

MEMORANDUM

TO: Council, SSC, and AP Members
FROM: Jim H. Branson
Executive Director
DATE: July 14, 1983
SUBJECT: Status of Contracts and Proposed Projects

ACTION REQUIRED

- (a) Contract 82-3 - Salmon Economic Profile: Approve final report. - *will mail to others - app. @ Sept. mtg*
- (b) Contract 82-4 - Halibut Limited Entry Study: Approve final report and economic appendix. *not read*
- (c) Contract 83-1 - Social and Cultural Aspects of the Pacific Halibut Fishery: Final report due, needs review by Limited Entry Workgroup. Council review in September. Document available after Workgroup review and comment. *Copy for workgroup*
- (d) UFA Compendium: Approve co-sponsorship.
- (e) Lowell Wakefield Symposium: Approve co-sponsorship.
- (f) Further Research on Incidentally Caught Chinook Salmon: Approve for funding in FY/84.
- (g) FY/84 Proposed Projects: Approve revised proposal for the Golden King Crab Study and approve sablefish research priorities.
- (h) Limited Entry Conference: Discuss concept and content.

BACKGROUND

Current Council contracts are listed below with contract information on the contractor, funding amount, percent expended to date, duration, objective, and status. Those contracts requiring Council action at this meeting are indicated with an asterisk.

Current Council Contracts

81-5: Incidental Salmon Catch Study
(FRI/UW, \$100,000, 78%, October 1, 1981 to September 30, 1983)

Objective: To determine the feasibility of using scale analysis to identify the stream or area of origin of chinook salmon caught incidentally in the foreign trawl fisheries off Alaska.

Status: A quarterly report for April 1 - June 30, 1983 has been received and distributed to the SSC for review. A draft final report is due in August. The contractor has identified several research priorities that will be reviewed by the SSC for possible FY/84 programmatic funding.

82-2: Crab Observer Program
(ADF&G, \$69,489, 87%, April, 1982 to October 31, 1983)

Objective: To gather in-season catch data on species and sex composition, size frequency, fecundity, and discards.

Status: This contract was recently extended to October 31, 1983 to allow remaining funds to be used for more observer time.

*82-3: An Economic Profile of the Southeast Alaska Salmon Industry
(UA, \$10,000, 70%, April 1, 1982 to July 31, 1983)

Objective: To provide current data on effort, costs and earnings in the Southeast Alaska salmon fisheries.

Status: This contract was extended through July to allow additional time for the final report to be reviewed by the SSC. The report was distributed to the SSC at this meeting.

*82-4: Halibut Limited Entry Study
(NW Res. Analysis, \$80,000, 85%, June 1, 1982 to October 31, 1983)

Objective: To fully evaluate a share-type halibut limited entry system for Alaska, from design of the system to analysis of its impact on income, prices, geographic distribution and product quality in the harvesting, processing, and marketing sectors; and to generally evaluate other types of limited entry systems.

Status: In March, the Council requested that the contractor submit an appendix to the economic analysis section of the report before it could be approved for public distribution. The Council staff was instructed to prepare a summarized edition of the report to facilitate review by the public. The staff synopsis was approved in May and distributed on June 30. The economic analysis and the full report still needs to be approved by the Council for public distribution. Public presentations by Stokes will be scheduled for sometime in the fall or later.

*83-1: Social and Cultural Aspects of the Pacific Halibut Fishery
(Langdon, \$26,500, 82%, January 1 to July 31, 1983)

Objective: To gather social, cultural, and demographic information descriptive of the contemporary Pacific halibut fishery important to management decisions.

Status: The due date for the draft final report was extended to July 1 and the report should be available under this tab (or in supplemental files) for review at this meeting.

Proposed Projects

*UFA Compendium

Cass Parsons has responded to our request for more information [see item E-1(a)]. UFA is requesting \$5,000 for co-sponsorship by the Council. In total, sponsors will contribute about 50-75% of the \$91,050 needed. Remaining funds would come from pre-sales. The Council needs to decide whether or not to support this project.

*Lowell Wakefield Fisheries Symposium on Non-fishing and Fishing Induced Changes in King Crab Populations

The Council has received a request to contribute \$4,000 toward support of a Lowell Wakefield Fisheries Symposium in 1984 [see item E-1(b)]. The Council needs to decide whether or not to support this project.

*Further Research on Incidentally Caught Chinook Salmon

FRI has identified several areas of further research on evaluating the impacts of the foreign trawl fisheries on chinook stocks and the distribution of these stocks in the eastern Bering Sea and Gulf of Alaska [see item E-1(c)]. The Council should consider whether or not to fund these projects from FY/84 monies.

*Limited Entry Conference

The Council has received a request to support a conference on limited entry [see item E-1(d)]. The Council needs to discuss the scope and content of such a conference.

*FY 84 Programmatic Requests

In May the Council approved FY/84 funding for six projects:

Rapid Response	\$ 80,000
FMP Development-ADF&G	60,000
Bering Sea Herring Scale Analysis (2nd year)	60,000
Growth and Size at Maturity of Golden King Crab	150,000
Stock Assessment Methodology for Sablefish	100,000
Limited Entry and Economics Study	<u>50,000</u>
TOTAL	\$500,000

Summaries of these project proposals will be submitted to NMFS along with the Council's budget requests following the July meeting. The SSC and Council still needs to review a revised proposal on the Golden King Crab Study moving it to the Bering Sea and sablefish research priorities developed at a meeting early this month at the NMFS Tiburon Lab. These proposals, when available, will be placed under this tab or in your supplemental file. A general description of work to be done in the second year of the Bering Sea Herring Scale Analysis is under item E-1(e) for your information.

Status of Other Projects

Joint Venture Analysis

This analysis of the short and long term effects of joint ventures on the entire domestic groundfish industry was requested by Larry Cotter in early 1982. In July 1982 the SSC recommended that the study be conducted by employing a graduate student to compile existing data and summarize the relevant analyses. This is being done at the Northwest and Alaska Fisheries Center under the supervision of Dr. Rich Marasco. A report should be available in September.

Marine Mammal Workshop

This workshop was recommended by the Council's study on Marine Mammals Feeding Habits last year. It will provide a forum for the discussion of biological interactions among marine mammals and commercial fisheries in the southeastern Bering Sea and a five- to ten-year plan to gather scientific information on which to base management of commercial fisheries with regard to marine mammals. The workshop is scheduled for October 18-21, 1983 in Anchorage. Alaska Sea Grant is handling the arrangements. The Council's co-sponsorship of \$10,000 was approved in July 1982. The other co-sponsor is the Marine Mammal Commission which has contributed \$5,000.

Joint Venture Logbook Program

A logbook program for the joint venture fisheries off Alaska was endorsed in concept by the Council in December 1982. In March 1983 the Council approved a proposal from ADF&G which was then submitted to NMFS for FY/83 programmatic funding. NMFS has approved the funding and a contract is now being written between the Council and ADF&G to do the project for \$33,400 between May 1983 and May 4, 1984.

Bering Sea Herring Scale Analysis

This project was approved by the Council in March 1983. The \$59,930 from FY/83 funds recently approved by NMFS have been channeled through the NWAFC to expedite the project. The contractor is the University of Washington Fisheries Research Institute and the period of the contract is April 1, 1983 to March 31, 1984. The project will determine the degree of separability of major spawning stocks of herring in the eastern Bering Sea, north Alaska Peninsula and Aleutian areas using scale pattern characters. It will also examine the stock composition of herring collected from the domestic summer food and bait fishery and from offshore overwintering grounds if spawning stocks are determined to be separable.

Sea Lion Pup Census Adjacent to Shelikof Strait

This project will provide an estimate of the total number of sea lion pups produced at the major sea lion rookeries in and adjacent to Shelikof Strait for comparison with similar counts made in 1978 and 1979. This comparison should help in determining whether the incidental take of sea lions in the commercial fishery is having any impact on the sea lion population. The Council approved this project in May 1983. A request for \$11,548 has been submitted to NMFS for FY/83 programmatic funds. The Marine Mammal Commission has tentatively offered an additional \$5,000 subject to adequate appropriations and approval of the research by their Committee of Scientific Advisors. ADF&G will conduct the census in June 1984.

Chinook Troll Data Analysis

The project was approved by the Council in May 1983 and will provide a comprehensive analysis and evaluation of the potential consequences of ADF&G changing the chinook accounting period. The project will evaluate available coded-wire tag recovery data to estimate the stock composition and age of chinook salmon taken during different seasons of the year, will evaluate the effectiveness of potential time-area closures, and will compile existing records for the 1982-83 winter troll fishery to describe catch, effort, and participation history in the fishery. ADF&G will do the study from July 1, 1983 until January 15, 1984 for \$22,600. Funds have been requested from NMFS.

North Pacific Fishery Management Council

Clement V. Tillion, Chairman
Jim H. Branson, Executive Director



Mailing Address: P.O. Box 103136
Anchorage, Alaska 99510

605 West 4th Avenue
Anchorage, Alaska 99510

Telephone: (907) 274-4563
FTS 271-4064

June 6, 1983

Ms Cass M. Parsons
Executive Director
United Fishermen of Alaska
319 Seward Street, Suite 208
Juneau, Alaska 99801-1188

Dear Cass:

In May the Council considered your proposal for UFA to publish an Alaskan Fisheries Compendium of all the statutes, regulations and issues pertaining to fisheries off Alaska. While we feel this will be a very useful document, particularly if it can be updated periodically, the project does seem to be overly ambitious for the support requested.

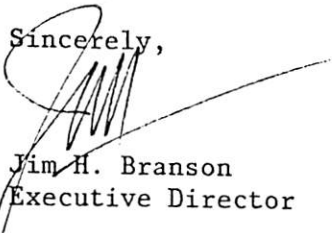
Our only other experience with such a compendium is Marine Fisheries Management Reporter published by Gary Knight in Louisiana. It comes in three volumes, is updated periodically and pertains to fisheries of the entire United States. The original subscription cost \$335, as did this year's renewal.

Your project is, of course, on a smaller scale, but still will require a great amount of effort to initiate and keep current if the compendium is to retain its usefulness. In your budget for 350 copies, the initial cost is \$260 per compendium with five years of free updating, or \$60 per compendium with \$50/year for updating. Considering the scope of your project, this seems insufficient to cover your costs.

I would like to have some additional details for the Council to consider when they meet in July. First, do you have a handle on how many potential subscribers have indicated any commitment to buy; i.e., is 350 copies a realistic minimum? Second, could you give me a more detailed breakdown of the various agencies referred to in your May 9 letter that you believe would contribute \$5,000 each and thus cover 75% of the \$91,050 budget you've proposed? And, would the remaining \$23,000 be covered through pre-sales at a lower subscription rate?

Any additional information you could send would be helpful. The Council will reconsider this in July.

