

Chapter 2: Alternatives

Chapter 2 contains a description of the four alternative management programs for the Bering Sea and Aleutian Island (BSAI) crab fisheries, a comparison of the alternatives, and a discussion of other alternatives considered but not carried forward. This EIS analyses the following four alternatives:

- Alternative 1 - Status quo (no action alternative)
- Alternative 2 - Three-pie voluntary cooperative program (preferred alternative)
- Alternative 3 - Individual Fishing Quota program
- Alternative 4 - Cooperative program

This is the range of alternatives the North Pacific Fisheries Management Council (Council) and National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NOAA Fisheries) has determined would best accomplish the proposed action's purpose and need. A comparison of alternatives is presented so that reviewers may evaluate the comparative merits of the alternatives. This chapter also describes the alternatives considered but not carried forward, and briefly discusses the reasons for their elimination from further analysis. Appropriate mitigation measures are included in the alternatives.

NOAA Fisheries and the Council determined, for several reasons, that the scope of this Environmental Impact Statement (EIS) should be a broad, programmatic review and analysis of the Fishery Management Plan (FMP) for BSAI King and Tanner Crabs and the rationalization alternatives. First, a broad, programmatic review and analysis will provide the Council, NOAA Fisheries, the State of Alaska (State), and the public with a greater level of information on which to make decisions about crab rationalization, and it will also inform subsequent crab management decisions. Second, a programmatic review will serve to address the crab management problems that were identified in the Council's problem statement and discussed in Chapter 1. Finally, a programmatic review is needed because the Crab FMP was adopted in 1989 without an EIS, and changes in the crab fisheries, the methods of crab management, and our scientific understanding of the fisheries, have occurred since its adoption. This programmatic review evaluates these changes and provides valuable information about the environmental impacts that will likely occur if the current management regime is replaced with a management regime based on some form of rights-based management.

Given the broad scope of this BSAI Crab Fisheries EIS, the alternatives framework for the EIS contains a two-step analysis: (1) an FMP-level review, and (2) an alternatives analysis. The discussion of Alternative 1, status quo, encompasses an FMP-level review that qualitatively examines and analyzes the overarching management principles set forth in the FMP and all of the FMP management measures. This examination is intended to inform decision-makers about whether the basic structure of the FMP should be changed to improve crab fisheries management by addressing the problems identified in the Council's problem statement. The FMP structure determined by this analysis is the FMP structure under which the rationalization program would be implemented. Existing FMP management measures that may be impacted by the rationalization alternatives are identified in the FMP-level review and further examined in the alternatives analysis. Those management measures that will not be impacted by the rationalization alternatives are not carried forward for further examination in the alternatives analysis. The FMP-level review also identifies any alternative FMP management measures considered but not carried forward.

The second step in the programmatic analysis is a comprehensive look at the alternative rationalization programs, which includes the program elements laid out in the Council's June 2002 and December 2002

motions, and the actions on the trailing amendments taken in January 2003, April 2003, and June 2004. The Council has determined that a type of rationalization program is the most effective tool for addressing the fundamental problems in the BSAI crab fisheries. The Council developed the alternative rationalization programs, with numerous program elements, during an extensive public process over the course of 11 Council meetings, six ad-hoc industry meetings, four Council Crab Rationalization Committee meetings, and numerous stakeholder committee meetings. Program elements include harvester sector allocations, Captain's allocations, processor sector allocations or licensing, catcher/processor (C/P) allocations, cooperatives, binding arbitration, regionalization, community protection measures, Community Development Quota (CDQ) Program and community allocations, a crew loan program, sideboards, and additional program elements. The Council constructed each program alternative from this suite of elements and a suite of options for each element. This range of elements and options were developed in the public arena and described and analyzed in the Council's *Public Review Draft for the Bering Sea Crab Rationalization Program Alternatives* (June 2002). Specific program elements were further analyzed in a series of documents on the BSAI crab rationalization program trailing amendments. These analyses are incorporated into the Regulatory Impact Review/Initial Regulatory Flexibility Analysis (RIR/IRFA) in Appendix 1.

The range of options for each program element of each rationalization program was fully analyzed in the above documents for the socio-economic and distributional effects. That analysis sharply defined the issues for each program element and provided the Council with a clear choice among the options presented in constructing the alternatives, including its preferred program alternative. Therefore, this EIS focuses on the effects of the programs as a whole, and not the individual effects of each of the many program elements. The detailed analysis of the program elements and options satisfies the intent of NEPA in evaluating a wide range of prospective management actions.

The description of each rationalization program alternative has two parts. The first part is the rationalization program, as designed by the Council. The second part examines alterations to the State's management of the crab fisheries that will likely result from each specific rationalization program. From this alternative structure, the decision-makers and the public will be able to determine the effects of the crab fisheries on the human environment under each alternative management program. Discussion of the potential Board of Fisheries (BOF) actions provides the detail needed to analyze the changes to the prosecution of the fisheries and potential environmental impacts of the alternatives.

This structure provides the decision-makers and the public with the information necessary to make decisions on the following items: (1) whether to continue the combined state and federal overall management regime; (2) whether to continue using the FMP's three-category management measure structure; (3) whether to revise the FMP-level management measures that are not currently included in the three categories; and (4) the selection of a preferred alternative that will include (a) the preferred rationalization program and (b) at the policy level, a decision on whether and to what extent the FMP should be amended as a result of the selected rationalization program. FMP changes could either be implemented as part of the proposed action or implemented through subsequent FMP amendments. This EIS also informs BOF decisions on subsequent changes to State crab fisheries management resulting from the implementation of a rationalization program.

2.1 Alternative 1 - Status Quo

The status quo alternative is the continuation of the current FMP for BSAI king and Tanner crabs, and 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. The analysis of Alternative 1 provides an understanding of the effects of the existing crab fisheries management regime on the human environment as well as the expected consequences to the affected environment should the agency undertake no action. In order to contrast status quo with the other alternatives, Alternatives 2, 3, and 4 are referred to collectively as ‘the rationalization program alternatives’. In addition to a description of the status quo, this section contains the FMP-level review to inform decision-makers about FMP and State management changes that may be implemented to improve crab fisheries management while addressing the problems identified in the Council’s problem statement.

2.1.1 Overview of the FMP

The crab stocks in the Bering Sea are managed by the State through a federal FMP. The BSAI Crab FMP is a framework FMP that establishes overarching management measures as well as three specific categories of management measures (Table 2.1-1). These three categories contain management measures that are: (1) under Council control and fixed in the FMP; (2) under State control but frameworked so that the State can change management measures following criteria outlined in the FMP; and (3) under discretion of the State. Significant State actions are either reviewed by or developed in conjunction with the Council’s Crab Plan Team to ensure the FMP complies with the Magnuson-Stevens Act.

Table 2.1-1 Management measures implemented for the Bering Sea and Aleutian Islands king and Tanner crab fisheries, as defined by the federal Fishery Management Plan, by category.

Category 1 - Fixed in FMP	Category 2 - Frameworked in FMP	Category 3 - Discretion of State
Legal gear	Minimum size limits	Reporting requirements
Permit requirements	Guideline harvest levels	Gear placement and removal
Federal observer requirements	Inseason adjustments	Gear storage
	Districts, subdistricts and sections	Gear modifications
Limited access		Vessel tank inspections
Norton Sound superexclusive registration area	Fishing seasons	State observer requirements
	Sex restrictions	Bycatch limits (in crab fisheries)
	Closed waters	
	Pot limits	Other
Registration areas		

Notes: FMP - Fishery Management Plan
State - State of Alaska

The Council approved the current FMP in 1989. The Council revised and updated the FMP in 1998 (NPFMC 1998c). The revised version of the FMP incorporates: six FMP amendments; catch data and other scientific

information from the past 10 years; changes due to amendments to the Magnuson-Stevens Act and other laws, a Russian/U.S. boundary agreement, and a federal/State action plan. The revised FMP also included Amendment 7 to specify criteria for identifying overfishing and when a crab stock is overfished.

Since the FMP was revised, NOAA Fisheries has approved Amendment 8 to establish Essential Fish Habitat (EFH), Amendment 9 to extend the moratorium program, Amendment 10 to establish recency criteria for the crab license limitation program (LLP), Amendment 11 to implement a rebuilding plan for Tanner crab, Amendment 14 to implement a rebuilding plan for snow crab, Amendment 15, to implement a rebuilding plan for St. Matthew blue king crab, Amendment 13 to implement American Fisheries Act (AFA) sideboards, and Amendment 17 to implement a rebuilding plan for Pribilof Islands blue king crab. The Council is developing Amendment 12 to establish habitat areas of particular concern (HAPC) and an amendment to revise the status determination criteria. NOAA Fisheries is implementing a capacity reduction program for the BSAI king and Tanner crab fisheries in response to a Congressional mandate.

The most basic fishery management measure employed for crab fisheries is the establishment of catch limits, called guideline harvest levels (GHL). Alaska Department of Fish and Game (ADF&G) derives the GHLs for most stocks based on annual abundance estimates. The abundance of the major crab stocks is estimated annually from data collected during the NOAA Fisheries annual eastern Bering Sea trawl survey and published in the NOAA Fisheries Annual Report. The crab stocks annually surveyed are: Bristol Bay red king crab, Pribilof Islands red king crab, Pribilof Islands blue king crab, St. Matthew blue king crab, eastern Bering Sea Tanner crab, and eastern Bering Sea snow crab. ADF&G derives the GHL from these annual abundance estimates following harvest strategies developed for each species. Once the fishery reaches its GHL, ADF&G closes the fishery by emergency order. For crab species not surveyed, ADF&G estimates abundance using pot surveys and fishery information.

The crab fisheries target only large male crabs. Each fishery has a minimum size limit for male crab. All crab fisheries use pot gear. The State has established pot limits for each fishery to limit effort in the crab fisheries. In addition to minimum size and sex restrictions, the State has instituted numerous other regulations for the BSAI crab fisheries. The State requires vessels to register with the State by obtaining licenses and permits, and register for each fishery and each area.

State regulations also prescribe gear modifications to inhibit the bycatch of small crab, female crab, and other species of crab. Gear modifications include escape rings, tunnel size, and a requirement that crab pots be fitted with a degradable escape mechanism. Like other fisheries, pot fisheries incur some bycatch of incidental fish and crab. Bycatch in crab pot fisheries includes non-target crab, octopus, Pacific cod, Pacific halibut, and other flatfish. However, the vast majority of bycatch in the crab fisheries are females of the target species, sub-legal males of target species, and non-target crabs. All bycatch of non-legal crabs are discarded at sea. Because pot gear selectively harvests primarily legal-sized crab, the crab fisheries do not remove significant amounts of other species from the ecosystem.

The State establishes fishing seasons following criteria in the FMP. Fishing seasons are established to achieve the biological conservation, economic and social, vessel safety, and gear conflict objectives of the FMP. Season opening dates are set to maximize meat yield, minimize handling of softshell crabs, and meet market demands.

2.1.2 Current State/Federal management structure

The crab FMP is unique in that its framework structure requires co-management of the crab fisheries between the State and the federal government. The FMP defers much of the fishery management decisions to the State, but reserves some management decisions for the Council and NOAA Fisheries. It also establishes a system for federal review and appeals of State management actions. Two other north Pacific FMPs, for the salmon fisheries and scallop fisheries in the exclusive economic zone (EEZ), are similar in that they also defer management to the State, but they do not establish a framework for State management measures or an appeals process.

Procedures for FMP implementation

The FMP establishes procedures for cooperative management between NOAA Fisheries, the Council and the State. The Secretary of Commerce (Secretary) (through the Council and NOAA Fisheries) and the State have a protocol which describes the roles of the Federal and State government. This protocol is detailed in the FMP. The protocol outlines the Council, NOAA Fisheries, and NOAA-General Counsel (GC) participation in the State's development of regulations for the BSAI crab fisheries and for Secretarial review of regulations adopted by the State. It states that the Secretary will issue Federal regulations to supersede any State laws in the EEZ that are inconsistent with the FMP, the Magnuson-Stevens Act or other applicable federal law. The protocol establishes a means of access to the BSAI crab regulatory process for non-residents of Alaska through an advisory committee. The protocol also establishes the Crab Interim Action Committee (CIAC) for the purposes of providing oversight of the FMP and to provide for Council review of management measures and other relevant matters. The CIAC is the mechanism for appeals to the Secretary of management actions taken by the State, and is described below.

Procedure for Council/Secretary of Commerce participation in State of Alaska preseason fisheries actions and NOAA Fisheries review

The FMP establishes procedures for individuals to appeal to NOAA Fisheries actions by the State that they believe are inconsistent with the FMP or other federal law. Secretarial review is limited to whether the challenged statute or regulation is consistent with the FMP, the Magnuson-Stevens Act, and other applicable Federal law. The FMP establishes two paths for Secretarial review of State management actions. 1) One path provides steps for an individual to follow for appealing to the Secretary an action of the BOF. After an appeal has been considered and rejected by the BOF, then the individual can appeal to the Secretary. The first step in Secretarial review is a review by the CIAC. The CIAC comments on the appeal are for the benefit of the Secretary. 2) The second path is for review of a BOF action by the Secretary without an appeal by a member of the public. If, through either path, the Secretary determines that a State regulation is inconsistent with the FMP, Magnuson-Stevens Act, or other applicable federal law, then the Secretary would publish a rule to supercede the State regulation in the EEZ.

Procedure for appeal to the Secretary of Commerce to set aside an in-season action of the State

The in-season appeals process is similar to the preseason process described above, in that the Secretary will only consider appeals claiming that the State regulation is inconsistent with the FMP, Magnuson-Stevens Act, or other applicable federal law. The FMP describes the process an individual is to follow in making an appeal to the Secretary. The Secretary, in reviewing the appeal, will solicit the CIAC's and ADF&G

Commissioner's comments on the management decision. If, after review of the appeal, the Secretary determines the State action is inconsistent with Federal law, the Secretary will issue Federal regulations to supercede the State's regulations in the EEZ.

2.1.3 Fishery Management Plan level management measures

This section discusses in a qualitative manner, and on a general policy level, the components of the FMP that are not included in the three categories of management measures. These components are: 1) FMP goals and objectives; 2) description of the FMP unit; 3) EFH; 4) overfishing definitions; and 5) rebuilding plans. These FMP components are under Federal jurisdiction and are Magnuson-Stevens Act requirements for FMPs.

FMP goals and objectives

The FMP establishes goals and objectives to promote a stable regulatory environment for the seafood industry and maintain the health of the resources and environment. The management goal in the FMP is to maximize the overall long-term benefit to the nation of the BSAI king and Tanner crab stocks by coordinated federal and State management, consistent with responsible stewardship for conservation of the crab resources and their habitats. The FMP objectives are as follows:

1. *Biological conservation objective* to ensure the long-term reproductive viability of king and Tanner crab populations;
2. *Economic and social objective* to maximize economic and social benefits to the nation over time;
3. *Gear conflict objective* to minimize gear conflicts among fisheries;
4. *Habitat Objective* to preserve the quality and extent of suitable habitat;
5. *Vessels safety objective* to provide public access to the regulatory process for vessel safety considerations;
6. *Due-process objective* to ensure that access to the regulatory process and opportunity for redress are available to interested parties; and
7. *Research and management objective* to provide fisheries research, data collection, and analysis to ensure a sound information base for management decisions.

Description of the fishery management unit

The FMP identifies the crab species in the BSAI area under the plan. The FMP applies to commercial fisheries for:

- red king crab (*Paralithodes camtschaticus*);
- blue king crab (*P. platypus*);
- golden king crab (*Lithodes aequispinus*);
- scarlet king crab (*L. cousi*);
- Tanner crab (*Chionoecetes bairdi*);
- snow crab (*C. opilio*);
- grooved Tanner crab (*C. tanneri*); and
- triangle Tanner crab (*C. angulatus*).

The FMP defines the BSAI area as those waters of the EEZ lying south of Point Hope (68°21'N), east of the United States (U.S.) - Union of Soviet Socialist Republics (U.S.S.R.) convention line of 1988, and extending south of the Aleutian Islands for 200 miles (320 kilometers [km]) between the convention line and Scotch Cap Light (164°44'36'W).

Essential fish habitat

The Sustainable Fisheries Act (SFA) of 1996 amended the Magnuson-Stevens Act to require each regional council to identify and protect important marine and anadromous fish habitat. Specifically, councils were required by the SFA to amend their FMPs to identify and describe EFH for all managed species; describe adverse impacts to that habitat from fishing and non-fishing activities; recommend conservation and enhancement measures to protect and restore habitat; and recommend measures that minimize, to the extent practicable, adverse effects from fishing. Amendment 8 established EFH for all of the crab species under this FMP. EFH was defined as the general distribution of the crab species at each identified life stage. The Environmental Assessment (EA) for Amendment 8 fully describes EFH for the crab species, includes maps of EFH for each crab species at each life stage, and is incorporated by reference (NPFMC 1998e). Measures that minimize the adverse effects of the crab fisheries on EFH for all BSAI species managed by FMPs are contained in this FMP. The effects of the crab fisheries on all existing EFH and measures to minimize the effects of crab fisheries are discussed in the EFH Assessment in Chapter 4 of this EIS.

Overfishing definitions

The Magnuson-Stevens Act requires FMPs to specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished, with an analysis of how the criteria were determined and the relationship between the criteria to the reproductive potential of the stock. Amendment 7 includes the Council's overfishing definitions for the FMP crab species in order to comply with the Magnuson-Stevens Act. The FMP identifies the following overfishing definitions to provide objective and measurable criteria for identifying when the BSAI crab fisheries are overfished or overfishing is occurring. The terms "overfishing" and "overfished" mean a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce maximum sustainable yield (MSY) on a continuing basis. The federal requirements for determining the status of the stocks are the minimum stock size threshold (MSST) and the maximum fishing mortality threshold (MFMT). These requirements are contained in the FMP and outlined here. The Crab Plan Team will reevaluate these estimates every five years or when environmental conditions indicate a regime shift has occurred. Table 2.1-2 provides the MSST, MSY, optimum yield (OY), and MSY control rule estimates for the BSAI king and Tanner crab stocks. Table 2.1-3 provides summary information on the basic elements of stock condition for the six crab stocks that are surveyed annually by NOAA Fisheries.

Table 2.1-2 Optimum yield, minimum stock size threshold, maximum sustainable yield (MSY), and the MSY control rule estimates for Bering Sea and Aleutian Island king and Tanner crab stocks (estimated values are in millions of pounds).

Stock	Optimum Yield	Maximum Stock Size Threshold	MSY Range	MSY Control Rule
Adak red king	NA	1.5	0 - 1.5	0.2
Bristol Bay red king	44.8	17.9	0 - 17.9	0.2
Dutch Harbor red king	NA	NA	NA	0.2
Pribilof Islands red king	3.3	1.3	0 - 1.3	0.2
Norton Sound red king	NA	0.5	0 - 0.5	0.2
Pribilof Islands blue king	6.6	2.6	0 - 2.6	0.2
St. Matthew blue king	11.0	4.4	0 - 4.4	0.2
St. Lawrence blue king	NA	0.1	0 - 0.1	0.2
Aleutian Islands golden king	NA	15.0	0 - 15.0	0.2
Pribilof Islands golden king	NA	0.3	0 - 0.3	0.2
St. Matthew golden king	NA	0.3	0 - 0.3	0.2
Aleutian Islands scarlet king	NA	NA	NA	0.2
Eastern Bering Sea scarlet king	NA	NA	NA	0.2
TOTAL king crab		43.9	0 - 43.9	
Eastern Aleutian Islands Tanner	NA	0.7	0 - 0.7	0.3
Eastern Bering Sea Tanner	94.8	56.9	0 - 56.9	0.3
Western Aleutian Islands Tanner	NA	0.4	0 - 0.4	0.3
TOTAL Tanner crab		58.0	0 - 58.0	
Eastern Bering Sea snow crab	460.8	276.5	0 - 276.5	0.3
Eastern Aleutian Islands triangle Tanner crab	NA	1.0	0 - 1.0	0.3
Eastern Bering Sea triangle Tanner crab	NA	0.3	0 - 0.3	0.3
Eastern Aleutian Islands grooved Tanner crab	NA	1.8	0 - 1.8	0.3
Eastern Bering Sea grooved Tanner crab	NA	1.5	0 - 1.5	0.3
Western Aleutian Islands grooved Tanner crab	NA	0.2	0 - 0.2	0.3
TOTAL other Tanners		4.8	0 - 4.8	

Notes: NA - Insufficient data exists at this time to estimate the value.

Table 2.1-3 Minimum stock size threshold, 2001 spawning biomass, sustained yield, and 2001/2002 guideline harvest level estimates for Bering Sea and Aleutian Islands king and Tanner crab stocks (estimated values are in millions of pounds).

Stock	MSST	2001 SB	2001 SY	2001/2002 GH L
Bristol Bay red king	44.8	88	17.6	7.15
Pribilof Islands red king	3.3	25.5	5.1	0
Pribilof Islands blue king	6.6	7	1.4	0
St. Matthew blue king	11.0	9	1.8	0
Eastern Bering Sea Tanner	94.8	67.7	20.31	0
Eastern Bering Sea snow	460.8	571	171.3	30.82

Notes: GH L - guideline harvest level
 MSST - minimum stock size threshold
 SB - spawning biomass
 SY - sustainable yield

The MSST is 50 percent of the mean total spawning biomass (SB) (SB=total biomass of mature males and females) for the period 1983-1997, upon which the MSY was based. When the mature biomass falls below this level, the stock is considered overfished. The MFMT is defined by the MSY control rule, and is expressed as the fishing mortality rate. The MSY fishing mortality rate, (F_{msy}) equals M , a conservative natural mortality value set equal to 0.20 for all species of king crab, and 0.30 for all *Chionoecetes* species. If the harvest rate is greater than the MFMT for one year or more, then overfishing is occurring. If a stock or stock complex is considered overfished or if overfishing is occurring, the Secretary will notify the Council to take action to rebuild the stock or stock complex.

MSY is the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions. MSY is estimated from the best information available. Proxy stocks are used for BSAI crab stocks where insufficient scientific data exists to estimate biological reference points and stock dynamics are inadequately understood. MSY for crab species is computed on the basis of the estimated biomass of the mature portion of the male and female population or total SB of a stock. The MSY stock size is the average size of the stock, measured in terms of mature biomass of a stock under prevailing environmental conditions, or a proxy thereof. It is the stock size that would be achieved under the MSY control rule. It is also the minimum standard for a rebuilding target when remedial management action is required. For king and Tanner crab, the MSY stock size is the average mature biomass observed over 15 years, from 1983 to 1997.

A fraction of the SB is considered sustained yield (SY) for a given year and the average of the SYs over a suitable period of time is considered the MSY. The MSY control rule means a harvest strategy which, if implemented, would be expected to result in a long-term average catch approximating MSY. The MSY control rule for king and Tanner crabs is the mature biomass of a stock under prevailing environmental conditions, or proxy thereof, exploited at a fishing mortality rate equal to a conservative estimate of natural mortality. SY in a given year is the MSY rule applied to the current spawning biomass.

Rebuilding plans

The Magnuson-Stevens Act requires FMPs to contain conservation and management measures to end overfishing and rebuild the fishery when NOAA Fisheries has determined the fishery is overfished or is approaching an overfished condition. The Magnuson-Stevens Act requires the Council to develop rebuilding plans within one year after NOAA Fisheries declares a stock overfished. Rebuilding plans are developed following the national standard guidelines (50 Code of Federal Regulations [CFR] 600.310) and *Technical Guidance on the Use of Precautionary Approaches to Implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act* (Restrepo et al. 1998).

Four BSAI crab stocks are under rebuilding plans; St. Matthew blue king crab, Tanner crab, snow crab, and Pribilof Islands blue king crab. On March 3, 1999, NOAA Fisheries declared Bering Sea Tanner crab overfished because the stock was below the MSST of 94.8 million pounds. The Council developed the rebuilding plan as Amendment 11. NOAA Fisheries approved Amendment 11 on November 26, 2000 (65 Federal Register [FR] 76175 December 6, 2000). On September 24, 1999, NOAA Fisheries declared St. Matthew blue king crab overfished because the stock was below the MSST of 11 million pounds. The Council developed a rebuilding plan for St. Matthew blue crab as Amendment 15, which NOAA Fisheries approved on June 8, 2000 (65 FR 38216, June 20, 2000). On September 24, 1999, NOAA Fisheries declared Bering Sea snow crab overfished because the stock was below the MSST of 460.8 million pounds. The Council developed the snow crab rebuilding plan as Amendment 14. NOAA Fisheries approved the rebuilding plan on December 28, 2000 (66 FR 742, January 4, 2001). NOAA Fisheries declared Pribilof Islands blue king crab overfished on September 23, 2002 (67 FR 62212). The Council developed the Pribilof Islands blue king crab rebuilding plan as Amendment 17. NOAA Fisheries approved the rebuilding plan on March 18, 2004 (69 FR 17651, April 5, 2004). An EA was prepared for each rebuilding plan.

Each rebuilding plan contains a rebuilding harvest strategy, bycatch control measures, and habitat protection measures. The rebuilding harvest strategies are the main components of these rebuilding plans and provide for the rebuilding of the stocks. Each rebuilding harvest strategy calculates the harvest rate based on stock abundance and closes the fishery when the stock is at low abundance it also allows a reduced harvest rate at medium levels of abundance, and a slightly higher harvest rate when stock abundance is high. The bycatch control measures are pot gear modifications to provide escape mechanisms which reduce bycatch of sub-legal and female crab in the directed crab fisheries. For Tanner and snow crab, habitat protection measures are increased protection of these species' EFH from non-fishing activities. For St. Matthew blue king crab, the waters within three miles (4.8 km) around St. Matthew, Hall, and Pinnacle Islands are closed to crab fishing to protect female spawning aggregations and their habitat. These rebuilding measures are all implemented by State regulations under Category 2 and Category 3. For the Pribilof Islands blue king crab, habitat is protected by the federal Pribilof Islands Habitat Conservation Area, which closed the majority of blue king crab habitat to bottom trawling.

2.1.4 Fishery Management Plan management measures

FMP management measure structure

The FMP establishes a structure to categorize management measures by management authority. Management measures are placed in one of three categories. This three category structure was created to clearly delineate management responsibility between the State and Federal government. These management measures are used to achieve the FMP's management goals and objectives and the Magnuson-Stevens Act National Standards.

Category 1 includes federal management measures set forth in the FMP. Federal management measures are inherent Federal responsibilities under the Magnuson-Stevens Act. Changes to Category 1 measures require an FMP amendment. For these actions, the Council recommends an FMP amendment to the Secretary for approval and implementation through federal regulations.

Category 2 includes measures for which the FMP provides a framework, but management decisions are deferred to the State. The FMP framework for these measures guides State decision making to comply with the Magnuson-Stevens Act, but at the same time recognizes the State's expertise in these management areas. Changes to framework language in the FMP require an amendment but changes to the management measures are made by the BOF.

Category 3 includes measures under discretion of the State that are neither rigidly specified nor frameworked in the FMP. These are management measures that do not have any FMP criteria for the State to follow and the FMP relies completely on State expertise. As with Category 2, changes to the FMP language or moving a measure between categories requires an FMP amendment but changes to the actual management measures are made by the BOF. BOF regulations are implemented by ADF&G.

Under Category 2 and 3 measures, the State makes changes to the crab fisheries regulations through the BOF and ADF&G implements the management measures. The Board adopts management measures through its public process, much like the Council's process. Members of the public can provide recommendations to the BOF on crab management in three ways. The public can submit a proposal to the BOF to make specific changes to the BSAI crab fisheries management measures. The public can also submit oral or written testimony to the BOF before it takes action on an issue. In addition, members of the public can serve on the BOF committees that make recommendations to the BOF. When the BOF takes action, it explains how the action complies with the FMP, Magnuson-Stevens Act, and applicable federal law.

This section analyzes each management measure in Categories 1, 2, and 3 and contains a description of the measure, how it's implemented under status quo, and its effectiveness at achieving the FMP criteria.

2.1.4.1 Category 1 - federal management measures fixed in the Fishery Management Plan

The following are management measures in Category 1.

Legal gear

This measure prohibits using trawls and tangle nets to capture crabs. The FMP does not list types of gear that are legal to use in the BSAI crab fisheries. These gear types are prohibited because of the high mortality rates which they inflict on non-legal crab, they are damaging to the benthic habitat, and they are not selective.

Specification of legal gear is important to the attainment of the biological conservation and economic and social objectives of the FMP.

Permit requirements

This measure requires vessels to be registered with the State and have valid federal licenses under the LLP. Federal regulations at CFR 679.4(b) require crab vessel owners to have a federal fisheries permit if they keep groundfish on board the vessel, even to use as bait. Otherwise, crab fishers are subject to the federal fisheries permit requirement. The FMP assumes that all crab fishers are licensed under the LLP, and vessels are licensed and registered with the State, and as such, while fishing in the EEZ are subject to all State regulations that are consistent with the FMP, Magnuson-Stevens Act, and other applicable federal law. These requirements are effective at meeting the FMP management goals and objectives.

