

ALASKAN OCEANS SEAS AND FISHERIES RESEARCH FOUNDATION

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January 27, 1999

Dr. John White, Chairman, State of Alaska Board of Fisheries
Mr. Rick Lauber, Chairman, North Pacific Fisheries Management Council

Re: ***Presentation of Unified Alaskan Marine Research Plan***

Dear Chairman Dr. John White, Chairman Rick Lauber, Members of the Alaskan Board of Fisheries, and Members of the North Pacific Fisheries Management Council,

The future of Alaska depends upon sustainable fisheries. Sustainable fisheries can only be maintained through prudent utilization of ocean resources based on excellent science. But excellent science requires coordination and collaboration using a unified research plan.

The Alaskan Oceans, Seas and Fisheries Research Foundation is a statewide non-profit public charity established to foster a collaborative, statewide ocean research plan which will enhance management of Alaska's oceans in a sustainable manner. Alaskan Oceans believes the public, the fishing industry and other ocean users, managers and researchers need a common forum to communicate, establish and support unified research. Alaskan Oceans is such a forum, its purpose is to promote a greater understanding and prudent utilization of marine resources.

Realizing the Foundation could only be successful with participation from the full spectrum of ocean users, Alaskan Oceans founding members created a statewide organization with broad representation. Composed of lay board members, seats are designated for representatives of conservation, Alaska Native, fishing industry and Alaskan business organizations, as well as for public figures and donors. Board representation from all ocean user groups being the key to achieving members' common goal: prudent utilization of Alaska's marine resources.

Founding members also realized it is imperative that federal and state agencies, institutions and sea water laboratories participate in research planning. Thus, stakeholders, agency and university representatives and Alaskan sea water research lab directors are ex-officio members of the Alaskan Oceans and serve on the Foundation's Research Planning Committee.

In December, General Mark Hamilton, President of the University of Alaska informed the

Foundation Board that the University has been charged with the responsibility of managing 6.6 million dollars, provided through the 1998 Consolidated and Emergency Supplemental Appropriations Act of Congress to use for basic marine fisheries research.

In his letter to the Foundation, President Hamilton wrote that he saw

" the Foundation playing an important role in providing input to the steering committee regarding research priorities and to the extent the foundation is able to provide input covering a broad scope of issues, the process will be much enhanced. In addition, as I pointed out in our tele-conference, we are interested in input from the Foundation on research priorities that extend beyond the scope of this particular grant we will be focusing on in the coming months. I believe this is a great opportunity for the Foundation to contribute to meeting the research needs of Alaska, both in the short and long terms."

President Hamilton has set a speedy schedule to get a plan approved and have proposals funded. He hopes to have a the marine research plan adopted by mid February. In following this fast paced schedule, the Foundation's Research Planning Committee met in early January with stakeholders to craft a Unified Plan for Alaskan Marine Research and Spending Priorities for the \$6.6 million Dollars. (Both are attached)

As this process is fast moving, the Foundation wants to make the Board of Fisheries aware of the process and the Unified Alaskan Marine Research Plan adopted by the Foundation's Board on January 25, 1999. This plan and recommendation will be forwarded to President Hamilton in early February.

Thank-you for the opportunity to make this presentation,

Dan Ogg,
Executive Director

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UNIFIED ALASKAN MARINE RESEARCH PLAN

Unifying Purpose

THE PURPOSE OF MARINE RESEARCH IN ALASKAN WATERS IS TO PROMOTE GREATER UNDERSTANDING AND PRUDENT UTILIZATION OF ALASKA'S OCEANS, SEAS AND FISHERIES RESOURCES.

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RESEARCH PRINCIPLES

- ▶ **EXCELLENT SCIENCE**
 - Chief Scientist
 - Peer review of projects to be funded
 - Peer review of ongoing projects
 - Annual report
 - Accountability

- ▶ **ADMINISTRATIVE PROCESS**
 - EVOS~research science process as model
 - Cost effective science

- ▶ **TRADITIONAL KNOWLEDGE AND WISDOM**
 - Use of local knowledge and wisdom to broaden western science

- ▶ **COASTAL COMMUNITY PERSPECTIVE**

- ▶ **TRANSPORTABILITY OF DATA**
 - Standard methodologies
 - Archive data electronically

- ▶ **ECOSYSTEM-LEVEL RESEARCH PLANS**
 - Sound Ecosystem Analysis (SEA) as a model

