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to answer the most critical questions in a timely manner. A standing scientific advisory board would also help to ensure that when urgently needed actions are taken, they are designed so that their effects and effectiveness can be properly assessed. The board's reports should be public.

AN APPROACH TO SOLVING THE SALMON PROBLEM

The salmon problem took many years to develop, and its solution will require the commitment of considerable time, money, and effort. The committee's analyses of the problems and potential solutions lead to the conclusion that there is no "magic bullet." Therefore, like the problem itself, solutions will be complex and often hard to agree on; to be successful, they will need to be based on scientific information, including information provided by social and economic sciences. In addition, to be successful, consensus will be needed about the size of the investments to be made in solving the problem and how the costs should be allocated. This means that solutions will have to be regionally based, just as the salmon problem has regional variations (see Chapter 13).

The committee recommends the following general approach. *For each major watershed or river basin*, the following should be assessed.

- All causes of salmon mortality, including their estimated magnitude and the uncertainties associated with the estimates. Factors known to decrease natural production should also be listed.
- Ways of reducing those sources of mortality or compensating for them, their probable effectiveness, and their drawbacks.
- The probable costs of each method of reducing mortality. To be most useful, the estimates should include both market and nonmarket costs. To the degree possible, it is important to identify what societal groups would bear the major portion of the costs of each method and significant uncertainties in the estimates. (For example, reductions in catch rates would primarily affect fishers and tourists; changes in water use could affect agricultural interests or ratepayers; changes in riparian management could affect forest-products industries or private landowners.)

All the estimates would include substantial uncertainties, due both to lack of knowledge and to fundamental environmental, socioeconomic, and biological uncertainties. Nonetheless, such a process of assessment and evaluation is essential for rational decision making. They will provide a basis for evaluating options—for weighing benefits and costs—and for identifying areas where research is critical. *All the recommendations in this report should be viewed in this context: they need to be considered on a regional basis (i.e., major watersheds) and in a comprehensive framework that includes an analysis of their costs, probable effectiveness, and the ability and willingness of various sectors to bear the costs.*

This will be challenging for several reasons. First, in many cases, the desired information has not been collated or does not exist. Second, considerable time and resources will be needed to perform such analyses even for one watershed. But the most important reason

is that estimates of costs and how they might be distributed will require intimate knowledge of each watershed and of people's preferences and habits. These essential estimates should be made with input from the people involved. The committee believes this approach will lead to improved effectiveness and—if not reduced costs—at least increased cost-effectiveness and reduced controversy.

THE FUTURE

The best approach to establishing a sustainable future for salmon in the Pacific Northwest is to use currently available information to develop workable, comprehensive programs rather than reacting to crises. This report has analyzed many parts of the salmon problem and assessed many options for intervention. However, if current trends continue, the Pacific Northwest will continue to see the effects of more people, more resource consumption, changing economic demands and technologies, and changing societal values. Because the success of programs to improve the long-term prospects for salmon in the Pacific Northwest will depend on the societal and environmental contexts, it is important to develop ways for improving our ability to identify changing contexts and to respond to them. As long as human populations and economic activities continue to increase, so will the challenge of successfully solving the salmon problem.

FINAL REPORT

COOK INLET FISHERIES MANAGEMENT STRATEGY

Submitted to the

ALASKA DEPARTMENT OF FISH AND GAME

by

THE MEDIATION INSTITUTE OF ALASKA
217 Second Street, Suite 204
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Cook Inlet Fisheries Management Strategy

CIFMS Science Committee Final Report and
Minutes of October 16, 1995, as amended by review of the committee

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I. Introduction

A.. Statement of Purpose

The Science Committee is a fact finding body for the mediation process known as the Cook Inlet Fisheries Management Strategy. The Science Committee is formed to identify data gaps which may inhibit conservation of Cook Inlet salmon, and to further support the mediation process by addressing the ability of available information to permit implementation of proposed allocation regulations, and to identify data gaps that make a proposed allocation regulation untenable. The Science Committee is expected to identify, define, integrate, and synthesize relevant information. The Science Committee is charged to remain free of advocacy, proposal of allocation actions, and debate of allocation options, other than in a scientific context.

APPENDIX V

Specifically, the function of the CIFMS Science Committee is to develop a list of data gaps which are either relevant to conservation of the salmon resources, or which may foreclose options for managing all types of the harvest of the resource. The list of data gaps is to be placed in order of priority to the extent possible. As the mediation process develops, the Committee is likely to be asked to address the kinds of information necessary to implement specific management options, as well as the feasibility of acquiring of such information. A further task is to identify relevant bibliographic sources and data bases for the final report of the Committee.

The basic ground rules for the committee are; 1) Committee work is limited to scientific issues, including harvest management, habitat and land use: individuals contribute professional expertise without regard to institutional affiliation, 2) Comments made within the committee process are not for attribution; contributors remain anonymous in the work of the Committee, 3) Members take the floor when recognized by the convener; everyone gets to speak in the order recognized.

B. Networking information from the committee

1. Other current committees working on comprehensive plans or reports of relevance, committee contact in parentheses.

- Economic study of marginal impacts of salmon allocation, U. Alaska Anchorage, Institute for Social and Economic Research (Richardson)
- Exxon Valdez Oil Spill Trustee Council Research (Mundy, Fried)
- Kenai Peninsula Borough Kenai River Working Group (Mears)
- Kenai River Interagency Habitat Task Force, Board of Fisheries (Doug Vincent-Lang, ADFG/SFD)
- Kenai River Special Management Area Plan Update (Richardson, Pres. of the SMA board)
- Kenai Area Land Use Plan, Alaska Department of Natural Resources (Trasky)
- Interagency Planning Team on the Upper Kenai River (Sonnevil)
- Mat-Su Valley Forest Plan, Mat-Su Borough (Trasky)
- Public Use Planning, USFWS, Kenai National Wildlife Refuge (Sonnevil)
- Regional Planning Team, Salmon Enhancement (Mears)
- State/federal Interagency Summit on the Kenai River, Nov. 1, 1995, (Wenger; Chair Steve Zemke, USFS)
- Statewide Sport Fishing Guide Task Force, Alaska Board of Fisheries, (McBride; Doug Vincent-Lang)

2. Past committees working on comprehensive plans or reports:

- Kenai River Sockeye Salmon Task Force (McBride)
- Kenai River Comprehensive Management Plan (ADNR; Trasky)
- Comprehensive Summary of Actions. Glenn Siemans
- Carrying Capacity Study, (ADNR; Trasky)

3. Reports of past committees

- Recommendations for Protection of Fish Spawning and Rearing Habitat on the Kenai River, Kenai Peninsula Borough Working Group
- McBride and Hammarstrom (1995)
- Governor's (Cowper) Fisheries Task Force (Meacham)
- State Game Refuge Management Plans (Palmer Hay Flats, Training Bay, Redoubt Bay, Kustatan, MacArthur) (Trasky)
- Board of Fisheries Reports
- Kodiak Interceptions Task Force. Ivan Vining Report (Swanton, ADFG/CFMDD)

4. Comprehensive data bases available, electronic copies

- Commercial Fisheries Entry Commission
- fish tickets and limited entry permit registration data, commercial catch by species, date, locality

- Commercial Fisheries Management and Development Division
- Registration of permits by subdistrict, since 1993; Annual Management Reports have summaries of commercial catch and effort, prices paid by species
- Private Nonprofit Hatchery Annual Reports (Fried; Ellen Simpson and Steve McGee, ADFG/CFMDD),
- Commercial catches and escapements by year, system, and age

- Sport Fish Division ADFG

- Annual Harvest, Catch, and Participation

- Kenai Sockeye Salmon Task Force, Summaries and Analysis of Catch, Escapement
- Fish Transport Permit records, ADFG, Irv Brock (SFD)

- Board of Fisheries
- History of fishing regulations. the codifieds. (Laird Jones, ADFG)

- Cook Inlet Aquaculture Association
- Hatchery releases and rack returns, eggs taken. (Mears)
- Alaska Department of Environmental Conservation
- List of impaired water bodies

- Habitat and Restoration ADFG
- Anadromous Waters Catalogs Atlas
- Alaska Habitat Guides, 1986 (abundance, distribution. life history, harvest)
- Alaska Department of Natural Resources Geographic Information System on the 29 areas of the Kenai Peninsula scheduled for logging within next five years

- Coded Wire Tag Recoveries of Upper Cook Inlet hatchery reared salmon
- Fishing Guide Data Base for Kenai and Deep Creek, ADNR
- Kenai Area Land Use Plan (ADFG/HRD)
- Public Access Data Base. ADNR
- Susitna Area Plan (ADFG/HRD)
- Subsistence(Tyonek, Nanwalek, Port Graham), educational (Kenaitze, Ninilchik and Eklutna), and personal use fisheries data bases (Jeff Fox and Linda Brannian, ADFG/CFMDD; see also Sport Fish Division Annual Management Reports)
- Recreation Rivers Management Plan (Susitna) (ADFG/HRD)
- List of current and proposed logging sites
- Library automated reference database

5. Bibliographies, Bibliographic sources, electronic copies

- ADFG/CFMDD Library, Anchorage (Fried)
- Technical Data Reports (1972-1988)
- Technical Fishery Reports (1987-1994) now
- Regional Information Report
- Informational Leaflets, (1961-1988)
- Fishery Research Bulletin (1987-1992)
- Alaska Fishery Research Bulletin (1994-present)

- Upper Cook Inlet Management Reports (1974-1987) merged with Regional Information Reports
- Upper Cook Inlet Data Reports, (1961-1987) merged with Regional

Information Reports

- Regional Information Reports. Upper Cook Inlet, 1988-present, including Annual Management Reports

- ADFG/HR Library, Anchorage (Trasky)
- ADFG/CFMDD Library, Juneau (Paul DeSloover)
- Special Publications
- Professional Publications (journal manuscripts)
- ADFG/CFMDD Publications Juneau (Bob Wilbur)
- US Fish and Wildlife Publications List (Sonnevil)
- US Forest Service - Forest Service Information (Wenger)
- ADNR/Various information bases

II. Data Gaps: Information Necessary to Salmon Conservation or Allocation Presently Unavailable

The Science Committee has not placed the data gaps in order of priority. The data gaps are broadly organized into allocation and conservation, although there is some overlap between the two.

II. A. Data Gaps Relating Primarily to Conservation of Fisheries Resources

II. A. 1. Relative importance of freshwater, nearshore marine and offshore marine survivals to salmon productivities

A better understanding of freshwater salmon productivity, as measured by survivals, and early marine survivals is needed. This information is needed to set escapement objectives for salmon species appropriate to sustained yield management, to identify and maintain critical freshwater and nearshore marine habitats, and to forecast future adult salmon returns and harvest levels. Better information is available for Kenai River sockeye than other drainage-species combinations. Relatively little information on survival by life history stage is available for species other than sockeye salmon. It is important to develop understandings of survival for coho and chinook salmon, because populations of these species can be heavily exploited due to strong public demand, particularly among sports harvesters.

The full extent of freshwater rearing areas has not been confirmed by direct observation for most species, so this information is needed to complete the anadromous stream catalog. Under existing laws, state biologists can only control

activities in streams where the presence of salmon has been physically confirmed. Such information is therefore essential to managing the effects of urbanization and development on salmon. and it is essential to understanding and predicting the effects of development on salmon productivities.

Partitioning freshwater effects from marine effects is essential to understanding the effects of habitat degradation on salmon production. Smolt to adult survivals, when measured close to the estuary, provide a composite of nearshore and offshore marine effects which can be distinguished from egg to smolt freshwater effects. Return per spawner analyses integrate the effects of all life history stages, marine and freshwater. Consequently, marine and freshwater habitat effects are statistically confounded in return per spawner analyses. In a return per spawner analysis, excellent marine conditions for salmon rearing can mask the effects of freshwater habitat degradation on salmon productivity for extended periods of time, approximately ten to fifteen years. This is undesirable in a sustained-yield salmon management context because, when poor marine conditions for salmon rearing return, either the habitat degradation is too far advanced for remedies to be socially acceptable, or the losses in freshwater continue to be ascribed to marine conditions until salmon population levels reach critically low levels. Both circumstances are contrary to the interests of sustained yield management of the salmon resources. Hence being able to distinguish freshwater mortalities from marine mortalities is essential to sustained yield salmon management.

Measuring adult escapements is an essential part of sustained yield salmon management. Upper Cook Inlet Coho salmon in general, and early and late run Kenai River coho escapements in particular, need attention in enumeration and escapement goal formulation (see Fried 1994, Table 3).

II. A. 2. Impacts of resource extraction and land development on habitat

There are data gaps on the effects of logging, road building, residential and commercial construction on fish bearing habitat. Such habitat alterations result in erosion, siltation, introduction of contaminants such as petroleum products, blockage of migratory fish movements, and alteration of flow and thermal regimes. Although information is available for other regions such as southeastern Alaska and British Columbia, quantitative data are needed on the status of Cook Inlet's salmon bearing habitat, and approaches for estimating impacts of habitat alterations on salmon production. Some relevant information exists for riparian zones of the Kenai River (Liepitz 1994), but more work is needed, both on the Kenai and in other watersheds. There are not enough local studies to keep up with

the number of habitat alterations now occurring.

Some studies are now in progress. For example. the Division of Forestry, ADNR, has a $500K study in progress, and the Tongass National Forest has a history of studies. Assessment (model) of impacts of logging and roading on the salmon productivities of affected streams. Refer to the U.S. Forest Service's Moose Pass Plan for an example of a study of proposed logging.

II. A. 3. Impacts of fishing activities on habitat

There are data gaps on the effects of fishery activities on salmon bearing habitat. Such activities as stream bank erosion from stream bank angling, disturbance of stream banks and spawning grounds from walking and motoring to fishing sites, results in increased siltation which probably lowers primary productivity and renders spawning habitat unsuitable. Studies are needed in the areas of the habitat impacts of fisheries management actions, and the role of boat wakes in stream bank erosion. A model which relates horsepower and number of angler trips to stream bank erosion would be useful. Follow-up studies on the effects of past remediation efforts could provide useful information on how to design future efforts.

II. A. 4. Impacts of exotic species of fish on production of salmon and resident native fish species. At present four species of piscivorous (fish eating) fishes have been introduced into the Kenai River from some other locality (Arctic grayling, Alaska blackfish, Northern pike and burbot (lush). Northern pike, an especially effective predator species, are now known to occur in parts of the Kenai River system which support rearing of coho juveniles, a suitable prey species. The extent to which these introductions have impacted salmon production in the Kenai needs to be understood. Further introductions by members of the public is a matter of serious concern in an area as heavily utilized by the public as the Kenai Peninsula.