Federal observer requirements

This measure provides the option for federal observers on crab vessels, when requested by the NOAA Fisheries Regional Administrator. Observer requirements are important to attainment of biological conservation and research and management objectives of this FMP. Currently, no federal observers are placed on crab vessels. The State shellfish observer program is described under Category 3 (Section 2.1.4.3).

Limited access

This measure establishes the LLP (as modified by Amendment 10), CDQ allocation, and the AFA harvester sideboard provisions. Limited access measures are enacted to meet the FMP management goals and biological conservation objective, economic and social objective, and vessel safety objective.

Licence limitation program

Fishing under the crab LLP began in January 2000 (Table 2.1-4). Vessels must have a valid LLP license on board in order to participate in the BSAI crab fisheries. The goal of the LLP is to limit access to the crab fisheries to the historic participants or to people who purchase licenses from historic participants. On initial issuance, NOAA Fisheries granted licenses to vessel owners who qualified under the program. The licenses are fully transferable. NOAA Fisheries issued licenses based on fishing history during a general qualifying period, with area/species endorsements based on additional qualifying periods for each species by area. Licenses also limit the size of the vessel deployed under the license. Interim licenses were also issued to any applicant that had a valid moratorium qualification for crab in 1999, or that appealed an initial administrative determination issued by Restricted Access Management (RAM). Interim licenses are temporary and the total number of licenses will decrease as interim licenses either are denied or licenses granted. Also, the number of licenses may change as a result of a small number of new licenses issued from late filed claims.

Table 2.1-4 Crab license limitation program - Number of licenses¹ issued with specific endorsements as of July 2003.

Number of crab licenses: 383 (61 of which are interim licenses)			
Endorsement	Licenses	Interim	Total
Aleutian Islands golden king	27	11	38
Aleutian Islands red king	26	11	37
BSAI ² Tanner	252	56	308
Bristol Bay red king	248	54	302
Norton Sound king	61	4	65
Pribilof Island King	110	26	136
St. Matthew Islands blue king	163	36	199

Notes: ¹A crab license may contain more than one endorsement.
² BSAI Tanner endorsements include both snow crab and Tanner crab.

The LLP was modified by Amendment 10, which changed the basic eligibility criteria for crab licenses. Amendment 10 requires recent participation in the BSAI king and Tanner crab fisheries in order to qualify for a license under the crab LLP. The recent participation requirement applies to the general licenses only; if a vessel satisfies the recent participation criteria, the owner would receive the original license and all of the species/area endorsements for which it qualified under the original criteria. No new species/area endorsements could be earned during the recent qualification. The Secretary approved Amendment 10 and issued implementing regulations that resulted in a decrease in the total number of crab licenses.

When the Council recommended the LLP for the BSAI crab fisheries, it recognized that this program was a step towards rationalization. The LLP restricts participation of new entrants and defines the universe of current participants in these fisheries. Persons issued licenses demonstrated recent and historic participation in the fishery. The LLP accomplished the goal and objectives set out for the program and set the playing field for a rationalization program. The LLP did not address the fundamental problem of overcapacity because it does not solve the race for fish.

Community development quota program

The Magnuson-Stevens Act mandated that the Council and NOAA Fisheries establish a CDQ program under which a percentage of the total allowable catch of BSAI crab fisheries is allocated to the program (16 United States Code [USC] 1855(i)(1)(A)). The CDQ groups receive 7.5 percent of the GHF for the following Bering Sea crab fisheries: Bristol Bay red king crab, Pribilof Islands red and blue king crab, Norton Sound red king crab, snow crab, and Tanner crab. Crab CDQ fisheries began in 1998. The Council and NOAA Fisheries defer management authority of the BSAI king and Tanner crab CDQ fisheries to the State, with federal oversight. The FMP provides the State with the authority to establish CDQ fishing seasons and manage the crab harvesting activity of the CDQ groups (§8.1.4.2 of the BSAI Crab FMP). The State also recommends the annual percentage allocations of crab among the CDQ groups. NOAA Fisheries reviews these recommendations and approves them if they comply with 50 CFR part 679 and all other applicable federal laws. The State sets the CDQ seasons after the regular commercial fishery. Sixty-five communities along the Bering Sea are currently eligible for the CDQ program. These villages have aligned into six CDQ groups.

The CDQ program is described in detail in Section 3.4.5, the RIR/IRFA in Appendix 1, and the Social Impact Assessment (SIA) in Appendix 3.

American Fisheries Act

In 1998, Congress passed the AFA to establish a new allocation scheme for the BSAI pollock fishery. The AFA required harvest restrictions (commonly known as sideboards) on the pollock fishers who received exclusive harvesting privileges under the AFA to protect the interests of fishers who are not directly benefitted by the AFA. Thirty-eight AFA vessels are endorsed to fish in the BSAI crab fisheries, but these vessels are restricted to participation in the specific fishery for which they are endorsed.

The sideboards for the AFA vessels to participate in the crab fisheries are as follows. Under regulations implementing the AFA, an AFA vessel is ineligible to participate in any BSAI crab fishery unless that specific vessel participated in a specific crab fishery during certain qualifying years. Amendment 13 implemented these crab fisheries protection measures. AFA vessel permits could be endorsed for the Bristol Bay red king crab, snow crab, Tanner crab, St. Matthew blue king crab, Pribilof Islands king crab, Aleutian Islands red king crab, and Aleutian Islands golden king crab fisheries. To participate in a BSAI crab fishery, an AFA vessel must be named on a valid LLP license for that crab fishery, as well as have an AFA vessel permit containing an endorsement for that crab fishery.

In addition to the historic participation requirements, there is a cap on the amount of Bristol Bay red king crab and Tanner crab that the AFA vessels can harvest. The Bristol Bay red king crab harvest cap is based on the aggregate 5-year (1991-1997, excluding 1994-1995) weighted average share. Under this cap, AFA vessels may harvest up to 10.81 percent of the regular commercial GHL. Approximately 30 AFA vessels participate in the Bristol Bay red king crab fishery. The amount of the harvest cap may change if the number of AFA vessels with Bristol Bay red king crab endorsements changes. An aggregate harvest cap will be established for Tanner crab once the stock rebuilds. This harvest cap will be based on the aggregate historic catch of the endorsed Tanner crab vessels for 1995-1996. Management and implementation of these crab harvest cap sideboards is deferred to the State.

Superexclusive registration in Norton Sound

The FMP establishes a superexclusive registration area for red king crab in Norton Sound, which prohibits vessels that fish in Norton Sound from fishing outside Norton Sound. This measure protects the local small vessel fleet from competition with the larger vessels that fish outside Norton Sound. This management measure is under Category 1 because the State does not have the authority to restrict participation in fisheries under a federal FMP. The superexclusive registration zone has been effective at keeping Norton Sound a small boat fishery for local participants.

2.1.4.2 Category 2 - Framework management measures

The following provides a description of management measures for which the FMP provides a framework, but management decisions are deferred to the State. The descriptions of the State management measures has been provided by ADF&G.

Minimum size limits

The FMP authorizes the State to adjust size limits under State regulations following criteria in the FMP. Minimum size limits are commonly used in managing crab fisheries, and are important in meeting both the biological conservation and economic and social objectives of the FMP.

The State has set a size limit on legal males for each BSAI crab fishery. Presently, minimum size limits for king crab in the BSAI are regulated under 5 Alaska Administrative Code (AAC) 34.060. SIZE LIMIT FOR KING CRAB, unless otherwise provided in 5 AAC 34. Minimum size limits for Tanner crab are described in 5 AAC 35.060. SIZE LIMIT FOR TANNER CRAB, unless otherwise provided in 5 AAC 35. The State uses biological considerations to establish minimum size limits to ensure that conservation needs are served. The fisheries discard all crab under the size limit. For snow crab, the legal-size limit is 3.1-inches carapace width (CW); however, the industry accepted size limit is 4 inches. The industry has a preference for larger crabs based upon market and other economic considerations dictated by industry rather than through regulation.

Guideline harvest levels

The FMP authorizes the State to set guideline harvest levels (GHLs) under State regulations following criteria in the FMP. GHLs are the amount of legal male crabs the fishery is allowed to retain. The GHL is a result of a process which includes the examination of the effects of different harvesting strategies on the seven FMP objectives. While harvest strategies are evaluated relative to all seven of these objectives, GHL most frequently is used as a management measure to achieve the first two objectives: biological conservation objective and social and economic objective.

The State sets the GHLs according to established harvest strategies. The harvest strategies are developed through the BOF process. For the Bristol Bay red king crab fishery, State regulation 5 AAC 34.816 BRISTOL BAY KING CRAB HARVEST STRATEGY provides guidelines. For the St. Matthew fishery, guidelines are established in 5 AAC 34.917 SAINT MATTHEW ISLAND SECTION BLUE KING CRAB HARVEST STRATEGY. Similar guidance exists for Bering Sea Tanner crab, under 5 AAC 335.508 EASTERN SUBDISTRICT C. BAIRDI TANNER CRAB HARVEST STRATEGY, and 5 AAC 35.517 BERING SEA C. OPILIO TANNER CRAB HARVEST STRATEGY.

GHLs are established preseason based upon extensive survey analysis, through joint NOAA Fisheries and ADF&G assessment of stock conditions utilizing harvest strategies developed by ADF&G. Survey results for five stocks are compared to thresholds established in State harvest strategies and regulations. ADF&G uses these thresholds to determine if a fishery should be opened and to calculate the GHL. Table 2.1-5 contains these thresholds.

With sex and minimum-size restrictions for retention, there is inherent fishery selectivity in the BSAI king and Tanner crab fisheries. Nonetheless, it is the policy of the BOF to maintain crab stocks comprised of various size and age classes of mature animals in order to maintain long-term reproductive viability of the stock and reduce industry dependence on annual recruitment, which is extremely variable. Harvest strategies developed for Bering Sea king and Tanner crab stocks since the mid-1990's account for assumed bycatch and handling mortality of non-retained crabs in the determination of the harvest rate on mature- or legal-sized males. The State harvest strategies currently address that policy by setting caps on the harvest rate of the size-shell component of legal males that is selected for retention in the fishery. In the king crab fisheries, where

there is currently little evidence for strong fishery selectivity within the class of legal-sized males, the harvest rate cap is applied to the preseason abundance of legal-sized males.

In both the Bering Sea Tanner and snow crab fisheries, however, there is strong selectivity by the fishery for legal males in new-shelled (or clean-shelled) condition as opposed to old-shelled (or dirty-shelled) condition. In the Bering Sea snow crab fishery, processor standards for delivered crabs also results in strong selectivity for males with greater than or equal to 4-inches CW, although the legal-size is 3.1-inches CW. Accordingly, the harvest strategies for the Bering Sea Tanner and snow crab fisheries apply the harvest rate cap to “exploitable legal males,” which is a subset of the legal males defined on the basis of fishery selectivity for shell condition, size, or both.

Table 2.1-5 Threshold values in State of Alaska harvest strategies for Bering Sea king and Tanner crabs (estimates in millions of pounds).

Pribilof blue king crab
Stock threshold for fishery opening 0.77 million crab ♂ >119-mm CL
St. Matthew blue king crab
Stock threshold for fishery opening 2.9 million crab ♂ >104 - mm CL
Stock threshold for increasing exploitation rate on molting mature males [(B-2.9)/8.7]*0.1+0.1 when 11.6 > B ≥ 2.9 million pounds. 0.2 when B ≥ 11.6 million pounds
GHL threshold for fishery opening 2.5 million pounds
Bristol Bay red king crab
Stock threshold for fishery opening 8.4 million crab ♀ >89 - mm CL and 14.5 million pounds effective spawning biomass
Stock threshold for increasing exploitation rate from 10% to 15% 55 million pounds effective spawning biomass
GHL threshold for fishery opening 4 million pounds
Eastern Bering Sea Tanner crab (<i>bairdi</i>)
Stock threshold for fishery opening 21 million pounds of ♀ > 79 - mm CW

Table 2.1-5 (Cont.) Threshold values in State of Alaska harvest strategies for Bering Sea king and Tanner crabs (estimates in millions of pounds).

Stock threshold for increasing exploitation rate from 10% to 15%
45 million pounds of ♀ > 79 - mm CW
GHL threshold for fishery opening
4 million pounds
Eastern Bering Sea snow crab (<i>opilio</i>)
Stock threshold for fishery opening
230.4 million pounds of spawning biomass
Cap on exploitation of exploited legal males
58%
Exploitation rate on mature male biomass
increases linearly with spawning biomass from 10% when spawning biomass in 230.4 million pounds to 22.5% when spawning biomass is 921.6 million pounds
GHL threshold for fishery opening
15 million pounds

Notes: B - biomass
 CL - carapace length
 CW - carapace width
 GHL - guideline harvest levels
 mm - millimeter

Tanner crab Harvest strategy. ADF&G developed the stairstep harvest strategy for Tanner crabs, which was adopted by the BOF in March 1999 and detailed in the ADF&G regional information report “Overview of Population Dynamics and Recommended Harvest Strategy for Tanner Crabs in the Eastern Bering Sea” (Zheng and Kruse 1999). The new harvest strategy follows the precautionary approach to fishery management by incorporating a fishery threshold and stair-step harvest rates (Restrepo et al. 1998). According to Zheng and Kruse (1999), “these features reduce mature harvest rates to protect reproductive potential during periods of low abundance when risks of overfishing or falling below the overfished level reference points are high because of uncertainties in abundance estimates and population dynamics (i.e., depensation vs. compensation).” The Tanner crab fishery has three thresholds against which survey data must be compared (Table 2.1-5; ADF&G 1999a): one for a fishery opening; one for increasing the exploitation rate on mature males; and a minimum GHL to assure manageability.

The harvest strategy for Tanner crab contains five components:

- Threshold: 21.0 million pounds (lbs.) of females biomass >80 millimeter (mm) CW. The fishery will be closed when the stock is below threshold.
- Mature Harvest Rates: 20 percent of molting mature males when biomass of females >80 mm CW is ≥45.0 million lbs. and 10 percent of molting mature males when the biomass of females >79 mm

CW is ≥ 21.0 million lbs. and < 45.0 million lbs. Molting mature males are 100 percent of newshell and 15 percent of oldshell males > 112 mm CW.

- Legal Harvest Rate Cap: a 50 percent cap of exploitable legal males, which are 100 percent of newshell and 32 percent of oldshell legal males.
- GHLS for Bristol Bay and Pribilof Islands: GHLS are determined separately for crabs east of 168°W (Bristol Bay) and west of 168°W (Pribilof Islands) in the eastern subdistrict of the Bering Sea.
- A precautionary measure: when the stock is reopened to fishing after having been closed to all commercial fishing in the preceding season due to the depressed stock condition, the GHL in the season will be reduced to one-half of the value as computed in the above GHL determination.

Snow crab Harvest strategy. ADF&G developed the rebuilding harvest strategy for snow crabs, which was adopted by the BOF in March 2000. The BOF revised this harvest strategy in March 2002 based on new scientific information and data analysis. This harvest strategy is detailed in the ADF&G regional information report “Overview of Recommended Harvest Strategy for Snow Crabs in the Eastern Bering Sea” (Zheng et al. 2002).

The harvest strategy for eastern Bering Sea snow crab has four components: a stock threshold for a fishery opening, a rule for determining an exploitation rate on mature male biomass when the fishery is open, a harvest rate cap on the class of legal-sized males that are selected by the fishery, and a minimum GHL for a fishery opening.

The stock threshold and rule for determining an exploitation rate on mature male biomass are both closely tied to the FMP definitions of the MSY biomass (B_{MSY}), MSST, and overfishing rate of snow crab in the eastern Bering Sea. The stock threshold is 25 percent of the MSST as defined in the FMP; that is, when the preseason estimate of total mature biomass is less than 25 percent of MSST, the fishery is closed. For total mature biomass greater than or equal to 25 percent of MSST, the exploitation rate on mature male biomass increases linearly with total mature biomass, from one-third of the FMP’s overfishing rate definition when total mature biomass is at 25 percent of MSST to a maximum of 75 percent of the FMP’s overfishing rate definition when total mature biomass is greater than or equal to B_{MSY} . Under current FMP definitions, one-third of the overfishing rate corresponds to a 10 percent exploitation rate; 75 percent of the overfishing rate corresponds to a 22.5 percent exploitation rate.

The difference between legal-size and size at maturity for male snow crab and the selectivity for restricted components of the legal-sized male snow crabs by processors and harvesters necessitates a harvest rate cap on “exploited legal males.” The harvest rate cap protects against excessive harvest of restricted components of the mature males. The industry standard for retention and processing of male snow crab during the commercial fishery is 4-inches CW, which is larger than both the legal-size definition of 3.1-inches CW and the estimated size of male maturity (approximately 3.0-inches CW). Moreover, within the size class favored by processors, there is also selection for male crabs in “clean-” or “new-shell” condition over those in “dirty” or “old-shell” condition. To protect against the overharvest of the restricted size-shell component selected for by the participants in the fishery, the harvest strategy includes a 58 percent harvest rate cap on “exploited legal males”, where “exploited legal males” are defined as all new-shell males 4-inches CW plus a percentage of old-shell males 4-inches CW that is determined from the expected fishery selectivity.

Finally, there is a minimum GHL of 15 million lbs. for a fishery opening to maintain the ability to manage the fishery inseason. The minimum GHL also protects against overharvests that can occur due to errors in stock abundance estimation when the stock is at low levels. To ensure manageability, the State implemented pot limits for fisheries with low GHGs. Fisheries with GHGs of 15 million to 20 million lbs. are prosecuted with pot limits of 90 pots for vessels > 125 feet length overall (LOA) and 70 pots for vessels ≤ 125 feet LOA. Fisheries with GHGs of 20 million to 25 million lbs. are prosecuted with pot limits of 120 pots for vessels > 125 feet LOA and 100 pots for vessels ≤ 125 feet LOA. Fisheries with GHGs of 25 million lbs. or more are prosecuted with pot limits of 250 pots for vessels > 125 feet LOA and 200 pots for vessels ≤ 125 feet.

Pribilof Islands red and blue king crab Harvest strategy. The GHG is derived from the annual abundance estimates and catch-survey analysis. Pribilof Islands red king crab are harvested concurrently with the Pribilof Islands blue king crab fishery. The rebuilding harvest strategy allows for no fishery on the Pribilof blue king crab stock until the stock level returns to the B_{MSY} level, defined as 13.2-million pounds of spawning biomass in the FMP. The harvest strategy is as follows:

- Threshold: B_{MSY} (13.2-million pounds of spawning biomass)
- Opens: in 2nd year stock is above B_{MSY}
- Harvest rate on mature males: 10% of survey estimate
- Cap on harvest of legal males: 20% of survey estimate
- Minimum GHG: 0.5 million pounds

St. Matthew blue king crab Harvest strategy. The rebuilding plan implements a more conservative harvest strategy for St. Matthew blue king crab. ADF&G developed the stairstep harvest strategy for St. Matthew blue king crab, which was adopted by the BOF in March 2000. Discussion and analysis of the harvest strategy, including the catch-survey analysis are in the ADF&G report “Overview of Stock Assessment and Recommended Harvest Strategy for St. Matthew Island Blue King Crabs” (Zheng and Kruse 2000c).

The harvest strategy for St. Matthew blue king crab contains four components:

- Stock threshold: 2.9 million lbs. of mature male (105 mm CL) biomass. This is 25 percent of the equivalent biomass at maximum sustainable yield ($B_{MSY} = 11.6$ million lbs.);
- Minimum GHG: 2.5 million lbs;
- Directed mature harvest rates: 0.0 when mature male biomass (B) is <2.9 million lbs., equal to $(B - 2.9)/(8.7) * 0.1 + 0.1$ when $11.6 > B \geq 2.9$ million lbs., and 0.2 when $B \geq 11.6$ million lbs., respectively; and
- Cap of legal harvest rate: 0.4.

Bristol Bay red king crab Harvest strategy. The GHG is derived from the annual abundance estimates and catch-survey analysis. The State generally sets preseason GHGs for Bristol Bay red king crab based on the following harvest strategy. ADF&G developed the stairstep harvest strategy for Bristol Bay red king crab. Analysis of the harvest strategy and the analytical tools used in developing and implementing the strategy are detailed in the ADF&G reports: “Overview of population estimation methods and recommended harvest strategy for red king crabs in Bristol Bay” (Zheng et al. 1996a) and “Evaluation of Alternative Harvest Strategies for Bristol Bay Red King Crabs (Zheng 2003).

The harvest strategy for Bristol Bay red king crab contains four components:

- The threshold level of abundance is 8.4 million mature female red king crab and 14.5 million lbs. of effective spawning biomass¹; the season will not open if preseason survey data indicates that the population is at or below either of these two indices of stock reproductive potential.
- If the effective spawning biomass is between 14.5 million lbs. and 35.75 million lbs., the harvest rate is 10 percent of mature male abundance or no more than 50 percent of the legal-sized male red king crab abundance, whichever is less.
- If the effective spawning biomass is between 35.75 million lbs. and 55 million lbs. and, the harvest rate is 12.5 percent of mature male abundance or no more than 50 percent of the legal-sized male red king crab abundance, whichever is less.
- If the effective spawning biomass is 55 million lbs. or more, the harvest rate is 15 percent of mature male abundance or no more than 50 percent of the legal-sized male abundance, whichever is less.

Norton Sound red king crab Harvest strategy. The Norton Sound red king crab GHL is set according to the following harvest strategy:

- When the abundance is below 1.5 million legal male crabs the fishery is closed;
- When the abundance is between 1.5 and 2.5 legal male crabs, the exploitation rate is 5 percent of legal male crabs; and
- When the abundance is above 2.5 million legal male crabs, the exploitation rate is 10 percent of legal male crabs.

In-season adjustments

The FMP authorizes the State to make in-season adjustment to GHLS and fishing period lengths and to close areas to fishing under State regulations, following guidelines in the FMP. Inseason adjustments allow management to respond when preseason predictions prove to be incorrect to ensure management continues to follow the biological and economic objectives of the FMP. The State monitors total catch, effort, and catch per unit effort (CPUE) inseason. In most seasons, harvest rates are similar to those projected and the season closure is determined based on the estimated time that it will take to fully harvest the GHL. Inseason adjustments are done through Emergency Orders, granted under the authority to the ADF&G Commissioner (5 ACC 16.05.060 EMERGENCY ORDERS).

The term GHL was expressed as a range about a point estimate for many years. A range of harvest levels allowed the State to make inseason management decisions based on current data obtained from the fishery. For healthy surveyed stocks, the preseason GHL may be adjusted up or down inseason using fishery information to fine tune the preseason harvest estimate. Closure dates are announced when the GHL is reached, or earlier/later based on current inseason information. Managers make inseason adjustments to the

¹ “Effective spawning biomass” means the estimated biomass of mature female red king crab that the population of mature male red king crab could successfully mate in a given year.

GHL when inseason fishery performance suggests population abundance is either under or over-estimated from the survey. This is an efficient conservation tool. Sources of error are imprecise estimates, survey error, or unexpected mortality. Inseason adjustments to the GHL rely upon a long baseline of fishery performance data and on grounds reporting. However, in recent years stocks have been depressed, GHLs and harvest rates were low, so that adjustments have not been made. This has made reliance on historic baseline data and fishery performance reports from inseason open access fisheries difficult. Short seasons, large fleet participation levels and changing fishery strategies make inseason adjustments questionable and difficult. Newer harvest strategies for several BSAI crab stocks have lower exploitation rates to address the survey-error and other mortality issues. This reaffirms the State's ability to proceed cautiously, with an eye on stock conservation. Note that the only time the fishery closed significantly early before the GHL was reached in the Tanner crab fishery when the survey indicated a large number of legal crab, but the fleet could only find a small number of marketable crab. The survey indicating a biologically available harvest was correct, but the crab on the grounds were dirty (not marketable). As a result, the fleet petitioned ADF&G managers to stop the fishery early so as not to destroy markets with a plethora of unmarketable crab.

With recent declines in various BSAI crab stocks and the shorter length of fisheries, inseason adjustments within the GHL range have not recently occurred. Recent harvest strategies adopted by the BOF have lower harvest rates; therefore inseason adjustment would be more problematic. Most GHLs are now treated as the season total allowable catch (TAC), and estimates of catching power and fleet participation are used to inform the fleet about an imminent fishery closure.

District, subdistrict, and section boundaries

The FMP authorizes the State to adjust district, subdistrict, and section boundaries on the basis of criteria in the FMP. This allows the State to manage reasonably distinct stocks of crab and the flexibility to prosecute commercial fisheries on healthy stocks, while protecting depressed stocks or portions of a population utilizing specific area closures. Descriptions of registration areas may be found in 5 AAC 34.600 DESCRIPTION OF REGISTRATION AREA O, 5 AAC 34.800 DESCRIPTION OF REGISTRATION AREA T, and 5 AAC 34.900 DESCRIPTION OF REGISTRATION AREA Q for king crab. Tanner crab area descriptions are under 5 AAC 35.500 DESCRIPTION OF REGISTRATION AREA J, and 5 AAC 35.505 DESCRIPTION OF REGISTRATION AREA J DISTRICTS. A more complete discussion of boundaries is under registration areas in this section. This management measure is effective at achieving the FMP management goals and objectives.

Fishing seasons

The FMP authorizes the State to establish fishing seasons following criteria in the FMP. Fishing seasons are established to achieve the biological conservation, economic and social, vessel safety, and gear conflict objectives of the FMP. Season opening dates are set to maximize meat yield, minimize handling of softshell crabs, and meet market demands. Under the FMP, fisheries should be closed during sensitive biological periods to protect crab from mortality caused by handling and stress when shells are soft, and to maximize meat recovery by delaying harvest until the shells have filled out. In 2001 the Council's Crab Plan Team reviewed biologically sensitive periods for each of the Bering Sea/Aleutian Island major commercial species. The biologically sensitive period for snow crab was redefined. Table 2.1-6 outlines the BSAI crab fishing season start dates and outlines the molting/mating time period as determined by the Crab Plan Team in September 2001.

Table 2.1-6 Bering Sea Aleutian Islands king and Tanner crab fishing seasons and molting/mating time period.

Species (crab)	Season Start Date	Molting/Mating Time Period
Snow	January 15	May 15 to July 31
Golden king	August 15	January 1 to December 31
St. Matthew/Pribilof Islands king	September 15	February 1 to July 31
Bristol Bay king	October 15	January 15 to June 30
Tanner	October 15/January 15	April 1 to July 31
Norton Sound king	July 1	September 15 to October 31

Regulations addressing fishing seasons for king crab are found in 5 AAC 34.610 FISHING SEASONS FOR REGISTRATION AREA O, 5 AAC 34.810 FISHING SEASONS FOR REGISTRATION AREA T, and 5 ACC 34.910 FISHING SEASONS FOR REGISTRATION AREA Q. Tanner crab seasons are addressed under 5 AAC 35.510 FISHING SEASONS FOR REGISTRATION AREA J. The State sets an opening date for each fishery based on the FMP criteria and closes the fishery once the GHL is reached. The State changes the season opening date through the BOF process based on the FMP criteria, public testimony, and the best available scientific information.

Sex restrictions

The FMP prohibits the harvest of females unless the State determines a surplus exists. The State has never allowed the crab fisheries to harvest females. However, the FMP authorizes an experimental harvest and processing of females when a surplus is determined to be available; otherwise female crabs may not be taken. The surplus would be dependent on the number of crabs above the threshold amount used in the spawning stock calculation of OY. The male only restriction is assumed to contribute to maximum reproductive potential. When a surplus of crabs exists, harvest is by State permit if fishers provide accurate documentation of harvest rates and location, and processing and marketing results are made available to the management agency.

Regulations addressing sex restrictions for king crab are under 5 AAC 34.060 SIZE LIMIT FOR KING CRAB, and 5 AAC 34.065 FEMALE AND UNDERSIZE KING CRAB. For the Aleutian Islands fisheries specifically, they are listed under 5 AAC 34.620 SIZE LIMITS FOR REGISTRATION AREA O. The Bristol Bay red king crab regulation is 5 AAC 34.820 SIZE LIMITS FOR REGISTRATION AREA T. The Bering Sea fisheries are addressed under 5 AAC 34.920 SIZE LIMITS FOR REGISTRATION AREA Q. Regulation of Tanner crab size and sex is found in 5 AAC 35.060 SIZE LIMIT FOR TANNER CRAB, and 5 AAC 35.065 FEMALE AND UNDERSIZE TANNER CRAB. Bering Sea size regulations are located in 5 AAC 35.520 SIZE LIMITS FOR REGISTRATION AREA J.

Pot limits

The FMP authorizes the State to use pot limits to attain the biological conservation objective and economic and social objective of the FMP. Pot limits are warranted to restrict deployment of excessive amounts of gear to attain the biological conservation objective in the event of pot loss to advancing ice cover that may result in biological resource wastage. Pot limits may also be warranted to restrict excessive amounts of gear to allow a small GHL from a depressed stock to attain the economic and social objective within biological conservation constraints.

Pot limits for the Bristol Bay red king crab fishery were adopted by the BOF under 5 AAC 34.825 LAWFUL GEAR FOR REGISTRATION AREA T. The BOF adopted a sliding pot limit based upon the available biomass and vessel size. Pot limits for king crab fisheries in the Pribilof and St. Matthew Island fisheries fall under 5 AAC 34.925 LAWFUL GEAR FOR REGISTRATION AREA Q.

