

**Materials for the
North Pacific Fishery Management Council on the
Environmental Impact Statement for the
Fishery Management Plan for Bering Sea/Aleutian Island King and Tanner Crabs**

Lead Agency: National Marine Fisheries Service (NMFS)
Alaska Region, Juneau

In consultation with: North Pacific Fishery Management Council

Responsible Official: James W. Balsiger
Regional Administrator, NMFS

For Further
Information Contact: Gretchen Harrington
Sustainable Fisheries Division
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802
(907) 586-7228
gretchen.harrington@noaa.gov

Contents

Introduction	1
Action Area	1
Purpose and Need for the Action	1
Scope of the EIS	3
Alternatives for the EIS	5
Summary of Public Scoping	6
Relevant Issues	8
Cooperating Agencies and Tribal Governments	17
Related NEPA Documents	17
Relationship of this action to other federal law and action	17
Preparation of the EIS	18
Organizational Structure of the EIS	19
Draft Outline and Deadlines	19

Introduction

This report provides the North Pacific Fishery Management Council (Council) with materials for making decisions for the Environmental Impact Statement (EIS) for the Fishery Management Plan for Bering Sea/Aleutian Island King and Tanner Crabs (FMP). The primary purpose of this report is to provide information to the Council in making its recommendations on the range of alternatives to be addressed in the EIS. It provides a preliminary purpose and need for the action, a description of the scope of the EIS, a summary of the comments received during the scoping public comment period, the environmental and socioeconomic issues identified during scoping and the Council process, and describe potential alternatives. Prior to drafting an EIS, the Council and NMFS must determine the precise nature and extent of the proposed action, the range of alternatives, the specific impacts to be evaluated, and the methods used to determine their evaluation.

This report includes excerpts on National Environmental Policy Act (NEPA) guidance from the Council on Environmental Quality (CEQ) regulations, The NEPA Book (Bass et al. 2001) and How to Write Quality EISs and EAs (The Shipley Group 1998). This information is provided to assist the Council and the public in understanding the NEPA requirements for an EIS and how the pieces of an EIS fit together. All excerpts are in *italics*. Using this guidance, we are asking the Council for input on each section to ensure that the EIS is progressing in a manner that the Council agrees with.

Action Area

The action area for BSAI crab fisheries effectively covers all of the Bering Sea under U.S. jurisdiction, extending southward to include the waters south of the Aleutian Islands west of 170°W. to the border of the U.S. Exclusive Economic Zone. These regions encompass those areas directly affected by fishing, and those that are likely affected indirectly by the removal of crab at nearby sites. The lack of important information on distribution and stock structure of target species confounds a clear and precise definition of the action area, but a review of areas fished by the crab fisheries suggests that virtually the entire Bering Sea and Aleutian Islands area, excluding the nearshore region (less than 50 meters in depth), is utilized by one fishery or another.

Purpose and Need for the Action

We are asking the Council to review and comment on this purpose and need for the proposed action.

*NEPA Guidance: The statement of purpose and need helps the lead agency select the range of alternatives to be evaluated in the EIS. This section explains the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action (40 C.F.R. 1502.13), and the benefits that would be realized by carrying out the proposed action. Make your purpose and need an honest, full explanation of why the agency is considering an action. **Explain who wants to do what and where and why they want to do it.** If the purpose and need for the project are rigorously defined, the number of solutions which will satisfy the conditions can be more readily identified and narrowly limited. If properly described, it also limits the range of alternatives which may be considered reasonable, prudent, and practicable in compliance with the CEQ regulations. **The federal agency's preferred alternative is the one that it believes would best fulfill the purpose and need of the action.** (Bass et al. 2001, The Shipley Group 1998)*

The Council is proposing a new management regime that rationalizes the crab fisheries in the Bering Sea and Aleutian Islands (BSAI). A rationalization program includes policies and management measures that would increase the economic efficiency of the BSAI crab fisheries by providing economic incentives to reduce excessive capital investment. This is accomplished through the establishment of transferable harvesting privileges or other market-based systems for allocating access to the fishery resources. Rationalization programs may provide additional opportunities to optimize the economic performance of fisheries and address conservation goals by providing opportunities to utilize fishing methods that reduce the bycatch and reduce gear conflicts. Rationalization programs may also reduce the incentive to fish during unsafe conditions. Rationalization programs frequently result in substantial changes to the existing management regime.

Problems facing the BSAI crab fisheries are excess capacity and the consequent race for fish and resource conservation and management problems. The race for fish exists because harvest capacity greatly exceeds the amount of crab available for harvest. Under the current management regime, each fishery is opened on a specific date with a specified harvest limit. Fishermen compete to harvest as much crab as they can before the harvest limit is reached and the fishery closes. This race for fish causes short, unprofitable seasons, resource and conservation problems, unsafe fishing conditions, and management difficulties. These problems are illustrated by the 2001 Bristol Bay red king crab regular commercial fishery in which 232 vessels caught 7.8 million pounds of crab in 3 days and 8 hours. Due to the management difficulties of determining the harvest of so many vessels in such a short amount time, the preseason guideline harvest level of 6.6 million pounds was exceeded by 1.2 million pounds. Some vessels fished during a storm, causing significant damage to 3 vessels and the loss of one human life at sea. The management tools in the existing FMP do not provide managers with the ability to effectively solve the excess harvesting capacity and resource allocation problems in the BSAI crab fisheries.

Given that the problems in the BSAI crab fisheries are due to overcapacity and the race for fish, the Council has determined that the institution of some form of rationalization program is warranted. The need for a rationalized crab management regime is explained in the Council's *BSAI Crab Rationalization Problem Statement*:

Vessel owners, processors and coastal communities have all made investments in the crab fisheries, and capacity in these fisheries far exceeds available resources. The BSAI crab stocks have also been highly variable and have suffered significant declines. Although three of these stocks are presently under rebuilding plans, the continuing race for fish frustrates conservation efforts. Additionally, the ability of crab harvesters and processors to diversify into other fisheries is severely limited and the economic viability of the crab industry is in jeopardy. Harvesting and processing capacity has expanded to accommodate highly abbreviated seasons, and presently, significant portions of that capacity operate in an economically inefficient manner or are idle between seasons. Many of the concerns identified by the NPFMC at the beginning of the comprehensive rationalization process in 1992 still exist for the BSAI crab fisheries. Problems facing the fishery include:

1. Resource conservation, utilization and management problems;
2. Bycatch and its associated mortalities, and potential landing deadloss;
3. Excess harvesting and processing capacity, as well as low economic returns;
4. Lack of economic stability for harvesters, processors and coastal communities; and
5. High levels of occupational loss of life and injury.