Sincerely,



Jim H. Branson
Executive Director

37D/DD

Mr. Jim Branson
June 24, 1983
Page Two

I hope the updated prospectus will help you in your discussions with the Council. I plan to be out of the office most of July (am hoping to get to the July meeting at Land's End) so if you have further questions and I am not available, please contact Gerry Kelly, who I have asked to help coordinate the compendium.

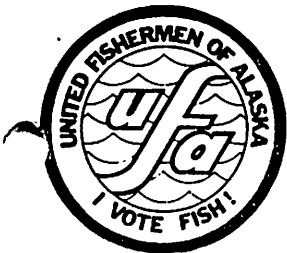
Sincerely,



Cass M. Parsons
UFA Executive Director

CMP/jb

Enclosure: Revised prospectus
Letters and contrac. copies



UNITED FISHERMEN OF ALASKA

Cass M. Parsons
Executive Director

319 Seward Street, Suite #208
Juneau, Alaska 99801-1188
(907) 586-2820

ALASKAN FISHERIES COMPENDIUM

SUMMARY

The Alaskan Fisheries Compendium is a reference document and tool which will allow fishermen, processors, other fishery user groups, the legislature, and state and federal officials access to the most current information on all issues and subjects affecting fisheries in Alaska. The compendium will gather together and present in concise form all the essential facts and details pertaining to each fishery topic. In fulfilling this goal, a brief historical review of each topic, as well as the applicable state or federal laws and regulations will be provided.

While documents summarizing and exploring these subjects exist in many cases, a compilation of these publications does not. Nor is this information available to any but those with the most extensive libraries. Simple summarizations of entire subjects are generally non-existent.

The Alaskan Fisheries Compendium will be presented in loose-leaf notebook form for easy copying and up-dating. Approximately 350 notebooks will be published initially with additional copies made according to demand. We will update annually (for a \$60 fee) to incorporate new regulations, policy changes or issues. We plan a regional version of the compendium after the statewide one is completed.

The compendium will be financed 25-50% from pre-sale commitments and 50-75% from those state and federal agencies with a specific involvement in the fishing industry. The UFA has asked these agencies for a \$5,000.00 sponsorship fee. Among the agencies requested to contribute include the University of Alaska, the Alaska Department of Fish and Game, the National Marine Fisheries Service, the North Pacific Fishery Management Council, the Department of Environmental Conservation, the Department of Commerce and Economic Development and so on. The Alaska State Legislature, the Board of Fisheries, fishermen's organization, processors, etc., either have been or will be solicited for pre-sale commitments.

The Alaskan Fisheries Compendium has a completion date scheduled for March, 1984. Those agencies which contribute to the project will receive one copy of the published document.

Because of its high priority, UFA has retained a full-time coordinator for the compendium to assist all agencies, associations, and individuals who wish to make input, collect existing laws and regulations, provide for an orderly review by all parties involved, and administer grant and pre-sale efforts.

The coordinator will work with qualified researchers to assist in the major subject areas indicated in this prospectus. The researcher's role will be to collect pertinent material and prepare concise summaries for each subject. This material will be edited and sent to cooperating agencies for review and approval. Additionally, the researchers will compile an annotated bibliography and index for the compendium.

We are making every effort to keep the planning process open to all. The coordinator and researchers will be in the UFA office in Juneau, accessible to legislators, agencies and individuals wishing to make input. All agencies, firms and associations which help sponsor the compendium will have ample opportunity for review and will have their names on the final copy. This will assure a comprehensive, accurate and objective compendium.

INTRODUCTION

A voluminous body of information exists describing the many facets of the fishing industry in Alaska. Presently this information is scattered throughout private, state and federal collections and thus generally inaccessible. Furthermore, the scientific and legal terminology that characterizes much of this literature often renders findings of significance uninterpretable to potential users, fishermen and legislators alike. Consequently, much of this information is seldom used. The rapid pace of development in the fishing industry diminishes the value of information that is not up to date, readily available and easily interpretable. The lack of a reference document to which people can turn for a concise and clearly written summary of issues and laws which are often complex, aggravates problems throughout the industry. To correct this situation the UFA proposes to produce an "Alaskan Fisheries Compendium".

The purpose of the compendium will be to present non-technical discussions of fisheries issues and laws to facilitate understanding by laypersons so that they may perform their duties in a more professional manner. The current absence of such a document negatively impacts all sectors of the fishing industry, the species upon which the industry depends, and the natural system upon which the species depend. Researchers and officials often work in their own worlds, at cross purpose or duplicating each other's efforts. As a result, both agency and privately proposed projects often meet with resistance from an uninformed public, the recent failure of the NMFS marine sanctuary proposal being a case in point.

Project Goals

The goal of this project is to synthesize the existing but fragmented body of information on Alaskan fisheries into a source book, the Alaskan Fisheries Compendium. The compendium will facilitate problem solving in all aspects of the Alaskan fisheries and thus serve to strengthen and stabilize the industry. The compendium will contain summaries of the literature on each topic of the industry and documents of significance will either be referenced or actually included in the appendices. Thus the compendium will be of much greater utility than an annotated bibliography or a compilation of documents. The major components of the project are briefly described as follows:

- 1.) Thoroughly review and summarize the history, current status, existing regulations and laws, pending legislation and potential future developments of each fisheries topic (described under Objectives).
- 2.) Offer the findings in two different editions of the compendium. One edition will have a statewide emphasis and be suitable for use by the industry, state and federal agencies, and the legislature. The other editions will have regional emphases and be suitable for use by the public, individual fishermen, local processors, and local governments who face problems unique to their geographical areas.

The review and summarization of the current literature on Alaskan fisheries topics will facilitate the following objectives:

- 1.) review of the history of Alaskan fisheries
- 2.) determination of the efficiency and productivity of harvesting techniques of the different gear groups
- 3.) analysis of fisheries management regimes; i.e., problems associated with sport fish, closures and openings, regulatory policy, regional problems, limited entry, interception, allocation and other problems facing the Board of Fish and the North Pacific Fisheries Management Council (NPFMC)
- 4.) evaluation of habitat protection guidelines in relation to the development of the following resources; hydroelectric, mineral, timber and OCS oil
- 5.) improvement in aquaculture, rehabilitation and enhancement techniques
- 6.) evaluation of the effectiveness of fishing loan programs, limited entry and the capital construction fund, review problems resulting from over and under capitalization, ADFG budget and taxation
- 7.) implementation of economic and investment studies of underutilized species
- 8.) planning of ports and harbors, water and sewer development
- 9.) assessment and testing of industry safety standards
- 10.) completion of quality assurance research by ASMI
- 11.) development of marketing techniques for foreign and domestic exports
- 12.) promotion of new products and processing techniques
- 13.) investigation of the problems associated with the expansion of the present industry into new fisheries; i.e., increased utilization of non-traditional resources as bottom fish; Office of Commercial Fisheries Development
- 14.) address the problems related to obtaining trained fisheries and processing work forces; i.e., maintenance and packing of fish, education, strikes and joint ventures to shoreside
- 15.) ascertain the direction of foreign developments that will affect Alaskan fisheries
- 16.) identification of foreign influence within the industry and its affect on the State's regulatory process, management and coordination of state fishery programs and policy, Domestic Fish Advisor, Office of International treaties.

The compendium will provide a synopsis in laymen's terms of the entire spectrum of Alaskan fisheries topics, an immediate and tangible benefit to users. They will also serve to identify topics for which a paucity of information exists and ascertain the degree to which these gaps are handicapping development of the industry. These topics will be rank ordered into a priority list of research needs. The compendium will function as a catalyst to promote cohesion amongst existing forces in the industry by providing equal footing on the ground of common knowledge. This body of specialized information will provide an all encompassing vantage point from which people new to the alien terrain of the fishing industry (conflicting regulations, overlapping responsibilities, etc.) will be able to find direction. Ease of interpretability and accessibility will encourage use of the directory and enable users to make informed decisions based on the best information available.

Dissemination of Results

The UFA will encourage wide dissemination of the compendium by advertising in fisheries periodicals and through direct solicitations. The rapid evolution of the fishing industry generates a constantly growing body of information. Compendium users will be provided with an updating service through annual and intermittent supplements.

TABLE OF CONTENTS

The Stocks (Life history, distribution, and abundance of commercial species)

- Salmon
- Codlike fishes
- Shrimps
- Herringlike fishes
- Mollusks
- Crabs
- Flatfishes

Commercial Fisheries

- Areas
- Gear
- Vessels
- Fishermen
- Processors

Fisheries Management

- Management techniques
- Limited licensing
- Sports fishery
- Subsistence and personal use fisheries
- Allocation
- Federal management

Fishery Economics

Production
Economic value
Domestic and foreign capitalization
Subsistence and personal use fisheries
State/federal role

Fisheries Development

Fully utilized species
Underutilized species
Transportation and infrastructure
State/federal role

Marketing

Promotion
Quality
Pricing
Import/export
Foreign/domestic

Research and Education

State
Federal
Private

Enforcement/Safety

State
Federal

Federal Fisheries Law

Treaties
Conventions

Habitat and the Environment

Aquaculture, enhancement and rehabilitation
Outer continental shelf oil
Timber and forestry
Mineral development
Coastal zone management
Hydroelectricity

Other Topics

Foreign fisheries in Alaska waters
State and federal coordination

CHAPTER ORGANIZATION

Chapter Title

Summary

Sub-topic heading

History
Present day analysis
Laws and regulations
Projections

Appendices

Glossary

Annotated Bibliography

Index*

PRELIMINARY WORK SCHEDULE

June: Agency and pre-sale solicitations; compendium design and layout; advertising strategy; development of final work plan

July: Enforcement and safety

August: Research and education

September: Development and commercial fisheries

October: Stocks and fisheries management

November: Fisheries economics and marketing

December: Federal fisheries law and other issues

January: Habitat and environmental conflicts

February: Final review and editing

March: Printing and dissemination

*Key words will be cross-referenced in an index at the back of the compendium notebook.

