska and Development Fund into which not less than 5% of the receipts of certain revenues will be deposited to be used to enhance and develop renewable resource programs.

The creation and state financing of the F.R.E.D. division, the creation and revision of loans to private non-profit regional aquaculture corporations, as well as these additional acts by the Alaska Legislature evince a continuing interest and struggle to find an acceptable solution to re-establishing the salmon fishery and developing other renewable resources.

While it is also understandable how these various legislative actions have evolved over a number of years, it

is equally clear that the pieces do not fit as well together as necessary. If, however, the variety of programs were to be restructured along the lines described, we believe adequate financial resources could be available to substantially accomplish a Salmon Resource Development Program (or as recommended in the organizational analysis in this report a Fisheries Resource Development Program).

Establish Regional Entities Responsible for Fisheries Development

Through either the creation of special service districts or appropriate constitutional amendment it would be possible to provide regional structures which have the capability to make mandatory salmon harvest assessments. Voluntary assessments could be continued in those areas where they are selected as the financing means.

Establish Regional Aquaculture Program Source and Applications of Funds Model

As our earlier analysis indicated, there are six distinct cost categories for activities associated with regional aquaculture. These are:

- Regional Association Administration
- Administrative and Supporting Services
- Technical Services
- Full Production Hatchery Operations

Hatchery and Enhancement Start-up Costs
Capital Investment Program

The costs associated with administering the regional association could be funded from the regional assessment or a like funding mechanism. Administrative and Supporting Services, while a budget category, would be allocated to the other categories (i.e. Regional Association Administration, Technical Services, etc.).

Technical Services could be financed through a redirection of the proceeds from Senate Bill 232. The cost of full production hatcheries would be borne by remaining funds from the regional assessment, and through the operation of terminal area harvests.

Hatchery and Enhancement Start-up Costs could be financed through the redirected funds from Senate Bill 232 and any assessment royalty not required for Full Production Hatchery Operations or the Capital Investment Program. The payment of capital and interest costs would be financed from a combination of remaining assessments and terminal area harvests.

Finally, and to the extent that local fisheries development priorities indicate the need, non-revenue producing projects such as stream rehabilitation for natural runs could be financed with a combination of assessment revenues and Senate Bill 232 funds together with any federal and state funds that may be received for such a project. (This

procedure avoids the necessity of having terminal area harvests on natural runs as a means of recovering the cost of non-revenue producing projects.) Regional associations could perform such projects on a contract basis on behalf of the state.

This proposed Source and Application of Funds Model accomplishes several objectives. First, it can be used as a means for guaranteeing to the state that repayment of state loans will be accorded a preferred position for assessment and terminal area harvest revenues equal to that of paying the costs associated with Full Production Hatchery Operations.

Secondly, the redirection of Senate Bill 232 funds to the regional associations provides a continuing stable revenue base for financing Technical Services and Hatchery and Enhancement Start-up Costs which are highly interrelated activities. The inclusion of start-up costs, to be funded from this source would also eliminate the present practice of capitalizing start-up costs within the present loan program. If the present loan program were modified to include only capital facilities, loan decisions could be more easily made because it would be unnecessary to make speculative or arbitrary determinations about whether the regional associations were properly spending their other income as a part of the loan approval process. The determination of the adequacy, over-abundance or inadequacy of other

income, as well as judgments about how wisely these resources are utilized should be the responsibility of the local borough assembly and the legislature.

According to financial information supplied by the Southern Southeast and Northern Southeast Regional Aquaculture Associations, for calendar years 1978 and 1979, the annual average operating expenditures (excluding capital investments) would have amounted to approximately 1.0 million dollars in these two regions had the assessment revenue been fully realized.

Under the proposed plan, had it been in effect in 1978, and based upon a 3% assessment rate, assessment revenues would have been approximately 1.7 million dollars. In addition, had Senate Bill 232 been in effect in 1978, it could have provided (depending on the percentage of revenue redirected) an additional 2.0 million dollars. Both sources together would have provided almost four times the amount which would have been expended. Had these funds been available, the two Southeast regional associations could have begun developing the necessary capital reserves required to pay future facility start-up costs; conducted the necessary stream surveys; performed stock enumerations and similar activities; and proceeded to develop the fishery in a comprehensive and organized manner through an integrated system of production and financial planning.

Establish Regional Long Range Production and Financial Plan

A third key element to the development of an economically and financially sound regional aquaculture program is the establishment of a production and financial management system consistent with the proposed organizational structure and financing mechanisms.

Once the regional associations have an assured and reasonably adequate revenue base, they should begin the development of a ten-year and perhaps a longer range Production and Financial Plan. (The ten year plan is the minimum necessary to cover the deferred payment period prior to reaching full production and capital repayment.) The implementation of a long range Production and Financial Plan by each regional aquaculture association is critically necessary if these associations are to approach the development of the salmon fishery in a comprehensive manner. Currently, because of the limited financial resources available to them, regional associations have tended to limit their production planning activities to a few projects. Current financial planning practices, because of financial uncertainties, tend to be very much oriented toward short term considerations.

If the organizational structure and the financing mechanism recommended in this report are implemented, it must be accompanied by a major change in the current "hand to mouth" type of planning now dictated by the fiscal constraints. For example, because of the substantial streams

of stable revenues which this report would direct at the regional associations, each regional association must begin to develop a comprehensive list of production alternatives. Enough information about each production alternative must be obtained to provide the capability to evaluate each project using the recommended return on investment model. Once a list of economically attractive projects is developed, the regional association will have to develop a time phased production plan which optimizes the use of the revenues flowing to the association. The corresponding financial plan, which will include a ten year annual forecast of revenues by source (i.e. assessment revenue, Senate Bill 232 revenue) should identify for each category of cost included in the recommended Source and Applications of Funds Model, the estimated level of activity which can be supported by each revenue stream. Because of the long duration between the initial start-up of a facility and the time when the facility reaches full production status, the regional associations will have to very carefully consider and plan for the costs to be incurred during this period so as to avoid over-committing available revenues and having a facility completed without the funds with which to operate it. As recommended in the Source and Applications of Funds Model, Technical Services, Hatchery and Enhancement Start-up costs and non-revenue producing projects could all be financed from the same source of funds, namely the redirected proceeds from

Senate Bill 232. If a regional association were to expend all of its annual revenues from this source on Technical Services and/or non-revenue producing projects and not create a substantial capital reserve to be used for projects during their start-up phase, the association would substantially limit its capability to place more than a few projects in start-up status. (Capital reserves are also necessary as a hedge against periods of low harvest levels.)

While it will require some experience developing the financial trade-offs between current expenditures for Technical Services and non-revenue producing projects with building capital reserves for future facility start-up costs or times of low returns, this type of activity will lead to an optimized and integrated production and financial plan.

Relative Balance Between Operating and Capital Funds

It is difficult to ascertain at this point whether the availability of capital investment funds to the regional associations are in balance with their need for operating and start-up funds. Given the state commitment to a 200 million dollar loan program for aquaculture, the availability of loans through the Renewable Resources Corporation and the Fisheries and Agriculture Bank, capital funds may be available in excess of those required. If there is an imbalance between capital and operating funds, and the operating funds

are found to be inadequate, it may be desirable to merge the Renewable Resources Corporation Development Fund with the Fisheries and Agriculture Bank and redirect the 20% portion of Senate Bill 232 proceeds from the Fisheries and Agriculture Bank to the regional associations to be used for Technical Services and Hatchery and Enhancement Start-up costs.

The diversion of Senate Bill 232 revenues to regional aquaculture plus the assessment income should provide for a substantially greater build-up of necessary capital reserves to be expended during future periods when the regional associations have a number of facilities in the start-up phase of operations as well as provide a more satisfactory means of financing some short term non-revenue producing projects.

Chapter III - INSTITUTIONAL PROBLEMS AND POTENTIAL REFORMS

Introduction

In Chapters I and II we have discussed methodologies for evaluating the economic viability of certain types of resource enhancement activities which are a critical element of Alaska's salmon fisheries resource development program, and several means for assuring the financial stability for such a program. We recognize that the Alaska salmon resource development program (ASRDP) is a relatively new endeavor. Its major elements, the private non-profit hatchery program (PNP) and the division of Fisheries Rehabilitation, Enhancement and Development (F.R.E.D.) within the Alaska Department of Fish and Game, are each less than 10 years old. ASRDP has come a long way in a short period of time toward achieving a basic goal of expanding the available harvest of salmon for Alaska's fishermen. We also recognize that the program's potential has not been reached and positive program results can be expanded if present financial, legal and institutional barriers are overcome.