The problem facing the Council, in the continuing process of comprehensive rationalization, is to develop a management program which slows the race for fish, reduces bycatch and its associated mortalities, provides for conservation to increase the efficacy of crab rebuilding strategies, addresses the social and economic concerns of communities, maintains healthy harvesting and processing sectors and promotes efficiency and safety in the harvesting sector. Any such system should seek to achieve equity between the harvesting and processing sectors, including healthy, stable and competitive markets.

The purpose of the proposed action is to provide a management program that improves resource management, reduces excess capacity, and provides economic stability for harvesters, processors, and communities. The allocation of harvesting and possibly processing privileges would allow harvesters and processors to manage their operations in a more economically efficient manner since they no longer must compete with other users for a portion of the available resource. Rationalization of the harvesting sector eliminates the derby-style race for fish by providing economic incentives to consolidate, thus reducing capacity by decreasing the number of vessels participating in the fishery. The extent of this consolidation depends on efficiency differences across the fleet, how the rationalization program is set up, and what restrictions are placed on amassing shares. Shares are expected to be consolidated on the most efficient vessels, thus removing excess capital from the fishery and allowing remaining vessels to fish for a longer amount of time. With a guaranteed share of the catch, fishermen can choose when to fish depending on weather conditions, market considerations, and other factors.

Measurable conservation goals of a rationalization program are improved stock conservation through decreased bycatch and handling mortalities. Bycatch and handling mortalities would be reduced by improvements to fishing practices possible with longer seasons. A rationalization program may also include measures to provide full observer coverage, and prevent highgrading and increases in deadloss. Eliminating the race for fish is thought to decrease the potential for harvest limit overruns that can result from the difficulty of monitoring catches during short fishing seasons with many vessels participating. A reduction in fishing effort would also reduce the impacts of pot gear on benthic habitat. These conservation benefits would decrease the impacts of the crab fisheries on crab stock abundance and improve the effectiveness of the rebuilding plans.

Scope of the EIS

We are asking the Council to review and provide input on the proposed scope of the EIS.

NEPA Guidance: A programmatic EIS is prepared for a broad federal action, such as the adoption of a regulation, policy, plan or program. A programmatic EIS is required only when there is a proposed formal agency program. The preparation of a programmatic EIS facilitates and expedites the preparation of subsequent project-specific NEPA documents through the use of a process called "tiering." Tiering refers to the coverage of general matters in broader EISs with subsequent narrower EISs or EAs incorporating by reference the general discussions [from the programmatic EIS] and concentrate solely on the issues specific to the [subsequent projects-specific action]. Although NEPA's legal requirements are the same for both the programmatic EIS and the project-specific EIS, lead agencies generally focus on different factors when preparing each of them. (Bass et al. 2001)

The purpose of the EIS is to provide decisionmakers and the public with an evaluation of the environmental and economic effects of the proposed action and alternatives to the proposed action. The EIS will examine the direct, indirect, and cumulative effects of the alternatives, including the proposed action and status quo, on the physical, biological, and human environment. The EIS will be programmatic in scope because the proposed action is a program. According to the CEQ regulations, a programmatic EIS is prepared for a broad federal action, such as the adoption of a plan, program or policy. The EIS will also include an environmental assessment of the FMP overall and the effects of the fisheries prosecuted under the FMP.

The scope of this EIS will include decisions before the Council and also before the State of Alaska, which shares the responsibility for the management of BSAI crab. The Council will decide whether to continue management under the existing crab FMP or to manage crab under a rationalization program FMP. An underlying principle of this EIS is that a rationalization program will affect most aspects of BSAI crab fishery management by making some existing management measures unnecessary and requiring modification of other management measures. If the Council recommends a rationalization program, the State will make changes to State regulations governing the BSAI crab fisheries so that fisheries management responds to the unique demands of the rationalization program. To the extent possible, the EIS will identify alternative rationalization programs, alternative modifications to the existing management measures in the FMP, and ranges of potential changes to State management measures. Once these have been identified, the EIS will then analyze the effects on the human environment of the status quo and each alternative, and discuss ways to avoid or mitigate any adverse effects. Alternatives considered but rejected will also be addressed in this EIS.

In order to analyze the proposed action, the EIS needs to provide the decisionmakers and the public with a basic understanding of the fishery, including a description of the historic and existing fishery, against which they can judge the alternatives. This EIS will analyze the environmental effects of all activities authorized under the FMP, the current suite of FMP management measures, as amended over the years, and the State and Federal regulations developed to implement those measures. As such, the scope of this analysis is not limited to alternative rationalization programs. By thoroughly analyzing the status quo, subsequent amendments to the FMP could tier off this EIS, thus focusing that NEPA analysis on the issues specific to the future proposed action. Likewise, future modifications to the rationalization program, if adopted, could tier off of this EIS. The EIS will not present alternatives to specific elements in the FMP that are not impacted by the proposed action because these are outside of the purpose and need for the action and were not brought up during scoping. FMPs are adaptive and alternatives to specific FMP measures can be adopted by the Council in the future, even if they are not foreseeable now and not specifically laid out in this EIS. A programmatic look at the existing FMP will also provide valuable information to the State in managing these fisheries and in making future management decisions beyond those required to manage under a rationalization program.

The stakeholders impacted by the crab FMP and proposed rationalization programs include crab vessel owners, skippers who do not own vessels, crew, owner/operators, crab processors, communities, crab consumers, participants in other State and Federal managed fisheries, and the general public.

Alternatives for the EIS

*NEPA Guidance: The content and scope of the discussion of alternatives should depend on the nature of the proposed action. **The evaluation of alternatives is governed by the rule of reason that requires a Draft EIS to consider a range of alternatives that could accomplish the proposed action's purpose***

and need. An EIS need include only those alternatives that would achieve at least some of the federal agency's objectives as set forth in the statement of purpose and need. The court has stated that the content and scope of the discussion of alternatives should depend upon the nature of the proposed action (NRDC v. Callaway). In general, if the statement of purpose and need has been clear and concise and all of the alternatives satisfy the purpose and need, then the courts will uphold the alternatives discussion in the EIS. The number of alternatives within the reasonable range is directly related to the statement of purpose and need. (Bass et al. 2001, The Shipley Group 1998)

The proposed action is a rationalization program. The Council has developed alternative rationalization programs, with numerous elements and options, during an extensive public process over the course of eight Council meetings, six ad-hoc industry meetings, and four Council Crab Rationalization Committee meetings. The alternative rationalization programs are fully described in the Council's Public Review Draft for the Bering Sea Crab Rationalization Program Alternatives. This report will be an appendix to the EIS. The Council has also received a report on the results of scoping for this EIS, which provided public comments on FMP alternatives. The Council plans on choosing its preferred rationalization program alternative in June 2002.

The decision before the Council now is how to construct the range of alternatives for the EIS. The CEQ regulations explain that the discussion of alternatives should present the environmental impacts of the proposed action and the alternatives to the proposed action in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The CEQ regulation require an EIS to consider three types of alternatives, a no action alternative, alternatives describing other reasonable courses of action, and an alternative that advances mitigation efforts to the proposed action (40 CFR 1508.25(b)).