In establishing pot limits, the FMP requires the State to consider, within constraints of available information, the following: (1) total vessel effort relative to GHL; (2) probable concentrations of pots by area; (3) potential for conflict with other fisheries; (4) potential for handling mortality of target or non-target species; (5) adverse effects on vessel safety including hazards to navigation; (6) enforceability of pot limits; and (7) analysis of effects on industry. The BOF adopted a sliding pot limit based upon the available biomass and the size of the vessel.

The FMP also requires that the pot limits be designed in a nondiscriminatory manner. For example, pot limits that are a function of vessel size can be developed which affect large and small vessels equally. Historic data on pot registration and LOA has been used for developing pot limit regulations.

Because the deployment of excessive amounts of gear may result in high amounts of wastage due to pots lost to advancing ice cover, pot limits are a useful measure to attain the biological conservation objective. Second, it may not be possible to satisfy conservation concerns in a fishery using excessive amounts of gear to catch a relatively small GHL from a depressed stock. Lacking ability to regulate the total number of pots placed on the grounds, it would otherwise be necessary to prohibit fisheries from opening. A limited but highly valuable fishery would be foregone. In this instance, prohibition of the fishery would satisfy biological conservation concerns, but the economic and social objective would not be satisfied. Rather, pot limits provide a mechanism to attain the economic and social objective within biological conservation constraints.

When pot limits were initially developed for some State fisheries in 1959, the major problem was too much gear in comparison to available resources. The number of vessels and total pots in use does not stay proportional to the projected harvest. The number of times a pot is picked during the fishery also varies. Without limitation on the amount of gear permitted, ADF&G's ability to achieve the preseason GHL is low. In extreme cases, the projected harvest could be exceeded by one pot lift of the gear in use. A fishery with the gear picked five or more times would allow managers sufficient information to evaluate inseason information and control the harvest in order to protect stocks.

In the early 1990's increasing fishing effort, decreasing GHLS, and shorter fishery seasons characterized BSAI crab fisheries. Responding to these concerns the BSAI crab industry submitted a petition to the BOF requesting the BOF to consider limiting the number of pots deployed in BSAI crab fisheries. Data from the ADF&G supported this petition. The data indicated significant crab pot gear deployment was creating

conservation and management difficulties. On March 20, 1991 the BOF proposed an agenda change request to discuss this issue. In 1992, the BOF adopted regulations limiting the number of pots a vessel may operate while harvesting Bering Sea king and Tanner crabs, effective August 1, 1992. The buoy tag identification program was designed to help implement these regulations.

On November 30, 1992, the NOAA Fisheries repealed Bering Sea pot limits due to inconsistency with the national standards that require all regulations to be applied in a nondiscriminatory manner. Pot limits are an FMP Category II measure, thus they may be adopted at the state level, but are subject to the federal appeals process. As a result, in February 1993 the BOF passed differential pot limit regulations based on vessel LOA. According to these regulations, vessels in excess of 125 feet LOA are entitled to operate the maximum number of pots allowed for a fishery, and vessels 125 feet or less LOA may fish 80 percent of the maximum pot limit.

On August 27, 1997, interim pot limit regulations were adopted for harvesting Bristol Bay red king crabs. The regulations outlined an 11-tier pot limit program dependent on fishery GHJ and vessel pre-registration and were made permanent in March 1999. Table 2.1-7 describes pot limits for Bering Sea king and Tanner crab fisheries, 2000-2001.

Table 2.1-7 Pot limits for Bering Sea king and Tanner crab fisheries, 2000-2001.

Fishery (crab)	GHL Range (million pounds)	Number of vessels	Pot limits	
			<= 125 ^a	> 125 ^a
Norton Sound section king ^b	-	-	40	50
St. Lawrence Island section king ^b	-	-	40	50
Pribilof Island section king ^b	-	-	40	50
St. Matthew Island section king ^b	-	-	60	75
Bering Sea district Tanner ^b	-	-	200	250
Bristol Bay red king ^c	< 4.0	NA	NA	NA
	4.0 to 5.9	< 200	80	100
		200 to 250	60	75
		> 250	60	75
	6.0 to 8.9	< 200	120	150
		200 to 250	100	125
		> 250	100	125
	9.0 to 12	< 200	200	250
		200 to 250	160	200
		> 250	160	200
	> 12	Any	200	250

Notes: ^aVessel length overall (feet).

^bPot limits independent of number of registered vessels and GHL.

^cMulti-tiered pot limits effective 1997.

GHL- guideline harvest level

NA - data is not available

Registration areas

The FMP adopts existing state registration areas within the BSAI fisheries management unit. The management unit is divided by the State into three king crab registration areas, Bering Sea, Bristol Bay, and Aleutian Islands, and one Tanner crab registration area, westward. The State further divides registration areas into fishing districts, subdistricts, and sections for purposes of management and reporting. State regulations require vessels to register for fishing in these areas, and may require vessels to register for specific districts within a registration area. Registration areas may be designated as either exclusive or nonexclusive. Vessels can register for any one exclusive area but cannot fish in any other exclusive area during the registration year. Vessels can fish any or all nonexclusive areas.

General registration areas for king crab are found in regulation under 5 AAC 34.005 REGISTRATION AREAS ESTABLISHED. King crab registration is further addressed under 5 AAC 34.020 KING CRAB AREA REGISTRATION. Specific registration requirements are found in regulation under 5 AAC 34.606 AREA O REGISTRATION, 5 AAC 34.806 AREA T REGISTRATION, and 5 AAC 34.906 AREA Q REGISTRATION. Tanner crab general registration areas are found in 5 AAC 35.005 REGISTRATION AREAS ESTABLISHED. Specific registration for Tanner crab fisheries are located in 5 AAC 35.506 AREA J REGISTRATION.

Closed waters

The FMP authorizes the State to designate closed waters and provides factors for the State to consider when making these designations. State regulations prohibit commercial fishing for king and Tanner crab in waters within 10 miles of mean lower low water (MLLW) around St. Lawrence, King and Little Diomed Islands, and portions of Norton Sound protect local subsistence king crab fisheries. The State may designate new closed water areas or expand or reduce existing state closed water areas in order to meet State subsistence requirements. The State also closed State waters around St. Matthew Island to all crab fishing to protect juvenile and breeding female blue king crab. This is found in 5 AAC 34.935 CLOSED WATERS IN REGISTRATION AREA Q.

2.1.4.3 Category 3 - Management measures deferred to the State

Reporting requirements

The FMP defers all reporting requirements to the State. Currently, the State's requirements are implemented through the completion of fish tickets, logbooks, Commercial Operators Annual Report, onboard observer reports and others. Regulations governing reporting requirements are found in 5 AAC 39.130 REPORTS REQUIRED OF PROCESSORS, BUYERS, FISHERS, AND OPERATORS OF CERTAIN COMMERCIAL FISHING VESSELS; TRANSPORTATION REQUIREMENTS. Authority is granted under State statutes SEC. 16.05.251 REGULATIONS OF THE BOARD OF FISHERIES, SEC. 16.05.475 REGISTRATION OF FISHING VESSELS, SEC 16.05.690 RECORD OF PURCHASES, SEC. 16.10.190 REGULATIONS, SEC 16.10.200 UNLAWFUL TAKING PROHIBITED, and SEC.16.10.210 UNLAWFUL SALE OR OFFER PROHIBITED. The current State catch and processing report requirements are an important component in achieving the biological conservation, economic and social, and research and management objectives of the FMP.

Gear placement and removal

The FMP defers placement and removal requirements of unbaited gear to the State. The State implements gear placement and removal regulations for safety and pot limit enforcement concerns. Current regulations are in place to ensure that prior to the season opening, and once a season closes, fishers would be allowed to store pots at specific depths or locations if the gear contained no bait or bait containers and had doors secured fully open. Placement of unbaited gear, with doors secured open on the fishing grounds before and after a season, has been allowed within certain limits. Authority is through 5 AAC 34.052 for king crab, and for each specific registration area under 5 AAC 34.627 KING CRAB GEAR STORAGE REQUIREMENTS FOR REGISTRATION AREA O, 5 AAC 34.827 KING CRAB POT STORAGE REQUIREMENTS FOR REGISTRATION AREA T, and 5 AAC 34.927 KING CRAB POT STORAGE REQUIREMENTS FOR REGISTRATION AREA Q. For Tanner crab, general provisions for pot storage are listed in 5 AAC 35.052 TANNER CRAB GEAR STORAGE REQUIREMENTS. For the Westward Region, the specific regulation is 5 AAC 35.527 TANNER CRAB POT STORAGE REQUIREMENTS FOR REGISTRATION AREA J.

Gear storage

The FMP defers gear storage requirements to the State. The State requires crab pots to be stored on land or in designated storage areas at sea. Current regulations are listed above.

Vessel tank inspections

The FMP defers tank inspection requirements to the State. Vessel tank (or live-hold) and freezer inspections are required for all vessels before the opening of a king or Tanner crab fishing season to meet the legal requirements of the State's landing laws, provide effort information, and provide for a fair start to the fishery. Specific times and locations where ADF&G staff will conduct these inspections are listed in regulations. General king crab regulations addressing vessel tank inspection and area registration are found in 5 AAC 34.030 INSPECTION REQUIREMENTS. Area specific requirements are located in 5 AAC 34.640 REGISTRATION AREA O INSPECTIONS AND INSPECTION POINTS, 5 AAC 34.840 REGISTRATION AREA T INSPECTION POINTS AND REQUIREMENTS, and 5 AAC 34.940 REGISTRATION AREA Q INSPECTIONS AND INSPECTION POINTS. For Tanner crab, general inspection requirements are found in 5 AAC 35.030 INSPECTION REQUIREMENTS. Westward Region Tanner specifically are addressed under 5 AAC REGISTRATION AREA J INSPECTION POINTS.

Gear modifications

The FMP defers design specifications required for commercial crab pots to the State. Pots are the specified legal commercial gear for capturing crab in the BSAI area. ADF&G regulates the maximum size of pots at 10'x10'x42". Typically, the red and blue king, Tanner, and snow crab fisheries use 6'x6'x3.5' or 8'x8'x3.5' rectangular pots. Some fishers use conical or pyramid shaped pots. Each pot weighs between 6 to 8 hundred lbs. For these fisheries, pots are deployed singly, each pot with its own buoy. The number of pots a vessel deploys in each fishery is regulated by vessel size, as shown in Table 2.1-7. For the golden king crab, pots are typically pyramid shaped and deployed by longline.

State regulations require an escape mechanism on all pots. Escape mechanisms allow escape of crab smaller than the legal-size. Degradable mesh terminates a pot's catching and holding ability in case the pot is lost. Escape areas may be incorporated or mesh size adjusted to allow the escape of nonlegal crabs. Various devices may be added to pots to prevent capture of other species. Escape mechanism regulations are found

in 5 AAC 39.145 ESCAPE MECHANISM FOR SHELLFISH AND BOTTOMFISH POTS. Additionally, lawful gear requirements list escape ring requirements. Lawful gear for king crab may be found at 5 AAC 34.825 LAWFUL GEAR FOR REGISTRATION AREA O, 5 AAC 34.925 LAWFUL GEAR FOR REGISTRATION AREA T, 5 AAC 34.925 LAWFUL GEAR FOR REGISTRATION AREA Q, and for Tanner crab under 5 AAC 35.525 LAWFUL GEAR FOR REGISTRATION AREA J.

Bycatch limits

The FMP defers to the State the right to implement bycatch limits of other species of crabs in the crab fisheries managed under this FMP. ADF&G has not set crab bycatch limits for other crab species in directed crab fisheries. ADF&G has attempted to reduce bycatch of other non-targeted crabs in directed crab fisheries through other management measures. For example the season for *C. bairdi* in the Bering Sea has been held in conjunction with other fisheries (i.e Bristol Bay red king crab & *C. opilio*) to reduce bycatch of legal-size *C. bairdi*. Another example is gear modifications to reduce crab bycatch of non-targeted crab species, i.e. escape rings and tunnel height restrictions. ADF&G has also taken action to eliminate all bycatch by keeping the Pribilof District red king crab season closed to eliminate all blue king crab bycatch. In addition, harvest strategies developed for Bering Sea king and Tanner crab stocks since the mid-1990's account for assumed incidental harvest and handling mortality of non-retained crabs in the determination of the harvest rate on mature or legal sized males. Concurrent season regulations are listed in 5 AAC 35.510 FISHING SEASON FOR REGISTRATION AREA J.

State observer requirements

The FMP defers the State observer requirements to the State. The State may place observers aboard crab fishing or processing vessels to obtain catch, effort, and biological data. The State currently has a mandatory observer requirement on all C/P and floating processors participating in the king, Tanner, and snow crab fisheries as a condition of obtaining a processing permit. Observers are also placed on a percentage of the participating catcher vessels (CV). It is important that the State observer program and any future federal observer program be coordinated. State regulations at 5 AAC 39.141 ONBOARD OBSERVER PROGRAM define the need and direction of the observer program. The BOF adopted this in the mid-1980's, to enhance management, primarily by facilitating information gathering, and by improving regulatory compliance. Additional regulations (5 AAC 39.142, 5 AAC 39.143, 5 AAC 39.144, and 5 AAC 39.146) address conflict of interest standards, certification and decertification procedures, procedures for becoming an independent contracting agent, and onboard observer briefing and debriefing requirements. The BOF also adopted 5 AAC 39.645 and 5 AAC 39.646, which defines the shellfish onboard observer program and its qualifications and requirements specifically.

Observers are required on all vessels processing BSAI crab, which includes floater/processors and C/P, on 100 percent of the CV in specific crab fisheries, and on 10 percent of the CV in the remaining crab fisheries. ADF&G began the observer program for processing vessels in 1988 for BSAI king and Tanner crab fisheries. ADF&G expanded this program to include observer coverage for processing vessels in the snow crab fishery in 1991. In 1994, ADF&G expanded the observer program to include requiring observers aboard all vessels (CV and C/P) in permit fisheries targeting grooved Tanner, triangle Tanner, scarlet king crab, Bering Sea golden king crab, and *Paralomis ssp.* In 1995, ADF&G required observers aboard all vessels targeting red and golden king crabs in the Aleutian Islands. In 1998, ADF&G required 100 percent observer coverage on CV operating in the CDQ fisheries targeting red and blue king crab, snow crab, and Tanner crab (Pappas 1999). In 2000, the State expanded observer coverage to include 10 percent observer coverage of CVs operating in the Bering Sea fisheries for snow crab, St. Matthew and Pribilof Islands king crab, Tanner crab,

and Bristol Bay red king crab fisheries. In addition, ADF&G requires that AFA vessels have 10 percent observer coverage in the Bristol Bay red king crab fishery and the Tanner crab fishery.

ADF&G does not place observers on CVs in Norton Sound. In years when a floating processor operates in Norton Sound, it has 100 percent observer coverage. Norton Sound vessels are exempt from observer requirements because the vessels are small (all vessels are under 60 feet and the majority are less than or equal to 32 feet, and many do not have a wheel house).

Observers are responsible for collecting biological data and monitoring vessel compliance with regulations. Observers document and communicate their information with the observer program in three ways; 1) observers complete radio report forms, which the observer files at sea daily or weekly, depending on the length of the fishery; 2) observers keep a logbook to record information while at sea; and 3) after the observer returns to port, the observer is debriefed. The ADF&G shellfish observers are trained at the North Pacific Fisheries Observer Training Center, which also trains the observers used by NOAA Fisheries.

“Other” management measures

This provision allows the State to enact other management measures not specified in the FMP, with consultation with the Council and NOAA Fisheries. Implementation of other management measures not described in the FMP must be consistent with the FMP, the Magnuson-Stevens Act, and other applicable federal laws, and may occur only after consultation with the Council. Other management measures the State may implement are subject to the review and appeals procedures described in the FMP. The State has adopted the following regulations under the other management measure category.

In king crab fisheries the State has restricted otter trawls on board crab vessels with a groundline not to exceed 60 feet. This measure is intended to reduce king crab prospecting.

Under landing requirements vessels must be at a designated landing location within a specified time frame after the closure of the fishery. This measure is intended to allow a vessel a reasonable length of time after the fishery closure to reach port, and is designed to help prevent illegal harvests after the season. Landing requirements also provide a mechanism to allow vessels to deliver to non-designated ports. Travel time to non-designated ports is provided to allow a vessel a reasonable length of time to transit to non-designated ports.

In brown king crab fisheries, pots are allowed to be set attached to a longline. This facilitates pot retrieval in high current areas and may reduce pot loss.

State regulations restrict certain fishing activities by vessels intending to participate in crab fisheries. Pot, longline and trawl vessels may be restricted from commercial, personal use or subsistence activities in the crab registration area prior to the season. This management measure is designed to prevent a vessel from prospecting for crab prior to the season. The prohibition of post-season operation of gear is an enforcement mechanism to prevent illegal harvests after the season is closed.

In crab fisheries where Tanner crab and snow crab hybridize and have intermediate forms, the State has classification standards for the commercial fishery. This classification allows fishers to decide whether they are harvesting Tanner crab or snow crab.

The State has also implemented measures for managing crab fisheries under programs adopted by the Council using other management measures. Two examples are implementation of the AFA sideboards into State regulation and implementing the CDQ fisheries.

2.1.5 Fishery Management Plan review

The cornerstone of the analysis of status quo is a complete FMP-level review. The FMP-level review qualitatively examines and analyzes the overarching management principles set forth in the current FMP (e.g. the combined State/federal management structure and the categorized management measures structure) and all of the FMP management measures (including the FMP-level management measures and the management measures in Categories 1, 2, and 3). This examination will inform decision-makers about whether the basic structure of the FMP should be changed to improve crab fisheries management by addressing the problems identified in the Council's problem statement. The FMP structure determined by this initial analysis is the FMP structure under which the alternatives would operate.

Reasonable alternatives to each FMP level management measure are presented when they exist. Reasonable alternatives to the FMP-level management measures are alternatives that improve crab fisheries management by addressing issues in the Council's *BSAI Crab Rationalization Problem Statement* or are required to effectively manage the crab fisheries under a rationalization program. Management measures that are not likely to be impacted by the rationalization programs are identified, explained, and not analyzed further under the alternatives analysis (but still remain as part of the FMP). If this analysis indicates that any of the measures should be modified independent of rationalization, a policy decision would be made to analyze this measure further in a subsequent FMP amendment. Alternatives to FMP-level management measures are analyzed in Chapter 4 of this EIS. Potential changes to State management in response to a rationalization program are discussed in further detail in Section 4.1.1.

2.1.5.1 Current State/federal management structure

The structure of the crab FMP was developed to address the unique and complex concerns of the State, crab harvesters, crab processors, and coastal communities. As explained in Section 3.4.2 on the history of the FMP, the Council, in developing the FMP, determined that effective management of the crab fisheries must provide efficient management, conservation of the crab stocks, and fair access by all user groups to management's decision-making. The co-management framework in the FMP addresses the Council's determination.

When the Council developed this FMP, it found compelling reasons to structure the shared management jurisdiction between the State and the federal government. The functions delegated to the State were those best performed by the State and the functions reserved by the Council and NOAA Fisheries were those functions best performed by the agency. In addition, the FMP established procedures to ensure communication and cooperation between the State, the Council, and NOAA Fisheries.

The two logical alternatives to the State/federal management structure are either complete federal management or complete State management. Exclusive federal management was proposed by public comment during the scoping process. Exclusive federal management would not provide efficient and effective management of the fisheries because all of the fishery management expertise, management infrastructure, and data collection resides with the State. While NOAA Fisheries could develop the

management infrastructure, implementing regulations, data collection, and expertise, no compelling reason to do so has been presented.

Likewise, an alternative could be put forth to withdraw the federal FMP and allow for the exclusive State management of the crab fisheries. However, the State would have difficulties limiting access to the crab fisheries and would be unable to implement a rationalization program. It may not be in the best interest of the nation for the Council and NOAA Fisheries to withdraw from the intrinsically federal functions, such as limited access, overfishing definitions, rebuilding plans, EFH, and other Magnuson-Stevens Act requirements. While the State could assume these federal functions, there would be no legal requirement for them to do so without an FMP. Also the FMP provides for fair access by all fishers and for review of State management actions. Additionally, according to the Magnuson-Stevens Act, the State would not be able to regulate crab fishing vessels outside the boundaries of the State because an FMP was in place on August 1, 1996 (Magnuson-Stevens Act Section 306[3][C]).

A complete analysis of which management agency had exclusive jurisdiction over BSAI crab fisheries management is unnecessary because neither of these alternatives would address the Council's concerns detailed in its problem statement, and are therefore included in Section 2.5, alternatives considered and eliminated from further study.

The rationalization alternatives under consideration would impact this State/federal management structure by increasing the federal government's role in BSAI crab fisheries management. Many of the program elements within each alternative would be implemented by NOAA Fisheries because they are limited access measures, which are inherent federal functions for fisheries in the EEZ. NOAA Fisheries will determine allocations to each group, issue quota shares to individuals or cooperatives, and ensure that the individuals or cooperatives do not harvest or process in excess of their quota. NOAA Fisheries will also ensure that industry adheres to the program's controls on ownership, transfer, and use of quota. Likewise, the State's key role in providing for a fair start and regulatory compliance prior to season openings, managing the prosecution of the fisheries, and closing the fisheries once the GHF is reached would change because of the nature of quota-based management. Potential changes to State management is discussed under each rationalization alternative.

2.1.5.2 Fishery Management Plan level management measures

Fishery Management Plan goals and objectives. The FMP goals and objectives promote the Magnuson-Stevens Act National Standards and guide management decisions. These goals and objectives complement the Council's problem statement for a rationalization program and do not need to be revised for management under a rationalization program. Therefore, no alternative FMP goals and objectives are considered in this EIS.

Description of the Fishery Management Unit. The Council may want to consider, at the recommendation of the State, removing some developing fisheries from FMP, such as eastern Aleutian Islands Tanner crab, scarlet king crab, grooved Tanner crab, triangle Tanner crab. Candidates for removal from the FMP are developing or historical fisheries that are predominantly prosecuted in State waters. If a species is removed from the FMP, the State will have sole management authority, as they do for hair crab. However, removing these species will not address the issues in the Council's problem statement or improve management under a rationalization program. This is an issue the Council may want to address in the future and is not analyzed in this EIS.

Procedure for Council/Secretary of Commerce Participation in State of Alaska Preseason Fisheries Actions and NMFS Review and Procedure to Appeal to the Secretary. The current appeals process in the FMP would need to be revised under a rationalization program to provide a more structured framework for the application to appeal an action by the State of Alaska and final determinations by the Secretary.

Essential Fish Habitat. In developing the existing definitions for EFH, the Crab Plan Team used the best information available to delineate habitat essential to each species of crab at each life stage. The EA for that amendment analyzed alternatives to the current definition. The effects of the alternatives considered in this EIS on existing EFH definitions is analyzed in the EFH Assessment. A requirement of the EFH Assessment, and a component of the EFH Assessment in Chapter 4, is a thorough discussion of the measures to mitigate the negative impacts of the alternatives on EFH.

The Council completed preparation of EFH amendments 55/55/8/5/5 (one amendment for each of its five FMPs) in 1998. These were approved by the Secretary and took effect on January 20, 1999 (64 FR 20216). The amendments delineated EFH for over 130 managed species with text and maps, and were based on rules that NOAA Fisheries developed (hereafter referred to as the EFH guidelines) to carry out the SFA mandates. NOAA Fisheries's EFH guidelines are found at 50 CFR 600, subpart J.

In June 1999, several environmental and fishing groups challenged the scope and substance of the EAs prepared by several regions (*American Oceans Campaign et al. v. Daley*, Civ. No. 99-982 [D.D.C.]). On September 14, 2000, the U.S. District Court issued an opinion, finding the Alaska EA insufficient in scope and analytical substance and requiring NOAA Fisheries to prepare an analysis that would be legally sufficient under NEPA. The Council and NOAA Fisheries currently are preparing an EIS to comply with the SFA mandates and with the judge's ruling.

NOAA Fisheries and the Council are currently developing an EFH EIS. Alternative methods to define EFH and alternative measures to mitigate crab fishery impacts on EFH are being developed for the EFH EIS. Interaction between the crab fisheries and the alternative definitions of EFH are analyzed in the EFH EIS (NMFS 2004d).

The development of alternatives for the EFH EIS was a two-year public process that involved guidance from NOAA Fisheries and NOAA General Counsel, a formal public scoping period, 15 EFH committee meetings and work sessions, and numerous meetings of the Council and its Advisory Panel and Scientific and Statistical Committee (SSC). After identification of the important issues, the Council selected 16 alternatives in three categories: (A) identifying and describing EFH for managed species; (B) identifying habitat areas of particular concern (HAPC) within EFH; and (C) responding to the SFA mandate that councils must "minimize, to the extent practicable, adverse effects on EFH caused by fishing." The Council will recommend one alternative from each category.

The six alternatives for identifying EFH include:

- *No EFH designation* - Remove any description or identification of EFH from the FMPs;
- *Status Quo* - EFH would continue to be defined as a subset of the overall species range and described as 95 percent of this range;
- *Revised General Distribution* - EFH descriptions would be updated with additional scientific information;

- *Presumed Known Concentration* - EFH would be somewhat more narrowly identified as areas of presumed known concentrations of each life stage of each species;
- *Eco-region strategy* - this alternative would take a different approach, describing EFH in eight eco-regions, with an index linking species by life stage to habitat types;
- *EEZ only* - EFH would be identified and described only within the EEZ, thus excluding State waters, including all freshwater streams.

The five alternative approaches to identifying HAPCs in the FMPs include:

- *No HAPC designation*;
- *Status Quo* - HAPC would remain as defined under Amendments 55/55/8/5/5: living substrates in shallow waters; living substrates in deep water; and freshwater areas used by anadromous fish;
- *Site-based concept* - HAPC designations would be constrained to explicit geographic locations, such as a particular seamount; and would not include types of habitat, as under the status quo;
- *Type/Site-based Concept* - A two-step process would be established. Types would be selected based on the EFH HAPC criteria in the EFH guidelines, and individual HAPC sites would then be selected as subsets of the habitat types;
- *Species Core Area* - HAPC areas would be designated for individual species, based on the productivity of the habitat.

The alternatives for minimizing the effects of fishing on EFH include:

- *Status Quo* -no additional measures would be taken to minimize the effects of fishing;
- *Gulf Slope Bottom Trawl Closures* - would prohibit the use of bottom trawls for rockfish in 11 designated areas of the Gulf of Alaska (GOA) slope, but allow vessels endorsed for trawl gear to fish for rockfish in these areas with fixed gear or pelagic trawl gear;
- *Bottom Trawl Gear Prohibition for GOA Slope Rockfish on Upper Slope Area* - as in Alternative 2, trawl gear and fixed gear could still be used to fish for slope rockfish, but the area of trawl prohibition would be greater;
- *Bottom Trawl Closures in All Management Areas* - would prohibit the use of bottom trawl gear in designated areas of the Bering Sea, Aleutian Islands, and the GOA. In the Bering Sea, the prohibition would be applied to all areas except within a designated “open” area based on historic bottom trawl effort. Within that open area, a rotating closure would be applied in five blocks, with ten-year closures to bottom trawls in 25 percent of each block at a time. Bottom trawl gear used in the remaining open areas of the Bering Sea would be required to have disks/bobbins on trawl sweeps and footropes;
 - (a) *Expanded Bottom Trawl Closures in All Management Areas* - essentially the same as Alternative 4, with differences in the way rotating closures would be handled;
 - (b) *Expanded Bottom Trawl Closures in All Management Areas with Sponge and Coral Closures in the Aleutian Islands* - same as (5)(a) in the GOA and Bering Sea, but would include a number of components including TAC reductions, coral/bryozoan and sponge bycatch limits, and other measures;
- *Closures to All Bottom Tending Gear* - would prohibit the use of all bottom tending gear (dredges, bottom trawls, pelagic trawls that contact the bottom, longlines, pots, and dinglebar gear) within approximately 20 percent of the fishable waters in the Bering Sea, Aleutian Islands, and GOA.

NOAA Fisheries and the plaintiffs negotiated the following schedule for the EIS. The schedule for Alaska requires the agency to publish a preliminary draft EIS by September 15, 2003, for initial Council review in

October 2003. The public review draft EIS was published January 16, 2004. The public comment period was 90 days. The final EIS is due by June 1, 2005.

