


MEMORANDUM

TO: Council, AP and SSC Members

FROM: Clarence G. Pautzke   
Executive Director

DATE: January 10, 1990

SUBJECT: Research Priorities

**ACTION REQUIRED**

Review recommendations from Plan Teams and forward to NMFS.

**BACKGROUND**

In October 1988, NMFS requested Council input on research priorities for 1989 to be included in their budget planning process. This has become an annual request and the Council developed a policy for the development of research priorities. In December, I presented to you the Plan Teams' list of priority research topics. Since that time, they have fleshed out this priority list with cost estimates. The list is attached as item C-9(a). Also attached as item C-9(b) is a copy of the priority research areas identified by the Alaska Region of NMFS for Saltonstall-Kennedy funding in 1990.

**PRIORITY RESEARCH TOPICS  
GULF OF ALASKA AND BERING SEA/ALEUTIAN ISLANDS  
GROUNDFISH PLAN TEAMS**

The Plan Teams believe strongly that the principal priority for marine fishery research in the North Pacific is to ensure that baseline longline and trawl surveys continue at least at current levels, and that strong consideration be given to enhancement of these vital stock surveys. Greater support for analysis of samples and data collected from previous surveys is also essential. The resources of the Aleutian Islands are in particular need of expanded survey coverage.

The Teams are encouraged at the prospect of expanded observer coverage and logbook data collection in the Bering Sea/Aleutian Islands and Gulf of Alaska groundfish fisheries beginning in 1990. Data collected from these programs must be expeditiously compiled and actively managed to be of maximum benefit to efforts to manage these fisheries. These programs will provide needed information on bycatch rates, species and size composition of catch, and discards. The Teams expect that these programs will contribute information addressing the following topics on last year's list:

- bycatch rates by area, species and season for each fishery.
- incidental catches among rockfish assemblages.

Recognizing that the information collected through the expanded domestic observer program will substantially improve our general knowledge of commercial fish stocks, the following research areas are also recommended by the Teams. The list is not in priority order. These are areas of general research, as opposed to specific research topics. Each area is characterized by a lack of information, but each broad in scope. Consequently, specific research budgets were not developed. The estimated costs associated with research in each area could vary dramatically depending on the techniques employed and the level of research undertaken. Several areas represent long term projects that could be candidates for S-K or Sea Grant funding at various universities. Other topics will likely be carried out at some level under existing programs.

Ecological and Stock Analyses

1. Mortality estimates for bycatch species in each fishery, particularly halibut and sablefish.

An initial approach could consist of analysis of halibut condition data which will be recorded routinely by the new domestic observer program. To include the collection and analysis of condition data for sablefish would require an additional \$10,000 to \$20,000. A more conclusive answer to these questions would best be accomplished by a dedicated research program including tagging programs on survey vessels. Such a program would cost approximately \$150,000.

2. Pollock life history information, especially spawning areas, annual stock production, and egg/larval transport in the Gulf of Alaska and Bering Sea. The Teams strongly support an expanded Fisheries-Oceanography Coordinated Investigation (FOCI) for the Bering Sea/Aleutian Islands.

FOCI programs in the Gulf of Alaska have cost about \$2,000,000 annually for the past several years. The Bering Sea represents a much larger area where spawning occurs over a longer period of time than in the Gulf. Research costs would be proportionately larger.

3. Expanded pollock stock assessments in the Gulf of Alaska, especially expanded annual acoustic surveys and recruitment studies.

Expanded assessments are planned in the Gulf of Alaska for 1990. To continue these studies annually after 1990 would cost approximately \$500,000 per year.

4. Structure and degrees of mixing of pollock stocks; the impact of fishing in international waters of the Bering Sea (the donut hole) on pollock stocks in the U.S. EEZ.

Studies currently underway in the Bering Sea.

5. Techniques for aging sablefish, pollock, and cod.

Field validation of aging techniques require long term research projects. Costs would be on the order of \$200,000 per year.

6. Field studies of recruitment in all major groundfish species, particularly Pacific cod, sablefish, and Greenland turbot in the Gulf of Alaska and Bering Sea/Aleutian Islands areas.

Field studies of recruitment are very expensive. FOCI is in large part a recruitment study and has been budgeted at approximately \$2,000,000 per year. An estimate of annual costs for recruitment studies in the eastern Gulf of Alaska is approximately \$1,500,000.

7. Biomass estimates for rockfish throughout the Gulf of Alaska.

The development of new techniques for rockfish biomass assessment would probably require survey vessels dedicated to rockfish (rather than the current multi-species surveys that are carried out triennially). Cost would be on the order of \$500,000 annually.

8. Expanded ecosystem studies of the Bering Sea/Aleutian Islands and the Gulf of Alaska, especially oceanography-recruitment relations and predator-prey studies such as Pacific cod predation on crab and other commercially important species.

Collection of stomachs could be carried out by the observer program. The cost of examining stomach contents and analyzing data depends upon numbers of species of interest. Approximately \$50,000 to \$150,000 would have to be added to annual funding for existing programs.

