LEGISLATIVE FINANCE-HOUSE/SENATE FINANCE COMM. FILES 8879

HB 210 cont. 489 80

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION : CSHB 210
PUBLISH DATE :

FISCAL NOTE

REQUEST:

Revision Date: 13-Feb-90
Agency Affected: Natural Resources
Title: An Act relating to the reservation of instream flows in water
BRU: Geological Management/Land & Water Mgmt/Mgmt & Admin
Sponsor: Davidson
Components: Geological Management
Requestor: House Resources
Land & Water Mgmt/Admin Svcs

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES	229.4	216.6	199.8	208.9	218.2	228.3
TRAVEL	80.0	80.0	70.0	70.0	70.0	70.0
CONTRACTUAL	311.6	100.0	90.0	90.0	90.0	90.0
SUPPLIES	12.0	11.0	15.0	15.0	15.0	15.0
EQUIPMENT	150.0	150.0	150.0	100.0	50.0	50.0
LAND&STRUCTURES						
GRANTS,CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	783.0	557.6	524.8	483.9	443.2	453.3
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	783.0	557.6	524.8	483.9	443.2	453.3
FEDERAL FUNDS						
OTHER						
TOTAL	783.0	557.6	524.8	483.9	443.2	453.3

POSITIONS:

FULL-TIME	3.0	3.0	3.0	3.0	3.0	3.0
PART-TIME						
TEMPORARY	2.0	2.0	2.0	2.0	2.0	2.0

ANALYSIS: (Attach a separate page if necessary)

See Attached

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Division: Land & Water Mgmt/Geological Mgmt
Date : 13-Feb-90

Approved by Commissioner: Jennie Gorsuch
Date: 13-Feb-90
Agency: Department of Natural Resources

Distribution (by preparer) :
Legislative Finance
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Office of Management and Budget
Impacted Agency(ies)

FISCAL NOTE

ANALYSIS:

INSTREAM FLOW DATA COLLECTION
Division of Geological and Geophysical Surveys (DGGS)

CSHB210 would require that a percentage of the mean annual flow of the streams in Alaska be reserved during the summer and winter seasons respectively and that no other use be permitted if measured instantaneous flows drop below the appropriate percentage.

In order to calculate the percentage required by the bill it would be necessary to know the mean annual flow of a given stream. According to the Alaska Department of Fish and Game Anadromous Fish Catalog, there are approximately 12,000 anadromous streams in Alaska. Additionally there are thousands of Alaskan streams which contain other fish populations. Few of Alaska's streams have been measured for streamflow (discharge). Approximately 260 streams have flow records of one year or longer. Therefore, in order to operate the instream program required by CSHB210, a very intensive stream-gaging program is required.

The hydrological work to provide reasonable estimates or measurements of annual and instantaneous stream flows will require an ongoing program of hydrological gaging and the establishment of a gaging network. Five years of data are the minimum for good records of stream flow. Therefore, this program is proposed for a five to ten year period. The gaging of thousands of streams would take many decades. The problem can be approached in various ways.

Authors and supporters of CSHB210 suggest that a tiered system be used to evaluate the flow of a given stream depending on the competition for the water. For those streams with the least competition, the "Tennant" or "Montana" methods may be used.

D.L. Tennant of the U.S. Fish and Wildlife Service in Billings, Montana, analyzed 38 flows from 11 rivers in several of the contiguous 48 states and derived a somewhat universal classification for the percentage of flow of the stream values for fish habitat as follows:

Flow Type	Recommended Base Flow	
	Oct-Mar	Apr-Sept
Flushing (Maximum)	200% of Average Flow	
Optimum Range	60%-100% Average Flow	
Outstanding	40%	60%
Excellent	30%	50%
Good	20%	40%
Fair or Degrading	10%	30%
Poor or Minimum	10%	10%
Severe Degradation	10% to 0% Average Flow	

Tennant writes, "First, determine the average annual flow of the stream at the location(s) of interest (listed as AVERAGE DISCHARGE by U.S.G.S. and hereinafter called flow)."

The above quote stresses the point that streamflow records and data are needed in order to use the "Tennant Method" correctly. However, there are methods of estimating flows for streams based on characteristics of the basin, climatic records, stream channel morphology and data from nearby streams. All of this type of hypothetical flow estimation produces data with large errors, considered inaccurate by most hydrologists, and are inadequate data on which to base laws, adjudicate water rights, or use in court.

Other variables affecting Alaskan streams include the variation with latitude of streamflow patterns. The farther north and more extreme the climate, the more widely streamflow vary from winter to summer. The most extreme are the streams of the North Slope where the streams do not flow in the winter and most of a season's flow occurs during a period of a few weeks in the early summer. The geographical area covered by Alaska is about like all of the 48 contiguous states with the marine and interior differences. Therefore the stream variety is very large---much larger than the streams included in Tennant study.

Glacial streams have different flow patterns from non-glacial streams; small streams have different patterns than large streams. The streamflow patterns of the thousands of Alaskan streams will have to be analyzed, either by gaging (the best method) or by surveying the channels in the field in order to make a determination of the mean annual flow.

The Instream Flow Program proposed in the attached fiscal note provides a hydrologist in three DNR regions of Alaska---southeast, southcentral and northern---to devote full time to the determination of mean annual flows for the streams of the region. These hydrologists will use all of the various scientifically sound techniques to provide water managers, habitat biologists, and fish and game managers the streamflow data they need.

A major part of the project will be the expansion of the stream gaging network in Alaska. The increased number of gages will be of great value to all areas of natural resources management and environmental evaluation because there are so few gaging stations in Alaska at the present time.

The instream flow hydrologist will determine the streams of the region which are representative and use them as index streams for making estimates of flow for ungaged streams. This system is used in several ways in hydrology when inadequate data are present. The more and better the index streams, the more accurate the ungaged stream estimate.

The instream flow hydrologists will also calculate the necessary percentages for the streams in his region and devise techniques necessary to evaluate flows for consumptive and out-of-stream uses and applications. This work will be closely coordinated among the Department of Fish and Game and DNR's Division of Land and Water Management and Division of Geological and Geophysical Surveys. The project will require purchase of equipment for the gaging stations; improved computer equipment to store, retrieve and manipulate data; travel funds; and contractual monies for related laboratory expenses and for a cooperative program with the U.S. Geological Survey, Water Resources Division, for part of the stream gaging program.

INSTREAM FLOW DATA MANAGEMENT
Division of Land and Water Management (DLWM)

This bill will require that DNR be able to track water that is withdrawn from appropriation for protection of fish habitat. The department presently has a computer filing system, the Land Administration System (LAS), to store information from casefiles. Water rights data from applications, permits, and certificates are stored in this system. However, this information is for single-point uses of water. This bill will require keeping track of information for withdrawn flows in segments of streams and rivers.

In the early 1980s DNR started a program to identify and record river miles on all streams in the state so that information can be stored for segments of streams in addition to single points. This system is the STORET system, which was developed by EPA. The procedures for mapping the river miles and physical work to identify, record, and index the river miles on USGS maps was begun. The project was approximately 50 percent complete when funding ran out.

The STORET system was identified as the best system for this type of tracking of stream flows in stream segments. This project and the mapping of the river mile index must be completed. The procedure manuals and original completed maps presently exist in DNR.

Initial programming to integrate the STORET system into the LAS system and link it to the water rights case file information system was completed in the early 1980s. It has not been used because the river mile index mapping was never completed. It will be necessary to evaluate the STORET system within LAS and make modifications if needed. Also, the river miles recorded on maps must be entered in the system.

Completion of the mapping, necessary programming, and data entry can be completed in one year. No new employees are requested. Funds will be required in subsequent years to pay programmer costs to maintain the STORET system in LAS.

SUMMARY

This fiscal note provides a DGGS hydrologist at each DNR regional office to work with water managers to determine flows for streams from which out-of-stream water rights are requested. It provides one senior hydrologist to conduct a statewide gaging program to produce data needed to calculate flows for instream flow needs and other uses. The hydrologists will conduct office, laboratory, and field work needed for various levels of instream flow analyses. The DLWM portion of the project will modify the DNR LAS system to accommodate instream flow data and out-of-stream appropriation data relative to instream flows and adoption of required regulations.

The project will develop a cooperative agreement with the U.S. Geological Survey Water Resources Division to cooperatively establish more critical and permanent streamflow gaging stations using joint (federal/state) funds.

BUDGET

		FY91	FY92	FY93	FY94	FY95	FY96
100	Personal Services						
	Instream Flow Monitoring						
	2 Hydrol III (EBK, AWA)	101.2	106.3	111.6	117.2	123.0	129.2
	1 Hydrologist II (JBC)	50.6	53.1	55.8	58.6	61.5	64.6
	1 Hydrologist VI	7.0	7.4	7.7	8.1	8.5	9.0
	Student Interns	20.0	20.0	20.0	20.0	20.0	20.0
	Regulations Writer, Rg 18A	50.6	25.3				
	Ongoing STORET Maintenance						
	1 Programmer,1 mth/yr		4.5	4.7	5.0	5.2	5.5
	Total Personal Services	**229.4**	**216.6**	**199.8**	**208.9**	**218.2**	**228.3**
200	Field Travel	50.0	50.0	50.0	50.0	50.0	50.0
	Travel for Public Meetings	10.0	10.0				
	Educational Training	20.0	20.0	20.0	20.0	20.0	20.0
	Total Travel	**80.0**	**80.0**	**70.0**	**70.0**	**70.0**	**70.0**
300	LAS Modification						
	1 Project Mgr, 1/3 time	17.0					
	1 Programmer, 1/3 time	41.6					
	3 Drafting Techs, PFT	102.0					
	2 Data Entry Clks, PFT	56.0					
	Expenses						
	Cartographic Material	2.0					
	Mapping Equipment	0.6					
	USGS Maps(1200@$2)	2.4					
	Lab Work	30.0	30.0	30.0	30.0	30.0	30.0
	Newspaper Advertising						
	20 papers at $300		6.0				
	Duplicating and Mailing		4.0				
	U.S. Geological Survey	50.0	50.0	50.0	50.0	50.0	50.0
	Helicopter	10.0	10.0	10.0	10.0	10.0	10.0
	Total Contract Svcs	**387.7**	**155.8**	**142.5**	**138.4**	**134.3**	**135.3**
400	**Total Supplies**	**12.0**	**11.0**	**15.0**	**15.0**	**15.0**	**15.0**
500	Equipment						
	Stream Gages						
	Datapods at $5.0	100.0	100.0	100.0	50.0		
	Field Structures	50.0	50.0	50.0	50.0	50.0	50.0
	Total Equipment	**150.0**	**150.0**	**150.0**	**100.0**	**50.0**	**50.0**
	Total Costs	**$859.1**	**$613.4**	**$577.3**	**$532.3**	**$487.5**	**$498.6**

BUDGET DETAIL

100 Personnel

Hydrologists II and III to be located in the three major regions of Alaska (southeastern, southcentral, and northern), to conduct all instream flow tasks necessary to develop a regional network of streamflow gaging stations, collect data, and make necessary analyses to support instream flow reservations of the region.

The southcentral region instream flow hydrologist, with Section Chief supervision, will also coordinate the regions into a statewide streamflow gaging network with identification of index stations to be used to evaluate ungaged streams in the regions.

Student interns will be used as assistants in field, office, and laboratories.

One computer programmer will be used for one month per year for ongoing maintenance of the STORET system.

This bill will require regulations to be adopted by DNR within 18 months of the effective date of the bill. The purpose of the regulations is to develop regional minimum instream flow withdrawals throughout the state of Alaska to protect habitat in anadromous fish streams. Regulations will be adopted under the Administrative Procedures Act. It will be necessary to review existing hydrologic and biologic information, procedures to calculate mean annual and mean monthly flows, and methods used to determine instream flow withdrawals. The regulations would establish an estimated 12 regions within the state. Meetings would be required to evaluate proposals with the public, Department of Fish and Game, and other agencies. Public hearings will be held in all of the proposed regions in accordance with the Administrative Procedures Act. Contractual funds will be required for newspaper advertisements, public notice, and duplicating and mailing the regulations.

200 Travel

The installation of up to 20 gages per year requires extensive field travel and the measurement of streamflow and gaging station data collection require regular travel to field sites (approximately four visits per year per site). Travel will be by airplane, helicopter, foot, boat or snowmachine depending on season and conditions.

Instream flow education courses are provided by the National Instream Flow Group at Colorado State University. The instream flow hydrologists for Alaska should enroll in short courses as time and funding allow.

300 Contractual Services

LAS modification will be contracted to the appropriate consultant or agency. This one-time expense is needed to evaluate the STORET system within LAS and make all necessary modifications. The contractor will also enter into this system all river miles recorded on maps.

400 Supplies

Supplies are needed for office, laboratory and field tasks.

500 Equipment

Stream-gaging equipment will be digital recording electronic devices such as "Datapod" and "Polycorder" which make digital recordings from sensors on the streambed. The digital data is read directly into the computer, to be stored or manipulated into a variety of calculations to provide mean annual flow, extreme flows and other streamflow characteristics needed for instream flow analysis.

Flow meters, wading rods, tag lines, sample bottles, and computer equipment for digital reading also will be needed, as well as the structures necessary to house and protect field installation equipment.

The DGGS cost per flow gaging site is approximately $5,000. This can be compared to the USGS stream gaging station cost of $8,000 to $25,000 per site. Digital recording, computer technology, and reduced overhead are major factors for the low DGGS cost per site.

Position Title	No. of Positions	Range/Step	Barg. Unit
Hydrologist III	1	18/A	GGU

Time Status	Staff Months	Location	Election District
PFT	12	Eagle River	15I

Type of Expenditure		Amount
1	2	3
Salary	37.4	
Benefits	13.2	
Premium Pay		
Other		
Total Personal Services		50.6
Travel		15.0
Contractual		8.0
Commodities		0.5
Equipment		
Other		
Total Cost		74.1

Funding Source for Total Cost		
Federal Receipts	1002	
G. F. Match	1003	
General Fund	1004	74.1
I-A Receipts	1006	
CIP Receipts	1061	
Other		

Justification

The Hydrologist III position will be in charge of the statewide instream flow data collection and data management project to ensure adequate statewide program of streamflow analysis for all instream flow reservations and conflicts with other streamflow use applications. A statewide gaging network will be designed, operated, and maintained. Also, a computer program to store and retrieve flow data will be developed and operated. Coordination of the instream flow statewide project with other agencies, particularly ADFG, will be an important duty of the position.

Request For New Position

Agency: Natural Resources
BRU: Geological Management
Component: Geological Management

FY 91

Position Title	No. of Positions	Range/Step	Barg. Unit
Hydrologist III	1	18/A	GGU

Time Status	Staff Months	Location	Election District
PFT	12	Juneau	4C

Type of Expenditure		Amount
1	2	3
Salary	37.4	
Benefits	13.2	
Premium Pay		
Other		
Total Personal Services		50.6
Travel		15.0
Contractual		8.0
Commodities		0.5
Equipment		
Other		
Total Cost		74.1

Funding Source for Total Cost		
Federal Receipts	1002	
G. F. Match	1003	
General Fund	1004	74.1
I-A Receipts	1006	
CIP Receipts	1061	
Other		

Justification

The Hydrologist III position is needed to conduct field, laboratory, and office work to provide streamflow data and analyses needed to support the instream flow reservations as described in HB 210. Index stations to be used for regional evaluations will be designed, installed, and operated to provide data for ungaged streamflow determinations. The position will work with DLWM water managers and ADFG biologists to provide useful, accurate streamflow data for managing the water and fish resources of Alaska.

Request For New Position

Agency: Natural Resources

BRU: Geological Management

Component: Geological Management

FY 91

Position Title	No. of Positions	Range/Step	Barg. Unit
Hydrologist II	1	16/A	GGU

Time Status	Staff Months	Location	Election District
PFT	12	Fairbanks	19-21K

Type of Expenditure		Amount
1	2	3
Salary	37.4	
Benefits	13.2	
Premium Pay		
Other		
Total Personal Services		50.6
Travel		15.0
Contractual		8.0
Commodities		0.5
Equipment		
Other		
Total Cost		74.1

Funding Source for Total Cost		
Federal Receipts	1002	
G. F. Match	1003	
General Fund	1004	74.1
I-A Receipts	1006	
CIP Receipts	1061	
Other		

Justification

The Hydrologist II position will provide technical water resources data for streams in the northern region needed to support instream flow reservations in the district. Data are needed from the streams to determine reasonably accurate mean annual flow as well as measuring flows at locations where other uses for the stream water are requested. Regional characteristics and patterns of streamflow will be determined and index stations established in order to evaluate appropriate percentage of streamflow for the instream flow reservations.

Request For New Position

Agency: Natural Resources

BRU: Geological Management

Component: Geological Management

Revised Date 2/9/90

FY 91

EXISTING LEGISLATION AND REGULATIONS	PROPOSED DNR REGULATION CHANGES	HB 210 LEGISLATION - CS FEBRUARY 13, 1990
DNR must only consider instream flows for fish despite a general reservation of instream flows for fish specified in Article VIII, Section 13 of the Alaska Constitution.	No change	Guarantees consistency with Constitutional mandate by requiring that sufficient water be reserved to maintain fish production.
The only procedure to acquire instream flow water rights for fish is to file an instream flow application. Water law is based upon "first in time and first in right". Therefore, fish are among many resources or uses to be considered by DNR when it, in its own discretion, appropriates water for an out of stream use, unless water rights to acquire instream flows for fish were filed first.	No Change	Automatically grants instream flow protection and priority date for instream flow water rights for over 12,000 known fish bearing streams as the date of bill enactment. Priority date for streams identified as fish bearing after bill passage is date of identification. Applications on file and existing out of stream appropriations at time of passage of bill receive grandfather rights.
Public water supplies are granted priority over all other water uses.	No change.	No change. Instream flows for fish are given priority consideration second only to public water supply, while allowing for other out of stream and instream uses.