PROPOSED BUDGET

1.0	<u>Personnel</u>		
1.1	<u>Salaries</u>		
	Secretarial: 4 mos. @ \$1,800.00/mo.	\$	7,200.00
	Bookkeeping: 240 hrs. @ \$18.00/hr.		4,320.00
1.2	<u>Professional Services</u>		
	Project Coordinator: 10 mos. @ \$2,700.00/mo.		27,000.00
	Principal Investigator: 10 mos. @ \$2,500.00/mo.		25,000.00
	Editor: 80 hrs. @ \$40.00/hr.		3,200.00
			<hr/>
	Sub-Total Personnel	\$	66,720.00
2.0	<u>Travel</u>		
2.1	<u>Air Travel</u>		
	Three RT Juneau/Anchorage	\$	960.00
	Three RT Juneau/Seattle		840.00
2.2	<u>Per Diem</u> (@\$80.00/day)		
	Nine days in Anchorage		720.00
	Nine days in Seattle		720.00
			<hr/>
	Sub-Total Travel	\$	3,240.00
3.0	<u>Office</u>		
3.1	<u>Space</u>		
	10 mos. @ \$324.00/mo.	\$	3,240.00
3.2	<u>Telephone</u>		
	10 mos. @ \$200.00/mo.		2,000.00
3.3	<u>Supplies</u>		500.00
3.4	<u>Equipment</u>		
	Two typewriters 10 mos. @ \$75.00/mo.		1,500.00
3.5	<u>Duplicating</u>		500.00
			<hr/>
	Sub-Total Office	\$	7,740.00
4.0	<u>Production</u>		
4.1	<u>Graphics/Design</u>		
	Cover & Contents	\$	2,000.00
4.2	<u>Materials</u>		
	Notebooks: 350 @ \$3.50/notebook		1,225.00
	Tabbed Inserts: 8,750 @ .25/notebook		1,750.00
	Paper: 175,000 @ 500/notebook		1,750.00
4.3	<u>Printing</u>		
	175,000 sheets @ .025/sheet		4,375.00
4.4	<u>Postage</u>		
	Directories: 350 @ \$5.00/copy		1,750.00
4.5	<u>Advertising</u>		
	Brochures: 1,000 @ \$.25/copy		250.00
	Newspapers: 10 @ \$25.00/ad		250.00
			<hr/>
	Sub-Total Production	\$	13,350.00
			<hr/>
	Grand-Total Requested Funds	\$	91,050.00

Alaska State Legislature



Speaker of the House of Representatives

Pouch V
State Capitol
Juneau, Alaska 99811
(907) 465-3720

Official Business

May 9, 1983

Cass M. Parsons
Executive Director
United Fishermen of Alaska
319 Seward Street, Suite 208
Juneau, Alaska 99801

Dear Ms. Parsons:

The Alaska Fisheries Compendium sounds like an interesting and worthwhile idea. I can easily conceive of many uses for such a reference source.

For their evaluation, I have forwarded copies of your letter and attachments, along with a copy of this letter, to the Co-Chairmen of our House Resources Committee and Special Committee on Fisheries. I will be anxious to hear their responses and recommendations.

I hope that I will be able to meet with you on the subject when you are in Juneau, but if scheduling makes it impossible a member of my staff will work with you on the project.

Thank you for your efforts and the introduction to the Compendium.

Sincerely,

A handwritten signature in cursive script, appearing to read "Joe L. Hayes".

Joe L. Hayes
SPEAKER OF THE HOUSE

JLH:da

cc: Rep. Herrmann
Rep. Ringstad
Rep. Shultz

REPRESENTATIVE
ADELHEID HERRMANN

P.O. BOX 83
NAKNEK, ALASKA 99833
(907) 246-4495

While in Juneau
POUCH V

JUNEAU, ALASKA 99811
(907) 465-4942, 465-4943

Alaska State Legislature



House of Representatives

CHAIRMAN
SPECIAL COMMITTEE
ON FISHERIES

MEMBER
TRANSPORTATION
COMMITTEE

DISTRICT 26

ADAK
AKUTAN
ALEKNAGIK
ATKA
BELKOFSKI
CLARK'S POINT
COLD BAY
DILLINGHAM
DUTCH HARBOR
EGEGIK
EKUK
EKWOK
FALSE PASS
IGIUGIG
ILIAMNA
KING COVE
KING SALMON
KOKHANOK
KOLIGANEK
LEVELOCK
MANOKOTAK
NAKNEK
NELSON LAGOON
NEWHALEN
NEW STUYAHOK
NIKOLSKI
NONDALTON
PEDRO BAY
PILOT POINT
PORT ALSWORTH
PORT HEIDEN
PORT MOLLER
PORTAGE CREEK
SAND POINT
SOUTH NAKNEK
SQUAW HARBOR
ST. GEORGE
ST. PAUL
TOGIK
TWIN HILLS
UGASHIK
UNALASKA

April 28, 1983

Cass M. Parsons, Executive Director
United Fishermen of Alaska
319 Seward Street, Suite #208
Juneau, Alaska 99801-1188

Dear Cass:

I have finally had the time to go over your proposal for an "Alaskan Fisheries Compendium" and I feel it would be a useful document. In the many years I have been involved in fisheries, concise and accurate information has always been in short supply.

This compendium should be able to gather a broad range of users, from the fishermen all the way to federal officials. But its value would really be apparent for our State Government. The legislature, administration, and the various state departments which deal with Alaska's fishing industry on a daily basis could use the compendium like an encyclopedia on our fishing industry.

I know for certain that members of the legislature could use this document. Being Chairman of the House Special Committee on Fisheries, my office is constantly asked to help other legislator's offices answer correspondence pertaining to fisheries. If a compendium was available, all but the most detailed requests could be answered by reference to the compendium.

I feel certain that there is a need for your "Alaskan Fisheries Compendium" and you can be sure, if it was available, I would have one.

Sincerely,

A handwritten signature in cursive script that reads "Adelheid Herrmann".

Adelheid Herrmann
Representative
District 26

AH/ml

REPRESENTATIVE
ADELHEID HERRMANN
P.O. BOX 63
NAKNEK, ALASKA 99633
(907) 246-4495

While in Juneau
POUCH V
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(907) 465-4942, 465-4943

Alaska State Legislature



House of Representatives

CHAIRMAN
SPECIAL COMMITTEE
ON FISHERIES

MEMBER
TRANSPORTATION
COMMITTEE

DISTRICT 26

ADAK
AKUTAN
ALEKNAGIK
ATKA
BELKOFSKI
CLARK'S POINT
COLD BAY
DILLINGHAM
DUTCH HARBOR
EGEGIK
EKUK
EKWOK
FALSE PASS
IGIUGIG
ILIAMNA
KING COVE
KING SALMON
KOKHANOK
KOLIGANEK
LEVELOCK
MANOKOTAK
NAKNEK
NELSON LAGOON
NEWHALEN
NEW STUYAHOK
NIKOLSKI
NONDALTON
PEDRO BAY
PILOT POINT
PORT ALSWORTH
PORT HEIDEN
PORT MOLLER
PORTAGE CREEK
SAND POINT
SOUTH NAKNEK
SQUAW HARBOR
ST. GEORGE
ST. PAUL
TOGIAK
TWIN HILLS
UGASHIK
UNALASKA

MEMORANDUM:

TO: Representative Jack Fuller, Chairman
House Rules Committee

FROM: Representative Adelheid Herrmann, Chairman
House Special Committee on Fisheries

DATE: June 9, 1983

SUBJECT: United Fishermen of Alaska's Proposed
Fisheries Compendium

The attached correspondence relates to the United Fishermen of Alaska's proposal to produce a Fisheries Compendium. I feel the idea has a lot of merit and that the House of Representatives should take advantage of the offer.

The total cost to provide each House member with a copy would be \$ 12,000.00 This Compendium would go a long way towards alleviating the poor understanding of Alaska's fishing industry that most Legislators and their staffs have.

Funding for these documents could be provided either through the House Special Committee on Fisheries or by House Leadership funds. Please let me know if you need further information on this.

AH/hc

Attached: UFA Fisheries Compendium
Proposal



University of Alaska

Statewide System of Higher Education

ALASKA SEA GRANT COLLEGE PROGRAM
590 University Ave., Suite 102
Fairbanks, Alaska 99701

April 18, 1983

Cass M. Parsons
Executive Director
United Fishermen of Alaska
319 Seward Street, Suite #208
Juneau, AK 99801-1188

Dear Cass:

Thank you for your letter of April 8 regarding an Alaskan Fisheries Directory and requesting comment. I understand that the project is no longer perceived as a "directory" and that some other nomenclature will be employed.

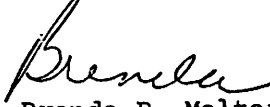
(Getting back to directories for a moment, I have talked with Dick Reynolds about an update of the Alaska Commercial Fisheries Directory. The funds for an update are being requested for FY84; we will talk more with Dick about this project after July 1.)

The Alaska Sea Grant Program could certainly make use of the information you propose to develop. Our main reservation is to how many other people would the information also be useful. I'm sure that you have requested comment from a wide variety of people and organizations. When you have had the opportunity to review the responses, we would be interested in being advised of the outcome so that we may more definitively respond.

We are in the process of putting together our proposal for the 1984 grant year; depending on the input you receive, it is possible that we might be able to include in our proposal some limited effort to assist with your project.

I look forward to hearing from you further on this project.

Yours truly,


Brenda R. Melteff
Coordinator

BRM:ach



**STATE OF ALASKA
DEPARTMENT OF ADMINISTRATION
STANDARD AGREEMENT FORM
FOR PROFESSIONAL SERVICES CONTRACT**

This contract, which is effective only if it is approved by the Department of Administration, is between the State of Alaska,

Department of Commerce & Economic Development					<i>hereafter, The State, and</i>
Contractor United Fishermen of Alaska					<i>hereafter, the Contractor</i>
Mailing Address	Street or P. O. Box	City	State	Zip Code	
319 Seward Street, Suite 208	Juneau	Alaska	99801-1188		
Alaska Business License Number			Internal Revenue Service Number 92-0048504		

This is a contract for professional services. AS 44.33.020 authorizes the State to make this contract. The parties to the contract agree as follows:

- ARTICLE 1. Appendices.** Appendices referred to in this contract and attached to it are considered part of it.
- ARTICLE 2. Performance of Services.**
- 2.1 Appendix A, Articles 1 through 16, governs the performance of services under this contract.
 - 2.2 Appendix B sets forth the services to be performed by the contractor.
- ARTICLE 3. Period of Performance.** The period of performance under this contract begins June 20, 1983 and ends April 30, 1984. Performance may be extended for additional periods by the written agreement of the parties.
- ARTICLE 4. Consideration.**
- 4.1 In full consideration of the Contractor's performance under this contract, the State shall pay the Contractor in accordance with the provisions of Appendix C.
 - 4.2 When billing the State, the Contractor shall refer to the State Contract Number and send the billing to:

Department of Commerce & Economic Development	Attn: Division of Office of Commercial Fisheries Development
Mailing Address Pouch EE, Juneau, AK 99811	
CONTRACTOR	STATE
Name of Firm United Fishermen of Alaska	Department or Agency Commerce & Economic Development
Signature of Authorized Representative	Signature of Certifying Officer
Typed or Printed Name of Authorized Representative	Typed or Printed Name of Certifying Officer Richard A. Lyon
Title	Title Commissioner

APPROVAL BY THE DEPARTMENT OF ADMINISTRATION

NOTICE! This contract has no effect except as an offer by the Contractor until it is approved by the Department of Administration.

Signature of Authorized Official of the Department of Administration	Date
Typed or Printed Name of Authorizing Official	Title

APPENDIX A

Article 1. Definitions.

- 1.1. In this contract and appendices, "Certifying Officer" means the person who signs this contract on behalf of the Department and includes a successor or authorized representative.
- 1.2. "Department" means the agency for which this contract is to be performed and for which the Certifying Officer acted in signing this contract.

Article 2. Inspection and Reports.

