

M E M O R A N D U M

TO: Council, SSC, and AP Members

FROM: Jim Branson
Executive Director

DATE: September 17, 1981

SUBJECT: Bering Sea/Aleutian Islands King Crab Fishery Management Plan

ACTION REQUIRED

Final action on Draft #11 of the BS/AI King Crab Fishery Management Plan. Consider proposal to examine Bering Sea survey design and its use by management.

BACKGROUND

On September 10-11 the Council met with the Alaska Board of Fisheries to review their joint king crab management policy and to conduct a public hearing on Draft #11 of the BS/AI King Crab FMP. Public response was both for and against the proposed plan and a summary of the hearing is attached as Item E-3(a). Based on the testimony received and the discussions with the Board, the Council directed the staff to finish the draft plan and prepare all necessary supporting documents for this meeting. The Draft Environmental Impact Statement is included in your files as Item E-3(b). Copies of the Draft FMP and the Draft Regulatory Impact Review will be available. If approved these documents will be submitted for Secretarial review.

A proposal by Natural Resources Consultants to examine the NMFS king crab trawl survey design, analysis of data and the eventual use of results by fishery managers is presented for your review and approval for Council funding participation. The National Bank of Alaska and industry groups have committed funding for a share of the proposal. The Study was prepared in response to the predicted decline in legal male king crab for the 1981 and 1982 crab season.

The Northwest and Alaska Fisheries Center Bering Sea Survey is now complete and is currently undergoing analysis. A preliminary report on the status of the king crab resource was presented to the Council at the Joint Council/Board meeting. A review of that report and any new information gathered since that meeting will be available.

SUMMARY: COUNCIL/BOARD OF FISHERIES JOINT PUBLIC HEARING
ON DRAFT #11, BERING SEA/ALEUTIAN ISLANDS KING CRAB
FISHERY MANAGEMENT PLAN

Kodiak, Alaska
September 10, 1981

A joint Council/Board of Fisheries public hearing was held in Kodiak in conjunction with the September 10-11 Council/Board meeting. General public in attendance included those present during the Council meeting. Synopses of individual testimony are given below.

Lt. Jack Jordan and Captain Robert Lockman, Alaska Department of Public Safety, Fish and Wildlife Protection Division, said they were concerned about potential enforcement problems resulting from implementation of an FMP. After discussing their concerns with the Council and Board, they realized that state regulations would be "federalized" so that only one set of regulations would exist for both state and federal waters. Lt. Jordan suggested that state courts handle violators more severely than do federal courts, and felt that if FCZ fisherman had the option to choose under which system they would be prosecuted, most would opt for the easier-going federal system. Lt. Jordan and Captain Lockman were also concerned over DPS jurisdiction in handling violations by catcher/processors in the FCZ.

Jude Henzler, RuralCap, Anchorage, testified in favor of the FMP and added that not only must the level of crab available for harvest be maintained, but the effort level as well. He was concerned about the low NMFS Survey abundance estimates. Mr. Henzler urged the Council and Board to initiate a study of the Norton Sound crab fishery.

Richard Goldsmith, Manager of the North Pacific Fishing Vessel Owners Association, Seattle, testified in support of the petition by NPFVOA, the Alaska Crab Institute, and the Alaska Marketing Association for a higher-than-normal exploitation rate to alleviate some of the economic hardship caused by setting quotas based on the NMFS Trawl Survey. He questioned the accuracy of the survey and suggested that an exploitation rate of almost 100% on all male crabs 6½ inches and larger would pose no threat to future king crab spawning stocks.

Mr. Goldsmith suggested that ADF&G put biologists on crab boats as observers to assess the condition of stocks, and said that the question of handling mortality might also be answered by such a program. If state funds were not available for a project such as this, he felt the industry would provide the necessary financial assistance.

Mr. Goldsmith wants Kodiak and the Peninsula included in the FMP. He was upset that the public hearing was scheduled for the time when fishermen were busy preparing to start the season. Mr. Goldsmith alleged that the Board had discriminated against non-resident crabbers by denying reconsideration of the October 15 Bering Sea opening date while at the same time, reconsidered its decision on the 7½ inch season for Kodiak.

Blake Kinnear, Kodiak fisherman, opposed the proposed FMP, stating that ADF&G had done an admirable job of managing the fishery over the years. He said in the that past he has experienced low abundance years and urged that caution be exercised when setting quotas. He felt the multi-year approach is the most risk-free management approach for the crab fishery.

Dave Herrnsteen, Kodiak fisherman, opposed the FMP and draft implementing regulations because he felt they would give the Secretary of Commerce too much power over the fishery to override Council actions. He suggested that the current low estimates of Tanner crab may be a result of federal mismanagement of that fishery.

D R A F T

ENVIRONMENTAL IMPACT STATEMENT
FOR THE BERING SEA/ALEUTIAN ISLANDS KING CRAB
FISHERY MANAGEMENT PLAN

September 22, 1981

Prepared By:

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U.S. Department of Commerce, NOAA
National Marine Fisheries Service
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COVER SHEET

RESPONSIBLE AGENCIES:

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PROPOSED ACTION: Approval and implementation of the Bering Sea/Aleutian Island King Crab Fishery Management Plan.

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TYPE OF STATEMENT:

(X) Draft () Final

ABSTRACT:

This Statement evaluates the direct and indirect impacts upon the quality of the human environment of the implementation of a fishery management plan prepared pursuant to the Magnuson Fishery Conservation and Management Act of 1976. This Statement also evaluates the impacts on the human environment of alternatives to and variations of such action. It concludes that commercial king crab fishery operations of the kind likely to be authorized under the proposed variations of and alternatives to the Plan would probably have minor adverse impacts upon the natural environment. It also concludes, however, that these operations will be or can be so limited as to mitigate these adverse impacts without imposing undue burdens upon participants in the fishery and consumer of king crab products.

DATE BY WHICH COMMENTS MUST BE RECEIVED: December 4, 1981

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CHAPTER I

SUMMARY

This statement examines the impacts upon the human environment of the approval and implementation of a Bering Sea/Aleutian Island King Crab Fishery Management Plan (FMP). A draft of the FMP representing a variety of management measures that are currently under consideration was released by the North Pacific Fishery Management Council (Council) in August 1981. If the Council ultimately approves a final version of the FMP, it will be submitted to the Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, for approval and implementation under the Magnuson Fishery Conservation and Management Act of 1976 (MFCMA).

This statement has been prepared pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) and its implementing regulations. It concludes that commercial king crab operations off the Bering Sea/Aleutian Islands have the following types of impacts on the quality of the environment:

1. incidental harvest of other marine resources;
2. direct stress to marine mammals and birds;
3. environmental pollution resulting from the dumping at sea by catcher/processor fishing vessels and by shore-based processing facilities of crab processing and other wastes;
4. navigational hazards posed by crab pots;
5. stress to biota caused by lost gear;
6. damage to benthic organisms caused by gear placement; and
7. handling mortality.

Precise data on most of these impacts are not currently available, but the information that does exist indicates that they do not severely affect the environment of the Bering Sea. In reviewing the management alternatives considered in the development of the draft FMP, this Statement concludes that, to the extent that a particular alternative would restrict the geographical extent, permissible harvest, intensity, and duration of the commercial king crab fishery, it would tend to mitigate the impacts of that fishery on the

environment. Management alternatives that would permit expanding these four qualities of the fishery would also tend to increase the level of environmental impact.

40 CFR Section 1502.14(e) requires that a draft environmental impact statement such as this identify the agency's preferred alternative or alternatives "if one or more exists." At this time, the Council has selected the preferred alternatives from among those presented in this draft statement and they have been incorporated into the draft FMP.

This Statement incorporates by reference the Bering Sea/Aleutian Island King Crab Draft Fishery Management Plan dated September 22, 1981. This document is available upon request from the North Pacific Fishery Management Council, P.O. Box 3136 DT, Suite 32, 333 West Fourth Avenue, Anchorage, Alaska 99510, telephone 907-274-4563.

CHAPTER II

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

In the Magnuson Fishery Conservation and Management Act of 1976 (MFCMA), Congress found that the marine resources off the coasts of the United States are valuable natural resources in need of immediate conservation and management by the United States to preserve their value to the Nation. It reasserted the exclusive fishery management authority of the United States over the resources of the continental shelf, and extended that authority to all living marine resources except for highly migratory species found within a Fishery Conservation Zone (FCZ) extending 200 miles from the shoreline of the United States, and excluding the areas within the territorial sea over which State management authority was reaffirmed.

The management of these marine resources is vested in the United States Secretary of Commerce and in eight Regional Fishery Management Councils. Each of these Councils has the duty to develop fishery management plans for the marine resources in its region of responsibility that require conservation and management. Among other things, an FMP must specify the optimum yield from each fishery which would provide the greatest benefit to the Nation, and must state how much of that optimum yield can be expected to be harvested by United States vessels. Each Council consists of Federal and State officials having authority for fishery management, and of private persons nominated by the governors of states in the region served by the Council and appointed by the Secretary of Commerce.

When a Council has adopted an FMP for a fishery under its jurisdiction, it must be submitted to the Secretary of Commerce for approval and implementation by him. The Secretary has delegated this authority to the Assistant Administrator for Fisheries (Assistant Administrator) of the National Oceanic and Atmospheric Administration (NOAA). The Assistant Administrator is the head of the National Marine Fisheries Service (NMFS). Upon receipt of an FMP from a Council, the Assistant Administrator must determine whether it is consistent with the MFCMA and other applicable law. If he so finds, he tentatively

approves the FMP, and publishes it for public comment together with proposed implementing regulations. If, in light of this public comment, the Assistant Administrator reaffirms his finding of the consistency of the FMP with the MFCMA and other applicable law, he publishes final regulations implementing the FMP. An FMP may be amended in accordance with these procedures.