The no action alternative is status quo FMP. The preferred alternative in the EIS will be the rationalization program the Council identifies as its preferred alternative. The Council will select a preferred alternative from the suite of alternatives, elements, and options presented in the Council's economic analysis for alternative rationalization programs. When the Council chooses its preferred alternative, it may want to put forward other alternatives.

At this stage the potential range of alternatives for Council consideration is as follows:

Alternative 1 - Status Quo FMP

Alternative 2 - Rationalization FMP

Alternative 3 - No fishing FMP

One outstanding issue is whether or not a specific 'mitigation measures' alternative is necessary. NOAA-GC has interpreted the CEQ regulations as requiring a separate mitigation alternative (Letter from Craig O'Connor, December 11, 2001, page 7). The letter states that without a discussion of a mitigation measures alternative, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects. Another point of view is that all management alternatives mitigate unregulated fishing. So the proposed action would be a mitigation measures alternative to status quo and unregulated fishing.

If the Council decides that a mitigation measures alternative is good idea, we proposes a 'no fishing' alternative as the mitigation alternative, because the environmental effects, most likely, will be from the prosecution of fisheries. A 'no fishing' alternative will allow the EIS to properly evaluate the magnitude of the effects on the human environment caused by the proposed action and no action alternatives. The Council

may also choose another mitigation alternative that would mitigate the effects of the crab fisheries, such as a rationalization program with additional environmental mitigation components, such as 100% observer coverage.

One unusual aspect of this EIS is that Congress may define the rationalization program for the BSAI crab fisheries, and that program may not mirror the any of alternatives recommended by the Council. At this stage, we think that once Congress takes action, NMFS, the Council, and ADF&G will need to assess the situation and determine the best way to proceed.

Summary of Public Scoping

Scoping for the EIS began with the publication of a Notice of Intent in the Federal Register on September 20, 2001 (66 FR 48410). Public comments were initially due to NMFS by November 16, 2001; however, NMFS extended the scoping period until December 10, 2001 to provide the public with more time to develop comments (66 FR 59771). The CEQ has issued informal guidance for the scoping process, which we have followed. The Draft EIS will be based on and prepared from the issues identified in the scoping process. NMFS presented the Council with a report on the results of public scoping in February 2002.

Scoping is an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to the proposed action. A principal objective of the scoping and public involvement process is to identify a reasonable range of management alternatives that, with adequate analysis, will delineate critical issues and provide a clear basis for distinguishing between those alternatives and selecting a preferred alternative.

NMFS held three public scoping meetings. At the scoping meetings, NMFS requested written comments from the public on the range of alternatives to be analyzed and on the environmental, social, and economic issues to be considered in the analysis. Each scoping meeting was held in conjunction with another formal public meeting on BSAI crab fishery management to make it convenient for interested public to attend. In addition to the Notice of Intent, the scoping meeting was on the agenda for each of these meetings. The scoping meetings were attended by fishermen; vessel owners; fishing and processing industry representatives; representatives from environmental organizations; ADF&G, Council, NMFS, and NOAA-GC staff; community representatives; and the general public. Attendance lists for each meeting are filed in the administrative record and available on request.

Summary of Comments and Issues Addressed in Written Comments Received During Scoping

NMFS receive three written comments during the scoping period. Copies of the three comments were provided to the Council at the February Council meeting and are available in the administrative record. The comments are summarized below.

Comment 1: Consider Alaskan Communities.

This comment requested consideration of the impacts of proposed rationalization programs on Alaskan coastal communities, and the City of Unalaska specifically. The comment explained the importance of crab harvesters and processors to the economic viability of the city and the need for the development of an

alternative management system that will lead to industry consolidation. The comment focused on four main areas of concern:

- Vessel safety
- Resource management
- Economic stability
- Excess harvesting capacity

The comment also recommended NMFS comply with NEPA and the Magnuson-Stevens Act national standards as it develops the EIS.

Comment 2: Analyze a harvester-only IFQ alternative.

This comment recommended moving forward with a harvester-only individual fishing quota (IFQ) program before analysis of a processor quota (PQ) program. The comment discussed issues in support of an harvester-only IFQ program over a two-pie IFQ program, and asserted that:

- Considering processor quota along with IFQ will delay implementation of an IFQ program because of the complexities of a PQ program,
- IFQs are an accepted and reasonable management tool for rationalization of the BSAI crab fleet, and will address significant resource conservation and management objectives, as well as specific economic and social objectives,
- PQs are not authorized by Congress and there is no precedent PQ program,
- PQ has anti-trust implications,
- PQs equate to a distribution of ownership rights of a natural resource to a small class of large businesses, many of which are vertically integrated and multinational.

Comment 3: Make conservation and sustainability of biological resources the highest priority for a rationalization program.

This comment recommended that the EIS evaluate rationalization alternatives against the following conservation and community objectives:

- Reward clean fishing (promote low bycatch and minimize impact on ocean floor).
- Create opportunity for future generations of independent fishermen.
- Prevent excessive consolidation and vertical integration of the seafood industry.
- Preserve healthy competition among seafood processors and prohibit processor monopolies.
- Promote healthy community fishing economies and maintain diverse independent fishing fleets.
- Recognize historic regional fishing and processing patterns.
- Require good stewardship of the public's marine resources as a condition for continuing participation in IFQ fisheries.

This comment also recommends that the EIS evaluate the success of the crab pot escape rings and mesh size required by State of Alaska regulations in reducing crab bycatch in the crab fisheries. In addition, the comment recommends that the EIS detail with GIS mapping the spatial extent of the crab fisheries, degree of fishing effort, and spatial extent of the crab stocks.

This comment also raises a number of issues outside the scope of this EIS. The comment recommends changes to the groundfish fisheries which are not under the management jurisdiction of the BSAI crab FMP and therefore will not be directly considered in the EIS for the BSAI crab FMP.

Additional Comments

In addition, one verbal public comment suggested an alternative structured around exclusive Federal management of the BSAI crab fisheries.

Other Scoping Efforts

Significant issues were also raised during a trip Mark Fina (Council staff) and Gretchen Harrington (NMFS staff) took to Dutch Harbor/Unalaska and Akutan in October 2001. The purpose of the trip was to meet with members of industry, harvesters (vessel owners, skippers, and crew) and processors (shore-based and catcher/processors), and ADF&G staff to listen to their position on various issues surrounding crab rationalization. In addition, staff observed the landing and processing of red king crab from Bristol Bay.