- 2.1 The Department may inspect, in the manner and at reasonable times it considers appropriate, all the Contractor's facilities and activities under this contract.
- 2.2 The Contractor shall make progress and other reports in the manner and at the times the Department reasonably requires.

Article 3. State Saved Harmless.

The Contractor shall indemnify and hold and save the State, its officers, agents and employees harmless from liability of any nature or kind, including costs and expenses, for or on account of any and all legal actions or claims of any character whatsoever resulting from injuries or damages sustained by any person or persons or property arising from its performance of this contract in any way whatsoever.

(OVER)

Article 4. Disputes.

4.1. Any dispute concerning a question of fact arising under this contract which is not disposed of by mutual agreement shall be decided without bias by the Director of the Department's Division of Administrative Services (or, if none, the Department's Administrative Officer), who shall reduce his decision to writing and mail or otherwise furnish a copy of it to the Contractor. The decision of the Director is final and conclusive unless, within 30 days from the date of receipt of that copy, the Contractor mails or otherwise furnishes to the Certifying Officer a written appeal addressed to the Commissioner of the Department. The Commissioner shall appoint a three-person board from the Department to hear the appeal. The decision of the board is final and conclusive, unless it is fraudulent or not supported by substantial evidence. In any proceeding under this article, the Contractor has a right to be heard by an unbiased panel and to offer evidence in support of his appeal. Pending final decision of a dispute, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Director of the Division of Administrative Services decision.

4.2 This disputes article does not preclude consideration of questions of law in connection with decisions provided for in paragraph 4.1 above. However, this article does not make the decision of any administrative official, representative or board on a question of law final or conclusive.

Article 5. Equal Employment Opportunity.

5.1. The Contractor may not discriminate against any employee or applicant for employment because of race, religion, color, national origin, or because of age, physical handicap, sex, or marital status, change in marital status, pregnancy or parenthood when the reasonable demands of the position do not require distinction on the basis of age, physical handicap, sex, or marital status, changes in marital status, pregnancy, or parenthood. The Contractor shall take affirmative action to insure that the applicants are employed and that employees are treated during employment without regard to their race, color, religion, national origin, ancestry, age, sex, or marital status. This action must include, but need not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting out the provisions of this paragraph.

5.2. The Contractor shall state, in all solicitations or advertisements for employees to work on State of Alaska contract jobs, that it is an equal opportunity employer and that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age, physical handicap, sex, or marital status.

5.3 The Contractor shall send to each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding a notice advising the labor union or workers' representative of the Contractor's commitments under this article and post copies of the notice in conspicuous places available to all employees and applicants for employment.

5.4. The Contractor shall include the provisions of this article in every contract, and shall require the inclusion of these provisions in every contract entered into by any of its subcontractors, so that those provisions will be binding upon each subcontractor. For the purpose of including those provisions in any construction, maintenance, or service contract or subcontract, as required by this contract, "contractor" and "subcontractor" may be changed to reflect appropriately the name or designation of the parties of the contract or subcontract.

5.5. The Contractor shall cooperate fully with the office or agency of the State of Alaska which seeks to deal with the problem of unlawful discrimination, and with all other State efforts to guarantee fair employment practices under this contract, and promptly comply with all requests and directions from the State Commission for Human Rights or any of its officers or agents relating to prevention of discriminatory employment practices.

5.6. Full cooperation in paragraph 5.5 includes, but is not limited to, being a witness in any proceeding involving questions of unlawful discrimination if that is requested by any official or agency of the State of Alaska; permitting employees of the Contractor to be witnesses or complainants in any proceeding involving questions of unlawful discrimination, if that is requested by any official or agency of the State of Alaska; participating in meetings; submitting periodic reports on the equal employment aspects of present and future employment; assisting in inspection of the Contractor's facilities; and promptly complying with all state directives considered essential by any office or agency of the State of Alaska to insure compliance with all federal and state laws, regulations, and policies pertaining to the prevention of discriminatory employment practices.

5.7 Failure to perform under this article constitutes a material breach of the contract.

Article 6. Termination.

The Certifying Officer, by written notice, may terminate this contract, in whole or in part, when it is in the best interest of the State. The State is liable only for payment in accordance with the payment provisions of this contract for services rendered before the effective date of termination.

Article 7. No Assignment or Delegation

This contract is personal and the Contractor may not assign or delegate this contract, or any part of it, or any right to any of the money to be paid under it, except with the written consent of the Certifying Officer.

Article 8. No Additional Work or Material

No claim for additional services, not specifically provided in this contract, performed or furnished by the Contractor, will be allowed, nor may the Contractor do any work or furnish any material covered by the contract unless the work or material is ordered in writing by the Certifying Officer and approved by the Department of Administration.

Article 9. Independent Contractor.

The Contractor and any agents and employees of the Contractor act in an independent capacity and are not officers or employees or agents of the State in the performance of this contract.

Article 10. Payment of Taxes.

As a condition of performance of this contract, the Contractor shall pay all federal, state, and local taxes incurred by the Contractor and shall require their payment by any subcontractor or any other persons in the performance of this contract. Satisfactory performance of this paragraph is a condition precedent to payment by the State under this contract.

Article 11. Workmen's Compensation Insurance.

During the life of this contract, the Contractor shall provide and maintain, for all employees of the Contractor engaged in work under this contract, workmen's compensation insurance as required by AS 23.30. The Contractor shall require any subcontractor to provide and maintain for its employees workmen's compensation insurance as required by AS 23.30. That coverage must remain in force from the day services begin under this contract and shall provide for written notice to the Certifying Officer at least 30 days before cancellation or non-renewal. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach and grounds for termination of the Contractor's services. Before performing under this contract, the Contractor shall furnish the Certifying Officer with certificates of insurance as proof of compliance with this article. The certificates of insurance must include an All States' Broad Form Endorsement.

Article 12. Insurance.

Before this contract may be approved, the Contractor shall furnish a certificate of liability insurance evidencing coverage satisfactory to the Risk Manager of the Department of Administration.

Article 13. Ownership of Documents.

All designs, drawings, specifications, notes, and other work developed in the performance of this agreement are and remain the sole property of the State of Alaska and may be used by the State for any other purpose without additional compensation to the Contractor. The Contractor agrees not to assert any rights and not to establish any claim under the design patent or copyright laws. The Contractor, for a period of three years after final payment under this contract, agrees to furnish and provide access to all retained materials at the request of the Certifying Officer. Unless otherwise directed by the Certifying Officer, the Contractor may retain copies of all the materials.

Article 14. Governing Law.

This contract is governed by the laws of the State of Alaska.

Article 15. Officials not to Benefit.*

No member of or delegate to Congress, United States Commissioner, or officials of the state or federal government may be admitted to any share or part of this contract or to any benefit to arise therefrom.

Article 16. Covenant Against Contingent Fees.

The Contractor warrants that no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, contingent fee, or brokerage except employees or agencies maintained by the Contractor for the purpose of securing business. For the breach or violation of this warranty, the State may terminate this contract without liability or in its discretion deduct from the contract price or consideration the full amount of the commission, percentage, brokerage, or contingent fee.

* Articles 15 and 16 are to be used only if the professional services contract is federally funded.

APPENDIX B

The Contractor will develop and print an Alaska Fisheries Compendium as outlined in Attachment #1. A draft of the compendium must be submitted to the Office of Commercial Fisheries Development for approval prior to the final printing.

Any change in the work schedule must be approved in advance by the State. The compendium must include a statement to the effect that funding was provided by the Department of Commerce and Economic Development, Office of Commercial Fisheries Development.

APPENDIX C

In full consideration of the Contractor's performance, the State shall pay the Contractor \$5,000.00. Upon final approval of this contract and receipt of written notification from the Contractor that an adequate amount of other government contributions and pre-sale commitments have been obtained to insure completion of the project, the Contractor will be paid \$3,000.00. The remaining \$2,000.00 will be paid upon receipt of a final copy of the compendium and a breakdown of contributions and expenses for the project. The State's contribution will not exceed \$5,000.00.



University of Alaska
 Statewide System of Higher Education

ACTION	ROUTE TO	INITIAL
	Exec. Dir.	3
ALASKA SEA GRANT COLLEGE PROGRAM		
590 University Ave.	Suite 102	
Fairbanks, Alaska	99701	
June 15, 1983		

Mr. James Branson
 Executive Director,
 North Pacific Fishery Management Council
 P.O. Box 3136DT
 Anchorage, AK 99510

Subject: Porposal -- Lowell Wakefield Fisheries Symposia Series
 Non-fishing and Fishing Induced Changes in King Crab
 Populations

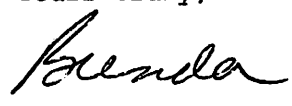
Dear Jim:

Following the outcome of the March SSC meeting, I began putting together preliminary information on the symposium suggested on fishing and non-fishing induced changes in populations of crustacea. The species to be looked at would be shrimp, tanner and king crabs. Because pandalid shrimp and tanner crab have already been the subjects of international meetings held in Alaska, and due to the fact that comprehensive proceedings documents have been published from those meetings, this proposal has taken on a slightly different tone.

It was felt important at this time to concentrate on the king crab. Hence, the attached proposal for your consideration.

If there are any questions regarding the proposal, please let me know.

Thank you.

Yours truly,

 Brenda R. Melteff
 Coordinator

BRM:ach

cc: D. H. Rosenberg

June 15, 1983

PROPOSAL

Title: Lowell Wakefield Fisheries Symposia Series
Non-fishing and Fishing Induced Changes in King Crab Populations

Principal Investigator: Brenda R. Melteff
Alaska Sea Grant College Program
University of Alaska
Fairbanks, Alaska 99701

BACKGROUND

King crab stocks of the northeastern Pacific Ocean and eastern Bering Sea have played a major role in the development of the fishing industry along the west coast of the United States. Since the early 1960s, the domestic catch has grown substantially. During 1980, 185.6 million pounds of king crab were harvested, with an ex vessel value of about \$170 million. The fishery is conducted by a fleet of vessels that is recognized as one of the world's most modern. It can also be listed among the factors responsible for the elevation of the Alaska cities of Kodiak and Dutch Harbor to major U.S. fishing ports.

After peaking in 1980, the king crab catch declined significantly. Preliminary data indicate the 1982 catch was 38.5 million pounds. The sharp decline has been attributed to reduced abundance of legal sized male king crab. This reduced abundance has significantly affected the economic viability of the fleet and stimulated interest in the effects of fishing and non-fishing sources of mortality on king crab stocks.

Fishery-induced changes in abundance are the keystone of current management, which regulates by size limits and a single-sex fishery. How the single-sex fishery affects crab reproduction and how the size limits influence mortality of sub-legal crabs are among topics that need further investigation. Non-fishery factors which also contribute to mortality among king crab stocks are yet another facet requiring more study and data collection. Key physical and biological factors contributing to king crab survival need to be documented in order to improve abundance forecasting and preservation. Finally, ways to predict how a management plan will economically affect the fishery need to be evaluated and considered before any plans are adopted.