EXISTING LEGISLATION AND REGULATIONS	PROPOSED DNR REGULATION CHANGES	HB 210 LEGISLATION - CS FEBRUARY 13, 1990
Approximately 4,500 out of stream flow water rights granted since 1966. Only 32 instream flow reservation applications filed since passage of legislation in 1980. Of them, seven have been granted and three are in process of adjudication.	No Change	Automatic instream flow protection in more than 12,000 fish bearing streams. Funds do not have to be expended to quantify instream flows for the thousands of streams protected. Instead, analyses are only performed for a stream protected by this law when an application to appropriate water for out of stream uses is filed. Two hundred to 300 out of stream applications received each year by DNR might be subject to provisions of this bill.
All instream flow applicants must go through extensive data gathering and analysis processes to provide sufficient data to DNR prior to filing application for instream flows and receiving priority date. Similar requirements for out of stream applicants are optional at DNR's discretion and often not required.	Instream flow applicants can file applications to receive priority date before completing all analyses. Analyses must be completed three to five years after filing. Out of stream applicants are required to provide better documentation to support requests. Requirements for applications for 100,000 gpd or more, are more equivalent to those for instream flow applicants.	All fish bearing streams receive automatic reservation and priority date without expending resources. Minimal resources required to quantify the instream flows for individual reservations on case by case basis only at time of receipt of application for out of stream appropriation. The automatic reservation can be adjusted based upon additional data and a public interest finding if coordinated with a similar finding by the ADF&G.

EXISTING LEGISLATION AND REGULATIONS	PROPOSED DNR REGULATION CHANGES	HB 210 LEGISLATION - CS FEBRUARY 13, 1990
No requirement that DNR provide or request sufficient hydrological description of water availability to ensure that stream will not be over appropriated when application for out of stream uses is adjudicated and to assist other agencies and the public to evaluate instream flow requirements or impacts on other appropriators.	Descriptions of water availability based upon mean annual or mean monthly flow based using best available data or estimate of mean annual flow required for out of stream appropriations equal to or greater than 100,000 gpd (0.15 cfs).	Descriptions of water availability based upon mean annual flow or mean monthly flow using best available data or estimate of mean annual flow required when an application to appropriate water for an out of stream use is received by the DNR.
ADF&G, other agencies, or the private sector must apply for individual instream flow regimes. Only an average of ten instream flow applications are filed each year due to the cumbersome data requirements. Each, assuming there is no controversy, averages a cost of $8,000 to $10,000 to the applicant. At this present rate it will take over 1000 years and over $96,000,000 to file for instream flows for presently identified fish bearing streams.	No Change.	All known fish bearing streams (over 12,000) and streams identified in the future as fish bearing are automatically granted instream flow protection on the date of enactment of bill without expending funding. Instream flows are not quantified until an out of stream appropriation is received following the existing adjudication process.
No requirement for ADNR to determine cumulative effects of multiple appropriations. No automated data base or mechanism in force to know how many streams have been over appropriated.	Requirement for mean annual flow or mean monthly flow description or mean annual flow estimate for appropriations of 100,000 gpd or more.	Requires DNR to reserve adequate instream flows for fish before additional water is appropriated for other uses. Public water supply and nonconsumptive uses are exempt from this provision.

EXISTING LEGISLATION AND REGULATIONS	PROPOSED DNR REGULATION CHANGES	HB 210 LEGISLATION - CS FEBRUARY 13, 1990
DNR has flexibility to determine whether a method is acceptable for calculating instream flows. DNR has discretion to decide the best public interest for uses of water when approving out of stream appropriations and instream flows.	No Change.	DNR maintains flexibility to determine if a method to calculate instream flows is acceptable and whether to provide full instream flow protection for fish. DNR must grant instream flows to protect existing fish habitat when appropriating new out of stream water rights unless a Title 46 public interest finding by the DNR in coordination with the Title 16 finding by the ADF&G supports alternative flows and/or mitigation.
No gaging station requirements or requirements for additional gages. However, it would benefit all water users and managers to improve the existing gaging system. There is only one gage per 7,000 square miles in Alaska while in the lower 48 states, it's one gage per 400 square miles, yet Alaska has 1/3 of the nation's freshwater.	No Change	No Change. Legislation is designed to be implemented using existing data base. Additional hydrological data would refine and improve decisions but is not a requirement of legislation.

EXISTING LEGISLATION AND REGULATIONS	PROPOSED DNR REGULATION CHANGES	HB 210 LEGISLATION - CS FEBRUARY 13, 1990
The Tennant Method is an approved method for reserving instream flows. With the exception of one application filed by the ADF&G, all others have relied in part or entirely the Tennant Method.	No Change	An automatic instream flow for all fish streams equal to 60% (Apr. to Oct.) and 30% (Nov. to Mar.) is guaranteed unless other regulations are adopted specifying other quantities. These percentages are based upon the Tennant approach of evaluating hydrological conditions to establish percentages of flows for fish habitat. Due to the climatic variation and other physical differences of this large state, it is obvious these percentages can be further refined to accommodate regional and local differences. However, when viewed from a statewide perspective and the extremes in conditions, it is obvious they were designed to protect fish habitat. Provisions in the bill allow for flexibility to adjust these percentages using existing or new data. It is also assumed the DNR and ADF&G will generate regional alternatives to these percentages within eighteen months of passage of this bill. The above percentages provide a basis for allocating water until alternatives are agreed upon.

Department of Fish and Game
Department of Natural Resources

House Bill 210
An Act Relating to the Reservation of Instream Flows
in Water Important for Fish

The Administration's position, formulated by the Departments of Fish and Game and Natural Resources, is in support of the concept of House Bill 210. House Bill 210, introduced by Representative Davidson and co-sponsored by Representatives Goll, Jacko, Ellis, and Brown, provides for the reservation of instream flows in waters supporting fish. Because of the complexity of the issues involved in this bill and the need to further examine the fiscal consideration of this legislation, the Administration recommends that the committee hold the bill over the interim for further work by a subcommittee that involves the Administration and all interested parties.

We are providing two documents for consideration by the committee: 1) this background paper and 2) a memorandum from technical staff suggesting amendments to the bill that are supported by both agencies, and identifying topics that need further work.

Background

The following is a summary of Alaskan Water Law. More detailed information specific to Alaska can be derived from the publications listed in the references.

In Alaska, water can be appropriated for out-of-stream or diversionary uses such as municipal or private water supplies, mining operations, hydroelectric generation, fish hatcheries, recreational lodges, pulp mill operations, etc. It may also be appropriated for instream uses (sometimes referred to as an instream flow reservation) such as fish and wildlife, habitat, hatcheries, drinking water, recreation and park purposes, water quality, and navigation.

Alaska's instream flow statutes and regulations are unique because they enable private individuals and federal agencies, in addition to state agencies, to apply for instream flow appropriations.

The Alaska State Constitution in Article VIII, Section 13 provides that:

> All surface waters and subsurface waters reserved to the people for common use,....are subject to appropriation. Priority of appropriation shall give prior right. Except for public water supply, an appropriation of water shall

be limited to state purposes and subject to preferences among beneficial uses,...as prescribed by law, and to the general reservation of fish and wildlife.

The Alaska Water Use Act, enacted in 1966, established procedures for maintaining existing water rights and for obtaining new rights. In 1980, instream flow amendments were enacted to provide for a mechanism by which private parties or public agencies could apply for instream flow reservations. Regulations were adopted and an application form was made available to the public and agencies for reserving instream flows in November 1983. ADNR is responsible for adjudicating applications for both out-of-stream and instream flow water appropriations.

Since 1980, twenty-five instream flow reservation applications have been filed. Six of them were filed by the private sector and were denied. All eighteen of the ADF&G applications filed have been accepted as has an application from the Bureau of Land Management. Six of the ADF&G applications have been approved. The remainder have not been adjudicated yet, but it is anticipated they will be approved. The BLM application is in the final stages of the adjudication process stage. The majority of these have been filed for streams that are particularly important for fisheries resources and where there is a higher danger of over-appropriation. It is anticipated the ADF&G will file an additional eight applications by July 1989.

House Bill 210 sets up a uniform method of reserving water in the stream to ensure support for fisheries by reserving 60 percent of the mean annual flow in the summer months and 30 percent in the winter months.

The concept of the bill is to ensure that there is enough water in the stream to support fish, while allowing out-of-stream/diversionary appropriations and preventing over-appropriations.

If enacted, House Bill 210 would require reservation of a set percentage of water in all fish streams. The remainder of the water would be available for out-of-stream/diversionary appropriations, (or other in-stream appropriations). Under this system the burden of providing the hydrological data to justify the out-of-stream or diversionary appropriation is on the appropriator, or ADNR. Currently, instream flow applicants, including ADF&G, bare the burden of providing both hydrologic and biologic data to document the request.

The size of the state, the large number of river systems, and, the limited amount of flow information make any system for determining water appropriations difficult at best.

In Alaska, hydrologic data is not available for the vast majority of streams. According to a Division of Geological and Geophysical Survey hydrologist, the extreme variations in terrain and climate influencing streams in various parts of the state make it difficult to obtain reliable flow data for ungaged streams. Similar size stream channels in close proximity may receive substantially different volumes of water, depending on local differences in weather, precipitation, and snow melt, which can be substantial.

Because very little actual hydrological data exist for Alaska drainages, and competition for water in the majority of streams is presently minimal or nonexistent, the bill uses the "Tennant" approach. Under this generalized, "umbrella" approach, the optimum flow for maintaining fisheries in streams is set at 60 percent for the high flow months and 30 percent for the low flow months.

Under the system set up by the bill, when a person comes in with an application for an appropriation, if no data exist for the water body from which they want to appropriate, a hydrologist may have to extrapolate the stream flow from information of a stream with some similar topographical and hydrological situations.

Summary of the Problem

Some critics of the bill are concerned because under the "Tennant" approach data is extrapolated from one stream and applied to another stream that may be very different but for which no data exist, and therefore appropriations may be based on "the best available" but inaccurate data. Proponents of the bill have expressed concern that appropriations and preference rights can now be granted without necessarily protecting against over-appropriation and without reserving enough water to support fish.

Another issue of concern that will be raised by the bill and by reviewing the current appropriation system is determining who will have responsibility for collecting the data to justify instream and out-of-stream/diversionary appropriations: The state? ADNR? the in-stream-appropriator? the out-of-stream-appropriator? or some combination of these?

The Administration recognizes that the bill provides some flexibility with respect to this problem, but also recommends adjusting the percentages on a regional basis, differentiating between gaged and ungaged streams and/or developing alternatives to consider different stream types. Because of the complexity of the issues involved, and the likelihood that the provisions of the bill may change, the Administration recommends that fiscal considerations associated with the bill be examined in detail over the interim along with any other issues that may be addressed at that time.

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Steve Cowper, Governor

Alaska Power Authority

State of Alaska

March 6, 1989

Mr. Stosh Anderson
P.O. Box KS
Levelock, Alaska 99627

Subject: Proposed Instream Flow Reservation Regulation Amendments

Dear Mr. Anderson:

The Alaska Power Authority has reviewed your proposed amendments to AS 46.15.145.

As a general comment, we support the adoption of an amendment that simplifies the reservation of public waters not only for fisheries, but for other public uses such as navigation and recreation. We also expect the amendment would simplify the permitting and feasibility analysis of hydroelectric projects as well.

Tennant's method of determining the minimum flow requirements for maintaining fisheries, which is the basis for the quantities of water to be reserved by the proposed amendment, has been demonstrated to be a very suitable methodology and compares favorably with the incremental flow types of analysis. Tennant's method, however, is simple to apply and far less costly with respect to data gathering and analysis.

With respect to the manner in which a reservation would be effected, we do have some specific comments. We believe that it may be most beneficial to the state to enact an amendment that withdraws from appropriation the 60% and 30% flows for all anadromous fish streams specified under AS 16.05.870(a) at the time of enactment.

We have discussed this concept cursorily with the Attorney General's Office and have been told that there is probably no legal or constitutional impediment to doing this. In fact, this type of statewide reservation would implement constitutional requirements related to maintaining fish and wildlife resources at sustained yields. The burden would rest upon the party requesting water rights to demonstrate that the request would still maintain the minimum flow requirements. If the requested appropriation diminishes flows below the minimums, the burden would be upon the user to demonstrate that he could adequately mitigate to maintain sustained yields of fisheries or compensate for their loss in an out-of-kind manner.

PO Box [illegible] Juneau, Alaska 99811 (907) 465-3575
PO Box 190869 701 East Tudor Road Anchorage, Alaska 99519-0869 (907) 561-7877

5011/941/1

The advantage to this approach is that the reservation is made statewide immediately, not piece-meal only as applications for water rights are submitted.

Enclosed with this letter is a capsule discussion of some of the issues we see related to this bill and reservations in general.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Robert E. LeResche
Executive Director

TA/REL/bw

Enclosure as stated

"A WAY TO MEASURE OUR WATER"

By Representative Cliff Davidson

Water means life. There is no argument that water is one of our most important public resources. In Alaska, we are unique. We have an abundance of fresh, clean water. We have so much water that for decades southwest Congressmen have proposed a water pipeline to transport Alaska's water to quench the thirsty appetites of their deserts and cities and to help solve their million dollars water battles.

But in Alaska, we also have our potential water problems. We are no better prepared to prevent these expensive water appropriation fiascoes from happening any more than the western states were 100 years ago.

As Chairman of the House Resources Committee, I have been looking at our water allocation system. And in my opinion, there exists a danger that we can over appropriate water from our fish bearing rivers and streams. Such protection is not guaranteed under our present laws, although a stream reservation is mandated in our Constitution.

If this seems ironic, it is. Alaska is a state where the economic, recreational and cultural values of our fisheries cannot be overstated. Commercial, sport and subsistence fishermen all depend on one basic thing -- fish. And without sufficient water there just won't be any fish.

The framers of our constitution realized this when they granted a general reservation of water to fish and wildlife, second only to public water supply, when drafting the supreme law of the land.

I introduced House Bill 210 to, among other things, automatically reserve sufficient water in rivers and streams for fish and wildlife, consistent with the constitutional mandate.

House Bill 210, however, really addresses a much deeper problem: we are currently appropriating water without a good idea of how much exists. In Alaska, we have 1/3 of the nation's freshwater, yet we have little or no data on 99% of our rivers and streams.

That's because good, reliable data is expensive. A single gage can cost as much as $5 to $30 thousand and requires 5 to 10 years to establish records on a single portion of a single stream. In Alaska, we have over 12,000 anadromous streams alone. Many more remain undiscovered.

While I wish we could gage every stream, it is unrealistic with the abundance of water and little competition for it in Alaska. And with the decreasing budget and increasing fiscal pressures, I am working on an alternative method which would save a portion of water for our fish while ensuring there is adequate water for other important uses, such as hydroelectric projects, mining, and public water.

We need an accounting system for how much water we are appropriating out of streams. It makes good sense with a public resource like water that we plan long-term. This is especially true because in the complex world of water law, as the western states are discovering, it is almost impossible to revoke a water right once it is granted.

We need a cost-effective way to allocate our public water resources today -- not tomorrow. My legislation, HB 210, would provide such an interim solution. When a person applies for a water right, the state would be required to first estimate how much water is in that specific stream before they grant the applicant the right to appropriate water from it. A percentage of this estimate would be left in the stream for fish and wildlife, and the remaining would be available for appropriation. It is important to note this legislation specifies these estimates are to be temporary and imperfect, and should be replaced when we can afford a better data collection method.

The best part about HB 210 is that it would be very inexpensive. It provides a way to sensibly allocate our water from the thousands of streams that have no flow records -- using existing data. And, in a state where fisheries and wildlife are of exceptional value and importance, as the framers of our State Constitution realized, House Bill 210 protects our water resources for present and future generations.

I strongly believe House Bill 210 will solve many future problems regarding the allocation of Alaska's water resources. And it accomplishes this for the benefit of all users of water -- including fish and wildlife. Applying for water rights is not a right we would want to restrict, but the fish and wildlife should also have rights to water, especially with so many livelihoods inextricably linked to these resources.

-30-

LETTERS COMMENTING ON HB 210

IN ALASKA:

SOUTHWEST FISH AND GAME COUNCIL
UNITED FISHERMAN OF ALASKA
ALASKA SPORTFISHING ASSN.
BRISTOL BAY COASTAL RESOURCE AREA
BRISTOL BAY SALMON ENHANCEMENT ASSN.
KODIAK REGIONAL AQUACULTURE ASSN.
AQUATECH INC.
ALASKA CENTER FOR THE ENVIRONMENT
WILDLIFE FEDERATION OF ALASKA
KENAI PENINSULA FISHERMEN'S ASSOCIATION
COOK INLET AQUACULTURE ASSN.
ANCHORAGE WATERWAYS COUNCIL
AMERICAN FISHERIES SOCIETY
NATIONAL WILDLIFE FEDERATION
AMERICAN RIVERS
THE GOOD SAM CLUB
ECO-NORTHWEST (WASHINGTON)
WATER WATCH OF OREGON

3b

SOUTHWEST REGIONAL FISH & GAME COUNCIL

c/o ADF&G, DIVISION OF BOARDS, P.O. BOX 1030, Dillingham, Alaska 99576/ph#842-51

January 26, 1987

ADVISORY COMMITTEES
Chignik
False Pass
Iliamna
King Cove
Kodiak
Lower Bristol Bay
Naknek/Kvichak
Nelson Lagoon
Nushagak
Sand Point
Togiak
Unalaska/Dutch Harbor

Senator Fred Zharoff
P.O. Box V
Mail Stop 3100
Juneau, Alaska 99811

Senator Zharoff;

The Southwest Regional Fish and Game Council, at their November 22, 1986 meeting in Anchorage, discussed at length the enclosed draft Bill titled "An Act Providing an Instream Flow Reservation for Anadromous Fish, a Priority Date for Anadromous Fish, and Providing for an Effective Date."