In this discussion, we will be addressing problems with ASRDP and means of achieving program improvements. The natural tendency of consultant studies to concentrate on program deficiencies is not intended. We believe that the managers of regional associations and the Alaska Department

of Fish and Game have many successes to point to in their implementation of this ambitious and important program.

While achieving stable financing for economically sound ASRDP programs is essential to meet established statutory and program goals, our analysis indicates that revisions to the institutional arrangement of Alaska's fisheries development program are required if the goals enunciated in statutes and regulations by the state, and in program goals and statements of regional associations are to be met. The detailed institutional review contained in Appendix II to this report indicates that there are a large number of programs, each of which can and does affect ASRDP, which are not centrally coordinated. The wide variety of government agencies and private activities impacting on ASRDP presents a critical need for greater horizontal coordination and cooperation among such programs, greater coordination with federal and local agencies, and increased cooperation between the private and public sectors. This discussion concentrates on some of the potential institutional reforms which could be implemented to positively impact those programs with primary responsibility for achievement of fisheries resource development goals and objectives for Alaska. We do not suggest all of the detailed reforms relating to improved coordination among regulatory agencies, financing agencies, construction entities, and other programs affecting ASRDP should be the responsibility of the Aquaculture Policy Study Group. The study group should, however, focus

their attention on necessary reforms in those agencies having primary responsibility affecting fisheries resource development.

We have identified a number of federal institutions and programs which have significant impact on overall fisheries development in the United States. Many of these programs impact on Alaska fisheries development, and it has been suggested to the study group that, to date, the State of Alaska may not have received its "fair share" of benefits from federal programs impacting on Alaskan fisheries. We offer the observation that there are many federal agencies which enjoy special working relationships within Alaska who provide positive support to ASRDP. Noteworthy is the U.S. Forest Service, which has established cooperative agreements with the Alaska Department of Fish and Game, and informal arrangements with many of the regional associations to maximize the effectiveness and impact of its programs on the important Alaska salmon fisheries resource.

We briefly identify in outline form other federal institutions affecting ASRDP (Appendix III). We will discuss means of improving relationships between key federal and state agencies affecting ASRDP.

Finally, perhaps the most critical element to the success of an Alaska fisheries development program is the commitment of the legislative and executive branches. A major reason why this study has been conducted is the concern

shared among persons within executive and legislative branches that the salmon fisheries development program is not producing satisfactory results as measured against the original goals of primary programs. This concern was reflected in the most recent legislatively approved budget for the F.R.E.D. division and for regional associations. The members of the study group were well aware in formulating this study that the key programs in ASRDP could be the subject of ever greater scrutiny in the future, particularly in the face of projected tight budgets and declining revenues.

Among the general program recommendations which have evolved from our analysis of existing institutions and policies are the following:

1. There is a need for increased cooperation and coordination among major program elements of ASRDP;
2. ASRDP should be expanded or altered to include consolidation and coordination of programs affecting the development of species other than salmon, i.e., establishment of an Alaska Fisheries Resource Development Program (AFRDP);
3. There is a need for improved and expanded research, data and information affecting AFRDP;
4. Region-specific planning, programs and institutional arrangements which will maximize the benefits of the program consistent with area needs should be established;
5. There is a need to identify the appropriate level of activity for individual program elements within

AFRDP; this should be done on a continuing basis and not merely through established budget processes;

6. Improved relationships with federal, local and private sector programs affecting or having potential impact on AFRDP is necessary;

7. There is a need to develop institutional reforms which ensure greater financial stability for existing and new programs; and

8. There is a need to develop an information base sufficient to evaluate program successes and failures in the future.

(Note: Because of the present financial difficulties of the regional association program, the consulting team was directed when the study was nearing completion to spend more time evaluating institutional arrangements which could affect the future of the regional association program. We suggest that further, more detailed analysis by the study group of financial and institutional alternatives affecting the regional association program will be required prior to the 1980 legislative session.

Identification of Primary Programs to be Included in Alaska Fisheries Development Program (AFRDP)

In the series of meetings with the Aquaculture Policy Study Group the consulting team sought to identify those programs primarily involved in fisheries development

activities at the state level. As indicated in Appendix II, there are a number of other programs which have an impact on fisheries development activities in Alaska, but the study group has designated the following programs and activities as includable in the primary program category:

- A. Alaska Department of Fish and Game.
 - 1. Fisheries Rehabilitation, Enhancement and Development Division (F.R.E.D.);
 - 2. Commercial Fisheries Division;
 - 3. Sport Fisheries Division;
 - 4. Shellfish Program.
- B. Private Nonprofit Hatchery Program/Regional Associations.
- C. Office of the Governor/Bottomfish Coordinator.
- D. Department of Commerce and Economic Development (Division of Business Loans).
- E. Department of Transportation (construction of facilities).
- F. Alaska Commercial Fisheries Entry Commission.
- G. Department of Community and Regional Affairs.

Because the initial focus of this project was to be on the salmon fisheries development program, major concentration on reforms affecting programs involved in this arena resulted. This is consistent with the goals, makeup and interests of the study group. However, we strongly believe that the salmon development program and its major elements cannot be planned or managed independent from other fisheries and that in the future it becomes critically important to

integrate the salmon development program with those for shellfish and bottomfish.

Statement of Project Findings and Needs

A. There is a Need for Increased Cooperation and Coordination Among Major Program Elements of AFRDP.

1. General Statement of Problems and Needs.

The detailed program outlines included in Appendix II indicate a need for greater horizontal coordination among a wide variety of programs and agencies in Alaska which impact on the successful operation of AFRDP. There is a need for clear direction as to the relative roles and responsibilities of each such entity: (a) as they relate to the overall goal of fisheries development; (b) as they relate to interrelationships of such programs in achieving established goals for the total fisheries development program; and, (c) as necessary to ensure that such programs and activities are not operating at cross purposes from one another. Increased coordination can be provided through the Office of the Governor or the State Legislature. Some lead agency could be assigned this responsibility by the Governor or the Legislature.

Following are a number of specific issues which must be addressed to increase cooperation and coordination among major program elements of AFRDP. These include improved relationships among:

- (a) ADF&G Commercial Fish, Sport Fish and F.R.E.D. divisions.
- (b) ADF&G and regional associations.
- (c) ADF&G, DCED and regional associations.
- (d) All Regional Associations.
- (e) ADF&G salmon and shellfish program elements, regional associations, and the Office of the Governor/Bottomfish Coordinator.

Increased coordination and cooperation are necessary for a variety of reasons. In some instances, improved relationships among these entities is absolutely essential to the future success of ASRDP. For instance, policies adopted by ADF&G regarding egg take and brood stock could effectively eliminate any prospect of success for individual hatchery programs or other activities undertaken by the regional associations.

In some instances, existing laws infer that coordination of activities among AFRDP entities is required or should occur. However, we suggest that there are situations where this legislative mandate is not strong enough. For example, legislation establishing the fisheries enhancement loan program, A.S. 16.10.500 et seq., provides authority in the Department of Commerce and Economic Development (DCED) to make loans and grants to regional associations for fisheries enhancement. There is no provision in the statute requiring or defining the necessary relationship between DCED and ADF&G regarding any aspect of the program.

This absence of a statutorily established coordination requirement could be resolved through legislative action.

In certain cases, relationships among program activities have not even been addressed by the legislature or the executive branch. For example, the newly established activities within the Office of the Governor relating to bottomfish development have evolved to date without identification of potential and necessary relationships between that office and fisheries development activities by ADF&G and the regional associations. If the legislature considers expanding the authority of regional associations to include other species, coordination with development activities of the Bottomfish Coordinator will be required.

Finally, there are situations where the legislature may wrongfully presume that coordination and cooperation among such entities is established and routinely occurring. One such instance involves the relationships among divisions within ADF&G. Testimony during study group meetings and a number of previous studies have indicated that the relationships among the F.R.E.D. division and the Commercial and Sport Fish divisions are less than fully cooperative. While considerable effort in recent years has been made to establish coordinated goals and objectives for these

programs, it does not appear that such activities have produced a result wherein each is working in as coordinated a fashion as possible toward a common fisheries resource development goal.