- ▶ **CONTINUITY OF DATA**

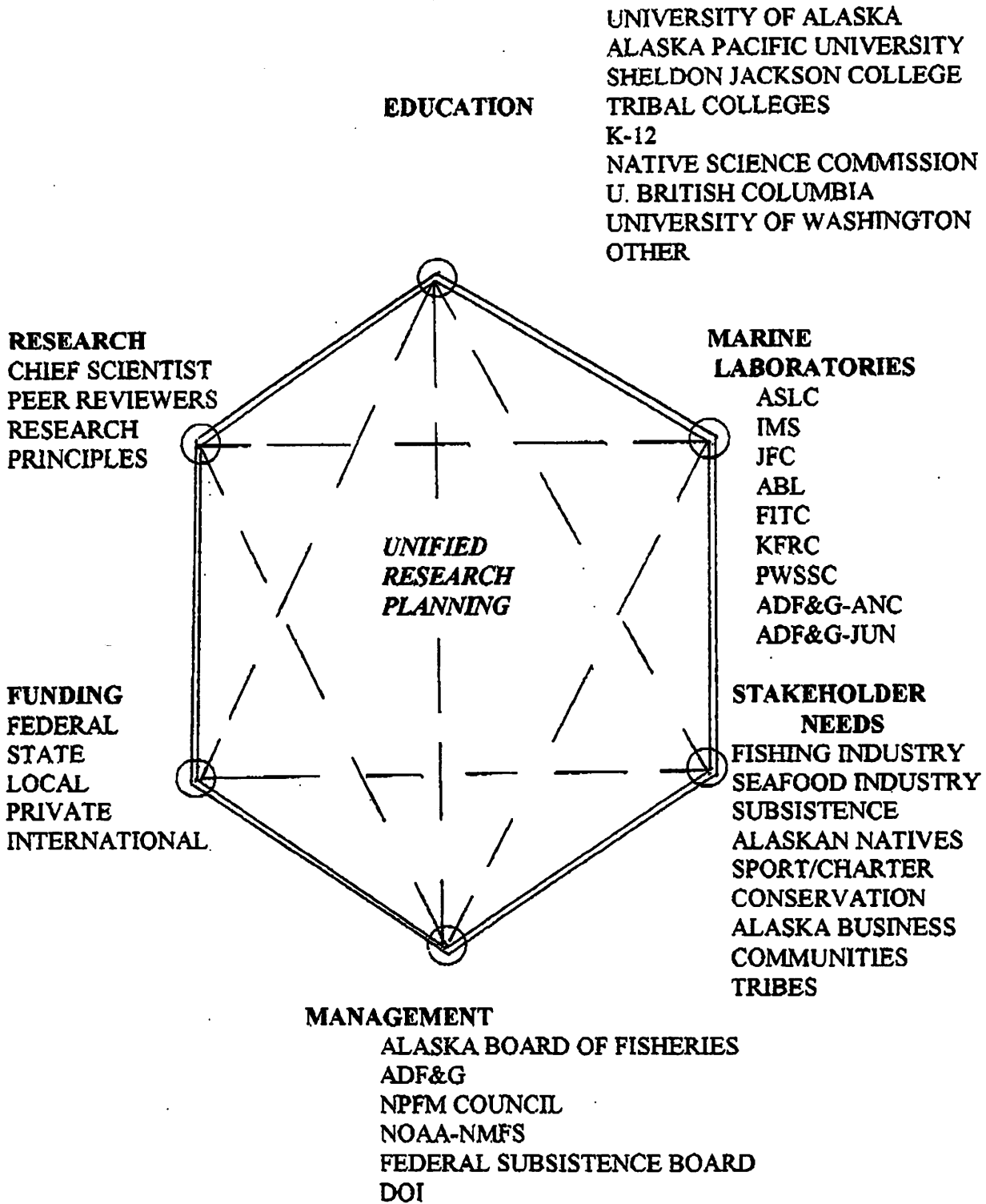
- ▶ **STAKE HOLDER PARTICIPATION**
 - Broad public input by use of
 - ADF&G Advisory Councils
 - Alaska Native Non-Profit Associations
 - Alaska Municipal League Districts
 - University of Alaska CES and MAP
 - Tribes
 - Other Stakeholder Groups (See matrix)