In developing alternative rationalization programs, a number of meetings to discuss rationalization have occurred in the Council arena. Beginning in late 1999, interested parties met on an informal basis in a series of meetings to discuss rationalization. In December 2000, this ad hoc industry committee was formalized into the Council's the BSAI Crab Rationalization Committee. The Council appointed members to the BSAI Crab Rationalization Committee, which included representatives for harvesters, processors, skippers and crewmen, communities, and environmental organizations. The Committee was tasked with developing elements and options for analysis and reporting to the Council at the April 2001 meeting. The Committee met once in February and once in March, 2001. In summary, the BSAI Crab Rationalization Committee made significant progress during its meetings in developing a set of elements and options for Council consideration and analysis of a crab rationalization program. Also, the Council, the Advisory Panel and Scientific and Statistical Committee have discussed rationalization at a number of meetings since October 1999, focusing on the alternatives, elements, and options under consideration during 6 Council meetings (June, October, and December of 2001, and February, April, and now in June of 2002). The public comments received and the issues discussed during these meetings are part of the scope of the EIS and are included under relevant issues below. They are also discussed in detail in the Public Review Draft of BSAI Crab Rationalization Alternatives, May 2002. The executive summary of this document is available on the web at <http://www.fakr.noaa.gov/npfmc/Committees/Crab/0502crabexecsum.pdf>.

Relevant Issues

We request that the Council review and comment on the proposed list of relevant issues and their indicators for the proposed action.

NEPA Guidance: CEQ regulations indicate that agencies are responsible for a clear and efficient definition of issues. An issue is an effect (or a perceived effect, risk, or hazard) on a physical, biological, social, or economic resource. An issue is not an activity; instead, the predicted effects of the activity create the issue. Your goal is to educate readers as to why a particular issue is truly relevant (and thus important to the decision at hand). (The Shipley Group 1998).

This section defines and summarizes the relevant issues raised during scoping and the Council process. The Council identified five problem areas; resource conservation, utilization and management problems; bycatch and its associated mortalities, and potential landing deadloss; excess harvesting and processing capacity, as well as low economic returns; lack of economic stability for harvesters, processors and coastal communities; and high levels of occupational loss of life and injury.

From this problem statement, and from public comments, we identified the following 22 issues that are relevant to the decision before the Council on rationalizing the BSAI crab fisheries. These issues will be analyzed in depth in the EIS, as required by the CEQ regulations (1502.7(2)). We have identified indicators for each issue. These indicators are potential impacts of the alternatives, including status quo. Indicators are used as analytical tools for measuring significance and comparing the effects of each alternative on the issue. From the analysis, we will be able to determine the extent to which each alternative results in an increase or decrease in each indicator. Indicators can be mitigated by management measures incorporated into the preferred alternative.

Issue 1. Fishery sources of legal male crab mortality

Harvest strategies have been developed for the crab fisheries that set the harvest levels to remove legal-sized male crabs. These harvest strategies incorporate the best available scientific information to set harvest levels that maintain healthy stock abundance. The goal of crab fisheries management is to allow a harvest rate that maintains stock abundance at the level necessary to produce the maximum sustained yield. This is a challenge for crab stocks because crab stocks experience cyclical levels of abundance. Crab stock abundance fluctuates with changes in environmental conditions. Currently, many stocks are in periods of low abundance and NMFS has declared three stocks overfished. Crab abundance is assessed annually for the stocks under consideration for the rationalization program, except for AI red king crab and AI brown king crab.

Indicator: Harvest above the GHL

Potential effects of the different alternative will be estimated in light of the extent to which the harvest amount exceeds the harvest level. Harvests that exceed the GHL are difficult to prevent in the derby-style fisheries. Even with good in-season assessment and catch reporting, catches can change rapidly and a large efficient fleet can quickly surpass a harvest target when they locate high concentrations of crab. These are crab that are not accounted for in the GHL. When stocks are low, management difficulties increase and actual harvest often exceeds the pre-season harvest limit.

Indicator: Highgrading

Potential effects of the different alternative will be estimated in light of the extent of highgrading. Highgrading is sorting through the legal crab for the largest, cleanest crab, and discarding the remaining legal crab to ensure that only the highest-priced portion of the catch is landed and counted against the quota. Some of this discarded crab dies. This leads to additional fishing mortality of legal males in excess of the quota. Highgrading is an environmental concern because it may alter the composition of the stock by removing only the largest, cleanest crab. These crab are also thought to be the most successful at mating.

Indicator: Deadloss

Potential effects of the different alternative will be estimated in light of the extent of deadloss. Deadloss is the amount of dead crab landed at the dock. If the deadloss is accounted for when crab is landed, then deadloss is not a biological problem because these are crab accounted for in the GHL. Deadloss is a direct result of the extended amount of time a crab spends in the boat. Deadloss can be increased by having diseased or dead crab in the tank with live crab. Currently deadloss is about 1 to 2 percent of all crab landed. If deadloss is discarded at-sea, then it negatively effects crab abundance.

Issue 2. Fishery sources of female and sublegal male crab mortality

The main source of female and sublegal male crab mortality is bycatch in the crab fisheries. Female crab and sublegal males can be up to two thirds of the total catch. All bycatch is discarded. Managers estimate that up to 25% of discarded crab die from handling. This is a precautionary estimate used for calculating total removals by the fishery, and includes unobserved mortality.

Indicator: Amount of bycatch

Potential effects of the different alternative will be estimated in light of the extent of female and sublegal male crab bycatch in the crab fisheries.

Issue 3. Stock rebuilding

Rebuilding plans for the overfished crab stocks implement conservative harvest strategies that promote stock rebuilding. The term overfished is used to define stocks at low levels of abundance, regardless of the causes of the low abundance. Rebuilding plans also close fisheries when the stock reached a very low abundance level.

Indicator: Abundance of overfished stocks

The analysis will examine the extent the alternative promote management under the rebuilding plan by reducing crab mortality and increasing crab stock abundance.

Issue 4. Fishery sources of non-target crab mortality

The crab fisheries catch and discard crab species not targeted by the fishery. A portion of this bycatch dies from handling mortality.

Indicators: Amount of bycatch of non-target crabs

Potential effects of the different alternative will be estimated in light of the extent of bycatch of non-target crab species in the crab fisheries.

Issue 5. Harvest methods

The methods of harvest include when the harvest occurs, the fishing effort, and how the crabs are handled. Harvest methods also include the extent to which fishers comply with regulations. Harvest methods impact

the crab resources by causing mortality of legal male crabs in excess of the harvest level and causing mortality of female and sublegal crabs.

Indicator: Handling of crab

Potential effects of the different alternative will be estimated in light of when the crabs are harvested and how they are handled on deck. The number of captured crab that die depends when the crab are harvested and on how the crabs are handled on deck. The time of year when crab are harvested effects the crab survival rate. Crab captured when they are soft-shelled suffer a higher mortality than hard-shelled crabs. Also, capturing crabs during mating disrupts mating and can negatively effect reproduction. Season timing during biologically sensitive periods can negatively effect crab abundance.