2. Need for Improved Relationships Between ADF&G Commercial Fish, Sport Fish and F.R.E.D. Divisions.

There are a number of indications that despite considerable efforts in recent years to establish policies and practices which will effect improved relationships between the state's resource development program and management activities of the commercial and sport fish divisions, there remain areas of conflict between these divisions. As hatcheries come on line, the need for coordination and communication among such divisions will become all the more important. Management to maximize harvest and protect viable natural runs is all the more complex with the interjection of hatchery runs.

Relationships between harvest and hatchery managers are affected by statutes and policies protecting natural runs. A.S. 16.10.420(10) provides:

A hatchery (shall) be located in an area where a reasonable segregation from natural stocks occurs, but when feasible, in an area where returning hatchery fish will pass through traditional salmon fisheries.

The existing policy of the Alaska Department of Fish and Game (see Alaska Fishery Management Policy Manual, Policy #1, (1974)) provides as follows:

The management of naturally occurring wild stocks will not be unduly hampered by locating the hatchery at the proposed site If complexities arise in managing mixed stocks, including both hatchery fish and wild fish, it will be the state's policy to manage the collective resource in a manner that favors protection of the wild stocks. (Emphasis added.)

As indicated at page 25 of the proposed Policy and Procedures, even "minor runs of salmon" must be given first priority consideration when a massive supplementally produced salmon run is imposed in fishing areas where wild fish are harvested. ADF&G acknowledges that this policy may lead to larger than required returns to the production sites. Over-protection of certain weak natural stocks at the expense of harvest of productive hatchery runs seems inconsistent with goals of the PNP hatchery program.

The department states that "long-term and continuing analysis will be conducted to assess benefits and disbenefits resulting from the fish cultural activity prior to any decision to sacrifice or overharvest wild stocks." (C.F. AK. Fish. management policy #7, page 4). The issue of protection of natural runs in areas where hatchery stocks have been introduced (e.g., Washington) is one of great controversy. This is in part because of failure of fisheries managers to address the potential problem prior to the evolution of major hatchery programs. At this time, the

State of Washington is struggling with the definition of "viable natural run" at a time when as much as half of the state-wide production of salmon is through artificial propagation. This has occurred in part because of the lack of imposed relationships and some conflict between harvest managers and hatchery managers at the outset of the resource development program. Alaska should make every effort to avoid repeating this experience.

A review of Washington's 1979 proposed salmon management plan is illustrative of a major change in approach to harvest-hatchery management patterns. The plan suggests harvest of certain natural runs prior to full production from planned facilities in the same area. In some instances, this "writing off" of natural runs is occurring before construction of a facility has even started. We do not begin to suggest this policy for Alaska. However, it does indicate the potential significant changes that may evolve in terms of harvest management practices as the hatchery program evolves.

The present policy regarding natural runs can also impact on the necessary development of brood stocks and egg takes for existing and planned hatcheries. At page 26f of the draft Policy and Procedures, ADF&G proposes the following:

It is recognized that an objective of salmon fisheries harvest management is the attainment of an appropriate magnitude and distribution of brood stock to drainages in all management

units. It is not always possible through management of mixed stock fisheries to ensure the appropriate escapement to a specific stream or stream segment, but generally, desired escapement ranges can be obtained over larger geographical units. Hatchery brood stock goals, as an additional part of the desired escapement [sic]. Where possible, brood stock development plans will include harvest management procedures or recommendations which will enhance the potential for achieving hatchery brood stock requirements without significantly reducing harvest from other stocks. Where restrictions on mixed stock fisheries to create additional donor escapements are requested, Board of Fisheries approval will be required, unless the Commissioner determines that no substantial impacts on established fisheries would occur.

The proposed brood stock policy of ADF&G further states that hatchery egg take schedules will be formulated to realistically provide for brood stock while "minimizing impact on natural recruitment."

This policy may present problems even now as the demand for eggs and brood stock for hatcheries coming on line is immediate (particularly during bad run years). A policy of "long-term and continuing analysis" prior to any decision to sacrifice or overharvest wild stocks not only impacts on the ultimate harvest of hatchery stocks by Alaska fishermen, it also may affect the front-end potential and timing of ultimate production by state and regional association hatcheries. Definition of "viable natural runs" is not a matter which should be deferred any longer than

necessary. Legislative direction regarding alteration of harvest management and brood stock policies may be necessary to resolve this problem.

A second problem reflected in the draft Policy and Procedures is the lack of guidance regarding the interface between the resource development and management divisions within ADF&G as they might affect regional association resource development activities. Appropriate alteration to the above policies will require joint research stream surveys, site selection and planning by these divisions and the associations. The regional comprehensive planning process should be instituted in a fashion which more directly requires effective interface between harvest management and resource development programs. Representation of each activity on regional planning teams is suggested by ADF&G Policies and Procedures; inter-divisional cooperation can be further achieved by assuring development of harvest management plans in concert with hatchery planning activities (which can positively improve relationships with regional associations as well).

At page 26a of ADF&G's proposed Policy and Procedures, it is stated: "There is a need to clarify the relationships between the management of hatchery returns and the issuance of a private nonprofit hatchery permit." ADF&G proposes development of a basic harvest management plan before a private nonprofit hatchery permit is issued or approved by

the commissioner and the Board of Fisheries. The basic plan would be developed by department area biologists in consultation with the applicant. The regional planning team would review the plan as part of the application review process to determine the proposed hatchery's compatibility with finalized or preliminary "comprehensive regional plans" required under A.S. 16.10.375. Ultimately, the basic harvest management plan would be part of the "regional comprehensive plan". Why should harvest management plans be formulated separately and in a different manner than other elements of a comprehensive plan? Are basic harvest management plans merely to be developed on a project-by-project basis and then incorporated into regional plans?

We believe that the comprehensive regional planning process must be upgraded to develop a multi-species harvest plan for the region which will allow hatchery locations to maximize harvest. This will require much new data as to existing and planned runs by species. Establishment of a comprehensive harvesting plan as part of the regional salmon plan is not to suggest that regional associations should in any way be involved in actual management of salmon stocks (i.e. delegation of regulatory authority). It is to suggest that policies which in any way segregate harvest and hatchery management and planning activities should be changed to ensure fuller coordination.

3. Need for Improved Relationships Between Regional Associations and ADF&G.

We have indicated that past relationships between regional associations and ADF&G have been less than cooperative, and improvements are still necessary. Lack of cooperation and coordination among these entities can jeopardize the future success of all programs.

Regional association managers have stated that in many cases they have had difficulties with ADF&G regarding methods selected to enhance the resource. They have had problems in obtaining state approval to take brood stock and eggs for existing facilities and proposed new facilities and the quality of relations during the evolution of the regional planning activity has varied. These factors indicate little evidence of clear commitment by ADF&G officials to assure on a priority basis the successful evolution of the regional association program or vice versa.

A.S. 16.10.375 provides that the Commissioner of ADF&G shall have developed regional plans for salmon enhancement. The plans are to be developed by regional planning teams consisting of ADF&G personnel and representatives of qualified regional associations. Ultimately, a state-wide plan is to be developed. Regional plans have been developed in some regions and not in others pursuant to this statute. Some are more comprehensive than others. No state-wide plan has been completed.

Legislative recognition of the need for comprehensive regional planning with input by regional user groups is a most progressive policy. In fact, this fisheries development planning effort appears more sophisticated than those existing in other states. However, the legislature needs to address means of upgrading this process to achieve express goals and effect improved relations between ADF&G and the associations.

First, at present, regional plan approval is the exclusive prerogative of the Commissioner of ADF&G. This level of control has been the subject of some criticism. Association representatives and others have indicated that while their voices are exercised through this process, whether they are heard or not is by no means assured. We believe that ultimate management authority should reside at the professional management or state agency level. However, it may be that the level and quality of association input into the planning process will better reflect the legislative policy of regional input if a dispute resolution mechanism, or at least a discussion process, were developed to satisfactorily air differences of opinion with regard to adopted plans.

Second, we question whether comprehensive planning in the various regions should be allowed to run at a pace which depends exclusively on the commitment of local users to establishment of regional associations and approval by ADF&G of same. To date, the basic thrust of the planning

process has been that regional plans themselves can be as simple or complex as those individuals involved choose to make them. Likewise, the amount of time, effort and money which is spent in developing comprehensive plans varies by region. Differentiation between short-term planning necessary to start a reasonable number of development projects and long-range planning must occur.