- ▶ **SCIENTIFIC TEAMS**

- ▶ **SOCIO-ECONOMIC ANALYSIS**
 - Based upon resource utilization

- ▶ **DISSEMINATION OF RESULTS AND PROGRESS**
 - Annual Report and Symposium
 - Traveling Science Program

UNIFIED ALASKAN MARINE RESEARCH PLANNING MATRIX



Unified Alaskan Marine Research Plan
\$6.6 Million Spending Plan for FY 1999

RESEARCH PLAN ELEMENTS

The Unified Research Plan is an inclusive plan, not an exclusive one. The Unified Plan recognizes that many research programs are in existence and encourages collaboration and extension of those programs. The Unified Plan encourages a coordinated research effort matching programs where possible and economizing resources to get the excellent science for Alaska's oceans. The Unified Plan also recognizes that through time the ocean ecosystem experiences regime shifts and other changes and that with these changes critical issues will change.

I DATA COLLATION, CENTRALIZATION AND DISSEMINATION

- Gather existing data, including old reports, international data
- Best Blend of science and local knowledge
- Traditional knowledge
- Virtual centralization
- Easy access, Internet available
- Gap in Data analysis
- Synthesis
- Geographic Information Systems (GIS)
- Weather, Climate, Satellite
- Continuity of data input

II SYNOPTIC CONTINENTAL SHELF MONITORING PROGRAMS

- Ocean Buoys
- Periodic Transects to monitoring buoys
- GIS
- Additional weather stations
- Develop small land based monitoring stations
- Ground truth monitoring
- Utilization of local people for monitoring and traditional knowledge
- Satellites and Airborne
- Platforms of opportunity (Use of commercial vessels)
- Benthic monitors
- Acoustical monitoring

III REPEAT BASELINE STUDIES TO TEST SPECIFIC HYPOTHESES

- Relevant selection of baseline studies
- Testing Hypothesis

RESEARCH PLAN ELEMENTS

continued

- IV COASTAL FISHERIES OCEANOGRAPHY
(Bering Sea~Gulf of Alaska~Arctic Ocean)
Use SEA and APEX programs as models
Coastal currents, bays, and estuaries

- V BLUE WATER OCEANOGRAPHY
Pacific gyre (salmon survival in the gyre)
Atmospheric science
Ocean ice edge
International partnering

- VI CURRENT CRITICAL ISSUES
 - A ASSURE COORDINATION OF AGENCIES AND INSTITUTIONS

 - B MARINE MAMMALS AND BIRDS
Prey predator relationships
Forage fish

 - C WESTERN ALASKA SALMON ISSUES
Survival of salmon smolt out of stream
Smolt in estuary and coastal marine waters
Predator prey relationship
Upstream survival and propagation
Coastal and in stream liminology
Stock identification and sockeye smolt enumeration
Small system escapement enumeration
In season run assessment and in river test fishing
Salmon aging and catch sampling
Juvenile sockeye salmon assessment

1999 RESEARCH PRIORITIES

UTILIZING \$6.6 MILLION GRANT TO UNIVERSITY OF ALASKA

The committee recommends the following priorities for funding in 1999 using the \$6.6 million grant to the University of Alaska. The following are considered critical issues for prudent utilization of Alaska's marine resources. Failure to address these issues will result in economic decline. Addressing them will support human endeavor and the ecosystem upon which they rely. In funding projects, opportunities to encourage match monies should be pursued.

I MARINE MAMMALS

\$2.0 Million to study of Stellar Sea Lions
Use APEX studies under EVOS as a model
Study predator prey relationship

II WESTERN ALASKA SALMON

\$2.0 Million to study in stream, estuarine, and coastal salmon ecosystems
Use SEA studies under EVOS as a model

III DATA COLLATION AND DISSEMINATION

\$0.3 Million to begin collation

IV SYNOPTIC CONTINENTAL SHELF MONITORING PROGRAMS

\$1.5 Million to embark on a system of monitoring buoys that collaborates with PMEL
Two monitoring buoys and periodic transects to buoys
One buoy in coastal western Gulf of Alaska
One buoy in coastal eastern Bering Sea

V ADMINISTRATION AND CONTINGENCIES

\$0.3 Million for University of Alaska administration pursuant to Act
\$0.5 Million for ASLC, contingency for \$0.5M grant monies allocated but not received. When grant monies are received by ASLC this amount should be reallocated.