The SW Regional Council adopted and supported this Bill with amendments which have been included in this proposed draft legislation.

I have included the minutes of the November 22, 1986 meeting for your information and further review.

The Southwest Regional Fish and Game Council endorses and supports this proposed Bill.

Thank you for your consideration.

Sincerely,

Alvin Osterback /DSW/

Alvin D. Osterback,
Chairman, Southwest Regional Council
P.O. Box 1030
Dillingham, Alaska 99576

cc: ~~SWRC~~ Members
~~Rep.~~ Adelheid Herrmann
Distribution (hold)
File

AO/SA/dsw

UNITED FISHERMEN OF ALASKA

211 4th Street, Suite 106
Juneau, AK 99801
907-586-2820

UNITED FISHERMEN OF ALASKA

Resolution 88-7

WHEREAS fisheries resources constitute one of the major contributors to the economy and well-being of the state of Alaska; and

WHEREAS maintenance of sufficient instream flows are essential to the continued production of these fisheries resources; and

WHEREAS United Fishermen of Alaska promotes the wise management of fisheries resources and the habitat that sustains them; and

WHEREAS UFA supports the intent of the existing Water Use Act (AS 46.15.145) to reserve instream flows for fish, wildlife, navigation and other purposes; and

WHEREAS the existing provisions of the Water Use Act are inefficient because they do not provide a cost-effective and timely process for reserving instream flows within the 12,000 waters that are classified under AS 16.05.870 as important to anadromous fish; and

WHEREAS UFA supports the attached proposed amendments to the Water Use Act designed to provide for a more efficient and technically sound process to reserve water within the waters specified in the "Anadromous Fish Catalog" under AS 16.05.870;

NOW THEREFORE BE IT RESOLVED that United Fishermen of Alaska urges the Alaska State Legislature to enact legislation similar to the attached proposal, to reserve instream flows for fish habitat.

Jim Bacon
President

3-1-88
Date

Alaska Sportfishing Association

3605 Arctic Blvd., Suite 800 • Anchorage, Alaska 99503

February 17, 1989

Mr. Stosh Anderson
Box KS
Livelock, AK 99625

Dear Stosh:

Thank you for sending us a copy of the proposed legislation that would improve the existing instream flow law and Water Use Act. We support this concept and commit our organization to assist you to obtain legislative approval.

We are disappointed that the existing legislation does not guarantee water rights for fish. It is apparent that the current processes to reserve instream flows or to condition out of stream appropriations to protect fish are too cumbersome and inefficient. It is obvious that the current rate at which the Department of Fish and Game or others can reserve instream flows under the present system will require hundreds of years to protect our important fish streams in Alaska. Observing the over appropriation of water in the Lower 48 and the resulting impacts to their fisheries makes it obvious that this legislative proposal is essential to the socioeconomic well-being of Alaska.

We whole heartily support your efforts to date.

Sincerely,

Russ Redick
Executive Director

BRISTOL BAY COASTAL RESOURCE SERVICE AREA
P.O. Box 849
Dillingham, Alaska 99576

Resolution 87-02

WHEREAS The salmon resource provides the basis for a multi-million dollar commercial fishery and growing recreation industry, and is the primary subsistence resource for residents in the region; and

WHEREAS Given the socioeconomic importance of this resource, both the Bristol Bay Area Plan and the Bristol Bay Coastal Management Program identify maintenance of fish stocks as generally the highest priority water use in Bristol Bay; and

WHEREAS Under AS 46.15.145, the use of water within a stream, lake, or other surface waterbody may be reserved to maintain an adequate instream flow or level of water for specific activities; and

WHEREAS Under AS 46.15.145, a permissable instream use can include protection of fish and wildlife habitat, migration and propogation; and

WHEREAS Draft legislation has been written that would require the state to reserve instream flows in waters important to anadramous fish for specified periods of time; and

WHEREAS The appropriation of water specified in this draft bill would help ensure protection of one of the states most valuable and economically productive renewable resources; and

WHEREAS The amount of water to be withdrawn from appropriation for fish and wildlife would not preclude additional water reservations for other compatible multiple uses;

NOW THEREFORE BE IT RESOLVED, the Bristol Bay Coastal Resource Service Area (CRSA) Board supports the draft legislation entitled "An Act Providing an Instream Flow Reservation for Anadromous Fish, a Priority Date for Anadramous Fish, and Providing for an Effective Date" and encourage our elected representatives to introduce formal legislation as soon as possible.

SIGNED: Alice Kelly
Chairperson

CERTIFICATION: I, the undersigned Secretary of said Board, do hereby certify that the full Bristol Bay Coastal Resource Service Area Board composed of seven members, of whom 5 were present at a meeting the 10 day of March, 1987, adopted the following resolution by the affirmative vote of 4 members.

SIGNED: _____
Secretary

BRISTOL BAY SALMON ENHANCEMENT ASSOCIATION
Box 1130
Dillingham, Ak 99576

February 27, 1989

Cliff Davidson, Representative
PO Box V
Juneau, AK 99811

Re: Instream Flow Amendment

Dear Rep. Davidson,

The importance of maintaining continuous water flows in the rives and streams in our region is important. The fishing industry in Bristol Bay has the biggest Red Salmon run in the world and is totally dependent on natural stocks in our river systems. The draft legislation that provides for instream reservations on all anadromous streams in the Alaska is an excellent approach to insure protection of our fish stocks. This approach will not only insure protection of our instream flows but will aid us in evaluating potential enhancement projects as it will quantify the amount of water available for appropriation.

Sincerely,

Stosh Anderson
Chairman BBSEA

RECEIVED ... 3 '989

KODIAK REGIONAL AQUACULTURE ASSOCIATION

BOX 3407 KODIAK, ALASKA 99615 (907) 486-6555

March 29, 1989

Representative Cliff Davidson
Ak. State Legislature
House District # 27
Box V
Juneau, Alaska 99811

Dear Mr. Davidson:

On March 27, the Kodiak Regional Aquaculture Association brought up at their regular board meeting House Bill No. 210 regarding Reservation of Instream Flows for Fish.

This Bill could provide to be of upmost importance in ongoing and upcoming salmon enhancement projects that KRAA is involved with.

The Board feels that House Bill No. 210 is very beneficial to them and to fisheries enhancement and wanted to let you know they fully support this Bill.

Sincerely,

Jeanne Friel
Admin. Asst
KRAA Board of Directors

* Enhancing Salmon in Kodiak Waters

RFB AQUATECH INC.

P.O. Box 593 Kodiak, Alaska 99615 (907) 486-3505

RECEIVED

March 30, 1989

Representative Cliff Davidson
Alaska House of Representatives
P.O. Box V
Juneau, Alaska 99811

Dear Cliff:

I support HB 210 reserving instream flows for fish. This legislation is long overdue.

I am concerned, however, about what I perceive as some deficiencies in the original version (3/8/89):

(1) The word "important" (lines 7 & 14) is vague and open to interpretation and challenge. Who determines importance and by what criteria?

I suggest in line 7 "important" be deleted and in line 14 "important" be deleted and replaced by used or usable.

(2) There are numerous streams blocked to anadromous fish that could become productive by installation of a fishway or by-pass channel at a falls or by stocking of fish into barren systems. The Bill needs to also address reservation of instream flows for fish in streams where it is feasible to create new fisheries by fisheries enhancement. This is my reason for adding "or usable" in line 14.

(3) An alternative to the changes above would be inclusion of definitions of important, instream flow, commissioner, etc.

(4) The Bill could be strengthened by provisions for monitoring flow, adopting regulations, enforcement, and penalties.

These are my initial comments in reviewing HB 210. Keep up the good work.

Sincerely,

Roger Blackett

Alaska Center for the Environment

700 H Street, Suite 4 • Anchorage, Alaska 99501 • (907) 274-3621

April 19, 1989

RECEIVED APR 24 1989

Rep. Cliff Davidson
Co-Chair, House Resources Com.
Box V
Juneau, AK 99811
Re: House Bill 210

Dear Representative Davidson,

Thank you for your letter on House Bill 210, and for introducing this very much needed and important piece of legislation. We strongly support this proposal.

Alaska's most valuable resources, especially in the long term, are its renewable ones. These include its air, water, fish and wildlife, scenic beauty, and wilderness. They provide us with both direct financial benefits, and with equally important subsistence, quality of life and recreational benefits without which life in Alaska would be substantially poorer. H.B. 210 would provide a major tool for protecting many of these values, as well as implementing a constitutional mandate that we have to date failed to adequately honor.

The existing procedure for protecting instream flows is time-consuming, costly and unfair. As a practical matter it favors out-of-stream, generally private, appropriators over instream, generally public, uses. It is effectively impossible, because of the time, money and expertise required to prepare an acceptable application, for most private individuals or non-profit organizations to reserve instream flows for public purposes. The result is to place the burden virtually entirely on a single governmental entity, the Alaska Department of Fish and Game. And of course ADF&G clearly lacks the resources to protect more than just a tiny fraction of Alaska's important fish streams.

The history of over-appropriation of waters in the western U.S. should be a warning to us. One of the most egregious examples is the serious threat to already endangered Whooping Cranes as a result of badly diminished flows in the Platte River. This is also an example of the fact that this legislation, though aimed at fisheries protection, will have many side benefits for other resources, activities and industries such as wildlife, recreation, tourism and scenic beauty.

This proposal will not create unreasonable burdens for either state government or other users. One additional DNR hydrologist will be able to handle both instream reservations and other needed water quantity responsibilities. Furthermore, ADF&G has

demonstrated in its support materials that impacts to municipal water supplies and the logging, mining, oil and gas, hydroelectric and fish processing industries will either be insignificant or can be adequately mitigated. We would add that even if impacts to these industries were to be more severe we need to be willing to accept those impacts as the price of protecting such priceless long-term values as our air, water, fish and wildlife, scenic beauty and wilderness.

Finally, it is unreasonable, and perhaps unfair, based on past experiences statewide as well as in the rest of the country, to expect that state government will be able, in the face of immediate pressures to appropriate waters for possibly substantial short-term economic gains, to protect long-term resources with an ad hoc adjudicatory process. We need to protect ourselves and future generations with reasonable, guaranteed reservations of adequate instream flows.

Thank you again.

Sincerely,

Cliff Eames

Cliff Eames
Issues Director

cc: Governor Cowper
Commissioner Collinsworth
Commissioner Gorsuch

WILDLIFE FEDERATION OF ALASKA

The Alaska Affiliate of the National Wildlife Federation

Representative Cliff Davidson
Co-Chair, House Resources Committee
Box V
Juneau, AK 99811

RE: House Bill 210

Dear Representative Davidson:

I am writing on behalf of the Wildlife Federation of Alaska to express our strong support of House Bill 210.

The Wildlife Federation of Alaska is an organization of outdoor enthusiasts, hunters, and fishermen with approximately 500 members. We work to protect Alaska's fish and wildlife resources, primarily by focusing on habitat protection. We are also the Alaska affiliate of the National Wildlife Federation, the largest conservation organization in the nation.

House Bill 210 is a very important step towards maintaining habitat which is critical to Alaska's fish and wildlife resources. It is, of course, obvious that fish are dependent on the water in Alaska's rivers, lakes, and streams. Wildlife also rely on those waters and on the fish within the waters for a source of food.

House Bill 210 is particularly important at this time because it protects the water flows necessary for fish and wildlife without adding regulatory costs to the State. In fact, the legislation relieves the regulatory burden now faced by the Department of Fish and Game which must, on a case by case basis, seek in-stream flow reservations. House Bill 210 corrects this problem by reserving sufficient water flow for the needs of fish, but also allowing appropriations for other uses.

We strongly support passage of House Bill 210.

Sincerely,

Jimmy Jackson
President

4/3/99

P.O. Box 100782 • Anchorage, Alaska 99510
(907) 278-3420

Kenai Peninsula Fishermen's Association
Box 546, Soldotna, Alaska 99669
Phone: 262-2492

RECEIVED APR 24 1989

April 20, 1989

Representative Cliff Davidson
Co-Chair, House Resources Committee
Box A
Juneau, Alaska 99811

Dear Representative Davidson:

We are writing in support of House Bill 210, "An Act relating to the reservation of instream flow."

It would seem in the best interests of Alaska and Alaskans to provide sufficient safeguards to ensure the ongoing viability of our fish and wildlife resources. Much of what Alaska is depends on the health of these resources. Additionally, this bill would provide adequate water for navigation and other recreational and subsistence uses.

Alaska has the unique benefit of learning from the failure of other states who did not safeguard sufficient instream flows to protect spawning, incubation, rearing, migration, and survival of fish. These states have lost their fish resources and will never recover them.

It has become alarmingly apparent through the *Exxon Valdez* oil spill just how important our waters and fishery resources are. House Bill 210 would codify a more efficient process for cataloging water flows on a case by case basis as need arises and for permitting competing water uses.

We believe that DNR's fiscal note is exceptionally high and would caution you and your committee against prejudicing your support of House Bill 210 because of the costs associated with implementation of these amendments to the Water Act.

We would urge you to pass this bill during this session; however, if you do not and choose to study the issues associated with the bill during the interim, we would appreciate being apprised of your actions. Thank you for your consideration.

Sincerely,

Cheryl Sutton

Cheryl Sutton
Special Projects Coordinator

COOK INLET
AQUACULTURE ASSOCIATION

HC 2, BOX 849
SOLDOTNA, AK 99669-9707
(907) 283-5761

RESOLUTION

IN SUPPORT OF HOUSE BILL NO. 210 -

"AN ACT RELATING TO THE RESERVATION OF INSTREAM FLOWS IN WATER IMPORTANT FOR FISH"

WHEREAS, perpetuation of the productivity of Alaskan salmon fisheries, because they are based predominately on the harvest of "wild" stocks, depends upon the continued maintenance of naturally occurring habitats for fish, and

WHEREAS, maintenance of minimum instream flow is of extreme importance in maintenance of existing habitat for fish, and

WHEREAS, the method specified in the bill (the "Tennant" or "Montana" method) for determining the amount of instream flow required to maintain fish habitat and sustain fish production has been widely accepted by fisheries scientists and has been successfully court tested in other areas, and

WHEREAS, the amount of instream flow required for maintenance of fish habitat is almost always greater than the amount required to support recreational use of a stream or use of its fish and wildlife resources, and

WHEREAS, the demands of other users of water within the State can only be expected to increase in the future, and

WHEREAS, the Alaska Constituitor. grants a general reservation of water to fish and wildlife,

THEREFORE, LET IT BE RESOLVED, that the Board of Directors of the Cook Inlet Aquaculture Association urge the Alaska Legislature and Administration to enact without delay House Bill 210, thereby implementing the Constitutional provision of water to fish and wildlife.

Margaret Branson

April 22, 1989

Margaret Branson, President

ANCHORAGE WATERWAYS COUNCIL
801 W. Fireweed Lane, Suite 103 • Anchorage, Alaska 99503

April 18, 1989

Representative Cliff Davidson
Alaska State Legislature
P.O. Box V
Juneau, Alaska 99811

Dear Representative Davidson:

The Anchorage Waterways Council (AWC) is a group of citizens who work to protect, restore, and enhance the creeks, lakes, and wetlands of Anchorage. The AWC supports efforts to improve and enhance waterways in general, for fish as well as waterbirds, and for recreational and aesthetic reasons. We have reviewed HB 210 and would like to express our support for the concept of in-stream flow reservations to protect fishery resources. We believe an ounce of prevention is worth a pound of cure--the Exxon Valdez spill seems to bear that out.

We also offer the following comments. First, we believe in-stream flow reservations also should be established to maintain and enhance water quality. Water quality is enhanced by adequate stream flow and is a public good that also protects fishery resources. This benefit should be incorporated into the bill. Second, we support the concept of applicants assuming responsibility for the costs of determining stream flows and believe this feature of the bill should be retained. Those who wish to derive private benefits from a public resource should be held responsible for the costs incurred in transferring that benefit from the public domain to them. Last, we concur with the principle of identifying a minimum flow like that established in HB 210 and allowing deviations from that only after analysis indicates that less flow is acceptable. Setting a minimum flow level based on general needs of the resource establishes the State's baseline and shifts the burden of proof for creating a different minimum flow for an individual creek on the user.

We hope these comments are useful in your deliberations on HB 210.

Sincerely,

Maureen McCrea

Maureen McCrea
President

Organized 1870 to Promote the Conservation, Development and Wise Utilization of the Fisheries

American Fisheries Society

ROBERT G. WHITE
President 1988-1989

CARL R. SULLIVAN
Executive Director

PAUL BROUHA
Deputy Director

Honorable Cliff Davidson
Co-Chairman
House Resources Committee
State of Alaska
Pouch V
Juneau, AK 99801

April 4, 1989

Dear Representative Davidson:

Thank you for providing me the opportunity to provide comments pertaining to house Bill 210. If enacted, this law would provide for a guaranteed instream flow reservation for fish in water throughout Alaska.