Foreign fishing in the FCZ may be authorized under permits to the extent that the marine resources in question will not be harvested by United States fishermen. If an FMP has not been implemented for a fishery in which foreigners wish to participate, the Assistant Administrator must prepare and implement a Preliminary Fishery Management Plan (PMP) for that fishery. A PMP and its implementing regulations govern only foreign fishing operations, and do not limit the activities of United States fishermen. A PMP and its implementing regulations are automatically suspended when an FMP is implemented for the fishery to which the PMP applies.

There are three commercially important species of king crab in Alaskan waters. The species commonly referred to as the king crab or red king crab is Paralithodes camtschatica. The other two commercial species are the blue king crab, P. platypus, and the brown or golden king crab, Lithodes aequispina. The domestic commercial harvest of king crab is unique to the State of Alaska. Of these three species of king crab found in Alaska waters, the red king crab is the most significant in economic value to fishermen and processors. In fact, the red king crab fishery has a cash value which is more than that of any other seafood species (i.e., sockeye salmon, halibut, Tanner crab, etc.) caught in Alaska.

King crab have been exploited commercially in Alaska since the 1920's. Except for fishing by the Japanese during the 1930's, there were no major fisheries for king crab prior to WWII. Commercial fishing for king crab was restarted after the war by domestic fishermen in 1948. Both the Japanese and the Russians entered the postwar fishery for king crab off Alaska, primarily in the Bering Sea. The efforts of both the Russians and Japanese increased into the mid 1960's until bilateral agreements with the United States began to set limits on their catch. The United States was successful in eliminating both nations from this fishery by 1975 through diplomatic negotiations. The king

crab fishery thus became solely a domestic fishery before passage of the MFCMA. The domestic and foreign harvest of king crab from the waters off Alaska between 1953 and 1980 is shown in Table 11 of the Appendices to the FMP.

In January 1977, NMFS adopted the Preliminary Fishery Management Plan for King and Tanner Crabs of the Eastern Bering Sea. This PMP established total allowable level of foreign fishing (TALFF) for king crab equal to zero, further eliminating the possibility of any foreign fishing for king crab.

A Draft Fishery Management Plan for the King Crab Fishery of the Bering Sea/Aleutian Islands (draft FMP) has been prepared for consideration by the North Pacific Fishery Management Council (Council). The draft FMP is designed as a "framework" FMP. Management measures incorporated into the draft FMP were chosen by the Council as their preferred alternatives. Both the management alternatives chosen and considered but not chosen, are reviewed in this statement. The "framework" FMP prescribes general management standards and criteria, but leaves the formulation of detailed management regulations to NMFS and State officials. The implementation of the FMP would require close cooperation among NMFS, the Council, the Alaska Department of Fish and Game (ADF&G), and the Alaska Board of Fisheries. The FMP would supersede the king crab provisions of the current crab PMP, discussed above.

CHAPTER III

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

As required by MFCMA section 303 and by 50 CFR Part 602, the draft FMP consists of: (a) informational sections summarizing current scientific, historical, and statistical information about the king crab fishery of the Alaska region and the various goals for, and considerations involved in, its management; and (b) operative sections, prescribing alternative management measures for the fishery. It is the operative sections of the FMP that would be embodied in regulations governing the fishery should the FMP be approved and implemented. Each preferred management measure and its alternatives must be examined, and the environmental impacts of the various alternatives compared on the basis of the analysis of environmental consequences set forth below.

The organization of the following discussion comparing the alternatives and their environmental impacts is based upon ten major groupings of alternatives considered in the development of the draft FMP. The preferred management alternatives are so indicated by an asterisk (*). These include alternatives concerning:

- A. need for a FMP;
- B. boundaries of the fishery management unit;
- C. selection of OY concept to be prescribed by the FMP;
- D. fishing seasons;
- E. gear restrictions;
- F. gear placement;
- G. gear storage;
- H. vessel tank inspection;
- I. sex restrictions; and
- J. registration areas;

A. Alternatives Concerning The Need For An FMP

The alternatives concerning the need for a FMP are as follows:

1. no FMP;
- *2. FMP implemented with the Secretarial delegation of regulatory authority to the State of Alaska; and
3. FMP implemented with regulatory authority retained by the Secretary.

1. No FMP

There is some question whether the western Alaska king crab fishery "requires conservation and management" within the meaning of MFCMA section 304 (c) (1) (A), and the Council was considering the alternative of not adopting an FMP at all.

If there were no action, and a fishery management plan was not implemented for the western Alaska king crab resource in the FCZ, the fishery would continue to be managed by the State of Alaska, to the extent it was carried out by vessels registered under the laws of that State. During the 1980-81 fishing season, about half of the total number of boats fishing king crab in the Bering Sea and Aleutian Islands were owned by non-residents of Alaska, and they harvested over two-thirds of the landings of king crab from these areas. Some of these fishermen have stated that the implementation of a fishery management plan would give them more opportunity to participate in the management and decision making process.

Under the present State of Alaska king crab management program, the king crab fishery may produce minor environmental impacts described below, due to incidental harvest of other marine resources, displacement of migratory birds, possible drowning of sea otters, environmental pollution, navigational hazards, lost gear, and damage to benthic organisms. However, no major environmental impacts are expected to occur nor have any been identified in over 20 years of State management of this resource.

2. FMP implemented with Secretarial delegation of regulatory authority to the State of Alaska

Under this alternative the Council would adopt and the Assistant Administrator would approve an FMP. The FMP would be implemented by Federal regulations, which delegate management authority to the State of Alaska.

The environmental impacts of this alternative would depend upon the management standards and criteria which were incorporated into the FMP. Because implementation of these standards and criteria could be expected to have the same environmental impacts, whether it took place under State or Federal auspices, the following discussion of the environmental impacts of the alternative management measures being considered for incorporation into the FMP applies to the consideration of the alternative.

3. FMP implemented with regulatory authority retained by the Secretary.

The approval and implementation of a plan would result in the cooperative management of the king crab resource in the FCZ area by the National Marine Fisheries Service, the Alaska Board of Fisheries (Board) and the Council. Regulations would be developed and reviewed by both the Council and the Board of Fisheries, and promulgated by the Assistant Administrator. Enforcement of regulations would be a cooperative effort of the Alaska Department of Public Safety, National Marine Fisheries Service, and U.S. Coast Guard.

Any environmental impacts of implementing an FMP, whether adverse or beneficial, would depend on which management measures are selected. The following discussion compares the environmental impacts of the management alternatives currently under consideration for incorporation in the FMP.

B. Alternatives Concerning The Boundaries Of The Fishery Management Unit

The alternatives that were considered for the boundaries of the fishery management unit were as follows:

1. Western Gulf of Alaska, Bering Sea and Aleutian Islands; and
- *2. Bering Sea and Aleutian Islands.

1. Western Gulf of Alaska, Bering Sea and Aleutian Islands

This alternative would include the FCZ south of the latitude of Cape Douglas and west of 148°40' W. longitude including the current State of Alaska-Kodiak, Alaska Peninsula, Dutch Harbor, Adak, Bristol Bay, and Bering Sea management areas.

This management unit would include all the known harvestable king crab resource of the FCZ off Alaska. The FMP would thus involve all of the environmental impacts of the commercial king crab fishery in the FCZ, discussed below in Chapter V.

2. Bering Sea and Aleutian Islands

Under this alternative the FMP would apply only to the FCZ waters of the Bering Sea, including Bristol Bay, Dutch Harbor, Adak and Norton Sound. This option would exclude the Kodiak and Peninsula king crab fishery. The Kodiak area is generally acknowledged to suffer from depressed stocks and surplus harvesting capacity to a greater extent than the Bering Sea king crab fishery. The Kodiak area would, therefore, not be directly affected by the FMP.

C. Alternatives Concerning The Determination Of Optimum Yield

The alternatives considered for the determining optimum yield (OY) were as follows:

1. season and size limit management;
2. multiple age class management; and
- *3. spawning stock management.

1. Season and size limit management

A closed season would be established to protect the mating and molting stages of the stocks and a minimum size limit set each year. No quota would be set, and the harvest would be unlimited during the open season. The optimum yield would be defined as all crab over a specified size which can be harvested during the open season, generally from August 1st to January 14 for 6½" crabs (carapace width).

This alternative maximizes the yield from the resource and spreads effort out over several months, thus providing the longest possible commercial fishing season while still protecting the stocks during the vulnerable period of their life cycle. This alternative does not consider scheduling the king crab season in relation to other fisheries, to allow optimal seasonal use of vessels, processing plants or work forces, nor does it take into consideration recovery rates, weather conditions or split seasons. It would require some adjustment in the industrial cycle which has been set up to process large volumes of crab in a short time. For example, the harvest of 130 million pounds of red king crab in the southeastern Bering Sea during 1980 took only 41 days.

Allowing unrestricted fishing for crab above a minimum size limit would yield the maximum physical yield. Management and enforcement costs would be reduced. The commercial harvest would, however, be largely dependent on a single recruit class which could cause great annual fluctuations in the harvest. If recruitment failure resulted in a very small harvest, it would have a severe economic impact on vessels, processors, communities, markets and consumers. Another possible disadvantage of selecting this alternative is that at low stock levels there could be a loss in reproductive potential if all

the the older crab, which are believed to be important in reproduction, are removed.

Since this alternative would extend the fishing season to several months, the time period for possible displacement of migratory birds would be increased, although the fishing effort would be less concentrated. The contact time with marine benthos would be increased. The time period of danger to navigation, marine mammals, and other marine resources would be extended.

Also, since this alternative would result in an increase in physical yield over an extended period of time, an increase in environmental pollution may result, although a long time frame would tend to mitigate possible pollution effects.

2. Multiple age class management

The current State management strategy employs fishing seasons, size limits, and exploitation rates to derive OY or harvest quotas. The specific measures can be found in the 1981 Alaska Commercial Shellfish Regulations. This management strategy reserves a portion of each recruit class to carry over into the next year's fishery so that multiple age classes support the fishery. This strategy is designed to moderate extreme fluctuations in harvest levels possible under a recruit only fishery and to enhance the reproductive potential of the stock. Optimum yield would be based on an exploitation rate of 40 percent of the recruit class and 50 percent of the next two older age classes.