With short seasons, crab are harvested very quickly. Long fishing seasons slow down the pace of the fisheries and allow the fishermen to improve fishing methods, such as gear operation and sorting on deck. With more time, fishermen would be able to soak pots on the bottom longer to allow the escape mechanisms to work, which would reduce bycatch. Also, with more time, fishermen would be able to improve handling methods and reduce the mortality of all crabs brought on deck. A longer season can positively effect crab abundance.

Indicator: Harvest Effort

Harvest effort is the amount of vessels and gear deployed to catch the harvest limit. Harvest effort above the amount required to catch the harvest limit results in crab harvests above the limits, increased bycatch, and increased habitat impacts. Excessive harvest capacity also causes wasteful fishing practices and results in the fleet deploying more pots than could be retrieved during a short fishing season, which results in lost pots. Potential effects of the different alternative will be estimated in light of the amount of harvest effort in relation to the harvest level.

Indicator: Manageability of fisheries

Potential effects of the different alternative will be estimated in light of the manageability of the fishery and the extent of monitoring. Since the goal of most management measures is conservation, the increased ability of managers to ensure compliance with harvest limits and other regulations has stock conservation benefits. Monitoring provides information to managers on the amount of catch and bycatch, and the location of harvest. This information is vital for setting the harvest levels, measuring the effectiveness of bycatch reduction measures, and determining when each vessel has reached its quota. Data collection is important for establishing the scientific foundation on which the fishery is managed. Improved manageability of the fisheries will have positive effects on stock abundance.

Issue 6. Other Bycatch Species (not crab)

The crab fisheries catch a small amount of other species as bycatch. These species include octopus, Pacific cod, Pacific halibut, and other flat fish. All bycatch is discarded. Low levels of bycatch of these species do not impact their abundance.

Indicator: Amount of bycatch of other species in crab fishery

Potential effects of the different alternative will be estimated in light of the extent of bycatch of other species. Increased observer coverage would result in better estimates of bycatch of other species.

Issue 7. Habitat Impacts

The crab fisheries may impact benthic habitat through the setting and retrieval of pots. Most likely, the extent of habitat impacts depends on the type of bottom habitat.

Indicators: Area Impacted and habitat type impacted

Potential effects of the different alternative will be estimated in light of the total area impacted by pot gear and the extent pot gear impacts different habitat types. This would include analysis of impacts on coral habitat.

Issue 8. Fishery Impacts on ESA species and their critical habitat

Fisheries can effect the listed species of marine mammals and seabirds and their critical habitat. This analysis would look at the effects of the crab fisheries and their alternatives on ESA species and their critical habitat

Indicators: Direct take, disturbance, and competition

Potential effects of the different alternative will be estimated in light of the extent of direct take of listed marine mammals and seabirds, disturbance of listed marine mammals and seabirds by fishing vessels, and competition between the fisheries and listed marine mammals and seabirds for food.

Issue 9. Efficiency in harvesting

Management of a fishery can affect the efficiency of the harvest and processing sectors. If management creates incentives for participants to race for fish, efficiency in the harvesting sector can be compromised. If the incentives created by management promote cost minimizing production, benefits can be realized by both participants and consumers. The change to a rationalized fishery could change efficiency in the crab fisheries.

Indicator: Fishing Effort and Cost of Effort

The effort expended per unit of output from a fishery and the cost per unit of output of that effort reflect the efficiency of harvests from the fishery. The amount and costs of effort will be analyzed to determine whether efficiency will change under the proposed alternatives.

Issue 10. Excess capacity in the crab harvesting sector

Excess capacity in the harvest sector occurs if the harvest capacity of vessels participating in the crab fisheries exceeds the amount of crab available to harvest. Crab abundance is cyclical and fishing effort in the crab fisheries has increased during times of high abundance. This level of fishing capacity is retained

during periods of low abundance. Derby-style fisheries also encourage excess harvest capacity as fishermen increase fishing capacity to increase rates of harvests. The very short seasons in recent years suggest that the current fleet has substantial excess capacity. Vessels that might have left the fishery for economic reasons still participate because of the potential to receive harvest privileges in a future rationalization program.

Indicator: Harvest Capacity Relative to Stocks

The analysis will examine potential changes in harvesting capacity under the different alternatives.

Issue 11. Efficiency in processing

In the current fishery, harvesters deliver their catch over a short period at the end of each season. With the abbreviated period of deliveries, processors may sacrifice efficiency to increase market share and avoid deadloss. Rationalization of the crab fisheries could extend the season enabling processors reduce processing costs to realize gains in efficiency.

Indicator: Processing costs and efficiency

The analysis will examine the potential changes in processing costs and efficiency under the different alternatives.

Issue 12. Excess capacity in the processing sector

Excess capacity in the processing sector occurs if processing capacity dedicated to crab exceeds the amount of crab available to process. The current crab processing capacity is designed to process crab quickly at the end of seasons when the entire fleet offloads its catch. A program that rationalizes the harvesting sector would spread deliveries to processors over a longer time period. Processors could then have excess processing capacity. The rationalization of the fishery could result in a reduction of processing capital utilized in the crab fisheries.

Indicator: Processing capacity relative to harvests

The analysis will examine potential changes in processing capacity under the different alternatives.

Issue 13. Availability and quality of crab for consumers

Currently, crab is processed primarily at the end of the each season. The majority of the product is processed into frozen crab legs. Lengthening the seasons could provide processors with more time to process crab. With added time processors might be able to improve product quality and develop other products. Processors may also be able to provide live crab to the market over a longer period.

Indicators: Changes in products and product quality

The analysis will examine potential product changes and improvements (including quality improvements) under the different alternatives.

Issue 14. Excessive shares

Excessive share concerns in a fishery arise when interests are consolidated to the extent that persons can influence the market for outputs, influence labor markets, influence opportunities for entry, or capture a disproportionate share of the benefits of a fishery. Management structures can influence excessive shares by limiting entry or by prohibiting or permitting the consolidation of interests by a relatively few number of participants. Limits on excessive shares are typically intended to prevent excessive consolidation and vertical integration. The Magnuson-Stevens Act states that any new IFQ program shall prevent any person from acquiring an excessive share of the quotas issued (§ 303(d)(5)(C)).

Indicators: Concentration of shares in the fishery

The analysis will examine the extent to which the different alternatives are likely to result in a concentration of interests in the fisheries.

Issue 15. Spillover effects on the harvest sector of other fisheries

If fishermen are allocated a portion of the crab harvest, this may alter fishing patterns, permitting fishers to increase participation in other fisheries, such as Pacific cod or crab in state waters. In addition, revenues generated in the BSAI crab fisheries could impact the ability of participants in the BSAI crab fisheries to increase their participation in these other fisheries. Spillover effects could be mitigated by sideboard measures.

Indicator: Participation levels of BSAI crab fishers in other fisheries

The analysis will examine the participation levels of BSAI crab fishers in other fisheries and the potential for these activities to change under the alternatives.