If there is truly a need for comprehensive planning with user participation on a regional basis, and we think there is, tying the level and quality of planning to the progress a particular region makes in organizing regional associations makes no sense. In fact, a decision whether a regional association is a necessary entity in a particular region may well depend in part on the findings of a comprehensive planning activity. The voluntary aspects of the hatchery development program are appropriate; however, comprehensive resource development plans for a region are necessary regardless of the election to establish regional associations. While this point is moot in certain regions from an organizational standpoint, it is not in others. Moreover, if the legislature expands regional association activities to include projects relating to other species, short and long-range planning to define new goals and programs will be necessary. Finally, we suggest throughout this report means of upgrading the planning process. This contemplates a long-range planning effort, with commitment to

development of necessary data and information. Recent efforts to speed the development of regional plans based on this year's appropriation to existing associations is inconsistent with this proposal (see below).

Third, relationships between ADF&G and the regional associations are affected by the quality and content of comprehensive salmon resource development plans. As the regional associations improve their management and technical skills, and this is occurring, they will be frustrated by present limits in the quality of planning.

We believe establishment of a truly effective comprehensive salmon resource development plan will necessitate substantial technical support services, research, stream surveys, tagging and other activities by or on behalf of the planning teams. This is particularly true if the management plan is to include those elements suggested as necessary below. It should be noted that the planning process cannot be carried out without adequate financing, region-by-region, in budgets of both ADF&G and the regional associations.

The quality of regional plans is also affected by present state policies protecting all natural runs. The proposed Policy and Procedures by ADF&G establish long-range and short-term objectives to be included in the regional comprehensive plan. Present policies may not apply over the long-term, and long-range planning which does not reflect likely changes in such policies will not be adequate. This

further states the need to address the issue and to begin to identify viable runs now.

ADF&G defines the focus of long-range comprehensive planning to include determination of public needs by species and user groups, proposal of numerical objectives by species to meet these needs, determination of numerical goals for natural stock maintenance and rehabilitation, determination of numerical goals for enhancement strategies by species, and integration of long-term user group needs with technical considerations on the biological potential of the resource. Short-term objectives involve essentially the same analysis for incremental time periods within the long-range (17 year) plan. We do not believe these objectives for comprehensive resource development plans, particularly for the long-term, are sufficient. While the establishment of numerical objectives may make some sense, it is the road map to establishment and achievement of those numerical objectives which should be the basic content of the comprehensive salmon resource development plans for each region and for the state.

Establishment of a comprehensive management plan might include at least the following basic elements:

1. Establish guidelines for salmon production.
2. Identify program objectives (it appears that this is the primary area of concentration presently contemplated for the regional planning process).
3. Describe and assess present natural production.

4. Determine and assess present artificial production.
5. Determine potential natural production.
6. Identify viable stocks and nonviable stocks that have potentially valuable characteristics.
7. Determine appropriate regional stocks by species.
8. Identify acceptable enhancement possibilities. These must be consistent with harvest management strategies.

Further consideration must be made for short-term and long-term policies for egg availability and development of brood stock. These policies must reflect the goals of maintaining reasonable fisheries and protecting viable natural runs during program implementation. All proposed projects in a region must be measured against the goals, policies or standards which will result from this analysis. This may require establishment of a construction and operating review process to ensure program activities consistent with approved plans.

Another major aspect affecting relations between ADF&G and regional associations involves the duplicity of roles to be assumed by the department. On the one hand, ADF&G is to help organize and help maintain viable regional associations. A.S. 16.10.380 provides that the Commissioner of ADF&G shall assist in and encourage the formation of qualified regional associations for the purpose of enhancing salmon production. On the other hand, the legislature has

also authorized the Commissioner to issue permits for salmon hatcheries to regional associations organized as non-profit corporations under A.S. 10.20 and regulate many operational aspects of the program. Thus, not only is the Commissioner the superseding authority over all regional planning activities as discussed above, he is also directed to assist regional associations and at the same time regulate all efforts pertaining to enhancement of salmon by the association-private non-profit corporation. Achievement of cooperation and assistance between ADF&G and the regional associations will be difficult, at best, given the nature and diversity of relationships presently existing. It will take strong management direction by both the state and the associations to recognize and deal with these sometimes conflicting roles. Establishment of clear biological, economic and management standards against which performance can be measured, and upgrading of the planning process may help offset the fact of these conflicting roles.

A.S. 16.10.443 states that the department shall make every effort "within the limits of time and resources" to advise and assist applicants in the planning, construction and operation of salmon hatcheries. The level and quality of assistance by the department to regional associations has varied from region to region and is affected by personalities and budget. Most association managers have indicated that relationships with local ADF&G officials at the technical

staff level have been quite positive and they have received considerable assistance from such persons. However, they have received less cooperation and support from the central office as a general rule. Procedures to clearly delineate reporting relationships and for expediting decision making on issues of concern to the associations need to be improved. Establishment of policies and procedures involving interrelationships between ADF&G and the associations should be developed with the cooperation of the associations. Moreover, top level management control and commitment to the success of both regional association and F.R.E.D. programs is essential. Association managers must have clear access to the director of the F.R.E.D. division, the commissioner and board members.

A third major issue and necessary element to improve on relationships between ADF&G and the regional associations involves clarification of the activities to be undertaken by both. We have suggested in Chapter II the evolution of defined roles and responsibilities over a ten year period. Of course, it is difficult at this point to finally determine the types of projects and programs which should be undertaken by regional associations other than planning until their financial viability and organizational stability is secured. However, assuming that problems relating to financing can be resolved on a satisfactory basis, clear definition of roles and responsibilities of ADF&G and the associations for both short-term and long-term

operations is essential. Specific program activities to be undertaken by ADF&G and regional associations in a particular region can and should be addressed, in part, in the development of comprehensive regional plans. However, guidance from the legislature as to the division of responsibilities is also appropriate. The study group and/or the Fisheries Council should be continued to assist the legislature and the Governor in continuing to define these roles.

To date, regional associations have built hatcheries and other artificial propagation projects, performed habitat rehabilitation, conducted (region-specific) research, they have created greater public awareness of the need for salmon resource development, participated in regional planning activities, and institutionalized themselves to varying degrees. At the same time, ADF&G has built hatcheries and other artificial propagation projects, performed habitat rehabilitation, conducted research, created greater public awareness of the need for salmon resource development, and participate in regional planning. Again, ADF&G exercises considerable regulatory authority over regional association projects and programs and controls the regional planning process. Based on present mandates, there is considerable potential for duplication of activities between the regional associations and ADF&G, and unhealthy competition between these entities for limited dollars and projects. The potential for the operation of certain programs at cross purposes from

one another, and perpetuation of adversary relationships are equally serious problems resulting from the lack of clear guidelines, priorities and authorities for each program.

The legislature can direct a phasing-in of operational authorities (or segregation of same) over a reasonable period of time, with final program assignments reflecting the relative maturity, skills, interests and financial capacity of each. Regional associations could, over time, become responsible for operation of production facilities operating at full or near full capacity consistent with approved comprehensive plans. This would reflect the legislature's goal of continuing to attract reasonable sums of private monies, to maintain user group participation in ASRDP, and would avoid long-term commitment of budget for operation and maintenance of hatcheries at a time of projected declining revenues. Projects of higher risk and supportive of the production program, but presenting costs or risks which would not naturally be borne by the private sector, would in large part be undertaken by ADF&G. For example, research operations and facilities would also be ADF&G's responsibility. Stream surveys might be the responsibility of the state, but conducted by associations on a contract basis. Joint participation in planning for production facilities and support services, including clear assignment of tasks can occur as institutions mature and obtain the financial commitments consistent with evolving assignments

which will further contribute to an improved and coordinated program.