Using this alternative, the environmental impacts of the commercial king crab fishery described in Chapter V, below, would probably remain unchanged.

3. Spawning stock management

The management approach of this option, preferred by the Council, would ensure a spawning stock of fertilized females. The minimum female spawning stock for production of MSY is established by analysis of the stock recruitment relationship. The estimation of yield from the stock is calculated using exploitation rates and size limits which vary according to the condition of the stock. The resulting estimate is equal to the Acceptable Biological Catch (ABC). For those stocks at a low level or where data are insufficient, the ABC is set at the catch which maintains full (near 100%) female fertilization. This level currently corresponds to an exploitation rate of .4 and a minimum size limit of 6.5 - 7 inches, depending upon the management area.

The determination of ABC would be made annually by the Council and the Board of Fisheries. The estimation of ABC might be modified depending on the results of analysis of the economic impacts of catches allowed by ABC guidelines. This would result in the OY.

The environmental impacts described in Chapter V would be affected under this option by the size of the fishery permitted in each area. Where spawning stocks are healthy, a more extensive fishery would be authorized, and the environmental impacts may be more pronounced. Where spawning stocks were depressed the authorized fishery and its attendant environmental impact would be reduced.

D. Alternatives Concerning Fishing Seasons

The alternatives that were considered for fishing seasons were as follows:

- *1. retain fishing seasons; and
2. eliminate fishing seasons.

1. Retain fishing seasons

The primary objective of this action is to prevent overfishing, protect industrial investments and conserve the resource. Maintaining the status quo by establishing definite fishing seasons to protect the crab during critical periods (i.e., mating, molting, growing, etc.) in their life cycle is one way of achieving this objective. In addition to these factors weather conditions and the scheduling of king crab seasons in relation to other fisheries would be considered.

Under this alternative, the environmental impacts of the commercial king crab fishery described in Chapter V would probably remain at their current levels.

2. Eliminate fishing seasons

Eliminating closed seasons would allow fishing to occur legally throughout the year, although it is unlikely to actually happen due to seasonal weather conditions and participation of many king crab fishermen in other fisheries. This alternative would allow fishing to occur at critical periods in the crabs life cycle, which could cause higher mortality due to handling and stress.

Since this alternative would extend the fishing season, the time period for possible displacement of migratory birds, the contact time with marine benthos, and the danger to navigation and marine mammals would all be increased.

E. Alternatives Concerning Gear Restrictions

The alternatives that were considered for gear restrictions were as follows:

- *1. legal gear for the commercial king crab fishery is limited to pots (traps); and

2. no gear restrictions.
1. Legal gear for the commercial king crab fishery is limited to pots (traps).

This alternative maintains the status quo. King crab pots are selective in the sense that non-legal crab (i.e., female and undersized male crab) can to some extent be kept out of the gear and, if caught, can be returned to the water unharmed. King crab pots contain a mechanism to terminate their holding ability within six months if not removed from the water. This ensures they will not continue to catch and hold crabs and other organisms if they are lost.

Adoption of this alternative would probably not change the environmental impacts discussed in Chapter V.

2. No gear restrictions

This alternative would allow the use of any type of fishing gear to harvest king crab. During the early development of the king crab fishery tangle nets and otter trawls were used. These gear types were eventually prohibited (1955 and 1960 respectively) because they were non-selective. They take females, softshelled crab and undersized male crab, with capture resulting in injury or deadloss even though they are returned to the sea.

Adoption of this alternative would result in significant damage to both the king crab resource and many other benthic populations. The non-selectivity of the gear would have an adverse impact on the entire fishery. The environmental impacts discussed in Chapter V would be much more severe than they currently are in the Bering Sea and Aleutian Islands area.

F. Alternatives Concerning Gear Placement and Storage

The alternatives that were considered for gear placement and storage were as follows:

- *1. During the closed season for king crab in any given statistical reporting area or any waters closed to king crab fishing, king crab pots must be either removed from the water or stored in designated areas, except that gear may be allowed on the fishing grounds for up to seven days prior to the season opening and up to seven days following a closure of the statistical reporting area if deemed desirable.
 2. No king crab pots could remain on the fishing grounds after the closure of the season.
1. During the closed season for king crab in any given statistical reporting area or any waters closed to king crab fishing, king crab pots must be either removed from the water or stored in designated areas, except that gear may be allowed on the fishing grounds for up to seven days prior to the season opening and up to seven days following a closure of the statistical reporting area if deemed necessary.

The need for regulations allowing fishing gear to be placed on the grounds prior to fishing and/or to remain on the grounds after season closure will be determined by examining the biological impacts on target and non-target species; enforcement problems and costs borne by the public versus those borne by the industry; possible gear conflicts; and the availability of shoreside loading/unloading facilities and at sea storage areas.

Gear placement prior to and after a fishing season would be limited to not more than seven days before and after a season.

2. No king crab pots could remain on the fishing grounds after the close of the season.

Smaller vessels that take several trips to remove their gear from the grounds would have to start reducing the number of deployed pots well before the end of the season. This alternative would mitigate the environmental impacts of the commercial king crab fishery as described in Chapter V.

G. Alternatives Concerning Gear Storage

The alternatives for gear storage are as follows:

- *1. King crab gear may be stored anywhere in 25 fathoms of water or less except in the Adak registration area where gear may be stored in 30 fathoms or less. Bait and bait containers must be removed and doors locked open. Additionally, two crab pot storage areas in water deeper than 25 fathoms are provided for in the Bering Sea;
 2. require king crab gear to be removed from the water during closed fishing periods; and
 3. provide for pot storage on the fishing grounds.
1. King crab gear may be stored anywhere in 25 fathoms of water or less except in the Adak registration area where gear may be stored in 30 fathoms or less. Bait and bait containers must be removed and doors locked open. Additionally, two crab pot storage areas in water deeper than 25 fathoms are provided for in the Bering Sea.

Under current State of Alaska regulations, crab gear may be stored anywhere in 25 fathoms of water or less except in the Adak registration area where gear may be stored in 30 fathoms or less due to a lack of shallower water. Bait and bait containers must be removed and doors locked open. They also provide two crab pot storage areas in waters generally deeper than 25 fathoms. They are: (1) north of 57°30' N. lat., south of 58°30' N. lat., west of 164° W. long., and

east of 166° W. long.; and (2) north of 61° N. lat., south of 61°30' N. lat., west of 169° W. long., and east of 169°30' W. long.

This alternative maintains the status quo. It would continue to allow pots to be stored at sea, having an unknown effect on the benthic community. If any of the pots are stored in a fishing condition, there could be some incidental mortality of sea otters which are commonly found in waters less than 25 fathoms, and perhaps of other marine resources. Water storage entails a possibility of gear loss and can be a navigational hazard if gear is left in shipping lanes, anchorages, or fishing areas for other types of gear.

2. Require king crab gear to be removed from the water during closed fishing periods

Dry land storage has the highest direct cost to the fisherman of any type of gear storage although it does eliminate the risk of gear loss with water storage. Any possible impact on the benthic community or on sea otters would be eliminated under this alternative. Lost gear and navigational hazards would also be eliminated.

3. Provide for pot storage on the fishing grounds

This alternative would reduce the costs of moving gear to storage areas, but would increase enforcement costs to the public and encourage covert fishing before the start of the fishing season, risking biological harm to the king crab resource. The impact of prolonged storage of hundreds of thousands of king crab pots on the benthos in active fishing areas has not been established. This option would create additional navigational risks and possibly preempt fishing grounds needed by other fisheries using different forms of gear.

H. Alternatives Concerning Vessel Tank Inspection

Two alternatives concerning vessel tank inspection were considered:

- *1. A vessel intending to fish crab must have a tank inspection within five days prior to a season opening or any time during the open season prior to fishing in a given area to ensure that no king crab are on board.
 2. No vessel tank inspection required prior to fishing for king crab.
1. A vessel intending to fish crab must have a tank inspection within five days prior to a season opening or any time during the open season prior to fishing in a given area to ensure that no king crab are on board.

Vessel tank inspections help assure an equal start for all participants at the beginning of the season. By reducing covert king crab fishing, this alternative would probably mitigate the environmental impacts described in Chapter V. Tank inspections also provide fishery managers with useful information for managing the fishery. Managers rely on in-season catch statistics in order to project harvest rates. Vessel tank inspections are necessary to prevent catches in one registration area from being delivered to another registration area. This alternative does create an additional economic impact on vessels by increasing their travel costs.

2. No vessel tank inspection required prior to fishing for king crab

Eliminating the vessel tank inspection requirement should reduce the travel cost for vessels, but useful catch information regarding the fleet would not be readily available to the fishery managers. This alternative would facilitate covert fishing prior to the season opening, thereby risking biological harm to the king crab resource and possibly increasing the environmental impacts described in Chapter V.

I. Alternatives Concerning Sex Restrictions

The alternatives concerning sex restrictions are as follows:

1. No commercial harvest of female crabs; and
- *2. Allow a percentage of females to be taken if a surplus is determined to be available. The surplus would be dependent on the amount of crabs above the threshold amount used in the spawning stock calculation of ABC.

1. No commercial harvest of female crabs

Harvesting only mature male crabs as currently required by the Board is an effective means of protecting the reproductivity of the king crab resource. The data base to support or reject an intensive harvest of female crabs is poor.

The males-only policy of the Board may result in a under-harvesting during periods of healthy stock conditions. Female crabs were harvested by foreign fleets in the 1950's with unknown impacts. Female crabs are smaller and produce less meat in proportion to total weight than male crabs, and thus are of limited interest to U.S. processors. Where stock assessments are incomplete or poor, protection of female crabs is plainly appropriate.

Adoption of this alternative would probably not affect the severity of the environmental impacts discussed in Chapter V.

2. Allow a percentage of female crabs to be taken if a surplus is determined to be available. The surplus would be dependent on the amount of crabs above the threshold amount used in the spawning stock calculation of ABC.