Issue 16. Spillover effects on the processing sector of other fisheries

Changes in the processing sector under crab rationalization could also have influences on other fisheries. Processors that are successful in a rationalized crab fishery could use resources developed in the crab fisheries to expand activities in other fisheries. In addition, consolidation of crab processing could lead to the exit of processors from other fisheries, as well as the crab fisheries. If processors that process crab as well as other species close facilities, fishermen that target other species, such as Pacific cod and other groundfish, may be left with fewer processors to which to deliver their harvests. Any decline in competition among processors could affect the ex vessel price realized for harvests and could increase delivery costs for harvesters.

Indicator: Participation levels of BSAI crab processors in other fisheries

The analysis will examine the participation levels of BSAI crab processors in other fisheries and the potential for these activities to change under the alternatives.

Issue 17. Fair and equitable allocation of interests in the fisheries

Fairness and equity in eligibility to participate and allocation of interests in a fishery are important to the management of public resources. Several factors could affect the fairness of a quota distribution including breadth of the distribution and historical reliance. A broad distribution of quota may better reflect reliance on the fishery. The Magnuson-Stevens Act states that any new IFQ program shall provide for a fair and equitable initial allocation of individual fishing quotas (§ 303(d)(5)(C)).

Indicator: Eligibility for participation and distribution of interests in the fisheries

The rules governing participation in the fishery will determine the fairness and equity of the allocation of interests in the fishery. In a rationalization program, the method and results of the distribution of the initial allocation of shares will be the determinants. In a license limitation program, the criteria for licensing are the determinants. The analysis will examine the rules for determining eligibility to participate and the allocations of interests in the fisheries to assess the fairness and equity of the allocation of interests in the fisheries.

Issue 18. Entry to the fisheries

Entry into the harvesting and processing sectors can be affected by fishery management. The current management program limits entry to those who meet certain participation criteria. Programs that allocate shares in a fishery can either create entry opportunities or limit opportunities based on several factors.

Indicator: Entry opportunities

The analysis will examine the opportunities for entry under the alternatives. Both the harvesting and processing sectors will be examined.

Issue 19. Competition in the harvesting and processing sectors

Competition can be used to facilitate efficiency, ensure fair price negotiations between harvesters and processors, and a reasonable return on investment to the harvesting and processing sectors. Competition is important for between harvesters and processors. Competition can also affect the distribution of activity and the benefits of the fisheries among communities. Management can influence the market power of these different interests to ensure a fair distribution of the resource rents. Vessel owners are concerned that the Council may recommend a rationalization program that eliminates competition and thus disadvantages harvesters in negotiating price with processors.

Indicator: Distribution of interests in the harvesting and processing sectors

The amount of competition between the different sectors will depend greatly on the distribution of interests in each sector. Concentration of interests in a sector can enable that sector's participants to exert market power over participants in other sectors. The analysis will examine the degree of consolidation in each sector and assess the effects of that consolidation on market power and competition.

Issue 20. Skipper/crew interests

Changes in management can affect the interests of skippers and crew in a fishery. If a management change results in a decline in the number of vessels participating in a fishery, skippers and crew could lose jobs. Skipper and crew shares, which are the percentage of the vessel earnings paid to skippers and crew, can be affected by management. A quota system that allocates quota to vessel owners only, without any provisions to allocate shares to skippers or crew or otherwise protect their interests could result in an erosion of those interests.

Indicator: Assessment of skipper and crew protections

The protection of skipper and crew interests under the alternatives will be examined.

Issue 21. Community interests

Many communities are home to crab processors and harvesting vessels. With a change in management (and consequent consolidation) may come decreases in the numbers of vessels and processing facilities in the crab fisheries. Communities are concerned that, under rationalization, processors may leave the local area. In addition, communities could be affected by changes in the regional distribution of landings. On the other hand, a rationalization program could provide economic stability to communities that are home to the remaining vessels and processors. Public comment recommends that a rationalization program promote healthy community fishing economies, maintain diverse independent fishing fleets, and recognize historic regional fishing and processing patterns.

Indicator: Assessment of community interests

The protection of community interests under the alternatives will be examined.

Issue 22. Safety

Safety is an important concern for the BSAI crab fisheries. The fisheries occur primarily in the winter, when weather conditions can be dangerous. Crab vessels haul and transport pot gear, which tends to be more dangerous than other gear types. Between 1990 and 2001, 61 fatalities occurred and 25 vessels were lost in the BSAI crab fisheries. Management programs can create incentives for fishers to risk vessels and lives. In the current fisheries, participants can maximize catch by fishing at all times when the season is open. Changes in management in a rationalized fishery could reduce incentives to fish in dangerous weather and take risks.

Indicators: Management incentives to take safety risks

The analysis will examine the incentives for risking participants safety under the different alternatives.

Cooperating Agencies and Tribal Governments

The CEQ regulations for implementing the procedural provisions of NEPA emphasize agency cooperation early in the NEPA process.

ADF&G and the U.S. Coast Guard have agreed to be cooperating agencies. Each agency agreed to participate in the development of this EIS and provide data, staff, and review for this analysis. ADF&G has an integral role in developing this EIS because they are co-managers of the BSAI crab resources and conduct the day-to-day management of the crab fisheries. ADF&G is preparing sections of the EIS, as discussed below. The Coast Guard has expertise with enforcement, search and rescue, vessel accidents and incidents at sea, and human safety at sea.

On November 1, 2001, NMFS mailed a letter to 113 Alaska tribal governments, providing information about the EIS and soliciting input from interested parties. As of the date of this report, no meetings have been scheduled and no correspondence has been received from any of the tribal governments.

Related NEPA Documents

This EIS is a standalone NEPA document that does not tier of any previous EISs because this will be the first EIS prepared for the BSAI crab FMP. An environmental assessment/regulatory impact review was prepared for the current FMP in 1988. Environmental Assessments have been prepared for each of the subsequent 15 amendments to the FMP, including revising the FMP in 1998. These EAs will be incorporated into the EIS to fully explain status quo and the analyze the cumulative effects of status quo on the human environment.

This EIS will incorporate by reference information from other EISs produced by the NMFS Alaska Region, were applicable. For example, the Draft Programmatic Supplemental EIS for the groundfish FMPs, November 2001, provides a detailed discussion of the Bering Sea and Aleutian Islands physical environment and ecosystem; life history, habitat, and stock status of groundfish species; seabird life history, population biology, and foraging ecology; and marine mammal life history, population biology, and foraging ecology. Most likely, these sections will be summarized and incorporated by reference into the Chapter 3, Affected Environment.