Overfishing definitions. When the existing overfishing definitions were developed, following the NOAA Fisheries National Standard 1 Guidelines (68 FR 7492, February 14, 2003), an EA was written that analyzed the new overfishing definitions and status quo. At that time, it was thought, because of the requirement to comply with the guidelines, that the only reasonable alternative to status quo were the definitions that complied with the guidelines. The focus then was constructing a set of status determination criteria for the BSAI crab species that complied with the guidelines. Effort was not spent developing alternative ways to construct status determination criteria that did not comply with the guidelines. This was also partly due to the two year time constraints the Council had in developing the overfishing definitions. However, since implementing the overfishing definitions, the Crab Plan Team, which consists of scientists from the State, NOAA Fisheries, Council staff, and University of Alaska, has continued to analyze status determination criteria and the relationship between the criteria and the reproductive potential of the crab stocks. The State scientists have taken the lead in developing biological reference points for the BSAI king and Tanner crab stocks (Siddeek 2002). State scientists have developed methods to determine overfishing and overfished reference points using crab-specific growth, mortality, reproduction, and fishery parameters. Based on these reference points, the Crab Plan Team will develop status determination criteria with consideration of the unique life history and fishery characteristics of crab populations. Once these new definitions are fully developed, the Crab Plan Team will present them to the Council and SSC for their review. The Council will determine whether to amend the FMP with the new overfishing definitions based on the biological reference points. The effects on the human environment that may result from a change to the crab overfishing definitions will be analyzed in accordance with NEPA.

Concurrently, NOAA Fisheries is in the process of revising the National Standard 1 Guidelines. The scientific community, fisheries managers, the fishing industry, and environmental groups have expressed concerns regarding the appropriateness of some aspects of the guidelines. NOAA Fisheries implemented the guidelines in 1998. Since that time, NOAA Fisheries has developed new perspectives, issues, and problems regarding their application. NOAA Fisheries estimates that the new guidelines may be implemented by 2006. The Crab Plan Team and the Council will coordinate analysis and recommendation of revised status determination criteria with the revised National Standard 1 Guidelines.

As a result of the on-going work on new overfishing definitions, analysis methods for the crab stocks, and revisions of the National Standard Guidelines, no alternative overfishing definitions will be considered in this EIS. New overfishing definitions would be applied to the fisheries under status quo or under a rationalization program.

Rebuilding plans. Each rebuilding plan amendment was approved with an EA that looked at alternative ways to rebuild these fisheries in accordance with the laws and guidelines. Alternatives for each component of the rebuilding plans were also analyzed. Because the rebuilding plans would remain in place with the adoption of any of the alternatives under consideration, they address the resource conservation issue in the Council's problem statement and are required to effectively manage the crab fisheries under a rationalization program. Thus, no new alternative rebuilding plans are under consideration in this EIS.

2.1.5.3 Fishery Management Plan management measures

This section analyzes the effectiveness of the FMP criteria at meeting the management goals and objectives and whether rationalization would impact a measure, either directly or indirectly. Based on this analysis, this section also provides a discussion of alternative ways to change the management authority, FMP category, FMP criteria and/or the management measure itself. Management measures that are not likely to be impacted by the rationalization programs are identified, explained, and not analyzed further under the alternatives analysis (and would still remain as part of the FMP). If this analysis indicates that any of the measures should be modified independent of rationalization, a policy decision would be made to analyze this measure further in a subsequent FMP amendment. The effects of these management measures and alternatives to these management measures are presented in Chapter 4 of this EIS.

Fishery Management Plan structure. The three category structure for management measures is necessary under cooperative State/federal management. It provides for clear delineation of management responsibilities and guidance for decision making by the State and federal government. This category structure is flexible in that the Council and NOAA Fisheries can move measures between categories or add measures to categories through FMP amendments. This category structure would still be necessary to manage the crab fisheries under the alternative rationalization programs being considered in this EIS, although some changing and moving of measures within this structure will be required. At this time, no reasonable alternatives to this category structure exists and so none will be considered in this EIS. In addition, changing the category structure would not address the issues in the Council's problem statement of improving management of crab fisheries under a rationalization program. Thus, this structure will continue to be used under any of the future management programs considered in this EIS. Changes to the measures in each category are discussed in the subsequent sections.

Category 1 - Federal management measures fixed in the FMP

Legal gear. Use of other gear types besides pot gear are not considered because other gear that could be used to catch crabs are highly destructive, and, besides pot gear, no other reasonable methods are used to capture cold water crabs throughout the world. In addition, none of the alternative rationalization programs would necessitate a change in this management measure.

Permit requirements. Permits are required under the three rationalization program alternatives in this EIS. In addition to the existing requirements, the Council would specify new requirements for federal permits under the alternative rationalization programs. An individual fishing quota (IFQ) is a federal permit. This management measure will need to be modified to include the requirement for an IFQ permit, under Alternatives 2 and 3. A cooperative program may also require federal permitting of vessels. Likewise, federal permits may be required for processors under Alternatives 2 and 4.

Federal observer requirements. Under status quo, the State shellfish observer program is adequate for the collection of fishery data to meet the FMP's goals and objectives. Increased observer coverage would be required under the rationalization program alternatives because of the nature of these programs. If the State observer program can grow to accommodate this increased coverage, then federal observers would not be necessary. However, if the Council and NOAA Fisheries determines that the State observer program is not accomplishing the data collection requirements, or that the percentage of coverage under the State program is too low to adequately provide information to assess the fisheries, then the Council and NOAA Fisheries may implement a federal observer program for the crab fisheries. If this program is implemented, the FMP

category would not need to be changed. However, a federal crab observer program would then need to be created or federal crab observers would need to be added onto the existing NOAA Fisheries groundfish observer program. If the Council and NOAA Fisheries decides to amend the FMP to include federal observers, then alternatives will be developed that are reasonable for this program. It is impractical and not necessary to develop and analyze reasonable alternative federal observer programs at this time.

License Limitation Program. The alternative rationalization programs contain measures to limit access to the BSAI crab fisheries. Under all alternatives, only holders of LLP licenses are eligible to receive harvest quota share. In addition, the LLP will still be in place for fisheries not included in the rationalization programs. Under each rationalization program alternative, limited access will remain in Category 1 because it is an inherent federal function. Comparison of the alternatives is in Section 2.5.

Alternative 2, as explained in Section 2.2, would create an IFQ system for harvesters, C/Ps, and captains. Alternative 2 would also create a processor quota share program for processors, which would limit access to processing.

Alternative 3, as explained in Section 2.3, would create an IFQ system for harvesters, C/Ps, and captains. No new statutory authority is required to implement the limited access measures in this alternative.

Alternative 4, as explained in Section 2.4, would create a cooperative system for harvesters and eligible processors. Eligible processors would receive a crab processing license.

Community Development Quota program. The two types of reasonable alternatives to the CDQ program are alternatives to the percent allocated to the program and changing the crab fisheries under the CDQ program. Under all three rationalization program alternatives, the Council is recommending changes to the CDQ program. The Council has recommended increasing the CDQ percentage from 7.5 percent to 10 percent. The alternatives require CDQ groups to deliver at least 25 percent of the allocation to shore based processors. The Council has also recommended expanding the crab fisheries under the CDQ program to include eastern Aleutian Island golden king crab and western Aleutian Island red king crab. The effects of these changes are analyzed in Chapter 4 of this EIS.

The Council also analyzed additional CDQ program changes in the document *BSAI Crab Rationalization Program Alternatives* (NPFMC 2002). This document analyzed the following alternatives: increasing CDQ percentages to 12.5 percent and expanding the CDQ program to include all fisheries under rationalization. These alternatives the Council considered and rejected. The Council did not consider removing crab species from the CDQ program or reducing the allocation below 7.5 percent.

American Fisheries Act provisions. The Council is recommending alternatives to the AFA provisions for the AFA vessels and processors that participate in the crab fisheries. Under the rationalization program alternatives, the Council is recommending removing the AFA sideboard restrictions because they would be redundant after the AFA vessels receive quota share.

Superexclusive registration in Norton Sound. An EA/RIR/IRFA analysis was prepared for Amendment 2 that analyzed two alternatives to status quo to remedy the unique problems in this area: superexclusive registration and exclusive registration. The superexclusive registration protects the small boat fleet from Norton Sound from competition with larger vessels from the Bering Sea and provides for a local fishery. No new alternatives are reasonable to consider at this time. The Norton Sound red king crab fishery is exempt

from the rationalization programs under consideration. This measure would still be necessary under a rationalization program because superexclusive registration would function as a sideboard to prevent vessels with quota share from participating in the Norton Sound red king crab fishery.

Category 2 - Framework management measures

Minimum size limit. The current size limits are based on the best available information and are effective at achieving the FMP criteria for this measure and the FMP goals. The State is not currently considering changing the size limits. The rationalization program alternatives under consideration do not require a change in the minimum size limit criteria or in the size limits themselves. The Council did consider whether changing the size limit and the FMP criteria was necessary under rationalization. The Council analyzed options to change the size limit for snow crab and specify the size limit in the FMP. This analysis is in the RIR/IRFA in Appendix 1. The Council considered and chose not to carry forward these options because they would not improve management of the fisheries and would create inconsistencies in treatment of snow crab from the other BSAI crab species. Therefore alternative size limits will not be analyzed in this EIS.

Harvest strategies. Each harvest strategy was developed and analyzed with a range of alternative harvest strategies. These strategies are effective at determining the optimal GHL for these stocks, given the cyclical nature of crab stock abundance.

Under the rationalization program alternatives, the FMP criteria for this management measure would need to be changed to require that the harvest strategies determine a TAC. State regulations would also need to be changed to determine a TAC instead of a GHL. However, the State has said that it would use the same harvest strategies to determine the TAC, with minor adjustments. A TAC is necessary for an IFQ fishery because it establishes set amount of harvest for allocating. This is further explained in Section 4.1.1.

Inseason adjustments. The State's ability to make inseason adjustments has been effective at achieving the FMP criteria and management objectives.

Under the rationalization program alternatives, this measure will need to be changed in the FMP and in State regulations. Inseason adjustments to the harvest amount are not appropriate for quota-based program because the harvest amount is allocated before the start of the season. Likewise, inseason adjustment to the season lengths are not desirable because fishers need a set season for planning purposes to harvest all of their quota share (QS). On the other hand, inseason adjustment may still be necessary to close areas and for fisheries on stocks not under the rationalization programs. An alternative for this FMP management measure is to restrict inseason adjustments to those stocks not included in a rationalization program.

District, subdistrict, and section boundaries. No alternatives to this management measure will be analyzed in this EIS. The rationalization programs under consideration do not require changes to this management measure or State implementation. Nor would changing this management measure improve management under any of the alternatives under consideration.

Fishing seasons. Continuing with status quo would not require changes to the fishing season management measure or the way the State implements this measure. The difficulties with managing seasons under the race for fish cannot be solved by only making adjustments to the fishing season length or timing. By eliminating the race for fish, however, the rationalization programs may allow fishing seasons to be extended. The State can extend the fishing seasons without changes to the FMP criteria. Fishing season length alternatives range from seasons for most of the year, except during the biologically sensitive periods, to

seasons that last a month or two. For all three rationalization programs, fishers can choose when to fish within the established season based on a number of factors, such as agreements with processors for delivery, weather, etc.

Sex restrictions. No alternatives will be analyzed for changing this management measure because it is effective at achieving the FMP's management goals and objectives and will not be impacted by rationalization.

Pot limits. The FMP criteria for this management measure is effective at meeting the FMP's goals and objectives and the way the State implements this measure is effective at achieving the criteria.

Under the rationalization program alternatives, the existing FMP criteria would not be changed because it provides the flexibility for the State to change pot limits and ensures that new pot limits comply with the FMP's goals and objectives. It is probable that the State would change pot limits under any of the rationalization program alternatives if the available information indicates they should be changed. Alternative pot limits range from no pot limits to status quo and any number of pots in between. This is further explained in Section 4.1.1.

Registration areas. The FMP criteria for registration areas is effective at meeting the FMP's goals and objectives and the State's implementation of this measure meets these criteria. None of the rationalization programs under consideration will require changes to the FMP criteria or the State's management measures. Therefore, no alternatives for registration areas are proposed for analysis in this EIS.

Closed waters. This FMP management measure and the State's implementation of this measure are effective at meeting the FMP goals and objectives. None of the rationalization program alternatives under consideration require changing this FMP measure; therefore, no alternatives for closed areas will be considered in this EIS.

Category 3 - Management measures deferred to the State

Reporting requirements. Under status quo, the existing reporting requirements meet the FMP's management goals and objectives. However, under the rationalization program alternatives, this management measure will require changes. The major change is moving many of the reporting requirements to the federal government for the allocation measures. The IFQ programs proposed by Alternatives 2 and 3 would require federal reporting requirements similar to the halibut and sablefish IFQ program. The cooperative programs proposed by Alternatives 2 and 4 would require federal reporting requirements similar to the AFA pollock cooperative. Processor quota shares (PQS) proposed by Alternative 2 and the processor licensing requirement proposed by Alternative 4 would both require federal reporting requirements for processors. The State may elect to make changes to some current reporting requirements, while opting to continue others. The State will still require fish tickets. The current inseason reporting requirement would likely not be necessary under a rationalized fishery because each fisher will have a set IFQ to harvest.

Gear placement and removal. This FMP management measure will not need to be changed for management under the alternatives considered in this EIS. The State, however, will probably review how it implements this measure to improve management under the rationalization program alternatives. To improve management and efficiency, the BOF may elect to implement changes. The current regulations created by

the BOF regarding gear placement and removal would have to be reviewed on a fishery by fishery basis.

Gear storage. This FMP management measure will not need to be changed for management under the alternatives considered in this EIS. As with gear placement and removal, the BOF may elect to modify current regulations to improve management and efficiency under the rationalization program.

Vessel tank inspections. This FMP management measure would not need to be changed to improve management under the alternatives considered in this EIS. The State is expected to review and modify the vessel tank inspections. Under the rationalization program alternatives, vessels may choose to begin participation in a fishery at any time within an established season, based upon logistical or market considerations. Prior to that first effort, ADF&G may still require vessel tank and gear inspections to track effort and meet other legal requirements. However, the importance of vessel tank inspections as an enforcement tool for fair start provisions will no longer be necessary, as each vessel will be harvesting toward their own quota share.

Gear modifications. This FMP management measure will not need to be changed to improve management under the alternatives considered in this EIS. While the current gear requirements are not to change under a rationalized fishery, the BOF may adopt additional regulations addressing minimum/maximum mesh size escape panel and/or ring and tunnel entrance openings to prevent highgrading on the bottom and still allow female and sub-legal crab to escape.

Bycatch limits. It is expected that rationalized fisheries will reduce overall bycatch. If fisheries information indicates that bycatch has not decreased, then ADF&G may implement bycatch limits for the BSAI crab fisheries. However, the State is not considering alternative bycatch limits at this time.

State observer coverage. The State observer program is effective at meeting the FMP goals and objectives under the current FMP.

Under the rationalization program alternatives, changes in State observer coverage might be required to adequately monitor the fishery. The BOF would make these changes through its process. Three types of changes to the observer program may be required: 1) changes to the percentage of the vessels covered; 2) increases in the amount of information collected by observers; and 3) changes to the mechanisms used to pay for observer coverage. Under any rationalization program that increases the season length, the State believes that crab C/P vessels will need to have enough observer coverage to enforce sex and size limits for crab. Changing fishing seasons through rationalization will necessitate continued collection of at-sea data to assess the effects of protracted seasons and soak times on bycatch and other fishery effects. This data could also help assure enforcement of harvest regulations. Observers will be necessary to document distribution of effort, catch, and bycatch, to monitor condition of catch relative to molting/mating periods that may be encountered during protracted seasons, and to monitor any changes in fishery selectivity and sorting. The current CV observer program is limited to an annual budget of \$650,000 that is based on cost-recovery fishing. This covers approximately 10 percent of the CV fleet in selected fisheries. Vessel operators pay for observer coverage on vessels processing king or Tanner crab at sea, vessels fishing in special-permit fisheries and vessels fishing in the Aleutian Islands golden king crab fishery.

“Other” management measures. This FMP management measure allows for flexibility and provides for the State to enact new measures and solve problems that were not considered when the FMP was written. Review and consultation by the Council and NOAA Fisheries ensures that the measures the State adopts

under this category comply with the FMP, Magnuson-Stevens Act and other applicable law. No alternatives to this management measure or the measures the State has adopted under this measure are required under the program alternatives considered and therefore will not be analyzed in this EIS. In fact, because of the novelty of most of the provisions of the proposed rationalizations programs, this 'other' management measure is required to allow the State the flexibility to manage under the new regime.

2.2 Alternative 2 - Three-Pie Voluntary Cooperative Program (the preferred alternative)

The preferred alternative would implement a three-pie cooperative to rationalize all of the large crab fisheries in the BSAI.² The following fisheries would be included in the rationalization program:

- Bristol Bay red king crab
- Western Aleutian Islands (Adak) golden king crab - West of 174° W
- Eastern Aleutian Islands (Dutch Harbor) golden king crab - East of 174° W
- Western Aleutian Islands (Adak) red king crab - West of 179° W
- Pribilof blue and red king crab
- St. Matthew blue king crab
- Bering Sea *C. opilio* (snow crab)
- Bering Sea *C. bairdi* (Tanner crab)

The preferred alternative is a carefully crafted program that strikes a balance of the interests of several identifiable groups that depend on these fisheries. The Council developed the rationalization program to fit the specific dynamics and needs of the BSAI crab fisheries. The program builds on the Council's experiences with the halibut and sablefish IFQ program and the AFA cooperative program for Bering Sea pollock. The program is intended to address conservation and management issues associated with the current derby fishery and to reduce bycatch and associated mortalities. Share allocations to harvesters and processors, together with incentives for cooperation, are intended to increase efficiencies, provide economic stability, and facilitate compensated reduction of excess capacities in both harvesting and processing sectors. The binding arbitration program is intended to resolve price disputes between harvesters and processors, which in the past have delayed fishing. Community interests are protected by CDQ group allocations and regional landing and processing requirements, as well as several community protection measures. Captains are allocated a portion of the catch to protect their interests in the fisheries. These "owner on board" shares are intended to provide long term benefits to both captains and crew. The program includes a comprehensive socio-economic data collection program that would aid the Council in assessing the success of the program and developing amendments necessary to mitigate any unintended consequences. Perhaps most importantly, the program would improve safety of participants in the fishery by ending the race for fish. The Council's motion defining the rationalization program is attached hereto in the RIR/IRFA in Appendix 1.

The Council believes that the crab fisheries in the BSAI require this innovative, comprehensive management approach to adequately recognize and protect the interests of all participants. It recognizes all components of the fishery as a balanced, inextricably linked system, rather than individual, competing components. It may not be the appropriate model for other fisheries in the Nation, or even for other fisheries in the North Pacific, and is not intended to be a template for other fisheries. The Council believes this program is the appropriate management approach for these fisheries.

² A few federal fisheries are excluded from the program, including the Norton Sound red king crab fishery, which is operated under a "superexclusive" permit program intended to protect the interests of local, small vessel participants. Under the permit program, participants in the Norton Sound fishery are not permitted to participate in any other BSAI crab fishery. Also excluded from this program are Aleutian Islands Tanner crab, Aleutian Islands red king crab east of 179° W. long., Bering Sea golden king crab, scarlet king crab, *C. angulatus*, and *C. tanneri*.

The program elements would require the amendment of the FMP and be implemented by NOAA Fisheries and the State through the cooperative management structure established in the FMP. This program relies on NOAA Fisheries, ADF&G, BOF and the BOF/Council Joint Protocol Committee³ to address concerns of discards, highgrading, incidental catch, and the need for bycatch reduction, improved retention, and inseason monitoring under the program. Incidental catch could be discarded under the proposed program, subject to any limits established by the State and Joint Protocol Committee.

Harvest sector

Harvesters would be allocated QS in each fishery rationalized by the program. QS are a revocable privilege that allow the holder to receive an annual allocation of a specific percentage of the TAC from a fishery. The annual allocations of harvests, in pounds, are referred to as IFQs. QS would be designated as either CV shares or C/P shares, depending on whether the vessel that created the privilege to the shares processed the qualifying harvests on board. In addition, CV QS would be designated by landing region. CV IFQ would be issued in two classes. Class A IFQ would require delivery to a processor holding processing quota. Class A IFQ would also be subject to a regional delivery requirement. Under this regional requirement, harvests would be delivered either in a North or South region (in most fisheries). Class B IFQ could be delivered to any processor (except C/P) and would not be regionally designated. Over harvest of IFQ would be forfeited in all cases. Penalties would be imposed for any overage in excess of 3 percent of a person's IFQ.

The Class A/Class B share distinction would be made only in the annual IFQ allocations. QS would be issued in a single class, with all QS identical except for the regional landing designation. Since the Class B IFQs are intended to provide negotiating leverage to harvesters that are unaffiliated with holders of processing shares, only QS holders that are unaffiliated with holders of processing shares would receive Class B IFQs. Holders of processing shares and their affiliates that hold QS would be allocated Class A IFQs for all of their Individual Processor Quota (IPQ) holdings, with the remainder of their IFQ allocated as Class A IFQ and Class B IFQ at the same ratio as those allocated to independent harvesters. The annual poundage allocation of IFQ arising from the QS would be unaffected by the Class A/Class B distinctions. For each region of each fishery, the allocation of Class B IFQ would be 10 percent of the total allocation of IFQ.⁴ The absence of an affiliation with a holder of processing shares would be established by a harvester filing an annual affidavit stating that the use of any IFQ held by that harvester is not subject to any control of any holder of processing shares.

To receive a QS allocation in a fishery a harvester must hold a valid, permanent, fully transferable LLP license endorsed for the fishery. Since LLP licenses are the current qualification for participation in the fisheries, their use for defining eligibility in the rationalization program would maintain the current fishery participation. A harvester's allocation of QS for a fishery would be based on landings in that fishery (excluding landings of deadloss). Specifically, each allocation is the harvesters average annual portion of the total qualified catch during a specific qualifying period. Qualifying periods were selected to balance

³ The BSAI crab fisheries are subject to joint federal and state management with certain elements of oversight, including monitoring and observer coverage deferred to the State. The Council contemplates that the joint management relationship would continue in the rationalized fishery.

⁴ For example, if no North QS holders are affiliated with processing share holders, each North IFQ allocation would be 90 percent North Class A IFQ and 10 percent Class B IFQ. If half of the North QS is held by persons affiliated with processing shares, the holders of North QS that are unaffiliated with processing share holders would receive 80 percent North Class A IFQ and 20 percent Class B IFQ. The result would be that 10 percent of the total North IFQ in the fishery would be Class B IFQ.

historical participation and recent participation. Different periods were selected for different fisheries to accommodate closures and other circumstances in the fisheries in recent years. Qualifying periods for the various fisheries are shown in Table 2.2-1.

Table 2.2-1 Crab fisheries qualification periods.

Fishery	Qualifying years
Bristol Bay red king crab	1996 - 2000 (best 4 of 5 seasons)
Bering Sea <i>C. opilio</i> (snow crab)	1996 - 2000 (best 4 of 5 seasons)
Bering Sea <i>C. bairdi</i> (Tanner crab)	1991/92 - 1996 (best 4 of 6 seasons)
Western Aleutian Islands (Adak) golden king crab	1996/97 - 2000/01 (all 5 seasons)
Eastern Aleutian Islands (Dutch Harbor) golden king crab	1996/97 - 2000/01 (all 5 seasons)
Western Aleutian Islands (Adak) red king crab - West of 179° W	1992/93 - 1995/96 (best 3 of 4 seasons)
Pribilof blue and red king crab	1994 - 1998 (best 4 of 5 seasons)
St. Matthew blue king crab	1994 - 1998 (best 4 of 5 seasons)

Qualified catch is generally associated with the vessel that created the privilege to the LLP license. Since LLP licenses (and permits under the vessel moratorium program that preceded the LLP) are transferrable from vessel to vessel, catch on the vessel on which a license was used would be included in determining the allocation associated with a license. An additional provision would permit a person that purchased a license to continue to participate in a fishery to receive an allocation based on the history of the vessel on which the license was used. Lastly, a provision would permit persons that owned vessels that sank and were replaced under the LLP license qualification rules or subsequent to satisfaction of the LLP license qualification requirements⁵ to credit 50 percent of their average annual history in qualifying years that the vessel participated for years that the vessel or its replacement was unable to participate.

QS and IFQ would both be transferrable under the program, subject to limits including caps on the amount of shares a person may hold or use. The Council may prohibit leasing of QS (or equivalently, the sale of IFQs), except within cooperatives, after the first five years of the program. Leasing is defined as the use of IFQs on a vessel in which the holder of the underlying QS holds less than a 10 percent ownership interest or on which the underlying QS holder is not present. The possible limit on leasing by persons not in cooperatives would be intended to create an incentive for cooperative membership. To be eligible to purchase QS or IFQs a person would be required to be a U.S. citizen with at least 150 days of sea time in U.S. commercial fisheries in a harvest capacity. An entity would be eligible to purchase shares only if it is at least 20 percent owned by a U.S. citizen with at least 150 days of sea time in U.S. commercial fisheries in a harvest capacity. Initial recipients of QS and CDQ groups are exempt from these eligibility criteria.

⁵ This provision also requires that the owner of the vessel also replace the vessel and begin fishing within a specified time period.

Separate caps would be imposed on the holdings of QS and IFQs by any person and on the use of IFQs onboard any vessel. These caps are intended to prevent excessive consolidation of shares under the program. Different caps are chosen for the different fisheries because fleet characteristics and dependence differ across fisheries. Separate caps on QS holdings are established for CDQ groups, which represent rural western Alaska communities. Caps on QS and IFQ holdings and use are shown in Table 2.2-2.

Table 2.2-2 Caps on quota shares and individual fishing quota holdings.

Fishery	Limit on percent of shares a person may hold	Limit on percent of shares a CDQ group may hold	Limit on percent of shares used onboard a vessel
Bristol Bay red king crab	1	5	2
Bering Sea <i>C. opilio</i> (snow crab)	1	5	2
Bering Sea <i>C. bairdi</i> (Tanner crab)	1	5	2
Western Aleutian Islands (Adak) golden king crab	10	20	20
Eastern Aleutian Islands (Dutch Harbor) golden king crab	10	20	20
Western Aleutian Islands (Adak) red king crab - West of 179° W	10	20	20
Pribilof blue and red king crab	2	10	4
St. Matthew blue king crab	2	10	4

Ownership caps are applied individually and collectively. Under this rule all of a person’s direct holdings are credited toward the cap. In addition, a person’s indirect holdings are also credited toward the cap in proportion to the person’s ownership interest. For example, if a person owns a 20 percent interest in a company that holds 100 shares, that person is credited with holding 20 shares for purposes of determining compliance with the cap. Because use caps are applied on a vessel basis, no similar circumstance arises in applying use caps.

Processor holdings of harvest shares would also be limited by caps on vertical integration. A processor’s ownership of QS is limited to 5 percent of the QS pool on a fishery basis. These caps are applied using a threshold rule for determining whether the shares are held by a processor and then the individual and collective rule for determining the extent of share ownership. Under the threshold rule, any entity with 10 percent or more common ownership with a processor is considered to be a part of that processor. Any direct holdings of those entities would be fully credited to the processor’s holdings. Indirect holdings of an entity would be credited toward the processor’s cap in proportion to the entity’s ownership. The rules for applying the caps on vertical integration are thought to be more appropriate for limiting consolidation of harvest shares by processors. The vertical integration cap would exempt only the primary processing corporate entity from any general cap on QS and IFQ holdings. All persons, subsidiaries, and affiliates would remain subject to the general caps on harvest share holdings. Initial allocations of shares above the cap would be grandfathered.

These provisions would amend the Category 1 limited access management measure and would replace the LLP program for the fisheries under this program. This portion would be implemented by the NOAA Fisheries RAM Division and be managed similar to the halibut/sablefish IFQ program with RAM determining and allocating quota share and approving transfer of quota.

Captains shares (C Shares)

Eligible captains would be allocated 3 percent of the TAC. The allocation to captains would be based on the same qualifying years and computational method used for vessel allocations (shown in Table 2.2-1). To be eligible to receive an allocation, a captain would have to have at least one landing in three of the qualifying years and have recent participation demonstrated by at least one landing in two of the three most recent seasons preceding June 10, 2002. For the Adak red king crab, the Pribilof red and blue king crab, the St. Matthew blue king crab, and the *C. bairdi* fisheries, recency would be demonstrated by at least one landing in two of the three most recent seasons preceding June 10, 2002 in the *C. opilio*, Bristol Bay red king crab, or one of the Aleutian Islands golden king crab fisheries.⁶ Recency requirements would be waived for captains who died in fishing related incidents. During the first three years a fishery is open after implementation, C shares would not be subject to IPQ or regional delivery requirements.⁷ After three years, C shares would be subject to the Class A IFQ/Class B IFQ distinction with commensurate regional delivery requirements unless the Council determines, after review, not to apply those designations.⁸ Regional designations would be based on the captain's historical deliveries, with an adjustment to match the regional PQS distribution using the same scheme used for making that adjustment to the harvest share distribution.

To be eligible to purchase C shares a person must be a U.S. citizen with at least 150 days sea time in a U.S. commercial fishery in a harvest capacity. In addition, the person must be an "active participant" in the BSAI crab fisheries, demonstrated by a landing in a fishery included in the rationalization program in the last 365 days evidenced by either an ADF&G fish ticket, an affidavit from the vessel owner, or other verifiable evidence.

Leasing of C shares in each fishery would be permitted in the first three seasons a fishery is prosecuted after implementation of the program. After the first three seasons the fishery is prosecuted, leasing would be permitted only in the case of a documented hardship (such as a medical hardship or loss of vessel) for the term of the hardship, subject to a maximum of two years over a ten year period.