This would increase the quantity of legally exploitable crabs. Since females are smaller than males, higher processing costs and a lower demand may cause an ex-vessel price reduction. Increased

catches could result in increased environmental pollution caused by dumping a larger volume of crab processing wastes. However, the total amount is small in comparison to the entire ecosystem and the net effect is probably negligible.

J. Alternatives Concerning Registration Areas

The options that were considered for registration areas were as follows:

- *1. Dutch Harbor and Bristol Bay are exclusive registration areas under current State regulations. A vessel may register for only one exclusive area during any one fishing season. All vessels may freely register for any non-exclusive registration area; and
 2. no registration system.
1. Dutch Harbor and Bristol Bay are exclusive registration areas under current State regulations. A vessel may register for only one exclusive area during any one fishing season. All vessels may freely register for any non-exclusive registration area.

Registration by statistical areas which correspond approximately to stock boundaries provides the fisheries manager with information needed to determine levels of fishing effort and to project fishing rates prior to the season opening. The use of exclusive and non-exclusive area registration provides for a measure of protection for local fleets and some stability in all sectors of the industry, and encourages exploration in new areas. As a result of this shift in fishing effort, the environmental impacts discussed in Chapter V are likely to be mitigated in the exclusive registration areas and exacerbated in non-exclusive areas.

2. No registration system

This alternative could result in concentrated effort on local crab populations by very large fleets shifting from area to area as season or availability dictate with an adverse impact on local industry elements. Pre-season effort information would not be available to fisheries managers so harvest efforts would be much more difficult to make. Overharvest or conversely, underharvests are much more likely to occur under those conditions. The environmental impacts discussed in Chapter V would be increased over current levels in the existing exclusive registration areas.

CHAPTER IV

DESCRIPTION OF THE AFFECTED ENVIRONMENT

The area that is expected to be affected by a king crab fishery in the Bering Sea and off the Aleutian Islands, consists of: (1) the Bering Sea, especially the eastern Bering Sea which includes Bristol Bay and Norton Sound; and (2) the Aleutian Islands and the waters of the Pacific Ocean and Bering Sea immediately adjacent thereto. The environment of this area, and the environmental impacts upon it resulting from the conduct of a king crab fishery, are determined by the distinctive physical and biological characteristics of the Bering Sea and the western Gulf of Alaska.

International North Pacific Fisheries Commission annual reports and associated documentation provide a summary of oceanographic research conducted by the United States, Canada, and Japan in the waters that are inhabited by king crabs. The series entitled Soviet Investigations in the Northeast Pacific (Moiseev 1964) provides a fairly complete analysis of the Bering Sea as a habitat. A more recent comprehensive review of the Bering Sea environment is given in Oceanography of the Bering Sea (Hood and Kelly 1974). McLain and Favorite (1976) describe recent anomalous climatic conditions in the Bering Sea and discuss the possible effects on fisheries. Bright et al. (1960) and Trasky et al. (1977) have summarized environmental data for the Kachemak Bay area of Cook Inlet.

Pereyra et al. (1976) and Wolotira et al. (1977) describe the baseline biological surveys conducted as part of the Bureau of Land Management/NOAA Outer Continental Shelf Environmental Assessment Program.

The Bering Sea is located between approximately 160° east longitude and 160° west longitude; and between approximately 52° north latitude and 65° north latitude. It is bounded on the east by the Alaska mainland; on the west by the Siberia mainland and the Kamchatka Peninsula; on the south by the Alaska Peninsula, the Aleutian Islands, and the Commander Islands; and on the north by the Bering Strait.

The area of the Bering Sea is about 2.3 million square kilometers. Of this area, 44 percent consists of continental shelf; 13 percent of continental slope; and 43 percent of deepwater basin. The continental shelf of the northeastern Bering Sea is one of the largest in the world. It is extremely smooth and has a gentle uniform gradient. The continental slope bordering this shelf is abrupt and very steep, and is scored with valleys and large submarine canyons. On the south, the Aleutian/Commander Islands Arc forms a partial barrier between the Bering Sea and the Pacific Ocean. This chain consists of more than 150 islands, and it is about 2,260 kilometers long. The continental shelf of the Aleutians is narrow and discontinuous, with a breadth ranging between 4 kilometers and 46 kilometers. The broader parts of this shelf are in the eastern Aleutians. The Aleutian Trench, a large canyon stretching from the central Gulf of Alaska to the Kamchatka Peninsula, adjoins the Aleutian/Commander chain on the south.

Bowers Bank is a submerged ridge extending to the northwest from the westcentral Aleutians into the Bering Sea. It is about 550 kilometers long and 75 to 110 kilometers wide, increasing in width as it approaches the continental shelf of the Aleutians. The summit of the ridge is 150 to 200 meters deep in the south, 600 to 700 meters deep in the center, and 800 to 1,000 meters deep in the north.

Aside from the Aleutians and Commanders, the Bering Sea has relatively few islands. The very small Pribilof and St. Matthews Island groups lie adjacent to the continental slope of the northeastern Bering Sea. Nunivak Island lies just off the Alaska mainland between the Yukon and Kuskokwim deltas. St. Lawrence Island lies in the northern part of the Bering Sea, between Norton Sound and the Chukchi Peninsula.

Water flows into the Bering Sea from the Pacific Ocean and from the rivers and surface of the adjoining land areas. Water moves from the Bering Sea into the Arctic Ocean through the Bering Strait. Thus, there is a net movement of water northward throughout the Bering Sea. On the eastern Bering Sea continental shelf, the dominant movement of water involves water entering the Bering Sea from the Pacific in the area of Unimak Pass. This water moves northward to St. Matthews Island and eastward toward Bristol Bay. Dividing

near St. Matthews Island, the northward stream reunites and passes through the Bering Strait.

Except for the southernmost part, which is in the temperate zone, the Bering Sea has a subarctic climate. It experiences moderate to strong atmospheric pressure gradients, and is subject to numerous storms. Pack ice covers most of the continental shelf of the northeastern Bering Sea during winter and spring, intruding into the northern Bering Sea in November and reaching its maximum extent in late March, when the ice edge may be south of the Pribilof Islands and as far west as Unimak Island. The more southerly area of the continental shelf between the Pribilofs and Unimak Island, and the deepwater basin area, are usually ice free throughout the year because of the intrusion of warmer water from the Pacific. In April and May, the ice begins to retreat, and the Bering Sea is usually free of ice by early summer.

Although the responsible natural processes are not completely understood, the physical features of the Bering Sea that have just been described combine to create conditions that are very favorable for biological production. During the cold winter months, there is a buildup of nutrients. The mixing of Pacific and Bering Sea water produces an upwelling of these nutrients along the Aleutian Chain, and the broad continental shelf of the northeastern Bering Sea provides a favorable habitat for plants and animals that consume those nutrients either directly or indirectly through a complex food web. As a result, the Bering Sea supports some of the largest fish, marine mammal, and bird populations in the world.

The red king crab is the most widespread and abundant of the three commercial species. It is found from Vancouver Island, British Columbia to Norton Sound in the Bering Sea. Moderate numbers are found in Southeast Alaska and Prince William Sound. King crab are abundant in the Gulf of Alaska and the Bering Sea where major fisheries exist at Cook Inlet, Kodiak Island, South Alaska Peninsula, Aleutian Islands, and the southeastern Bering Sea at depths of 100 fathoms or less.

The blue king crab is the second-most abundant species. It has a more limited distribution. Populations are found in the eastern Bering Sea, in Herendeen

Bay on the Alaska Peninsula, Olga Bay on Kodiak Island, and in Icy Strait, Auke Bay and Gambier Bay in Southeast Alaska (Wallace et al., 1949).

The brown or golden king crab is the least abundant of the commercially important king crab in Alaskan waters. It characteristically inhabits deep water (greater than 100 fathoms) along the continental slopes of the North Pacific Ocean and the Bering Sea. This crab enters the commercial catch in limited quantity in the State of Alaska southeastern management area which encompasses all waters surrounding the Alexander Archipelago and the outer coast. Little is known of its life history.

The distribution of the red king crab in the southeastern Bering Sea is related to the bottom temperature. Data compiled over a five-year period and analyzed by Stinson (1975) indicate that males inhabit a temperature range from 0 to 5.5° C with a maximum abundance at 1.5° C during summer months. Adult females inhabit the same temperature range with maximum abundance between 3° and 5° C. King crab have been found in depths of 200 fm or more although the majority of the commercial fishery is taken from depths less than 150 fm. Juveniles are abundant in inshore waters and in relatively shallow (less than 75 fm) waters offshore. Most king crab are harvested from soft substrates of mud or sand. King crab are unable to tolerate wide variations insalinity (stenohaline) and are adapted to cold waters, generally 0° - 10° C.

Although king crab are found in most Alaskan waters, tagging evidence demonstrates that they belong to several stocks rather than one population. During the course of tagging studies in the southeastern Bering Sea, thousands of king crab have been tagged but none have been recovered in the Gulf of Alaska (Simpson and Shippen 1968). Moreover, Hayes and Montgomery (1963) reported that crab marked in the Shumagin Islands area had never been reported in either the Bering Sea or Kodiak Island fisheries. In addition, crab tagged in the Kodiak Island fishery have not been recovered in other fisheries (Powell and Reynolds 1965).

Very little is known about the interactions of king crab with their physical and biotic environments. Most of the information about king crab pertains to natural history or descriptive bionomics. Knowledge of the functional aspects (intra-and interspecific relationships) is still rudimentary.

A high mortality occurs during the larval stages due to plankton feeding animals. Juveniles, because of their small size, are susceptible to predation by fish and large invertebrates. Adult crab are also particularly susceptible to predation when they are in the soft-shelled stage. The only animal known to prey upon larger king crab for much of their diet is the halibut.