Based upon my professional experiences as the former Director of the Fisheries Rehabilitation, Enhancement and Development Division of the Alaska Department of Fish and Game and having served as President of the American Fisheries Society (AFS), and currently Chairman of F.I.S.H., Fishermen Involved Saving Habitat, "the coalition for the conservation of aquatic habitat". (I have enclosed a list of the organizations that associate themselves with F.I.S.H.), I recognize the significance of and fully support your efforts to enact this legislation.

As President of the AFS, I often travelled throughout North America and observed the effects of poor water management and over-appropriation of our nation's water resources. In the west, insufficient instream flows has resulted in the decimation of fisheries in what were once prime fish producing streams and rivers. In the east, the water pollution of fish streams and rivers can partially be attributed to insufficient instream flow receiving waters and poor enforcement of effluent laws. If the "lower 48" states had the opportunity to turn back the clock, I am confident they too would attempt to pass legislation similar to HB 210 to prevent repeating these mistakes. Many states are in the process of now attempting to provide for instream flows, for fish and wildlife, and the price is very high, if they are even successful at all.

I also believe our nation and other countries are finally beginning to recognize the significance of the contribution of fishery resources to the economic and social well being of this planet. North America is blessed with a significant amount of

this planet's fishery resources and Alaska is responsible for about two thirds to three quarters of what is found on this continent. Commercial, sport land subsistence fisheries contribute over a billion dollars to the Alaskan economy annually and while oil provides most of the State's income for the present, the fishing industry provides the jobs for Alaska's citizens. The Alaskan fishery represents tremendous renewable resource wealth that will provide jobs and income for Alaskans forever, if properly cared for.

It is apparent to me that as the oil and other non-renewable resources in Alaska dwindle, fish and related enterprises will become even that much more vital to the future of Alaska. Yet, without your legislation, there is not guarantee that water will be available that is critical to continued fishery production. And if we can draw upon the experiences of the "lower 48", we can say with certainty that the water will not be available. I often think of the fish habitat and environmental consequences of the pipeline development had not there been strong laws and regulations to support the permitting process via Title 16. . Alaska needs to look to the future and secure the water necessary for continued production of its aquatic resources.

The recent tragedy of the oil spill in Prince William Sound is the classic example of why legislation that protects our resources must be enacted now, not after the destruction has occurred. I offer you my full support of this legislation and I feel confident that the fisheries scientists as well as all segments of the fish community support this legislation.

Please let me know if I can be of further assistance.

Sincerely,

Stan Moberly, Immediate Past President
American Fisheries Society
Chairman of F.I.S.H.
P.O. Box 99488
Seattle, WA 98199-0488

cc: Senator Ted Stevens
Senator Frank Murkowski
Representative Don Young
Governor Steve Cowper
Don Collinsworth, Commissioner ADF&G
Carl Sullivan, Executive Director AFS
Bob White, President AFS

F.I.S.H., FISHERMEN INVOLVED SAVING HABITAT
"a coalition for the conservation of aquatic habitat"

Organizations associated with F.I.S.H.

AMERICAN FISHERIES SOCIETY
AMERICAN FISHING TACKLE MANUFACTURES ASSOCIATION
ATLANTIC OFFSHORE FISHERMEN'S ASSOCIATION
BASS ANGLERS SPORTSMAN SOCIETY
COASTAL CONSERVATION ASSOCIATION
COASTAL SOCIETY
KIP KOEHLER, (CITIZEN CONSERVATIONIST)
COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION
FISHERIES MANAGEMENT FOUNDATION
IZAAK WALTON LEAGUE OF AMERICA, INC.
MID-ATLANTIC FISHERIES MANAGEMENT COUNCIL
NATIONAL COALITION FOR MARINE CONSERVATION
NATIONAL FISHERIES INSTITUTE
NATIONAL FISHERMAN
NATIONAL WILDLIFE FEDERATION
NEW JERSEY MARINE SCIENCES CONSORTIUM
OUTDOOR WRITERS ASSOCIATION OF AMERICA
PACIFIC COAST FEDERATION OF FISHERMEN ASSOCIATION
PACIFIC MARINE FISHERIES COMMISSION
SALTWATER SPORTSMAN
SOUTHEASTERN FISHERIES ASSOCIATION
SPORT FISHING INSTITUTE
SPRING AND GROUNDWATER RESOURCES INSTITUTE
TEXAS SHRIMP ASSOCIATION
TROUT UNLIMITED
UNITED FISHERMEN OF ALASKA
UNITED STATES TUNA FOUNDATION

Working for the Nature of Tomorrow.

NATIONAL WILDLIFE FEDERATION

750 West Second Avenue, #200, Anchorage, Alaska 99501 (907) 258-4800

April 4, 1989

Honorable Cliff Davidson
State Of Alaska
House of Representatives
Box V
Juneau, Alaska 99811

Dear Representative Davidson:

I am writing to you on behalf of the National Wildlife Federation. We are the nation's largest conservation organization with 5.2 million members, 10,000 of whom are Alaskans.

The National Wildlife Federation is an organization of concerned conservationists--outdoor enthusiasts, hunters and fishermen--who share a common commitment to the wise use of our nation's wildlife resources and the protection of habitats on which they depend. It is this commitment that prompts our strong support of HB 210, "an act relating to the reservation of instream flows in water important for fish."

We applaud your sponsorship of this bill. We believe as you do that Alaska's fisheries resources support a significant part of the state's economy through commercial, sport and subsistence fishing activities. HB 210 would insure that sufficient water flows exist for these fisheries as well as for wildlife and recreational use by requiring that water be reserved in stream to maintain fish and wildlife populations.

Upon thorough review of the bill, we agree with you that enactment of this legislation would not only protect fisheries and wildlife resources, but also provide a cost-effective mechanism for allocation of water from streams that do not presently have flow records, thereby benefiting users of water and expediting the application process for water appropriation to these users.

Additionally, in this time of severe budget constraints, passage of HB 210 becomes particularly significant because it would protect water flows necessary

for fish and wildlife without adding regulatory costs to the State. In fact, the bill relieves the regulatory burden now faced by the Department of Fish and Game which must, on a case by case basis, seek instream flow reservations in waters important for fish and wildlife.

Again, we appreciate your sponsorship of this important legislation and strongly support its swift and timely passage through the House.

Respectfully,

Ann L. Rothe
Regional Representative

cc: Members, Resources Committee, State of Alaska House of Representatives
Bruce Apple, Director, NWF Pacific Northwest Natural Resources Center
Larry Schweiger, Vice President, NWF Regional Programs

ECO - NORTHWEST
510 North Granger Road
Granger, Washington 98932
(509) 854-2841

6 April, 1989

Representative Cliff Davidson
State of Alaska
House of Representatives
Box V
Juneau, Alaska 99811

Subject: HB 210

Dear Representative Davidson:

I was pleased to receive your letter regarding HB 210, and a copy of the bill, which I read with great interest. Alaska, if it is to retain its vast fisheries resources, must not make the same mistakes that where made by the western states with regard to protection of fisheries habitat. The western states once thought that the salmon, steelhead, and resident fisheries resources of the Columbia River Basin and the Sacramento River Basin were also inexhaustible. To our sorrow, we have learned that they were not. Where are the large runs of Sacramento River chinook? Gone. Where are the thousands upon thousands of upper Columbia River chinook and sockeye? Gone. Where are hundreds of other runs that once returned to streams big and small, from southern California to the Olympic Peninsula? Gone.

Although a number of factors have contributed to this drastic decline over the past century, the failure to protect instream flows for fisheries habitat surely ranks as one of the most important. Dewatering streams or stream reaches destroys rearing and spawning habitat and may block migration for both juvenile and adult anadromous fish. If it occurs on regular basis over a period of years, you can be sure it will drastically reduce, if not totally destroy, salmon and steelhead runs in the affected stream.

Low or nonexistent instream flows are a fact across most of the western states. Why? Because none of these states took action early to reserve or protect instream flows from out of stream diversions until the streams were over appropriated. Fisheries habitat disappeared, and so did the fish.

Now, many states are struggling with the legal and administrative process of establishing instream flows. This is proving to be very difficult for a number of reasons. In many cases (such as

the Yakima Basin in eastern Washington) there are no unappropriated natural flows remaining to reserve for instream flows. This means that the state is faced with a paper instream flow, or buying water rights, building reservoirs to store flood waters, or implementing other action. Any program to acquire water for instream flows is expensive, takes many years to implement, and is often the victim of budgetary constraints. Alaska will show great wisdom and leadership if it establishes instream flows before its streams and rivers are dewatered.

In the state of Washington, the legislature has passed various water laws over the past 20 years that recognize the importance of instream flows and establish procedures for implementation. Many streams in eastern Washington, however, have been over appropriated for many decades, and establishing instream flows is purely a paper exercise. In addition, as you can well imagine, establishing instream flows meets strong opposition from those groups that have traditionally diverted water for out of stream uses. Setting instream flows thus becomes a highly charged, emotional and political issue. The technical aspects often get lost in the rhetoric.

Based on our experience in Washington, I would strongly urge the Alaska Legislature to establish a system of reserving instream flows now, before it is faced with individual water resource allocation issues. If that is done, Alaska will avoid the sad experience of the western states, who have largely squandered their inherited fisheries resources wealth. It may be true that society did not recognize the importance of fisheries resources during the early development of the West, but that is certainly not the case now. Alaska should move decisively to preserve its economic base and its heritage.

I hope this short summary has been some help. Should you desire more detailed information and analysis, I would be happy to provide that for you. Should it be appropriate, we can also provide graphic visual evidence of the consequences of not adopting an instream flow program.

Good luck with HB 210!

Sincerely yours,

Bob Tuck

Bob Tuck,
Fisheries Biologist

American Rivers

Rep. Cliff Davidson
Box 746
Kodiak, AK 99615

April 5, 1989

Dear Representative Davidson,

American Rivers, Inc., the nation's principal river-saving conservation organization, wholeheartedly supports HB 210 to reserve the instream flows of Alaska's rivers. The State of Alaska is to be commended for appropriately addressing this important matter now - before it becomes an overcommitted resource. Many of the Lower 48 wish that they could reverse the clock and undertake this type of advance planning for their rivers.

The provisions in the bill for quantifying instream flow are simple - easy to regulate and comply with - and adequate. The bill appropriately calls for the holding of water instream, with the "burden of proof" needed when changes from that norm are requested.

American Rivers is pleased that the bill includes all rivers, not just those that sustain anadromous species and that it requires protection of fisheries, rather than just "consider" this resource as do existing laws. While the latter is admirable from both an economic and resource perspective, American Rivers believes that it is important to recognize that rivers are a multi-faceted resource and that instream flow is vital to more than just fish. Nonetheless, we believe that this bill, while not necessarily providing for the water needs of all aquatic resources or all forms of recreation, does secondarily and adequately meet many of their requirements.

Alaska holds approximately one third of the nation's fresh water. Its decision makers should protect this important resource for future generations. American Rivers commends your efforts with this bill and urges support of HB 210 in the April 11 House Resources Committee, in the full House and in the Senate.

Sincerely,

Suzi Wilkins

Suzanne C. Wilkins
Director of River Protection

801 PENNSYLVANIA AVE. S.E.
SUITE 303

The World's Largest and Fastest Growing RV Owners Organization

THE GOOD SAM CLUB

International Headquarters: P.O. Box 500, Agoura, California 91301 (818) 991-4980

April 5, 1989

The Honorable Cliff Davidson
Co-Chair, House Resources Committee
State of Alaska House of Representatives
Box V
Juneau, Alaska 99811

Dear Representative Davidson:

On behalf of the Good Sam Club, an international organization of 675,000 familes who are recreational vehicle enthusiasts (and with nearly 2,000 family members in Alaska), I want to strongly support House Bill No. 210, an effort to reserve instream flows in water which is important for fish to survive.

Each year, thousands of our members drive their recreational vehicles to enjoy the fabulous scenery and take advantage of the magnificent outdoor recreational opportunities which are so abundant in your state. Our organization and a number of tour operators sponsor planned tours and caravans through Alaska; other RVers venture to your state on their own.

Regardless of the actual number of RVers who tour your state, I can assure you that an RV trip to Alaska is virtually every RVer's dream. In a recent internal survey we conducted of our members in order to determine their travel preferences, the first choice of a north American destination for 51% of our members was Alaska. The lure of the relatively untouched resources in your state is tremendously appealing to those of us who live in the congested lower 48.

That's why we as recreationists see House Bill No. 210 to be vitally important to our pursuit of our interests. 76% of our members own fresh water fishing gear. They have the means and the transportation to venture far from home in order to take advantage of fishing opportunities they may not be able to find in their immediate locales. Our research tells us that they are looking to your resources in Alaska for these opportunities.

We at the Good Sam Club urge you to do all that you can to protect and enhance your waters and fishing opportunities for all enthusiasts.

Sincerely,

Susan Bray

Susan Bray
Executive Director/Vice President
The Good Sam Club

WaterWatch
OF OREGON

3 April 1989

The Honorable Cliff Davidson
House of Representatives
Juneau, Alaska 99811

Dear Representative Davidson:

Your House Bill 210 is a visionary piece of legislation if there is any valid comparison between Oregon and Alaska.

Oregon failed to protect its streams many years ago. We now face a condition in the state of massive overappropriation of our streams. We are struggling with the bleak and costly process of restoring streamflows in most streams in Oregon in order to salvage something of our recreation and anadromous fish resources.

You will note by the enclosed legislation that the process of streamflow restoration is a long and difficult task once streams become overappropriated. (HB3203 is before our current legislature.) Once the water has been allocated for out-of-stream use, the legal and political problems of streamflow restoration become almost impossible to manage. I can not impress on you and your legislature enough, the importance of acting now to forestall a serious problem in your state's future.

We wish you the best of luck. Please let us know if we may be of any assistance to you.

Sincerely,

Tom Simmons

Tom Simmons
Chairman of the Board

MOSES, WITTEMYER, HARRISON AND WOODRUFF, P. C.

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(406) 586-1373

April 4, 1989

Representative Cliff Davidson
State of Alaska
House of Representatives

BY FAX 9074652718

Dear Representative Davidson:

In response to your March 29, 1989 letter, I have quickly reviewed the draft House Bill 210. Honestly, I am not in a very strong position to comment on Alaska law, my own experiences being limited to instream flow situations in the western states in the lower 48.

On the face of it, however, it seems that you have come up with something that appears to be appropriate for the Alaska situation. Certainly it is important to do something; the problems of reparing instream flow situations after out-of-stream diversions have already been instituted is a tough one throughout the west. It appears that your bill adequately protects existing out-of-stream users, which is in my opinion a fundamental necessity. As far as the argument that we sometimes hear about instream flow reservations precluding future uses, I think that becomes an Alaska decision to be made by Alaskans. What is the value of the resource to support instream uses which are so uniquely valuable in Alaska compared with the value for future development based on out-of-stream diversions?

Again, based on my limited knowledge of the situation, it certainly sounds like you are on the right track. Good luck on this important endeavor.

Very truly,

MOSES, WITTEMYER, HARRISON
AND WOODRUFF, P.C.

By _____
David L. Harrison

DLH:rlo

STATE OF ALASKA
HOUSE OF REPRESENTATIVES
Box V, Juneau, Alaska 99811
(907) 465-2487 • 465-2498

REPRESENTATIVE CLIFF DAVIDSON • DISTRICT 27 • Box 746, Kodiak, Alaska 99615 • (907) 486-8250

MEMORANDUM

TO: Members of the House Finance Committee

FROM: Representative Davidson
Co-Chairman, House Resources Committee

DATE: February 23, 1990

SUBJECT: CSHB210(RES)

Enclosed is additional information for CSHB210(RES).

- a summary of the sections of CSHB210(RES)
- answers to concerns that this legislation will affect development projects

Thank you.

PAGE 1

LINES 11 THROUGH

THIS PORTION OF THE BILL AUTOMATICALLY GUARANTEES INSTREAM FLOW WATER RIGHTS TO FISH IN ALL FISH BEARING STREAMS WITH FOUR EXEMPTIONS SPECIFIED BELOW. A FIFTH, PUBLIC WATER SUPPLIES, IS ALSO EXEMPTED FROM THE PROVISIONS OF THE BILL.

THE COMMISSIONER IS NOT REQUIRED TO FORMALLY RESERVE THE WATER IN A FISH STREAM UNTIL AN APPLICATION FOR AN OUT OF STREAM WATER USE IS RECEIVED. THE AMOUNTS OF WATER TO BE RESERVED ARE SPECIFIED IN SECTIONS B AND C.

LINES 18 THROUGH 21

THIS PROVISION REQUIRES THAT EACH INSTREAM FLOW RESERVATION WILL BE BASED UPON BEST AVAILABLE DATA OR ESTIMATES OF HYDROLOGICAL DATA EXISTING AT THE TIME THE APPLICATION FOR THE OUT OF STREAM WATER USE WAS RECEIVED (WITH FIVE EXCEPTIONS).

LINES 22 TO 27

THIS IS AN INTERIM PROVISION TO QUANTIFY THE AMOUNT OF WATER TO BE RESERVED UNTIL REGULATIONS DEFINED BY LINES 28 AND 29 AND PAGE 2, LINES 1 THROUGH 9 ARE PROMULGATED.