To ensure that these shares benefit at sea participants in the fisheries, holders of the underlying QS would be required to be on the vessel harvesting the C share IFQs. In addition, individual C share use and holdings are capped at the same level as the vessel use caps applicable to general harvest shares (shown in Table 2.2-2). Initial allocations in excess of the cap are grandfathered. C shares are not considered in determining a vessel's compliance with the vessel use caps on general harvest shares. Landings with C shares would be subject to the IFQ fee program.

⁶ The Adak red king crab, the Pribilof red and blue king crab, the St. Matthew blue king crab, and the *C. bairdi* fisheries were all closed for several consecutive seasons preceding 2002.

⁷ During these three years, C share IFQs would not be considered in determining the 90 percent/10 percent ratio of Class A IFQ to Class B IFQ in each region of each fishery.

⁸ If C share IFQs are issued with the Class A IFQ/Class B IFQ distinction after the third year of the program, the ratio of C share Class A IFQ to Class B IFQ would be the same as the ratio of CV Class A IFQ to Class B IFQ in each region. In addition, both the CV Class B IFQ allocation and the C share Class B IFQ allocation would be included in determining the 10 percent allocation of Class B IFQ in each region in each fishery.

C/P captains would be allocated C/P C shares that include both a harvesting and on board processing privilege. Harvests with C/P C shares may be delivered to shore-based or floating processors. CV C shares must be delivered to shore-based or floating processors for processing.

This provision would amend the Category 1 limited access management measure. This portion would be implemented by the RAM, along with the harvester quota share provision, with RAM determining and allocating QS and approving transfer of quota. This portion of the program would include the regionalization requirements for C shares.

Processing sector

The proposed program would also create a processing privilege, which would be allocated to processors, that is analogous to the harvest privilege allocated to harvesters. Processors would be allocated PQS in each fishery rationalized by the program. PQS are a revocable privilege to receive deliveries of a specific portion of the annual TAC from a fishery. These annual allocations of processing privileges are referred to as IPQs. IPQs would be issued for 90 percent of the allocated harvests, corresponding to the 90 percent allocation of Class A harvest shares.⁹ The annual IPQ allocation would equal the processor's PQS times 90 percent of the TAC, the portion of the TAC for which processor shares are allocated.

Processors that processed crab in either 1998 or 1999 would be eligible for an initial allocation of PQS. Under a hardship provision, a processor that failed to meet this requirement but that processed *C. opilio* in all years from 1988 to 1997 and invested in excess of \$1 million dollars in processing equipment and improvements after 1995 would be eligible for an allocation. Processing shares would be regionally designated for processing in a North or South region (corresponding to the regional designation of the Class A harvest shares).

PQS allocations would be based on processing history during a specified qualifying period for each fishery. A processor's allocation in a fishery would equal its share of all qualified processing in the qualifying period (i.e., pounds processed by the processor divided by pounds processed by all qualified processors). The qualifying period for determining processor allocations are shown in Table 2.2-3.

⁹ Processor privileges would not apply to the remaining 10 percent of the TAC (corresponding to the 10 percent of the TAC allocated as Class B harvest shares).

Table 2.2-3 Processor allocation qualifying periods.

Fishery	Qualifying years
Bristol Bay red king crab	1997 - 1999 (3 seasons)
Bering Sea <i>C. opilio</i> (snow crab)	1997 - 1999 (3 seasons)
Bering Sea <i>C. bairdi</i> (Tanner crab)	Based 50 percent on allocation for Bristol Bay red king crab and 50 percent on allocation for Bering Sea <i>C. opilio</i>
Western Aleutian Islands (Adak) golden king crab	1996/97 - 1999/2000 (4 seasons)
Eastern Aleutian Islands (Dutch Harbor) golden king crab	1996/97 - 1999/2000 (4 seasons)
Western Aleutian Islands (Adak) red king crab - West of 179° W	Based on allocation for Western Aleutian Island (Adak) golden king crab
Pribilof blue and red king crab	1996 - 1998 (3 seasons)
St. Matthew blue king crab	1996 - 1998 (3 seasons)

Allocations are made to the buyer of record of ADF&G fish tickets, except if the buyer can be determined to be an entity other than the entity named on the fish ticket, by the State of Alaska Commercial Operators Annual Report, fish tax records, or other evidence of direct payments to fishers.

Processor shares would be transferable, including leasing of PQS (or equivalently, the sale of IPQs) subject only to use and ownership caps. IPQs would be usable at any facility of a processor without transfer. In addition, new processors would enter the fishery by purchasing PQS or IPQs or by purchasing crab harvested with Class B shares or CDQ crab.

Ownership of PQS would be limited to 30 percent of the PQS in a fishery. As with vertical integration caps, PQS ownership caps would be applied using a threshold rule for determining whether the shares are held by a processor and then the individual and collective rule for determining the extent of share ownership. Under the threshold rule, any entity with 10 percent or more common ownership with a processor is considered to be a part of that processor. Any direct holdings of those entities would be fully credited to the processor's holdings. Indirect holdings of those entities would be credited toward the processor's cap in proportion to the entities ownership. Initial allocations of shares above the cap would be grandfathered.

In addition, in the *C. opilio* fishery no processor would be permitted to use in excess of 60 percent of the IPQs issued in the Northern region. Processing use caps for other species and for the Southern region were not included.

These provisions would amend the Category 1 limited access management measure. This portion would be implemented by the NOAA Fisheries RAM Division and be managed similar to the IFQ portion of the program with RAM determining and allocating quota share and approving transfer of quota.

Catcher/processors

C/Ps, because they participate in both the harvest and processing sectors, have a unique position in the program. A few provisions of the program have been developed to deal specifically with the C/P fleet. C/Ps

would be allocated C/P QS under the program. These shares would have both a harvest privilege and an on board processing privilege. CVs would be allocated QS that requires delivery to a shore-based or floating processor. To be eligible for C/P shares, a person must be eligible for a harvest allocation by holding a permanent fully transferable C/P LLP license. In addition, the C/P must have processed crab in either 1998 or 1999. This requirement parallels the processor qualification requirement. Persons meeting this qualification requirement would be allocated C/P shares in accordance with the allocation rules for harvest shares for all qualified catch that was processed on board.¹⁰ C/P shares would not have regional designations.

Although C/P shares extend both harvesting and processing privileges, a person may deliver unprocessed crab harvested with C/P shares to any other processor. In other words, C/P shares may be delivered to a processor that does not hold unused IPQs. C/P shares may be severed into separate CV QS and PQS. When severed, the shares must be designated for a region with both shares taking the same regional designation.

C/P may purchase additional PQS, but any crab processed with purchased PQS must be processed within three miles of shore in the designated region. C/P may not purchase crab harvested with Class B harvest shares for processing. For purposes of this provision, any vessel that purchases crab harvested with B shares for processing during a season would be prohibited from acting as a C/P during the remainder of the season and any vessel that operates as a C/P during a season would be prohibited from purchasing crab harvested with Class B shares during that season.

These provisions would amend the Category 1 limited access management measure and would replace the LLP program for the fisheries under this program. This portion would be implemented by the NOAA Fisheries RAM Division and be managed similar to the IFQ portion of the program with RAM determining and allocating quota share and approving transfer of quota.

Cooperatives

The program would permit harvesters to form voluntary cooperatives associated with one or more processors holding PQS. A minimum membership of four unique QS holders would be required for cooperative formation. The cooperative would receive the sum of the annual allocations of its members in the applicable fisheries. Cooperatives are required to file a cooperative agreement with the Secretary annually, after Council review, prior to the cooperative's allocation being set aside for its exclusive use. Cooperative members would be permitted to leave a cooperative at any time after one season. Departing members would be permitted to retain their QS and the associated IFQ allocations. Processors that associate with cooperatives would not be members of the cooperatives but would remain independent. A cooperative would not be bound to deliver any harvests to an associated processor provided that the cooperative complies with any delivery requirements of the program associated with the harvest and processing shares.

Harvesters within a cooperative would be permitted to transfer shares freely and vessels on which cooperative shares are fished would not be subject to use caps. Shares would also be freely transferable between cooperatives, but would require approval by RAM before shares could be fished.

Only processors that own PQS would be permitted to associate with a cooperative. Processors that do not hold IPQ could purchase crab harvested with Class B shares, but would not be able to associate with a cooperative. In addition, custom processing would be permitted under the cooperative program.

¹⁰ C/Ps that meet only the harvest eligibility requirement would receive an allocation of CV shares for any qualified catch. Likewise, C/Ps that meet only the processing eligibility requirement would receive only processor shares.

This provision would amend the Category 1 limited access management measure and would be implemented by RAM similar to the AFA pollock cooperatives with RAM determining and allocating the Qs to cooperatives and approving transfer of quota.

Binding arbitration

BSAI crab fisheries have a history of contentious price negotiations. Harvesters have often acted collectively to negotiate an ex-vessel price with processors, at times delaying fishing to pressure price concessions from processors. Participants in both sectors are interested in ending that practice but are concerned that market power could be unbalanced by the rationalization of the fisheries. In a system with a one-to-one relationship of harvest and processing shares, the concern rises since the system would limit the pool of persons with which a shareholder may transact. The concern is most acute for the last shareholders from each sector to commit their shares. To ensure fair price negotiations, the Council has included a provision for binding arbitration for the settlement of price disputes. The system of binding arbitration would apply to Class A shares and C shares when those shares are subject to IPQ landing requirements. Under the system, the arbitrator would establish a finding that preserves the historic division of revenues while considering other relevant factors including current ex-vessel prices, location and timing of deliveries, and safety.

The arbitration process would begin with a market report prepared by an independent market analyst and the establishment of a non-binding fleet wide benchmark price by an arbitrator that has consulted with both fleet representatives and processors. In determining this benchmark price, the arbitrator would consider the highest arbitrated price that applied to at least 7 percent of the IPQ in the fishery in the preceding year. This non-binding price is intended to inform the participants and the later binding arbitration proceedings. After a negotiating period, Class A IFQ holders would be permitted to initiate a single arbitration proceeding with each IPQ holder in the pre-season. Proceedings may be initiated by an IFQ holder (or a group of IFQ holders) prior to the season after committing to deliver shares to the IPQ holder. For a brief period of time prior to the commencement of hearings, other IFQ holders could join the proceeding by unilaterally committing deliveries to the IPQ holder. The arbitration would be in a last best (or final) offer format, which is favored by some participants and is used in the Newfoundland arbitration system. The IPQ holder would submit a single offer. Each IFQ holder could submit an offer or join a group to submit a collective offer. For each IFQ holder or group, the arbitrator would select between the IFQ holder's (or group's) offer and the IPQ holder's offer. IFQ holders that did not participate in the arbitration could receive the benefits of arbitration by agreeing to deliver to the IPQ holder, accepting all terms of the arbitration decision (assuming that the IPQ holder held adequate shares to accept the delivery).

The binding arbitration structure would be a Category 1 measure in the FMP.

Regionalization

QS, Class A IFQ (which requires delivery to a processor holding unused IPQs), and processor shares would be regionally designated under the program. Crab harvested with regionally designated IFQ would be required to be delivered to a processor in the designated region. Likewise, a processor with regionally designated shares would be required to accept delivery of and process crab in the designated region.

Two regional designations would be created in most fisheries. The North region would be all areas on the Bering Sea north of 56°20' N latitude. The South region would be all other areas. The regional designation is intended to preserve the historic geographic distribution of landings in the fisheries. Communities in the Pribilof Islands are the prime beneficiaries of the regionalization of the program.

QS and PQS would be designated based on the location of the activity that gave rise to the allocation. For example, qualified catch delivered in a region would result in shares designated for that region. Discrepancies in the North/South allocations in the two sectors would occur because of the differences in qualified catch caused by the qualification requirements and differences in qualification years for the sectors. This discrepancy would be corrected by redesignation of a portion of the harvest sector allocation. Only persons receiving harvest share allocations in both regions would have a portion of their shares redesignated. The number of a person's shares redesignated would be proportional to the total allocation in the region.

The Council has created exceptions to the North/South regional designations. In the western Aleutian Islands (Adak) golden king crab fishery, 50 percent of the QS and PQS would be designated as western shares.¹¹ This designation would be applied to all allocations regardless of the historic location landings in the fishery. A second exception is the Bering Sea *C. bairdi* fishery, which would have no regional designation. This fishery is anticipated to be conducted primarily as an incidental catch fishery with the Bristol Bay red king crab and Bering Sea *C. opilio* fisheries making any regional designation operationally difficult and potentially overly restrictive.

Regionalization would be implemented as a restriction on the IFQ and IPQ issued and would be part of those Category 1 measures.

Community protection measures

The program includes several provisions intended to protect communities from adverse impacts that could result from the change in management in the fisheries.

Cooling off provision. A “cooling off” period would prevent the movement of processing shares from eligible communities during the first two years of the program. Communities with 3 percent or more of the qualified landings in any crab fishery included in the program would be eligible for this protection in all fisheries included in the program. Communities are defined as boroughs, if one exists, or first or second class cities, if no borough exists. Based on these criteria, NMFS has preliminarily determined that the eligible crab communities are as follows: Adak, Akutan, Dutch Harbor, Kodiak, King Cove, False Pass, St. George, St. Paul, and Port Moeller. During the first two years of the program, any processing shares based on processing history from an eligible community could not be moved from that community. To allow for coordination of deliveries an exception to the rule would allow each processor to move 10 percent of its allocation from the eligible community, provided the aggregate amount of IPQs that could be moved from the community in any fishery in any season could not exceed 500,000 lbs. If 10 percent of the IPQs in a fishery in an eligible community exceeds 500,000 lbs., then 500,000 lbs. of IPQs would be permitted to be moved from the community, which amount would be pro-rated among processors with shares from that community based on their IPQ holdings in the fishery. The *C. bairdi* fishery would be excluded from the “cooling off” period landing requirements, as that fishery is expected to be a bycatch fishery to the Bristol Bay red king crab and *C. opilio* fisheries on implementation of the program. The western Aleutian Islands red king crab fishery would also be exempt from the “cooling off” period landing requirements because that fishery was closed for several years leading up to the program implementation. The western Aleutian Islands golden king crab fishery would also be exempt from the “cooling off” period landing requirements because the landing requirements of the West regionalization program are inconsistent with the historic distribution of landings

¹¹ The remaining 50 percent of the Class A IFQ allocation would have no regional designation and would not be subject to a regional delivery requirement.

that would be established by the “cooling off” period. The “cooling off” period would be implemented as a restriction on PQS under Category 1.

Individual processing quota caps. IPQ caps would be established limiting the annual allocation of IPQs in seasons when the TAC exceeds a threshold amount. In the Bristol Bay red king crab fishery IPQs would not be issued for the amount of the TAC in excess of 20 million lbs. (the total IPQ allocation would not exceed 18 million lbs.). In the *C. opilio* fishery, IPQs would not be issued for the amount of the TAC in excess of 175 million lbs. (the total IPQ allocation would not exceed 157.5 million lbs.). Any Class A IFQ issued in excess of the threshold would not be subject to the IPQ landing requirements but would be subject to the regional landing requirements. The IPQ caps would be implemented as a restriction on PQS under Category 1.

Sea time waiver. Sea time eligibility requirements for the purchase of harvest shares would be waived for CDQ and community groups in eligible communities allowing those communities to build and maintain local interests in harvesting.¹² CDQ and community groups would not be permitted to purchase C shares. The sea time waiver would be implemented as an exception under the harvester quota share measure in Category 1.

Right of first refusal for processor quota share. Eligible communities would also have a right of first refusal on the sale of processor shares originating from processing history in the community where the sale contemplates transfer of the shares outside of the community. Communities with 3 percent or more of the qualified landings in any crab fishery included in the program would be eligible for this protection in all fisheries included in the program. Communities are defined as boroughs, if one exists, or first or second class cities, if no borough exists. Based on these criteria, NMFS has preliminarily determined that the eligible crab communities are as follows: Adak, Akutan, Dutch Harbor, Kodiak, King Cove, False Pass, St. George, St. Paul, and Port Moeller. However, Adak is not eligible for the right of first refusal provision. In addition, eligible communities in the Northern GOA (defined as the area of the Gulf north of 56°20') would have a right of first refusal on the sale of processor shares from communities in that area that are not dependent on the crab fisheries. The right of first refusal would be granted to CDQ groups in CDQ communities. The right of first refusal and any share holdings of CDQ groups would be subject to CDQ rules. In non-CDQ communities, the right of first refusal would be granted to a community group formed under the rules of the halibut and sablefish community purchase program. The right of first refusal and any share holdings of these groups would be governed by rules similar to the halibut and sablefish community purchase program. This provision would be added to Category 1 of the FMP to be implemented by NOAA Fisheries.

Community development quota program and community allocations

Community development quota program. The program would also make changes in the allocations under the CDQ program. The CDQ program would be broadened to include the eastern Aleutian Islands (Dutch Harbor) golden king crab fishery and the western Aleutian Islands (Adak) red king crab fishery. In addition, the allocations in all crab fisheries covered by the program would be increased to 10 percent from its current level of 7.5 percent.¹³ CDQ groups would be required to deliver at least 25 percent of the allocation to shore

¹² CDQ and community groups would be eligible to purchase processing shares because no qualifying requirements are proposed for the purchase of those shares.

¹³ The increase would not apply in the Norton Sound fisheries, which are excluded from the three-pie voluntary cooperative program.

based processors. The CDQ allocations would be managed independently from the rationalization program and are not subject to the share designations and landing requirements of the rationalization program. These provisions would amend Category 1 limited access and be implemented through the existing crab CDQ program and retain the existing State/federal shared management responsibilities of the existing CDQ program.

Adak allocation. The Council motion also provides that an allocation would be made to the community of Adak from the western Aleutian Islands (Adak) golden king crab fishery in an amount equal to the unused resource during the qualifying period. This allocation, however, would be capped at 10 percent of the total allocation in that fishery. Since approximately 12 percent of the GHL was unharvested during the qualifying period, the 10 percent cap would apply. The allocation to Adak would go to a nonprofit entity representing the community with a board of directors elected by the community. Shares could be held in trust by the Aleut Enterprise Corporation for a period not to exceed two years if the community organization is not formed prior to implementation of the program. Share holdings of the community organization would be governed by CDQ-type management and oversight to ensure the benefits of the allocation are realized by the community. This allocation is independent of any requirements of the program (e.g., IPQ landing requirements, regionalization, or other community protections). This provision would be added to Category 1 in the FMP to be implemented by NOAA Fisheries similar to the CDQ program with deferring some of the management responsibilities to the State.

Crew loan program

To aid captains and crew in purchasing QS, a low interest loan program (similar to the loan program under the halibut and sablefish IFQ program) would be created. This program would be funded by 25 percent of the cost recovery fees required by section 304 of the Magnuson-Stevens Act. Loan money would be accessible only to active participants and could be used to purchase either C shares or QS. Quota share purchased with loan money would be subject to all use and leasing restrictions applicable to C shares for the term of the loan. This provision would be added to Category 1 and implemented by NOAA Fisheries similar to the halibut/sablefish crew loan program.

Sideboards to protect participants in other fisheries

A three-pie voluntary cooperative program for the BSAI crab fisheries would affect the fishing patterns of current participants. Some participants may sell or lease their shares. Other participants could change the timing of their fishing. In either case, rationalization could allow BSAI crab fishers to increase participation in other fisheries. To protect participants in these other fisheries, sideboard protections would apply to all non-AFA vessels that formed the basis for an allocation in the *C. opilio* fishery. The sideboards would restrict a vessel's harvests to its historic harvests in all GOA groundfish fisheries (except the sablefish fishery, which is subject to the IFQ program harvest limitations). Vessels with less than 100,000 lbs. of total *C. opilio* harvests and more than 500 metric tons (mt) of total cod harvests in the GOA during the qualifying years would be exempt from the sideboard caps. In addition, vessels with less than 50 mt of total groundfish landings in the GOA during the qualifying period would be prohibited from harvesting cod from the GOA. Sideboards would be applied to vessels but would also restrict harvests on the groundfish license associated with the crab licenses used to qualify for QS, if that license is used on another vessel.

Crab harvests by vessels that participate in the Bering Sea pollock fisheries are currently limited by sideboard restrictions established under the AFA. Likewise, the quantity of crab processed by entities that participate in the Bering Sea pollock fisheries are also limited by sideboards established under the AFA. Since the crab

fisheries would be rationalized, these sideboard restrictions would be removed under the crab rationalization program.

The sideboard measures created by the Council for federally managed fisheries would be incorporated into the FMP as a Category 1 measure and implemented by NOAA Fisheries. Sideboard measures for State managed fisheries may be a Category 2 or 3 measure, with the State regulations implementing these measures.

Additional program elements

Program Review. Under the program, NOAA Fisheries RAM in conjunction with the State would be directed to produce annual reports concerning the program and a preliminary review of the program at three years.

The Council directs staff to prepare an analysis for delivery to the Council 18 months after fishing begins under the program. The analysis is to examine the effects of the 90/10 A share/B share split and the binding arbitration program on the distribution of benefits between harvesters and processors. After receiving the analysis, the Council will consider whether the A share/B share split and the arbitration program are having their intended effects and, if not, whether some other A share/B share split is appropriate. In addition, staff shall the prepare an analysis of the application of the 90/10 Class A/Class B split and regionalization to captain and crew shares (C shares) for consideration by the Council.

A full review of the program would be undertaken at the first Council meeting in the fifth year after implementation of the program. The review would be intended to objectively measure the success of the program in addressing the concerns and achieving the goals and objectives specified in the Council's problem statement and the Magnuson-Stevens Act standards. Impacts of the program on vessel owners, captains, crew, processors, and communities would be examined. The review would include an assessment of options to mitigate negative impacts of the program. Additional reviews would be conducted every five years.

Data collection. A mandatory data collection program would be developed and implemented under the rationalization program. Cost, revenue, ownership, and employment data would be collected regularly from the harvest and processing sectors. The data would be used to study the economic and social impacts of the program on harvesters, processors, and communities and assess the success of the program. Participation in the data collection program would be mandatory for all participants in the fisheries. The program would require adequate regulatory and statutory protection of confidentiality. The novelty of the data collection program and the lack of uniformity in accounting practices could lead to some compliance errors notwithstanding good faith efforts to comply with the requirements of the program. Data collection enforcement and penalties would be structured to avoid overpenalizing honest mistakes of those attempting to comply with its requirements. This program would be a Category 1 management measure in the FMP, with the FMP containing the program elements and data collection protocols. The mandatory data collection program would be implemented by NOAA Fisheries.

Monitoring and enforcement. NOAA Fisheries and the State would coordinate monitoring and enforcement of this program. Managers must be able to ensure adherence to the regulations governing the fishery. A harvester's harvest activity, a cooperative's aggregate catch, a processor's processing activity, and a C/P's activity would need to be monitored. Methods for catch accounting and catch monitoring plans for cooperatives would be developed to generate data that would provide accurate and reliable estimates of the total catch and landings to manage quota share accounts, prevent overages of harvest IFS and IPQ, and

determine regionalization requirements. Monitoring needs include catch composition, bycatch and discards, and deadloss to estimate total fishery removals. Tools used for monitoring include scales at processors, observers, vessel monitoring system, shoreside observers, and shoreside electronic reporting.

Cost Recovery. NOAA Fisheries would establish a cost recovery fee system, required by section 304(d)(2) of the Magnuson-Stevens Act, to recover actual costs directly related to the management and enforcement of the Program. The crab cost recovery fee would be paid in equal shares by the harvesting and processing sectors and would be based on the ex-vessel value of all crab harvested under the Program, including CDQ crab and Adak crab. NOAA Fisheries also would enter into a cooperative agreement with the State of Alaska to use IFQ cost recovery funds in State management and observer programs for BSAI crab fisheries. The crab cost recovery fee is prohibited from exceeding 3 percent of the annual ex-vessel value. However, the collection of up to 133 percent of the actual costs of management and enforcement under the Program would be authorized, which would provide for up to 100 percent of management costs after allocation of 25 percent of the cost recovery fees to the loan program.

Changes to state management

ADF&G provided the following description of potential changes to State management resulting from the implementation of the three-pie voluntary cooperative program. Changes to State management are generally responsive to NOAA Fisheries implementing this program. The State would change management measures to improve the conduct of the fisheries and to reduce the impacts of the crab fisheries on the crab stocks. ADF&G and BOF, in consultation with the BOF/Council Joint Protocol Committee would address concerns of discards, highgrading, incidental catch, and the need for bycatch reduction, improved retention, and inseason monitoring under the program. The following potential changes to State crab management were provided by the State and are further analyzed in Section 4.1.1 of this EIS. Actions taken by both the Council and the BOF would help ensure that the conservation needs of the crab resources in the BSAI are maintained. With this continued attention to detail, these fisheries would remain one of the best managed and economically viable commercial shellfish programs in the U.S.

The Council's three-pie voluntary cooperative program is designed to provide resource conservation, solutions to utilization and management problems, address bycatch and its associated mortalities along with reductions in deadloss, tackle the issues of excess harvesting and processing capacity causing poor economic returns, while solving problems regarding the lack of economic stability for harvesters, processors, and coastal communities. The preferred alternative should provide solutions for creating a safer working environment for participants in an occupation that is continually ranked by the Food and Agricultural Organization as the most dangerous in the nation.

To accomplish or address these issues, the preferred alternative may require the BOF to adopt or change a number of regulations. Discards, highgrading, incidental catch and the need for bycatch reduction and improved in-season monitoring to coincide with implementation of a three-pie voluntary cooperative program are concerns that can be addressed by the BOF under the authority provided in the existing FMP in Categories 2 and 3 management measures. The BOF may choose to change additional management measures at the request of industry or to improve the manageability of the fisheries. ADF&G requests changes to the crab fisheries regulations through the BOF process. It is not possible to predict the exact management measures the BOF would adopt because each measure is adopted through its public process, much like the Council's process. The following actions are all hypothetical, and in no way reflect any limits to the broad range of proposals that the BOF may choose to address.

Guideline harvest levels. Under a three-pie voluntary cooperative, GHGs would not be practical. With fishers and processors working under their own IFQ shares, the fisheries would have to be managed by TAC. For most stocks, the TAC would be set based upon the summer survey and the particular stock harvest strategy, and not changed. For stocks without good population assessment, harvest history, or a harvest strategy, the TAC would be set conservatively to address uncertainty in stock condition. TAC is generally considered to be the fixed target goal necessary for a QS system. TAC allows fishers participating in QS fisheries the confidence that regardless of when they choose to harvest their shares, their quota amount would not change for the duration of the season. Those opting to fish later should have no concern that the catch ceiling may be reduced, thereby reducing their allocated percentage of the total catch as compared to fishers who had fished their share early in the season. Since a change from a GHG to a TAC approach would not allow for inseason quota adjustment based on fishery performance, harvest quotas for un-surveyed crab stocks, such as the Aleutian Islands golden king crab, would be set at conservative levels. Management to the TAC rather than a GHG would ensure better resource conservation at low stock levels, as many GHGs were exceeded because high levels of participation.

Inseason adjustments. With harvest QS, a fishery would continue to be prosecuted within the biological season until the TAC is reached, or the season ends. Fishers and processors would determine when their initial start up occurs each season, and would conclude fishing when their individual quotas are taken or the season ends. Therefore, inseason adjustments would no longer be an appropriate management tool. To ensure that the TAC is not exceeded, ADF&G or NOAA Fisheries would need a catch accounting system to track harvested QSs. The Council adopted a penalty structure to help ensure vessel operators stay within the TAC. The IFQ permit holders with overages of 3 percent or less on their last delivery would forfeit that amount. IFQ permit holders with overages greater than 3 percent on their last delivery would also face legal actions for the violation.

Seasons. The three-pie voluntary cooperative program should provide relief from several problems that exist in fisheries operating under the status quo. Proposals are expected to be addressed by the BOF that would permit longer fishing seasons. It is anticipated that seasons would be allowed to occur during most of the year outside those biologically sensitive periods when molting, mating, and summer surveys occur. The Crab Plan Team has reevaluated the current biological seasons to include new information on crab mating and molting to more accurately describe biological seasons, and has reviewed the effect of broader fishing seasons with respect to natural mortality during the interval between the survey and the fishery. Because some biological activities, such as molting, may vary with annual regimes, a CDQ or IFQ fisher who chooses to fish late in the season, close to the edge of a biological period, may encounter softshell crab. Note that the Council's Crab Plan Team changed the biological season start date from June 1 to May 15 for snow crab because of soft shell crab. Under a three-pie voluntary cooperative program, if fishers did run into soft shell crab (as they have in snow crab) then the State would attempt to adjust open areas through the use of their emergency order authority to target the fleet on areas of marketable crab for fisheries where the stock occur over a broad area (such as snow crab).