The food and feeding habits of king crab vary with age, geographical distribution, and the availability of a particular food source. Adult king crab are benthic predators (Fenuik 1945). The food web of the Kodiak king crab has been constructed by scientists at the University of Alaska (Feder and Jewett, 1977). Larval crab are planktonic feeders subsisting on phytoplankton and smaller zooplankton. Upon metamorphosis to the benthic state, they utilize bottom species and organic detritus. Bright (1967), in analyzing the stomach contents of king crab larvae, found that diatoms were almost exclusively utilized.

Large populations of marine mammals are present in the Bering Sea. These marine mammals feed on various combinations of fish and other marine species. In general, there is minimal interaction between king crab and marine mammals; the major exceptions are the bearded seal, Erignathus barbatus and the sea otter, Enhydra lutris.

Unlike most seals, which are pelagic feeders, the bearded seal is a benthic feeder. Tanner crab and, to a lesser extent, king crab constitute part of the diet. The king crab taken by the bearded seal are generally smaller than the commercially legal crab so direct competition with the commercial fishery is avoided, though the commercial fishery is deprived of potential harvests. The degree of predation upon crab by bearded seals has not been quantified.

The sea otter feeds upon a wide variety of fish, sea urchins, clams, mussels, crabs, and octopus. Sea otters may take any size of king crab including legal-sized crab. The frequency and significance of such predation is unknown. There has not been any documentation of intense feeding of sea otters upon king crab. Sea otters regularly dive to 25 fathoms in search of food and have been recorded at depths as great as 50 fathoms. There is the potential for conflicts between fishermen and sea otters when crab pots are set in

relatively shallow water near shore. The incidence of sea otter mortality due to drowning in crab pots is rare, but it is a possible occurrence where sea otters and crab fishing areas overlap.

Indirect interaction between the pelagic-feeding seals and king crab also occurs, in the sense that king crab larvae constitute part of the zooplankton utilized by the forage fish, such as herring and capelin, which are preyed upon by these seals. The contribution of king crab larvae to the diets of these forage fish, the subsequent impact of this predation on the population of adult king crab, and any role played by seals in regulating the numbers of these fishes is unknown at this time. Subsequent research will have to investigate the significance of the interactions between these species.

The other marine mammals present in the waters off Alaska (whales, porpoises, sea lion, walrus, and polar bear) do not interact with king crab or the king crab fishery except inasmuch as they all co-exist in the same waters.

The 1980 human population of Alaska was estimated to be 481,000 according to the Alaska Department of Labor. Of this total, 39,974 individuals (civilian and military) were residents of the Bering Sea, Alaska Peninsula, and Kodiak. Along the northern coast of Norton Sound, these people are predominantly Inupiat Eskimos. From Norton Sound to Bristol Bay and on Saint Lawrence Island, most of the natives are Yup'ik Eskimos. The Pribilof Islands, and Aleutian Islands are inhabited predominantly by Aleuts. While various features of the cash economy prevailing in the rest of the United States have made inroads, all of these native people continue to depend heavily, as they have for centuries, upon the direct subsistence harvest of the other forms of life that are found in the Bering Sea and the Aleutians. While these are not, in general, seafaring peoples, they have been able to take advantage of the fact that many of the animals upon which they depend are accessible at various times of the year in coastal areas. Throughout the recorded history of the region, they have been particularly dependent upon salmon, herring, halibut, seals, ducks, geese, and in the case of the Inupiat and Saint Lawrence Island Yup'ik, whales. The entire culture of each of these peoples is based upon the pursuit, capture, and consumption of these animals, without which human life in the region would, until recent years, have been totally impossible. The

hunting of these animals thus fulfills deep seated spiritual and social, as well as physical, needs of the people of the region, needs which purported substitutes offered by the gradually encroaching Western culture have consistently proved unable to satisfy completely.

There is no licensed recreational fishery for king crab. The taking of king crab for personal use is permitted under subsistence fishery regulations. Though the subsistence harvest of king crab may be significant to those individuals who participate in the fishery, the size of the subsistence harvest is negligible compared to the commercial harvest. Except for the Bering Sea area (Norton Sound), catch and effort records are not kept for the subsistence fishery. The subsistence catch in the Bering Sea may range between 20-25 thousand crab per season.

In the northern portion of the Bering Sea area, subsistence herring and crab fishermen have expressed some concern with the developing commercial king crab fishery. They feel that the bait herring fishery, the primary source of crab bait, will compete with subsistence and the developing (through the ice) commercial king crab fishery.

The commercial fishery is a dramatic perturbation (130 million pounds of red and blue king crab in 1980 from the Southeastern Bering Sea alone) on the crab resource and the community of which it is a part.

CHAPTER V

ENVIRONMENTAL IMPACTS OF PROPOSED MANAGEMENT MEASURE ALTERNATIVES

A. Description Of Impacts

Like other human activities, the harvest of king crab in the Bering Sea and Aleutian Islands has impacts upon the natural environment. These impacts can vary depending upon the particular management alternatives selected. The impacts of the king crab fishery in these regions upon the natural environment include:

1. the incidental harvest of other marine resources;
2. direct stress to marine mammals and birds;
3. environmental pollution resulting from the dumping at sea by catcher-processor fishing vessels and by shore based processing facilities of crab processing and other wastes;
4. crab pots as a navigational hazard;
5. stress to biota caused by lost gear;
6. damage to benthic organisms caused by gear placement; and
7. handling mortality.

Each of these impacts will now be discussed in detail. This discussion forms the basis for the analysis and comparison of the environmental impacts of the proposed management alternatives which were presented in Chapter III. This description of the impacts of king crab commercial fishing operations in the Bering Sea and Aleutian Islands accounts for adverse environmental impacts that cannot be avoided if this fishery is allowed; by discussions of any irretrievable commitments of resources which would be involved if such a crab fishery were allowed and of the relationship between the short-term uses of marine resources that are involved in king crab operations; and the maintenance of the long-term productivity of the natural environment of the Bering Sea and Aleutian Islands.

B. Direct Impacts Of King Crab Fishing In The Bering Sea And Aleutian Islands Upon The Natural Environment.

1. Incidental harvest of other marine resources

No statistics are available on the by-catches of domestic commercial crab fishing in the Bering Sea. However, information from research cruises can provide some insight into the problem. During the July 1978 Kodiak area crab survey, 895 pots were fished. The catch composition was 59,720 king crab, 7,522 Tanner crab, 2,909 cod, 66 sculpin, 212 halibut, 25 octopus as well as numerous starfish and snails.

If caught during the commercial fishery, the tanner crabs, sculpins, octopi, starfish, and snails most likely could be returned to the sea unharmed. Cod mortality would depend on the depth of capture and pot retrieval speed. Halibut mortality probably would approach 100% if the halibut remained in the crab pots for more than 2 days. Studies by ADF&G around Kodiak and Cook Inlet have shown that 62% to 85% of incidentally caught halibut will survive if the crab pots are fished, or soaked, for less than 24 hours. The International Pacific Halibut Commission (IPHC) has found that about 80% of the halibut taken in king crab pots which have been soaked about 18 hours were in good or excellent condition. However, when finfish are captured in pots, fishermen will often use them for bait, thus increasing the mortality of incidentally caught finfish.

The IPHC took ADF&G incidental halibut catches from summer pot index surveys and extrapolated the data to the commercial fishery. Although this methodology may be rather crude, it does tend to support the thesis that incidental catch is significant. Based on their data, it is estimated that the incidental catch of halibut in commercial king crab pots for 1974-79 in the Bering Sea and Gulf of Alaska west of Cape Spencer was equal to about 25% of the total catch taken by the commercial halibut fishery in these areas. It is emphasized that in order to have accurate estimates of the

incidental catch of halibut in king crab pots, catch data is needed from the commercial fishery.

2. Direct stress to marine mammals and birds

Sea otters may take any size king crab including legal-sized crab. The frequency and significance of such predation is unknown. There is the potential for conflicts between fishermen and sea otters when crab pots are set in relatively shallow water near shore where sea otters feed. Sea otter mortality due to drowning in crab pots is rare, but it is a possible occurrence where sea otters and crab fishing areas overlap.

King crab harvesting operations may cause marine birds, including those protected by the Migratory Bird Treaty Act, to avoid areas that they might otherwise frequent. Such displacement of these birds does not appear to be a prohibited taking for purposes of Migratory Bird Treaty Act, but its long-term effect on them should be the subject of further study.

3. Environmental pollution resulting from the dumping into the sea by catcher-processor fishing vessels and by shore-based processing facilities of crab processing and other wastes

Commercial king crab operations in the Bering Sea and Aleutian Islands have resulted in the discharge into the environment of a variety of solid and liquid wastes. Because some of the vessels engaged in this fishery have processing capability, crab processing wastes are routinely discharged. Since these wastes are composed primarily of the discarded remains of harvested crab, they are not believed to be harmful to the ecosystem and, in fact, provide nutrients for the food web, although their amount is so small in comparison to the ecosystem of the region as a whole that the net effect of their discharge is probably negligible. Sewage and other organic wastes are also discharged in the course of commercial king crab operations, also in amounts that are believed to be too small

to significantly affect the ecosystem. However, dead loss and dumping of crab are local problems in ports such as Dutch Harbor where a high volume of crab is delivered during short periods when processing capacity is over taxed. Crabs are highly sensitive to water quality and the passage of a live tank boat through an area of poor water quality or of low salinity will cause heavy mortality of the crabs held in the live tanks of the fishing boat. It is not known how pollution impacts on king crab.

Properly conducted, king crab operations should not result in the discharge of toxic wastes into the environment. One constant hazard of commercial fishing, as of any other modern seaborne operation, is the discharge of petroleum products used as fuel as a result of accidents. While such discharges would not approach the magnitude of the massive oil spills that result from the wreck of an oil tanker, they can and have had significant short-term environmental effects when they occur near the coastline. Responsibility for avoiding and remedying such discharges and the accidents that lead to them is vested by law in the United States Coast Guard and the Environmental Protection Agency.

4. Crab pots as a navigational hazard

Crab pots which are stored or fishing present a navigational hazard. Pot storage areas are designated Statewide in waters generally less than 25 fathoms. In addition, a large Bering Sea pot storage area in water deeper than 25 fathoms is currently in effect.