II. B. Data Gaps Relating Primarily to Allocation of Fisheries Resources

II. B. 1. Stock identification of catches

Stock identification information is essential to sustained yield management, and to allocation among user groups, for any species or stock of salmon which is harvested extensively in mixed stock situations. Resource managers need to know when and where the various spawning stocks are to be found in the harvest areas, if they are to effectively control harvests. Specifically, it is important to understand where salmon originating in Cook Inlet are harvested in directed fisheries and as

bycatch, in the waters of Cook Inlet and elsewhere, such as in fisheries in Shelikof Strait and near Kodiak Island. Whenever hatchery contributions become a factor in the management of the populations, it is important to be able to identify hatchery contributions to catches, and to be able to identify hatchery reared salmon on the spawning grounds.

At present the stock identification capabilities contributing to harvest management decisions are limited to Kenai River sockeye salmon (genetic stock identification), wild chinook salmon from Deep Creek and the Kenai River (coded wire tagged) and hatchery reared chinook and coho salmon, all of which are presently coded wire tagged. Since 1995 genetic stock identification of Kenai River sockeye has been available to managers during the harvest season. Coho salmon smolt (juveniles) have been marked with coded wire tags and adipose fin clips in the Kenai River since 1992, and in the Deep Creek since 1995. Chinook and coho salmon juveniles have been similarly marked in the Kenai River and in Deep Creek since 1993.

II. B. 2. Migratory paths and relative timings of stocks and species

Understanding where and when salmon species and stocks transit harvest areas is essential to understanding the impact of mixed-stock harvests on these species and stocks. Distinct differences in migratory paths and timings among stocks in mixed stock harvest areas can serve the purposes of stock identification information. At present the best understanding and implementation of stock identification capability in Upper Cook Inlet is for Kenai River sockeye. Historical information is available for the Central District of Upper Cook Inlet as a whole for the four major sockeye drainages (i.e. Mundy et al. 1993). Unfortunately the programs which produced the historical sockeye salmon stock identification information had to be discontinued. These programs (see Marshall et al. and Cross in Mundy et al. 1993) were replaced by genetic stock identification techniques which presently identify only the Kenai River sockeye in commercial catches.

The information on coded wire tags recovered from adult catches now accumulating for hatchery produced coho and chinook holds promise for understanding the migratory paths of these stocks. Recoveries of adult wild chinook and coho which were marked in Deep Creek and the Kenai River as juveniles may provide the ability to discern migratory paths and timings for these stocks. It may also be possible to make crude inferences on wild coho and chinook paths and timings of stocks which are not presently tagged by analogy to the coded wire tag recoveries from those stocks which are.

Stock identification capabilities and programs for chum and pink salmon originating in Cook Inlet are presently lacking, although genetic stock identification tools may be appropriate.

II. B. 3. Organization and accessibility of information

The public needs ready access to harvest and biological data, and analyses of these data by the concerned agencies in an understandable format. There are publication series by the agencies, and there are electronic data bases from which the public may draw, if they know how. Yet there is no one source which the public and concerned scientists can access in a common format and location for Cook Inlet salmon data. As item number I.B.4 above attests, there are many sources located across a large number of concerned agencies.

II. C. Data gaps submitted by individual members after the meeting of October 16, 1995.

II. C. 1. Analysis of existing data on Knik arm drainages with respect to run sizes, escapements, and factors limiting production for each salmon species.

II. C. 2. Integration and analysis of present status of critical harvest management information, including genetic stock identification, Central District marine sonar, freshwater sonar escapement estimation, Anchor Point offshore test fishing, and historical scale pattern analysis. An analysis is needed on the current status of the ability of the Anchor Point offshore test fishery to estimate sockeye catches and abundances in light of new knowledge on Central District run strength developed from sonar surveys and genetic stock identification. To what extent can the Anchor Point Test fishery now be calibrated without using catches from the drift gill net fleet? To what extent will it still be necessary to use drift catch data to calibrate the offshore test fishery in order to make estimates of total abundance of sockeye salmon in the Central District? The report should focus on the ability of the test fishery to make total abundance estimates by time period, and by locality, in order to provide more precision in harvest management.

II. C. 3. Analysis of sport harvest rates in the rivers on Northern Cook Inlet chinook and coho salmon stocks and habitats.

II. C. 4. Timely reporting of harvest by sport fishing guides.

II. C. 5. Analysis of the socioeconomic effects of the Upper Cook Inlet Management Plan on the native village of Tyonek. Has the historical pattern of

reliance on commercial fishing by the village been sustained? What is the time series of the number of commercial fisheries entry permits at Tyonek from 1974 to present? What are the reasons for the changes in commercial fishing activities. and how do these impact the social and economic factors in the community?

III. Questions posed by the Strategy Group

The following are questions raised by the participants at the meetings of Oct 13-14, except that questions with the same general answer are grouped under a single question in square brackets [ ].

1. Are there harvest management methods [for the set nets] which promote delivery of kings into the Kenai River? [Please identify size and species specific harvest methods as they may be applicable to Cook Inlet salmon.] [Please look into the feasibility of limits on commercial bycatch of individual commercial harvesters daily, annual.]

Yes. Time and area closures can promote delivery of chinook salmon into the Kenai River, however little information exists which would permit the effects from these types of actions to be evaluated. A study now in progress under the ADFG Sports Fish Division is designed to produce this type of information. Gear modifications, web material, reductions in length, and depth of net, may also provide reduction of king salmon bycatch in sockeye set net fisheries. ADFG Sport Fish Division initiated a study (under Mike Bethe) on July 1, 1995 to address information needed to design such regulations. The Eastside Set Net Monitoring Program (ADFG/CFD March 1984) provides some information relevant to management measures. The 1984 study noted a problem with catch reporting in that fish retained for personal use by commercial harvesters were not required to be reported. Personal use fish are now required by law to be reported. Data on the amount of set net gear by harvest period fished in each period are also lacking. Legal counsel is needed to determine if it would be possible to draw closure lines that would exclude harvest of individual permit holders.

2. Can we partition freshwater and marine mortality in order to determine the ability of freshwater habitat to support spawning and rearing?

Yes, we can, but so far we have not done so for most salmon stocks. This constitutes a major data gap for sustained yield management of Cook Inlet salmon. Studies on the sockeye salmon of the Kenai and Kasilof Rivers have provided data which infer density dependent freshwater mortality, and which could permit differentiation of marine and freshwater effects for some brood years. Survival

studies of Bristol Bay sockeye salmon production are available for comparison. Smolt-to-adult survivals (mostly marine) may become available for chinook and coho stocks to which coded wire tags have been applied. While the technologies are available, each application entails substantial expense to adapt the technology to the stocks, species and localities of interest in Upper Cook Inlet.

3. Questions related to the "overescapement" issue. What are the differences between single stock or single species Maximum Sustained Yield (MSY) strategies and multiple stock and multiple species sustained yield management? How do these differ in terms of management objectives and information requirements?[Please describe means to maximize productivity of all Cook Inlet salmon. How do we maximize productivity?] [Please contrast information needs for single stock, single species versus integrated management of multiple stocks and species.][Please develop a discussion paper on the overescapement issue, and the implications and impacts of overescapement, as an introduction to a joint policy and science committee briefing on the issue.]

Salmon allocation issues in Cook Inlet often involve the concept of overescapement. While there is only one basic biological theory relevant to "overescapement," the variability in the quality and quantity of data available for a salmon stock can cause reasonable scientists to have different opinions on what constitutes overescapement. The purpose of the text which follows is to explain how the concept of overescapement is defined, and how the fact of overescapement for one salmon stock can mean underescapement for another stock or species of salmon.

The question of how best to divide any salmon resource between catch and escapement is complex, regardless of how the catch is allocated. In principle there is an annual number of spawners, an escapement goal, which allows each spawner in a salmon stock to produce the most offspring which survive to adults (recruits). The appropriate catch limit then becomes what is left over after the escapement goal is subtracted from the total number of adult salmon in the stock that year. That much is easy, at least in principle. With respect to this single stock of salmon, any number of spawners in excess of the escapement goal may be termed, overescapement, and any number of spawners less than the escapement goal may be termed, underescapement.

The complexity is introduced because, in practice, escapement goals are often set for species of salmon in river systems, and not for individual salmon stocks. The escapement goal for sockeye salmon in a river system such as the

Kenai is the average of the escapement goals of all the stocks in that drainage, so that even when the river's escapement goal is achieved exactly, there will necessarily be overescapements and underescapements with respect to the individual salmon stocks. This combination of overescapements and underescapements also can occur when mixtures of salmon species, such as sockeye and coho, are managed to attain the escapement goal for one of the species in one, or more, river systems.

The foundation of escapement goals is the concept that managers can influence the productivity of stocks (groups of spawners, usually from the same watershed or river) by harvest which is widely accepted in all areas of natural resource management, including wildlife, fisheries and forest management. The basic idea is that populations such as Douglas fir trees, coyotes, sockeye, and other types of plants and animals grow fastest when they number about half the maximum amount the environment can support, the carrying capacity. At this level there are not so many individuals as to create competition for limiting resources such as food and sun light, but there are enough individuals around to make full use of the limiting resources to produce wood or fish. The exact population level, i.e. escapement level, at which the total amount of wood or fish grows the fastest is the level of maximum sustained yield, MSY, or so the theory goes. Through controlled harvests fish populations can be kept at levels of sustained yield other than those at which the harvestable surplus is the greatest, if other constraints compel.

Each identifiable group of spawners, a stock, may have a different level of maximum sustained yield, due to differences in the number of eggs per female, the average size of the eggs produced, and the critical qualities of the spawning and rearing environments. There are obvious differences in MSY among species; salmon produce more offspring per female than do coyotes. But within species there are differences in MSY as well, even if all the biological factors are the same. For example, sockeye salmon stocks coming from two lakes identical in every way, except that one is smaller than the other, will have different MSY harvest levels. This is true because the population level at which total production is the fastest is about one-half the carrying capacity of the environment. In general, big environment means big MSY, and conversely, all other factors being equal. So the actual population level, or escapement goal, which provides the greatest rate of return on a mixture of stocks is not the escapement goal which gives the theoretical maximum sustained yield on a single stock. The mixed stock MSY is a somewhat higher escapement level than the single-stock MSY which permits the mixture of stocks actually harvested to survive and produce at the highest rate possible for the combination of stocks. All salmon escapement goals

in Alaska are most likely to be based on data collected from mixtures of stocks, although the mixture may be arbitrarily designated a single stock. For example, the many spawning aggregates of the Kvichak River sockeye of Bristol Bay have been managed effectively as a single stock, even though one of its two major rearing lakes, Iliamna, has more surface area than Puget Sound.

In a mixed stock management context, as well as in an ecosystem management context, overescapement and underescapement for individual stocks and species is a given, no matter what the escapement goal may be. Even when escapement goals can be identified for individual salmon stocks, when these stocks are harvested in mixed stock fisheries, some stocks experience "overescapement" relative to their theoretical MSY escapement level, and some experience "underescapement," even when the average escapement goal for the stock mixture is perfectly achieved. In this context, overescapement is not waste. Overescapement is the price to be paid for keeping the entire mixture of stocks producing on a sustained yield basis. Further, when the importance of escapements to the production of other species resident in the watershed such as rainbow trout, grayling, char, bald eagle, bear, and others is considered, overescapement of a salmon stock may be fully consistent with maximum sustained yield objectives for these other species.

So far, the approach of most fishery management agencies to sustained yield is to harvest the most economically prominent group of fish stocks at an annual rate which produces the maximum average rate of return for that mixture of stocks. The more stocks and species which are managed simultaneously in a mixed stock scenario, the greater the information requirements, and the greater the costs. The "economically important stocks" approach is so often taken because governments typically provide only enough funds to collect the information necessary to manage the economically most important stocks, if for those. So, as previously noted, the management escapement goal is not defined in terms of the yields or productivities of other stocks of the same species, or of other species.

When it comes to the question of maximizing the productivity of a natural resource, there are several questions which policy makers must answer before scientists can even begin to frame an answer. Which species? Which stocks? Within what time frame, years, decades, or centuries? What do you want to maximize; present dollar value to a gear type, future dollar value to a gear type, biomass, population viabilities, recreational opportunities, or whatever? Which stocks or species are you willing to sacrifice to this maximization? How much are you willing to pay to have what you want? Each of these questions has already been answered explicitly in Board of Fisheries actions, or during the

implementation of the Board's intentions during the management season. In framing proposals to the Board it is important to 1) understand the present answers to each question. and 2) the answers your own interests would pose to each of these questions.

4. Please look at the feasibility of weak stock management.

Weak stock management may or may not be feasible depending on the nature of information available for the smallest, or most chronically under seeded, group of spawners. A "weak stock" is the smallest identifiable spawning group of salmon for which 1) there is sufficient information on which to base fishing regulations. and 2) for which the responsible parties have agreed to provide a stated escapement or harvest rate objective. In general. the wider the data gaps, the more terminal the harvest management regime must be in order to effect weak stock management. Terminal fishing refers to fishing as near to the spawning grounds as product quality concerns permit. For example, the east side Bristol Bay sockeye salmon fisheries in the nearshore marine waters adjacent to the river mouths of the Naknek, Kvichak, Egegik and Ugashik are considered terminal fisheries, whereas the west side Bristol Bay sockeye fisheries in Nushagak Bay are mixed stock, working on the salmon from at least three river systems. Mixed stock fisheries generally require more information and are much more expensive to manage on a sustained yield basis than are terminal fisheries. See also the answer to number three, immediately above.

5. Please look at the impacts of hatchery fish on the fishery management and reproduction of wild stocks in Cook Inlet.

In general. production of salmon from hatcheries, and the harvest of that production, may impact wild salmon stocks in a number of different ways. Salmon from hatcheries may interbreed with wild salmon producing effects which appear to depend on the degree to which the hatchery and wild stocks differ. Transmission of disease among hatchery and wild stocks is another concern. Mixed stock harvest of wild and hatchery stocks at rates appropriate to the hatchery stock would result in loss of productivity and increased risk of extirpation for the wild stock. Data gaps exist on all three of these areas of impact.

Data are not available to address the degree to which hatchery salmon may have spawned with wild salmon, nor is it possible to tell what effects this may have had on the fitness or viability of the wild population, if they did. Since hatchery coho and chinook are now all coded wire tagged, in instances where spawning ground surveys allow collection of carcasses, if any, the proportion of

hatchery fish in the escapement might be roughly estimated. Collection of carcasses would not give any indication of whether the hatchery fish spawned successfully, nor whether it may have spawned with a wild salmon as opposed to another hatchery fish.