Another element critical to the joint success of ADF&G and regional association programs, discussed in Chapter II, is assurance over time that financial resources will be sufficient to support a program which will begin to achieve established numerical production goals as part of an upgraded comprehensive regional plan. At present, it appears that the regional associations and ADF&G are strictly limited by statute and available financial resources as to the number and types of production projects they may undertake, regardless of the final outcome of the assessment litigation. Review of proposed long-range association plans reflects a fairly conservative approach to expansion of existing programs. While this may make sense under present circumstances, we suggest that Alaska will not begin to reach appropriate production goals in a reasonable period of time if it is unwilling to assume greater risk and undertake projects more aggressively than indicated by its present course. Improved planning, research and data, and coordination of program activities are steps that will minimize risk over time. The legislature and the Governor must recognize, however, that legitimate expansion of AFRDP consistent with its established goals will require approval of actions and management decisions that involve some yet unanswered questions. ADF&G and the associations cannot achieve reasonable production goals within the present financial, budget and statutory limits.

4. Need for Improved Relationships Between or Alteration of Roles of ADF&G and DCED.

A.S. 16.10.500 et seq. provides authority for a fisheries enhancement loan program. The Commissioner of the Department of Commerce and Economic Development (DCED) is authorized to make loans to qualified regional associations holding permits pursuant to A.S. 16.10.400-470 for the planning, construction, and operation of hatchery facilities. Thus, the financing of regional association activities largely within the authority of DCED. We have indicated above an apparent lack of an appropriate cooperative relationship between ADF&G and DCED by statute. The proposed Policy and Procedures by ADF&G, on page 60, recognizes that coordination between ADF&G and DCED is necessary for orderly review and approval of permit applications and loan applications.

DCED operates a number of financial assistance programs and conducts other activities related to the economic development policies of the State of Alaska. It is perhaps for this reason that the financing program for the regional association hatchery program was assigned to that agency.

The financial viability of proposed artificial propagation is directly related to a number of biological factors and harvest management strategies, among other things. These criteria involved in the evaluation of individual projects, or a broad-based regional program, require

consideration of a number of factors which require the expertise of persons familiar with the science of fisheries production. Further the bulk of analysis related to the financing of regional association projects, not to mention those to be undertaken by ADF&G, involves scientific information not traditionally considered by lending officers.

It is (or should be) clearly recognized that there are technical risks inherent in aquaculture programs which dictate training and experience not common to persons with traditional financial backgrounds.

Given the choice of continuing the aquaculture loan program within DCED, and establishing biological expertise within that department, we believe a more practical option would be to provide ADF&G with the capability to perform the loan function. With this accomplished, transfer of authority for financing of fisheries enhancement facilities from DCED to ADF&G would reduce the need to depend upon interagency relationships to ensure that program and loan approval are coordinated.

5. Need for Improved Relationships Among All Regional Associations.

Regional associations are at varying levels of maturation, and in some instances, have not been formed to the point of approval by the Commissioner of ADF&G. We have

observed in recent meetings with the study group a growing inclination for association managers to discuss among themselves various problems and potential solutions. Communication as to research and planning results, means of operation of facilities, and other activities is occurring. However, members of the study group and others have reported and our own observations have indicated the need for improved relations among the associations. Some of the improvement is necessary because of differences in personalities, and in other cases a misguided spirit of competition among the associations appears to exist.

There is good reason for allowing associations to establish resource development programs at their own respective paces within each region, although in some instances the pace of program and project development has unnecessarily been slowed because of regulatory problems, obtaining necessary approvals, and the like. The experiences of the more mature organizations will be most helpful to those in the beginning stages of development. Much research, data and information has been performed and compiled by some regional associations. The sharing of such information should occur as a matter of course, and it may be necessary to establish a system among the associations to ensure that this occurs. This could be mandated by the state legislature.

It is critical for each association to understand what the others are doing. The potential for duplication of

tasks unnecessarily among the associations exists without a clearly established system of communications. It is suggested that the study group or perhaps an upgraded Fisheries Council be continued into the future, perhaps with a specific mission to ensure continued communication and improved relationships among association representatives (and state agencies).

6. Need for Improved Relationships Among Salmon, Shellfish and Bottomfish Development Program Elements.

We have suggested that the development of Alaska's abundant fisheries resources be viewed and organized as a single program (AFRDP). Competition for research, management, development and investment dollars among program elements at federal, state and local government levels and from the private sector is presently unavoidable among salmon, shellfish and species development activities. This competition among species has been heightened by new opportunities available as a result of enactment of the Fisheries Conservation and Management Act (FCMA).

Assuming the goal for development and utilization of fisheries resources off the shores of Alaska is to maximize potential benefits to the citizens of the state consistent with principles of sound conservation and enhancement, establishment of programs and activities to achieve that goal based upon treating each fishery independent of one another and on a haphazard basis makes no sense. Certainly salmon, shellfish and bottomfish species are at varying

stages in terms of development, utilization, management sophistication, market potential and value, industrial development, and understanding of resource status and potential. All such factors will be reflected in the ultimate budget commitment and programs of the state to affect reasonable maintenance, development and utilization of these renewable resources. However, the organizational and professional disciplines to be applied to proper utilization of all species of fish are relatively the same. The fixing of sound state policies, budgets and management principles for each fishery with maximum avoidance of conflicts, and the sharing of information, expertise and program experiences to maximize effectiveness of each is essential.

In the development of its "Alaska Fisheries Plan," ADF&G acknowledged that salmon stocks can and need to be rehabilitated. Numerical objectives were established by ADF&G to provide minimum annual harvests of 40 million salmon at the end of seven years and 100 million salmon at the end of eighteen years. These goals would be achieved through a combination of enhancement, rehabilitation, management, development research and habitat protection at a cost of 300 million dollars over fifteen years according to the proposed plan. ADF&G acknowledged that implementation of the plan would "require a major effort on the part of fishermen, industry and government alike . . ."

The level and quality of government and private sector planning, management and development activities for shellfish and bottomfish lag far behind those for salmon. The maturity of programs and dedication of state resources to maintenance and proper utilization of these important species differ as well, largely because the legal and economic opportunities affecting the harvesting and production of each has varied.

The study group is well aware that salmon harvests may no longer predominate fisheries development activities because of these newly available opportunities and the economic reality of need for diversified harvesting activities by fishermen formerly able to target primarily on salmon. There has been much talk, and considerable study, planning, and now, pilot projects related to necessary economic development activities to maximize benefits to Alaskans of utilization of offshore fisheries. Most representatives of the industry, fishermen, processors, bankers, public officials and other participants at regional and national conferences on 200-mile limit fisheries (despite differing findings from a variety of consultant reports), indicate that by necessity this new industry will not develop separate and apart from existing fisheries and industry. This reality further establishes the need for a holistic fisheries development and utilization policy and program.

As noted above, responsibility for development activities relating to these fisheries presently resides in a number of different agencies and offices. The need for program activities and budget for each have not been addressed in the context of a single program or policy; priorities affecting each have not been established nor have relationships or coordination among them been imposed. We have been directed by the study group to assess on a preliminary basis alternative means of converting ASRDP programs to the broader program context of AFRDP. Our review is not only to include potential organizational arrangements affecting state activities, but also alteration of the missions and structure of regional associations. To this latter point we will now briefly speak.

It is our view that an altered regional association form which allows such associations to become involved in diversified activities necessary to the development of all fish resources consistent with local priorities and needs is appropriate. This suggested diversity and expansion of authority may seem odd at a time when the financial arrangements for a number of the regional associations are severely restricted. However, certain features of the existing program are most applicable to development needs and opportunities in other fisheries. These include:

1. There is a clear need for involvement of fishermen and other sectors of the industry

in the protection, utilization and development decisions affecting all fisheries.

2. There is a need for fishermen and other sectors of the industry to participate in the financing of all fisheries development activities (the legislature's recent re-enactment of A.S. 43.75, which taxes all species harvested in Alaska waters to finance fisheries development indicates support for this rationale).
3. There are varying needs and interests by region with regard to fisheries development. For example, salmon fisheries development may be a priority to fishermen in Southeast Alaska, while projects related to bottomfish development may be more relevant in the Aleutian Chain.
4. The more flexible the regional association structure is in terms of meeting clear regional needs and reacting to priority development activities, the greater the likelihood of financial and institutional stability.
5. A feature of the regional associations is their clear mandate and need as an organization to be responsive to the variety of interests among local fishermen. We believe that over time, a balanced approach to fisheries produc-

tion will evolve as a result of this program, and that this will occur on a multi-species basis if the mandate and membership of such associations is broadened to include development of and planning for other fisheries.

6. The need for a holistic fisheries approach, if appropriate for state programs, is also necessary for regional associations. This is especially true if the role of user groups in regional fisheries planning (regional planning teams) is to be upgraded.
7. Regional fisheries planning can and should address potential gear and harvest arrangements on a multi-species basis.