Periodic reports of navigation problems caused by crab gear appear in the news media. Preemption of shrimp fishing grounds by crab gear has also been reported. An accurate estimate of the magnitude of these problems or their frequency cannot be made on the basis of current data.

5. Stress to biota caused by lost gear

Lost gear which continues to fish could have an adverse impact on the king crab resource and other marine resources. However, this adverse impact should be reduced since biodegradable escape panels are presently required by the State on all king crab pots.

6. Damage to benthic organisms due to gear placement

The impact of hundreds of thousands of king crab pots on benthic communities is unknown. The impact on king crab populations may be significant when many pots are placed in areas of dense crab schools. The above impacts need to be studied.

7. Handling mortality

The actual extent of mortality caused by catching and the subsequent sorting and return to the sea of small male and female crab is unknown. The impact on king crab populations may be significant during periods of increased fishing intensity. The above impacts require study.

C. Irreversible Or Irretrievable Commitments Of Resources Which Would Be Involved If Commercial King Crab Operations Are Permitted In The Bering Sea And Aleutian Islands

The proposed action requires considerable cooperation among the agencies responsible for management and enforcement in the territorial sea and fishery conservation zone waters to insure that the management measures are reviewed and implemented. There will be no irretrievable nor irreversible commitment of resources if this action is implemented. No irreversible commitment of financial resources is required by the proposed action, although recommendations have been made for further research. Short-term irretrievable commitments of funds for monitoring the fisheries will be necessary by the State of Alaska and the Federal Government.

D. Relationships Between Short-Term Uses Of Marine Resources Which Are Involved In Commercial King Crab Operations And The Maintenance Of The Long-Term Productivity Of The Natural Environment Of The Bering Sea And Aleutian Islands.

The objectives of the fishery management plan require the determination of a harvest level that will ensure the continuing viability of the stocks to support a high annual harvest. Annual variations in recruitment and availability of crabs require a flexible system to review the status of stocks, and catch per unit of effort in order to achieve the maximum long-term yield or optimum yield from the stock. Commercial king crab operations that are under active consideration for authorization under an FMP are not expected to significantly affect the long-term productivity of the environment of the Bering Sea. Even if an FMP is not immediately implemented, the Council would be obliged to review the fishery periodically to determine that its long-term productivity is being maintained.

E. Relationships Between The Proposed Action And The Objectives Of Federal, Regional, State and Local Governments' Plans And Policies For The Affected Area.

1. Coastal Zone Management Act

According to the requirements of the Coastal Zone Management Act of 1972 (CZMA), the State of Alaska submitted a Coastal Management Program and an Environmental Impact Statement which were approved by the NOAA Assistant Administrator for Coastal Zone Management in July 1979. CZMA Section 307 states that all major federal actions shall be made consistent to the maximum extent practicable with the State's approved coastal management program. A determination of the consistency of the FMP with the Alaska Coastal Management Program is being submitted to the Alaska Office of Coastal Management pursuant to this requirement.

2. State of Alaska Board of Fisheries

The Alaska Board of Fisheries is responsible for the management and regulation of the fisheries of Alaska. The role of the Board of Fisheries in the management of the king crab fishery is discussed in Section 9.2 in the Appendices of the fishery management plan. The draft FMP has incorporated a review of the historic and current management strategy of the Board and proposes a coordinated management process based on a cooperative policy whereby the biological assessments and public input would be reviewed simultaneously by both the Council and Board. In addition, the draft FMP proposes the use of a single federal "turnover" regulation which will delegate management authority to the State in order to avoid unnecessary duplication.

3. Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 established a moratorium on the taking, harassing or killing of marine mammals except under permits issued by NMFS or the Fish and Wildlife Service.

4. Endangered Species Act

According to the requirements of the Endangered Species Act, a determination must be made whether the proposed action of implementation of the fishery management plan would jeopardize the continued existence of any endangered species or would result in the destruction or adverse modification of a critical habitat of such species. Formal consultations, as specified by Section 7 of the Endangered Species Act, have been requested with the National Marine Fisheries Service.

F. Consultation And Coordination With Others

The king crab fishery management plan drafting team consulted extensively with representatives of the Alaska Department of Fish and Game, National

Marine Fisheries Service, members of the Scientific and Statistical Committee of the North Pacific Fishery Management Council, and members of the academic and industrial community.

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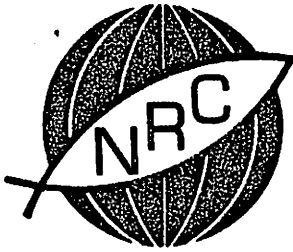
Comments Requested

Comments on this statement are requested of all interested persons and agencies, including:

Alaska Department of Fish and Game
Alaska Board of Fisheries
Alaska Board of Game
Bureau of Land Management
Alaska Office of Coastal Management
Commercial Fisheries Entry Commission
U.S. Department of Commerce
U.S. Department of the Interior
U.S. Department of State
Environmental Organizations
U.S. Environmental Protection Agency
Fishermen's Associations
Marine Mammal Commission
Native Alaskan Associations and Corporations
North Pacific Fishery Management Council
Pacific Marine Fisheries Commission
Processors and Seafood Industry
State Clearinghouses
U.S. Army Corps of Engineers
U.S. Coast Guard
U.S. Fish and Wildlife Service

Hearings

Public hearings on the DEIS are scheduled in Seattle and Anchorage. Time and location will be broadcasted through local media, newspapers, radio, etc.



NATURAL RESOURCES CONSULTANTS

4055 21st Avenue West • Seattle, Washington 98199, U.S.A. • (206) 285-3480

A Study Proposal

September 1981

A Review of the Management Process, Strategies and Procedures of the King Crab Fishery

The king crab fishery is one of the most important fishing industries in Alaska, ranking second to salmon. Its ex-vessel value in 1979 was 149 million dollars. The fishing, which is conducted in both State and Federal jurisdictions is currently managed by the State of Alaska, although efforts to evolve a Federal management plan under the NPFMC have been underway for several years. Statistical and biological information used to determine the status of the stocks and biological attributes of king crabs and their populations are compiled and analyzed by the Alaska Department of Fish and Game and the National Marine Fisheries Service. These data, along with recommendations provided by user groups, are used by the Alaska Board of Fisheries to establish management measures designed to perpetuate the resources and maintain economic stability in the industry. The same data sources and institutional support is likely to be provided to the Council, if an FMP is adopted for the king crab fishery.

The current management process relies to a significant degree on resource surveys conducted by NMFS or ADF&G analysis of catch data, test fishing, etc., to establish levels of crab. These data sources are synthesized by the agencies involved and passed on to the Alaska Board of Fisheries and NPFMC. Timing of the data outputs is frequently critical in terms of the data's utility regarding management decisions and the review capacity of the industry.

The results of the surveys, analyses and strategies employed have major economic impact on the fishermen, processors and consumers.

Proposal

NRC proposes to undertake a careful analysis of:

- 1) The current management decision process
- 2) Survey methodology.
- 3) Data synthesis techniques.
- 4) Nature and availability of outputs.
- 5) Current management techniques in relation to the biological attributes of the resources, the influence of environmental factors on sampling schedules, the availability of resources, the mortality associated with sorting, yields and size limits, and stock recruitment.
- 6) Stability of yields.

The study will conclude with recommendations to improve king crab management.

Expected output of the study includes:

1. A decision flow chart
2. An analysis of the sampling survey system
3. An analysis of resource status techniques
4. An analytical evaluation of procedures
5. An analysis from size distribution data of sorting mortality.
6. A classification of usable outputs for decision-making documents
7. An analysis of regulatory strategies
8. Recommendations

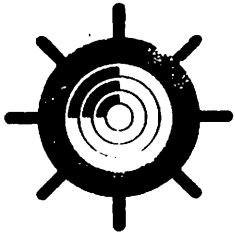
The study will not deal with the issue of who should manage the fishery, but will be confined to an appraisal of collected information, its reliability as a management tool, current management strategies (size, sex, season, etc.), and recommended alternatives.

Timing

The study would begin in November 1981, and a report would be submitted to the sponsor by April 1, 1982.

Proposed Budget

Professional fee	\$14,000
Computer Support	2,000
Travel and Other	<u>1,000</u>
Total	\$17,000



**North Pacific
Fishing Vessel
Owners' Association**

September 17, 1981

Milstead Zahn
Executive Director
Alaska Board of Fisheries
Subport Building
Juneau, Alaska 99801

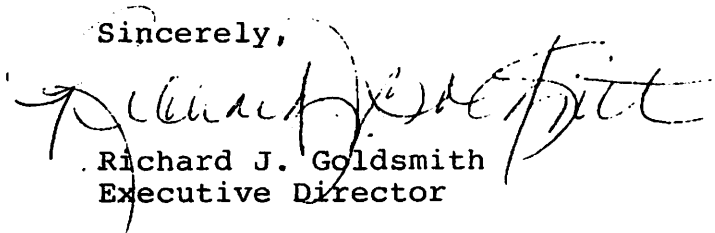
Dear Mr. Zahn:

The North Pacific Fishing Vessel Owners' Association proposes that the State of Alaska's regulations governing the herring fishery (5 AAC Chapter 27) be amended to allow a high seas trawl fishery to take place in the central Bering Sea during the first three months of 1982. This trawl fishery should be allowed to harvest approximately 5,800 tons of herring from January 1 through March 31, and conduct its operations between 54° North latitude and 62° North latitude, and west of 162° West longitude.

The Alaska Department of Fish and Game (ADF&G) in its preliminary report for 1981 on Pacific herring in the eastern Bering Sea recognizes that the abundance of herring in all areas appears to be much greater in 1981 than in the previous year. When data generated by ADF&G abundance estimates for 1981 and the 1981 sac roe fishery are used in the formula set out in the North Pacific Council's Bering-Chukchi Sea Herring Management Plan (a plan developed in cooperation with ADF&G and the Board), a 14% exploitation rate is appropriate for these stocks. Consequently, about 5,800 tons of herring are biologically available for harvest before the 1982 sac roe fishery begins.