Contributions of hatchery production of coho and chinook salmon to Cook Inlet, and other, harvests can now be determined by the recovery of coded wire tags. All such production is being coded wire tagged prior to release from the hatcheries, and there is a program in place to sample fisheries for the tagged fish which are recognizable by the absence of an adipose fin, clipped at time of tagging, or by the use of a metal detector. The extent to which fishery management decisions for these species are influenced by the presence of hatchery fish can be determined in post season analysis of tag recoveries. It should be noted that harvest decisions for wild chinook salmon in Crooked Creek, the Ninilchik River and salt water south of Bluff Point are being driven by the real and perceived levels of returning hatchery fish.

Harvest decisions for wild stocks of sockeye salmon in Upper Cook Inlet have not been determined by the level of returning hatchery sockeye, but by the total numbers of wild and hatchery fish escaping to the Kenai River, as measured at the sonar site. Between 1976 and 1995 sockeye salmon escapements to Hidden Creek hatchery program averaged 3.5% of the total escapement to the Kenai River. In only two of those years, 1990 and 1991, did hatchery escapements exceed 10% of the Kenai River total, reaching the maximum of 17.5% in 1991, and 11.8% in 1990. Since the brood years which produced the bulk of the 1990 and 1991 escapements, levels of hatchery production of sockeye salmon have been deliberately held at levels which produce returns far smaller than the natural return. Hatchery escapements as a percent of total Kenai river sockeye salmon escapement were 0.3%, 1.4%, 0.6%, and 1.2% in 1992 through 1995, respectively. In the peak year of hatchery escapements, 1991, the difference between the hatchery escapement of 112,792 and the sonar count of 645,000 sockeye was above the lower boundary of the Kenai River sockeye escapement goal, as was the case in the next largest hatchery escapement year, 1990. Since the hatchery escapement had an effect on the apparent rate of increase in Kenai River sockeye salmon escapement in 1990 and 1991, and since fishery management decisions in the commercial fishery take into account the rate at which the Kenai River sockeye salmon escapement is building, it is fair to say that the hatchery escapements could have influenced fishery management decisions. As a consequence of the ability to identify hatchery production in the samples at the Kenai river fishwheels, hatchery escapements on the fishery management decisions of 1990 and 1991, did not inhibit managers from providing the Kenai River with wild sockeye salmon

escapements within the optimum range.

During the 1991 sockeye harvest management season, escapements were sampled from fish wheel catches in the lower Kenai River at the sonar counting sites. Hatchery sockeye from Hidden Lake were identified by examining growth rings on the fish scales. Sockeye scales of the hatchery origin sockeye reflect the large amount of freshwater growth which typically occurs in Hidden Lake relative to other sockeye rearing Lakes in the Kenai River system. Sockeye smolt (emigrants) from Hidden Lake commonly attain the length of 120 mm, whereas smolt from the larger glacial lakes, such as Skilak, would be quite a bit shorter, usually less than 100 mm. As it happened in 1991, sockeye salmon from Hidden Lake were obvious in the escapements from inspection of scale samples. Consequently harvest management intentionally tried to attain escapements toward the upper end of the Kenai River sockeye escapement goal of 700,000 in order to achieve full seeding of spawning areas other than those attendant to Hidden Lake. In the opinion of management it would have exceeded their statutory authorities to intentionally permit escapements of sockeye above the upper limit set by the Board of Fisheries.

Concerns over the ability to manage the large hatchery related sockeye returns to Hidden Lake have lead to the current conservative stocking limit of two million spring fry. The stocking limit also serves to address water quality concerns of the U.S. Fish and Wildlife Service. The Service also supported the limit in order to control financial and habitat costs of managing the harvest of very large sockeye returns to Hidden Lake. In order to harvest Hidden Lake surplus it is estimated to have cost the Service approximately $1.00/fish and the large number of harvesters had negative impacts on the habitat.

6. Do we need better detection of in season impacts in terms of who is [illegible]ing what?

Yes we do, especially at the level of stocks. At present it is only possible to determine the origin of Kenai River sockeye salmon caught by commercial harvesters in mixed stock areas. When harvests occur inside major river systems, such as the Susitna or the Kenai, it is not usually possible to identify the spawning grounds to which the fish were returning. The river of origin of coho and chinook salmon caught in the commercial fisheries of the Central District is a matter of speculation, although those caught near the river mouths are presumed to be from that river. Studies of straying behavior in chinook salmon using radio tags do not necessarily support this presumption. Implementation of multiple species sustained yield management, any Susitna Management Plan, or any Coho

Management Plan will require some assumptions about the origins of the harvests in the Central District based on timing and geographic location.

8. Please identify methods to increase passage to Northern Cook Inlet with minimum impact on the [catches of non-Susitna sockeye in the] Central District.

Corridor openings which hold the drift gill net fleet relatively close to the east side beaches have been effective at reducing the efficiency of the commercial drift fleet (Mundy et al. 1993) with respect to Susitna bound sockeye in the Central District, while permitting harvest of Kenai bound fish. Kasilof special harvest areas have allowed targeting of commercial fishing effort on Kasilof bound sockeye, while apparently sparing Kenai and Susitna bound sockeye. Impacts of corridor openings on rate of catch of other species, such as Kenai River king salmon, need to be examined. Possibilities other than corridor openings have been identified in proposals to the Board of Fisheries which involve time and area closures need to be evaluated.

9. Describe harvest methods and regulations that promote the avoidance of waste.

Time and area regulations which avoid peak periods of abundance, and which evenly space relatively short openings, and which control the amount of gear which an individual harvester may employ, are all conducive to controlling waste in general. Specific objectives in terms of times, areas, and harvests, and/or escapement objectives by species and/or stock need to be supplied in order for the science committee to respond further.

10. Comment on the feasibility of developing a management plan for the Susitna.

Specific objectives in terms of times, areas, and harvests, and/or escapement objectives by species and/or stock need to be supplied in order for the science committee to respond. Data gaps and basic salmon migratory behavior may define the degree of specificity which management could achieve with respect to stocks and species.

11. Comment on the feasibility of developing a coho management plan for Cook Inlet.

See answer to preceding question on Susitna Plan.

12. Identify the effects on commercial harvesters of reducing the commercial season from July 1 - August 15 to July 7 - August 9.

The impacts on commercial harvesters can be estimated from available historical for the data of each fishery (gear-locality combination) by looking at the percent of the annual harvest which occurs during these time periods, July 1 - July 6, and August 10 - 15, as an average over all available years of record. Each fishery may experience a different impact from this option. Such information may be available from previous analyses, or it may require requesting a fish ticket run from Juneau. The Science Committee needs clarification of whether the request includes deletion of special openings for commercial fishing prior to July 1 under circumstances indicating an early and or heavy sockeye run? If so, the best approach may be to consider all commercial harvest prior to July 7 as an average percent of total annual harvest.

Miscellaneous issues, briefly addressed due to lack of time

1. Spread sport fish impact on Kenai River habitat by opening other areas to fisheries (fairness). Data gap exists, impacts are not quantifiable.

2. Allocation of current sport priority to other sectors (early run/late run). Specific objectives in terms of times, areas, and harvests need to be supplied in order for the science committee to respond.

3. Non residents commercial harvesting with sport gear. Legal tools may not be available to enforcement. Need a legal opinion. Specific objectives in terms of times, areas, and harvests need to be supplied in order for the science committee to respond.

4. Enforcement (limits). Specific objectives in terms of times, areas, and harvests need to be supplied in order for the science committee to respond.

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34828 Kalifornsky Beach Road Suite B
Soldotna, AK 99669-8367
907-262-9368; 907-262-4709, fax

Stephen Braund
Stephen R. Braund & Associates
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Anchorage, AK 99510
907-276-8222, voice ; 276-6117 fax

Phil Cutler,
AK Sportfishing
6622 Lakeway Dr
Anchorage, AK
564-5828; 564-4637 fax

Al Carson
Habitat and Restoration Division, Region II
Alaska Department of Fish and Game
333 Raspberry Road
Anchorage, AK 99518-1599
907-267-2335, 907-267-2464 fax

Suzanne Fisler
State Parks, Kenai District
Box 1247

Soldotna, AK 99669
907-262-5581
907-262-3717 fax

Loren Flagg
Kenai Peninsula Fisheries Association
34824 Kalifornsky Beach Rd.., Suite E,
Soldotna, AK 99669
907-262-2492, 907-262-2898 fax

Steve Fried
Commercial Fisheries Management and Development Division, Region II
Alaska Department of Fish and Game
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Anchorage, AK 99518-1599
907-267-2130, 907-267-2442 fax

Doug McBride ADF&G
Sport Fish Division
Alaska Department of Fish and Game
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Anchorage, AK 99518-1599
907-267-2227; 267-2424 fax

Tom Mears
Cook Inlet Aquaculture Association
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907-283-5761, 283-9433 fax

Larry Peltz ADF&G
Sport Fish Division
Alaska Department of Fish and Game
1800 Glenn Hwy Suite 4
Palmer, AK 99645-6736
907-745-5016; 745-7362 fax

Jim Richardson
308 G St, Suite 302
Anchorage, AK 99501
279-2883, 276-0830 fax

Gary Sonnevil
US Fish and Wildlife Service
Kenai Fishery Resource Office
Kenai, AK 99611
907-262-9863
907-262-7145 fax

Jim Sumner
ACRE, KPFA,
HC 52, Box 8815
Indian, AK 99540
653-7308

Lance Trasky
Habitat and Restoration Division, Region II
Alaska Department of Fish and Game
333 Raspberry Road
Anchorage, AK 99518-1599
907-267-2335, 907-267-2464 fax

Mark Wenger
US Forest Service
P.O. Box 390
Seward, AK 99664
907-224-3374, 907-224-3268 fax

January 17, 1977

Alaska Boating Association • P.O. Box 210430 • Anchorage, Alaska 99521

Senator Rick Halford
Alaska State Senate
State Capitol, Interdepartmental Mail Stop: 3101
Juneau, AK 99801-1182

Dear Senator Halford:

This letter is in response to your proposed SB0040 relating to the management of discrete salmon stocks. At a regularly scheduled meeting of the Alaska Boating Association held on January 16, 1997, our organization voted unanimously to support this legislation. This letter communicates to your our official position on the legislation.

In addition, many of our individual members will be corresponding with individual letters, POM's, testimony at teleconferences, etc. This bill is important to all of us as non-commercial consumptive users, for the commercial sport-fishing industry, and the tourist industry to assure ongoing yields of the resource.

Thank you for your efforts and continue to keep us informed of any and all related legislative matters we can be effective in supporting.

Yours truly,

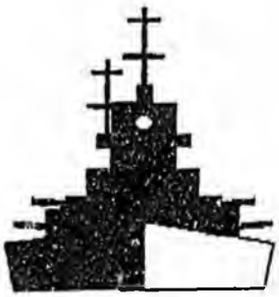
Roy J. Burkhart

Roy J. Burkhart, Legislative Affairs Officer
Alaska Boating Association
Voice:(907)495-6337 FAX:(907)495-6338 E-Mail. rjburk@alaska.net

cc: Donald Sherwood, President, Alaska Boating Association
Senator Lyda Green, Co-Sponsor SB0040, Alaska State Senate
Senator Dave Donley, Co-Sponsor SB0040, Alaska State Senate

SUPPORT

Donald E Sherwood
1640 Brink Dr
Anchorage, Alaska 99504
Fax 333-6211
Home Phone 333-6268



FAX COVER SHEET

DATE: 25 Jan 1997

- **TO:** State Senate
- **ATTN:** Sen R Halford
- **FAX NO:** 1-907-465-3805
- **PAGE:** 1 **OF** 1

- **SUBJECT:** Act Relating to Management of Discrete Salmon Stocks
- **REF:** SB-40

Sen Halford:

The Alaska Boating Assoc is supporting SB-40. Our time is running out for saving our existing stocks. The Feds have said they will implement various methods to relieve the overharvest but you know how that will be. Our State must step in and stop the fish board from making total biased regulations both now and in the future and the only way to do it, is move this bill forward as soon as possible.

We do have one problem and that can be resolved and that is on page 1 line 14 "1} by Jan 1, 2004, shall adopt regulations", we think this time should be shorted to possibily "2001", due to the fact, the Upper Cook Inlet fishery is in rapid decline in some rivers as have been seen by ADF&G studies. The record harvest are here every year but thats hatchery fish not wild stock and this is harvested way below the Upper Cook Inlet rivers and streams.

If there is a way to help in getting this bill moved, do not hesitate to call and we will try to help. Keep up the great job you all are doing.

President
Alaska Boating Assoc

ALASKA COUNCIL OF TROUT UNLIMITED
P.O.Box 3055, Soldotna AK 99669
(907) 262-9494 Fax: 262-5920

February 24, 1997

Senator Rick Halford
fax: 465-4928

Re: SB 40

The Alaska State Council of Trout Unlimited supports this bill. Discrete stock management addresses several conservation issues of concern to T.U. including: the Alaska Constitutional mandate for sustained yield of all salmonid resources (not just commercially exploitable stocks), concerns over loss of species diversity, ecosystem health, and last but not least the burden of conservation, which the Alaska Board of Fisheries acknowledges is disproportionately shares among users.

The problems inherent to a discrete stock management approach are not insignificant. 1) Data development for discrete stock management is dependent upon both funding and expediency. While it is not possible to have all of the information at once this is a significant management direction change for both the Board of Fisheries and the Department of Fish and Game and as such will requlre a constant data stream designed to provide at least initially the minimum information necessary for discrete stock management decision making.. 2) The funding necessary for successful implementation is imperative and we believe that this bill's approach to funding shares that burden among all of the users of the resource. 3) Finally, assurance for success in this effort will require a commitment from ADF&G. Lower level management and field staff must believe in the sincerity of that commitment as well.

Scientific data (both recent and historic) indicates that mixed stock fisheries management does contributed to the decline of discrete salmonid stocks. Most recently the National Research Council's Pacific Salmon study (Upstream: Salmon and Society in the Pacific Northwest) recognizes mixed stock management as conflicting with efforts to manage for healthy (or restore to health depleted) discrete salmon stocks.

T.U. supports SB 40 as a necessary first step toward responsible management of Alaska's renewable salmonid resource.

Dennis H. Randa, President
cc: Charles Gauvin, T.U. National President
Bill Robinson, T.U. Westcoast Rep.

MATANUSKA-SUSITNA BOROUGH

Borough Manager
350 E. Dahlia Avenue, Palmer, Alaska 99645-6488
Phone (907) 745-9689 • FAX (907) 745-0886

February 28, 1997

Senate Resources Committee
State Capitol
Room 508
Juneau, AK 99801-1182

Re: Senate Bill No. 40 - "An Act relating to management of discrete salmon stocks, to salmon management assessments, and to the fishery business tax."