PAGE 2

LINES 10 THROUGH 15

THIS PROVISION LIMITS THE INSTREAM FLOW RESERVATIONS GRANTED BY THIS BILL TO THE PORTIONS OF WATER THAT HAVE NOT BEEN APPROPRIATED OR REQUESTED PRIOR TO WHEN THE BILL PASSED.

LINES 16 THROUGH 25

THIS PROVISION ALLOWS AN INDIVIDUAL OR AN AGENCY TO CONDUCT AN INSTREAM FLOW STUDY FOLLOWING PROCEDURES SPECIFIED IN AS 46.15.145 AND REQUEST A VARIANCE FROM THE AUTOMATIC RESERVATION PROVISIONS OF THIS BILL. THE COMMISSIONER WILL THEN BASE HIS OR HER DECISION UPON A PUBLIC INTEREST FINDING IN COORDINATION WITH AN EVALUATION OF THE EFFECTS OF THE PROPOSED MODIFICATION TO FISH HABITAT AND PASSAGE BY THE COMMISSIONER OF FISH AND GAME. THE PROVISION ALSO IMPLIES THAT MITIGATION CAN BE ALLOWED AS AN ALTERNATIVE TO GRANTING ALL OF THE REQUIRED INSTREAM FLOWS.

LINES 27 THROUGH 29 AND PAGE 3, LINES 1 THROUGH 4

THE PRIORITY DATE FOR THE INSTREAM FLOW RESERVATIONS GUARANTEED FOR FISH EVEN THOUGH THE QUANTITY OF THE INSTREAM FLOWS

IS NOT
CALCULATED IS THE DATE THE BILL WAS ENACTED FOR ALL FISH BEARING STREAM IDENTIFIED EFFECTIVE THAT DATE. PRIORITY DATES FOR STREAMS THAT BEAR FISH AFTER THE BILL IS PASSED IS THE DATE OF IDENTIFICATION.

PAGE 3

LINES 5 AND 6

WATERS RESERVED FOR INSTREAM FLOWS FOR FISH CANNOT BE USED OUT OF STREAM.

LINES 7 THROUGH 9

WATER RIGHTS AND APPLICATIONS FOR WATER RIGHTS FILED BEFORE THE BILL IS ENACTED ARE EXEMPTED FROM THE PROVISIONS OF THE BILL.

LINES 10 AND 11

NONCONSUMPTIVE USES OF WATER ARE EXEMPTED FROM THE PROVISIONS OF THIS BILL.

LINES 12 THROUGH 14

THE REGULATIONS SPECIFIED ON PAGES 1 AND 2 MUST BE ADOPTED NO LATER THAN 18 MONTHS AFTER THE DATE THIS BILL IS ENACTED.

LINE 15

ALL PROVISIONS OF THE BILL TAKE IMMEDIATE EFFECT WHEN THE BILL IS PASSED.

HOW WILL THE BILL AFFECT, MINING, OIL AND GAS DEVELOPMENT, HYDROELECTRIC PROJECTS, FISH PROCESSING PLANTS, FISH HATCHERIES, THE LOGGING AND PULP MILL INDUSTRY, COMMERCIAL RECREATIONAL LODGES?

MINING

THE MINING INDUSTRY CAN BE A LARGE CONSUMER OF WATER AND IS CURRENTLY GOVERNED BY VARIOUS WATER AND OTHER LAWS AND REGULATIONS.

ALTHOUGH THE BILL GUARANTEES INSTREAM FLOW PROTECTION FOR FISH, IT IS UNLIKELY IT WOULD NEGATIVELY AFFECT MINING ACTIVITIES.

IT MUST BE REMEMBERED THIS BILL AFFECTS WATER QUANTITY AND IS INDEPENDENT OF WATER QUALITY LAWS, ALTHOUGH IT MIGHT HELP TO MEET WATER QUALITY STANDARDS.

THE MINING INDUSTRY'S USE OF WATER IS GENERALLY SEASONAL, WITH MOST OCCURRING DURING THE SUMMER MONTHS WHEN THE HIGHER FLOWS AND ASSOCIATED WATER SURPLUSES ARE AVAILABLE. IT WOULD BE UNUSUAL FOR THE NECESSARY WATER DEMANDS OF A TYPICAL MINING OPERATION NOT TO BE MET DURING THE SUMMER MONTHS WHEN FLOWS TYPICALLY EXCEED 200% OF THE MEAN ANNUAL FLOW.

MOREOVER, IF MINING EFFLUENT DISCHARGE PERMITS WERE TO INCORPORATE DILUTION MIXING ZONE REQUIREMENTS, MINING OPERATIONS WOULD BE BENEFITED BY THE GUARANTEED INSTREAM FLOWS THAT WOULD BE REQUIRED BY THIS BILL.

THE PROPOSED LEGISLATION ANTICIPATES THE USE OF LARGE-SCALE MINING OPERATION SUCH AS GREENS CREEK AND U.S. BORAX AND PROVIDES THE FLEXIBILITY TO ADJUST INSTREAM FLOW FOR FISH BASED UPON AN INSTREAM FLOW ANALYSIS AND A BEST PUBLIC INTEREST FINDING. THIS PROCESS IS ALREADY IN FORCE UNDER EXISTING LAWS AND REGULATIONS AND WOULD NOT CHANGE.

ANOTHER PROVISION OF THE BILL WOULD EXEMPT NON CONSUMPTIVE USES OF WATER FROM ITS PROVISIONS WHICH WOULD APPLY TO SOME MINING OPERATIONS. A MINER WITH A NON CONSUMPTIVE WATER USE OPERATION WOULD BENEFIT FROM THIS LEGISLATION IF THE POINT OF TAKE WERE IN A FISH STREAM. THIS IS BECAUSE THERE WOULD BE A GUARANTEED BASE LEVEL OF INSTREAM FLOWS FOR THE FISH WHICH WOULD ALSO BE AVAILABLE FOR A NONCONSUMPTIVE USE.

OIL AND GAS INDUSTRY.

THE PRINCIPAL USES OF WATER FROM FISH STREAMS BY THE OIL AND GAS INDUSTRY INCLUDE CAMP WATER SUPPLIES, DRILLING, ICE ROAD CONSTRUCTION, AND DUST SUPPRESSION.

SINCE 1977, A STATE POLICY HAS PROHIBITED THE INDUSTRY ON THE NORTH SLOPE FROM WITHDRAWING WATER FROM FISH BEARING STREAM REACHES DURING THE LOW FLOW WINTER MONTHS BECAUSE LIMITED WATER QUANTITIES ARE ESSENTIAL TO FISH PRODUCTION.

WATER WITHDRAWALS ARE INSTEAD GENERALLY TAKEN FROM EITHER NON-FISH BEARING REACHES OR RESERVOIRS CONSTRUCTED SPECIFICALLY FOR WATER STORAGE. WATER CAN ALSO BE WITHDRAWN FROM FISH BEARING REACHES DURING THE SUMMER, IF DURING PERIODS OF HIGHEST FLOWS.

REGARDING THE PROPOSED ANWR OIL FIELD EXPLORATION AND DEVELOPMENT, STUDIES ARE PRESENTLY ONGOING WHICH WOULD BE USED TO ALLOCATE INSTREAM AND OUT OF STREAM USES INSTEAD OF THE AUTOMATIC PERCENTAGES PROVIDED BY THIS LEGISLATION. FURTHERMORE, THE FEDERAL GOVERNMENT HAS SENIOR WATER RIGHTS FOR WATER UNDER FEDERAL RESERVED WATER RIGHTS PROVISIONS FOR THIS FEDERAL LAND.

THIS LEGISLATION WOULD HELP TO CODIFY THIS POLICY AND THEREFORE WOULD NOT SIGNIFICANTLY AFFECT CURRENT WATER USE PRACTICES AND SHOULD HAVE MINIMAL EFFECTS ON THE OIL AND GAS INDUSTRY.

HYDROELECTRIC DEVELOPMENT

AS THE MAJOR USER OF WATER, HYDROELECTRIC DEVELOPMENTS WILL BE AFFECTED BY THIS LEGISLATION, BUT NOT ADVERSELY IMPACTED. (SEE LETTER FROM THE ALASKA ENERGY AUTHORITY). THERE ARE TWO CATEGORIES OF HYDROELECTRIC PROJECTS - THOSE THAT MUST BE LICENSED BY THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) AND SMALL HYDROELECTRIC PROJECTS THAT ARE EXEMPT FROM FERC LICENSING.

FERC HYDROELECTRIC PROJECTS

FERC HYDROELECTRIC LICENSING PROCESSES CURRENTLY REQUIRE QUANTIFICATION AND PROTECTION OF INSTREAM FLOWS OR ADEQUATE MITIGATION.

SECTION 4.41, PARAGRAPH 12.041 OF THE FERC REGULATIONS REQUIRES THE APPLICANT TO PROVIDE A REPORT THAT ADDRESSES INSTREAM FLOWS AND THE IMPACTS OF THE PROJECT ON INSTREAM FLOWS. THE REPORT MUST ALSO DESCRIBE IMPACTS ON FISH AND WILDLIFE AND PLANNED ACTIONS FOR MITIGATION OF NEGATIVE

IMPACTS. THIS REPORT MUST BE PREPARED IN CONSULTATION WITH STATE AND FEDERAL FISH AND WILDLIFE AGENCIES.

FLOWS ARE NEGOTIATED DURING THE FINAL LICENSING PHASE OF THE PROJECT.

THE PROPOSED LEGISLATION WOULD NOT CREATE AN ADDITIONAL BURDEN ON THE APPLICANT OR SIGNIFICANTLY CHANGE THE WAY FERC HYDROELECTRIC PROJECTS ARE PERMITTED AND LICENSED.

NON FERC PROJECTS

SMALL HYDROELECTRIC PROJECTS LOCATED IN FISH HABITAT THAT ARE EXEMPTED FROM FERC LICENSING ARE REGULATED BY ADF&G TITLE 16 AND ADNR TITLE 46 PROVISIONS AND IN SOME INSTANCES FEDERAL LAWS. THIS LAW WOULD GUARANTEE INSTREAM FLOW PROTECTION. THE BILL ALSO HAS A PROVISION ALLOWING A BEST PUBLIC FINDING FOR REDUCING THE RECOMMENDED INSTREAM FLOWS BY PROVIDING MITIGATION. IN SOME SITUATIONS THIS LEGISLATION MAY OBVIATE THE NEED TO CONDUCT A FORMAL INSTREAM FLOW STUDY IF THE AUTOMATIC PERCENTAGES OF INSTREAM FLOWS GUARANTEED BY THE LEGISLATION WOULD NOT BE ADVERSELY AFFECTED BY THE PROJECT.

FISH PROCESSING INDUSTRY AND HATCHERIES

THE FISH PROCESSING INDUSTRY IS A MAJOR USER OF WATER. PERMITS TO APPROPRIATE WATER FROM FISH BEARING STREAMS WOULD BE SUBJECT TO THE INSTREAM FLOW REQUIREMENTS OF THIS LEGISLATION. HOWEVER, MANY FISH PROCESSING OPERATIONS ALREADY HAVE WATER RIGHTS OR THEIR REQUIREMENTS IN COMBINATION WITH INSTREAM FLOW REQUIREMENTS WOULD NOT EXCEED WATER AVAILABILITY.

MOST FISH HATCHERIES HAVE EXISTING WATER RIGHTS THAT ARE GRANDFATHERED BY THIS LEGISLATION.

BOTH FISH PROCESSING AND HATCHERY WATER VENTURES USUALLY PERFORM DETAILED HYDROLOGICAL EVALUATIONS TO INSURE THAT A WATER SUPPLY IS ADEQUATE BOTH IN QUANTITY AND QUALITY BEFORE INVESTING THEIR MONEY AND RESOURCES INTO THESE VENTURES. THIS SAME INFORMATION COULD BE USED IN AN INSTREAM FLOW ASSESSMENT FOR A BEST INTEREST DETERMINATION TO ADJUST THE AUTOMATIC FLOWS PROVIDED BY THE LEGISLATION IF WATER AVAILABILITY WAS INSUFFICIENT TO FULLY SATISFY BOTH INSTREAM AND OUT OF STREAM REQUIREMENTS.

LOGGING INDUSTRY

IF PASSED, NEW APPLICATIONS FOR WATER APPROPRIATIONS WOULD BE SUBJECT TO ITS PROVISIONS. FOR THE LOGGING INDUSTRY, ACTIVITIES THAT COULD BE AFFECTED BY THE LEGISLATION WOULD PRIMARILY INCLUDE WATER SUPPLIES FOR LOGGING CAMPS AND PULP MILL OPERATIONS. HOWEVER THIS PROPOSED LEGISLATION, WOULD PROBABLY HAVE MINIMAL IMPACT ON THESE WATER USERS.

LOGGING CAMPS ARE USUALLY SITUATED IN REMOTE LOCATIONS WHERE THERE IS LITTLE OR NO PRIOR COMPETITION FOR OUT OF STREAM WATER APPROPRIATIONS. THEREFORE, WATER REQUIREMENTS BY LOGGING CAMPS ARE UNLIKELY TO EXCEED THE AVAILABILITY OF WATER DURING THE SUMMER MONTHS EVEN IF THE BILL PASSES. IF THEY DID, A BEST INTEREST PUBLIC FINDING COULD BE USED TO EVALUATE WHETHER TO MODIFY INSTREAM FLOWS.

PULP MILLS ARE LARGE CONSUMERS OF WATER. HOWEVER, WATER RIGHTS FOR THE TWO PULP MILLS IN ALASKA WERE GRANTED SEVERAL DECADES AGO AND ARE GRANDFATHERED BY THIS LEGISLATION. THERE ARE NO KNOWN PLANS FOR ADDITIONAL PULP MILLS IN ALASKA AT THIS TIME.

COMMERCIAL LODGES

SIMILAR TO THE EXISTING LAW, THE PROPOSED LEGISLATION, IF PASSED CAN AFFECT ALL WATER APPROPRIATIONS FOR CONSUMPTIVE USES, EXCEPT PUBLIC WATER SUPPLIES. HOWEVER, IT IS UNLIKELY THAT THE BILL WOULD HAVE A NEGATIVE AFFECT ON A RECREATIONAL LODGE. THIS IS BECAUSE IT IS IN THE BEST FINANCIAL INTEREST OF A DEVELOPER/INVESTOR TO DETERMINE WATER AVAILABILITY AND QUALITY FOR SIZING AND LOCATING THE FACILITY, EVEN IF IT WERE NOT NECESSARY TO RESERVE A PORTION OF INSTREAM FLOWS FOR FISH. IF THE WATER REQUIREMENTS FOR THE LODGE AND INSTREAM FLOWS FOR FISH EXCEEDED WATER AVAILABILITY, THESE DATA COULD BE USED TO REQUEST A MODIFICATION OF THE AUTOMATIC RESERVATION USING A BEST INTEREST FINDING. IT WOULD SEEM UNLIKELY THAT THIS CONFLICT WOULD OCCUR BECAUSE IT IS ALSO IN THE INTEREST OF THE LODGE TO INSURE PROTECTION OF FISH AND WILDLIFE RESOURCES.

IN SUMMARY, THE MAJOR IMPACT OF THIS BILL WILL BE TO REQUIRE THE ADNR TO GUARANTEE INSTREAM FLOW PROTECTION AND ENSURE THAT WATER IS AVAILABLE FOR APPROPRIATION BY USING BEST AVAILABLE DATA TO CALCULATE AND/OR ESTIMATE WATER AVAILABILITY. THIS IS A COST EFFECTIVE MEANS TO BENEFIT ALL ALASKANS AND GUARANTEE MULTIPLE WATER USES FOR FUTURE GENERATIONS.

Calista Corporation

601 W. 5th Avenue, Suite 200, Anchorage, Alaska 99501-2225 • (907) 279-5516 • FACSIMILE (907) 272-5060

February 27, 1990

Representative Ronald L. Larson
Room 502, Capitol
P.O. Box V
Juneau, Alaska 99811

Dear Representative Larson:

I prepared a letter outlining Calista Corporation's concerns regarding HB 210 on February 13, 1990 for the House Resources Committee. I don't know whether my letter was forwarded to your committee or not. I have attached a copy of that letter to this correspondence. This issue is of great concern to Calista; consequently, I ask you to distribute this letter to the members of your committee.

I am sorry for delivering this information to you at what appears to be the 11th hour. During the last session when this bill was first introduced, concerns were raised by several groups. As a result, the House Resources Committee made commitments to hold several hearings/meetings to review these issues with ADNR, ADF&G and other interested parties. I checked with ADNR on numerous occasions in 1989 to find out when these meetings would be held as Calista was one of the interested parties. None were held. This bill is moving so fast now that no meaningful dialogue has been possible. This bill makes radical changes to the existing water law. It is likely that it will create substantial burdens on numerous public agencies as well as the public. We do not believe the issues have been adequately addressed. The opportunity for public debate that we fully expected has not materialized. Consequently, the rapidity at which this bill has been moving has caught us, and I'm certain others as well, completely off guard. I apologize for our 11th hour attempt to have our concerns heard. Due to the substantial and complex nature of these issues, however, we simply have not had sufficient time to provide these comments earlier. We are providing them now because this appears to be our last opportunity.

I would like to add below several comments in addition to the issues already discussed in my February 13 letter.