Domestic fishermen believe that a viable offshore fishery for herring--which will offer economic alternatives to the very intensive, single-market sac roe fishery--can be developed. The Board's endorsement of this fishery will facilitate its development and provide resource managers with more (and much needed) information on herring behavior, abundance and interactions with other fishery resources.

Sincerely,


Richard J. Goldsmith
Executive Director



**North Pacific
Fishing Vessel
Owners' Association**

September 21, 1981

Clement V. Tillion
Chairman
North Pacific Fishery Management Council
P.O. Box 3136 DT
Anchorage, Alaska 99510

Dear Mr. Tillion:

This letter contains the Association's observations on Draft #11 of the King Crab Plan (dated August 15, 1981). Since Draft #11 does not differ markedly from other versions of the plan prepared after September 15, 1980, these comments, generally, will not go into lengthy recitation of our initial and continued objections to the Council's proposed actions; the Association will only speak to those provisions of Draft #11 which vary from earlier versions. However, after reading this letter, one should then reread the Association's letters of December 6, 1980, March 23, 1981, May 18, 1981, and May 28, 1981 and consider them to be part of these comments; those observations are still valid in light of the course of action which the Council continues to pursue for the management of the king crab fishery.

GENERAL OBSERVATIONS

Before addressing specific sections of Draft #11, there are some general comments which the Association would like to make about the Council's proposed management scheme for the king crab fishery.

Delegation To The State Is Illegal

As it has indicated in its earlier comments, the Association believes that a delegation of the Secretary of Commerce's regulatory powers to the Alaska Board of Fisheries is not a legal option under the Magnuson Fishery Conservation and Management Act (MFCMA); there is no authority in the MFCMA for such a delegation. Also, if the Framework FMP were adopted as written, the Board of Fisheries would have such wide latitude in establishing regulations that the intent and provisions of the Magnuson Act would be undermined. This result would not be changed even if, as the Council has proposed, the Secretary were to withhold giving some of his regulatory powers to the Board.

The State Regulatory System Favors Residents

By using the Magnuson Act to place the Board of Fisheries in the position where it is still able to determine the extent of the regulations for the king crab fishery, the Council only perpetuates a system which has been set up solely for the benefit of Alaska and its residents. As we have specifically pointed out in our earlier comments, the allegiances of the Board and its local advisory committees (which have not only the power to advise the Board, but also to close local fisheries) are--by law--pledged to the State. Only Alaska residents can serve on these two bodies; consequently, non-residents cannot enter these inner sanctums and have a meaningful voice in determining how the offshore fleets will be able to harvest the king crab resource.

The Board Has Not Followed The Framework

In view of the failures of the Board of Fisheries to follow the Framework's criteria for promulgating regulations for the Bering Sea king crab fishery, the Association is at a loss to understand why the Council wishes the Board to continue to have the central role in managing this fishery. As we indicated in our May 18, 1981 letter to the Council, the Board at its March meeting breached the Joint Statement of Principles by ignoring the regulation setting standards articulated in the Framework. More recently, the Board at its September meeting in Kodiak again ignored the Framework and set an exploitation rate for the Bristol Bay fishery which was far below that required by the plan. Both times the Council acquiesced to the Board. This acquiescence by the Council does nothing to convince us that the Council will be the dominant management body for fisheries in the Fishery Conservation Zone.

In addition, the Board has not been held accountable for its refusal to reconsider the opening date for the 1981 Bristol Bay king crab fishery and its almost simultaneous agreement to reopen discussion on a second season in Kodiak for 7-1/2 inch crab. Such actions by the Board appear, at best, to be arbitrary, and once again, reinforce the conviction that the Board is not really concerned about the interests of non-residents.

The Board Cannot Be The Primary Regulatory Body

The FMP narrative describes the proposed system of implementation

as offering "fairness and equity to all...." Apparently, the drafters of the FMP believe that by grafting some "procedural safeguards" onto the Board of Fisheries system they can gloss over this system's inequities, and thus win the hearts and minds of the non-resident fleet. However, our four previous sets of comments are replete with examples of the discrimination imposed upon non-resident crab fishermen by Alaska's management measures—edicts of the Board of Fisheries. If the Board were to remain at the core of the regulatory system, no amount of procedural safeguards would allow the system to work smoothly and equitably, as Congress mandated. Whoever initially controls the nature and extent of regulations ultimately shapes the tenor of the entire management process. Procedural safeguards, plan criteria, and National Standards cannot keep the members of the Board from manifesting, consciously or otherwise, their loyalties and sympathies to their state and to their neighbors. For the MFCMA conservation and management process to succeed, the Board of Fisheries must not be able to continue to play the dominant role in the management of the king crab fishery.

Federal Courts Must Rule on MFCMA Regulations

The Council is in error in its belief that the Alaska court system would be the forum for challenging regulations if the Board were to be delegated MFCMA regulatory powers. Section 311(d) of the Magnuson Act unequivocally states :

"The district courts of the United States shall have exclusive jurisdiction over any case or controversy arising under the provisions of this Act." (emphasis added.)

Illegal Fishing Is A Civil Not Criminal Offense

The Council should also be aware that Congress, in the MFCMA, purposely characterized illegal fishing activities by domestic fishermen as civil offenses; generally, criminal sanctions are reserved only for actions directed against officers trying to enforce the Magnuson Act. If the Council's proposal to delegate regulatory powers to the State were accepted, Congressional intent would be thwarted: in Alaska, violations of the State's fishing regulations are misdemeanors and offenders are subject to criminal penalties.

The Council Has Not Carefully Examined The State's Regulations

With the exception of a few regulatory proposals which were under consideration by the Board this year, the Council has yet to ask the Board to test its current king crab regulations against the criteria set forth in the Framework Plan. Nor has the Council, on its own, scrutinized these regulations to determine if they conform to the National Standards embodied in the Magnuson Act.

By its inaction, the Council seems to be urging the wholesale adoption of the State's regulations for the king crab fishery—regulations primarily established at the behest of Alaskans for benefit of Alaskans. We are troubled by the Council's failure to carefully examine the rationales behind these regulations. While Congress, in the MFCMA, provided for the Councils to "incorporate.... the relevant fishery conservation and management measures of the coastal States nearest to the fishery" into their plans, it added

a caveat: that those management measures must be "consistent with the national standards, the other provisions of this Act, and any other applicable law."

SPECIFIC COMMENTS ON THE PLAN

Introduction

While in theory a "framework" fishery management plan would enable managers to respond more quickly to changing conditions in a fishery, this FMP does little more than give the Board of Fisheries license to do whatever it wants, whenever it wants. The FMP fails to indicate those conditions which must exist in the fishery before the regulatory body can even consider imposing certain management measures. Furthermore, the FMP does not expressly and emphatically state that the criteria to be examined in setting regulations are the only criteria to which the Board can direct its attention. Nor does the FMP assign a priority to each criterion. For these reasons, the FMP—contrary to the Introduction's assertions—does not provide "clear guidance to the on-going regulatory process...." and "...eliminate duplications of bureaucratic functions...." In fact, if one assumes that a properly constructed framework plan is a valid approach to managing a fishery, then the proposed system is more costly and burdensome than the MFCMA regulatory process. Once a FMP is approved and initially implemented, further promulgations of regulations under the MFCMA consist of three steps: notice of proposed rulemaking, a period of public comment, and publication of final regulations. Since the Secretary promulgates

the regulations, Secretarial review of the regulations for conformity with the MFCMA is inherent in the process. Under the system proposed in the King Crab FMP, not only do the regulations go through the "regular" Board of Fisheries procedures (which require hearings in Alaska), but the Board must hold a meeting in Seattle and also meet with the Council to discuss management of the king crab fishery. Any regulations decided upon by the Board must undergo further scrutiny by the Regional Director, NMFS, and the Secretary of Commerce. One can only wonder how such a bastardized system can purport to achieve savings in time and money.

If bureaucratic functions are "themselves unnecessary to effective resource management where the fishery is entirely limited to the waters off the coast of a single state...", why is the Alaska regulatory system needed? Do not the Board of Fisheries and ADF&G perform "bureaucratic functions"?

Where is any analysis by the Council showing the State of Alaska has had a "longstanding and successful history of regulation" of the king crab fishery? "Successful" in achieving what goals? The Board's policy on king crab resource management is to manage in a manner which "establishes stability and eliminates, as much as possible, extreme fluctuations in annual harvest...." How successful was the Board in achieving this goal this year when it appears the harvest in Bristol Bay is going to be around 40 to 60 million pounds, a drop of over 50% from last year's record catch.

The FMP fails to acknowledge that most of the resource in the area covered by the plan is harvested by non-resident fishermen. These fishermen believe the procedures and roles outlined in the Magnuson Act are necessary to assure all fishermen--regardless of residence--equal access to the resource and an equal voice in participating in decisions.

The Introduction avers that "the framework presents its objectives in detail." In fact, these and earlier comments of ours point out that the objectives lack specificity.

The FMP states

"Ideally, selection of appropriate management measures for the achievement of any objective would be done almost mathematically through the use of standard techniques of population dynamics.*** ...[Due to a lack of information, however, the Council] must rely on less exact means to describe how, and under what circumstances, a given set of measures will be employed to achieve a given set of objectives."

This statement is misleading. It leaves the impression that the FMP's objectives and management measures are strictly related to increases and decreases in the resource, and therefore, loosely drafted circumstances for imposing management measures are somehow excusable. However, upon close examination of the FMP, one finds that most of the management measures are not concerned with the population dynamics of king crab, but with achieving socioeconomic

goals which benefit Alaska and its residents.

Description Of The Fishery Management Unit

In earlier drafts of the King Crab FMP, Kodiak was considered for inclusion in the fishery management unit. Why was Kodiak dropped from the plan, especially after ADF&G Commissioner Skoog detailed the strong economic links between Kodiak and the Bering Sea fisheries in his May 19, 1981 letter to Robert Alverson (attached to our May 28, 1981 letter to the Council)?