Certain other features will need to be built into the regional fisheries development program as a result of the recent Superior Court decision and the need for a secure income and financing stream. If the program assumes more of a local quasi-governmental character than at present (e.g., borough or municipal fisheries development service areas), assumption of a more diverse economic development program may be appropriate. The legislature should address whether newly instituted associations could finance, construct and operate needed infrastructure, marina space, processor facilities (for lease) and other activities much as do port facilities, economic development districts or other local

governmental entities. However, care must also be taken to preserve certain of the private sector features of the present associations in deciding what activities they might undertake.

Assuming that the appropriate institutional arrangements for regional associations necessary to expand their basic authority can be made, necessary relationships will need to be established between such associations and the existing Office of the Governor/Bottomfish Coordinator. Governor Hammond has created a bottomfish task force, whose membership includes state legislators, agency commissioners, and private sector representatives, to define specific goals for the state and to design a work plan for industry development relating to the state's bottomfish development opportunity. In a draft report by the bottomfish program coordinator, dated May, 1979, a program management and organization structure which would have all bottomfish program elements operate at the direction of the bottomfish coordinator, with advice from the bottomfish task force, was proposed. This program proposal suggests that the Department of Commerce and Economic Development would pinpoint areas of industrial weakness and offer strategies and guidelines to strengthen the economic incentive for harvesting bottomfish. The Department would also provide loans to the industry through state loan programs, the Commercial Fishing and Agriculture Bank, and the Alaska Industrial Development

Authority. ADF&G would monitor the biological characteristics of the bottomfish resource to provide information for managing the resources for optimum sustainable yield and to assess harvest potential. ADF&G would sample commercial harvest efforts and identify areas of potential conflict between bottomfish fisheries and those of traditional salmon and shellfish fisheries. The Department of Community and Regional Affairs would draw up strategies to assist local communities in alleviating specific local physical and social-economic impediments to development.

While relationships with other fisheries development activities at federal, state and local levels are suggested by the Bottomfish Coordinator's report, establishment of a holistic fisheries development program is not. The proposed program plan to achieve bottomfish development goals and objectives is an impressive start toward the establishment of specific program activities to achieve the state's bottomfish resource utilization goals. However, only limited program budget monies are committed to the resource management aspects of the proposed program. Resource development and enhancement is only vaguely referred to and the relationship between salmon and shellfish fisheries development programs and that for bottomfish is not seriously addressed. The concept of top-level management control over all elements of the Alaskan fishery with provision for coordination among agencies and programs is essential to the success of AFRDP.

B. There is a Need for Improved Information, Data and Research Results for AFRDP.

1. Introduction.

We have discussed the clear need for improved data and information regarding fisheries development activities from economic, financial and biological perspectives, by both state agencies and regional associations, if financing for expansion of the fisheries resources of the state is ever to be secure. Lack of information and proof of success of existing programs has affected budget reductions and instability which makes short and long-range planning very difficult.

We have also described the likely prospect of competition for dollars among salmon, shellfish and bottomfish development program activities, and have suggested that lack of a holistic view of the fishery and an understanding of its needs will make it difficult for the Governor and the legislature to make proper budget decisions. Not only is a methodology for assessing potential returns on investment and relative program costs and benefits necessary, provision of technical data and information upon which to base such assessments will be required.

Finally, we have referred to the need for greater coordination and expansion of research activities related to AFRDP. This section will describe certain non-financial data and information needs for both ADF&G and regional

associations as well as the expanded research and development requirements associated with development goals for the Alaska fisheries. This section will also describe alternative institutional arrangements which are necessary to meet the goal of improved information, data and research.

2. Need for Improved and Expanded Research for AFRDP.

While there is a major need for improvement of data and information for budget purposes, increased biological information regarding existing and proposed projects and to accomplish the objectives of AFRDP also are necessary. A first step in improving Alaska's research program is establishment of categories of research which will afford biologists a common basis to fix research priorities and goals.

For salmon, we would place federal, state and private sector research into three categories. The first category would include evaluation of the potential for maintaining and enhancing artificial and wild salmon. The second would include development of improved techniques to increase the numbers and quality of artificially propagated salmon. A third category would involve assessment of environmental factors causing variations in the abundance of anadromous species. A further description follows:

Category 1: Evaluation of Potential for Maintaining and Enhancing Artificial and Wild Salmon.

Evaluation should extend to existing wild and artificially produced populations as well as proposed new

production because of the need to monitor the Alaska salmon production system as a whole. Priorities and areas of investigation will need to be continuously re-assessed as information is gathered.

The following specific areas are suggested for priority investigation:

(a) Evaluate the economics of enhancement - benefits versus cost or return on investment to improve knowledge about the economics of fisheries.

(b) Determine population levels and behaviors of wild and artificially produced stocks, and population interactions for the purpose of reducing negative impacts. This would include determination of catch distribution and migratory routes for mixed stock fisheries.

(c) Assess environmental limits for productive capacity of wild and artificially produced stocks.

(d) Determine and solve disease problems as they relate to stocking policies.

(e) Identify valuable stocks, including measures of isolation or inbreeding, and examine opportunities for new introductions both in nature and artificial facilities.

Category 2: Improved Techniques to Increase the Numbers and Quality of Artificially Propagated Salmon.

Research should be aimed at improving the cost effectiveness of artificial propagation systems through

modification of existing technology or the development of new culture techniques, including increased survival of artificially propagated salmon. It follows that newly developed techniques must ultimately be shown to contribute significantly to the fishery under carefully controlled pilot-scale rearing and/or release experiments. Examples of recommended research are given under the five following headings:

1. Physiology: Development of physiological, biochemical, and endocrinological measures to assess the effect of the rearing environment on smolt quality. Development of smoltification indices as a tool to predict optimum time for release and techniques to enforce, advance, or delay smoltification.
2. Genetics: Development of brood stock management and breeding regimes to identify and enhance those characteristics of salmon that produce the greatest benefit to the fisheries. Develop strain of disease-resistant, fast-growing, early-maturing salmon. Test the application of various brood stock techniques and breeding regimes to particular artificial propagation strategies.
3. Disease: Development of new methods for diagnosis and prevention of hatchery diseases.
4. Nutrition: Development of cost-effective feeds using new or under-utilized nutrient sources.

5. Behavior: Development of a technology to control migratory and homing patterns in appropriate circumstances.

Category 3: Environmental Considerations.

Enhancement, which is defined as all means of increasing production--both natural and artificial--of anadromous salmon, not only is dependent upon the successful rearing of the animal, but also the ability of the animal to survive in its total environment. Information is required to assess the effect of habitat alterations on the fish. Emphasis should be given to delineating environmental factors, good and bad, causing variation in the abundance of anadromous species.

1. Habitat Maintenance.

Studies to be directed toward improving existing habitat, including in-stream flow and temperature requirements and barrier passage.

2. Evaluation of the Animal and its Habitat.

To assess environmental changes, it is necessary to measure the response of the animal to such changes.

Establishment of these research categories suggests the need for a long-range research program in Alaska to improve salmon resource development activities for natural and artificially produced salmon from the point of egg take or implantation (including improved incubation methods) to

the emerge stage, to survival through the full migratory pattern of the fish. Research related to the stages of a salmon's survival and growth should be undertaken on a cooperative basis with the federal government, University of Alaska, and others with research capabilities consistent with the jurisdictional interests of each. For example, assessment of the salmon in the ocean environment, which is within the jurisdiction of the federal government should be a priority of the National Marine Fisheries Service. It appears that research relating to environmental concerns are now a priority of the U.S. Fish and Wildlife Service, and to a lesser degree the U.S. Forest Service. Research relating to hatchery operations and performance and that relating to the natural environment in fresh waters, including certain research relating to environmental considerations, would appropriately be the priority of the state. Discussions with study group members indicate that this division among federal and state research activities is evolving on an informal basis.

Biological standards for construction and operation of hatcheries and other artificial propagation projects need to be established as part of the comprehensive planning process. ADF&G has done some work in this area. However, the adoption of final standards will require further research and analysis on the impact of such projects on existing natural runs; the viability of projects in the face of

competing beneficial uses of watersheds, and a wide variety of other critical biological issues will also require additional research before final standards can be established.