UNIFIED ALASKAN MARINE RESEARCH PLAN

Process

Alaskan Oceans Seas and Fisheries Research Foundation's Research Planning Committee met in Anchorage on January 8-9, 1999 to develop a unified research plan for Alaskan marine research and to recommend priorities for the expenditure of \$6.6 million dollars on critical needs pursuant to the plan. The Alaska Oceans Foundation, after adoption, will forward the plan and recommendations to President Mark Hamilton of the University of Alaska.

Alaskan Oceans Foundation's research planning committee consists of a broad spectrum of marine stakeholders, managers, lab directors, university and agency researchers, and ad hoc members. (See. Attached list)

The committee set forth and accomplished four tasks: one, define an over arching mission~purpose of Alaskan marine research; two, adopt a set of principles that can aid in planning Alaska's marine research; three, develop a unified plan for research; and four select priorities for critical research to be funded from the \$6.6 million in 1999.

In doing so, the committee recognized the plan is a living document, no different than the oceans it addresses. That is the plan will be constantly monitored and updated. As research questions are answered more gaps in knowledge will become apparent and need addressing. As such this research plan requires much attention.

The Foundation has set the next review of the plan for April 2, 1999. At this meeting the Research Planning Committee will review the plan, modify if necessary, and set a list of spending priorities for FY 2000 in the amount of \$10.0 million. This amount is the next expected disbursement of monies from Dinkum Sands.

One thing became clear through the two days, that there needs to be a unified plan for marine research in Alaska's oceans. A plan that agencies, institutions, stakeholders, and Universities all recognize, contribute to, and work toward.

Narrative

Alaskans from a variety of different cultures have been harvesting food from the surrounding seas for thousands of years. Research archaeologists investigating middens have found evidence of the food use of invertebrates, fish, birds and marine mammals stretching back over the millennia. Analysis of the stratification of bones and shells in these middens reveals cyclic trends in species use that may be interpreted as cycling population levels, perhaps reflective of changes in the environment.

Modern coastal Alaskan communities have also relied on fishing. Of interest are commercial harvest records stretching back over the decades. In communities like Kodiak or Homer, where fish harvest records go back before World War II, we see changes in the harvested species on a decadal time scale; herring in the 40s and 50s, cod in the 50s and 60s, crab and shrimp in the 60s and 70s, pollock and groundfish in the 80s and 90s.

Several different kinds of climate changes have had effects on the biota of Alaska's oceans and seas. Huge masses of unusually warm water migrated into the Gulf of Alaska and persisted for a number of years during the El Niño - southern oscillation (ENSO) of 1981. The immense power of geological forces, evidenced through earthquakes and volcanic activity, has also brought significant change to coastal Alaska and its fishing industries. The 1912 Katmai (Novarupta) eruption blanketed huge areas of the Alaska Peninsula and Kodiak Island in volcanic ash. The 1964 earthquake and tidal wave changed spawning beds in salmon stream around the central Gulf of Alaska. Clearly human activities, such as fishing, can alter the biota. Usually we think that nature's effects are more powerful and wide sweeping.

Research on Alaska's Oceans and Seas was delayed compared to that of the continental US largely because of the significant logistics problems associated with our weather. However, a major effort in marine research was funded by Federal money (Dept. Commerce, Dept. Interior) in the 1970s in the Outer Continental Shelf Environmental Assessment Program (OCSEAP), in anticipation of oil development on Alaska's Continental Shelf. Other large federally funded projects have followed including:

AMAP Arctic Monitoring and Assessment Program; BESIS Bering Sea Impact Study; BS-MIZEK - Bering Sea - Marginal Ice Zone Experiment; FOCI - Fisheries Oceanography Coordinated Investigations; ISHTAR Inner Shelf Transfer and Recycling; PROBES Processes and Resources of the southeastern Bering Sea, SEBSEC - Southeast Bering Sea Carrying Capacity; and SMMOCI - Seabird, Marine Mammal and Oceanography Coordinated Investigations; among others. However, to resource users in the communities of coastal Alaska, the output from these investigations is hard to find.