9. Marine mammal investigations focusing on marine mammal dependence on commercial fish stocks and quantification of the impacts of commercial fishing on marine mammal populations through direct mortality, disturbance, and commercial harvesting of marine mammal prey species.

Substantial costs could be expected to be incurred by the commercial fisheries if experiments incorporating various reductions in current levels of exploitation are designed. Additional programmatic costs would include expanded field surveys to accurately assess changes in mammal populations and additional analytic personnel. These costs would be in the range of \$50,000 to \$250,000 annually.

10. Techniques for better assessment of Atka mackerel in the Aleutian Islands.

As with #7 above, costs for a dedicated research effort would likely be on the order of \$500,000 annually.

11. Improved bathymetric mapping in the Gulf of Alaska, especially the eastern portion, to assist rockfish stock survey planning and implementation. The National Ocean Service is encouraged to undertake this work as this agency is best equipped to do so.

### Economic and Fisheries Analyses

1. Economic studies of the total value of Alaskan fishery products, including processing, marketing and retailing.

Such a study could probably be conducted over an 18 month period at a cost of approximately \$100,000.

2. Operation cost data for all groundfish fisheries in the Bering Sea/Aleutian Islands and Gulf of Alaska.

Such research has already been initiated for some segments of the trawl fleet. A dedicated research effort over the course of one year would require a budget of approximately \$60,000.

3. Continued examination of the institutional problems associated with limited access schemes in the Bering Sea/Aleutian Islands and Gulf of Alaska groundfish fisheries.

4. Economic impact of Alaskan harvests on the world market, including price impacts of changes in foreign and domestic supplies and demand.

This topic could be approached through a variety of techniques. A current project, similar in scope, is looking at groundfish prices and is contracted out through S-K funding with a total budget of \$180,000 over a 2 year period.

5. Economic evaluation of the consequences of various bycatch management alternatives.
6. Net fishing efficiency studies, including effectiveness of various trawl operations in terms of area swept versus retained catch, fish avoidance, etc.
7. Effects of trawl mesh size on catch and size composition of pollock and other species in order to minimize catch of undersize fish.
8. Economic effects on groundfish fisheries of marine mammal competition, marine mammal incidental take, and marine mammal avoidance regulations.



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service AGENDA C-9(b)  
P.O. Box 21668 JANUARY 1990  
Juneau, Alaska 99802-1668

December 13, 1989

Mr. Clarence Pautzke, Executive Director  
North Pacific Fishery Management Council  
P.O. Box 103136  
Anchorage, Alaska 99510

Dear Clarence:

Enclosed is a copy of the priority research area identified by the Alaska Region for the 1990 Saltonstall-Kennedy solicitation. We had discussed those priorities with Steve Davis, and he had requested a copy of the final recommendations.

If you have any questions or comments on the priorities, please feel free to contact my office.

Sincerely,

A handwritten signature in cursive script that reads "Carl L. Rosier".

Carl L. Rosier  
Chief of Industry Services



## Alaska Region

The research and development program in Alaska has focused on the domestic utilization of the groundfish resources in the Exclusive Economic Zone (EEZ) off the Alaska coast. Technology development and application have been stressed to support U.S. industry efforts to become a competitive and dominant force in the utilization of these massive EEZ resources.

In recent years, many Alaska coastal communities have developed strong interest in the potential of aquaculture and mariculture. Both fields appear to provide significant economic opportunity; however, basic research supporting feasibility analysis is required before proceeding.

In FY 89, funded projects addressed development impediments in the areas of flat fish handling and utilization, groundfish quality enhancement, by-product utilization, by-catch avoidance, basic aquaculture research, international trade in West Coast groundfish, and commercial fishing - marine mammal interactions. Groundfish utilization in the EEZ and basic aquaculture research continue to be priority research areas for development in FY 90. Applications which address the following areas will be given priority for funding in FY 90.

- (a) By-catch utilization and/or avoidance is an area of

critical importance to the entire domestic fishing industry. High priority research areas include:

- (1) Development of new or application of existing technology for the avoidance of taking unwanted or prohibited species.
  - (2) Development of handling and processing technology for increased utilization of by-catch.
  - (3) Economic analysis of the consequences of by-catch management alternatives.
- (b) Development of production cost models for the groundfish complex of the Bering Sea and Gulf of Alaska.
- (c) Continued analysis and development of technology to reduce and/or eliminate negative interactions between commercial fisheries and marine mammals.
- (d) Address information needs associated with the quality and wholesomeness of seafood to increase public confidence in fisheries products.
- (e) Studies which address processing line efficiencies and reduce operating costs. Priority proposal areas include:
- (1) Projects which support development of efficient methods for handling and processing the Gulf of Alaska and Bering Sea flat fish complex.
  - (2) Improvement in the number and quality of products

produced from the waste streams of floating and  
shoreside processing facilities.

- (f) Conduct basic research supporting domestication and mass culture of regional living marine resources in the areas of brood stock development, technical feasibility analysis, and production cost efficiencies.