The establishment of guidelines to evaluate potential areas for the construction and operation of hatcheries and other projects, and evaluation of performance of such projects will necessarily require improved data and information regarding stock identification (i.e. tagging, scale studies and various other marking methods), and stock assessment through improved means of counting salmon in various stages of the life cycle. Such data and information will be necessary in order to make improved management decisions, including those related to the development program.

For bottomfish, the draft report to the bottomfish program coordinator of May, 1979, describes a role for ADF&G in the development of fisheries management plans for off-shore fisheries. While the management authority over such resources largely resides within the North Pacific Fisheries Management Council, ADF&G is recommended as the state entity responsible for overseeing the activities of the Council and recommending sound management practices to the protection of bottomfish resources. Data and information research activities relating to both shellfish and bottomfish lag behind that available and presently being conducted for salmon. Included among those proposed activities to be undertaken by ADF&G for bottomfish which relate to the above research, data and information goal, are the following:

1. Coordinate research activities and cooperate in the design of needed projects with other research agencies.
2. Sample commercial harvests for biological, effort and technical data in a manner and volume which is statistically significant.
3. Assess resource independently of the commercial harvest (survey, tagging) and analyze data collected.
4. Collect and distribute to the public relevant biological and technical information generated by resource agencies, including ADF&G.
5. Identify areas of conflict between the bottom-fish fishery and present historical fisheries and recommend measures to resolve these conflicts in a manner resulting in optimum yield from these interacting fisheries.

Discussions with a number of persons in the industry, federal and state policymakers, and others, indicate that the single most important effort to be undertaken by government in the next few years to ensure the appropriate development of off-shore fisheries is related to the research and data goal. The concern has been expressed that investments in some fisheries may be lost because so-called under-utilized species may already be on the decline as a result of over-harvesting by foreign fleets. Mistakes of the past regarding

other species which allowed overharvesting without consideration of resource impact should not be repeated. The potential to enhance presently depressed species needs to be evaluated. The role of the state in protecting resources off its shores cannot be minimized. If new industry or benefits are to accrue to Alaska by development of off-shore fisheries, there is a legitimate state interest in doing that which is necessary to protect these resources. The state can best accomplish this by preparing to be an effective advocate before and assistant to the federal resource manager.

While research relating to shellfish management and development is in a more advanced stage than for most bottomfish species, this may not be true on a world-wide basis. Accessing foreign data and information developed with regard to off-shore fisheries may begin to offset some of the information gaps.

The proposed research, data and information program to be undertaken by ADF&G pursuant to the report of the bottomfish coordinator is an ambitious one. Priorities will need to be established between this and other fisheries research and information development programs. Clearly, ADF&G will need adequate funding if it is to begin to accomplish the suggested goals.

2. There is a Need to Coordinate Research and Development and Information Systems Among Federal and State Agencies and Regional Associations.

We have sought to identify certain research cate-

gories and information needs which over time must be met in order to maximize the productivity of AFRDP. Another factor necessary to the accomplishment of this goal is improved coordination among federal, state and private sector research activities. Avoidance of unnecessary competition for dollars among state agencies and duplication of activities among all research entities, as well as the establishment of priorities for research consistent with guidelines and criteria, can and should be accomplished with or without legislative action. However, a legislative mandate for improved research coordination may be required.

Perhaps the single most important means for ensuring greater coordination of research would be the establishment of a comprehensive joint research facility in Alaska. As has been previously discussed, Alaska may not be receiving its fair share of fisheries research benefits when compared to other states. Particularly in view of the fact that it produces as much as eighty percent of the nation's bottomfish resources, is the largest producer of salmon, and is a major source for shellfish. In Washington, a joint research facility is being funded in large part by the federal government and is to include state, tribal and university research facilities as well. Justification for the joint facility included the obvious need for improved research coordination, increased information and greater likelihood of joint projects, an expanded skill base for research as a result of centraliza-

tion of research staffs in a single facility, and the avoidance of unnecessary duplication. Such a facility may be more appropriate for Alaska and is necessary to attract quality research staffs, appropriate levels of funding for state-federal projects, and to respond to the major research requirements evolving from development of new off-shore fisheries. Such a facility could be jointly funded by the federal and state governments.

A second major step at improving coordination among research entities is to clarify research responsibilities among programs within AFRDP itself. As previously indicated, a major thrust of an improved AFRDP will require clearer definition of the roles and responsibilities of state agencies and regional associations. It has been suggested that a long-term policy could be established to specifically provide that research activities by or in behalf of the state be the responsibility of ADF&G. Were this accomplished, assurances must be provided that regional association needs will be met, possibly by legislative mandate. Establishment of a comprehensive regional plan for salmon fisheries development and other species can and should include fixing research priorities for the region. Of course, continuous upgrading of the comprehensive plan based on experience and information developed over time will be required.

A third means of improving coordination among research activities may be found in action already undertaken

by the legislature. The Science and Technology Act of 1978 established a statutory framework for the creation of the Alaska Council on Science and Technology (ACST), a comprehensive planning mechanism to guide important research activities in support of state objectives and to ensure the efficient transfer of resulting data and information. This act reflects legislative recognition of the importance of the role of science and technology in public policy and decision making.

The Council's activities are to include:

1. Objective evaluation of the need for specific research;
2. Set priorities for state research requirements;
3. Identify and evaluate immediate and future options available to solve a particular problem or implement an idea; and
4. Coordinate data and information exchange among research organizations to avoid unnecessary and costly duplication of effort.

The Council's authority is not limited to fisheries research activities. Additionally, its involvement in evaluating and coordinating priorities for research by the private sector, the federal government, and others, appears somewhat limited.

We believe ACST can provide an appropriate model for ensuring coordination and fixing of appropriate research priorities for fisheries in Alaska. It might be possible to

establish a sub-committee to ACST to deal specifically with fisheries research activities. (Note: That Council membership includes representatives with fisheries-related research backgrounds from the University of Alaska, the U.S. Department of Commerce and ADF&G.)

An alternative approach might be establishment through legislation or executive order of a fisheries research council or work group, to perform many of the fisheries related tasks of ACST. A council would be responsible for establishing cooperative agreements with federal research agencies and private research laboratories; reviewing and incorporating research priorities established by regional associations through proposed regional planning processes; and, working with the state legislature in the development of budget proposals to fund an improved and expanded research program. The committee could also oversee the funding, design and construction of a joint research facility. Membership on the committee might include representatives from the U.S. Forest Service, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the Bureau of Indian Affairs, ADF&G, the Legislative Affairs Agency, the Alaska Department of Transportation, the Office of the Bottomfish Coordinator, and representation from the Regional Associations and Native Corporations, among others.

A fourth means for improving research is the establishment of cooperative agreements between federal and

state agencies to ensure research consistent with the needs and priorities of AFRDP. ADF&G has in effect a cooperative agreement with U.S. Forest Service, although this agreement does not significantly address research coordination as discussed above. There is considerable interest and precedent at the federal level in providing for coordination with state activities through interagency agreement.

The legislature can mandate that the regional associations and the state negotiate cooperative agreements with all appropriate federal agencies. These agreements should not necessarily be limited to fisheries agencies or affect the research function alone. Research conducted by environmental agencies, industrial development agencies, economic planning programs, and others will occur and coordination is appropriate if AFRDP is to achieve its lofty goals.

A fifth important means of upgrading the research and information development elements of AFRDP is establishment of a uniform reporting and accounting system for each association. State agencies (DCED and ADF&G) and legislators have to date been relatively critical of the level and quality of information available to them regarding internal activities of the associations. While an annual report by the regional associations is required, a more sophisticated budget and accounting system by which the legislature can evaluate individual regional programs and ADF&G projects will be

helpful. Economic data and financial information consistent with the methodology described in Chapter I should be required.

In analyzing economic and biological projections, as well as total program results over the long-term, it will be necessary for regional associations and ADF&G to work from much common data. This is necessary to compare the effectiveness and efficiency of different programs and approaches to resource development undertaken by the associations and federal and state agencies. Any improved system must be simple and yet report out information necessary not only to evaluate the programs, but also to reduce and minimize administrative burdens and costs to the associations. Obviously, the regional associations must participate in any program effort at information and data system development. The state-wide comprehensive planning process might be an appropriate vehicle for accomplishing this.