Dear Committee Member:

For the past several years the Borough has been working diligently to improve the management of our fishery resource. We have testified at Alaska Board of Fishery meetings as well as submitted written testimony requesting changes to the Cook Inlet Salmon Management Plan. Many of the changes we have requested are addressed by Senate Bill 40, such as:

1) Require the Department of Fish and Game to prioritize their management of salmon harvests for escapement, thereby ensuring a sustained return of all salmon species to all waters of Cook Inlet.
2) Survey small streams in Upper Cook Inlet for biological escapement of all stocks and species of salmon to determine where a conservation emergency exists and take corrective measures to abate the emergency.
3) Require the Board of Fisheries to address management of salmon harvests throughout the entire migration route of each salmon species and stock.

Current management policies of the Board of Fisheries and Department of Fish and Game have resulted in the closure of some of the Borough's most popular sport fishing areas. Senate Bill 40 is a major stride in improving the management capabilities for this valuable resource. The Act requires the Board of Fisheries to adopt and implement management policies that are consistent with the constitutional requirement of managing the resource for a sustained yield. It also provides a means to offset the costs incurred by the state in implementing the management policies.

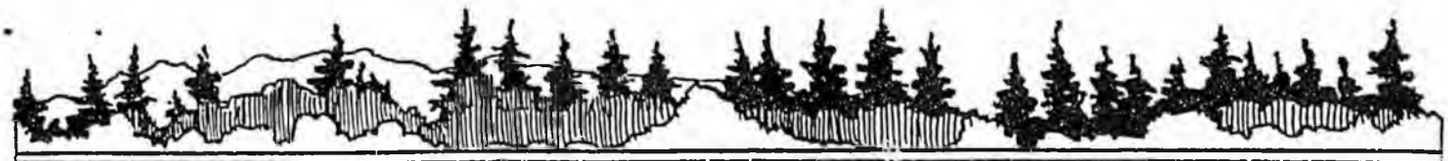
The Matanuska-Susitna Borough supports Senate Bill No. 40 and encourages adoption and implementation of the management policies as proposed.

Sincerely,

Donald L. Moore
Borough Manager

cc: Alaska Board of Fisheries
Matanuska-Susitna Borough Assembly
Mayor's Blue Ribbon Task Force

pln/pmg/dm/1287



HOUSTON CHAMBER of COMMERCE

RESOLUTION NO. HCC97-03

A RESOLUTION OF THE HOUSTON CHAMBER OF COMMERCE SUPPORTING SENATE BILL 40 "AN ACT RELATING TO THE MANAGEMENT OF DISCRETE SALMON STOCKS".

WHEREAS, The current salmon management centers around heavy exploitation of mixed stock fisheries and disregards the negative effects this policy has on discrete stocks of all salmon species; and

WHEREAS, the salmon resources available to the Houston area are an integral part of our community; and

WHEREAS, Senate Bill 40 would maintain genetic variation and local adaptation; and

WHEREAS, the long-term survival of salmon depends crucially on a diverse and rich store of genetic variations; and

WHEREAS, Senate Bill 40 would redirect our attention from the past mistakes of allocation driven management system toward a system which will fully meet our constitutional responsibility to sustained yield.

NOW THEREFORE BE IT RESOLVED by the Houston Chamber of Commerce that it supports Senate Bill 40 and urges all governing bodies and communities to support and approve Senate Bill 40.

I certify that this resolution reflects the wishes of the Houston Chamber of Commerce.

APPROVED:

Robert Hall

Robert Hall

ATTEST:

Nathan Dunn

CORRECTION

THE FOLLOWING DOCUMENT(S)
HAVE BEEN REFILMED TO
ASSURE LEGIBILITY OR PAGINATION

HOUSTON CHAMBER of COMMERCE

RESOLUTION NO. HCC97-03

A RESOLUTION OF THE HOUSTON CHAMBER OF COMMERCE SUPPORTING SENATE BILL 40 "AN ACT RELATING TO THE MANAGEMENT OF DISCRETE SALMON STOCKS".

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I certify that this resolution reflects the wishes of the Houston Chamber of Commerce.

APPROVED:

Robert Hall

Robert Hall

ATTEST:

Nathan Dunn

March 3, 1997

Via Fax and First Class Mail
Senator Rick Halford
Room 121
State Capitol
Juneau, AK 99801-1181

Re: Senate Bill No. 40, "An Act relating to management of discrete salmon stocks . . ."

Dear Senator Halford:

Dennis Randa, Trout Unlimited's Alaska Council Chairman, has brought the above-referenced bill to my attention and asked that I analyze it and provide you with the comments of Trout Unlimited's national organization on the bill and the problem of mixed stock salmon fisheries generally. Trout Unlimited is a 100,000 member organization whose mission is to conserve, protect, and restore North America's coldwater fisheries. Major priorities in Trout Unlimited's national conservation agenda are protection of healthy Pacific salmon stocks and restoration of weak ones, and a principal goal in our conservation strategy for Pacific salmon is discrete stocks management.

The scientific and management literature is virtually unanimous in decrying the negative impacts of mixed stock management as a major factor in the weakening of discrete wild salmon stocks and the extirpation of weak stocks. (See, e.g., National Research Council, 1990. Upstream: salmon and society in the Pacific Northwest.) Although fortunate not to have experienced the widespread salmon stock declines that have occurred in Washington, Oregon, and California, Alaska has healthy stocks that are at risk and weak stocks that are failing to recover due substantially to mixed stock management.

S. 40 is a solid first step toward ending mixed stock management in some of the places where it is currently doing the greatest damage and in redirecting, over the longer term, fishery management policy toward selective harvest measures in other places where there are still opportunities to prevent the down-spiraling of healthy stocks. The measures that it would direct the Board of Fisheries to undertake are essential to the sustainability of Alaska's salmon and the current and future well being of all resource users: commercial, subsistence and recreational. Moreover, commercial and recreational users would share equitably the burdens of implementing the new stock management policy.

I urge that the Alaska Senate pass S.40 and begin the task of managing discrete salmon stocks.

Thank you for the opportunity to comment on this important legislation.

Sincerely yours,

Charles F. Gauvin
President and CEO

cc: Dennis Randa
Bill Robinson
Rick Applegate
Ron Holtcamp

Official Business

COMMITTEE: SENATE RESOURCES

DATE: 4/11/97

Subject of meeting: SB 40 Discreet Salmon Assessment and Management

SIGN-IN

PLEASE PRINT!

NAME	ADDRESS (MAILING) & (ZIP)	PHONE	REPRESENTING	DO YOU WANT TO TESTIFY?
Gerod Bruce	Bx 25526 Juneau AK 99802	465-6143	Fish / Game	Yes
John Sund	Box 91739 Anchorage AK 99509	463 2628	Alaska Seafood Council	Yes.
Dean Paddock	PO Box 21851 Juneau AK 99802	463-4970	Bristol Bay Drift netters Assn	Yes
Jym McCune	4005 211 45 St Suite 112 Juneau Ak	586-2820	UFA	Yes
Chris Kelly	8800 Glacier Hwy #109 Juneau AK 99801	789-6150	CFEC	Yes
Cliff Skillings				

04/11/97 LEGISLATIVE TELECONFERENCE NETWORK SYSTEM LTN1150

15:49:08 PARTICIPANT LIST (ALL PARTICIPANTS) BY:ANC

TCN:70593 SCHEDULED FOR:04/11/97 15:30 TO 17:00 FOR:ANC

PUBLIC HEARING SENATE RESOURCES

LOCATION:ANCHORAGE

SB 40		SAM	MCDOWELL		TESTIFY
SB 40		EMMET	HEIDEMANN		TESTIFY
SB 40		LOUIS	CLARK		TESTIFY
SB 40		KEVIN	DELANEY	AK F&G	TESTIFY
SB 40		EUGENE	SVETC		TESTIFY
SB 40		DON	SHERWOOD		TESTIFY
SB 40		MARGO	SHERWOOD		TESTIFY
SB 40		WILLIAM	YOUNG		TESTIFY
SB 40		KENNETH	SVETC		TESTIFY
SB 40		BUD	HODSON		TESTIFY
SB 40		RANDY	BJORGAN		TESTIFY

LOCATION:BETHEL

SB 40	DR.	JOHN	WHITE	BOARD OF F&G	TESTIFY

LOCATION:CORDOVA

SB 40	MS.	CHERI	SHAW	CDFU	TESTIFY

LOCATION:HOMER

SB 40	MR.	DAN	WINN	SELF	TESTIFY
SB 40	MR.	YAKOV	REUTOV	SELF	TESTIFY

LOCATION:KENAI LIO

SB 40	MR.	LEONARD	EFTA	SELF	TESTIFY
SB 40	MS.	KATHY	TIKKA	SELF	TESTIFY
SB 40	MR.	DALE	BONDURANT	SELF	TESTIFY
SB 40	MR.	KARL	KIRCHER	KPFA	TESTIFY
SB 40	MR.	RON	RAINEY	KRSI	TESTIFY
SB 40	MR.	ARTHUR	ROBINSON	SELF	TESTIFY
SB 40	MR.	PHIL	SQUIRES	UCIDA	TESTIFY
SB 40	MR.	DREW	SPARLIN	SELF	TESTIFY
SB 40	MR.	DICK	BOWER	SELF	TESTIFY

04/11/97 LEGISLATIVE TELECONFERENCE NETWORK SYSTEM LTN1150

16:20:08 PARTICIPANT LIST (ALL PARTICIPANTS) BY:KOD

TCN:70593 SCHEDULED FOR:04/11/97 15:30 TO 17:00 FOR:KOD

PUBLIC HEARING SENATE RESOURCES

LOCATION:KODIAK

SB 40	MR	LARRY	MALLOY	KOD AQUA. ASSOC	TESTIFY
SB 40	MR	BRUCE	SCHACTLER	SEINERS_ASSOC	TESTIFY
SB 40	MR	JOE	MACINKO		TESTIFY

LOCATION:MATSU

SB 40	MRS.	JUNE	BURKHART		TESTIFY
SB 40	MR.	ROY	BURKHART		TESTIFY
SB 40	MR.	JAMES	TUTT		TESTIFY
SB 40	MR.	RICK	BRAY		TESTIFY
SB 40	MR.	BILL	PACE		TESTIFY
SB 40	MRS.	NANCY	PACE		TESTIFY
SB 40	MR.	TOM	NAMTREDT		TESTIFY
SB 40	MR.	LEONARD	HAIRE		TESTIFY
SB 40	MR	LARRY	ENGEL Board		TESTIFY
SB 40	MR	RON	WILSON		TESTIFY
SB 40	MR	BRUCE	KNOWLES Guide		TESTIFY
SB 40	MR	ROBERT	MARTINSON		TESTIFY
SB 40	MR	ROBERT	PEACOCK		TESTIFY
SB 40	MR	DAVE	GLASON		TESTIFY

LOCATION:PETERSBURG

SB 40	MS.	LIZ	CABRERA	PVOA	TESTIFY
SB 40	MS	GERRY	MERRIGAN		TESTIFY

LOCATION:SITKA

SB 40		GRANT J.	MILLER	BD. OF FISH	TESTIFY

To Senate Resources
SB 140/Testimony
T/C 70593 4/11
4928

Alaska Boating Association * PO Box 210430 * Anchorage Alaska 99521
E-Mail to ..... loneagle@alaska.net

TO: **To All Legislatures** **11 April 97**

FROM: Francisca M Sherwood

SUBJECT: Support of SB40
Afternoon Vice Chairman

~~My name is~~ I'm **Margo Sherwood ~~and~~ I live at 1640 Brink Dr Anchorage 99504. As a proud resident for over 31 years, and who has raised and educated my family in this great state, I have come to testify in support of SB40.**

This is one bill that will actually pay for itself, by collecting money from those who use the resource. What a change coming out of Juneau. It provides a funding mechanism for the discrete stock assessment program through a surcharge on both sport and commercial users. This funding proposal shares the burden of the cost of increased information among these user groups in a fair and equitable way.

This bill requires the Department to prepare a list of projects and their costs that will address the stocks identified by the Board. The Department will also prepare a list of future and/or potential projects. This in itself coming from a mother and a grandmother is just like raising a family. List, Prioritize, and then Pay for it,not charge it.

There are many fine points in this bill that will be ~~disgust~~ discussed **today, but as a User, we are in need of something that will guarantee me and my family a fair allocation of fish on a continuing base ,which is not happening now.**

I want to thank you for listening to my comments and also say, Thanks for doing a great job in determining the future ,and our renewable resources is and always will be ,the future of our great State.

Margo Sherwood
Wife, Mother, & Grandmother

Dedicated to the rights of Alaskan Boaters

Blase A. Burkhart
1161 W. 79th
Anchorage, Alaska 99518
Secretary - Alaska Boating Association

Alaska State House and Senate
c/o Senator Rick Halford
Twentieth Legislature - First Session

Re: Senate Bill No. 40

Dear Representatives and Senators,

I am a lifelong Alaska resident writing in support of Senate Bill No. 40, referring to discreet salmon stock management.

As you know, there has been a continual controversy regarding allocation of fish resources between the interests of sport and commercial fishing. I have always believed resolution of these concerns would require some fair, honest, and "common sense" compromises. And it is imperative that we always approach allocation and fishing regulations with the concern for the resource renewal above all else.

I believe this bill heads in the right direction for my concerns.

I SUPPORT SENATE BILL NO. 40

Sincerely,
Blase Burkhart - Secretary, Alaska Boating Association

ALASKA SEAFOOD COUNCIL, INC.
PO Box 91239 Anchorage, AK 99509-1239 Phone/Fax: 907/463-2628

April 1, 1998

Senator Rick Halford, Chairman
Members
Senate Resources Committee

Dear Senator Halford,

The Alaska Seafood Council is an umbrella organization representing the Alaska seafood industry. It is comprised of almost 2,000 individual members which include harvesters and processors, processing workers, and Alaskans working in supporting businesses. We have members in the banking, insurance, transportation, fuel, legal and manufacturing sector.

We are opposed to SB 40 for the following reasons:

1) SB 40 requires the Board of Fish to prioritize discrete salmon stock assessment projects based on several new criteria including the importance of the fishery to the state, and the magnitude of the conflicts among users of a certain salmon stock.

We believe this may lead to a situation where only the "squeaky wheel gets the grease", so to speak. We can envision political allocation battles determining research priorities rather than true management and scientific needs getting the attention and research funds they deserve. Good science, not emotion, needs to determine research priorities.

2) The bill fails to define what a "discrete" stock is , and fails to identify the problem it is trying to fix.

3) Commercial fishermen and the industry are already taxed in Alaska in many ways-through the raw fish tax which goes to shoreside communities, by the tax paid to the Alaska Seafood Marketing Institute for marketing of Alaskan fish, and in many cases, by a tax for the continued production of salmon stocks through aquaculture associations. This is in addition to other taxes paid through property taxes, business taxes, and taxes on fuel, permit fees, and every day operations. In addition, fishermen throughout the state will be taxed, but many will never see any research done in their areas.