Management Objectives

Although the FMP lists the management measures expected to be used in achieving objectives, it does not readily explain how the measures would help reach these goals.

What is the priority ranking for the four secondary objectives?

1. Optimize the Net Value of the Fishery

The plan seems to infer that stabilization of the annual harvest is a goal. Yet, due to environmental conditions and limited knowledge about the resource, it is questionable whether stability is possible to achieve. If current Alaska management practices are designed to eliminate "boom and bust" fisheries, why is the Bering Sea harvest this year only likely to reach 40 million pounds and last year's catch was over 130 million pounds?

What are the "production and marketing standards and requirements"

that management measures should be designed to complement?

2. Minimize the Socioeconomic Impacts of
Conservation and Management Measures

What are the "well-established" harvesting and processing systems and community infrastructures? Why are management measures necessary to protect them?

Where are the areas that king crab has been utilized as a "traditional subsistence food source?" For how long? How is "subsistence" defined? What have been the "past food requirements" for these areas?

3. Minimize Adverse Interactions Among Fisheries

What are these other commercial fisheries which may affect ship and worker availability and processing capacity? How?

What are the trawl fisheries which may interfere with the conduct of the king crab fishery?

What are the species which may be incidentally caught in crab pots?

What is the extent (history) of these incidental catches?

Management Measures

1. Determination of Optimim Yield

a. ABC—Bristol Bay

In setting ABC, the FMP is unclear as to whether ABC must be the highest of the catches estimated in the size limit-exploitation

rate table. Again, it is interesting to note that for the 1981 king crab fishery, Reeves' data indicated that fishing above the .8 exploitation rate on 6-1/2 inch crab would not impair the future reproductive potential of the stocks. Yet, the Board of Fisheries would not instruct its staff to allow fishing beyond the .6 exploitation rate. How does this comport with the FMP's directives?

Why doesn't Table A go beyond .8? How are the size limits established?

b. ABC- Adak, Dutch Harbor, and Bering Sea

What are the maximum levels of catch which will not result in declines of female fertilization for these areas?

The FMP notes that fisheries "have not shown any decline in female fertilization" when their minimum size limits and exploitation rates were determined in accordance with the procedures for setting ABC's for Adak, Dutch Harbor and the Bering Sea. However, could exploitation rates higher than .4 have still protected female fertilization, thus resulting in increased yields?

c. OY

If ABC takes into account environmental and ecological factors, why should ecological considerations again influence the determination of OY?

What would be the social or economic reasons for harvesting more

or less than the ABC?

2. Fishing Seasons

What are the approximate dates of the "period from late summer through early winter when crab are in a valuable condition to the fishery"?

In determining season openings, one factor is "timing of the season openings for individual areas relative to one another." Are areas outside of the plan (i.e. Kodiak) to be considered in setting season openings? If so, why shouldn't Kodiak be included in the plan if its fishing activities are allowed to influence fishing in the Bering Sea and Aleutian Islands areas?

By noting that simultaneous openings "[result]... in lesser utilization of the capacity of large vessels that could otherwise fish a number of areas in succession," isn't the FMP inferring that simultaneous openings are used to protect the small boat fisheries from influxes of large vessels? Isn't this discrimination?

How are season openings "important in determining prices, the distribution of floating processors, and the ability to meet marketing commitments"? Why is the FMP concerned with these activities?

3. Gear Placement

Another factor should be the costs of onshore loading and unloading facilities versus the costs of at sea storage.

Why is the scope of the regulations affecting gear placement limited to seven days before and after a season?

4. Gear Storage

By whom is land storage preferred?

The State has an enforcement program to determine whether pots are stored in a non-fishing condition. However, given the requirement for vessel tank inspections, do the benefits of such a program really outweigh the costs?

5. Registration Areas

The FMP notes that

"Historically, exclusive registration areas have been relatively small... [and] are close to shore...."

However, what this draft of the FMP fails to mention is that small, near-shore areas were purposely designed as exclusive areas in order to allow small vessels, owned by Alaskans, to harvest crab without worrying about incursions on "their" resource by large vessels, owned primarily by non-residents of Alaska. Setting aside small areas as exclusive made it economically infeasible for the large boats to fish there. The only area lacking the historical characteristics of an exclusive area is Bristol Bay. Bristol Bay was carved out of the Bering Sea non-exclusive area and designated as "exclusive" so the small boat fleet of Dutch Harbor would not have to compete with the large out-of-state vessels fishing in the Bering Sea and selecting Dutch Harbor as their sole exclusive area.

The past drafts of the FMP have been very forward in stating that the socioeconomic impact on local communities was a major factor in designating an area as "exclusive" or "non-exclusive." In this draft, such a statement is conspicuous by its absence.

6. Reporting Requirements

The FMP is unclear as to whom catcher/processor reports or processor reports are to be submitted. To the Secretary of Commerce? To the State of Alaska?

If data is to be submitted to the State, will these FMP reporting requirements be affected by Section 303(d) of the MFCMA and 50 CFR Part 603, which are concerned with the confidentiality of statistics?

Procedures For Plan Implementation

May the Regional Director prevent a State regulation from taking effect in the Fishery Conservation Zone if he does not consult with the Council? For example, what if time does not allow consultation?

The Introduction to the FMP states that the Board of Fisheries will hold at least one annual shellfish hearing in Seattle. Is this hearing different from the joint Council-Board public hearing in the State of Washington prior to the mandatory annual joint meeting of the Council and Board?

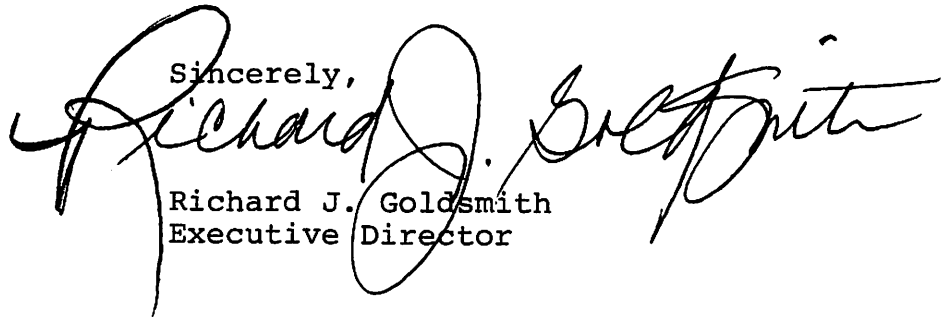
It is unclear whether the mandatory annual joint meeting of the Board and Council will take place before, after, or at the same time the Board holds its annual shellfish meeting.

Joint Statement of Principles and Initial Regulations
Implementing the FMP

At this time, these documents are being redrafted; therefore, the Association reserves its right to comment until the materials are again distributed for public review.

It is hoped these observations on Draft #11 of the King Crab Fishery Management Plan will be of assistance to the Council.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard J. Goldsmith". The signature is fluid and cursive, with a large initial "R" and "J".

Richard J. Goldsmith
Executive Director

NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

MINORITY REPORT

This statement outlines the views of the minority members of the North Pacific Fishery Management Council in the vote taken by the Council on September 25, 1981 in approving the Bering Sea/Aleutian Islands King Crab Fishery Management Plan for review by the Secretary of Commerce.

Our basic objection to the FMP is the limited area (Bering Sea and the Aleutian Islands) covered by the plan. It is our contention that the plan should cover all the waters outside the territorial limits of the State of Alaska. Then, if certain areas under federal jurisdiction are not in need of federal management in waters outside of State jurisdiction, these waters can be excluded as a part of regulations adopted under the plan based upon an adequate showing that federal management and jurisdiction is unnecessary. It is our belief that the plan as now written surrenders federal jurisdiction to the State. It leaves a vacuum in enforcement of king crab regulations in that the State has no control over a fishing vessel operating outside of the territorial waters of Alaska when such a vessel does not enter the State's waters either before or after conducting fishing operations on the customary crab grounds.

We have no objection to the framework nature of the plan. In fact, we strongly favor this aspect of the plan so as to allow for local implementation of the plan by the Regional Director of the National Marine Fisheries Service in conjunction with the Alaska Commissioner of Fish and Game and the Board of

Fisheries but within limits agreed to in advance by the Secretary of Commerce. This will allow for fast action when it is required by unpredictable changes in the condition of the king crab resource.

Neither do we have any objections to designating the State of Alaska as the managing agency of the king crab plan as long as they manage the plan as agreed upon in advance through existing mechanisms of both the federal government and the State. In this way there will be no loopholes in the king crab management and enforcement as there are at present.

In the event there are differences of opinion between the Board of Fisheries and the Council, we are certain that these can be reconciled by appropriate officials of the State and the Federal government.

N. P. F. M.

Council Minority Report.

This statement outlines the views of the minority members of the North Pacific Fishery Management Council in the vote taken by the Council on September 25, 1981 in approving for review by the Secretary of Commerce.

Bering Sea/Aleutian Islands
the Western Alaska King Crab Management Plan

Our basic objection to the ^{FMP} plan is the limited area (Bering Sea and the Aleutian Islands) covered by the plan. It is our contention that the plan should cover all the waters outside the territorial limits of the State of Alaska. Then if certain areas under federal jurisdiction are not in need of federal management in waters outside of State jurisdiction these waters can be excluded as a part of regulations adopted under the plan based upon an adequate showing that federal management and jurisdiction is unnecessary. It is our belief that the plan as now written surrenders federal jurisdiction to the State. It leaves a vacuum in enforcement of king crab regulations in that the State has no control over a fishing vessel operating outside of the territorial waters of Alaska when such a vessel does not enter the State's waters either before or after conducting fishing operations on the customary crab grounds.

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As shown in the attached map, the proposed project is located in the vicinity of the town of...

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In the event there are differences of opinion between the Board of Fisheries and the Council, we are certain that these can be reconciled by appropriate officials of the State and the Federal government,