March 1989 brought the Exxon Valdez Oil Spill (EVOS) to Prince William's Sound, central and western Gulf of Alaska. 11,000,000 gallons of crude oil killed invertebrates, fish, seabirds and marine mammals. Tourism and fishing businesses were hard hit, as were municipalities that derived operating revenue from fish landing taxes. Fisheries were interrupted, in some cases, for years. In the aftermath of the oil spill, stakeholders in Prince Williams's Sound demanded of the Exxon Valdez Trustee's Council, answers to marine biotic questions central to their livelihood. From these questions came the genesis of two major ecosystem level research projects: SEA (Sound Ecosystem Assessment) and APEX (Alaska Predator Experiment).

Alaska's oceans and seas face new and potentially grave difficulties. Erosion of the population of Stellar Sea Lions west of 144° west latitude have led NMFS to determine that these populations are in jeopardy, (sensu Endangered Species Act). The reasons behind the diminishment of these populations are unclear and could be either connected to climate change or potentially to human

activities. The jeopardy finding has been interpreted to require implementation of a plan to reduce human activities, meaning fishing, in the affected area. Seabirds have been dying in the central Bering Sea and Gulf of Alaska. The explanation for these die offs is not obvious, although climate change and human activities are both suggested. Salmon returns to a number of regions of western Alaska have been declining precipitously. The reasons for these declines are, again, not obvious.

Implicated in all these biotic changes are environmental change and human activities. So, although state and federal governmental agencies, foreign governments, and university researchers have been studying marine resource issues in the Bering Sea for 30 years, little of this information has trickled down to interested citizens, resource users or stakeholders in coastal Alaskan communities. Neither has this information been used to assist in answering the most pertinent resource questions these folks have. Many Alaskans hold the responsible development of our marine or fishery resources among their deepest concerns both economically and environmentally.

Our inquiry into the kinds of questions stakeholders have about Alaska's marine resources has been very instructive. Across the coastal communities of Alaska, in large measure, we have found a populace well educated on issues of marine resources, a populace with a fairly consistent series of concerns, and a populace fairly unified on what are the most pressing resource questions today.

RESEARCH PRINCIPLES:

EXCELLENT SCIENCE: Among the ideas that enjoyed broad support among coastal citizens was listing research principles. These principles are intended to animate research on Alaska's marine resources. We recognize the lead of the EVOS Trustee's Council in establishing a process that serves and an effective model. First among the research principles is that the Alaskan Oceans Seas and Fishery Research Foundation will support research involving excellent science. How do we determine what is excellent science? First, we will employ peer review of the research proposals. When research proposals are hypothesis based, we will make certain that the hypotheses are both testable and falsifiable - two criteria required of scientific hypotheses. Those projects that involve monitoring, and that are not easily forced into a hypothesis testing regiment, we will address in terms of filling previously agreed on gaps in data to stakeholders. The Foundation supports the concept of an annual symposium to discuss project progress and accountability.

ADMINISTRATIVE PROCESS: There needs to be an administrative process that ensures cost effective science and affects responsibility to all partners. The research science process developed and utilized by EVOS should be used as a model. Overhead rates are a concern to all funding agencies and foundations, as such the Foundation believes the EVOS model is one that encourages more funds into science and a minimum into indirect or overhead costs.

TRADITIONAL KNOWLEDGE AND WISDOM: Cyclic events such as are found in environmental change have, by their very nature, occurred before. The different cultures in Alaska's coastal communities may have recorded information on these cyclic events in a variety of ways. Archaeologists are helping us to uncover information on changing animal populations through analysis of middens. Other information is also available in the recollections of their elders and in a culture's myths and legends.

DATA TRANSPORTABILITY: Much of the data collected in the past 30 years of marine research in Alaskan waters described above lies fallow because it is not transportable. Although federal and state agency researchers are working diligently to bring data sets from past research onto the web, there remain intrinsic problems with using old data to address new questions. Some of the lack of data transportability comes from the fact that many research projects are effectively one-of-a-kind projects, with hand crafted methods designed to produce an elegant analysis of a specific question, but a methodology that is broadly applicable. Any data whether it is past or current needs to be archived electronically. This will ensure transportability and accessibility by the broadest group of users in the most economic manner.

CONTINUITY OF DATA: Once a monitoring project is decided upon a base consideration is the ability to have a constant stream of data from that project. Projects that utilize monitoring should have that data made available electronically to stakeholders and team scientist. It is through the stream of continuing data that a better understanding of the ecosystem will develop.