We are supportive of the ADF&G having adequate funding to provide for good management and collection for Alaska's fishery resources. We believe the present relationship between the ADF&G and the Board of Fisheries is healthy.

We also support research and scientific data, and it's the feeling of the Alaska Seafood Council that the authority to accomplish the intent of this legislation, to gather information and assess the health of salmon stocks, already exists in the state constitution, statute and in the ADF&G regulations and policies.

Thank you for the opportunity to submitt this testimony for your review.

Sincerely,

Kris Norosz

Kris Norosz, President

PO Box 3662
Soldotna, AK 99669
April 11, 1997

TO: Senate Resources Committee

FROM: Dick H. Bower

SUBJECT: SB 40 - Discrete stock salmon assessment

The following represents my written testimony regarding SB 40 prepared for the Committee's first statewide teleconference hearing held on this date:

I would first like to state that I fully support the intent of this proposed legislation. In its present form several elements have been deleted from the bill proposed during the last legislative session. I have mixed feelings regarding some of the deletions because the present form represents less of a commitment to required management action regarding salmon stocks which may be troubled or in serious jeopardy. However, this version of the bill is less specific in several ways and may result in more appropriate action statewide.

The Alaska Board of Fisheries has too often found itself faced with a lack of appropriate and relevant data in its decision making process. In many cases data received has been inconsistent, inaccurate, and in some instances represents extrapolation from insufficient or inaccurate data. The results of this legislation **could** help overcome this problem. I say **could** because unless there are specific procedures and criteria for the gathering, assessment, evaluation, interpretation and formatting of the data collected the potential of this effort will not be realized. This consistency must be assured on a year to year basis and should be carefully crafted so that computerization will result in relatively easily understood results.

I believe that it is inherent within this purpose that the Department prepare and review with the Board of Fisheries a five year assessment plan in one year increments which can be reviewed and evaluated annually.

The committee substitute for SB 40 describes the funding mechanism for this effort as "...a user-pay system for the discrete stock assessment program". This prompts me to register several concerns:

1. Given the interpretation that there is a Constitutional prohibition of designated funds and the reluctance of the Legislature to clarify this issue the process proposed has some pitfalls.

2. The "user" groups identified are those holding either sport or commercial licenses or permits. This applies equally to both resident and non-resident recipients. However, there is no recognition of the subsistence category which I assume is not to be involved as a paying "user" group. **I do not propose that subsistence users pay as the other groups.** There are also a number of Alaska seniors who do not directly pay for fishing privileges. However, I believe that the purpose of the legislation is not the allocation of fish stocks to any user group, but rather the commitment to the protection and continuation of the salmon resource. In this regard it seems that there should be a designation of some monies from the general fund to support this program since it is clearly directed toward the protection of a critical renewable resource of importance to the state as a whole.

3. It is indicated that funds generated and appropriated in this manner are "...not intended to replace, funds appropriated for the operation of the division of commercial fisheries management and development or the division of sport fish". The division of sport fish does not now receive general fund monies, however one would not want to see assessment funds replace its federal and license fee expenditures. An unrecognized division in this critical effort is the **habitat division.** This division has one of the most important roles in accomplishing the intent of this legislation.

4. This legislation is directed toward discrete stocks of salmon, however to fail to take advantage of the program to assess other fish stocks will be a major mistake. For too long management of specific salmon species as if they were discrete from not only other salmon species but also other fish species present within the ecosystem has occurred. This has resulted in some known problems and undoubtedly unknown problems not identified because of either their lack of economic value or lack of importance to those persons who do not view them as their responsibility.

This legislation represents a first step long overdue in the management of Alaska's fishery resource. I would like to urge two additional steps for your consideration:

1. Encourage (mandate) the establishment of a Research Division within the Department which will have the responsibility for conducting or coordinating all research activities. This department must be separate from the sportfish and commercial fisheries divisions to assure maximum objectivity within the highly charged atmosphere which exists in these two divisions.

2. Establish an active and ongoing relationship with the University of Alaska in both research and scientific studies. The benefits of this effort will be at least twofold. First, it may bring a degree of objectivity to both the studies and results which may defuse problems which now often result. Secondly, given budget shortfalls of both the Department and the University this may be a means to accomplish joint objectives in a meaningful and cost effective manner. The scientific resources found within the Universities general academic staff and its School of Fisheries and Ocean Sciences should represent a significant resource to the Department and to the state of Alaska in programs such as are represented by this legislation.

I appreciate the opportunity to comment upon this legislation and hope that you will not hesitate to call upon me if I can be of any further assistance . Two of Alaska's most important renewable resources are its fish and its forests. Both offer considerable economic return through their harvest. We need their use, but must avoid their abuse. Wise and responsible use will assure their presence for years to come. Less than that may soon find Alaska in the position of many of the states in the lower forty-eight.

Bob Martinson CO-CHAIR GILLNET - DIVISION,
CORDOVA DISTRICT FISHERMEN UNITED.

900 Iroquois Dr.
Wasilla, AK 99654

Dear Honorable Members of the Senate:

I have seen politics interfere and undermine fisheries' health from California, to Oregon, to Washington and British Columbia. Living in the Mat-Su valley, and being a lifetime commercial fisherman, it angers me that those who are chosen to represent me are the ones who are always trying to take away my livelihood, one piece at a time, or sometimes all at once. This time it may be all at once.

In a nutshell, SB40 is essentially a sportfish-driven ploy to fill the streams of Alaska with fish. Sounds good doesn't it? It's not good, Alaska's Department of Fish and Game would tell you so. All the ADF+G managers that I spoke with are against it. Is it a coincidence that sportfishing guide Rick Halford sponsored this bill? NO!

If this bill were to be stripped of its technical garble, it would say: "We should go out and tag every fish from every stream and if one of those fish comes up missing, then all we have to do is close down commercial fishing!"

Well, commercial fishing is the State of Alaska's #1 employer and provides revenues for the state while generating millions in revenue sharing for coastal communities. For FY96 com-fish revenues of the State of Alaska exceeded expenditures for fish management by 9 million dollars.

In 1995, my vessel license renewal fee more than doubled and there was the 1% tax for marketing seafood. Then they increased our marine fuel tax last year also. The legislature's decision to cut the ADF+G's budget is not a justification for SB40.

Why are we the fishing industry, being asked to pay again, and again, and again!?

The Department hasn't asked for any changes to the current policy. It would create another whole batch of state employees with another fish lab and on and on and on . . .

Keep in mind this is all because sportfish guide Rick Halford says it's a good idea.

Remember, this is a very misleading, allocative measure, and allocation is to be left to the BOARD OF FISHERIES . This research would be prioritized by the B.O.F.- a budget supplement controlled by the B.O.F. This amounts to a serious and radical disruption of the public budget process.

Good fish management has been underway in Alaska since the late 1800's. Let the biologists continue to do their jobs which have created the most successful management in the world, and don't befuddle it with more unneeded bureaucracy.

Cordova District Fishermen United

Celebrating 62 Years of Service to Commercial Fishermen in Cordova, Alaska
P.O. Box 939 Cordova, Alaska 99574 / Telephone (907) 424-3447 / Fax (907) 424-3430

April 11, 1997

Oral testimony to be given April 11, 1997 re: SB 40 (Discreet Stock Assessment)
Sent via facsimile to Senate Resources Committee

Good afternoon. Mr. Chairman and committee members, my name is Cheri Shaw. I am the executive director of Cordova District Fishermen United and will be speaking on behalf of the organization today.

For convenience, my testimony with attachment were faxed directly to each of your offices earlier.

The old saying "don't fix what isn't broken" comes to mind when reading SB 40. The State of Alaska has had the good fortune of having the highest quality finfish management in the world. Managing a watershed as opposed to assessing discreet stocks is extremely successful and is supported in an article recently published in the Coos Bay, Oregon paper The World which I have included with my testimony. Let's learn from other people's mistakes, not our own.

Sound management comes from good science which we all agree is important. Assuring sustainable fisheries is in the best interest of everyone including commercial fishermen. Ask yourselves these questions, is SB 40 the way to accomplish better management? Is this bill just a disguise to fund fish and game without going through the budget process? Commercial fishermen already pay their way in the State. We most recently had an increase in the marine fuel tax and the vessel licensing fee. In addition, CDFU is supporting the reauthorization of the 1% ASMI tax. When will it stop? Is giving the Board of Fisheries an open checkbook in the best interest of the resource?

Another concern CDFU has is the allocative nature of this bill. After reviewing the fiscal note with attached FY98 projects, it appears that putting more salmon in the rivers from the Cook Inlet region seems to be a priority. It looks as though the sport/commercial battle in this area has gained the attention of the legislature.

Ask yourselves, will this bill force the commercial fleet into the terminal harvest areas? During the Salmon Strategy Forum last January the State agreed that managing for quality by placing harvesters away from the terminal harvest areas was a necessity in stabilizing and increasing the net worth of our fisheries. SB 40 will be in direct conflict with this thought pattern. Decreasing the intrinsic value of commercially harvested salmon will only increase the problems we face in the world market today.

One final concern is the lack of complete definitions for the terms discreet stock, sustained yield and biological health which can be interpreted as one sees fit. To understand the intent of SB 40 one must define the terms contained within so as not to confuse the interpreter.

Committee members, thank you for the opportunity to testify before you today and please consider the concerns of Cordova District Fishermen United and do not pass this bill out of committee.

Sincerely,

Cheri Shaw

Cheri Shaw, Executive Director
Cordova District Fishermen United

/attachment

Bob Martinson CO-CHAIR GILLNET - DIVISION,
CORDOVA DISTRICT FISHERMEN UNITED.

900 Iroquois Dr.
Wasilla, AK 99654

Testimony to ~~Legislature~~ Legislative Committee
Mr. Chair ~~[redacted]~~ ladies & Gentlemen
~~[redacted]~~ of the ~~[redacted]~~,

I have seen politics interfere and undermine fisheries health from California, to Oregon, to Washington and British Columbia. Living in the Mat-Su valley, and being a lifetime commercial fisherman, it angers me that those who are chosen to represent me are the ones who are always trying to take away my livelihood, one piece at a time, or sometimes all at once. This time it seems to be all at once.

In a nutshell, SB40 is essentially a sportfish driven ploy to fill the streams of Alaska with fish. Sounds good doesn't it? Well its not good and Alaska's Department of Fish and Game would tell you so. All the ADF+G managers that I spoke with are against it. Is it a coincidence that the ~~[redacted]~~ sportfishing guide Rick Halford sponsored this bill? NO!

If this bill were to be stripped of its technical garble, it would say: "We should go out and tag every fish from every stream and if one of those fish come up missing, then all we have to do is close down commercial fishing!"

Well, commercial fishing is the State of Alaska's #1 employer and provides revenues for the state while generating millions in revenue sharing for coastal communities. For FY96 com-fish revenues of the State of Alaska exceeded expenditures for fish management by 9 million dollars.

In 1995, my vessel license renewal fee more than doubled and there was the 1% tax for marketing seafood. Then our marine fuel tax was increased last year also. The legislatures decision to cut the ADF+G's budget is not a justification for SB40.

Why are we the fishing industry, being asked to pay again, and again, and again!?

The Department hasn't asked for any changes to the current policy. It would create another whole batch of state employees with another fish lab and on and on and on.....

Keep in mind this is all because sportfish guide Rick Halford says its a good idea.

Well its a poor way to disguise the Fish Initiative while trying to ram it down the residents throats.

Good fish management has been underway in Alaska since the late 1800's . Let the bioligists continue to do their jobs which have created the most sucessful management in the world, and don't befuddle it with more unneeded bueracracy.

See this for what it is, an expensive, unecessary , cloaking of the truth. The public will know,I will see to it. Vote no on SB40. THANK YOU.

Robert A. Martinson

Robert Martinson

Cordova District Fishermen United
P.O. Box 939
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(907) 424-3447 FAX (907) 424-3430

April 18, 1997

The Honorable Rick Halford, Chairman
Senate Resources Committee
State Capitol (Mail Stop 3101), Room 121
Juneau, Alaska 99801-1182

Dear Senator Halford:

I would like to go on record in opposition to SB 40 (Discreet Stock Assessment) for the following reasons:

1. This bill creates another tax on an already over-taxed industry. I am amazed, in a year when Republicans are taking stands opposed to any new taxes, that this bill would be introduced. No matter how you justify it, the people of this state do not need more money taken out of their pockets to fund more government, **PERIOD!**

2. This legislation is unnecessary. Protecting the health of Alaska's Salmon returns is already the number one priority of the Alaska Department of Fish and Game and the Board of Fish. The local advisory committee and Board process is working. Why attempt to fix something if it is not broken?

3. This bill does not contain definitions of critical terms, nor is there consensus in the scientific community on these definitions. If this bill becomes law, we can look forward to years of debate about what it really means.

4. I believe that this legislation has far reaching implications that are not clearly understood. Implementation of this bill would cost far more than the revenues generated and would result in further increases in taxes on users or a drain on state funds.

In conclusion, I believe that this bill is both unnecessary and poorly written and strongly oppose its passage. Thank you for your consideration.

Sincerely,

Stephen C. Riedel

Stephen C. Riedel
Chair, CDFU Seine Division

Cordova District Fishermen United

Celebrating 62 Years of Service to Commercial Fishermen in Cordova, Alaska

P.O. Box 939 Cordova, Alaska 99574 / Telephone (907) 424-3447 / Fax (907) 424-3430

April 21, 1997

Written testimony submitted on April 21, 1997 re: SB 40 (Discreet Stock Assessment) Sent via facsimile to Senate Resources Committee

Good afternoon. Mr. Chairman and committee members, my name is Cheri Shaw. I am the executive director of Cordova District Fishermen United (CDFU) and will be speaking on behalf of the organization today. CDFU opposes the passage of SB 40.

Sound management comes from good science which we all agree is important. Assuring sustainable fisheries is in the best interest of everyone, especially commercial fishermen. Ask yourselves the following questions. Is SB 40 the way to accomplish better management? Alaska has the proud distinction of being world renowned for its fisheries management. Do we need this change or is this a bill disguised to fund fish and game without going through the proper budget process? Commercial fishermen already pay their way over and above the cost of management in this state.

CDFU has another concern with the allocative nature of this bill. After reviewing the fiscal note with attached FY98 projects, it would appear that putting more salmon in the drainage rivers in the Cook Inlet region is a priority. It looks as though user conflicts in Cook Inlet have gained the attention of the legislature. If this is the intention of SB 40, to resolve allocation conflicts, why should *all* fishermen in the state be subject to funding these studies?