It is difficult or impossible for us to imagine a fiscal note attached to this bill of only $150,000. There are approximately 150 surface water applications per year received by ADNR since 1986 (see attached February 15 letter from ADNR to Representative Davidson). If this number of applications were to continue, each of these would trigger an instream flow analysis per HB 210 requiring approximately 150 analyses per year. Using the current costs of $8-10,000 per analysis (see February 13 letter from Calista to Representative Davidson), the cost to the state would be in the range of $1.2 million to $1.5 million per year. The cost would most likely come down with a staff of experienced application adjudicators in ADNR using a more efficient assembly line system which is not presently available to ADF&G staff because of the limited number of instream flow applications received. If that number can be reduced by 50%, it would still be necessary for ADNR to spend $600,000-750,000 or $4-5,000 per analysis. This would indeed be a substantial savings per application.

Nevertheless, ADNR or each applicant seeking a surface water right would have to spend an additional $4-5,000 (assuming assembly line costs) to process their application. If ADNR has only $150,000 per year for this program, then the water use applicants will have to come up with the remaining $450,000-600,000 annually to implement HB 210. Eventually, more and more waterbodies in Alaska will be surveyed as this program continues, relieving future water users of this expense; provided, their activities take place on water bodies already surveyed.

There is a possibility, however, that $150,000 may indeed be adequate funds for implementation of HB 210, as its implementation may drive the water using public away from the application process. As the February 15 letter from ADNR to Representative Davidson points out; there has been a marked difference in total number of applications received by ADNR since January 1, 1986. After that date, ADNR began charging administrative fees for each application received. They charge $50 for a use of 5,000 gallons per day; $100 for 5,000-30,000 gallons per day; and $200 for uses of greater than 30,000 gallons per day. Their average annual application rate dropped from 300 to 150. The staff at ADNR thinks that this drop was because of the fees.

We may see a similar drop if each application costs the applicant upwards of $4,000 (using assembly line costs). Previous reductions in applications in 1986, and future reductions as a result of HB 210 can mean only one of two things: either developments and activities which need water declined or will decline in the future because of the additional expense; or new water uses continued at the same rate after 1986 and will continue after the passage of HB 210 unreported and unpermitted.

Given the state's declining economy, I don't think we should encourage fewer developments or activities, nor should we force citizens to take water unlawfully. HB 210 would do one or the other. In order to manage our water resources wisely, we need to know who is using water; where they are taking it from; and how much they are taking. By discouraging people from using the process, we lose this valuable information.

I have compiled a chart from ADNR records to show you which industries typically use surface waters of the state. Some of these industries will still comply with the water application process no matter what the cost. Many loan officers in this state understand the need for secured water rights for home or commercial loans. This alone will guarantee a certain level of compliance.

Do we want to discourage the activities represented on this chart? Do we want to make the owners of these types of activities criminals if they proceed to use the water without going through the application process? I think not. HB 210 places this kind of burden on the public especially with only a $150,000 annual funding level. The only way to relieve that burden is to have the state subsidize the program through a greater funding level. ADNR has previously requested $800,000 for the first year to implement HB 210 and $500,000 annually for the next five years. Assuming ADNR continues to receive 150 applications a year for surface water use, this may be an overly optimistic sum.

The Calista Region is quite remote. Because of the difficulties and expenses associated with starting a new venture in the region, very little industry occurs. Diversification of the economy is essential since there is already a heavy reliance on public assistance programs funded by both the state and federal governments. I can't say that the passage of HB 210 would be the same as placing the final nail in the coffin regarding diversification of the economy of the region, but it would certainly be one more nail. We cannot support HB 210 because of the additional financial burden it places on new developments and activities in the region. I know that you and your committee will review the fiscal note for its appropriateness with respect to state agency funding after receiving this information, but I would also encourage you to look at the broader public policy implications that the passage of this bill will have as well.

If I can be of any further assistance on this issue, please feel free to call on us.

Sincerely,

CALISTA CORPORATION

Mike Neimeyer

Mike Neimeyer
Vice President
Land & Natural Resources

MN:slb

Enclosures

Surface Water Rights Applications

Received by Alaska Department of Natural Resources

AFFECTED INDUSTRIES	NUMBER OF APPLICATIONS AND LOCATIONS[1]					
	1984	1985	1986	1987	1988	1989[2]
Mining	146 ABC	141 AC	83 ABC	46 ABC	50 ABC	29 AC
Lodges, Marinas & Restaurants	12 AB	173 ABC	21 ABC	10 AB	16 ABC	4 ABC
Hatchery	4 AB	5 AB	10 AB	10 AB	22 AB	1 B
Public Water Supplies	6 AB	8 AB	8 ABC	17 ABC	6 ABC	–
Oil & Gas	20 C	1 C	1 C	–	23 C	–
Hydroelectric	14 AB	35 AB	8 AB	5 ABC	9 AB	2 B
Single Family Domestic	149 ABC	333 ABC	41 ABC	30 ABC	32 AB	5 ABC
Seafood Processing	5 AB	1 A	3 A	10 AB	3 AB	1 A
Other Uses	132 ABC	195 ABC	27 ABC	64 AB	111 ABC	16 AB

NOTES: 1 - Locations are the various ADNR offices wherein these applications were filed.

A = Southcentral Office, Anchorage
B = Southeastern Office, Juneau
C = Northcentral Office, Fairbanks

2 - 1989 figures recorded only through May 31, 1989.

Calista Corporation

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February 13, 1990

Representative Cliff Davidson
Chairman, House Resource Committee
Rm. 108, Capitol
P.O. Box V
Juneau, Alaska 99811

Dear Representative Davidson:

Before your committee is a bill which is of great concern to Calista Corporation (HB210 dealing with instream flows). The following are our comments regarding this bill. I ask that you and the other members of the House Resources Committee take these comments under consideration.

Our concern revolves around a house bill that was introduced last year (HB 210) regarding instream flow reservations. Calista does not support this bill and would urge your committee to take a serious look at the potential impacts it would have on the entire state. Although it would protect grandfathered water rights applicants, it would harm all other applicants. This would include most public facilities in the region since few have made water rights applications for the water they currently use. Municipal water supplies have preferential rights under existing law. Unless a municipality has taken adequate measures to perfect its rights prior to the passage of this bill, there remains some doubt as to its preference over this proposed instream flow program. This bill may jeopardize public and municipal water use rights in rural Alaska since most municipalities in the villages have failed to apply for these rights.

We believe that this bill will result in overkill.

Commercial fishing groups are the primary proponents of the bill. For some reason or another, these groups have adopted the view that any other extractive industry is a threat to their existence. It is not reasonable to assert that they are mutually exclusive. Both mining and a healthy fishery exist on the Seward Peninsula for example. Circumstances exist some times that do make certain operations totally incompatible with each other. There is an adequate system in place now to assure their compatibility. The existing water appropriation system in this state currently takes care of those problems on a case-by-case basis when the conflict is over water quantity. When extractive industries unduly compete for water quantity, the state constitution and DNR regulations currently require DNR to consider the impacts that the appropriation will have on fish. This issue should not be confused with the DEC and EPA administration of water quality.

There are some amongst the commercial fishing groups who do not want these extractive industries to survive at all. I assume that they feel this way because of aesthetics or because they feel that catastrophes can happen even under the most stringent of water

quality regulations, i.e. Exxon Valdez. If they can't prevent these industries from occurring through water quality regs, then the next best thing is to make getting a permit for appropriating water (water quantity) difficult or impossible. Whether that is the intent or not, that is exactly what the instream-flow bill, HB 210, does. Unfortunately, HB 210 will affect every industry including fishing support facilities such as fish hatcheries and packing plants and any public facility that uses surface waters in its operation.

HB 210 requires a certain percentage of water to be left in the water body at all times. That is a noble gesture, but of very little guidance to either the subsequent appropriator or DNR, the regulatory agency charged with issuing water appropriation permits. The state has over 12,000 streams, rivers, etc. that ADF&G has identified with anadromous fish. Since this bill applies to all bodies of water, including lakes with any kind of fish, this bill will apply to hundreds of thousands of water bodies: virtually every water body in the state.

In order to determine what impact this bill has on Alaska and why Calista is so concerned about it, one has to ask the following questions:

1) What does HB 210 do?

The concept of instream flows came from other prior appropriation water law states in arid western states. It was designed to provide water primarily to protect fish habitats in water bodies that had been heavily appropriated by other water users. The law of prior appropriation was developed in the west to make certain that the highest and best use (beneficial use) of the scarce water resources were made. It provided certainty to senior water users that water would continue to be available for projects they undertook thus encouraging the investments necessary to develop those states. Any water appropriated but not used by them in any given time frame would go to junior claimants or appropriators and not be wasted.

Unlike Alaska law, few states prior to the mid 70's recognized fish and wildlife habitat protection as a beneficial use. This has been an integral part of Alaska's Constitution since statehood. Instream flow programs developed in the mid-1970's were designed to recognize habitat protection as a beneficial use and to provide a mechanism to protect that use in over appropriated water bodies. Since most water bodies in those states are over-appropriated, there are more rights to use water than exists in the waterbody. State agencies identify threatened habitats and have the authority to acquire and dedicate, through purchase or gift, water rights for an instream use on the threatened waterbody. This provides a significant level of protection because no appropriator whose right is junior to the quantity acquired by the state may divert that water from its course. Alaska's existing program allows anyone to apply for a reservation of instream flow prior to a water body's overappropriation. The application can be made for public, private or commercial uses. In addition to Alaska current in-stream flow program, existing regulations also require DNR adjudicators to consider habitat protection when they issue a permit for diversionary or out-of-stream use of water.

HB 210 is a major modification to Alaska's instream flow program: it guarantees an automatic instream flow of 60% of mean annual flow between April and October and 30% between November-March. It does not require a concerned constituency to come forward to identify a resource that needs the protection afforded an in-stream flow reservation. This would be a radical change in Alaska's prior appropriation water law. This would also be a radical change in the treatment of instream flows nationwide.

2) Does Alaska need the level of protection offered by revising its present instream flow program through HB 210?

The factual circumstances regarding Alaska water use patterns and availability significantly differ from the western states. The current instream flow program in Alaska is also quite different from the programs in the western states providing a great deal more participation by the public in its program.

Simply put, Alaska has more water available than the arid western states. It has significantly fewer water users and those who do use the water generally use a great deal less than water users down south. We have no agricultural users to speak of in Alaska; in comparison, less water per household is used to maintain lawns, wash cars, etc., and water in Alaska is generally used in the basin that it is produced from. Municipalities and other water districts in Alaska do not have to ship water hundreds of miles depleting distant drainages to satisfy their water needs. There are by far more abundant water resources in this state than in the arid western states and significantly less pressure on water supplies by Alaska's out-of-stream water users.

It is noteworthy that our instream flow laws are already the most liberal laws in the nation. Anybody or any entity can apply for an instream flow reservation (not just a state agency as in other states) for:

i) protection of fish and wildlife habitat, migration and propagation;
ii) recreation and park purposes;
iii) navigation and transportation purposes; and
iv) sanitary and water quality purposes.

This provides a greater array of authorized purposes for instream flow reservations than exists in any other state. Additionally; in Alaska, unlike any other state, an applicant for a new reservation can receive a priority date as of the date of application rather than the date that he completes the water flow analysis. This recent change will be adopted in DNR's soon-to-be-released regulatory revisions.

DNR requires all water rights applicants to go through a public comment period prior to issuing a water right. If an agency, person or group of persons feels that a water body that has significant qualities or resources is threatened by the requested appropriation, they may use that public comment process to identify their concerns. They may also apply ahead of time for an instream flow reservation to protect those resources if they do not wish to depend on the public review process available to them. It may cost that person or entity both time and money to complete the instream flow application, but the process does assure, in this way, that the highest and best use of the water body is attained, and that limited state resources are only expended on water bodies needing this protection. Those persons best prepared to identify a valuable resource or most affected by potential future threats will come forward to protect their interests under existing water laws.

Alaska's existing instream flow program does provide the finest program in the country for instream flow protection. The system assures that the process will only be used if there is a threat to the resource. This is as it should be, since one of the main goals of prior appropriation water law is to achieve the highest and best or most beneficial use of the water resource available. If there is no valuable resource to protect and if there is no threat, then the water should not be made more difficult to acquire by other beneficial users. The program required by HB 210 does have significant costs to either junior water users or the state as I will point out later in this discussion.

Is there a threat in the state to the water resources that would require this broad application of the instream program? How many water bodies are over-appropriated now and how many water bodies have imminent threats to the water quantity available for fish habitat protection? Very few surface water bodies in the state are over-appropriated now. You could probably count them on one hand. None of these over-appropriated water bodies would be protected by this bill anyway since HB 210 does not affect existing water rights.

The next question to ask is: How many water bodies are imminently threatened by over-appropriation? We must remember that we are not asking: How many water bodies are important for fish habitat? Since we have such a strong commercial, recreational and subsistence fishery in the state, we would have to answer that question in the thousands. In order to make wise use of our state's resources there should be two prerogatives for an instream flow reservation: a resource to protect and a threat to the resource! After all, if there is nothing to protect (no significant resource or no material threat) then an in-stream flow reservation and analysis is an unnecessary burden and expense on the state agencies, the public and future water rights applicants.

We have a great water resource in this state but quantifiably speaking, we have an insignificant threat. I would be surprised if you could count on both hands the number of water bodies that are imminently or foreseeably threatened by over-appropriation of the available water. There doesn't appear to be a significant enough threat in this state to justify the breadth of this bill.

3) Does HB 210 provide the protection it is designed to provide?

It is designed to provide an adequate water supply for instream uses of fish and to maintain existing habitat for fish. It does this by prohibiting the commissionor of DNR from issuing water use permits to applicants if; 1) the water body is important to fish during any one of the many life cycles it undergoes; and 2) if the use would draw down the mean annual water flow basically below 60% in the summer and 30% in the winter.

There are quite a few factors that one must consider in determining the level of protection required in a bill like HB 210. It will apply to hundreds or thousands of drainages; hundreds of thousands of water bodies; approximately 45 species of fresh water and anadromous fish; a myriad of different topographic, hydrologic, and climactic conditions; etc. Even if this bill is limited to anadromous fish streams, it will still apply to over 12,000 waterbodies statewide. It should come as no surprise then that the 60% and 30% requirements are completely arbitrary percentages. This percentage of guaranteed water flow will not be enough to protect some water bodies; it will provide much more protection than is necessary on others and for the exceptional few water bodies, it will provide just the right amount of protection. This bill does not take into account any of the relevant issues that should be considered when determining the level of protection needed in a waterbody, i.e. physical characteristics of the stream bed; time of year that the waterbody is used by the fish species present; the specific needs of the fish species present, etc. These factors can only be considered on a case-by-case basis.

HB 210 protects all fish including those that are not threatened or used for commercial, recreational, or subsistence purposes or that might be part of the food chain of these species. Do we need the same level of protection for all of these fish?

What is the mean annual flow of a waterbody? That is the question that the commissioner will be asking each time he or she receives a water use application. The commissioner will

have to determine that for each drainage on which an application is made, whether the state wants to protect the species of fish in that drainage or not because the Commissioner must make that annual flow determination before he or she can determine what 60% or 30% of that level is.

HB 210 is reputed by its proponents as a cost-saving measure to the state. It is supposed to remove the need to make costly instream flow analysis each time a state agency chooses to apply for a reservation to protect whatever interest they believe needs protection. Its proponents site the numerous instream flow reservations that ADF&G has applied for in the past 2-3 years and the list of proposed future applications waiting in the wings at ADF&G. We are led to believe that none of these expenses would be necessary if HB 210 was current law. Rather than providing adequate justification for a broad instream flow reservation program; however, that argument is better made to reduce existing agency spending on instream flow programs. None of these water bodies meet the two tiered test (resource and threat) to begin with. Each may have a significant resource but few or none are threatened by out-of-stream appropriations. Many are very large water bodies with little or no appropriation or diversion occurring or foreseeable. Because of the large quantity of water available and absence of any threats, none of these instream flow programs were necessary to protect these water bodies. For most of these water bodies, it strains one's imagination to come up with a scenario that would give rise to a significant enough threat to justify the expense of an instream flow reservation to protect these waterbodies.

There are no cost savings associated with this proposed program. In fact, a good case could be made that this across-the-board application of instream reservations may be <u>much more</u> expensive in the long run to the agencies and to Alaska citizens. Under the existing program, the only instream flow analyses reasonably necessary are on threatened water bodies. Even when one expands this requirement to the water bodies that ADF&G has extended the program to, only a handful of instream flow analyses become necessary annually. The expanded application of instream flows as a result of HB 210 passage would, on the other hand, require a greatly increased need for these costly analyses with virtually each surface water rights application filed. There are hundreds of thousands of water bodies in the state that would require protection pursuant to HB 210. There are less than twenty water bodies in Alaska that have had an instream flow analysis completed. The likelihood of an applicant requiring water from one of the water bodies with no instream flow analysis as opposed to one of the less than 20 having a completed analysis are pretty good. Therefore, it is easy to see that a new analysis will be necessary for virtually each application filed. The arguments that HB 210 will reduce costs for producing instream flow analysis, consequently, are misleading. This bill will trigger a greater number of costly instream flow analyses than are presently contemplated by ADF&G under the existing system at much greater expense to the state.

Due to the necessity of setting an arbitrary ceiling in HB 210 and the potential for widely varying circumstances associated with each application, it is difficult to say whether HB 210 will accomplish its desired goal of fish habitat protection. It is very likely, however, that the increased workload required for the large number of additional instream flow analyses will overburden the state water appropriation programs.

4) Does HB 210 provide the greatest amount of protection to the resource with the least amount of harm to other water users?