In the Bering Sea, fishing for red and blue king crab stocks might be permitted to occur from August to January, although the ultimate season adopted by the BOF would be based upon a number of considerations addressed in the FMP. Other than the sensitive mating and molting period, the BOF would need to consider product quality, minimization of bycatch, environmental conditions, minimization of deadloss, and the cost to industry operations. Different segments of the industry are likely to have differing views on potential season length; however, ADF&G assumes that fishing seasons are likely to expand under rationalization. The magnitude of the expansion cannot be predicted, although sales of crab increase during mini-peaks for

specific holiday seasons in the Asian markets. Fisheries could extend for the majority of the year, as long as they avoid the biological season. However, it is likely that the actual season set by the BOF would be less than that given analysis of summer survey data, manageability, market conditions, meat fullness, etc. Fisheries for golden king crab in the Aleutian Islands, which now extend from mid-August into the late-spring, would probably continue to have lengthy harvest periods because the biological mating and molting period is unknown.

The Aleutian Islands golden king crab fishery in the eastern portion of the management area could extend beyond the current three to four week seasons recently seen. Seasons in the western portion would probably remain open for eight to ten months, as has been the recent season length. Protracted seasons would provide a safety factor to these fisheries by allowing fishers greater leeway to remain in port during severe storms, and protect crab stocks by reducing handling mortality associated with severe weather handling and sorting conditions.

Pot limits. A race to fish can lead to excessive gear on the grounds, gear conflicts, and lost gear. To minimize these problems, limits on gear have been implemented by the current FMP. In a rationalized fishery the number of vessels on the grounds at any one time would likely be reduced. If vessel participation decreases through the formation of cooperatives, leasing arrangements, or with exits from the fishery with the sale of harvest QS, the BOF may decide to increase the number of pots allowed to be fished by each vessel or even consider rescinding pot limits entirely. However, the BOF may decide that some upper level on pot limits needs to be retained to assure that gear continues to be fished in an orderly and controlled manner. The FMP authorizes ADF&G to use pot limits to attain the biological conservation objective and the economic and social objective of the FMP. In establishing pot limits, the BOF would consider, within constraints of available information, the following:

- total vessel effort relative to GHL;
- probable concentrations of pots by area;
- potential for conflict with other fisheries;
- potential for handling mortality of target or non-target species;
- adverse effects on vessel safety including hazards to navigation;
- enforceability of pot limits; and
- analysis of effects on industry.

Pot limits must be designed in a nondiscriminatory manner. For example, pot limits that are a function of vessel size can only be developed if the limits affect large and small vessels equally. Historic data on pot registration and vessel length overall could be used for developing pot limit regulations.

Changes in gear limits can have both biological and economic implications and serve to protect the resource health as well. As gear limits and seasons are relaxed, actual pot soak times should increase, as the need to pull a pot in a short period of time is no longer necessary. This increase in soak time would allow the crab to sort on-bottom, diminishing the number of undersized crab brought to the surface. As a result of the increase in soak time, and fishing in potentially less severe weather, handling and bycatch mortalities should decrease.

With a prolonged season, fishers have increased ability to avoid pack ice, and the associated problems with pot loss. It is anticipated that the number of lost pots due to ice interactions would decrease under a rationalized fishery. Resource impacts due to lost pots would also decrease. However, the actual quantitative benefit to the resource remains unknown at this time. On the other hand, prolonged seasons may cause crab fishers to actually increase their gear interactions with groundfish fishers in the same area. As with the AFA,

cooperatives may work to reduce this potential effect. If fewer pots are placed on the grounds because of consolidation, interaction with other fishing gear and ice should decline.

Reporting requirements. The BOF may elect to make changes to some current reporting requirements under a three-pie voluntary cooperative program, while opting to continue others. Reporting of crab catches by individual vessel operators has been required from as early as 1941. Current State reporting requirements at 5 AAC 39.130, include: reporting the company or individual that purchased the catch; the full name and signature of the permit holder, the vessel that landed the catch with its Commercial Fisheries Entry Commission license plate number; the type of gear used; the amount of gear (number of pots, pot lifts); the weight and number of crab landed including deadloss; the dates of landing and capture; and the location of capture. Processing companies are required to report this information for each landing purchased, and vessel operators are required to provide information to the processor at the time of sale. All reports (fish tickets) are confidential. Reporting requirements ensure adequate information and efficient management and enforcement. Fish tickets would still be required by ADF&G, but actual tracking of IFQ balances would fall to the federal government under the RAM. The current practice of inseason reporting directly from the vessels on a daily basis would likely not be necessary under a rationalized fishery because each fisher would have a set individual quota level to harvest, and the race for fish would be eliminated.

Gear placement and removal and gear storage. Current regulations addressing gear placement and removal would probably need to be reviewed by the BOF, and changes made. Current regulations are in place to ensure that prior to the season opening, and once a season closes, fishers would be allowed to store pots at specific depths or locations if the gear contained no bait or bait containers and had doors secured fully open. The FMP justifies this practice and acknowledges that gear placement and removal lacks biological impacts, potential gear conflicts, the unavailability of loading and unloading facilities and gear storage areas. Under a harvest quota system, fishing seasons may start at any time within the allowed season, and would end when fishers quotas are taken. Current regulations created by the BOF regarding gear placement, removal, and storage would have to be reviewed on a fishery-by-fishery basis.

Vessel tank inspections. The requirement for vessel tank inspections is expected to be maintained under a three-pie voluntary cooperative program. During these inspections, ADF&G staff are looking at gear configurations (escape rings, panel design), buoy marking requirements, and pot limits. However, the importance as an enforcement tool for fair start provisions would no longer be necessary, as each person's vessel would be harvesting toward the permit holder's IFQ allocation.

Measures to reduce bycatch, incidental harvest, and highgrading. With a three-pie voluntary cooperative program, the BOF may establish concurrent seasons for multiple species. This would allow fishers to harvest all legal-sized, male crab brought onboard for which an IFQ is held. This could reduce discards of legal-sized male crab of non-target species (incidental harvest) and reduce mortality from handling and discarding of those crabs. However, because of quota allocations and differing TACs, gear would have to be configured for the most conservative bycatch reduction measures at some point during the fishing seasons. The BOF may implement requirements for mandatory offloading once the quota for one species in a multiple species fishery is reached, and then require re-registration for a new gear configuration. The BOF may also elect to close the area where the species overlap if enforcement issues arise. Another problem the BOF may need to address is one concerning the definition of management areas. Management areas are different for each fishery and the districts do not perfectly overlap. For example, in the Bristol Bay red king crab season, the fishery is located east of 168°W longitude. However, the eastern subdistrict for Tanner crab is east of 173°W longitude. ADF&G managers would not want a redistribution of effort resulting in localized depletion in the area of species overlap in a multi-species fishery. Fishery boundaries have been established through a review

of historical effort by area. Some species overlap occurs in some areas. If concurrent fisheries are allowed, it is conceivable that fishers would, for economic reasons, try to capture their entire allocated quota for one species as incidental harvest to their directed fishery in the same area.

Bycatch in the crab fisheries is predominantly female and small male crabs of the target species and other crab species. All bycatch is discarded at sea. In general, bycatch should decrease under a three-pie voluntary cooperative program. Increased season lengths, if adopted by the BOF, would allow fishers the opportunity and time necessary to search for fishing grounds with lower concentrations of bycatch, and would allow gear to remain on-bottom longer. The former is possible because most stocks tend to segregate geographically by size and sex. Female and small male crab could be better avoided, and old-shell crab, which may be an important reproductive component in the population, could be sorted quickly and returned unharmed. Longer seasons and relaxed pot limits would allow required crab pot escape mechanisms to more effectively sort on bottom.

Harvest strategies developed for Bering Sea king and Tanner crab stocks since the mid-1990's account for assumed bycatch and handling mortality of non-retained crabs in the determination of the harvest rate on mature or legal-sized males. Presently Tanner crab are harvested as an incidental harvest in both the Bristol Bay red king crab and snow crab seasons when Tanner crab are sufficiently abundant. Discards of legal crabs (e.g., legal males that are either undersized relative to processor standards or possess dirty shells) and sub-legal crab are accounted for in ADF&G present harvest strategies that establish harvest rate. Harvest caps are in place to guard against overharvest of specific size and shell-age classes. Under a three-pie voluntary cooperative program, the harvest strategies proposed by ADF&G ultimately adopted by the BOF would continue to account for assumed bycatch and handling mortality establishing the TAC for legal males. But these may be adjusted if bycatch impacts can be determined to have diminished under the rationalized fishery.

Under the three-pie voluntary cooperative program, the incidence of highgrading of larger, cleaner, more desirable, and more valuable crab may increase as fishers have longer seasons and more time to fish in a manner that increases economic return on their limited IFQ. Under open access, at reduced GHL every legal marketable crab that comes on board is kept. A vessel may move to a different area, but once landed, legal crab would be kept unless it is absolutely unmarketable. Market forces could provide incentives for selective harvest of larger size or shell classes that could occur with changes in fishing practices facilitated by the three-pie voluntary cooperative program.

Highgrading is a resource concern because it may alter the composition of the stock by removing only the largest, cleanest crab. The largest crab are also thought to be the most successful at mating. Successful manipulation of current harvest strategies or other BOF actions to more accurately reflect current fleet practices would ensure long-term reproductive viability and the continued health of the resource.

Some small level of highgrading has been observed in CDQ crab fisheries which operate in a rationalized manner, but this is not widespread. If highgrading appears to be a problem, the BOF could take action to halt or diminish this practice. The best tool to deal with this would be reevaluation of current harvest strategies. It is the policy of the BOF to:

“maintain crab comprised of various size and age classes of mature animals in order to maintain long term reproductive viability of the stock and reduce industry dependence on annual recruitment, which is extremely variable” (90-04 FB March 23, 1990).

ADF&G harvest strategies currently address that policy by setting caps on the harvest rate of the size-shell component of legal males that is selected for retention in the fishery. In the king crab fisheries, where there is currently little evidence for strong fishery selectivity within the class of legal-sized males, the harvest rate

cap is applied to the preseason abundance of legal-sized males. In both the Bering Sea Tanner crab and snow crab fisheries, however, there is strong selectivity by the fishery for legal males in new-shelled (clean-shelled) condition as opposed to old-shell (dirty-shell) condition. In the Bering Sea snow crab fishery, processor standards for delivered crabs also results in strong selectivity for males with greater than or equal to 4-inches CW, although the legal-size is 3.1-inches CW. Accordingly, the harvest strategies for the Bering Sea snow crab and Tanner crab fisheries apply the harvest rate cap to exploitable legal males, which is a subset of the legal males defined on the basis of fishery selectivity for shell condition, size, or both. Again, harvest strategies developed for Bering Sea king and Tanner crab stocks since the mid-1990's account for assumed bycatch and handling mortality of non-retained crabs in the determination of the harvest rate on mature- or legal-sized males. Other options the BOF may take to address highgrading might include adopting a minimum/maximum mesh size escape panel, ring and tunnel entrance openings to prevent highgrading on the bottom and still allow female and sub-legal crab to escape, time-area closures, increased observer requirements or, less desirable, mandatory retention of all legal animals up to individual or cooperative-pooled QS limits. Full retention may not be enforceable, and could be counter-productive by lowering long-term fishery value and by increasing deadloss in the tank due to the spread of disease through retention of legal crabs in poor condition.

New regulations would likely need to be developed to protect the biological integrity of the stock. Sorting on the bottom with longer soak times could have similar detrimental consequences if the escape panel mesh size were enlarged above the current regulatory minimum. Only larger crab would be retained (i.e., highgrading). If, however, the mesh size were not allowed to exceed the current size and soak times were to increase (probably adjusting or eliminating pot limits) then sorting on the bottom should prove to be an important conservation benefit of rationalization. Small males and females would escape prior to pot retrieval. Thus, the BOF may consider adopting a minimum/maximum legal-size and work with panel, ring and pot mouth openings to achieve these ends.

State observer requirements. A fleet under the three-pie voluntary cooperative program would still be monitored using onboard observers and dockside samplers. Observer requirements and the program designed to meet those requirements, have been actively in place in selected BSAI fisheries for over 14 years. This program has continued to change and mature. The BOF may elect to make necessary changes to the shellfish observer program. If fleet consolidation occurs and the number of observers deployed remains constant, the percentage of pot lifts and associated catch that are sampled by observers should increase. ADF&G works in conjunction with the Industry Observer Task Force, taking recommendations on levels of observer coverage, cost assessments and payment of those costs. The monitoring program in the fisheries would be adapted to address potential changes in fishing practices under the rationalization program and improve knowledge of stocks in slower paced fisheries by documenting mechanisms for such changes (e.g., to monitor conditions of catch relative to molting/mating periods that may be encountered during protracted seasons, and to monitor any changes in fishery selectivity and on-deck sorting, changes in gear, fishing practices, or areas fished). If problems like highgrading surface, observer coverage may be increased to better document the incidence of occurrence.

In order for the state to meet its statutory responsibility to conserve the resource, the three-pie voluntary cooperative program would need to include funding provisions for sufficient onboard observer and port-sampling coverage. The current CV observer program is limited to an annual budget of \$650,000 that is based on cost-recovery fishing. This observer program covers approximately 10 percent of the CV fleet in current selected fisheries. Observer coverage on vessels processing king or Tanner crab at sea, vessels fishing in special-permit fisheries, and vessels fishing in the Aleutian Islands golden king crab fishery continue to be paid for by vessel operators. This amount of \$650,000 with an additional increment, is needed to fully

develop and implement the observer program and to evaluate the conservation benefits of rationalization. Deployment of observers in protracted seasons under rationalization may have higher overhead costs (travel, for example) than under the current compressed seasons. Additionally, it may be desirable to have costs of observer deployments shared more equitably across vessels under a rationalization program, as opposed to the current system where some components of the fleet bear the cost of observers and others do not. Similarly, the number of port samplers stationed at shore-based facilities could likely be increased to observe and assess potential changes under rationalization. Extended fishing seasons would necessitate coverage of multiple shore-side delivery locations over an extended period. Overall, resource benefits should be enhanced by better data collection, with real time reporting to track potential changes, allowing promulgation of adaptive regulations addressing problematic areas.

Spillover. Under the three-pie voluntary cooperative program, sideboards can be addressed that reduce or eliminate harmful spillover of effort into other commercial fisheries. Impacts to other fishery resources could be significantly lessened or eliminated altogether.

2.3 Alternative 3 - Individual Fishing Quota Program

As with the preferred alternative, the IFQ alternative would rationalize all of the large crab fisheries in the BSAI. The following fisheries would be included in the rationalization program:

- Bristol Bay red king crab
- Western Aleutian Islands (Adak) golden king crab - West of 174° W
- Eastern Aleutian Islands (Dutch Harbor) golden king crab - East of 174° W
- Western Aleutian Islands (Adak) red king crab - West of 179° W
- Pribilof blue and red king crab
- St. Matthew blue king crab
- Bering Sea *C. opilio* (snow crab)
- Bering Sea *C. bairdi* (Tanner crab)

The primary difference between the IFQ alternative and the preferred alternative is the absence of processor shares in the IFQ alternative. Allocations of harvest shares would be made to harvesters, communities, and captains. Designated regions would be allocated landings to preserve their historic interests in the fisheries. The novelty of this program has compelled the Council to include, as a safeguard, extensive data collection and review program to assess the success of the program. The program elements would amend the FMP and be implemented by NOAA Fisheries and the State through the cooperative management structure established in the FMP.

ADF&G, the BOF, and the BOF/Council Joint Protocol Committee would address concerns of discards, highgrading, incidental catch, and the need for bycatch reduction, improved retention, and inseason monitoring under the program. Incidental catch could be discarded under the proposed program, subject to any limits established by the State and Joint Protocol Committee. Potential State actions to improve fisheries management and address these issues are discussed at the end of this section.

Harvest sector

Harvesters would be allocated QS in each fishery rationalized by the program. QS are a revocable privilege that allow the holder to receive an annual allocation of a specific portion of the TAC from a fishery. These annual allocations of harvests are referred to as IFQs. QS would be designated as either CV shares or C/P shares, depending on whether the vessel that created the privilege to the shares processed the qualifying harvests on board. CV QS and IFQ would be regionally designated. IFQ landings could be delivered to any processor (except C/P) in the designated region. Over harvest of IFQ would be forfeited in all cases. Penalties would be imposed for any overage in excess of 3 percent of a person's unused IFQs at the time of landing.

To receive a QS allocation in a fishery a harvester must hold a valid, permanent, fully transferable LLP license endorsed for the fishery. Since LLP licenses are the current qualification for participation in the fisheries, their use for defining eligibility in the rationalization program would maintain the current fishery participation. A harvester's allocation of QS for a fishery would be based on landings in that fishery (excluding landings of deadloss). Specifically, each allocation is the harvesters average annual portion of the total qualified catch during a specific qualifying period. Qualifying periods were selected to balance historical participation and recent participation. Different periods were selected for different fisheries to

accommodate closures and other circumstances in the fisheries in recent years. Qualifying periods for the various fisheries are shown in Table 2.3-1.

Table 2.3-1 Crab fisheries qualifying periods.

Fishery	Qualifying years
Bristol Bay red king crab	1996 - 2000 (best 4 of 5 seasons)
Bering Sea <i>C. opilio</i> (snow crab)	1996 - 2000 (best 4 of 5 seasons)
Bering Sea <i>C. bairdi</i> (Tanner crab)	1991/92 - 1996 (best 4 of 6 seasons)
Western Aleutian Islands (Adak) golden king crab	1996/97 - 2000/01 (all 5 seasons)
Eastern Aleutian Islands (Dutch Harbor) golden king crab	1996/97 - 2000/01 (all 5 seasons)
Western Aleutian Islands (Adak) red king crab - West of 179° W	1992/93 - 1995/96 (best 3 of 4 seasons)
Pribilof blue and red king crab	1994 - 1998 (best 4 of 5 seasons)
St. Matthew blue king crab	1994 - 1998 (best 4 of 5 seasons)

Qualified catch is generally associated with the vessel that created the privilege to the LLP license. Since LLP licenses (and permits under the vessel moratorium program that preceded the LLP) are transferrable from vessel to vessel, catch on the vessel on which a license was used would be included in determining the allocation associated with a license. An additional provision would permit a person that purchased a license to continue to participate in a fishery to receive an allocation based on the history of the vessel on which the license was used. Lastly, a provision would permit persons that owned vessels that sank and were replaced under the LLP license qualification rules or subsequent to satisfaction of the LLP license qualification requirements¹⁴ to credit 50 percent of their average annual history in qualifying years that the vessel participated for years that the vessel or its replacement was unable to participate.

QS and IFQ would both be transferrable under the program, subject to limits including caps on the amount of shares a person may hold or use. Leasing of QS (or equivalently, the sale of IFQs) would also be permitted. Leasing is defined as the use of IFQs on a vessel in which the holder of the underlying QS holds less than a 10 percent ownership interest or on which the underlying QS holder is not present. To be eligible to purchase QS or IFQs a person would be required to be a U.S. citizen with at least 150 days of sea time in U.S. commercial fisheries in a harvest capacity. An entity would be eligible to purchase shares only if it is at least 20 percent owned by a U.S. citizen with at least 150 days of sea time in U.S. commercial fisheries in a harvest capacity. Initial recipients of QS and CDQ groups are exempt from these eligibility criteria.

Separate caps would be imposed on the holdings of QS and IFQs by any person and on the use of IFQs by any vessel. These caps are intended to prevent excessive consolidation of shares under the program. Different caps are chosen for the different fisheries because of fleet characteristics and dependence differ across

¹⁴ This provision also requires that the owner of the vessel replace the vessel and begin fishing within a specified time period.

fisheries. Separate caps on QS holdings are established for CDQ groups, which represent rural western Alaska communities. Caps on QS and IFQ holdings and use are shown in Table 2.3-2.

Table 2.3-2 Caps on quota share and individual fishing quota holdings.

Fishery	Limit on percent of shares a person may hold	Limit on percent of shares a CDQ group may hold	Limit on percent of shares a vessel may use
Bristol Bay red king crab	1	5	2
Bering Sea <i>C. opilio</i> (snow crab)	1	5	2
Bering Sea <i>C. bairdi</i> (Tanner crab)	1	5	2
Western Aleutian Islands (Adak) golden king crab	10	20	20
Eastern Aleutian Islands (Dutch Harbor) golden king crab	10	20	20
Western Aleutian Islands (Adak) red king crab - West of 179° W	10	20	20
Pribilof blue and red king crab	2	10	4
St. Matthew blue king crab	2	10	4

Caps on QS and IFQ holdings are applied individually and collectively. Under this rule all of a person's direct holdings are credited toward the cap. In addition, a person's indirect holdings are also credited toward the cap in proportion to the person's ownership interest in the entity that holds the shares. For example, if a person owns a 20 percent interest in a company that holds 100 shares, that person is credited with holding 20 shares for purposes of determining compliance with the cap. Because use caps are applied on a vessel basis, no similar circumstance arises in applying use caps.

These provisions would amend the Category 1 limited access management measure. This portion would be implemented by RAM and be managed similar to the halibut/sablefish IFQ program with RAM determining and allocating QS and facilitating transfer of quota.

Catcher/processors

The C/Ps, because they participate in both the harvest and processing sectors, have a unique position in the program. A few provisions of the program have been developed to deal specifically with the C/P fleet. C/Ps would be allocated C/P QS under the program. These shares would have both a harvest privilege and an on board processing privilege. CVs would be allocated QS that requires delivery to a shore-based or floating processor. To be eligible for C/P shares, a person must be eligible for a harvest allocation by holding a permanent fully transferable C/P LLP license. Persons meeting this qualification requirement would be allocated C/P shares in accordance with the allocation rules for harvest shares for all qualified catch that was processed on board. C/P shares would not have regional designations. Although C/P shares extend both harvesting and on board processing privileges, a person may deliver unprocessed crab harvested with C/P shares to any other processor in any location.

These provision would amend the Category 1 limited access management measure. This portion would be implemented by RAM and be managed similar to the halibut/sablefish IFQ program with RAM determining and allocating quota share and facilitating transfer of quota.

*Captains shares (C Shares)*¹⁵

Eligible captains would be allocated 3 percent of the TAC. The allocation to captains would be based on the same qualifying years and computational method used for vessel allocations (shown in Table 2.3-1). To be eligible to receive an allocation, a captain would have to have at least one landing in three of the qualifying years and have recent participation demonstrated by at least one landing in two of the three most recent seasons preceding June 10, 2002. For the Adak red king crab, the Pribilof red and blue king crab, the St. Matthew blue king crab, and the *C. bairdi* fisheries, recency would be demonstrated by at least one landing in two of the three most recent seasons preceding June 10, 2002 in the *C. opilio*, Bristol Bay red king crab, or one of the Aleutian Islands golden king crab fisheries.¹⁶ Recency requirements would be waived for captains who died in fishing related incidents. Captains shares would be subject to regional landings requirements akin to those applicable to the general IFQs.

To be eligible to purchase C shares a person must be a U.S. citizen with at least 150 days sea time in a U.S. commercial fishery in a harvest capacity. In addition, the person must be an “active participant” in the BSAI crab fisheries, demonstrated by a landing in a fishery included in the rationalization program in the last 365 days evidenced by either an ADF&G fish ticket, an affidavit from the vessel owner, or other verifiable evidence.

Leasing of C shares in each fishery would be permitted in the first three seasons a fishery is prosecuted after implementation of the program. After the first three seasons the fishery is prosecuted, leasing would be permitted only in the case of a documented hardship (such as a medical hardship or loss of vessel) for the term of the hardship, subject to a maximum of two years over a ten year period.

To ensure that these shares benefit at sea participants in the fisheries, holders of the underlying QS would be required to be on the vessel harvesting the C share IFQs. In addition, individual C share use and holdings are capped at the same level as the vessel use caps applicable to general harvest shares (shown in Table 2.3-2). Initial allocations in excess of the cap are grandfathered. C shares are not considered in determining a vessel’s compliance with the vessel use caps on general harvest shares. Landings with C shares would be subject to the IFQ fee program.

C/P captains would be allocated C/P C shares that include both a harvesting and on board processing privilege. Harvests with C/P C shares may be delivered to shore-based or floating processors. CV C shares must be delivered to shore-based or floating processors for processing.

¹⁵ Allocations to captains are referred to as C shares to capture the different nature of these allocations. Allocation of shares (which are transferrable from cooperative to cooperative without penalty) is thought to be more consistent with the protection of the interests of captains intended by this allocation.

¹⁶ The Adak red king crab, the Pribilof red and blue king crab, the St. Matthew blue king crab, and the *C. bairdi* fisheries were all closed for several consecutive seasons preceding 2002.

This provision would amend the Category 1 limited access management measure and be a component of the harvester QS program. This portion would be implemented by RAM and include the regionalization requirements for C shares.

Crew loan program

To aid captains and crew, a low interest loan program (similar to the loan program under the halibut and sablefish IFQ program) would be created. This program would be funded by 25 percent of the funds collected under the fee program applied to IFQ holders in the BSAI crab fisheries. Loan money would be accessible only by active participants and could be used to purchase either C shares or general harvest shares. Any general harvest shares purchased with loan money would be subject to all use and leasing restrictions applicable to C shares for the term of the loan. This provision would be added to Category 1 and implemented by NOAA Fisheries similar to the halibut/sablefish crew loan program.

Regionalization

All harvest shares (including C shares but excluding C/P shares) would be regionally designated under the program. Crab harvested with regionally designated shares would be required to be delivered to a processor in the designated region.

Two regional designations would be created in most fisheries. The North region would be all areas on the Bering Sea north of 56°20' N latitude. The South region would be all other areas. The regional designation is intended to preserve the historic geographic distribution of landings in the fisheries. Communities in the Pribilof Islands are the prime beneficiaries of the regionalization of the program.

Shares would be designated based on the location of the activity that gave rise to the allocation. Qualified catch delivered in a region would result in shares designated for that region.

The Council has created exceptions to the North/South regional designations. In the western Aleutian Islands (Adak) golden king crab fishery, 50 percent of the shares would be designated as western shares.¹⁷ This designation would be applied to all allocations regardless of historic location of landings in the fishery. A second exception is the Bering Sea *C. bairdi* fishery, which would have no regional designation. This fishery is anticipated to be conducted primarily as an incidental catch fishery with the Bristol Bay red king crab and Bering Sea *C. opilio* fisheries making any regional designation operationally difficult and potentially overly restrictive. In addition, the Aleutian Islands (Adak) red king crab fishery would be designated South, in its entirety. Although this fishery had some landings in the North, those landings were likely related to harvesters' gear storage in the North region rather than routine deliveries from the fishery.

Regionalization would be implemented as a restriction on the IFQ and would be part of that Category 1 measures.

¹⁷ The remaining 50 percent of the Class A share allocation would have no regional designation and would not be subject to a regional delivery requirement.

Community protection measure

To help communities increase participation in the fisheries, sea time eligibility requirements would be waived to allow CDQ and community groups that represent communities that have more than 3 percent of the qualifying landings to purchase QS and IFQs. The sea time requirements are intended to limit share purchases to persons and entities with direct involvement in the harvest sector. Waiving these requirements for groups representing eligible communities may help those communities increase their activities in the fisheries. CDQ and community groups would not be permitted to purchase C shares. The sea time waiver would be implemented as an exception under the harvester quota share measure in Category 1.

Community development quota program and community allocations

Community development quota program: The program would also make changes in the allocations under the CDQ program. The program would be broadened to include the eastern Aleutian Islands (Dutch Harbor) golden king crab fishery and the western Aleutian Islands (Adak) red king crab fishery. In addition, the allocations in all crab fisheries covered by the program would be increased to 10 percent from its current level of 7.5 percent.¹⁸ CDQ groups would be required to deliver at least 25 percent of the allocation to shore based processors. The CDQ allocations would be managed independently from the rationalization program and not subject to the share designations and landing requirements of the rationalization program. These provisions would amend Category 1 limited access and be implemented through the existing crab CDQ program and retain the existing State/federal shared management responsibilities as the existing CDQ program.

Adak allocation. The Council motion also provides that an allocation would be made to the community of Adak from the western Aleutian Islands (Adak) golden king crab fishery in an amount equal to the unused resource during the qualifying period. This allocation, however, would be capped at 10 percent of the total allocation in that fishery. Since approximately 12 percent of the GHL was unharvested during the qualifying period, the 10 percent cap would apply. The allocation to Adak would go to a non-profit entity representing the community with a board of directors elected by the community. Shares could be held in trust by the Aleut Enterprise Corporation for a period not to exceed two years if the community organization is not formed prior to implementation of the program. Share holdings of the community organization would be governed by CDQ-type management and oversight to ensure the benefits of the allocation are realized by the community. This provision would be added to Category 1 in the FMP to be implemented by NOAA Fisheries similar to the CDQ program with deferring some of the management responsibilities to the State. This allocation is independent of the share designations and landing requirements of the IFQ program.

Sideboards to protect participants in other fisheries

An IFQ program for the BSAI crab fisheries would affect the fishing patterns of current participants. Some participants may sell or lease their shares. Other participants could change the timing of their fishing. In either case, rationalization could allow BSAI crab fishers to increase participation in other fisheries. To protect participants in these other fisheries, sideboard protections would apply to all non-AFA vessels that receive an allocation in the snow crab (*C. opilio*) fishery. The sideboards would restrict these vessels to their historic harvests in all GOA groundfish fisheries (except the sablefish fishery, which is subject to the IFQ program harvest limitations). Vessels with less than 100,000 lbs. of total snow crab harvests and more than 500 mt of total cod harvests in the GOA during the qualifying years would be exempt from the sideboard

¹⁸ The increase would not apply in the Norton Sound fisheries, which are excluded from the rationalization program.

caps. In addition, vessels with less than 50 mt of total groundfish landings in the GOA during the qualifying period would be prohibited from harvesting cod from the GOA. Sideboards would be applied to vessels but would also restrict harvests on the accompanying groundfish license, if that license is used on another vessel.