STAKEHOLDER PARTICIPATION: Stakeholders and their needs are key elements in deciding what questions are relevant. A process of having research plans receive input from stakeholders is imperative. Once a plan is developed, it needs to be sent to the broadest audience by use of existing advisory councils, groups, associations, and other interested groups. The research plan should be reviewed and updated annually. The plan is a living document and needs to be amendable as the conditions in the oceans change and the needs of the stakeholders change. Understanding the changing needs of the stakeholders and only be accomplished by having them as part of the process.

SCIENTIFIC TEAMS: The money and the days of individual scientists pursuing their own agendas without some relation to a unified plan are a thing of the past. The cost of ocean research demands that scientist investigate as members of teams. The example of the SEA project of EVOS is an excellent example and should be used as a model for research on Alaskan ocean issues.

SOCIO-ECONOMIC ANALYSIS: Before a research project or plan is approved it needs to be assessed on its socio-economic impact. Research should have a relation to the human environment. Does the research answer a question that is solving a situation to better human utilization of resources without damaging them.

DISSEMINATION OF RESULTS AND PROGRESS: How do we guard against a project, for whatever reasons, veering off the direction the funders felt was most germane. One way is to annual review progress and to fine tune projects to insure they are most applicable to the various interested groups. It is also critical that the data generated from research projects be rapidly brought back into the coastal communities. These issues have been dealt with through the research principles listed in our research plan.

RESEARCH PLAN

1. Data Collation, Centralization and Dissemination: Reports on marine research done in Alaska's oceans and seas are not archived in one central location. Much of the information garnered in US research projects exists in a variety of formats; some in scientific journal articles, some in symposium volumes, some in governmental reports, others in a variety of lengthy in house documents. Much of the raw data collected in these multi-million dollar research projects has not yet been analyzed and rests either in hand written notes in typed up format and in a variety of electronic formats. Still other data from researchers in other nations such as Russia and Japan has not been archived or is not translated into English and is also difficult to access. A major goal of the Alaskan Ocean Seas and Fishery Foundation Unified Research Plan is to collate, centralize and make available this information. We envision a web site with this information available through connected bibliographic data bases and web links to other data bases in a virtual research compendium.

2. Synoptic Continental Shelf Monitoring Program: The need for a system of continental shelf monitoring by the use of Ocean buoys is seen as the most efficient manner to provide consistent data to all researchers. These buoys will monitor the water column from surface to benthic. The concept is to have a system of approximately fifteen buoys from Ketchikan to Barrow. On a periodic basis transects will be taken to and from the monitoring buoys. Additional land weather stations with small ocean stations attached should be deployed. Emphasis should be place upon use of local inhabitants for manning the stations and for traditional knowledge as ways to improve ground truthing of observations by satellites and other remote sensing devices. An emphasis was placed upon the importance of benthic monitoring. This is especially so in light of the low numbers shell fish populations in the central and western areas of the Gulf of Alaska. It is felt that monitoring the benthos will give a better understanding and predictability of shell fish ecosystems.

3. Repeating Baseline Studies to Test Specific Hypotheses: Baseline studies completed in the past should be analyzed for their relevance to today's issues and those studies showing relevance should be repeated to test the original baseline.

4. Coastal Fisheries Oceanography: The Sound Ecosystem Analysis (SEA) accomplished in Prince William Sound under the aegis of EVOS-Trustee Council has proven to be a valuable tool for understanding coastal fisheries. This model, based upon a team of scientists working together to answer questions posed by stakeholders need to be expanded to the remainder of Alaskan waters. In addition, fisheries research model Alaska Predator Experiment is a tool that allows an

analysis of the impacts of commercial fishing on affected species. Research focused on coastal currents and bay and estuarine oceanography will ensure a better understanding and management of fisheries.

5. Blue Water Oceanography: Much funding and programs are in place and focused upon Blue Water Oceanography. These studies need to be continued and need to address issues such as ocean carrying capacity, ocean ice edge understanding, pacific gyre and deep ocean currents. There needs to be great emphasis placed upon international partnering, in particular, working closely with the Japanese, the Russians, and Canadiens.