We don't know if this bill provides any protection and if it does we don't know what level of protection it provides. No threat has been identified as of yet. The proponents of this

bill have not provided nor have they compiled to my knowledge a list of streams that are threatened by out of stream appropriators. Where is this major threat that demands the statewide "fix" proposed in HB210? Where are all the news articles bemoaning the tragic loss of fish habitats to out of stream appropriation? Can the proponents of this bill even identify one waterbody that would be protected by this bill? No, they can't. The very few waterbodies that have been threatened wouldn't receive protection from this bill due to the grandfather rights provision.

The bill is completely arbitrary with regards to drainage and fish species. The physical characteristics of each drainage and the needs of each fish species is different from the next. In order to accomodate these vast differences HB210 casts a large net around the states waters and creates a regulatory system that will burden every future water use or user in Alaska.

When a threat does arise there are adequate methods in place now to address them both before hand and at the time that a proposed appropriation provides a threat. DNR is presently required to protect both fish and wildlife habitats that will be affected by proposed water appropriations. Large projects or controversial projects are required to have instream flow analysis as part of the water permitting process. For example both the Susitna hydro and the Bradley Lake (Terror River) project spent upwards of $1,000,000 apiece during incremental instream flow analysis.

For smaller projects too, DNR requires the applicant to provide information if it is apparent that our appropriation will damage fish and wildlife habitats. Furthermore, the public notice process associated with the water permit process opportunities for concerns to be raised by both public and private interests. This process is designed to protect, on a case by case basis, waterbodies and habitats from over appropriation. Amendments currently proposed DNR to their regulations would require all appropriators of 100,000 gallons of water per day to provide DNR with information necessary to determine minimum in-stream flow requirements to protect fish & wildlife habitats.

Furthermore the present in-stream flow process allows a concerned party ample opportunity, in advance of large scale appropriations, to protect a waterbody with an in-stream flow reservation. Those reservations are made on a case by case basis and are sufficiently tailored to provide the protection needed and allow for maximum beneficial use of the remaining water.

Using Dingall-Johnson funds, ADF&G has applied for approximately 20 in-stream flows to date. Several private parties have also turned in incomplete applications for reservations as well. ADF&G spends on an average $8,000-10,000 per application or roughly $100,000 per year. In-stream flow analysis are apparently an acceptable means of expending Dingall-Johnson funds. (As an aside, perhaps these funds should be dedicated to all future in-stream flow programs if HB-210 passes. This would resolve everyones concern over where the money will come from to pay for all the in-stream flow analysis required pursuant to HB210.)

Other public agencies (federal) are also taking advantage of Alaska's current in-stream flow program. This program is available to those individuals or groups desiring in-stream flow reservations, i.e., fishermen, conservationists, health and human services agencies, or private commercial interests.

The proponents of this bill may be right about one thing. This bill may provide some habitat protection due to the chilling effect it will have on future residential, commercial,

industrial or public growth and developments primarily in rural parts of the state. Water is used in every facility or development for drinking, sanitational purposes, irrigation, cleaning or flushing actions, and in numerous manufacturing or industrial process's. Virtually every type of rural project in the future may be affected by this bill, i.e., various, hunting and fishing lodges, hatcheries; fish processors; mines; residential developments; remote cabins; laundromats; national guard armories; tourist facilities; municipal water needs not already grandfathered; state and federal facilities; and commercial, manufacturing or industrial enterprises. These developments (or at least those that are not public funded) will most likely be affected at both the permitting and financing stages of the developments. Public funded developments will at least have the luxury of avoiding inquiring loan officers.

It should be obvious from the fiscal note attached to this bill that extra work and expense to the state and the public will be associated with its passage. In its efforts to date to protect in-stream flows on a case by case basis, ADF&G has spent approximately $100,000 per year. We must remember that these efforts offer greater precision in identifying water levels necessary for fish protection than the more arbitrary and broad application of HB210. Funding levels requested by ADNR to administer HB210 are projected to cost the state $800,000 in the first year. Thereafter, approximately a half million dollars per year will be required by ADNR to administer the program. An 800% increase in the first year and annual 500% increases above present spending levels does not appear to provide the savings this bill was supposed to provide.

When the administrative regulations are drafted to implement this bill it is difficult to imagine that future water users will not feel similar increases in their costs associated with acquiring water rights. Future cost cutting measures may also require a shifting of the states expense associated with administering this program to water users in addition to whatever expense they may have at the programs initiation.

The cost of preparing an in-stream flow analysis on a waterbody will not be reduced just because we wave a magic wand over the state and arbitrarily impose the in-stream flow prescribed in HB210. That makes no sense at all. If ADF&G could do an adequate job for less then $8-10,000 per analysis it seems like they would be doing it already. If these can be done for less, then why isn't ADF&G using the cheaper method now? It is unreasonable to expect that an incremental analysis will cost less then one million dollars per project or a modified tenants method analysis will cost less then $8-10,000 per analysis. That is the cost now; and that will be the cost next month or next year whether HB210 passes or not.

The large fiscal note attached to this bill is more than likely a reflection of the increased number of in-stream flow analysis that will be required because of HB210. If HB210 is not passed, these expenditures will not be necessary since in-stream flow analysis will continue to be done only on an as needed basis; and not just because there is an inflexible statutory requirement to complete these analysis for every fish stream. The existing system to protect fish streams works now. There is no large scale threat in this state currently or on the horizon. Furthermore, specific in-stream flow programs completed on a case by case basis provide better protection for a waterbody and its fish than a broad program such as HB210. In-stream flow protection provided on a case by case basis also imposes far less burden on water users and permits maximum beneficial use of Alaska's water resources.

In stream flow reservations are an important part of Alaska's water rights scheme. They provide opportunities to protect significant resources and opportunities associated with Alaska's water resources. There are many beneficial uses of water, however, that should be promoted and protected by the state. Unfortunately, the broad expansion of the in-stream

'low reservations program proposed in HB210 will be at the expense of these other beneficial users and may impair or prevent these beneficial uses from occuring. As I have pointed out the bill also imposes a large financial burden on the state and future water users.

Consequently, Calista does not support the passage of this bill. We urge your committee to oppose passage of HB210 for the reasons I have outlined above.

If I can be of any assistance on the positions I have outlined, please feel free to call me.

Sincerely,

CALISTA CORPORATION

Mike Neimeyer

Mike Neimeyer
Vice President
Land & Natural Resources

STEVE COWPER, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF LAND AND WATER MANAGEMENT

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February 15, 1990

Representative Cliff Davidson
Co-chairman, House Resources Committee
P.O. Box V
Juneau, AK 99811

Dear Representative Davidson:

In your February 6, 1990 memorandum, you asked for a large amount of statistical information over the last twenty years regarding surface water appropriations.

As you know, the Water Use Act was enacted in 1966 and early casefiles in some cases contain little information. In the early 1980's, we designed and began entering information into the department's Land Administration System (LAS) computer system which includes information about water rights applications, permits, and certificates. It is important to understand that this computer system is a computer filing system and it cannot manipulate data and produce custom reports quickly. It is not a system like the readily available Lotus software. To compile much of the information that you have requested will require a custom report that can only be prepared by programming a custom request for the information. This is both costly and time consuming; it will take approximately two to four weeks to gather some of this information. However, if that is what you want, our staff is available to work closely with your staff to design a programming request to produce the required information. The initial programming request must be specific and complete, because once the programming is done it cannot be easily changed.

The following responses answer your questions as best we can with current information.

1. **Prior to April, 1968, how many applications were filed for the withdrawal, impoundment, or diversion of streams?**

No applications were received prior to April, 1968. However AS 46.15.065 required existing water users to file declarations of

appropriations during this time to protect their existing right to use water. It will require a custom report to provide how many declarations of appropriation were filed during this period. Any of the declarations that were closed and not issued are not on our computer, and some background information, such as water source, was not entered during the initial batch entry of data and is not available.

2. How many applications were filed and accepted for the withdrawal, impoundment, or diversion of streams for the rest of 1968?

This information is available only through a custom report.

3. How many applications for the withdrawal, impoundment or diversion of streams have been filed and accepted per year from 1968 through 1989?

Information on numbers of surface water applications received from 1968 through 1983 is not available except through a custom report. The following summarizes surface water applications received from 1984 through May, 1989, produced by a custom report in May, 1989.

1984 - 342 surface water rights applications received
1985 - 683 surface water rights applications received
1986 - 151 surface water rights applications received
1987 - 108 surface water rights applications received
1988 - 139 surface water rights applications received
1989 through May - 78 surface water rights applications received

Jan-Feb Filing

4. What out of stream users of water have applied for 100,000 gallons a day or more appropriation of streams, or what type of uses would require 100,000 gallons of water a day appropriation?

This information is not available prior to 1984 except by generating a custom report. The attached printout of surface water rights applications filed between 1984 and May, 1989 lists the quantities applied for. The codes are as follows: G is gallons per day; M is gallons per minute; A is acre feet per day; C is cubic feet per second; Y is total flow; Z is other; and U is unknown.

Typical water uses in excess of 100,000 gallons of water per day might include, depending on the project, placer and lode mining, oil and gas exploration, public water supplies, docking facilities, fish hatcheries, hydroelectric facilities, canneries, and other large industrial users.

5. Names of these streams or rivers for these applications.

This information is not available for applications prior to 1984 except by generating a custom report. The attached printout of surface water rights applications filed between 1984 and May, 1989

lists the surface water sources from with water is applied for.

6. **The quantity of water requested for the appropriations.**

This information is not available for applications prior to 1984 except by generating a custom report. The attached printout of surface water rights applications filed between 1984 and May, 1989 lists the quantities applied for or granted for these applications. Please note the status codes are as follows: 10 is application; 11 is permit issued; 12 is certificate issued; 44 is application closed; and 40 is certificate revoked.

7. **Of all of the above, please differentiate between diversions, withdrawals, and impoundment appropriations. How many of the diversions would be classified as a nonconsumptive use of water under your proposed regulation revisions?**

We do not specifically differentiate between diversions, withdrawals, and impoundments. The applications are coded by surface, subsurface, and dams. The attached printout is a custom report for source codes surface and dam water rights. We do not have nonconsumptive uses coded in our computer so that information is not available. These uses are generally, depending on the project, placer mining, run of the river hydroelectric projects and instream flow reservations.

8. **Of all the above, on how many streams have you calculated or estimated the water available for appropriation and by which techniques?**

This information is not coded and is not available. We use a variety of techniques from calculating mean annual flows using USGS records to requesting detailed hydrologic analysis from the Division of Geological and Geophysical Surveys.

If you have further questions, please do not hesitate to contact me.

Cordially,

Gary Gustafson
Director

cc: Lennie Gorsuch
Rod Swope
Tom Hawkins
Larry Ostrovsky
Bob Forbes

HB 210

United States Department of the Interior

GEOLOGICAL SURVEY
Water Resources Division
4230 University Drive - Suite 201
ANCHORAGE ALASKA 99508-4664

Christopher Estes
Statewide Instream Flow Coordinator
Alaska Department of Fish & Game
Division of Sport Fisheries
Research & Technical Services Unit
333 Raspberry Road
Anchorage, Alaska 99518

November 9, 1987

Dear Mr. Estes:

This letter is in response to your inquiry as to whether a mean annual discharge can be calculated or estimated for all streams in Alaska.

Yes, a mean annual discharge value can be determined for most streams; however, the quantity and quality of the data base and analysis used to derive this value for a given stream will limit its statistical reliability. We would therefore strongly urge that the presentation of these values, or for that matter any flow calculations or estimates that are reported, also reference the data source or sources and include a summary of the analysis used to derive a value and its confidence intervals.

There are over 8,400 named streams in Alaska and many more un-named streams. Of them, only 160 have continuous historical flow records of ten or more years (long-term record), 55 have a record length of five to nine years, and 95 have a record length of one to four years. A few streams have short-term seasonal records. The remaining streams have no continuous records. From a statistical perspective, stream-flow statistics from streams with ten or more years of record are considered statistically reliable for use in regional flow analysis. Any flow value derived from a data base of shorter duration should be examined to see if there is sufficient range in discharge and whether it can be compared to long-term streamflow data at nearby stations or within the region. Adjustments can be made to the short-term data to reflect flow conditions over a longer time period.

It is recognized that deriving a value from a limited data base and presenting the results with proper qualifiers is better than not having any value at all. If possible, a statistical assessment of a value derived from a limited data base should be made or proper qualifiers should be presented; otherwise, use of the value could result in serious misinterpretations and decisions using that information.

An analysis and brief discussion is attached for some of the available methods for estimating a mean annual discharge for ungaged streams having no data. Mean annual discharge of streams on or near a stream-gaging station with a long-term record can easily be calculated and applicable adjustments made. Methods for correlating discharge measurements at ungaged sites to gaged streams are available. The methods that have been used in Alaska are discussed in:

Scully, D. R., Krumhardt, A. P., and Kernodle, D. R., Hydrologic Reconnaissance of the Beluga, Peters Creek, and Healy Coal Areas, Alaska: U. S. Geological Survey Water Resources Investigations 81-56, 71 p.

Savard, C. S., and Scully D. R., 1984, Surface-Water Quantity and Quality in the Lower Kenai Peninsula, Alaska: U. S. Geological Survey Water-Resources Investigation Report 84-4161, 62 p.

Alaska has only one active stream gage per 7000 square miles as opposed to an average of one gage per 400 square miles in the lower 48 states. Obviously, the best solution to deriving reliable stream flow values for Alaska would be to expand our gaging-station network, and maintain a sufficient number of stations to insure that long term records can be developed.

I hope this provides you the information requested.

Sincerely,

Philip A. Emery
District Chief

Attachment

EXAMINATION OF METHODS USED TO ESTIMATE MEAN ANNUAL DISCHARGE IN ALASKAN STREAMS

R. D. Lamke August 21, 1987

Techniques that can be used to estimate mean annual discharge at ungaged sites throughout Alaska were provided in a report by Bruce Parks and Robert J. Madison in the 1985 report: "Estimation of Selected Flow and Water-Quality Characteristics of Alaskan Streams", U.S. Geological Survey, Water-Resources Investigations Report 84-4247. In order to use the techniques, some degree of technical expertise is required. However, the specific methods of estimating annual discharges are just a portion of the report. A discussion of the pertinent parts of the report follows:

The best method (of those examined in the report) to estimate average discharge (cubic feet per second) of a stream throughout the year are equations that use drainage area of the basin and the mean annual precipitation averaged over the basin. The maps used for drainage area were standard U.S. Geological Survey contour maps of 1:63,360 and 1:250,000 scale. Precipitation should be determined from an isohyetal map issued by the National Weather Service in 1972 entitled "Mean Annual Precipitation". It is important to use the same methods and maps used to derive the equations. A level of knowledge is required to determine drainage area in that the location of the site in question for which the mean annual discharge is desired has to be located on a USGS contour map, the drainage basin boundaries have to be defined on the contour map, and the drainage area has to be measured. The general definition of the drainage area boundaries needs to be transferred to the

isohyetal map (NWS, 1972) and an average precipitation (inches) determined by averaging values of precipitation from several equally-spaced locations within the drainage boundaries defined on the isohyetal map. If the drainage basin is relatively small, the precipitation value on the NWS map at the point of interest is sufficient.

Parks and Madison (1985, p. 26-27) developed a statewide equation and regional equations to estimate mean annual discharge. They state (p. 26) that in southwest, northwest, and Arctic Slope regions, whore they are few data available, statewide equations offer the best alternative for estimating flow at ungaged sites.

The mean annual discharge can be estimated by using a form of the equation:

$$\text{Log } Q_A = \text{Log } a + b_1 \text{ Log } A + b_2 \text{ Log } P$$

where Q_A is mean annual discharge in cubic feet per second

a = regression constant

A = drainage area in square miles

P = mean annual precipitation in inches

b_1 and b_2 are regression coefficients

An equivalent form of the equation is:

$$Q_A = a A^{b_1} P^{b_2}$$

Values within the range of drainage area and precipitation used in the derivation of the equations should be used. The ranges used are presented below:

		Statewide	Southeast	South-central	Yukon
Range in area:	lower	2.5	2.5	4.7	9
(mi^2)	upper	321,000	226	20,600	321,000
Range in precipitation:	lower	4	60	10	12
(inches)	upper	280	280	160	80

Reliability of the equations is the highest where sufficient streamflow data are available. Therefore, equations are less reliable where data are sparse. There is no map which shows the locations of the gages used to determine the equations for mean annual discharge. However, figure 1 (Parks and Madison, 1985) shows the locations of the 246 gaging stations used in WRI 84-4247. Of these, 172 were used in computing the regression equations for mean annual discharge.

Regression equation theory is briefly explained on pages 10 and 11 of Parks and Madison (1985). The measurements of the accuracy of the equations are discussed in paragraphs 1 and 2 of page 11 and evaluations of the equations are discussed on pages 19 and 26. Table 5 on Page 27 gives the log of the regression constant, regression coefficients, and error statistics of the equations derived to estimate mean annual flow, Q_A. In using these equations, it is helpful to know that "a" is the antilog of Log a and the logarithms are to base 10.

The standard error of estimate is given in log units. Standard errors in log units are more understandable when expressed in (+) and (-) percent. The standard errors shown are standard errors of estimate (SEE); a more common method of expression is to give the standard error of the regression equation (SER). (See discussions on the two types of standard errors on pages 17-19.) The equations and error information given in table 5 of the report have been reformatted to incorporate some of the information discussed in the two preceding paragraphs.