Crab harvests by vessels that participate in the Bering Sea pollock fisheries are currently limited by sideboard restrictions established under the AFA. Likewise, the quantity of crab processed by entities that participate in the Bering Sea pollock fisheries are also limited by sideboards established under the AFA. Since the crab fisheries would be rationalized, these sideboard restrictions would be removed under the crab rationalization program.

The sideboard measures created by the Council for federally managed fisheries would be incorporated into the FMP as a Category 1 measure and implemented by NOAA Fisheries. Sideboard measures for State managed fisheries may be a Category 2 or 3 measure, with the State regulations implementing these measures.

Additional program elements

Annual reports. Under the program, NOAA Fisheries RAM in conjunction with the State would be directed to produce annual reports concerning the program and a preliminary report on the program at three years. A full review of the program would be undertaken at the first Council meeting in the fifth year after implementation of the program. The review would be intended to objectively measure the success of the program in addressing the concerns and achieving the goals and objectives specified in the Council's problem statement and the Magnuson-Stevens Act standards. Impacts of the program on vessel owners, captains, crew, processors, and communities would be examined. The review would include an assessment of options to mitigate negative impacts of the program. Additional reviews would be conducted every five years.

Mandatory data collection program. A mandatory data collection program would be developed and implemented under the rationalization program. Cost, revenue, ownership, and employment data would be collected regularly from the harvest and processing sectors. All variable cost data would be collected, along with fixed cost data to the extent necessary to explain variable costs. The data would be used to study the economic and social impacts of the program on harvesters, processors, and communities and assess the success of the program. Participation in the data collection program would be mandatory for all participants in the fisheries. The program would require adequate regulatory and statutory protection of confidentiality. The novelty of the data collection program and the lack of uniformity in accounting practices could lead to some compliance errors notwithstanding good faith efforts to comply with the requirements of the program. Data collection enforcement and penalties would be structured to avoid over penalizing honest mistakes of those attempting to comply with its requirements. This program would be a Category 1 management measure in the FMP, with the FMP containing the program elements and data collection protocols. The mandatory data collection program to be implemented by NOAA Fisheries is to collect cost, revenue, ownership, and employment data.

Monitoring and enforcement. NOAA Fisheries and the State would coordinate monitoring and enforcement of this program. Managers must be able to ensure that regulations governing the fishery are adhered to. A harvester's harvest activity, a cooperative's aggregate catch, a processor's processing activity, and a C/P's activity would need to be monitored. Methods for catch accounting and catch monitoring plans for cooperatives would be developed to generate data that would provide accurate and reliable estimates of the total catch and landings to manage QS accounts, prevent overages of harvest QS and PQS, and determine regionalization requirements. Monitoring needs include catch composition, bycatch and discards, and

deadloss. Tools used for monitoring include scales at processors, observers, vessel monitoring system, shore side observers, and shoreside electronic reporting. A portion of the management fees collected from harvesters and processors under the program would be shared with the State for management and observer programs in these fisheries and resulting from this program.

Cost Recovery. NMFS would establish a cost recovery fee system, required by section 304(d)(2) of the Magnuson-Stevens Act, to recover actual costs directly related to the management and enforcement of the Program. The crab cost recovery fee would be paid in equal shares by the harvesting and processing sectors and would be based on the ex-vessel value of all crab harvested under the Program, including CDQ crab and Adak crab. NMFS also would enter into a cooperative agreement with the State of Alaska to use IFQ cost recovery funds in State management and observer programs for BSAI crab fisheries. The crab cost recovery fee is prohibited from exceeding 3 percent of the annual ex-vessel value. However, the collection of up to 133 percent of the actual costs of management and enforcement under the Program would be authorized, which would provide for up to 100 percent of management costs after allocation of 25 percent of the cost recovery fees to the loan program.

Changes to state management

ADF&G provided the following description of potential changes to State management resulting from the implementation of the IFQ program. Changes to State management are generally responsive to NOAA Fisheries implementing this program. The State would change management measures to improve the conduct of the fisheries and to reduce the impacts of the crab fisheries on the crab stocks. ADF&G and BOF, in consultation with the BOF/Council Joint Protocol Committee would address concerns of discards, highgrading, incidental catch, and the need for bycatch reduction, improved retention, and inseason monitoring under the program. The following potential changes to State crab management under an IFQ program were provided by the State and further analyzed in Section 4.1.3.2 of this EIS. Actions taken by both the Council and the BOF would help ensure that the conservation needs of the crab resources in the BSAI are maintained. With this continued attention to detail, these fisheries would remain one of the best managed and economically viable commercial shellfish programs in the U.S.

An IFQ program should provide relief to several problems that exist in fisheries operating under the status quo. As is the case with the three-pie voluntary cooperative alternative, implementation of an IFQ program alternative could require changes to management strategies currently operating under the status quo. These changes would have to come about through actions by the BOF, and could involve both FMP Categories 2 and 3 management measures, although Category 3 measures would remain at the discretion of the State. As an IFQ managed fishery is similar to the three-pie model in management approach, some management measures would not necessarily change. As was described in the three-pie voluntary cooperative program discussion, Category 2 measures such as minimum size limits, districts, subdistricts and sections, sex restrictions, and registration areas would not change. These are fundamental biological or reporting considerations that operate under an IFQ or non-IFQ fishery. Several Category 2 measures would require BOF action. In consideration of implementation of an IFQ program in the BSAI king and Tanner crab fisheries, subsequent changes in the historical characteristics of these fisheries could require changes in several management measures.

Guideline harvest levels. As with the preferred alternative, any IFQ fishery cannot be prosecuted under existing GHL. With fishers working under their own IFQ shares, the fisheries would have to be managed with a TAC. For most stocks, the TAC would be set based upon the summer survey and the particular stock

harvest strategy, and not changed. For stocks without good population assessment, harvest history, or a harvest strategy, the TAC would be set conservatively to address uncertainty in stock condition. TAC is generally considered to be the fixed target goal necessary for a QS system. TAC allows fishers participating in QS fisheries the confidence that regardless of when they choose to harvest their shares, their quota amount would not change for the duration of the season. Those opting to fish later should have no concern that the catch ceiling may be reduced, thereby reducing their allocated percentage of the total catch as compared to a fisher who had fished their share early in the season. Since a change from a GHL to a TAC approach would not allow for inseason quota adjustment based on fishery performance, harvest quotas for un-surveyed crab stocks, such as the Aleutian Islands golden king crab, would be set at conservative levels. Management to the TAC under IFQs rather than a GHL under competitive fisheries without an IFQ would ensure better resource conservation at low stock levels, as many GHLs were exceeded because high levels of participation.

Seasons. With any QS based fishery, a fishery would continue to be prosecuted within the biological season until the TAC is reached, or the season ends. Fishers, in discussions with individual processors, would determine when their initial start up occurs each season, and would conclude fishing when quotas are reached.

Proposals are expected to be addressed by the BOF that would permit longer fishing seasons. It is anticipated that seasons would be allowed to occur during most of the year outside those biologically sensitive periods when molting, mating, and summer surveys occur. The Crab Plan Team has reevaluated the current biological seasons to include new information on crab mating and molting to more accurately describe biological seasons, and has reviewed the effect of broader fishing seasons with respect to natural mortality during the interval between the survey and the fishery. Because some biological activities, such as molting, may vary with annual regimes, a CDQ or IFQ fisher who chooses to fish late in the season, close to the edge of a biological period, may encounter softshell crab. Note that the Council's Crab Plan Team changed the biological season from June 1 to May 15 for *C. opilio* because of soft shell crab. Under rationalization, if fishers did run into soft shell crab (as they have in *C. opilio*) then the state would attempt to adjust open areas through the use of their emergency order authority to target the fleet on areas of marketable crab for fisheries where the stock occur over a broad area (such as *C. opilio*). In an IFQ crab fishery prosecuted in the Bering Sea, fishing for red and blue king crab stocks might also be permitted to occur during most of the year outside those biologically sensitive periods. The ultimate season adopted by the BOF would be based upon a number of considerations addressed in the FMP. Other than the sensitive mating and molting period, the BOF would need to consider product quality, minimization of bycatch, environmental conditions, minimization of deadloss, and the cost to industry operations. Different segments of the industry are likely to have differing views on potential season length; however, the ADF&G assumes that fishing seasons are likely to expand under rationalization. The magnitude of the expansion cannot be predicted.

Inseason adjustments. Inseason adjustments, a Category 2 management measure, would no longer be an appropriate management tool. To ensure that the TAC is not exceeded, ADF&G or NOAA Fisheries would need a catch accounting system to track harvested quota shares. The Council adopted a penalty structure to help ensure vessel operators stay within the TAC. IFQ permit holders with overages of 3 percent or less on their last delivery would forfeit that amount. IFQ permit holders with overages greater than 3 percent on their last delivery may also face legal actions for the violation.

Pot limits. Another action that would almost certainly occur through BOF actions would be changes to existing pot limits imposed in these crab fisheries. A race to fish can lead to excessive gear on the grounds, gear conflicts, and lost gear. To minimize these problems, limits on gear have been implemented. In an IFQ

fishery, it is anticipated that vessel participation would diminish through consolidation of fishing effort. If vessel participation decreases through the formation of co-ops, leasing arrangements, or sale of QS with exit from the fishery, the BOF may decide to increase the number of pots allowed to be fished by each vessel or even consider rescinding pot limits entirely. However, the BOF may decide that some upper level on pot limits needs to be retained to assure that gear continues to be fished in an orderly and controlled manner. The FMP authorizes the ADF&G to use pot limits to attain the biological conservation objective and the economic and social objective of the FMP. As with the consideration of the preferred alternative, changes in gear limits can have both biological and economic implications that serve to protect the resource health as well. As gear limits and seasons are relaxed, actual pot soak times should increase, as the need to pull a pot in a short period of time is no longer necessary. This increase in soak time would allow the gear to sort on-bottom, diminishing the number of undersized crab brought to the surface. As a result of the increase in soak time, and fishing in potentially less severe weather, handling and bycatch mortalities should decrease. With a prolonged season, fishers have increased ability to avoid pack ice, and the problems associated with pot loss. It is anticipated that the number of lost pots due to ice interactions would decrease under an IFQ fishery, along with resource impacts due to lost pots. However, the actual quantitative benefit to the resource remains unknown at this time. On the other hand, prolonged seasons may cause crab fishers to actually increase their gear interactions with groundfish fishers in the same area. As with the AFA, cooperatives may work to reduce this potential effect. If fewer pots are placed on the grounds because of consolidation, interaction with other fishing gear and ice should decline.

Reporting requirements. It is anticipated that reporting requirements would have to be addressed by the BOF if an IFQ approach was implemented. The BOF may elect to make changes to some current reporting requirements, while opting to continue others. Fish tickets would still be required by ADF&G, but actual tracking of QS balances would fall to the federal government. ADF&G would coordinate to get timely data. The current practice of inseason reporting directly from the vessels on a daily basis would likely not be necessary under a rationalized fishery because each fisher would have a set individual quota level to harvest, the race for fish would be eliminated, and it is anticipated that overages could be subject to penalties. These would likely deter overages.

Gear placement and removal. Current regulations addressing gear placement and removal would probably need to be reviewed by the BOF. Current regulations are in place to ensure that prior to the season opening, and once a season closes, fishers would be allowed to store pots at specific depths or locations if the gear contained no bait or bait containers and had doors secured fully open. Under any quota system, fisher seasons may start at any time within the allowed season, and would end when their quota is taken. To improve management and efficiency, the BOF may elect to implement changes. Regardless, current regulations created by the BOF regarding gear placement, removal, and storage would have to be reviewed on a fishery by fishery basis. The BOF would also consider other gear interactions when addressing this issue. Crab pots are generally stored on land or in designated storage areas at sea.

Gear modification. As with gear placement and removal, the BOF may elect to modify current regulations for similar reasons under this rationalization approach. Gear modifications presently include the use of escape mechanisms on all crab pots. While this would likely not change under an IFQ fishery, the BOF may adopt regulations addressing minimum/maximum mesh size escape panel and/or ring and tunnel entrance openings to prevent highgrading on the bottom and still allow female and sub-legal crab to escape. Harvest strategies developed for Bering Sea king and Tanner crab stocks since the mid-1990's account for assumed bycatch and handling mortality of non-retained crabs in the determination of the harvest rate on mature- or legal-sized males. It is the policy of the BOF to maintain crab comprised of various size and age classes of mature

animals in order to maintain long-term reproductive viability of the stock and reduce industry dependence on annual recruitment, which is extremely variable.

Vessel tank inspections. Vessel tank inspections need to be changed, although perhaps not significantly. If boats operate under a quota program rather than a “derby-style” race for fish, they may choose to begin participation in a fishery at any time within an established, protracted season, based upon logistical or market considerations. Prior to that first effort, ADF&G may still require vessel tank and gear inspections to track effort and meet other legal requirements. However, their importance as an enforcement tool for fair start provisions would no longer be necessary, as each vessel would be harvesting toward their own IFQ.

Measures to reduce bycatch, incidental harvest, and highgrading. Under an IFQ program, new regulations would likely need to be developed to protect the biological integrity of the stock. As described for the preferred alternative, similar considerations would also apply for an IFQ program. These could develop as a result of continued monitoring of bycatch to judge the effectiveness of this approach to rationalization. It is widely accepted that increased soak time should reduce bycatch of sub-legal crab, however, fishing characteristics of the fleet could change. Changes in area fished, soak time, pot limits, market characteristics, and stock distribution could all affect bycatch rates. Gear modifications to allow escapement, such as escape rings or large mesh panels, would be evaluated under longer soak times and changes in fishery/processor selectivity and fishing strategies. As long as concerns over highgrading, or ghost fishing from lost pots (if pot limits are removed), do not evolve then an IFQ program should have environmental-friendly impacts on our crab resources and their associated habitat. Sorting on the bottom with longer soak times could have similar detrimental consequences if the escape panel mesh size were enlarged above the current regulatory minimum. Only larger crab would be retained, i.e., highgrading. If, however, the mesh size were not allowed to exceed the current size and soak times were to increase (through adjustment or elimination of pot limits) then sorting on the bottom should prove to be an important conservation benefit of rationalization. Small males and females would escape prior to pot retrieval. Thus, managers may consider adopting a minimum/maximum legal mesh size and work with panel, ring and pot mouth openings to achieve these goals. Additionally, if concurrent seasons are adopted through the one-pie voluntary cooperative process, the BOF may wish to allow gear modification to allow retention of more than one species of crab, while still protecting escape of sub-legal and female crab. The state may implement incidental harvest limits of crab in crab fisheries managed under the FMP. Retention of non-target species may be allowed in concurrent seasons if the population of bycatch species is sufficient (above threshold minimums). As previously mentioned, harvest strategies developed for Bering Sea king and Tanner crab stocks since the mid-1990's account for assumed incidental harvest and handling mortality of non-retained crabs in the determination of the harvest rate on mature- or legal-sized males.

Presently, Tanner crab are harvested incidentally in both the Bristol Bay red king and snow crab seasons. Discards of legal animals (e.g. legal males, but either undersized relative to processor standards or possessing dirty shells) and sub-legal crab are accounted for in our present harvest strategies that establish harvest rate. Harvest caps are in place to guard against over-harvest of specific size and shell-age classes. Changes in area fished, soak time, pot limits, market characteristics, and stock distribution could all affect bycatch rates. Extended soak times and gear modifications should allow for sorting to occur while the pots are still on bottom. This should drastically reduce handling of non-retained animals, and the subsequent, associated handling mortality. Under the IFQ program alternative, fishers may be able to avoid fishing during severe weather conditions that may be detrimental to bycaught crab and may have the time and economic incentive to search for areas with the highest value crabs and lowest bycatch.

Observer coverage. In a fishery operating under an IFQ program, vessels would be engaged in fishing over a longer part of the year complicating oversight of fishing. To adequately monitor the fishery, changes in observer coverage might be required. This would necessitate BOF action. Under an IFQ program that increases the season length, the State believes that crab C/P vessels would need to have enough observer coverage to enforce sex and size limits for crab. One reason that the BOF placed observers onboard crab CPs was because those vessels were demonstrated to have been retaining sub-legal sized crab. Because sorting of sub-legal crab down the processing chute can occur during hours when catches go unobserved (an observer is sleeping, eating, or resting, etc), coverage should be increased under any rationalization program. Though managers believe this occurs under the current, pre-rationalization fisheries, other enforcement issues are currently a priority. Since transshipment invoices are not sufficient to eliminate possible violations, managers are concerned about the enforcement implications of a more leisurely fishery. As such, the actual quota management of C/P crab vessels should require special unloading requirements to limit the ability of at-sea processors from exceeding their quota.

Increased season length would also have effects on the CV observer program. The current CV observer program is limited to an annual budget of \$650,000 that is based on cost-recovery fishing. This covers approximately 10 percent of the CV fleet in selected fisheries. Observer coverage on vessels processing king or Tanner crab at sea, vessels fishing in special-permit fisheries and vessels fishing in the Aleutian Islands golden king crab fishery continue to be paid for by vessel operators. Changing fishing seasons through rationalization would necessitate continued collection of at-sea data to assess the effects of protracted seasons and soak times on bycatch and other fishery effects. This data could also help assure enforcement of harvest regulations. Observers would be necessary to document distribution of effort, catch, and bycatch, to monitor condition of catch relative to molting/mating periods that may be encountered during protracted seasons, and to monitor any changes in fishery selectivity and sorting. Funding for ADF&G to replace existing cost-recovery funds is necessary. This amount, and an additional increment, is needed to fully develop and implement the observer program and to evaluate the conservation benefits of rationalization. Deployment of observers in protracted seasons under rationalization may have higher overhead costs (for travel, for example) than under the current compressed seasons. Additionally, it may be desirable to have costs of observer deployments shared more equitably across vessels under a rationalization program, as opposed to the current system where some components of the fleet bear the cost of observers and others do not.

2.4 Alternative 4 - Cooperative Program

The cooperative alternative would rationalize all of the large crab fisheries in the BSAI.¹⁹ The following fisheries would be included in the rationalization program:

- Bristol Bay red king crab
- Western Aleutian Islands (Adak) golden king crab - West of 174° W
- Eastern Aleutian Islands (Dutch Harbor) golden king crab - East of 174° W
- Western Aleutian Islands (Adak) red king crab - West of 179° W
- Pribilof blue and red king crab
- St. Matthew blue king crab
- Bering Sea *C. opilio* (snow crab)
- Bering Sea *C. bairdi* (Tanner crab)

The primary difference between the cooperative alternative and the preferred alternative is that processors would not receive processor shares and would instead be licensed. Harvesters and processors would form cooperatives to realize efficiencies through fleet consolidation and coordination. The novelty of this program has compelled the Council to include, as a safeguard, extensive data collection and review program to assess the success of the program. The program elements would amend the FMP and be implemented by NOAA Fisheries and the State through the cooperative management structure established in the FMP.

ADF&G, the BOF, and the BOF/Council Joint Protocol Committee would address concerns of discards, highgrading, incidental catch, and the need for bycatch reduction, improved retention, and inseason monitoring under the program. Incidental catch could be discarded under the proposed program, subject to any limits established by the State and Joint Protocol Committee. Potential State actions to improve fisheries management and address these issues are discussed at the end of this section.

Harvest sector

In each fishery, eligible harvesters would be permitted to form a cooperative associated with the eligible processor to which the harvester delivered the majority of its catch in the year preceding implementation of the program. Processor association would be determined at the company level (rather than at the plant level). On joining a cooperative, the annual allocation attributable to the harvester's history would be made to the cooperative for use as specified in the cooperative agreement.

Annual harvest allocations would be made in each fishery rationalized by the program. Annual harvest allocations are contingent on the harvester being a member of a cooperative. Qualified harvest histories create a revocable privilege that allow the harvester's cooperative to receive an annual allocation of a specific portion of the TAC from a fishery. Harvest allocations would be designated for harvest by either CVs or C/Ps, depending on whether the vessel that created the privilege to the allocation processed the qualifying harvests on board. Over harvest of a harvest allocation would be forfeited in all cases. Over harvest of a

¹⁹ A few federal fisheries are excluded from the program, including the Norton Sound red king crab fishery, which is operated under a "superexclusive" permit program intended to protect the interests of local, small vessel participants. Under the permit program, participants in the Norton Sound fishery are not permitted to participate in any other BSAI crab fishery. Also excluded from this program are Aleutian Islands Tanner crab, Aleutian Islands red king crab east of 179° W. long., Bering Sea golden king crab, scarlet king crab, *C. angulatus*, and *C. tanneri*.

cooperative's allocation would be forfeited in all cases. Penalties would be imposed for any overage in excess of 3 percent of a cooperative's unused shares at the time of the landing.

To be eligible to join a cooperative in a fishery at the implementation of the program a harvester must hold a valid, permanent, fully transferable LLP license endorsed for the fishery.²⁰ Since LLP licenses are the current qualification for participation in the fisheries, their use for defining eligibility in the rationalization program would maintain the current fishery participation. In the cooperative structure, annual harvest allocations would be made to a cooperative based on the qualified landings history of its members. Specifically, each cooperative's annual allocation is its members' portion of the total qualified landings history during a specific qualifying period. Qualifying periods were selected to balance historical participation and recent participation. Different periods were selected for different fisheries to accommodate closures and other circumstances in the fisheries in recent years. Qualifying periods for the various fisheries are shown in Table 2.4-1.

Table 2.4-1 Crab fisheries qualifying periods.

Fishery	Qualifying years
Bristol Bay red king crab	1996 - 2000 (best 4 of 5 seasons)
Bering Sea <i>C. opilio</i> (snow crab)	1996 - 2000 (best 4 of 5 seasons)
Bering Sea <i>C. bairdi</i> (Tanner crab)	1991/92 - 1996 (best 4 of 6 seasons)
Western Aleutian Islands (Adak) golden king crab	1996/97 - 2000/01 (all 5 seasons)
Eastern Aleutian Islands (Dutch Harbor) golden king crab	1996/97 - 2000/01 (all 5 seasons)
Western Aleutian Islands (Adak) red king crab - West of 179° W	1992/93 - 1995/96 (best 3 of 4 seasons)
Pribilof blue and red king crab	1994 - 1998 (best 4 of 5 seasons)
St. Matthew blue king crab	1994 - 1998 (best 4 of 5 seasons)

Qualified harvest history is generally associated with the vessel that created the privilege to the LLP license. Since LLP licenses (and permits under the vessel moratorium program that preceded the LLP) are transferrable from vessel to vessel, catch on the vessel on which a license was used would be included in determining the qualified history associated with a license. An additional provision would permit a person that purchased a license to continue to participate in a fishery to develop qualified history on the vessel on which the license was used. Lastly, a provision would permit persons that owned vessels that sank and were replaced under the LLP license qualification rules or subsequent to satisfaction of the LLP license qualification requirements²¹ to credit 50 percent of their average annual history in qualifying years that the vessel participated for years that the vessel or its replacement was unable to participate.

²⁰ The purchaser of an eligible harvester's qualified history would also be eligible to join a cooperative.

²¹ This provision also requires that the owner of the vessel also replace the vessel and begin fishing within a specified time period.

Qualified harvest histories would be divisible and transferrable under the program, subject to limits including caps on the amount of qualified history a person may hold.²² Annual allocations would be transferrable between cooperatives subject to agreement of the associated processors. To be eligible to purchase harvest history a person would be required to be a U.S. citizen with at least 150 days of sea time in U.S. commercial fisheries in a harvest capacity. An entity would be eligible to purchase history only if it is at least 20 percent owned by a U.S. citizen with at least 150 days of sea time in U.S. commercial fisheries in a harvest capacity. Holders of qualified history on implementation of the program are exempt from these eligibility criteria.

Separate caps would be imposed on the holdings of harvest history by any person. These caps are intended to prevent excessive consolidation of history under the program. Different caps are chosen for the different fisheries because of fleet characteristics and dependence differ across fisheries. Separate caps on harvest history holdings are established for CDQ groups, which represent rural western Alaska communities. Caps on harvest history holdings are shown in Table 2.4-2.

Table 2.4-2 Caps on harvest history holdings.

Fishery	Limit on percent of qualified history a person may hold	Limit on percent of qualified history a CDQ group may hold
Bristol Bay red king crab	1	5
Bering Sea <i>C. opilio</i> (snow crab)	1	5
Bering Sea <i>C. bairdi</i> (Tanner crab)	1	5
Western Aleutian Islands (Adak) golden king crab	10	20
Eastern Aleutian Islands (Dutch Harbor) golden king crab	10	20
Western Aleutian Islands(Adak) red king crab - West of 179° W	10	20
Pribilof blue and red king crab	2	10
St. Matthew blue king crab	2	10

Caps on harvest history holdings are applied individually and collectively. Under this rule all of a person's direct holdings are credited toward the cap. In addition, a person's indirect holdings are also credited toward the cap in proportion to the person's ownership interest in the entity holding the qualified history. For example, if a person owns a 20 percent interest in a company, that person is credited with holding 20 percent of the qualified history held by that company for purposes of determining compliance with the cap. Initial holdings of qualified history in excess of the caps would be grandfathered.

Processor holdings of harvest history would also be limited by caps on vertical integration. A processor's harvest history holdings are limited to 5 percent of the qualified harvest history pool on a fishery basis. These caps are applied using a threshold rule for determining whether the history is held by a processor and then

²² Under the AFA catch histories are non-divisible and are associated with a vessel. These requirements may limit the ability of participants to realize efficiencies and complicate the application of caps on harvest histories and are therefore relaxed in this cooperative structure.

the individual and collective rule for determining the extent of history holdings. Under the threshold rule, any entity with 10 percent or more common ownership with a processor is considered to be a part of that processor. Any direct holdings of those entities would be fully credited to the processor's holdings. Indirect holdings of an entity would be credited toward the processor's cap in proportion to the entity's ownership interest. The rules for applying the caps on vertical integration are thought to be more appropriate for limiting consolidation of harvest history by processors. The vertical integration cap would exempt only the primary processing corporate entity from any general cap on harvest history holdings. All persons, subsidiaries, and affiliates would remain subject to the general caps on harvest history holdings. Initial holdings of history above the cap would be grandfathered.

This provision would amend the Category 1 limited access management measure. The cooperatives would be implemented by RAM similar to the AFA pollock cooperatives with RAM determining and allocating the IFQ to cooperatives and facilitating transfer of quota.

Processing sector

Any processor that processed crab from one of the fisheries proposed for rationalization in either 1998 or 1999 would be granted a crab processing license. Under a hardship provision, a processor that failed to meet this requirement but that processed *C. opilio* in all years from 1988 to 1997 and invested in excess of \$1 million in processing equipment and improvements after 1995 would receive a crab processing license. Any processor that holds a crab processing license would be eligible to associate with a cooperative. A cooperative must deliver 90 percent of its annual harvest allocation to its associated processor. Deliveries need not be made to a specific plant but to any plant operated by the processor. The remaining 10 percent could be delivered to any processor (including those not holding a crab processor license). Processor licenses are fully transferable. A processor could hold up to two licenses. A processor could purchase a second license to develop an affiliation with the cooperative associated with the processor selling the license. The cooperative would be assigned to the purchasing processor. Although its members could move to a different cooperative, if a harvester leaves the cooperative without permission of the purchasing processor, the harvester would be subject to a one year forfeiture of a portion of the annual allocation.²³

Until Congress takes action to authorize NOAA Fisheries to license processors, it is not possible to determine if or how this provision would fit into the FMP. If Congress provides authority for the Council to regulate processors through the FMP, then this provision would be in the Category 1 limited access management measure.

Cooperative formation

On implementation of the program, each eligible harvester with qualified history would be assigned to the processor to which it delivered a plurality of its harvests in pounds in the year prior to implementation of the program. In the first year of the program, each harvester could join a cooperative associated with the processor to which it is assigned. A harvester that did not participate in any crab fisheries proposed for rationalization in the year prior to implementation would be eligible to join a cooperative associated with the processor to which it delivered a plurality of its harvests in pounds from fisheries proposed for rationalization in the last year that it participated. In the first year of the program cooperative formation would require at

²³ Any movement of a harvester between cooperatives without permission of the cooperative that a harvester is departing would result in a one year forfeiture of 10 percent of the harvester's annual allocation to the cooperative associated with the processor that the harvester is departing.

least four harvesters and the holders of 70 percent of the qualified harvests by harvesters eligible to join the cooperative. The cooperative would receive the sum of the annual allocations of its members in the applicable fisheries. Cooperatives are required to file a cooperative agreement with the Secretary annually, after Council review, prior to the cooperative's allocation being set aside for its exclusive use. Processors that associate with cooperatives would not be members of the cooperatives but would remain independent. Each cooperative would be required to deliver 90 percent of its harvest allocation in each fishery to the processor associated with the cooperative. Annual harvest allocations would be harvested in accordance with the cooperative agreement. In the event that a harvester did not join a cooperative, all of that harvester's allocation would be forfeited and would be allocated on a pro-rated basis to all cooperatives on a fishery-by-fishery basis.²⁴

After the first year of the program, a harvester could join a cooperative associated with any processor subject to the agreement of the cooperative. In addition, four or more harvesters could form a new cooperative associated with the holder of a processor license, provided that no more than one cooperative may be formed in association with any processor. In the first year of membership to a new cooperative, 10 percent of the annual allocation attributed to that harvester's history would be forfeited to the cooperative that the harvester exited, unless otherwise agreed by the cooperative that the harvester exited and its associated processor.²⁵ If all members of a cooperative associated with a processor elect to leave the cooperative in a single year, 10 percent of the allocation attributable to the history of those harvesters would be forfeited in that year and would be divided pro-rated among all cooperatives in the fishery, unless otherwise agreed by the associated processor. In any year that a harvester is not a member of a cooperative, the annual allocation that would arise from that harvester's history would be divided pro-rata among all cooperatives on a fishery-by fishery basis.