Relationship of this action to other federal law and action

The relationship of this action to other federal laws and actions is complex because the potential rationalization program alternatives are not authorized by Congress. A statutory change is required before the Council would submit a recommendation on a rationalization program to the Secretary of Commerce. We can not predict the nature of the statute change and whether it will provide broad authority to rationalize the crab fisheries or whether it will define the BSAI crab rationalization program. However, for this analysis, we assume congress will proved the authority to develop and implement a rationalization program.

While NEPA is the primary law directing the preparation of this EIS, a variety of other federal laws and policies require environmental, economic, and socioeconomic analysis of proposed federal actions. This EIS will contain the required analysis of the proposed federal action to ensure that the action complies with applicable federal law. These laws include:

- Endangered Species Act (ESA)
- Marine Mammal Protection Act (MMPA)
- Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act)
- Regulatory Flexibility Act (RFA)
- Executive Order (E.O.) 12866: Regulatory Planning and Review
- Executive Order (E.O.) 13084: Consultation and Coordination with Indian Tribal Governments

- Executive Order (E.O.) 12898: Environmental Justice
- Executive Order (E.O.) 13132: Federalism
- Consolidated Appropriations Act of 2001 (Pub. L. No. 106-554)
- Coastal Zone Management Act (CZMA)
- Administrative Procedure Act (APA)
- Paperwork Reduction Act of 1995 (PRA)

The Consolidated Appropriations Act of 2001 directed the Council to provide analysis of several specific approaches to rationalization of the BSAI crab fisheries and mandated NMFS to implement the Capacity Reduction Program for the BSAI crab fisheries.

Preparation of the EIS

A steering committee was created for the EIS. The steering committee consists of Jim Balsiger, NMFS; Chris Oliver, Council staff; Kevin Duffy, ADF&G; Robert Otto, NMFS-Alaska Fisheries Science Center (AFSC); Tom Meyer, NOAA-GC; Ramona Schreiber, NOAA; and Tamra Faris, NMFS. The Steering Committee's charge is to ensure the scope of analysis adequately spans the action being taken and to coordinate staff tasking among the various government agencies and departments.

We have determined that the best way to organize the preparation of this analysis is to convene an analytical team comprised of NMFS staff, Council staff, and ADF&G staff, supplemented by contracts for the environmental justice and cumulative impact analyses. We have established staff assignments for the preparation of this analysis and confirmed the staff assignments with ADF&G, the Council, and the AFSC. The analytical team consists of Gretchen Harrington, NMFS; Robert Otto, Brad Stevens, AFSC Kodiak Lab; Herman Savikko, Wayne Donaldson, Forrest Bowers, ADF&G; Mark Fina, Council; and Jessica Gharrett, NMFS-RAM. We have contracted with URS Corporation for the cumulative impacts analysis; URS will revise these sections in response to public comments between draft and final EIS, and edit the entire document for internal consistency. We have also established deadlines for completing each section to ensure timely completion of the EIS.

The first analytical team meeting was in November 2001. At this meeting, the team developed an analytical framework for identifying the affected environment and reviewed the FMP issues that arise from rationalization. Potential modifications to the FMP and to State regulations were also identified. These issues are reflected in the draft outline. The next analytical team meeting was April 15 determine relevant issues and indicators and being work on determining significance criteria for the direct, indirect, and cumulative effects assessments. We also agreed on deadlines for the sections of the EIS that can be completed before the alternatives are chosen.

Organizational Structure of the EIS

The CEQ regulations that implement NEPA recommend a format for organizing an EIS (40 CFR 1502.10). Federal agencies are given the flexibility to modify the standard format to encourage good analysis and provide for a clear presentation of the alternatives including the proposed action. A draft outline has been

prepared for this EIS that encompasses all of the required elements for an EIS, but organizes the presentation of information, alternatives, and issues in a way that best meets the needs of this project. The draft outline is a work in progress and many sections and subsections are likely to change, be moved, or be added as the analysts prepare the draft EIS.

The draft outline also includes deadlines for completing sections. Some sections will be completed before others so that the document will be coherent. Also, some sections are not possible to complete until after the Council has chosen a preferred alternative. The proposed deadlines assume that the Council will choose a range of alternatives and a preferred alternative in June. With this schedule, a draft of the first three chapters must be finished by June, so that a draft of chapter 4 can be completed by August. The Council would then initially review the draft, perhaps in October, and decided to send the draft out for public review. Also, if Congress has not provided statutory authority before October, NMFS will consult with the Council on whether to release the draft for public review or wait for Congressional action before releasing the draft to the public. NMFS would then publish the draft EIS, file it with EPA, and distribute it for public review. Public comment received by NMFS on the draft EIS would be summarized and responded to, to the extent possible, prior to the February 2003 Council meeting. The Council may then take final action to recommend a rationalization program to the Secretary of Commerce at that meeting. This way, the Council would have the draft EIS and public comments when it takes final action to recommend a rationalization program. Any delays in Council or Congressional action will lengthen the time for preparation of the draft EIS. Alternatively, Congress may decide to enact the rationalization program as a statute, similar to their action for the AFA or the BSAI crab capacity reduction program. In this case, an EIS would still be required.

Draft Outline and Deadlines

Notes: 1) Due dates assume the Council will recommend a preferred alternative in June 2002 and that Congress will make the required statutory changes necessary for the Council to take final action on a rationalization program in February 2003. Following this schedule, a draft EIS will be ready for initial Council review in October 2002. 2) This outline may change as the EIS is written and in response to Council input and public comments.

<u>Section</u>	<u>Due Date</u>
Chapter 1 Purpose and Need for Action	June 2002
1.1 Introduction	
1.2 Action Area	
1.3 Purpose and Need for Action	
1.4 Public participation	
1.4.1 Notice of Intent and Scoping	
1.4.2 Public participation in development of rationalization	
1.5 Coordination with other agencies	
1.6 Issues to be addressed in the EIS	
1.7 Related NEPA Documents	
1.8 Relationship of this action to other federal laws and action	
 Chapter 2 Alternatives	
2.1 Development of the Alternatives	June 2002
2.1.1 How the alternatives are constructed	

2.2.2	Key policy issues and decision points in the development of the alternatives	
2.2.3	NMFS and Council development of Alternatives	
2.2	Alternative 1: Status Quo - FMP	May 2002
2.2.1	Category 1 - Federal management measures fixed by the FMP	
2.2.2	Category 2 - framework management measures (<i>What is in the FMP, what is in the State regs, and why</i>)	
2.2.3	Category 3 - management measures deferred to State	
2.3	Alternative 2: ?????????? ¹	June 2002
2.3.1	Description of alternative	
2.3.2	Description of potential changes to FMP measures resulting from IFQ (<i>These are changes to FMP text required to implement the rationalization program</i>)	
2.4	Alternative 3: ??????????	
2.4.1	Description of alternative	
2.4.2	Description of potential changes to FMP measures resulting from IFQ (<i>These are changes to FMP text required to implement the rationalization program</i>)	
2.4	Alternative 3: No Fishing ²	June 2002
2.5	Comparison of the alternatives	June 2002
2.6	Alternatives considered and rejected ³	June 2002
2.6.1	?????????	
2.6.2	?????????	
2.6.3	??????	
2.6.4	??????	
2.6.5	??????	
2.7	Impact Assessment Methodology	

Chapter 3 Affected Environment

3.1	BSAI Ecosystem	May 2002
3.2	Crab Life History Approach (physical and biological environment)	May 2002
3.2.1	Larval stage	
3.2.2	Settlement stage	
3.2.3	Juvenile stage	
3.2.4	Adult stage	
3.2.5	Spawning stage	
3.3	Other Biological Resources	May 2002
3.3.1	Benthic species caught as bycatch in the crab fishery	
3.3.2	Benthic species impacted by pot gear	
3.3.3	ESA listed species present in action area	
3.3.4	Marine mammals - not listed	
3.3.5	Seabird - not listed	

¹Details of these alternatives recommended by the Council.