OBJECTIVE

To provide a forum for fisheries scientists and management personnel working with king crab to present reports on their activities and to discuss and develop strategies for future use in the king crab fishery.

APPROACH

To hold a Lowell Wakefield Fisheries Symposia on non-fishing and fishing induced changes in king crab populations during the spring of 1984. In addition to the North Pacific Fishery Management Council, participation will be invited from the National Marine Fisheries Service, the Alaska Department of Fish and Game, other fisheries agencies, departments and universities in Oregon, Washington and Alaska, as well as from fisheries agencies of Japan and the Soviet Union. The University of Alaska Sea Grant Program will coordinate the symposium including invitations and arrangements for participants, logistics for the meeting dates, place, publicity and other publications.

PRODUCTS

Alaska's fisheries biologists and managers working on king crab will have the opportunity to meet and interact with their peers from other states and nations. The information gained from presentations and discussions will provide an ordered list of research projects needed to understand what has happened to the stocks and how they can be most effectively managed. A proceedings document will be published incorporating the research results presented and the future research needs.

ESTIMATED BUDGET

This proposal requests \$4,000.00 from the North Pacific Fishery Management Council for participant travel and publication.

JUL 12 1983

AGENDA E-1(c)
JULY 1983

UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195

ACTION	ROUTE TO	INITIAL
	Exec. Dir.	
	Deputy Dir.	
	Admin. Off.	
	Exec. Rel. 1983	
	Staff Asst. 1	
	Staff Asst. 2	
	Staff Asst. 3	
	Economist	
	Sec./Bkgr.	
	Sec./Typst	

Fisheries Research Institute, WH-10

Dr. Clarence Pautzke
North Pacific Fishery Management Council
333 West Fourth Avenue, Suite 32
P.O. Box 3136 DT
Anchorage, AK 99510

Dear Dr. Pautzke:

Enclosed is the April 1 - June 30, 1983, quarterly report for our Contract 81-5, "Determination of Stock Origins of Chinook Salmon Incidentally Caught in Foreign Trawls in the Alaska FCZ." This is the last quarterly report that we will submit prior to our final report in September 1983.

We are pleased to report that our research is going well, and that we will be able to meet all of our contract obligations. Our estimates of stock origins of chinook salmon in the foreign groundfish fishery in the Alaska FCZ should provide the Council with some useful information for management decisions.

During the course of our work we identified some areas where additional research is needed, which are briefly discussed in the enclosed report. This research would provide information directly applicable to the evaluation of the economic impact of the foreign groundfish fishery on Alaskan chinook fisheries, as well as needed additional information on the distribution of chinook salmon stocks in the eastern Bering Sea and Gulf of Alaska. We ask that you give these topics some consideration and we request the Council to provide additional funding to continue this research.

Sincerely,

Katherine W. Myers

Katherine W. Myers
Fishery Biologist

KWM:as
enc.
cc: Dr. D.E. Rogers

Fisheries Research Institute
School of Fisheries
University of Washington
Seattle, WA 98195

Determination of Stock Origins of Chinook Salmon
Incidentally Caught in Foreign Trawls
in the Alaska FCZ

by

Katherine W. Myers and Donald E. Rogers

Quarterly Report, April 1 - June 30, 1983
Contract No. 81-5
North Pacific Fishery Management Council

Approved

Submitted July 7, 1983

Roy E. Palatani
for the Director

Introduction

The primary objective of this project is to use scale pattern recognition techniques to determine stock origins of chinook salmon (Oncorhynchus tshawytscha) incidentally caught in foreign trawls in the Bering Sea and Gulf of Alaska in 1978, 1979, and 1981. Brood year "standards" constructed from the scale patterns of 1979-1982 inshore samples (known origin) will be used to classify chinook of the same brood year in the trawl samples to region or river of origin.

Methods and Results

During this quarter we completed the digitizing of all 1979-82 inshore scale samples to be used in the analysis of brood year 1973-78 age 1. chinook in the trawl samples. All inshore and trawl scale measurement data have been reformatted, and data are now undergoing analysis for our final report.

Trawl samples will first be classified to five major regions of origin: 1) Asia, 2) Western Alaska, 3) Central Alaska, 4) Southeast Alaska, and 5) Oregon, Washington, and California. Point estimates and 90% confidence intervals of the proportion of each regional stock will be calculated for fishery samples stratified by age class (1.1, 1.2, 1.3, 1.4), time (10-day period and month), and area (Bering Sea, Gulf of Alaska, NMFS areas, INPFC ($2^{\circ} \times 5^{\circ}$) areas, $1^{\circ} \times 1^{\circ}$ area, and $1^{\circ} \times 1/2^{\circ}$ areas) where sample sizes permit. If negative estimates (indicating that a regional stock is not present) are obtained, estimates will be recalculated for the remaining stocks. For cases where negative

estimates are obtained for two or more of the regional stocks, Western Alaska is the predominant stock, and classification accuracies are sufficient, we will reclassify the trawl fishery samples using standards constructed for the three major Western Alaska stocks (i.e., Yukon, Kuskokwim, and Bristol Bay) and the remaining regional stocks.

Because we are still in the early stages of our final analyses, we will not present any of the results at this time. However, we would like to use this report to briefly identify some additional areas of research, should more time or funding become available.

Additional Areas for Research

1. Interception estimates

Our study will provide estimates of the proportions of five regional (Asia, Western Alaska, Central Alaska, Southeast Alaska and British Columbia, and Oregon, Washington, and California) and, if applicable, three Western Alaska stocks (Yukon, Kuskokwim, and Bristol Bay) in the foreign groundfish fishery (1978, 1979, 1981). These mixing proportion estimates and data on age composition of the fishery samples could be used in combination with catch data to provide estimates of the number of fish of each stock caught by the foreign groundfish fishery in the Alaska FCZ. These estimates would be directly applicable to the evaluation of the economic impact of the foreign trawl fishery on Western Alaska and other regional stocks.

2. Classification of 1982 foreign trawl fishery samples

Brood year 1976 (age 1.4), 1977 (age 1.3), 1978 (age 1.2), and 1979 (age 1.1) chinook scales collected by NMFS observers in 1982 could be classified to region or stock of origin using the same techniques that we have devised for our present study. This would provide needed additional information on the distribution of chinook salmon stocks in the eastern Bering Sea and Gulf of Alaska.

3. Improvements in classification of 1981 trawl samples

We think that the mixing proportion estimates of brood years 1976 (age 1.3), 1977 (age 1.2), and 1978 (age 1.1) chinook in the 1981 trawl samples would be improved considerably by the addition of 1983 inshore scale samples to the standards used for classification. The estimates obtained for 1981 NMFS observer samples during our present study should be considered as provisional since the scales of 1983 returns were not available in time to be included in our analyses. In addition, our present standards for brood years 1975-78 do not include any samples of 1982 Asian chinook returns. These samples have been requested (Rogers et al. 1983), and we hope to receive them within the next year.

4. Effect of non-preferred scales on mixing proportion estimates

To our knowledge, no studies have been conducted on the effect of inclusion of non-preferred area scales in standard or unknown samples in scale pattern recognition studies. FRI is currently collecting scale samples from different areas on the bodies of chinook salmon to examine variability in scale characters with body zone. These studies could be

extended to determine the effect of inclusion of non-preferred area scales on classification of high seas fishery unknowns. Perhaps, a set of scale characters that do not vary with body zone could be determined. These types of studies would be particularly relevant to the analysis of NMFS trawl samples, as they are collected from many different areas on the body of the fish (Myers and Rogers 1982). For the present, we have circumvented this problem by using only those scales taken from the preferred area (Type-A) or adjacent to the preferred area (Type-B), although this technique reduces sample sizes considerably. We are calculating two different sets of mixing proportion estimates: those which include both Type-A and Type-B scales and those which include only Type-A scales. Our preliminary analyses suggest that when both Type-A and Type-B scales are present in the unknown (trawl fishery) samples, we obtain larger mixing proportion estimates for Asian chinook than when Type-A scales only are included in the analysis. We suspect that many of our Asian scale samples may have been collected from a different body area than our North American scale standards. This is an area which deserves more attention.

5. Analysis of freshwater age 0. chinook

A secondary objective of our study is to provide recommendations on the applicability of scale pattern recognition techniques to stock separation of chinook caught by Southeast Alaska troll fisheries. Although our success to date with separation of freshwater 1. age classes of chinook in the trawl fishery is encouraging, our study will not provide any information on classification accuracies of freshwater

age 0. chinook salmon stocks. As this age class is more prevalent in Southeast Alaska fishery samples (Kissner 1983, 1984) than in the Bering Sea and Gulf of Alaska trawl fishery samples (Myers and Rogers 1982), we think further analyses are needed to determine the applicability of scale pattern recognition techniques to Southeast Alaska troll fishery samples. Furthermore, a successful analysis of Southeast troll fishery samples may have to include an examination of hatchery and wild contribution. These are areas that need more research before direct applications can be made to stock separation of chinook in ocean fisheries.

6. Statistical methods and scale characters for stock separation

Many different statistical techniques are used for stock separation analysis of scale pattern data. We are using a direct density leaving-one-out approach (Cook 1982) for our analysis of the trawl fishery samples. Other methods presently in wide use include stepwise linear discriminant (Dixon and Brown 1979) and nearest neighbor (Clover and Hart 1967) techniques. Graduate student research at FRI, funded in part by this study, is directed at examining the application of these techniques to different types of scale character sets and chinook stock separation models, and comparing resultant classification accuracies. The use of new types and combinations of scale characters other than the traditional linear measurements and counts of circuli and life history zones is also being examined. We think that further research in these areas will provide more standardization of stock separation techniques among fisheries agencies and increase accuracies of separation of chinook salmon stocks with scale pattern recognition techniques.

Literature Cited

- Clover, T. M., and P. E. Hart. 1967. Nearest neighbor pattern classification. I.E.E.E. Trans. on Information Theory IT-13:21-27.
- Cook, R. C. 1982. Stock identification of sockeye salmon (Oncorhynchus nerka) with scale pattern recognition. Can. J. Fish. Aquat. Sci. 39:611-617.
- Dixon, W., and M. Brown. 1979. Biomedical computer programs, p series. Univ. of Calif. Press, Berkeley. 880 pp.
- Kissner, P. D., Jr. 1973. A study of chinook salmon in southeast Alaska. Alaska Dept. Fish and Game, Sport Fish. Div., Anad. Fish Studies 41, 24 pp. (AFS-41-1).
- Kissner, P. D., Jr. 1974. A study of chinook salmon in southeast Alaska. Alaska Dept. Fish and Game, Sport Fish Div., Anad. Fish Studies 41, 30 pp. (AFS-41-2).
- Myers, K. W., and D. E. Rogers. 1982. Determination of stock origins of chinook salmon incidentally caught in foreign trawls in the Alaska FCZ. Ann. Rep., FRI-UW-8215, Univ. Washington, North Pacific Fishery Management Council, 64 pp.
- Rogers, D. E., K. J. Bruya, K. W. Myers, C. M. Knudsen, N. D. Davis, and T. Nishida. 1983. Origins of chinook salmon in the area of the Japanese mothership salmon fishery. Ann. Rep., FRI-UW-8311, Univ. Washington, Alaska Dept. Fish and Game, 146 pp.