C. There is a Need to Improve Relationships With and Expand the Contribution of Federal, Local and Private Sector Programs Affecting or Having Potential Impact on AFRDP.

1. Introduction.

We have identified in outline form a number of federal fisheries programs which have direct and indirect impact on achievement of the goals of AFRDP (see Appendix III for outline presented to the study group), and have discussed the need for federal and state research coordination. Improved relationships with local governments have been

discussed during the last two years because of the enactment of the FCMA. A number of commentators have indicated the need for local governments to develop infrastructure, processing capabilities, and other necessary support services to the growing bottomfish industry if Alaska is to maximize the benefits to be obtained from this important resource. We have suggested that local government involvement in the development of all fisheries resources is growing in importance as a result of the recent decision by the Superior Court affecting the authority of regional associations to raise revenues for salmon production and the reenactment of A.S. 43.75 relating to fisheries taxes on all species harvested in Alaska waters or off its coast. The law provides for sharing a proportion of such revenue with local governments after the end of fiscal year 1980. This will necessitate greater interaction between state program elements of AFRDP and local governments. Finally, the considerable efforts of the state through regional planning processes and the regional association program to increase the input and stake of various elements of the fishing industry in AFRDP have been identified.

Alteration of the regional association institutional form to better assure financial and organizational stability, upgrading of the association's role in regional planning, and expansion of the ASRDP program concept to AFRDP provide the means for increasing private sector and local government

involvement in AFRDP. This section will concentrate on the need for improvement of federal and state relations.

2. There is a Need to Build a Case for a More Equitable Federal Contribution to AFRDP.

Although it was impossible to obtain detailed budget statements regarding commitment of federal dollars to programs and activities relating to AFRDP, we would suggest that a number of factors indicate that Alaska may not be obtaining a fair share of federal research monies commensurate both with its resource availability and potential when compared with other states. While the overall federal presence in Alaska is perhaps greater than in any other state, competition for limited dollars is again a fact of life among the states when it comes to monies which would contribute positively to accomplishment of the goals of AFRDP. There are a number of possible reasons for the less than appropriate federal expenditures relating to Alaska's fisheries. Alaska's Congressional delegation is small, and in recent years has been forced to concentrate the bulk of its efforts to the D₂ lands issue.

Secondly, Alaska is not perceived as conveniently located by most persons in the lower forty-eight states. Federal regional offices and major district offices for the Western region are located in large part in

Seattle and Portland. Fisheries policy is generally made in these offices or in Washington D.C. Most of the major regional and local fisheries research facilities are located outside the State of Alaska. These and other factors may have tended to reduce Alaska's input into federal decision making and budget allocations.

An expanded federal contribution to AFRDP is clearly justified. First, the federal presence in Alaska is greater than in any other state in the union. Second, considerable degradation of fisheries resources in Alaska occurred during years in which the federal government was responsible for management of the resource (before statehood). Third, a major proportion of the nation's fisheries resources are off the shores of Alaska. Fourth, with enactment of legislation affecting native claims to fisheries, and the trust responsibility of the United States over such claims, the need for expansion of fisheries resources to meet subsistence and other needs of Alaska natives will be heightened in coming years. Finally, the State of Alaska is among the most economically dependent of any of the states on its fisheries.

Research needs related to Alaska's unique fisheries problems (e.g., weather, methods of stream classification to be applied to the large number of Alaska streams, migration patterns, etc.), dictate establishment of research priorities to achieve the goals of AFRDP. An articulation of these

needs will help Alaska better justify expanded federal and state expenditures. Coordination of research activities with federal agencies through cooperative facilities and agreements will be a further important step towards justifying increased contributions to meet the goals of AFRDP.

3. There is a Need for Greater Federal-State Regulatory Coordination.

We have identified a number of federal requirements and regulations which can (and do) significantly increase costs and reduce the productivity for AFRDP. The regional associations have experienced the need to obtain an excessive number of permits from federal agencies merely to begin their operations. These requirements are also imposed on ADF&G. Regulations affecting the development of the bottom-fish industry are perhaps even more difficult because of the broad jurisdictional authority of the federal government over coastal zones outside three miles. While many and perhaps all of the permit requirements are justified, the process for obtaining necessary approvals can be greatly simplified. The first step should be a concerted effort by the state to consolidate its permit requirements, eliminate duplication, and provide services which may include a one-stop licensing process for AFRDP activities.

Alaska has already enacted legislation for a one-stop licensing program, and this program could serve as a vehicle to minimize regulatory impacts on AFRDP. The state

program could reasonably be applied specifically to fisheries resource development projects on a priority basis. A necessary next step would be the expansion of this program to include federal regulatory activities. AFRDP activities, including the development of salmon hatcheries, other enhancement projects, infrastructure development, and necessary support services for a growing bottomfish industry, could also provide an appropriate model means for bringing about coordinated and consolidated non-fishery related federal and state regulatory processes.

Because Alaska has not yet developed its coastal zone management program to the point of full implementation, and because coastal zone management is viewed by the federal government as a potential vehicle to achieve rational development through simplified processes, monies are available to incorporate measures of regulatory reform and coordination into this process. As part of a special AFRDP program effort (perhaps to be undertaken by the study group or Fisheries Council at the direction of the legislature), policies, processes and initiatives which will ensure improved coordination by federal and state regulatory activities should be developed.

It is noteworthy that most existing fisheries statutes, not to mention upland regulatory activities, specifically authorize coordination, and in some cases, the federal government has appropriated funds for the establish-

ment of such processes through programs other than coastal zone management. Yet, implementation of model programs for specific interest areas (e.g., fisheries development) are in effect only on a limited basis to date. Impetus towards development of off-shore fisheries can be utilized as a further rationale for incorporating a model permitting project for AFRDP, which could be funded in large part by the federal government.

4. There is a Need to Identify Federal Programs Which May Contribute to Accomplishment of the Goals of AFRDP.

Most states have difficulty identifying on a continuing basis the many federal programs which may be utilized to contribute to accomplishment of broad state policies. The State of Alaska can and should make special efforts to identify federal activities and funding sources, not to mention those in the private sector, which can be utilized to contribute to the accomplishment of the goals for AFRDP.

A major argument against seeking federal financing for fisheries development programs is a legitimate concern over the "strings attached" to such funds. Given the level of federal presence in Alaska, this concern is clearly justified. Thus, in the framing of an overall Alaska fisheries resource development program, attention must be paid to the true cost of federal funding. It is suggested that loss of resource management authority or local government

planning control over development activities is hardly worth the sacrifice for additional federal dollars.

The legislature can mandate identification of information and data needs for effective intergovernmental advocacy and relations, coordination with the federal government as discussed above, and a continuous monitoring of federal programs to ensure maximum support for AFRDP. Because working with the federal government can involve considerable time and effort, any monitoring and fund seeking activity should be measured by the legislature, over time, on a cost-benefit basis. Building the expertise in working with the federal government is a necessary element of this program.

5. There is a Need to Evaluate AFRDP Program Goals in Relation to the President's Recently Announced National Policy on Fisheries.

In May, President Carter announced a national fisheries policy aimed essentially at increased utilization by Americans of fisheries resources off the shores of the United States. The attractiveness of the development of off-shore fisheries has led to what can be termed a reversal of existing federal policies relating to fisheries activities. As indicated in prior study group meetings, the U.S. Office of Management and Budget has indicated in the past no special treatment of fisheries related programs is justified and all such programs must be considered as in competition with

other resource and economic development projects. While this reversal in policy indicates greater federal interest in fisheries development, the study group must understand that the impetus for the change in policy is not salmon fisheries development.

We are aware of considerable national interest in the proper development of Alaska's fisheries consistent with this new policy. While the state is taking a number of actions to take advantage of the national policy, this is not a coordinated or priority activity at this time. We suggest that a major state effort be undertaken to upgrade AFRDP and effective presentations of state oriented proposals to federal policymakers are essential to achieving a more appropriate federal contribution to the state program.

Alternative Institutional Arrangements for Consideration
by the Study Group and the Alaska State Legislature

A. Introduction.

We have discussed a number of potential reforms to AFRDP which we believe are necessary to accomplishment of the broad fisheries development goals and objectives established by the state legislature and the executive branch for expansion and utilization of all the state's fisheries resources to the maximum benefit of its citizens. We have directed attention to the need for sound economic evaluation of AFRDP projects and programs prior to and during the course of

CORRECTION

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