Will this bill force the commercial fleet into the terminal harvest areas? During the Salmon Strategy Forum last January the State agreed that managing for quality by placing harvesters out of the terminal harvest areas was a necessity in stabilizing and increasing the net worth of our fisheries while still managing for sustained yield. SB 40 will be in direct conflict with this approach. Decreasing the intrinsic value of commercially harvested salmon will only increase the problems we face in the world market today. The commercial fishing industry supports the largest work force of any industry in the State. Does the legislature think that the passage of SB 40 will help an already struggling industry that has recognized its problems and is in the process of rectifying them?

One final concern is the lack of comprehensive definitions for the terms "discreet stock", "sustained yield" and "biological health" - interpretation is as varied as the reader's bias. To understand the intent of SB 40 one must define the terms contained within so as not to confuse the interpreter.

Committee members, thank you for the opportunity to testify before you today and please consider the concerns of Cordova District Fishermen United. We urge you to not pass this bill out of committee.

Sincerely,

Cheri Shaw

Cheri Shaw, Executive Director
Cordova District Fishermen United

Mr. Chairman and members of the Senate resources committee, my name is Liz Cabrera and I am testifying on behalf of the Petersburg Vessel Owners Association (PVOA). For the record, we are opposed to the provisions of Senate bill 40, which create a tax and spend mechanism for the development of a discrete salmon stock assessment program.

The sponsor statement for Senate bill 40 states that "far too much of our fishery management is being driven by allocation battles..., instead of by sound science and pertinent information." In our opinion, SB 40 is a perfect example of management of our resources being driven by allocation, not sound science. Currently, the authority to manage and allocate our fishery resources is divided between the Department of Fish and Game and the Alaska Board of Fisheries. The Department is charged with conservation, i.e. the biology and the Board allocates our resources among competing users. This system of checks and balances is one of the strengths of the Alaska management system and has resulted in record salmon returns, generated substantial revenue to our state in the form of commercial fisheries tax and in the form of tens of thousands of jobs in the commercial and charter/guide industries.

Senate bill 40 jeopardizes the division of authority by allowing the Board of Fish to cross into an area under the purview of the Department of Fish and Game. While Board members are knowledgeable about our fisheries, they are not stock assessment biologists. The real danger with this legislation is it would allow the Board to develop the science. The Board could substantiate their allocation decisions with their science. Given this possibility, the state will run the risk of eroding public confidence in the Board process and further polarizing the user groups. The Department of Fish and Game is more than capable of developing stock assessments to assist the Board in making informed decisions, the only real problem is getting the Legislature to fund the request.

Despite our industries contribution to the state's general fund, the legislature continues to cut funding for management of our fisheries resources. Now, we are being asked to pay for development of a new tool, which isn't necessary to manage for sustained yield, biological health or genetic diversity. While we are not opposed to improving our management techniques or gathering new information, we fail to see why we would want to "improve" by using management tools which failed in the Lower 48. SB 40 does not mandate a discrete stock policy, but it does the next best thing and allows the Board to make decisions based on discrete stock assessments. Discrete stock management has never proven a successful method of managing salmon and contributed to the destruction of salmon runs in the Pacific Northwest. In other words, why should we pay for something which could ultimately compromise the health of our stocks and why would we want to repeat the mistakes of the Pacific Northwest ?

In short, allocation battles are sufficiently contentious is some areas of the state without adding the provisions of sb 40 and politicizing our science. We urge you to vote no on Senate bill 40.

Liz Cabrera

PO BOX 232
PETERSBURG AK 99833

Anne Herschleb

Telephone (907) 783-3153
Fax (907) 783-1223

P.O. Box 447
Girdwood, Alaska USA 99587
e-mail: soundodv@customcpu.com

Senate Resources Committee Members
State Capital Building
Juneau, AK

RE: CSSB 40- Public Hearing 4/11/97, 3:30 p.m.

Senators,

I am against CSSB 40 for the following reasons:

- There is no definition of "discrete stock management of salmon," "biological health," "sustained yield," "conflicts," and "importance of stock" included in the bill. If this is to be a viable bill these terms need to be defined in order to avoid subjective judgments by the Board of Fish and ADF&G.

- Commercial fishing already contributes revenues to the state in excess of the cost of expenditures for management. (For documentation please see Fish and Wildlife Revenues and Expenditures of State Government in FY 95, Geron Bruce and Tuula Marquardt, November 5, 1996). Why tax the commercial fishing industry once again to pay for a legislative action that does not benefit the industry?

- This bill is an attempt to micro-manage state fisheries by the legislature and politicizes the Board of Fisheries & ADF&G decision making process.

- This bill is allocative in nature in that the Board of Fish determines discrete stocks in need of assessment, it allows political pressure to drive science.

- There is no scientific method defined or mandated in the bill with which to carry out "discrete stock management."

- "Importance of the stock to fisheries," and user conflicts are listed as priorities used in ranking before biological health of the stock and sustained yield. This signifies the allocative intent of the bill and is mismanagement of the highest degree.

I hope that you will not let this bill pass out of your committee and I thank you for your time and efforts.

Sincerely,

Anne Herschleb

Testimony of
Dale Kelley, Executive Director
Alaska Trollers Association
Before the Alaska Senate Resources Committee
on SB 40
April 11, 1997

Good afternoon Mr. Chairman and members of the committee. My name is Dale Kelley, I'm the executive director of the Alaska Trollers Association (ATA). ATA opposes SB 40, which seeks to establish an industry funded discrete salmon stock assessment program. Our opposition to this bill stems from the following issues:

SB 40 is a bill of dubious intent and definitely appears to be an allocation bill and a funding mechanism dressed up in a cloak of conservation. Such 'cross-dressing' should never be permitted in the world of salmon management and is the very reason the legislature should steer clear of such *initiatives*, so to speak. What does the magnitude of user conflicts have to do with sustained yield and genetic diversity? What "problem" does SB 40 seek to correct?

The sponsor statement speaks more clearly to user conflict than science. If the point is to analyze who is taking what and then fairly apportion the conservation burden, and the sponsor wants fishermen to pay for it, why not just say that? But why ask fishermen to pay when they already contribute so heavily to the general fund? And why ask fishermen to pay who aren't even involved in the dispute?

If ADF&G and the Board of Fisheries are missing critical data, they should identify those needs and request the necessary funding. On this point, we urge the legislature to take a hard look at the state of the ADF&G budget. Over one third of the entire FY97 ADF&G budget relied on federal funds. That's a precarious position for a state with more fish and game than entire regions of this country. The state has an obligation to manage its resources and adequate research is the cornerstone of good management. ADF&G simply must have more money to do their very large job.

SB 40 politicizes the state's salmon stock assessment program, by blurring the line that has so plainly divided authorities between Fish & Game and the Board of Fisheries. The state currently holds ADF&G responsible for conservation and gives the Board of Fisheries authority to allocate harvestable surpluses. Fish and Game said it best themselves in a recent publication: "The clear separation of management authority from allocation authority is one of the strengths of the Alaska management system."

As drafted, ADF&G becomes nearly subservient to the Board of Fisheries, since the Board *shall* identify the stocks in need of analysis *in consultation with the Department.* Hopefully, the agency experts will always be at the helm when identifying and setting research priorities intended to address conservation concerns. Through the years I've been privileged to work with some of the finest stock assessment biologists on the coast, most of whom work for ADF&G. As a former member of the Northern Panel and a Commissioner on the Pacific States Marine Fisheries Commission, I'm familiar with key fisheries professionals in the Pacific Northwest. Alaska can be proud of its talented research and management staff, as there are none better on the west coast. The health of our resource and fisheries are a testament to that fact. Surely they are capable of identifying research priorities. Which begs the question, what problem does SB 40 seek to correct?

SB 40 provides an increased opportunity for public comment about stock selections, but the purpose of this provision isn't clear – unless it's about the criteria in Section 2 about "*conflict among users*". While ATA strongly supports the public process, research programs built around user conflict seem destined to be driven by political whim instead of good science.

This isn't to say the Board of Fisheries or constituents shouldn't have input into fisheries research. If the Board lacks sufficient data to make sound decisions, it's perfectly reasonable to make recommendations to the Department and work to secure the necessary funding.

SB 40 calls for a series of long term, costly research programs, many of which aren't necessary to secure sustained yield. To establish meaningful escapement goals will mean the development of many years of data, which varies greatly by species. A spawner/recruit analysis will require a *minimum* of 16 years escapement data for chinook, and 12 years for pink salmon; 10 years of harvest data; and, 10-13 years of age composition estimates for all but pink salmon. River size and quality of available spawning and rearing habitat are also important factors to assess.

To estimate who's catching what/where, will require an exploitation rate analysis complete with years of extensive in-stream tagging, followed by even more years of tag recovery and analysis.

Similar catch and escapement programs in Southeast, even where some data existed and programs where in place, have cost from $150,000 to well over a quarter of a million dollars a year.

If core data is currently lacking, it could be years before enough data is gathered to be useful for policy makers. Ironically, if "user conflict" is a criteria for selecting stock analysis programs, some of these unhappy fishermen may retire before the answers are in hand. For instance, although the Columbia River drainage has been studied since the mid-1800s, when the Pacific Salmon Treaty was signed in 1985, only 4 stocks formed the basis of the chinook model due to the lack of good data.

More information is always good, but isn't always necessary to manage for sustained yield or genetic diversity. Given there are 15,000 salmon streams in Alaska, it's unlikely we'll ever know it all. ADF&G utilizes information from key indicator stocks and area biologists manage intensively in-season. Our biologists are on the ground, in the air and on their computers monitoring fisheries activity and analyzing data. Fisheries are opened and closed on a daily basis, to ensure the continued health of salmon. Alaska's program is more rigorous than any on the west coast and overall ADF&G is meeting the sustained yield mandate. So, what problem does SB 40 seek to correct?

SB 40's emphasis on discrete stocks is contrary to the state's management program and positions in federal arenas. The sponsor tabled a similar bill last session in an attempt to manage for discrete stocks, ostensibly to protect sustained yield and genetic diversity. While this bill doesn't specify a change in management philosophy, it's definitely walking down the path of weak stock management -- the very form of management that has helped to annihilate fish stocks, fisheries and communities in the Pacific Northwest.

Abundance based management is working in Alaska, as exhibited by vibrant production in most rivers statewide. The current Board of Fisheries process and emergency order authority vested in ADF&G provides maximum flexibility to manage stocks. This includes the option of conducting more selective fisheries when appropriate. However, one prescription definitely does not fit all in salmon management.

Weak stock management is contrary to Alaska's positions in key national and international forums, like the Pacific Salmon Treaty and the Endangered Species Act. Under the ESA, Alaska fishermen have lost fishing time and over 56,000 salmon since 1993, to save a handful of Snake River fall chinook. This is weak stock management at its finest!

SB 40 is punitive when added to the taxes and fees already paid by the commercial salmon industry. Deckhands will have to pay nearly as much as permit holders in some fisheries. To add insult to injury, this bill mandates sport and commercial fishermen foot the bill for stock analysis regardless of whether they harvest the stock in question.

Commercial fishing pays it's way, far beyond that of most state industries. The commercial fishing industry is made up of thousands of small family businesses, which are being placed at risk by the same elected officials that talk about jobs and families. Despite the seafood industry's substantial general fund contributions, some legislators continue to ask for more while reducing services. 'User pay' has been amped up to 'user pay more'. When will it end?

Oh, and what is the problem SB 40 seeks to correct?

ATA urges you to vote no on SB 40. Thank You.

Testimony before the
Senate Resources Committee
on SB 40
By Ron Rainey
Member of the Board of Directors
Kenai River Sportfishing Association
April 11, 1997

The Board of Directors of the Kenai River Sportfishing Association support the concept that the Alaska Board of Fisheries and Department of Fish & Game will gather needed information to more scientifically manage discrete salmon stocks.

We also support a funding mechanism for such a program through a surcharge on sport and commercial crewmembers licenses and commercial entry permits. We are not sure in the Commercial Fish Division, but paying for stock identification work is not new or unusual for the Sport Fish Division. Currently, they have at least $1-$3 million in sock ID programs in the field. I'm sure Sport Fish Director Kevin Delaney, who I believe is in the Anchorage LIO, can explain specifically what they are doing and how much the division is spending for this type of information if anyone is interested.

We would stress funding must be shared equally between commercial and sport users. Placing the entire or even the majority of the financial burden on the sport angler would be improper and, in some cases, illegal.

An important aspect of this assessment concept is that it involves the Alaska Board of Fisheries. They would be required to annually identify salmon stocks for which discrete stock assessment is needed. What better board to do this than the one set in statute to address fisheries issues. We have also heard from many legislators for many years to keep fisheries issues under the Board of Fisheries purview. We agree. This concept would support those beliefs.

The Board would also be required to prioritize the projects with the assistance of the Department and involving the public. This should allay any fears that this assessment will circumvent the public process.

It would also require the Department to submit a prioritized list of projects to the Governor to be included as a separate item in the Governor's operating budget for the following fiscal year. This could provide for more credibility in the legislative budget process.

And this concept would elevate discrete stock salmon assessment by establishing such a section in the Fish and Game statutes.

We believe such assessments will create new information which will lead to a more scientific management paradigm. That, in turn, should provide for healthier more sustainability salmon populations. It is a concept supported in the National Research Council's publication Upstream Salmon and Society in the Pacific Northwest. It is a concept that we hope you support.

Such a model will benefit commercial and sport users and, more importantly, will help preserve diverse salmon populations for generations to come.

Alaska State Legislature

Please enter into the record my testimony to the Senate Resources committee name

committee on SB 40 bill/subject, dated April 11, 1997.

Discrete Stock Management is not clearly defined, it is not the Business of Rick Halford to Manage Wild Stock Salmon through some Vague Bill, it Sounds like a power grab, a means to Collect more revenue, unfair revenue, I might add, from fishers to mis manage their fisheries without representation; there isn't anything good about it, therefore fifty times over No, no, no and Hell no!

Signed: Lucia D. Kendall
Testifier

Representing (Optional)

P.O. Box 2523 Soldotna, AK. 99669
Address

Phone No.

Public Opinion Message

Anchorage Legislative Information Office (LIO)
• 716 W 4th Avenue, Suite 200, Anchorage, AK 99501 • Phone: 258-8111 Fax: 258-1251

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Mr., Mrs., ...	First name	M.I.	Last name	Jr., Sr., II, ...
	LAUREN	E	MOSS	

Mailing address	Zip code
P.O. BOX 869 GIRDWOOD AK	99587
Residence (street) address if different from mailing address: SAME	Zip code

Daytime telephone number	Group affiliation (if applicable)	Signature	Date
783-1312			4-11-97

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CSSB40	40

and check one: [ ] Support [X] Oppose [ ] Amend — OR enter a general Subject (LIO staff may modify):

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CSSB 40	IS	A	POLITICALLY	LOADED
SUBSTITUTE	FOR	GOOD	SCIENCE.	THIS
BOF	SHOULD	NOT	HAVE	D.S.M.
DECISION	POWER.	THIS	COULD	BE
ALLOCATNE	IN	NATURE.	ADFG	ALREADY
HAS	STATEWIDE	SALMON	MANAGEMENT	IN
PLACE	AND	THE	LEGISLATURE	SHOULD
NOT	MISMANAGE	A	SUCCESFUL	PROGRAM
WHICH	IS	ALREADY	FULLY	FUNDED
BY	COMMERCIAL	FISHING	[illegible] THANK YOU	[illegible]

WILLIAM & NANCY PACE
HC 31, Box 5079P
Wasilla, Alaska 99654
(907) 376-2286

April 21, 1997

Re: SB 40

Dear Members of the legislative committee:

Once again, like the annual returning of salmon, commercial fisherman must once again rally to defend and justify our existence. Yet we are the largest employer in the State of Alaska and the second largest revenue generator in the State.