University of Alaska

Statewide System of Higher Education

JUN 27 1983

ALASKA SEA GRANT COLLEGE PROGRAM
590 University Ave., Suite 102
Fairbanks, Alaska 99701

MEMORANDUM

DATE: June 22, 1983

TO: **Jim H. Branson**, Executive Director
North Pacific Fishery Management Council

Don W. Collinsworth, Commissioner
Alaska Department of Fish & Game

Robert W. McVey, Regional Director
National Marine Fisheries Service

FROM: Donald H. Rosenberg, Director

SUBJECT: Potential Conference on Limited Entry

ACTION	ROUTE TO	INITIAL
	Exec. Dir.	B
	Deputy Dir.	Y
	Asst. Dir.	
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	Sec. 50	

While seeking input for her proposal for Public Information Services for 1984 funding, Brenda Melteff received expressions of interest for a conference addressing limited entry. This week interest has again been expressed by the National Fisherman organization. They advised, too, that Bill Gordon indicated interest in such a conference.

Since this is the most explosive topic we have considered, but one that very definitely needs to be addressed soon, I'd like to have your comments. If there is sufficient interest among your organizations, we propose to put together a planning committee to define the objectives and content of such a conference. Once we have the output of the planning committee, we can assess the feasibility of a conference and develop the program and budget accordingly.

If there is in fact much discussion about a conference on limited entry, someone is going to pick it up and run with it. It is our feeling that if Alaska could benefit from it, we should be the ones to take the responsibility.

If your response to this inquiry is positive, would you please advise who will represent your organization on the planning committee.

Thank you for your assistance.

DHR:ach

cc: Brenda Melteff

JUN 13 1983

UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195

Fisheries Research Institute, WH-10

DATE: 7 June 1983

TO: Clarence Pautzke
North Pacific Fishery Management Council
Anchorage

FROM: Donald E. Rogers *DR*

SUBJECT: Information you requested by phone

ACTION	ROUTE TO	INITIA
	Exec. Dir.	3
	Deputy Dir.	
	Admin. Off.	
	Exec. Sec.	
	Staff Asst. 1	
	Staff Asst. 2	
	Staff Asst. 3	
	Economist	
	Sec./Bkkr.	
	Sec./Typist	

Title: Feasibility of Scale Analysis Methods to Identify Bering Sea Herring Stocks

Relevant Fishery Management Plan: Bering-Chukchi Sea Herring

Objectives and Need

Objectives

1. To determine the degree of separability of major spawning stocks of herring in the eastern Bering Sea, north Alaska Peninsula and Aleutian areas from scale pattern characters.
2. To determine the consistency in stock separation from two age classes in each of two years.
3. To determine the stock composition of herring caught in domestic (summer) and offshore fisheries.

Need

Some Bering Sea spawning stocks make extensive migrations after spawning inshore in the spring. The migratory routes of the stocks are largely unknown; however, the Alaskan stocks probably overwinter near the Pribilof Islands. The exact spawning stocks involved in the summer fishery near Dutch Harbor and the relative abundances in offshore wintering grounds need to be determined for rational management of the fisheries.

Statement of Work

Scale pattern analysis, which depends on genetic and environmental effects on herring growth, appears to offer the

greatest potential to identify individual stocks of herring. Scale measurements will be made from samples collected by Alaska Department of Fish and Game on the coastal spawning grounds and from the summer domestic fishery, and by National Marine Fisheries Service observers on foreign trawlers in the Bering Sea. Scale measurements and analytical techniques for 1984 samples will be the same as those used by FRI for the 1983 samples to provide consistent comparisons between years. A final two-year project report will be prepared and submitted.

Project Duration: 1 April 1984 - 31 March 1985

Budget: \$ 62,000

DER:as

JUL 20 1983

ACTION	ROUTE TC
	Exec. Dir. AGENDA E-1 Supple.
	Deputy Dir. July 1983
	Admin. Off.
	Exec. Sec.
	Staff Asst. 1
	Staff Asst. 2
	Staff Asst. 3
	Economist
	Sec./Bkkr.
	Sec./Typist

13 July 1983

Mr Jim H. Branson
Executive Director
North Pacific Fisheries Management Council
P.O. Box 103136
Anchorage, Alaska 99510

Dear Mr Branson:

Enclosed is my revised proposal entitled "Growth and Size at maturity of Golden (Brown) King Crab, *Lithodes aequispina*." I earlier expressed my skepticism to you about conducting a tagging study in the Aleutians due to the broad spatial coverage of that fishery. That skepticism has abated somewhat after discovering that most of the harvest comes from two rather localized areas. Hopefully, tagged crab can be recaptured from the area I have proposed.

I talked with Mr David Clausen (NMFS-Auke Bay) (Bob Otto was not available for contact) regarding an alternative method for measuring male maturity over the chela allometry proposed in my study. He actually does not favor another method, but is not certain what is the best method. We discussed some recent findings of Dr David Somerton regarding size at maturity of male king crab. In an unpublished study addressing "Size at maturity of the Golden King Crab (*Lithodes aequispina*) in the Northern Bering Sea" Dr Somerton reported "... golden king crab have a greater change in chela relative growth at maturity than do blue king crab." This point is particularly important when examining the general utility of chela allometry as a tool for estimating the size at maturity of male king crab. Dr Somerton continues "It is now clear that blue king crab and red king crab (both *Paralithodes*) do not have a pronounced change in relative growth at maturity, whereas golden king crab and deep-sea king crab (both *Lithodes*)." In light of his findings I feel that the chela allometry method is still the best one to use on golden king crab.

Please notice that the budget for the revised proposal is more than double the previous one. This increase is mainly attributed to exorbitant charter costs for that part of Alaska. I have enquired about piggybacking with NMFS surveys, but this is not possible due to the type (trawling) and timing (July-September 1983) of survey planned. A possible mechanism for reducing the proposal budget is to conduct the work through my company (North Pacific Research) rather than IMS. I hesitate in doing this because I prefer to work through the university framework. However, the university overhead is really tough to live with in the current research arena.

I hope this revised proposal is in order. I will be in Anchorage July 25 & 26 for a meeting, and I will call you then to see if further clarification of the proposal is needed.

Sincerely,



Stephen C. Jewett
Research Associate of Marine Science

TECHNICAL PROPOSAL

Growth and Size at Maturity of Golden (Brown)
King Crab, *Lithodes aequispina*

Prepared for:

North Pacific Fisheries Management Council
P.O. Box 3136 DT
Anchorage, Alaska 99510

Prepared by:

North Pacific Research
S.R. Box 30320 J
Fairbanks, Alaska 99701

July 1983

TITLE: Growth and Size at Maturity of Golden (Brown) King Crab,
Lithodes aequispina

RELEVANT FISHERY MANAGEMENT PLAN: King crab

OBJECTIVES AND NEED:

Recent declines in red king crab (*Paralithodes camtschatica*) stocks have created greater interest and subsequent exploitation of stocks of golden king crab. Stocks are currently fished in southeastern Alaska and along the Aleutian Islands at depths of 200-400 meters, somewhat deeper than the depths at which red king crabs are fished. Most of the golden king crab catch in Alaska is taken from the Dutch Harbor and Adak statistical areas. During the 1982-83 fishing year (Nov. 82-Feb. 83) 9.1 million pounds were harvested from these two areas (Per. Commun. Richard Petersen, ADF&G, Kodiak, AK). The landings in southeastern Alaska last winter (1983) approximated 600,000 pounds. The objectives of this study are to examine the growth and size at maturity for golden king crabs. Since this crab is a deep-water species, its growth is presumably slower than that of red king crabs. Growth information is necessary in order to address recruitment to exploitable size. The commercial fishery for golden king crabs in the Aleutians currently uses 165 mm carapace width as the minimum legal size, which is based on the same criteria as for red king crabs. However, the length-width relationships are different for the two species, reflecting dissimilar growth patterns (Jewett, 1983). Size at maturity for golden king crabs is not known for the Aleutian Islands, however, size at maturity for this species has recently been examined in the northern Bering Sea (Somerton, in prep.). Harvesting golden king crabs using the red king crab legal size, and not knowing the size at maturity for golden

king crabs, presents the danger of either harvesting them prior to maturity or under-harvesting if they are taken at a size well beyond maturity.

EXPECTED BENEFITS:

This research would benefit ADF&G golden king crab management by providing growth data and size at maturity which, in part, is the basis for Optimum Yield and Acceptable Biological Catch management strategies. This research is not scheduled to be undertaken by ADF&G due to budgetary constraints.

WORK TO BE PERFORMED:

This project includes field research to be conducted in the Aleutian Islands. A commercial king crab vessel will be chartered for 12 days in early spring 1984, and with the use of ADF&G fine-meshed king crab pots, golden king crabs will be caught, tagged and released. The tagging period is dependent upon the ADF&G management strategy of defining the 1984 golden king crab fishing season; tagging will occur subsequent to the closure of that fishing season. The fishing season is expected to end in April. The location of the tagging operation will be in the vicinity of Seguam and Amukta Islands because most of the 1.2 million pounds that were harvested from the Dutch Harbor area came from between these two islands. Tagging will be accomplished with the permanent, numbered, isthmus spaghetti tag, which has been used successfully by ADF&G to obtain growth data on red king crab (Gray, 1965; Powell, 1967). One thousand (1000) juvenile and adult crabs of both sexes will be tagged. All crabs will be

wet-weighed and measured (mm) using three measurements: 1) carapace length, 2) carapace width and 3) chela height. Maturity of females will be determined by the presence of eggs or egg remnants on the plepods. Maturity of males will be determined from the size of the chela relative to the size of the carapace using the method discussed in Somerton (1980). The released crabs will be at liberty for at least eight months, until the 12-day recovery operation begins with a charter vessel prior to the next fishing season. Tagged crabs are also expected to be recovered by the fishing fleet and subsequently returned to ADF&G under the auspices of a tag-recovery reward program (\$5.00 per tagged crab). This reward program has been used successfully in previous ADF&G crab-tagging ventures (G. C. Powell, personal communication, 1983). The charter vessel used in the tag recovery operation will use fine-meshed pots in an effort to recapture smaller crabs. Furthermore, in order to maximize spatial coverage, the charter vessel may fish waters that the commercial fleet typically do not fish. The time the tagged crabs are at large should encompass the supposed molting period of spring 1984. Little is known about the molting period for this species. Spring is the anticipated molting period for adults; however, evidence of asynchronous molting exists (Jewett, 1983; Somerton, personal observation).