²This is the default alternative for purposes of constructing the outline. The alternatives will be determined through public participation in the scoping process and input from the Council.

³These are also for discussion purposes and may change in response to public and Council input.

- 3.3.6 Environment in vicinity of crab processors
- 3.4 Features of the human environment **May 2002**
 - 3.4.1 History of the BSAI crab fishery (*This section can be summarized from the ADF&G AMR*)
 - 3.4.2 History of BSAI crab management
 - 3.4.3 Profile/Description of the BSAI crab industry
 - 3.4.4 Affected communities
 - 3.4.5 CDQ groups
 - 3.4.6 Other Fisheries in the BSAI
 - 3.4.7 Other human activity
- Chapter 4 Environmental and Economic Consequences of the Alternatives**
- 4.1 Anticipated changes to BSAI crab fishing patterns resulting from the alternatives **July 2002**

(This section can be largely summarized from the Council's economic analysis)

 - 4.1.1 Scenario 1: Status quo fishery (Alternative 1–No action)
 - 4.1.2 Scenario 2: ????????
 - 4.1.3 Scenario 3: ????????
 - 4.1.4 Projected changes to fleet composition (*vessels, skippers, crew*)
 - 4.1.5 Projected changes to processing practices (*shore-based, floaters, CPs*)
 - 4.1.6 Projected changes to State management of BSAI crab fisheries
 - 4.1.6.1 Fishing Seasons
 - 4.1.6.2 Pot limits
 - 4.1.6.3 Guideline Harvest Levels
 - 4.1.6.4 In-season adjustments
 - 4.1.6.5 Closed Waters
 - 4.1.6.6 Reporting Requirements
 - 4.1.6.7 Bycatch Limits
 - 4.1.6.8 Other Measures
 - 4.1.7 Projected change to Federal management of BSAI crab fisheries
 - 4.1.8 Projected changes to other State and Federal fisheries ⁴
 - 4.1.9 Summary of expected changes in BSAI crab fishery
- 4.2 Predicted effects of the alternatives on the life history stages of crab **August 2002**
 - 4.2.1 Effects of the alternatives on larval life stage
 - 4.2.2 Effects of the alternatives on settlement stage
 - 4.2.3 Effects of the alternatives on juvenile stage
 - 4.2.4 Effects of the alternatives on adult stage
 - 4.2.5 Effects of the alternatives on spawning stage
 - 4.2.6 Cumulative Effects on crab life history
- 4.3 Predicted effects of the alternatives on other biological resources **August 2002**
 - 4.3.1 Effects of the alternatives on benthic species caught as bycatch in the crab fisheries
 - 4.3.2 Effects of the alternatives on benthic species impacted by pot gear
 - 4.3.3 Effects of the alternatives on marine mammals (*non-ESA*)
 - 4.3.4 Effects of the alternatives on seabirds (*non-ESA*)
 - 4.3.5 Effects of the alternatives on ESA listed species present in action area

⁴Federal groundfish fisheries, jointly managed scallop fishery, and State managed snail, GOA crab, Pacific cod, and hair crab fisheries.

4.3.6	Effects of crab processing on water quality and substrate	
4.3.7	Other environmental consequences	
4.3.8	Commutative effects on other biological resources	
4.4	Essential Fish Habitat assessment	August 2002
4.5	Predicted effects of the alternatives on the BSAI Ecosystem	August 2002
4.6	Economic and socioeconomic effects of the alternatives (<i>This section can be largely summarized from the Council's economic analysis</i>)	August 2002
4.6.1	Crab allocations and eligible participants	
4.6.2	Economic structure under FMP - status quo	
4.6.3	Economic structure under Alternative 2	
4.6.4	Economic structure under Alternative 3	
4.6.5	Effects of the alternatives on management and enforcement ⁵	
4.6.5	Effects of the alternatives on communities	
4.6.7	Effects of alternatives on other State and Federal Fisheries	
4.6.8	Effects of alternatives on CDQ groups	
4.6.8	Commutative economic effects	
4.7	Regulatory Impact Review (RIR)	July 2002
4.7.1	Introduction	
4.7.2	Benefit-Cost Analysis	
4.7.3	Distributional impacts	
4.7.4	Evaluation of significance	
4.8	Initial Regulatory Flexibility Analysis (IRFA)	July 2002
4.8.1	Statement of Problem	
4.8.2	Objective Statement of Proposed Action and its Legal Basis	
4.8.3	Description of each Action	
4.8.4	Reasoning for, and focus of, an IRFA	
4.8.5	Requirement to prepare an IRFA	
4.8.6	What is a Small Entity?	
4.8.7	Description of Fleet, Fishery, & Industry Directly and Reasonably Indirectly Impacted by Proposed Action	
4.8.8	Discussion of the potential negative effects of alternatives on small entities	
4.8.9	Mitigation of negative impacts	
4.8.10	Recordkeeping and reporting requirements	
4.8.11	Summary and conclusions	
4.9	Environmental Justice Considerations	August 2002
4.10	Energy Requirements and Conservation Potential of Alternatives	July 2002
4.11	Cumulative Effects Assessment	August 2002
4.12	Summary and Conclusions	August 2002
Chapter 5:	List of Preparers	July 2002
5.1	EIS Steering Committee	
5.2	Project leaders	

⁵ Includes full discussion of recordkeeping, reporting, and catch accounting requirements of proposed programs.

- 5.3 Contributors
- 5.4 Consultant contributors
- Chapter 6:** List of Agencies, organizations, and persons to whom copies of the statement are sent
- Chapter 7:** Literature cited

Appendix 1: Council Analysis of BSAI Crab Rationalization Program Alternatives - Report to Congress

Appendix 2: Scoping process documentation (NOI, meeting records, summary of comments, issues identified for analysis)

Appendix 3: History of FMP (previous FMPs, approval dates, NEPA analysis, list of FMP amendments, list of regulatory actions)

Appendix 4: State crab regulations