In preparing my statement to SB 40, I realized that over the years and numerous attempts to undercut commercial fisherman's ability to make a living, it is not the Alaska resident sport fisherman who introduces the bills. The bills are sponsored by guides and lodge owners and other parties that have a financial interest in the passage of bills that restrict commercial fisherman. It is the same parties that testify at the hearings, not Alaska sport fisherman. For and example, at the last hearing held in the Mat-Su on SB 40, not one Alaska sport fisherman appeared to testify. Yet, Guides and Lodge Owners Testified. So is it any surprise that SB 40 was introduced by Senator Halford, a registered fishing guide.

SB 40 is nothing more that another FISH initiative disguised as a scientific approach to save all the fish, in all the rivers. all the time. However, by restricting commercial fisherman to put more salmon in the rivers, it gives guides and lodge owners more fish for their paying clients. SB 40 is vague and ambiguous and probable not enforceable if challenged in a court of law. It has no defined purposed or direction on how to accomplish the unstated goal of SB 40. Discrete stock does not even have a definition, yet the Department of Fish and Game is to carry out the unstated purpose of SB 40, without knowing what they are to accomplish.

In addition, the Department of Fish and Game will be answering to two masters. One being the legislatures, which is the proper body to fund the Department of fish and Game. the second being the Board of Fisheries, which is a politically driven body. By controlling funding for assessment of discrete stock, Department of will be required to dance to any tune the Board of Fisheries dictates, whether it is good for the overall salmon population or not.

If SB 40 is passed, I would like to see the cost of the program shift from commercial fisherman, who are paying their way, to the parties who will benefit directly from its passage, guides and lodge owners, who are paying little or nothing. After all, guides and lodge owners are commercial entities. The one big difference is that they get paid whether they catch fish or not.

Alaska State Legislature

Please enter into the record my testimony to the Senate Natural Resources
committee name

committee on SB 40 CSSB 40 (RES), dated 4/11/97.
bill/subject

The problem with this bill is that it will further divide the BOF and the commercial and sport user groups. If SB 40 passes, user groups will be vying for research on pet projects as well as additional allocation of stocks. I realize that BOF tries to be impartial, but it is still a political body driven by the agendas of the various groups it represents.

Regarding the funding issue; if the research is so valuable, why can't the legislature fund it from the general fund which already has a most generous contribution from the commercial fishing industry.

With the research projects determined by BOF we are again allowing science to be controlled politically and thereby dictating the scientific data.

The days of testimony involved in ~~[illegible]~~ BOF meetings ~~[illegible]~~ will be multiplied exponentially if the bill becomes law. It will promote added confusion, misunderstanding and lack of trust between user groups.

Signed: Bill Pace
Testifier

F/V Evergreen Express
Representing (Optional)

Hc 31 Box 5079-P Wasilla AK 99654
Address

(907) 376-2226
Phone No.

Alaska State Legislature

Please enter into the record my testimony to the Senate Natural Resources committee name

committee on CSSB 40 (RES) bill/subject, dated 4-11-97.

I want to register my OPPOSITION to SB40/CSSB 40(RES) as still another attempt by legislators to micro-manage fisheries issues.

There is adequate money going to the gen'l. fund from commil. fishing taxes/assessments to pay for any research deemed necessary by ADFG. Let ADFG prioritize the research projects needed to support their already successful management of Alaska's wild runs. Let the legislature fund the budget requests of ADFG for this research and management effort. Let ADFG manage.

Commercial fishing has had numerous tax and fee increases in the past few years. More surcharges/taxes/fees or whatever you want to call them will unduly burden the already struggling comm'l. fishers of this state.

We have ADFG - give them the funds and the opportunity to do the job they were created to do. They were created to manage fish and game - that includes research, setting seasons, setting bag limits, establishing harvestable surpluses, setting escapement goals and managing harvest efforts to meet those goals. They need our support and the legislature's funding to do these jobs. They don't need more interference by non-professionals.

Signed: Nancy J. Power
Testifier

F/V EVERGREEN EXPRESS
Representing (Optional)

HC 31 Box 5079-P WASILLA AK 99654
Address

(907) 376-2286
Phone No.

Roys

April 22, 1997

Senator Rick Halford
Chairman, Senate Resource Committee
State Capitol
Juneau, AK 99801-1182

Dear Senator Halford,

Thank you for your efforts to emphasize Alaska's constitutional mandate for sustained yield. Alaskans should unanimously agree with your position that it is our responsibility to pass along a healthy and diverse resource to future generations. CSSB 40 (RES) has evolved to help focus the crucial need to gather information on stocks which present both biological and user complexities, and for which little information is available to aid the Board of Fisheries and fishery managers in their decisions. Decisions based on good information will help Alaska achieve its constitutional mandate and provide for a rich and diverse resource for our children.

The Copper River sockeye and chinook fisheries are very real examples for which CSSB 40 can provide direction. A great deal of ADFG and Board of Fisheries time and resources have been devoted to Copper River stock and user conflict issues. Not only has the Copper River sustained a significant gillnet fishery for almost 100 years, but the growing participation of personal use dip net fishermen, subsistence users and sport fishermen has focused the need for careful fishery management and re-allocations as the fisheries expand. The most unfortunate aspect of this situation is that so little is currently known of the up river stocks. This was clearly evidenced at the 1997 Board of Fisheries meeting held in Cordova. In addition, with increased harvest pressure up river during the early wild stock sockeye return, stocks may suffer while hatchery produced sockeye entering the system later in the season may not be subject to the same harvest pressure yet provide a more ample and less critical harvestable component. Conversely managing for the Copper River delta sockeye stocks presents managers with complexities due to run timing similarity with that of the up river hatchery stocks. It was also pointed out at the Board of Fisheries that delta stock escapement has recently suffered.

To help address these issues Prince William Sound Aquaculture Corporation recently put forward (March, 1997) a proposal to otolith mark Gulkana Hatchery sockeye salmon. The fish enter the Copper River system after over-wintering in several lakes in the Copper Basin area after release from the Gulkana Hatchery. Almost 30 million sockeye fry are released into these lake systems. The program began in 1974 and has been quite successful. In 1996 it is estimated the program contributed more than $3.58 million dollars to the commercial fishery and more than 28,000 sockeye valued at $300,000 to the personal use, subsistence and sport fisheries. With better baseline and inseason information we believe the upriver contribution can be significantly increased and lessen the harvest rate on wild stocks. We believe that through information gained by the otolith mark and recovery program, ADFG and the Board of Fisheries will have substantial new insights to manage the Copper River fisheries while addressing the complex mixed stock issues and fulfilling user needs as they increase and shift.

With passage of CSSB 40(RES) Alaska will be given a significant opportunity to gain information, to develop a better understanding of our salmon stocks, and to fulfill both sustained yield and conservation of our wild stocks. We can help in this effort and therefore ask you to consider our proposal for funding

the otolith marking program for Gulkana Hatchery sockeye salmon under authorization of the proposed statute to assess discrete salmon stocks.

Sincerely,

Bob Roys
CEO

cc: Senate Resource Committee
House Resource Committee
Senate Finance Committee
House Finance Committee
Senator Georgianna Lincoln
Representative Gene Kubina
Governor Tony Knowles
Members, Alaska Board of Fisheries
Advisory Committees: Cordova, Glennallen, Fairbanks
Frank Rue, Commissioner, ADFG
Bob Clasby, Director, CFMDD, ADFG
Kevin Delaney, Director, Sport Fish Division, ADFG
John Hilsinger, CFMDD Area Supervisor Central Region, ADFG

(hf)

Prince William Sound Aquaculture Corporation

Proposal to Otolith Mark Gulkana Hatchery Sockeye Salmon

March 1997

Contents

Proposal:

Prince William Sound Aquaculture Corporation (PWSAC) seeks funding to purchase, install and operate a thermal marking system to identify sockeye salmon produced by the Gulkana Hatchery. To achieve full scale marking, a three phase ramp-up program will be carried out. Thermally induced otolith marks will be first applied to pre-hatch alevins beginning in the Fall of 1997 at a feasibility scale. Full scale marking will take place in 1999. Assessment of thermally marked fish will contribute significantly in the future to more accurate identification of hatchery stock contributions and migration routes in the mixed stock Copper River fisheries. Such information will give resource managers an edge in managing for both conservation of wild stocks under the maximum sustained yield principle, and maximum utilization of hatchery produced fish. **The three year project will cost $427,214**. Thereafter annual operating costs ($69,000 year 2000 and beyond) and annual otolith recovery and analysis ($62,500 year 2003 and beyond) will be incorporated into PWSAC's annual budget.

Significance:

The 1996 enhanced sockeye salmon return to the Copper River was worth over $3.58 million to commercial fishermen, and an additional 28,000 sockeye salmon (valued at $300,000 using commercial fisheries prices) were caught in the personal use, subsistence and sport fisheries. Hatchery contribution to the resource users of the region is significant. However, to manage the complexity of the mixed stock fishery to maintain wild stock escapement for sustained yield and to maximize harvest of hatchery salmon, a comprehensive mark and recovery program is vital. Current hatchery operations, coded wire tagging and adult enumeration studies are paid for by PWSAC through a 2% assessment paid by Copper River commercial fishermen on the value of their catch. Other user groups contribute nothing to the enhancement program.

Background:

The Gulkana Hatchery is located on the Gulkana River, a head water tributary of the Copper River. The first Gulkana facility was built in 1973 and operated by the Alaska Department of Fish and Game until 1992 when the program was transferred to PWSAC; complete operational takeover occurred in 1993. The Gulkana program is actually comprised of two facilities (GH I and II). Gulkana I is permitted to take

35.5 million sockeye eggs. Gulkana II is permitted to take 2.5 million sockeye eggs. It is estimated the Gulkana Hatchery annually contributes approximately 250,000 sockeye to the Copper River. Adults are harvested primarily by the commercial fleet, but Chitina personal use dipnetters, subsistence fish wheel operators and sports fishermen also harvest large numbers. Unharvested fish return to the hatchery site and lakes where released as fry. Brood stock are taken at the hatchery site. Although many adults go unharvested, they cannot be exploited more intensively in the delta and river fisheries without accurate and timely assessment information. To do so could jeopardize wild stock escapement.

Adult Gulkana Hatchery sockeye return with large components of upper Copper River and Copper River Delta wild stocks. As a result, management of the fishery is complex and resource managers are challenged to achieve wild stock escapement goals, particularly in the delta. As Gulkana Hatchery returns increased, harvest strategies and harvest pressure increased during mid and late stages of the season to target returning hatchery fish. This pressure particularly coincides with delta stock migration. A review of historic Copper River sockeye commercial harvests (**Figure 1**) clearly indicates a shifting cumulative harvest as the season progresses. It is also notable that delta stock spawning escapement has not been achieved in recent years coinciding with hatchery increases. As a result of this concern the Board of Fisheries (12/96) mandated delta escapement goals be met.

Recognizing potential complexities with wild stock management, in 1990 ADF&G published the "Gulkana Hatchery Policy Paper" (RIR No. 2C90-06). Expressing concerns for large and overlapping hatchery contributions to Copper River wild stock sockeye production, the Department articulated the policy that "hatchery production at the current level or at an increased level must occur in conjunction with evaluation programs that ensure maintenance of wild stock escapements."

Copper River management tools include escapement goals for up river and delta stocks, a sonar enumeration program on the Copper River at Miles Lake, delta stock escapement aerial estimates, commercial harvest enumeration and forecast methods. Additionally, hatchery fry and smolt survival studies have been conducted as have coded wire tag (CWT) recovery programs to assess hatchery stock adult survival and estimations of hatchery contributions to overall Copper River production. Annual adjustments to the hatchery component contributed to total Copper River production is required to avoid over exploitation of wild stocks. The adjustment factor is based on projected hatchery return. However, should the forecast not be accurate, potential exists for increases in over exploitation. As hatchery fry production and adult returns increased (**Table 1**), the fishery became more complex and increased potential for both assumption error and over exploitation. Although stocks have been coded wire tagged, validity of CWT programs has been questioned. Differential mortality between tagged and untagged fish can result in statistical expansion errors; CWT tag shedding rate is unknown; adult fish often occur with naturally missing adipose fins (adipose fins are clipped by hatchery staff to visually mark CWT fish); 10 million fry released into Paxson Lake do not get represented by tagged lots, all of which can result in erroneous assumptions and inaccurate assessments.

Due to numerous weaknesses with coded wire tagging and resultant analyses, thermal marking otolith programs have gained significant support. Results of multi year otolith mark, recovery and analysis programs in Southeast Alaska and more recent but preliminary otolith marking in Prince William Sound underscore the significance of the technology and procedures. ADF&G supports implementation of otolith marking programs and is preparing to establish an otolith analysis lab at its Cordova field office to manage the otolith program in PWS. With financial support of the *Exxon Valdez Oil Spill* Trustee Council, ADF&G and local PNP hatchery programs, all hatchery produced pink salmon were successfully and differentially marked beginning 1995. Otolith recovery and inseason analysis beginning 1997 will provide resource managers a new, highly accurate and very rapid tool to discriminate hatchery

contribution in the mixed stock pink salmon fisheries.

An otolith program appears to be the most effective tool currently available to mark and recover sockeye in the Copper River in order to provide managers the tools necessary to manage the resource. Advantages of such a program include:

all hatchery fish can be marked (Gulkana I site);
thermal marking is the most cost effective, least risky and environmentally sound method to mark hatchery incubated fish;
sampling costs will decline because all returning hatchery fish are marked;
no assumptions regarding marked to unmarked ratios will be required for in season or post season estimations;
differential marks can readily be applied to fish released at different locations;
more comprehensive, accurate and timely assessments can be made;
accurate and timely stock assessment provides resource managers with information to adjust strategies to assure wild stock escapement and maximum utilization of the hatchery resource.

Objectives:

Construct and evaluate small scale prototype gravity feed thermal marking program based on naturally occurring temperature differentials and heat exchange principles.