Since this region is one that is heavily exploited for golden king crabs, we are assuming a relatively high exploitation and subsequent tag recovery. A recovery of only 5-10% (50-100 crabs) (assuming molting has occurred) should yield sufficient information to address growth.

Recaptured crabs will be measured similarly as in the tagging operation.

Growth will be addressed by examining the relationship of premolt and postmolt sizes according to the methodology of McCaughran and Powell (1977). Some premolt and postmolt data exists within ADF&G; this data will be analyzed with data collected on this project. A National Marine Fisheries Service trawling survey will sample Seguam Pass during the period from 26 July to 4 September 1983. Size measurements will be taken of all golden king crabs caught during this survey and these measurements may be made available to the proposed study.

URGENCY AND DURATION:

The basic biological information to be addressed in this proposal is necessary for determination of the Acceptable Biological Catch and Optimum Yield required by ADF&G. Implementation of the results of this study into the king crab management plan should proceed as soon as possible. This research could be postponed until regular agency budgeting can handle the funding. However, in view of the recent increased levels of exploitation, the basic biological questions asked in this proposal should be addressed immediately so that appropriate steps can be taken in managing this species before the repercussion of perhaps unwise management appears. This research will be conducted in FY 84 and FY 85. The data from the tag recovery operation will not be available until after the golden king crab fishing season of the winter of 1985 (see Milestones). Again, tagging will be conducted in the winter of 1984, subsequent to the fishing season, and recovery will be conducted in the winter of 1985, during and

subsequent to the fishing season. The duration of the tagged crabs are at liberty (10-12 months) should encompass the molting period.

REFERENCES:

- Gray, G. W., Jr. 1965. Tags for marking king crabs. Prog. Fish. Culturist. 27:221-227.
- Jewett, S. C. 1983. Survey of the golden crab *Lithodes aequispina* in Alice Arm, British Columbia. Final Report to Amax of Canada Limited. 59p.
- McCaughran, D. A. and G. C. Powell. 1977. Growth model for Alaska king crab (*Paralithodes camtschatica*) J. Fish. Res. Bd. Canada 34:989-995.
- Powell, G. C. 1967. Growth of king crabs in the vicinity of Kodiak Island, Alaska. Alaska Department of Fish and Game, Inform. Leaf. No. 92, 106 p.
- Somerton, D. A. 1980. A computer technique for estimating the size of sexual maturity in crabs. Can. J. Fish. Aquat. Sci. 37: 1488-1494.
- Somerton, D. A. In preparation. Size at maturity of the golden king crab (*Lithodes aequispina*) in the northern Bering Sea.

MILESTONES:

	FY 84						FY 85																		
	1983			1984			1985																		
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	
Tagging								<u>?</u>																	
Molting									_____																
Recovery																			<u>?</u>						
Data Analysis																									
Report Preparation																									
Final Report																									

MAN-POWER ALLOCATION:

FIELD WORK

Jewett	4 wks
Somerton	1 wk

DATA ANALYSIS

Feder	1 wk
Jewett	4 wks
Somerton	2 wks

REPORT PREPARATION

Feder	1 wks
Jewett	4 wks
Somerton	1 wk

BUDGET ESTIMATE:

SALARY

Jewett, S. C., 3 mos	\$22,080	
Feder, H. M., 2 wks	<u>3,200</u>	
Total Salary		\$25,280

TRAVEL

2 Round trips Fairbanks/Dutch Harbor	1,890	
1 Round trip Fairbanks/Corvallis, OR	775	
Per diem, 30 days	<u>1,700</u>	
Total Travel		4,365

SERVICES

Dr. David A. Somerton, Subcontractor	2,500	
Boat charter, 24 days @\$2500	60,000	
Drafting, 20 hrs	760	
Data processing, 40 hrs	1,200	
Communications	300	
Tag-recovery reward	<u>500</u>	
Total Services		65,260

SUPPLIES

Spaghetti tags (1,000 tags)	<u>300</u>	
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TOTAL DIRECT COSTS		<u>\$95,205</u>
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DATE AND ORIGINATORS OF PROPOSAL:

Proposal date - 13 July 1983

Mr. Stephen C. Jewett Institute of Marine Science University of Alaska
Fairbanks, AK 99701 (907) 474-7841

Mr. Jewett will coordinate and participate in the tag and recovery operations. His previous experience in crab tagging includes working on red king crabs with Guy C. Powell of ADF&G, and golden king crabs in Alice Arm, British Columbia. Mr. Jewett's involvement in the data analysis will be in conjunction with Dr. David Somerton. Mr. Jewett and Dr. Somerton will coordinate the data analysis through the Institute of Marine Science Data Processing Group. The preparation of a final report will be coordinated by Mr. Jewett and Dr. Howard Feder.

Dr. Howard M. Feder
Institute of Marine Science
University of Alaska
Fairbanks, AK 99701
(907) 474-7841

Dr. Feder will mainly be involved in the report preparation. His experience as an invertebrate zoologist in Alaska will be especially helpful in interpreting and presenting our findings.

Dr. David A. Somerton
Department of Wildlife & Fisheries
104 Nash Hall
Oregon State University
Corvallis, Oregon 97331-3803

Dr. Somerton has almost exclusively been involved in Alaskan crab research during the past seven years. His most recent work has involved blue king crab and deep sea king crab. All of Dr. Somerton's crab research are strengthened by rigorous statistics, which he performs. Dr. Somerton's main involvement will be in analyzing the data and applying computer techniques, which he has successfully used on other crab species.

NORTH PACIFIC RESEARCH

NORTH PACIFIC RESEARCH (NPR) is a small company that specializes in research in marine biology and fisheries of the North Pacific Ocean region. NPR was organized in 1982 by Stephen C. Jewett and has its main office in Fairbanks. Three research biologists are affiliated with the company.

Recent NPR projects include: (1) a survey of the golden king crab of Alice Arm, British Columbia, (2) a survey of larval and juvenile red king crab in the North Aleutian Basin, (3) a report on the distribution and abundance of benthic invertebrate resources of the Bering and Chukchi seas, and (4) a report of the environmental characterization of the North Aleutian Shelf nearshore region.

Stephen C. Jewett has worked as a fisheries biologist in Alaska for 11 years, the last nine of which have been for the Institute of Marine Science at the University of Alaska, Fairbanks. He holds a Master of Science Degree (1977) in biology from the University of Alaska. Mr. Jewett has participated in various types of marine biological research, such as king and Tanner crab research for the Alaska Department of Fish and Game, pre-pipeline environmental studies of Port Valdez for the Environmental Protection Agency, and numerous studies on distribution, abundance, and biology of fishes and invertebrates from Alaska marine waters for the National Oceanic and Atmospheric Administration (see Biographical Sketch).

Biographical Sketch

Stephen C. Jewett

SS #004-48-2438

Mailing Address: SR Box 30320 J
Fairbanks, Alaska 99701

Work Address: Institute of Marine Science
University of Alaska
Fairbanks, Alaska 99701

Telephone: Home 479-3239; work 474-7841

Born: 31 December 1947, Dexter, Maine

Education: M.S. University of Alaska, 1977
B.A. John Brown University, 1970

Experience: North Pacific Research, Senior Marine Biologist, 1982-present
University of Alaska, Research Associate, 1974-present
Alaska Department of Fish & Game, Fishery biologist, 1973-1974
University of Alaska, Research Assistant, 1972-1973

Member: World Mariculture Society
Western Society of Naturalists
National Shellfish Association
American Fisheries Society
American Fisheries Society - Alaska Chapter
Pacific Science Association

Certifications: Fishery Scientist - American Fisheries Society, 1981
Professional Association of Diving Instructors - Basic
SCUBA Diver, 1980
YMCA - SCUBA Diver, 1978

Teaching: Instructor of workshops in Oceanography and Fisheries Oceanography, conducted through the Fisheries Industrial Technology Center, University of Alaska.

Research Activities: Investigation of the sediment environment in Port Valdez and the effects of oil on this environment - an observational and experimental project. Funded by Environmental Protection Agency - 1974-1976..
Investigation of the benthos on the shelf of the Gulf of Alaska. An environmental assessment study funded by NOAA - 1975-1978.
Investigation of the benthos on the shelf of Norton Sound-Chukchi Sea. An environmental assessment study funded by NOAA - 1976-1977.

Research
Activities
(Cont'd)

- Investigation of the benthos of lower Cook Inlet. An environmental assessment study funded by NOAA - 1976-1978.
- Investigation of the benthos on the shelf of the Bering Sea. An environmental assessment study funded by NOAA - 1975-1977.
- Investigation of the benthos of two bays of Kodiak Island. An environmental assessment study funded by NOAA - 1976-1977.
- Investigation of the benthos and food relationships near Kodiak Island. An environmental assessment study funded by NOAA - 1978-79.
- Investigation of the distribution, abundance, and community structure of the infaunal benthos from the northeastern Bering Sea and the Chukchi Sea. An environmental assessment study funded by NOAA - 1980-81.
- Investigation of the invertebrates related to the extension of the West Prudhoe Bay causeway and the associated waterflood project. An environmental assessment funded by ARCO oil and gas Company through Woodward-Clyde consultants - 1981.
- Investigation of the epifaunal invertebrates in an eastern Beaufort Sea lagoon. An environmental assessment funded by NOAA through LGL Ecological Research Associates - 1982-83.
- Investigation of the commercially-important crabs in Alice Arm, British Columbia. Funded by Amax of Canada Ltd. through Rescan Environmental Services and North Pacific Research - 1982-83.
- Strategic Assessment of the benthic invertebrate biomass of the Beringian shelf. Funded by NOAA through University of Virginia and North Pacific Research - 1982-83.
- Investigation of larval and juvenile red king crabs in the North Aleutian Basin. Funded by NOAA through VTN Oregon, Inc. and North Pacific Research - 1983-84.
- Environmental characterization of the North Aleutian Shelf nearshore region. Funded by NOAA through Kinnetics Laboratory, Inc. and North Pacific Research - 1983.