	Statewide	Southeast	South-central	Yukon
a	(0.0309)	(0.347)	(0.0468)	(0.00912)
Log a	-1.51	-0.46	-1.33	-2.04
b_1	0.98	1.01	0.96	1.05
b_2	1.19	0.68	1.11	1.39
n (sample size)	172	66	56	32
r^2 (coef. of determination)	0.98	0.92	0.97	0.99
SEE (log units)	.15	.14	.16	.10
(+) percent	(41)	(38)	(45)	(26)
(-) percent	(29)	(28)	(31)	(21)
SER (log units)	(0.123)	(0.114)	(0.133)	(0.077)
(+) percent	(33)	(30)	(36)	(19)
(-) percent	(25)	(23)	(26)	(16)

Note: The values in parenthesis are not given in the report by Parks and Madison, 1985; but they can be estimated from the information in the report.

A summation of the methods to compute flow characteristics in WRI 84-4247 is given on pages 88-92 of the following publication (Appendix C of this publication contains the precipitation map):

Entrix, Inc., 1986, Best Management Practices for Placer Mining, Technical Report: Alaska Department of Fish and Game, Division of Habitat, Juneau, AK, 250 p.

There are other reports that present methods, utilizing regression equations of basin characteristics, to determine mean annual discharge. The two that are the most readily available are for U.S. Forest Service areas in Alaska and the other is for the Cook Inlet sub-region. The references are:

OTT Water Engineers, Inc., 1979, Water Resources Atlas for USDA Forest Service, Region 10 Juneau, Alaska: Redding, Calif., 7 p., 5 appendices.

Freethey, G.W., and Scully, D.R., 1980, Water Resources of the Cook Inlet basin: U.S. Geological Survey Hydrologic Investigations Atlas HA-620, 4 sheets.

A subjective comparison of the results of determining average discharge using methods in these two reports with results from Parks and Madison (1985) was made. Some observations follow:

FOREST SERVICE

1. The author's selected the stations to use. They arbitrarily excluded stations with significant glacier areas.

2. The precipitation maps presented in the report have to be used in the regression equations.

3. Results for average discharge seem to be quite good. However, there is an element of cross-correlation involved; because runoff data were used as an aid in drawing the precipitation maps.

4. However, in spite of the above drawbacks, I would recommend that mean annual discharges be estimated for comparable (maritime, island, non-glacial) streams in Southeast Alaska and Chugach Forest using this method. The result should be compared with the results from using the methods in WRI 84-4247.

COOK INLET

1. The mean elevation of the drainage basin has to be determined for use in the equation presented in this report.

2. Results [in terms of standard error of the regression (SER)] using the equation presented in this report are better than results from methods given in WRI 84-4247.

3. In other regional analyses (unpublished), I have found that including a third variable (besides area and precipitation) reduces the standard error of the equation and this third variable is significant at the 95% level.

Other methods to estimate average discharge at ungaged sites involve making several measurements of discharge at the site and comparing their discharges with concurrent flow at an index streamflow station; or to determine runoff from "runoff" maps. The first method is expensive. The second method is not very accurate and the potential error can not be quantified. Also, only a few areas of the state have regional runoff maps.

CALISTA CORPORATION POSITION PAPER ON HB210 March 1, 1990

1. Redundant:

Alaska currently has the most progressive in-stream flow program in North America, providing sufficient protection of habitats for water-dependent species of all fish and wildlife. HB210 adds no additional protection of these habitats than that which currently exists. This protection stems from Article VIII, Section 13 of the Alaska Constitution which provides that: "Except for public water supply, an appropriation of water shall be....subject to preference among beneficial uses...and to the general reservation of fish and wildlife."

This protection is further codified in Alaska Statutes and the Alaska Administrative Code as follows:

AS 46.15.080(b)(3). This section allows the Commissioner to issue a permit for water appropriation if the appropriation is in the public interest. Subsection (3) requires the Commissioner to consider "..the effect on fish and game resources and on public recreational opportunities." This requirement is further codified in 11AAC93.120(a) and (b).

AS 46.15.090. In a situation where there is insufficient water available from a water body, this statute requires the Commissioner to give preference to public water supplies, then to the use that will constitute the most beneficial use. For example, if the most beneficial use is fish habitat protection, then other applicants must be denied under this statute. This is further codified at 11AAC93.230.

AS 46.15.133. Every water appropriation application must undergo a public notice process as outlined in this statute. In addition to all of the parties required to be notified, ADF&G and ADEC are specifically identified for service on this notice. Potential harm, including habitat damage, overlooked by the Commissioner may be identified during this process. This requirement is further codified in 11AAC93.080.

AS 46.15.145. Anybody can use this statute to file for a reservation of water (otherwise known as in-stream flow) on any water body in the state for public, private or commercial purposes. If AS 46.15.080(b)(3), AS 46.15.090, and AS 46.15.133 do not provide sufficient protection of fish habitats, then anyone can file for protection of an in-stream flow using this statute. Although ADF&G is not the only applicant to date to take advantage of this program it has, by far, been the major user. All of their applications were for fish habitat protection. This statute is further codified in 11AAC93.141.

HB210 does nothing more than these statutes except to place an automatic reservation of water, using an arbitrary standard for minimum water flows to be maintained.

2. Contrary to existing water law and unconstitutional:

Current water law is based largely on prior appropriation water laws adopted from western states. The major difference is that Alaska's water law has always specifically recognized two beneficial uses to exist: for public water supplies; and for fish and wildlife. Article VIII, Section 1 of our Constitution states that, "it is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest."

Section 5 of that Article states, "the legislature may provide for facilities, improvements, and services to assure greater utilization, development, reclamation, and settlement of lands, and to assure fuller utilization and development of the fisheries, wildlife and waters." The final section in Article VIII that frames Alaska's water law is Section 13, which states: "All surface and subsurface waters reserved to the people for common use, except mineral and medicinal waters, are subject to appropriation. Priority of appropriation shall give prior right. Except for public water supply, an appropriation of water shall be limited to stated purposes and subject to preferences among beneficial uses, concurrent or otherwise, as prescribed by law, and to the general reservation of fish and wildlife."

Clearly, the framers of the Constitution meant for the water resources of this state to be developed and utilized for beneficial uses to the maximum extent possible. They expected public water supplies to be protected. They also expected as many other beneficial uses to be made as possible, consistent with wise fish and wildlife management.

HB210 raises fish habitat protection to the number one priority amongst beneficial uses of water in this state. It will impose financial disincentives for other uses and developments of the water resources of this state by requiring costly in-stream flow analysis requirements for each surface water appropriation application filed subsequent to its passage. It will discourage rather than encourage water uses. Its expense, if placed upon the water use applicant will discourage permit compliance and, if placed upon the permitting agency (ADNR), will cause tremendous permit backlogs and delays in processing unless ADNR is fully funded annually.

HB210 guts the whole concept of prior appropriation adopted

in the Constitution, which recognizes that "priority of appropriation shall give prior right." This bill automatically assigns a priority of right, without an identified appropriation, on over 12,000 water bodies with the stroke of a pen.

HB210 establishes a preferred use which specifically contravenes the preferred use identified in the Constitution and in existing statutory law. Public water supplies have preferential status over all other water uses. Article VIII, Section 13, of the Constitution places public water supplies above all other uses, including fish and wildlife habitat protection. AS 46.15.090 and AS 46.15.150 also elevate public water supplies over all other water uses. HB210, however, places fish habitat protection above that priority status granted public water supplies in the constitutional and statutory references cited above.

3. Minor users hurt the most.

ADNR already requires large or controversial water users to provide data on fish and wildlife impacts. In the draft revisions of the Alaska Administrative Code dealing with water appropriations, ADNR will require water users of more than 100,000 gallons per day to gather sufficient data to allow ADNR to determine the impact that the withdrawal of water will have on fish and wildlife. Consequently, all water users of large amounts of water will be required to provide in-stream flow analyses. Those water users who use less water and who are least able to supply this information will now be required to do so by HB210. Of course if ADNR is sufficiently funded they can perform the required in-stream flow analysis that will be triggered by each surface water appropriation filing. Otherwise, HB210 will have its greatest impact on those who can least afford it.

ALASKA OUTDOOR COUNCIL, INC.
3780 McGINNIS DR. JUNEAU, AK 99801
(907) 789-3450

POSITION STATEMENT

INSTREAM FLOW RESERVATION

HB 210

March 29, 1989

The Alaska Outdoor Council has adopted a firm position on HB 210 dealing with instream flow reservation in Alaska.

The Alaska Outdoor Council supports this legislation as a major step forward in guaranteeing necessary instream flow needed to protect our fisheries resources.

The establishment of minimum summer and winter water flow requirements is a major purpose of this legislation. It will also require a major water flow assessment before out-of-stream appropriations are made. This process will avert excessive appropriations of water which jeopardize our common property fisheries resources.

The Council is not opposed to out-of-stream appropriations but we are concerned that one of our most valuable resources (water) be managed properly to benefit Alaskans as a whole.

This legislation would provide that type of guarantee with adequate flexibility built in to provide public water and resource development needs. We do feel, however, that it is also the responsibility of the Department of Natural Resources to guarantee that water appropriations do not adversely affect other resources.

The Alaska Outdoor Council is an Alaskan sportsmen and outdoor organization consisting of 54 clubs with a membership of over 11,000 statewide.

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION: CSHB 210(RES) No. 1
PUBLISH DATE: HOUSE 2/14/90

FISCAL NOTE

IN FILE

REQUEST:

Revision Date: 13-Feb-90
Title: An Act relating to the reservation of instream flows in water
Sponsor: Davidson
Requestor: House Resources

Agency Affected: Natural Resources
BRU: Geological Management/Land & Water Mgmt/Mgmt & Admin
Components: Geological Management Land & Water Mgmt/Admin Svcs

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES	229.4	216.6	199.8	208.9	218.2	228.3
TRAVEL	80.0	80.0	70.0	70.0	70.0	70.0
CONTRACTUAL	311.6	100.0	90.0	90.0	90.0	90.0
SUPPLIES	12.0	11.0	15.0	15.0	15.0	15.0
EQUIPMENT	150.0	150.0	150.0	100.0	50.0	50.0
LAND&STRUCTURES						
GRANTS,CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	783.0	557.6	524.8	483.9	443.2	453.3
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	783.0	557.6	524.8	483.9	443.2	453.3
FEDERAL FUNDS						
OTHER						
TOTAL	783.0	557.6	524.8	483.9	443.2	453.3

POSITIONS:

FULL-TIME	3.0	3.0	3.0	3.0	3.0	3.0
PART-TIME						
TEMPORARY	2.0	2.0	2.0	2.0	2.0	2.0

ANALYSIS: (Attach a separate page if necessary)

See Attached

Prepared by: Mary Lu Harle/Bill Long Phone: 696-0070
Division: Land & Water Mgmt/Geological Mgmt Date: 13-Feb-90

Approved by Commissioner: Jennie Gorsuch Date: 13-Feb-90
Agency: Department of Natural Resources

Distribution (by preparer) :
Legislative Finance
Legislative Sponsor
Requestor
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STATE OF ALASKA
1990 LEGISLATIVE SESSION

FISCAL NOTE

ANALYSIS:

INSTREAM FLOW DATA COLLECTION
Division of Geological and Geophysical Surveys (DGGS)

CSHB210 would require that a percentage of the mean annual flow of the streams in Alaska be reserved during the summer and winter seasons respectively and that no other use be permitted if measured instantaneous flows drop below the appropriate percentage.

In order to calculate the percentage required by the bill it would be necessary to know the mean annual flow of a given stream. According to the Alaska Department of Fish and Game Anadromous Fish Catalog, there are approximately 12,000 anadromous streams in Alaska. Additionally there are thousands of Alaskan streams which contain other fish populations. Few of Alaska's streams have been measured for streamflow (discharge). Approximately 260 streams have flow records of one year or longer. Therefore, in order to operate the instream program required by CSHB210, a very intensive stream-gaging program is required.

The hydrological work to provide reasonable estimates or measurements of annual and instantaneous stream flows will require an ongoing program of hydrological gaging and the establishment of a gaging network. Five years of data are the minimum for good records of stream flow. Therefore, this program is proposed for a five to ten year period. The gaging of thousands of streams would take many decades. The problem can be approached in various ways.

Authors and supporters of CSHB210 suggest that a tiered system be used to evaluate the flow of a given stream depending on the competition for the water. For those streams with the least competition, the "Tennant" or "Montana" methods may be used.

D.L. Tennant of the U.S. Fish and Wildlife Service in Billings, Montana, analyzed 38 flows from 11 rivers in several of the contiguous 48 states and derived a somewhat universal classification for the percentage of flow of the stream values for fish habitat as follows:

Flow Type	Recommended Base Flow	
	Oct-Mar	Apr-Sept
Flushing (Maximum)	200% of Average Flow	
Optimum Range	60%-100% Average Flow	
Outstanding	40%	60%
Excellent	30%	50%
Good	20%	40%
Fair or Degrading	10%	30%
Poor or Minimum	10%	10%
Severe Degradation	10% to 0% Average Flow	

Tennant writes, "First, determine the average annual flow of the stream at the location(s) of interest (listed as AVERAGE DISCHARGE by U.S.G.S. and hereinafter called flow)."

The above quote stresses the point that streamflow records and data are needed in order to use the "Tennant Method" correctly. However, there are methods of estimating flows for streams based on characteristics of the basin, climatic records, stream channel morphology and data from nearby streams. All of this type of hypothetical flow estimation produces data with large errors, considered inaccurate by most hydrologists, and are inadequate data on which to base laws, adjudicate water rights, or use in court.

Other variables affecting Alaskan streams include the variation with latitude of streamflow patterns. The farther north and more extreme the climate, the more widely streamflow vary from winter to summer. The most extreme are the streams of the North Slope where the streams do not flow in the winter and most of a season's flow occurs during a period of a few weeks in the early summer. The geographical area covered by Alaska is about like all of the 48 contiguous states with the marine and interior differences. Therefore the stream variety is very large—much larger than the streams included in Tennant study.

Glacial streams have different flow patterns from non-glacial streams; small streams have different patterns than large streams. The streamflow patterns of the thousands of Alaskan streams will have to be analyzed, either by gaging (the best method) or by surveying the channels in the field in order to make a determination of the mean annual flow.

The Instream Flow Program proposed in the attached fiscal note provides a hydrologist in three DNR regions of Alaska—southeast, southcentral and northern—to devote full time to the determination of mean annual flows for the streams of the region. These hydrologists will use all of the various scientifically sound techniques to provide water managers, habitat biologists, and fish and game managers the streamflow data they need.

A major part of the project will be the expansion of the stream gaging network in Alaska. The increased number of gages will be of great value to all areas of natural resources management and environmental evaluation because there are so few gaging stations in Alaska at the present time.

The instream flow hydrologist will determine the streams of the region which are representative and use them as index streams for making estimates of flow for ungaged streams. This system is used in several ways in hydrology when inadequate data are present. The more and better the index streams, the more accurate the ungaged stream estimate.

The instream flow hydrologists will also calculate the necessary percentages for the streams in his region and devise techniques necessary to evaluate flows for consumptive and out-of-stream uses and applications. This work will be closely coordinated among the Department of Fish and Game and DNR's Division of Land and Water Management and Division of Geological and Geophysical Surveys. The project will require purchase of equipment for the gaging stations; improved computer equipment to store, retrieve and manipulate data; travel funds; and contractual monies for related laboratory expenses and for a cooperative program with the U.S. Geological Survey, Water Resources Division, for part of the stream gaging program.

INSTREAM FLOW DATA MANAGEMENT
Division of Land and Water Management (DLWM)

This bill will require that DNR be able to track water that is withdrawn from appropriation for protection of fish habitat. The department presently has a computer filing system, the Land Administration System (LAS), to store information from casefiles. Water rights data from applications, permits, and certificates are stored in this system. However, this information is for single-point uses of water. This bill will require keeping track of information for withdrawn flows in segments of streams and rivers.

In the early 1980s DNR started a program to identify and record river miles on all streams in the state so that information can be stored for segments of streams in addition to single points. This system is the STORET system, which was developed by EPA. The procedures for mapping the river miles and physical work to identify, record, and index the river miles on USGS maps was begun. The project was approximately 50 percent complete when funding ran out.

The STORET system was identified as the best system for this type of tracking of stream flows in stream segments. This project and the mapping of the river mile index must be completed. The procedure manuals and original completed maps presently exist in DNR.

Initial programming to integrate the STORET system into the LAS system and link it to the water rights case file information system was completed in the early 1980s. It has not been used because the river mile index mapping was never completed. It will be necessary to evaluate the STORET system within LAS and make modifications if needed. Also, the river miles recorded on maps must be entered in the system.

Completion of the mapping, necessary programming, and data entry can be completed in one year. No new employees are requested. Funds will be required in subsequent years to pay programmer costs to maintain the STORET system in LAS.

SUMMARY

This fiscal note provides a DGGS hydrologist at each DNR regional office to work with water managers to determine flows for streams from which out-of-stream water rights are requested. It provides one senior hydrologist to conduct a statewide gaging program to produce data needed to calculate flows for instream flow needs and other uses. The hydrologists will conduct office, laboratory, and field work needed for various levels of instream flow analyses. The DLWM portion of the project will modify the DNR LAS system to accommodate instream flow data and out-of-stream appropriation data relative to instream flows and adoption of required regulations.

The project will develop a cooperative agreement with the U.S. Geological Survey Water Resources Division to cooperatively establish more critical and permanent streamflow gaging stations using joint (federal/state) funds.