Construct and implement production scale marking program at Gulkana I site. Gulkana II fry, approximately 8% of total hatchery production, will not be marked.

Provide accurate and timely assessment tool to help resource managers identify in season the hatchery component of the mixed stock Copper River sockeye. This information will enable managers to achieve maximum exploitation of hatchery stocks while meeting escapement goals for wild stocks under the sustained yield principle mandated in the Alaska Constitution and articulated in the Department of Fish and Game escapement goal policy.

Project Phases:

Phase 1. Following prototype designs from National Marine Fisheries Service and Northern Southeast Regional Aquaculture Association, equipment will be acquired, assembled, installed and tested at the Gulkana Hatchery site for operation during the desired mid-winter (1997-98) marking time frame. Otolith marks will be applied to a small sample lot (one or two incubators). Evaluation of otolith marks, operational and climate issues, plus suitability and requirements for full scale marking program will be undertaken. Wild stock sampling and otolith analysis will provide background information to both define an identifiable hatchery mark and differentiate hatchery marked fry from wild stock fry. **Cost: $26, 685**

CWT marking will continue through year 2001and overlap otolith applications. CWT recovery will continue through year 2003, the first year when the entire return of adult Gulkana Hatchery I sockeye will be otolith marked.

Phase 2. Dependent to a large degree on Phase 1 results, the second phase will expand marking and evaluation of equipment under severe conditions of interior Alaska. Currently, thermal marking equipment is deployed in moderate climate coastal locations. Significant alterations to provide protection against the environment may be necessary. It is anticipated that during Phase 2, only the

on-site release group (approximately 40% of the fry) would be marked. Marking of all Gulkana I fry will require installation of short term holding capacity for approximately 15 million fry. This equipment has not yet been installed or tested. Phase 1 testing should provide answers to most, if not all of the issues anticipated for operation of Phase 2. To the extent possible, cooling will be used for marking using water source temperature differentials. Using cooled water will dramatically reduce the recurring cost of marking by eliminating nearly half the fossil fuel needed if only heating is used for marking. **Cost: $273,960**

Phase 3. Phase 3 will be the first full facility marking effort and as such will represen the "operational level" of marking for Gulkana. Three distinct groups of fry will be marked with differential marks to allow identification when they are recovered in the commercial fishery or other recovery sites. Essential to Phase 3 is installation of short term holding capacity for 15 million fry. Without a short term holding facility, Phase 3 cannot occur. **Cost: $70,845**

Phase 4. Adult sockeye otolith recovery will begin May 15 each season or at a later date if evidence supports sampling schedule changes. Samples will be taken in various fisheries and at various locations according to sampling protocol. ADF&G field technicians will be assigned to sample adults, analyze otolith marks and report on hatchery contributions to the mixed stock fishery.

Methods:

Phase 1: Develop small scale prototype to evaluate assumptions.

Run one or two incubators (15 gpm each).
Acquire baseline data for temperatures, flow requirements, mark quality and other parameters.
Evaluate need for degassing supply water.
Determine feasibility of gravity flow system (if not entirely gravity flow, what degree can gravity flow be achieved).
Determine feasibility of using cooling rather than heating to generate mark.
Evaluate using river water (32.5 degrees F) to cool hatchery water (37.5 degrees F) to approximately 34 degrees F using heat exchanger.
Compare estimated costs for cooling some or all of the required flow to estimated heating costs and or combined system costs to achieve marking goal.
Develop associated plumbing controls for system.
Collect (March '98) and evaluate fry otoliths from wild stock systems in the Copper River and Copper River delta area including Eyak Lake, Clear Creek, Summit Lake, McKinley Lake and Bering River stock.

Phase 2: Heat or cool 40% of entire facility, mark all releases to Paxson Lake, can occur in cycles with 20% per alternating cycle.

All on site (Paxson Lake) releases marked; remote releases marked with CWT's as done currently.
Production design equipment (full scale) to heat/cool 800 gpm or half of mark group each cycle with 400 gpm.
Assume continuous on site personnel requirement.
Requires alarm system for both flow and temperature variations.
Requires recording thermograph to document temperature cycles for evaluation of otolith marks.

Phase 3: Expand capacity to mark entire facility using mark cycles to reduce cooling and/or

heating costs and logistics. Full production marking.
Minimum requirement approximately 35-40% of facility capacity marked in a cycle.
All Phase 2 requirements continue to Phase 3.

Phase 4: Mark recovery; recovery by fishery.
Recovery mandatory in commercial fishery and personal use dipnet fishery plus hatchery and remote release sites.
Recovery in subsistence and sport (rod and reel) fisheries desired but not critical.
Recovered otoliths analyzed in area ADF&G otolith lab (Cordova).

Technical support:

Alaska Department of Fish and Game will provide technical support through its fishery management division and the state's otolith lab.

Budget **Phase 1-3 Development and Marking** (see attached budget detail: Table 2)

100	Personnel	$37,000	
200	Travel	2,170	
300	Contractual	154,000	
400	Commodities	86,220	
500	Equipment	92,100	
	Subtotal	**$371,490**	
	Admin (15%)	55,724	
	Total	**$427,214**	**Grant request**

Budget **Phase 4 Recovery and Analysis** (see attached budget detail: Table 2)

100	Personnel	$57,400	
200	Travel	0	
300	Contractual	1,100	
400	Commodities	4,000	
500	Equipment	0	
	Total	**$62,500**	**PWSAC annual operating cost**

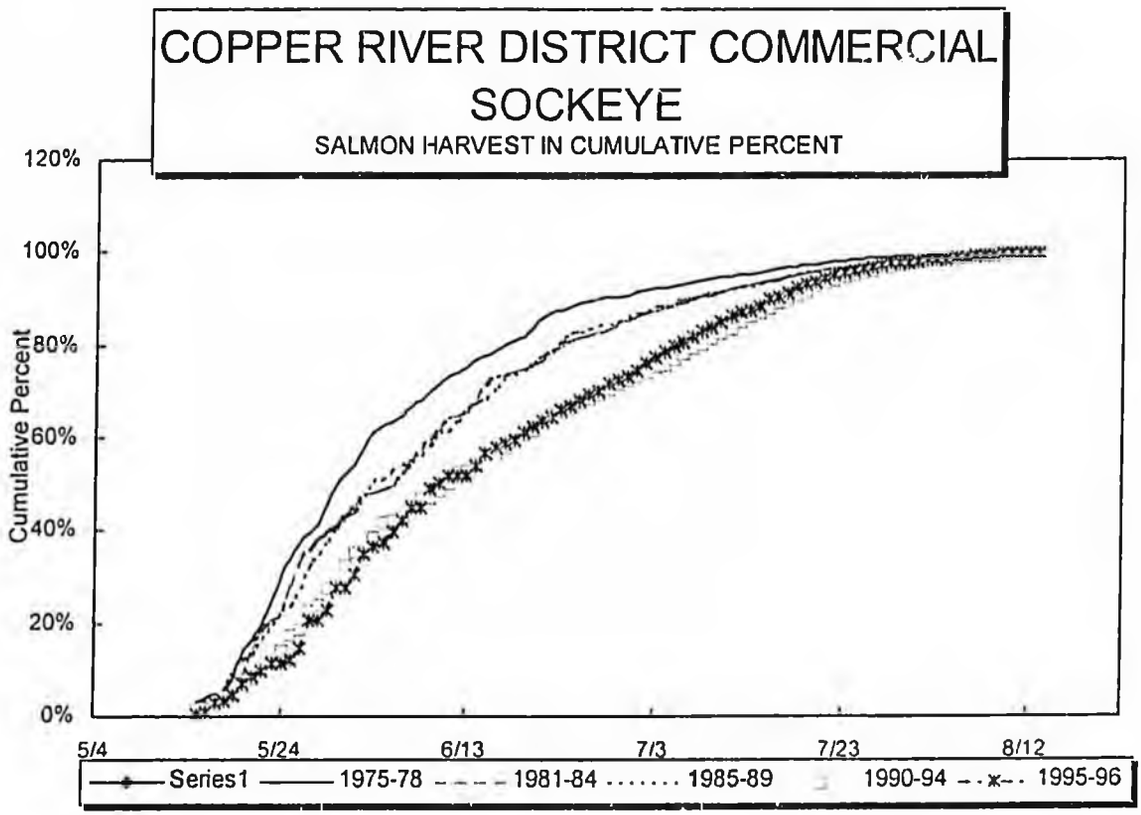
COPPER RIVER DISTRICT COMMERCIAL SOCKEYE
SALMON HARVEST IN CUMULATIVE PERCENT
120%
100%
80%
60%
40%
20%
0%
Cumulative Percent
5/4
5/24
6/13
7/3
7/23
8/12
Series1
1975-78
1981-84
1985-89
1990-94
1995-96

Table 1

Number of sockeye salmon fry released at the Gulkana Hatchery (Paxson Lake) and remote releases at Summit and Crosswind lakes, 1974-1996.

Release year	Number released			
	Gulkana (I&II) (Paxson Lake)	Summit Lake	Crosswind Lake	Total
1974	79,691			79,691
1975	785,110			785,110
1976	627,080			627,080
1977	514,922			514,922
1978	477,219			477,219
1979	940,974			940,974
1980	1,105,397			1,105,397
1981	3,368,642	1,340,660		4,709,302
1982	5,985,270	1,860,491		7,845,761
1983	5,470,056	2,047,947		7,518,003
1984	6,162,450	4,312,628		10,475,078
1985	9,261,785	4,741,759		14,003,544
1986	8,586,509	8,451,782	1,287,042	18,325,333
1987	9,905,907	14,999,085		24,904,992
1988	6,204,332	12,491,926	2,487,396	21,183,654
1989	10,105,238	12,026,642	3,130,373	25,262,253
1990	13,288,695	12,004,491	4,906,005	30,199,191
1991	10,522,819	6,455,011	5,469,759	22,447,589
1992	10,553,621	7,048,536	5,420,351	23,022,508
1993	5,295,017	2,651,542	4,495,966	12,442,525
1994	9,405,449	7,637,009	9,144,382	26,186,840
1995	10,317,116	7,418,311	9,973,600	27,709,027
1996	12,241,896	8,400,148	9,732,911	30,374,955
Total	141,205,195	113,887,968	56,047,785	311,140,948

April 24, 1997

Senator Rick Halford
Chairman, Senate Resource Committee
State Capitol
Juneau, AK 99801-1182

Dear Senator Halford,

It seems there is some misunderstanding and confusion regarding my April 22 letter and Copper River sockeye otolith marking proposal addressed to you. Clearly the letter spoke to CSSB 40(RES), the discreet stock assessment bill. **HOWEVER, the letter did in no manner suggest that PWSAC supports the proposed bill.** Rather, the letter spoke to the constitutional mandate for sustained yield, the need for information gathering, developing understanding of our salmon stocks, passing along a healthy and diverse resource to future generations, and needed stock research on the Copper River.

I have a very real impression that my message has been misinterpreted. To clarify my position to you, the legislative and administrative offices contacted, and general public who have had the opportunity to review my April 22 letter, let it be very clear that:

PWSAC did not "state" support for the bill.
PWSAC will not comment on the funding sources prescribed in the bill.

Further, PWSAC did not comment on other specifics of the bill which may be contentious including:

The relationship of the Governor, Legislature, Board of Fisheries and Department of Fish and Game in prioritizing projects.
"Discreet stock" terminology which has no commonly accepted definition and may be determined by regulation after serious review by experts.

Whether the bill positions the Board of Fisheries to exceed its authority and administratively infringe on the Department of Fish and Game's authority and responsibilities.

PWSAC has a mandate to produce fish for all users. Therefore nothing in this or the previous letter can be construed as allocative.

The sole reason for writing the April 22 letter was to request that you consider the importance of Copper River salmon resources, and consider funding our stock marking proposal should funding for such stock investigations become available.

Sincerely,

Bob Roys

Robert S. Roys
CEO

cc: Senate Resource Committee
House Resource Committee
Senate Finance Committee
House Finance Committee
Senator Georgianna Lincoln
Representative Gene Kubina
Governor Tony Knowles
Members, Alaska Board of Fisheries
Advisory Committees: Cordova, Glennallen, Fairbanks
Frank Rue, Commissioner, ADFG
Bob Clasby, Director, CFMDD, ADFG
Kevin Delaney, Director, Sport Fish Division, ADFG
John Hilsinger, CFMDD Area Supervisor Central Region, ADFG

(hf)

Alaska State Legislature

Please enter into the record my testimony to the Senate Resources
committee name

committee on HB 40 , dated 4/11/97 .
bill/subject

after listening to the many testimonies presented today, I find that my opposition to the bill is very adequately stated by Misters Carl Christianson Wadlow, and Bates. Teleconference input by me would be redundant therefore, so I would like to go on record opposing SB 40. Let the ADF+G continue the good job they are doing without interference, and don't let another play at unfair allocation and scapegoating succeed. Thank you

Signed: James Tutt
Testifier

Representing (Optional)

Box 878810, Wasilla, Ak. 99687
Address

(907) 892-8167
Phone No.

UCIDA
UNITED COOK INLET DRIFT ASSOCIATION
P.O. Box 389 • Kenai, Alaska 99611 - 0389
(907) 283-3600 • FAX (907) 283-3306 e-mail: ucida@kenai.net

April 23, 1997
Sent via fax

To: Senator Rick Halford
Chair, Senate Resources Committee
State Capitol
Room 121
Juneau, AK 99801-1182

Subject: UCIDA opposition to CSSB 40 (RES)

Dear Senator Halford,

United Cook Inlet Drift Association (UCIDA) represents the 585 salmon drift permit holders in Upper Cook Inlet. Some 350 permit holders are current members of our association. UCIDA is also active at the state and federal levels as a member of the Executive Committee of United Fisherman of Alaska (UFA).

UCIDA would like to express it unequivocal opposition to CSSB 40 (RES) for the following reasons:

1) Contrary to the sponsor's statement, this version is **NOT** a great deal different than the original bill which mandated that the Board of Fisheries adopt discrete stock management.

   - Sec 2 (b) mandates development of new discrete stock escapement objectives and forecasts. This is nothing more than the intent of the original version - escapements objectives **REQUIRE** management.

2) CSSB 40 (RES) is **NOT** an attempt to assure necessary stock assessments to provide for healthy stocks. CSSB 40 is special interest legislation designed to use "science" to create a de facto sport priority.

3) CSSB 40 undermines the current public process for the resolution of allocative conflicts.

   - Under the current process, the public and F&G Advisory Committees (A/C's) interact with the BOF and ADF&G to establish the "importance of stocks," "magnitude of conflicts," "biological health" and appropriate levels of "sustained yield" to create viable and stable sport and commercial fisheries.

   - Under this bill the public and A/C's **DO NOT** help identify stocks for which discrete stock assessments are needed.