Publications:

- Jewett, S. C. 1976. Pollutants of the Northeast Gulf of Alaska. *Mar. Poll. Bull.* 7(9):169.
- Jewett, S. C. 1977. Alaska's Latent Fishery - Pacific cod. *Alaska Seas and Coast* 5(1):6-8.
- Jewett, S. C. and H. M. Feder. 1977. Biology of the Harpacticoid Copepod, *Harpacticus uniremis*, Krøyer on Dayville Flats, Port Valdez, Alaska. *Ophelia* 16(1):111-129.
- Jewett, S. C. and R. E. Haight. 1977. Description of Megalopa of Snow Crab *Chionoecetes bairdi* (Majidae, sub-family Oregoniinae). *Fish. Bull.* 75(2):459-463.
- Jewett, S. C. 1978. Summer Food of the Pacific Cod, *Gadus macrocephalus*, near Kodiak Island, Alaska. *Fish. Bull.* 76(3):700-706.
- Feder, H. M., S. C. Jewett and J. Hilsinger. 1978. Man-Made Debris on the Bering Sea Floor. *Mar. Poll. Bull.* 9(2): 52-53.
- Jewett, S. C. and G. C. Powell. 1979. Summer Food of the Sculpins, *Myoxocephalus* spp. and *Hemilepidotus jordani*, Near Kodiak Island, Alaska. *Mar. Sci. Comm.* 5(4&5):315-331.
- Paul, A. J., H. M. Feder and S. C. Jewett. 1979. Food of the Snow Crab, *Chionoecetes bairdi*, Rathbun 1924, from Cook Inlet, Alaska (Decapoda, Majidae). *Crustaceana Suppl.* 5:62-68.
- Jewett, S. C. and H. M. Feder. 1980. Autumn Food of the Starry Flounder, *Platichthys stellatus*, from the north-eastern Bering Sea and the southeastern Chukchi Sea. *J. Cons. Int. Explor. Mer* 39(1):7-14. (Also published In: Proceedings of the 29th Alaska Science Conference. Alaska Fisheries: 200 years and 200 miles of change. B. R. Melteff [ed.]). 796 p.
- Hoberg, M. K., H. M. Feder, and S. C. Jewett. 1980. Some Aspects of the Biology of the Parasitic Gastropod, *Asterophila japonica* Randall and Heath (Prosobranchia: Melanellidae), from Southeastern Chukchi Sea and North-eastern Bering Sea, Alaska. *Ophelia* 19(1):73-77.
- Jewett, S. C. and H. M. Feder. 1981. Epifaunal invertebrates of the Continental Shelf of the eastern Bering and Chukchi Seas. In: The Eastern Bering Sea Shelf: Oceanography and Resources, D. W. Hood and J. A. Calder (eds.). U.S. Dept. of Comm. pp. 1131-1153.
- Feder, H. M. and S. C. Jewett. 1981. Feeding interactions in the eastern Bering Sea with emphasis on the benthos. In: The Eastern Bering Sea Shelf: Oceanography and Resources, D. W. Hood and J. A. Calder (eds.). U.S. Dept. of Comm. pp. 1229-1261.
- Jewett, S. C. and G. C. Powell. 1981. Nearshore movement of king crab. *Alaska Seas and Coast* 9(3):6-8.
- Jewett, S. C. 1981. Variations in some reproductive aspects of female snow crabs *Chionoecetes opilio*. *J. Shellfish Res.* 1(1):95-99.
- Jewett, S. C. and H. M. Feder. 1982. Food and feeding habits of the king crab *Paralithodes camtschatica* near Kodiak Island, Alaska. *Mar. Biol.* 66:243-250.

Publications
(Cont'd)

Jewett, S. C. and H. M. Feder. 1983. Food of the Tanner crab, *Chionoecetes bairdi*, near Kodiak Island, Alaska. *J. Crust. Biol.* 3:196-207 (Also published In: Proceedings of the International Symposium on the Genus *Chionoecetes*. B. R. Melteff [ed.] Alaska Sea Grant Rept. 82-10, 1982, 732 p.).

Technical
Reports:

Jewett, S. C. and H. M. Feder. 1976. Distribution and Abundance of some Epibenthic Invertebrates of the Northeast Gulf of Alaska, with Notes on the Feeding Biology of Selected Species. Rept. R76-8, Inst. Mar. Sci., Univ. of Alaska, Fairbanks. 61 p. (Also published In: Proceedings of the 27th Alaska Science Conference. Resource Development-Processes and Problems, Vol. II, D. W. Norton [ed.], 488 p. 1976).

Feder, H. M., L. M. Cheek, P. Flannagan, S. C. Jewett, M. H. Johnson, A. S. Naidu, S. A. Norrell, A. J. Paul, A. Scarborough and D. Shaw. 1976. The Sediment Environment of Port Valdez, Alaska and the Effect of Oil on this Ecosystem. Environmental Protection Agency. Final Report. 322 p.

Feder, H. M. and S. C. Jewett. 1977. The Distribution, Abundance, and Diversity of the Epifauna of Two Bays (Alitak and Ugak) of Kodiak Island, Alaska. Rept. R77-3, Inst. Mar. Sci., Univ. of Alaska, Fairbanks. 74 p.

Feder, H. M. and S. C. Jewett. 1978. Survey of the Epifaunal Invertebrates of Norton Sound, the Southeastern Chukchi Sea, and Kotzebue Sound. Rept. R78-1, Inst. Mar. Sci., Univ. of Alaska, Fairbanks. 124 p.

Feder, H. M. and S. C. Jewett. 1980. Survey of the Epifaunal Invertebrates of the Southeastern Bering Sea with Notes on the Feeding Biology of Selected Species. Rept. R78-5, Inst. Mar. Sci., Univ. of Alaska. 105 p.

Feder, H. M. and S. C. Jewett. 1981. Distribution, abundance, community structure and trophic relationships of the nearshore benthos of the Kodiak continental shelf. Rept. R81-1, Inst. Mar. Sci., Univ. of Alaska, Fairbanks. 190 p.

Jewett, S. C. and H. M. Feder. 1982. Food of the Tanner crab *Chionoecetes bairdi* near Kodiak Island, Alaska. Alaska Sea Grant Rept. 82-10, 732 p.

Jewett, S. C. 1982. Predation on crabs of the genus *Chionoecetes*: a literature review. In: Proceedings of the International Symposium on the Genus *Chionoecetes*. B. R. Melteff (ed.). Alaska Sea Grant Rept. 82-10, 732 p.

Unpublished
Final Reports:

Feder, H. M., S. C. Jewett, S. G. McGee, and G. E. M. Matheke. 1981. Distribution, abundance, community structure, and trophic relationships of the benthos of the northeastern Gulf of Alaska from Yakutat Bay to Cross Sound. Final Rept. to NOAA. 197 p.

Unpublished
Final Reports
(Cont'd)

- Feder, H. M., R. H. Day, S. C. Jewett, K. McCumby, S. McGee, and S. V. Schonberg. 1981. The infauna of the northeastern Bering and southeastern Chukchi Seas. Final Rept. to NOAA. 122 p.
- Feder, H. M. and S. C. Jewett. 1982. Prudhoe Bay waterflood project. Infaunal monitoring program: the 1981 studies. Final Rept. to ARCO Oil and Gas Company. 203 p.

Conference
Participation:

- 27th Alaska Science Conference; American Association for the Advancement of Science (AAAS). Univ. of Alaska, Fairbanks, 4-7 August 1976.
- 29th Alaska Science Conference; (AAAS), Univ. of Alaska, Fairbanks, 15-17 August 1978.
- American Society of Zoologists, University of Washington, Seattle, 26-30 December 1980.
- The Lowell Wakefield Fisheries Symposia Series - International Symposium on the Genus *Chionoecetes*, Anchorage, Alaska, 3-6 May 1982.

Field
Experience:

- 1973 Jun-Aug F/V *Rosie G.* Population indexing of the king crab and snow crab in Kodiak Island waters.
- 1974 Jun-Jul F/V *Virginia Santos.* Population indexing of the king crab and snow crab in Kodiak Island waters.
- 1975 Feb NOAA Ship *Oceanographer.* Survey of benthic meiofauna of the northeast Gulf of Alaska.
- 1975 Apr-Jun F/V *North Pacific.* Project leader. Benthic trawl survey of the northeast Gulf of Alaska.
- 1975 Jun-Jul F/V *Elizabeth F.* Population indexing of king crab and snow crab, and food analysis of the Pacific cod in Kodiak Island waters.
- 1976 Mar-Apr R/V *Moana wave.* Survey of benthic invertebrates of the northeast Gulf of Alaska.
- 1976 Jun R/V *Big Valley.* Project leader. Survey of benthic invertebrates of Ugak and Alitak Bay of Kodiak Island.
- 1976 Aug-Sep NOAA Ship *Miller Freeman.* Project leader. Survey of benthic invertebrates and food of starry flounder of the northeastern Bering Sea and southeastern Chukchi Sea.
- 1976 Oct NOAA Ship *Miller Freeman.* Survey of benthic invertebrates of lower Cook Inlet.
- 1977 Mar F/V *Big Valley.* Project leader. Survey of benthic invertebrates of Ugak and Alitak Bay of Kodiak Island.
- 1978 May R/V *Yankee Clipper.* Project leader. Survey of benthic invertebrates of Izhut Bay, Afognak Island.
- 1978 May Project leader. Exploratory SCUBA-diving for king crab near Kodiak Island.
- 1978 Jun-Jul NOAA Ship *Miller Freeman.* Project leader. Survey of benthic fauna of the Kodiak Shelf.
- 1978 Jun-Jul Project leader. Exploratory SCUBA-diving for king crab near Kodiak Island.

Field
Experience
(Cont'd)

1978 Jul-Aug F/V *Antares*. Conduct benthic assessment in two bays in S.E. Alaska via the submersible *Nekton Gamma*.

1979 Feb NOAA Ship *Miller Freeman*. Project leader. Survey of the benthic fauna of the Kodiak Shelf.

1979 Feb Project leader. Exploratory SCUBA diving for king crab near Kodiak Island.

1979 May Project leader. Exploratory SCUBA diving for king crab near Kodiak Island.

1979 Nov NOAA Ship *Miller Freeman*. Chief Scientist. Survey of the benthic fauna of the northeastern Gulf of Alaska from Yakutat Bay to Cape Spencer.

1981 Jul Infaunal sampling via SCUBA in Prudhoe Bay.

1981 Aug Epifaunal sampling via drop net and epibenthic sled in Prudhoe Bay.

1982 Nov R/V *Alliance*. Chief Scientist. Conduct a population assessment of the golden king crab, *Lithodes aequispina* in Alice Arm, British Columbia.

1973 Feb R/V *Alpha Helix*. Sample larvae of spot shrimp in Prince William Sound.

1983 Apr-May NOAA Ship *Miller Freeman*. Survey of larval and juvenile red king crab in the North Aleutian Basin and Bristol Bay.

TECHNICAL PROPOSAL

TO: North Pacific Fisheries Management Council
P.O. Box 3136 DT
Anchorage, Alaska 99510

FROM: Institute of Marine Science
University of Alaska
Fairbanks, Alaska 99701

TITLE: Growth and Size at Maturity of Golden (Brown) King Crab,
Lithodes aequispina

PRINCIPAL INVESTIGATORS:
S. C. Jewett
Research Associate of
Marine Science


H. M. Feder
Professor of Marine Science


NEW/CONTINUING: New

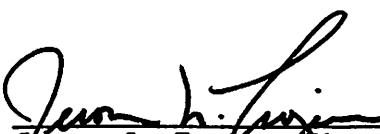
PROPOSED STARTING DATE: Spring 1984

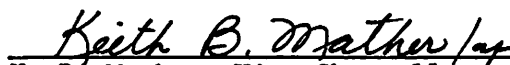
PROPOSED DURATION: FY 84 & 85


PROPOSED FUNDING: \$136,874



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