6. Current Critical Issues:

- A. Assure Coordination of Agencies and Institutions: Alaskan marine research needs to be focused, coordinated, and collaborative. A unified plan is the method that will most effectively accomplish coordination and maximum use of funds available.
- B. Marine Mammals and Birds
 - Stellar Sea Lion Population Levels
 - Bering Sea Birds
- C. Western Alaska Salmon Issues

Alaskan Oceans Seas and Fisheries Research Foundation

Research Planning Committee Meeting January 8-9, 1999

Research Planning Committee Members and Participants

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Member, Board of Directors, Alaskan Oceans Seas and
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Dick Tremaine
Kathy Miller
Michael R. Jump
Carl Jack
Robert Mikol

UNIFIED ALASKAN MARINE RESEARCH PLAN
LIST OF ACRONYMS

ADF&G	Alaska Department of Fish and Game
AGC	Alaska Division of Governmental Coordination
ACMP	Alaska Coastal Management Plan
ANSC	Alaska Native Science Commission
ABWC	Alaska Beluga Whale Committee
AEC	Alaska Eskimo Walrus Commission
ANHSC	Alaska Native Harbor Seal Commission
EMMC	Elim-Shaktoolik-Koyuk Marine Mammal Commission
PMMC	Pribilof Marine Mammal Commission
AOSFRF	Alaskan Oceans Seas and Fisheries Research Foundation (AOF)
AMMI	The Alaskan Marine Mammal Institute
ASLC	Alaska Sea Life Center (Seward)
AMAP	Arctic Monitoring and Assessment Program
ARI	Arctic Research Initiative
BESIS	Bering Sea Impact Study
BOF	Board of Fisheries (Alaska)
Bsc	Bering Sea Coalition
BSEMP	Bering Sea Marginal Ice Zone Experiment
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CCCC	Climate Change and Carrying Capacity Program (PICES)
CIFAR	Cooperative Institute for Arctic Research
DEC	Department of Environmental Conservation (Alaska)
DNR	Department of Natural Resources (Alaska)
EPA	Environmental Protection Agency
EVOS	Exxon Valdez Oil Spill (EVOS-TRUSTEE COUNCIL)
FOCI	Fisheries-Oceanography Coordinated Studies
GIS	Geographic Information Services
GLOBEC	Global Ecosystems Dynamics
ISHTAR	Inner Shelf Transfer and Recycling in the Bering and Chukchi Seas
IPHC	International Pacific Halibut Commission
IWC	International Whaling Commission
MMC	Marine Mammal Commission
MMS	Minerals Management Service
NOAA	National Oceanic and Atmospheric Administration
	NMFS NOAA-National Marine Fisheries Service
	ABL Auke Bay Laboratory (Juneau)
	KFRC Kodiak Fisheries Research Center

AFSC Alaska Fisheries Science Center (Seattle)
 NAS National Academy of Science
 NF Northern Forum
 NPAFC North Pacific Anadromous Fish Commission
 NPFMC North Pacific Fisheries Management Council
 NRC National Research Council
 NRCS National Resource Conservation Service
 NSF National Science Foundation
 OCS Outer Continental Shelf
 OCSEAP Outer Continental Shelf Environmental Assessment Program
 OES US-State Dept. Bureau of Oceans International Environmental and Scientific Affairs

 OSRI Oil Spill Recovery Institute
 PICES North Pacific Marine Science Organization
 PMEL Pacific Marine Environmental Laboratory
 PROBES Processes and Resources of the Bering Sea
 PWSSC Prince William Sound Science Center
 REX Regional Experiment Task Team of PICES-CCCC Program
 SEBSEC Southeast Bering Sea Carrying Capacity
 SMMOCI Seabird, Marine Mammal and Oceanography Coordinated Investigations
 TK Traditional or Local Knowledge
 UA University of Alaska
 UAF University of Alaska at Fairbanks
 UAA University of Alaska at Anchorage
 UAS University of Alaska at Southeast (Juneau)
 GI Geophysical Institute (Fairbanks)
 IARC International Arctic Research Center (Fairbanks)
 SFOS UA-UAF School of Fisheries and Ocean Sciences
 IMS UA-UAF-SFOS Institute of Marine Science (Fairbanks~Seward)
 FITC UA-UAF-SFOS Fisheries Industrial Technology Center (Kodiak)
 JFC UA-UAF-SFOS Juneau Fisheries Center
 MAP UA-UAF-SFOS Marine Advisory Program (Anchorage)
 CMI UA-UAF-SFO Coastal Marine Institute
 ASGP NOAA-UA-UAF-SFOS Alaska Sea Grant Program
 USDOI United States Department of Interior (DOI)
 USFWS Fish and Wildlife Service
 USGS United States Geological Survey