Although harvesters are permitted to transfer history freely, movement of history to a new cooperative would be subject to any forfeiture that would occur from moving between cooperatives in the absence of a transfer. So, if a harvester sold its history to a member of another cooperative, 10 percent of the annual allocation attributable to that history would be forfeited to the cooperative of the seller in the first year of the transfer, unless the cooperative of the seller and its associated processor agreed to waive the forfeiture. Cooperatives would be permitted to freely transfer annual allocations subject to their agreements and consent of the associated processor.

This provision would amend the Category 1 limited access management measure. This provision would be implemented by NOAA Fisheries similar to the AFA pollock cooperatives with NOAA Fisheries determining and allocating the IFQ to cooperatives and facilitating transfer of quota.

Catcher/processors

C/Ps, because they participate in both the harvest and processing sectors, have a unique position in the program. A few provisions of the program have been developed to deal specifically with the C/P fleet. C/P cooperatives would be allocated C/P harvest allocations under the program. These allocations would have both a harvest privilege and an on board processing privilege. CVs would be allocated harvest allocations that require delivery to a shore-based or floating processor. To be eligible for C/P allocations, a person must

²⁴ The allocation for each fishery would be divided among cooperatives that have allocations in the fishery in proportion to their annual allocations.

²⁵ If a harvester was not a member of a cooperative in the preceding year, no additional harvest allocation would be forfeited, since the harvester would have forfeited the entire allocation in the previous year.

be eligible for a harvest allocation by holding a permanent fully transferable C/P LLP license. In addition, the C/P must have processed crab in either 1998 or 1999 in one of the fisheries proposed for rationalization. This requirement parallels the processor license requirement. Persons meeting this eligibility requirement would be eligible to join a C/P cooperative, which would receive an annual C/P allocation in accordance with the harvest allocation rules for all qualified catch that was processed on board.²⁶ C/Ps may form cooperatives with other C/Ps. At least four holders of C/P history would be required for the formation of a C/P cooperative. C/P cooperatives would harvest and process the annual allocation of its members in accordance with its cooperative agreement. Although C/P allocations extend both harvesting and processing privileges, a C/P cooperative may deliver unprocessed crab harvested with C/P allocations to any other processor (including those without crab processing licenses).

*Captains shares (C Shares)*²⁷

Eligible captains would be allocated 3 percent of the TAC as C shares. The allocation to captains would be based on the same qualifying years and computational method used for vessel allocations (shown in Table 2.4-1). To be eligible to receive an allocation, a captain would have to have at least one landing in three of the qualifying years and have recent participation demonstrated by at least one landing in two of the three most recent seasons preceding June 10, 2002. For the Adak red king crab, the Pribilof red and blue king crab, the St. Matthew blue king crab, and the *C. bairdi* fisheries, recency would be demonstrated by at least one landing in two of the three most recent seasons preceding June 10, 2002 in the *C. opilio*, Bristol Bay red king crab, or one of the Aleutian Islands golden king crab fisheries.²⁸ Recency requirements would be waived for captains who died in fishing related incidents.

To be eligible to purchase C shares a person must be a U.S. citizen with at least 150 days sea time in a U.S. commercial fishery in a harvest capacity. In addition, the person must be an “active participant” in the BSAI crab fisheries, demonstrated by a landing in a fishery included in the rationalization program in the last 365 days evidenced by either an ADF&G fish ticket, an affidavit from the vessel owner, or other verifiable evidence.

Leasing of C shares in each fishery would be permitted in the first three seasons a fishery is prosecuted after implementation of the program. After the first three seasons the fishery is prosecuted, leasing would be permitted only in the case of a documented hardship (such as a medical hardship or loss of vessel) for the term of the hardship, subject to a maximum of two years over a ten year period.

To ensure that these shares benefit at sea participants in the fisheries, C share holders would be required to be on the vessel harvesting the C share annual allocation. In addition, individual C share use and ownership

²⁶ C/Ps that meet only the harvest eligibility requirement would be eligible for membership in a CV cooperative. In addition, eligible C/Ps that delivered some harvests to other processors would be eligible for membership in a CV cooperative with respect to any history not processed on board. C/Ps that meet the eligibility requirement for processors by processing deliveries from other vessels would receive processor licenses.

²⁷ Allocations to captains are referred to as C shares to capture the different nature of these allocations. Allocation of shares (which are transferrable from cooperative to cooperative without penalty) is thought to be more consistent with the protection the interests of captains intended by this allocation.

²⁸ The Adak red king crab, the Pribilof red and blue king crab, the St. Matthew blue king crab, and the *C. bairdi* fisheries were all closed for several consecutive seasons preceding 2002.

are capped at twice the caps applicable to holdings of general harvest shares (shown in Table 2.4-2). Initial allocations in excess of the cap are grandfathered.

C/P captains would be allocated C/P C shares that include both a harvesting and on board processing privilege. Harvests with C/P C shares may be delivered to shore-based or floating processors. CV C shares must be delivered to shore-based or floating processors for processing. Landings with C shares would be subject to the fee program.

Holders of C shares would be eligible to join any cooperative and can move from cooperative to cooperative without forfeiture of shares or penalty when a fishery is closed. Annual allocations would be made to the cooperative but must be fished in accordance with the rules for C share harvests. In the event that a Captain does not join a cooperative, all of that Captain's allocation would be forfeited and would be allocated to all other captains on a pro-rated basis for use by their cooperatives.

Community development quota program and community allocations

Community development quota program. The program would also make changes in the allocations under the CDQ program. The CDQ program would be broadened to include the eastern Aleutian Islands (Dutch Harbor) golden king crab fishery and the western Aleutian Islands (Adak) red king crab fishery. In addition, the allocations in all crab fisheries covered by the program would be increased to 10 percent from its current level of 7.5 percent.²⁹ CDQ groups would be required to deliver at least 25 percent of the allocation to shore based processors. The CDQ allocations would be managed independently from the rationalization program and not subject to the cooperative requirements of the rationalization program. These provisions would amend Category 1 limited access and be implemented through the existing crab CDQ program and retain the existing State/federal shared management responsibilities of the existing CDQ program.

Adak allocation. The Council motion also provides that an allocation would be made to the community of Adak from the western Aleutian Islands (Adak) golden king crab fishery in an amount equal to the unused resource during the qualifying period. This allocation, however, would be capped at 10 percent of the total allocation in that fishery. Since approximately 12 percent of the GHF was unharvested during the qualifying period, the 10 percent cap would apply. The allocation to Adak would go to a nonprofit entity representing the community with a board of directors elected by the community. Shares could be held in trust by the Aleut Enterprise Corporation for a period not to exceed two years if the community organization is not formed prior to implementation of the program. Share holdings of the community organization would be governed by CDQ-type management and oversight to ensure the benefits of the allocation are realized by the community. This provision would be added to Category 1 in the FMP to be implemented by NOAA Fisheries similar to the CDQ program with deferring some of the management responsibilities to the State. This allocation is independent of any requirements of the rationalization program (e.g., the cooperative requirements).

Crew loan program

To aid captains and crew a low interest loan program (similar to the loan program under the halibut and sablefish IFQ program) would be created. This program would be funded by 25 percent of the funds collected under the fee program applied to harvest landings (including landings with C shares) in the BSAI crab fisheries under this program. Loan money would be accessible only by active participants and could be used

²⁹ The increase would not apply in the Norton Sound fisheries, which are excluded from the rationalization program.

to purchase either C shares or general harvest history. Any general harvest history purchased with loan money would be subject to all use and leasing restrictions applicable to C shares for the term of the loan. This provision would be added to Category 1 and implemented by NOAA Fisheries similar to the halibut/sablefish crew loan program.

Sideboards to protect participants in other fisheries

A cooperative program for the BSAI crab fisheries would affect the fishing patterns of current participants. Some participants may sell or lease their history. Other participants could change the timing of their fishing. In either case, rationalization could allow BSAI crab fishers to increase participation in other fisheries. To protect participants in these other fisheries, sideboard protections would apply to all non-AFA vessels that formed the basis for an allocation in the *C. opilio* fishery. The sideboards would restrict a vessel's harvests to its historic harvests in all GOA groundfish fisheries (except the sablefish fishery, which is subject to the IFQ program harvest limitations). Vessels with less than 100,000 lbs. of total *C. opilio* harvests and more than 500 mt of total cod harvests in the GOA during the qualifying years would be exempt from the sideboard caps. In addition, vessels with less than 50 mt of total groundfish landings in the GOA during the qualifying period would be prohibited from harvesting cod from the GOA. Sideboards would be applied to vessels but would also restrict harvests on the groundfish license associated with the crab licenses used to qualify for QS, if that license is used on another vessel.

Crab harvests by vessels that participate in the Bering Sea pollock fisheries are currently limited by sideboard restrictions established under the AFA. Likewise, the quantity of crab processed by entities that participate in the Bering Sea pollock fisheries are also limited by sideboards established under the AFA. Since the crab fisheries would be rationalized, these sideboard restrictions would be removed under the crab rationalization program.

The sideboard measures created by the Council for federally managed fisheries would be incorporated into the FMP as a Category 1 measure and implemented by NOAA Fisheries. Sideboard measures for State managed fisheries may be a Category 2 or 3 measure, with the State regulations implementing these measures.

Additional program elements

Annual reports. Under the program, NOAA Fisheries RAM in conjunction with the State would be directed to produce annual reports concerning the program and a preliminary report on the program at three years. A full review of the program would be undertaken at the first Council meeting in the fifth year after implementation of the program. The review would be intended to objectively measure the success of the program in addressing the concerns and achieving the goals and objectives specified in the Council's problem statement and the Magnuson-Stevens Act standards. Impacts of the program on vessel owners, captains, crew, processors, and communities would be examined. The review would include an assessment of options to mitigate negative impacts of the program. Additional reviews would be conducted every five years.

Data collection. A mandatory data collection program would be developed and implemented under the rationalization program. Cost, revenue, ownership, and employment data would be collected regularly from the harvest and processing sectors. The data would be used to study the economic and social impacts of the program on harvesters, processors, and communities and assess the success of the program. Participation in the data collection program would be mandatory for all participants in the fisheries. The program would require adequate regulatory and statutory protection of confidentiality. The novelty of the data collection program and the lack of uniformity in accounting practices could lead to some compliance errors

notwithstanding good faith efforts to comply with the requirements of the program. Data collection enforcement and penalties would be structured to avoid overpenalizing honest mistakes of those attempting to comply with its requirements.

Monitoring and enforcement. NOAA Fisheries and the State would coordinate monitoring and enforcement of this program. Managers must be able to ensure that regulations governing the fishery are adhered to. A harvester's harvest activity, a cooperative's aggregate catch, a processor's processing activity, and a C/P's activity would need to be monitored. Methods for catch accounting and catch monitoring plans for cooperatives would be developed to generate data that would provide accurate and reliable estimates of the total catch and landings to manage QS accounts, prevent overages of harvest QS and processor QS. Monitoring needs include catch composition, bycatch and discards, and deadloss. Tools used for monitoring include scales at processors, observers, vessel monitoring system, shoreside observers, and shoreside electronic reporting. A portion of the management fees collected from harvesters and processors under the program would be shared with the State for management and observer programs in the fisheries.

Cost Recovery. NMFS would establish a cost recovery fee system, required by section 304(d)(2) of the Magnuson-Stevens Act, to recover actual costs directly related to the management and enforcement of the Program. The crab cost recovery fee would be paid in equal shares by the harvesting and processing sectors and would be based on the ex-vessel value of all crab harvested under the Program, including CDQ crab and Adak crab. NMFS also would enter into a cooperative agreement with the State of Alaska to use IFQ cost recovery funds in State management and observer programs for BSAI crab fisheries. The crab cost recovery fee is prohibited from exceeding 3 percent of the annual ex-vessel value. However, the collection of up to 133 percent of the actual costs of management and enforcement under the Program would be authorized, which would provide for up to 100 percent of management costs after allocation of 25 percent of the cost recovery fees to the loan program.

Changes to state management

ADF&G provided the following description of potential changes to State management resulting from the implementation of the cooperative program. Changes to State management are generally responsive to NOAA Fisheries implementing this program. The State would change management measures to improve the conduct of the fisheries and to reduce the impacts of the crab fisheries on the crab stocks. ADF&G and BOF, in consultation with the BOF/Council Joint Protocol Committee would address concerns of discards, highgrading, incidental catch, and the need for bycatch reduction, improved retention, and inseason monitoring under the program. The following potential changes to State crab management were provided by the State and are further analyzed in Section 4.1.3.2 of this EIS. Actions taken by both the Council and the BOF would help ensure that the conservation needs of the crab resources in the BSAI are maintained. With this continued attention to detail, these fisheries would remain one of the best managed and economically viable commercial shellfish programs in the U.S.

The Council's cooperative program is designed to provide resource conservation, solutions to utilization and management problems, address bycatch and its associated mortalities along with reductions in deadloss, tackle the issues of excess harvesting and processing capacity causing poor economic returns, while solving problems regarding the lack of economic stability for harvesters, processors, and coastal communities. The alternative should provide solutions for creating a safer working environment for participants in an occupation that is continually ranked by the Food and Agricultural Organization as the most dangerous in the nation.

To accomplish or address these issues, the cooperative program may require the BOF to adopt or change a number of regulations. Discards, highgrading, incidental catch and the need for bycatch reduction and improved in-season monitoring to coincide with implementation of a cooperative program are concerns that can be addressed by the BOF under the authority provided in the existing FMP in Category 2 and 3 management measures. The BOF may choose to change additional management measures at the request of industry or to improve the manageability of the fisheries. ADF&G requests changes to the crab fisheries regulations through the BOF process. It is not possible to predict the exact management measures the BOF would adopt because each measure is adopted through its public process, much like the Council's process.

The State believes that any actions deemed necessary by the BOF for the cooperative program would mirror those for a fishery operating under an IFQ approach. Both are prosecuted as IFQ fisheries, and potential State decisions under the Category 2 and 3 management measures would therefore be similar, if not identical.

2.5 Comparison of alternatives

This section compares the program elements of the four alternatives under consideration in this EIS.

Table 2.5-1 Comparison of alternatives for harvester sector.

Harvester Sector	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Harvester TAC allocation	No direct allocation - 100% of the post-CDQ TAC fished by license holders	Allocation of 100% of the post-CDQ TAC to share holders	Allocation of 100% of the post-CDQ TAC to share holders	Allocation of 100% of the post-CDQ TAC to eligible cooperatives
Processor landings requirements	none	90% of harvest share pool is Class A shares requiring delivery to a processor holding unused processing shares	none	90% of a cooperative's allocation must be delivered to the associated processor
Harvester Eligibility	LLP licenses are issued to persons that own vessels meeting historical landing requirements	LLP license holders are eligible for an allocation	LLP license holders are eligible for an allocation	LLP license holders are eligible to join a cooperative
Initial allocation of harvest shares	NA	Allocation based on historic participation	Allocation based on historic participation	Allocation based on historic participation
Harvest license and share use	Licenses usable on any vessel under the MLOA defined on the license	Shares usable on any vessel	Shares usable on any vessel	Shares usable on any vessel
Transferability of harvest licenses and shares	Licenses are transferable but not severable by fishery	Shares are fully transferable, including leasing	Shares are fully transferable, including leasing	Shares are fully transferable, including leasing
Caps on harvest share and license holdings	No limit on the number of licenses held	Individual limits on share holdings	Individual limits on share holdings	Individual limits on share holdings
Caps on harvest share use by a vessel	NA	Vessel use caps with exemption to cooperatives	Vessel use caps	No caps on share use by vessels
Limits on vertical integration (harvest share or license holdings by processors)	none	Individual limits on harvest share holdings by processors	none	Individual limits on harvest share holdings by processors

Table 2.5-1 (Cont.) Comparison of alternatives for harvester sector.

Harvester Sector	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Cooperative membership	NA	Voluntary	NA	Mandatory to receive share allocation
Captains shares	NA	3% of the TAC	3% of the TAC	3% of the TAC
Regional delivery requirements	NA	'A' Shares required to be delivered in the designated region	All shares required to be delivered in the designated region	none

Notes: CDQ - community development quota MLOA - maximum length overall
 IFQ - individual fishing quota NA - data not available
 LLP - License Limitation Program TAC - total allowable catch

Table 2.5-2 Comparison of alternatives for processor sector.

Processor Sector	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Processor TAC allocation	No processing allocation	Allocation of 90% of the post-CDQ TAC to processing share holders	No processing allocation	No processing allocation - Cooperative landing requirements protect associated processor
Eligibility for processor licenses or shares	No processor licensing or share requirements	Allocations issued to processors active in eligibility period	No processor licensing or share requirements	Licenses issued to processors active in eligibility period
Allocation of processor shares or processing protections	NA	Allocation based on historic participation	NA	Harvesters eligible to join cooperative associated with processor to which most deliveries made in the year prior to implementation
Processor license and share use	NA	Shares usable by any facility of the holder in the designated region	NA	Licenses authorize use of any facility of the holder

Table 2.5-2 (Cont.) Comparison of alternatives for processor sector.

Processor Sector	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Transferability	NA	Shares are fully transferable, including leasing	NA	Licenses are fully transferable - Processing privilege arising from associated cooperative transfers with license
Caps on share and license holdings	NA	Individual limits on share holdings	NA	Limit on number of licenses an individual can hold
Caps on share use by a processor	NA	Individual limits on share use	NA	NA
Regional Processing requirements	NA	Processors required to accept delivery and process crab in designated region	none	none
Restrictions on shares and licenses leaving a community	NA	Two year prohibition on moving PQS out of community and community right of first refusal to purchase PQS	NA	none

Notes: CDQ - community development quota PQS - processor quota shares
 IFQ - individual fishing quota TAC - total allowable catch
 NA - data not available

Table 2.5-3 Comparison of alternatives for catcher/processor sector.

Catcher/ Processor Sector	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Eligibility for C/P licenses or shares	C/P licenses are issued to vessels that processed crab during the LLP endorsement period	Vessels meeting license eligibility requirements that harvested and processed crab on board during processor eligibility period are eligible for C/P shares	Vessels meeting license eligibility requirements that harvested and processed crab on board during processor eligibility period are eligible for C/P shares	Vessels meeting license eligibility requirements that harvested and processed crab on board during processor eligibility period are eligible for C/P shares
Initial allocation of C/P licenses and shares	NA	Allocation based on historic activity as a C/P	Allocation based on historic activity as a C/P	Allocation based on historic activity as a C/P
Size of the C/P sector	Size of sector depends on performance of license holders in competitive fishery	Sector is limited in size by the initial allocation	Sector is limited in size by the initial allocation	Sector is limited in size by the initial allocation
Captains shares	NA	yes	yes	yes

Notes: C/P - catcher/processor LLP - License Limitation Program
 IFQ - individual fishing quota NA - data not available

Table 2.5-4 Comparison of alternatives for vessel captains.

Captains Shares	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Eligibility for Captains shares	NA	Captains with landings in qualifying years and recent seasons	Captains with landings in qualifying years and recent seasons	Captains with landings in qualifying years and recent seasons
Initial allocation of Captains shares	NA	Allocation based on historic participation	Allocation based on historic participation	Allocation based on historic participation
Regional delivery requirements	NA	Not subject to delivery requirements for the first three years of the program	C shares required to be delivered in designated region	none
Leasing and purchase of shares	NA	Allowed with restrictions	Allowed with restrictions	Allowed with restrictions
Owner on board	NA	Holders of C shares are required to be on the vessel harvesting the C shares	Holders of C shares are required to be on the vessel harvesting the C shares	Holders of C shares are required to be on the vessel harvesting the C shares

Notes: IFQ - individual fishing quota NA - data not available

Table 2.5-5 Comparison of alternatives for cooperatives.

Cooperatives	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Cooperative formation	NA	Voluntary cooperative with fishers choice to join or fish IFQ	none	Mandatory cooperative with no IFQ or open-access fishery
Eligibility to join cooperative in first year	NA	voluntary	NA	Eligible to join cooperative associated with the processor to which most deliveries made in year prior to implementation
Movement among cooperatives	NA	unlimited	NA	By consent or forfeiting 10% of annual allocation to cooperative and associated processor

Table 2.5-5 (Cont.) Comparison of alternatives for cooperatives.

Cooperatives	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Cooperative/ processor association	NA	Cooperatives associate with one or more processors with PQS	NA	Cooperatives associate with one licensed processor
Cooperative delivery requirements	NA	None - must deliver A Shares to holder of unused IPQ	NA	Must deliver 90 percent of landings to associated processor
Regional delivery requirements	NA	'A' Shares required to be delivered in the designated region	NA	none
Cooperative agreement	NA	Cooperatives annually file agreement with Secretary	NA	Cooperatives annually file agreement with Secretary

Notes: IFQ - individual fishing quota
IPQ - individual processing quota
NA - data not available

PQS - processor quota shares
Secretary - Secretary of Commerce

Table 2.5-6 Comparison of alternatives for CDQ and community allocations.

CDQ and Community Allocations	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
CDQ allocation	7.5% of the TAC	10% of the TAC (increase does not apply to Norton Sound red king crab)	10% of the TAC (increase does not apply to Norton Sound red king crab)	10% of the TAC (increase does not apply to Norton Sound red king crab)
CDQ crab fisheries	Snow crab, Tanner crab, Bristol Bay red king crab, Pribilof Islands red and blue king crab, St. Matthew blue king crab, Norton Sound red king crab	Same as status quo, plus eastern Aleutian Island golden king crab, Western Aleutian Island red king crab	Same as status quo, plus eastern Aleutian Islands golden king crab, western Aleutian Islands red king crab	Same as status quo, plus eastern Aleutian Islands golden king crab, western Aleutian Islands red king crab
Adak allocation	NA	10% of the TAC of western Aleutian Islands golden king crab allocated to Adak subject to CDQ type management and oversight	10% of the TAC of western Aleutian Islands golden king crab allocated to Adak subject to CDQ type management and oversight	10% of the TAC of western Aleutian Islands golden king crab allocated to Adak subject to CDQ type management and oversight
CDQ share landing requirements	NA	CDQ groups are required to deliver 25% to shore-based processors	CDQ groups are required to deliver 25% to shore-based processors	CDQ groups are required to deliver 25% to shore-based processors
CDQ purchase of shares	NA	Allowed with CDQ group ownership caps	Allowed with CDQ group ownership caps	Allowed with CDQ group ownership caps

Notes: CDQ - community development quota NA - data not available
 IFQ - individual fishing quota TAC - total allowable catch

Table 2.5-7 Comparison of alternatives for additional elements.

<i>Additional Elements</i>	Alternative 1 (status quo)	Alternative 2 (3-pie voluntary cooperative)	Alternative 3 (harvester IFQ)	Alternative 4 (cooperative)
Crew Loan Program	no	yes	yes	yes
Sideboards	none	yes	yes	yes
Annual reports	none	yes	yes	yes
Mandatory data collection	none	Mandatory collection of cost, revenue, ownership and employment data from harvesting and processing sectors	Mandatory collection of cost, revenue, ownership and employment data from harvesting and processing sectors	Mandatory collection of cost, revenue, ownership and employment data from harvesting and processing sectors
Monitoring and enforcement	yes	yes	yes	yes

Notes: IFQ - individual fishing quota

2.6 Alternatives considered and eliminated from detailed study

During the development of the alternatives for the proposed action, the Council considered that several different options are available for managing the BSAI crab fisheries. Some of these alternatives have received extensive analysis, either as alternatives in this EIS or in the RIR/IRFA (Appendix 1). This section provides a summary of the alternatives that receive little analysis because the management structure is viewed as unsuitable for management of the BSAI crab fisheries. A brief rationale as to why they were not included in the analysis is presented below.

In addition, the Council considered a wide range of options for each program element contained in the three rationalization program alternatives analyzed in this EIS. The RIR/IRFA contains the analysis of the complete set of options for each program element, including the options that were not included in the alternatives (Appendix 1).³⁰

Exclusive federal management/exclusive State management alternatives

The crab FMP is unique in its framework structure for co-management between the State and the federal government. As explained in Section 2.1, the FMP defers much of the fishery management decisions to the State, while reserving some management decisions for the federal process and establishing a system for federal review and appeals of State management actions. Two other North Pacific FMPs, for the salmon fisheries and scallop fisheries in the EEZ, are similar in that they also defer management to the State, but they do not establish a framework for State management measures or an appeals process.

The structure of the crab FMP was developed to address the unique and complex concerns of the State, crab harvesters, crab processors, and coastal communities. As explained in Section 3.4.2 on the history of the FMP, the Council, in developing the FMP, realized that effective management of the crab fisheries must provide efficient and effective management, conservation of the crab stocks, and fair access by all user groups to management's decision-making. The co-management framework in the FMP provides for these components.

An alternative for exclusive federal management was proposed by public comment during the scoping process. Exclusive federal management would not provide efficient and effective management of the fisheries because all of the fishery management expertise, management infrastructure, and data collection resides with the State. While NOAA Fisheries could develop the management infrastructure, implementing regulations, data collection, and expertise, there is no compelling reason to do so.

Likewise, an alternative could be put forth to withdraw the federal FMP for exclusive State management of the crab fisheries. The State would have difficulties limiting access to the crab fisheries and would be unable to implement a rationalization program, such as the three-pie cooperative. It may not be in the best interest of the nation for the Council and NOAA Fisheries to withdraw from the intrinsically federal functions, such as limited access, overfishing definitions, rebuilding plans, EFH, and other Magnuson-Stevens Act requirements. While the State could assume these federal functions, there is no legal requirement for them

³⁰ The RIR/IRFA also discusses various other management systems including pot quotas and collective entitlements which were not advanced for analysis. A discussion of the Council's rationale for not considering those programs is contained in section 3.0 of the RIR/IRFA.

to do so without an FMP. Also, an FMP provides for fair access by all fishers and for review of State management actions.

When the Council developed this FMP, it found compelling reasons to structure the shared management jurisdiction between the State and the federal government. The functions delegated to the State are those best performed by the State and the functions reserved by the Council are those functions best performed by the Council. In addition, the FMP established checks and balances to ensure communication and cooperation between the State, the Council, and NOAA Fisheries. It is not clear what would be gained by a completed analysis of which management agency had exclusive jurisdiction over BSAI crab fisheries management. Both of these alternatives would not address the Council's concerns detailed in its problem statement, and are therefore not carried forward as alternative in this EIS.

No fishing alternative

The Council considered a 'no fishing' alternative but determined that it is not a reasonable to address the problem statement and does not meet the objectives of the stated scope of the action. A 'no fishing' alternative would close the BSAI to commercial crab fishing for all species covered under the FMP. Fisheries would not be allowed for the following species:

- red king crab
- blue king crab
- golden king crab
- scarlet king crab
- Tanner king crab
- snow crab
- grooved Tanner crab
- triangle Tanner crab

Under this alternative, the State would still be able to prosecute crab fisheries in State waters. The FMP would still need to comply with the Magnuson-Stevens Act, even though the FMP would close the BSAI crab fisheries. As a result, EFH would still be designated for these crab species.

The purpose of a 'no fishing' alternative is to provide an understanding of what the environment would be like without the proposed action or status quo, and which environmental components are affected or unaffected by the crab fisheries. From this understanding, the significance of the effects of the proposed action on the environmental components that are affected by the fishery could be determined. For example, if an environmental component is not affected by eliminating a fishery, then it is possible to conclude that comparing the two alternatives would also not effect that environmental component. A 'no fishing' alternative also allows the agency to assess its ability to avoid impacts altogether. Analyzing the environmental characteristics without fishing would also improve NOAA Fisheries' ability to determine what effects can be mitigated and how to mitigate them. The discussion of the extent to which adverse effects can be avoided provides the agency, interested groups, and individuals, an understanding of how to properly evaluate the severity of the adverse effects of the crab fisheries and the proposed changes to crab fishery management.

In essence, a 'no fishing' alternative would negate any directed fishery-related impacts to the resource. Fishery-related impacts would still occur from bycatch of crab in other non-crab fisheries. Existing estimates of bycatch mortality would continue to be valid or perhaps increase as stocks would likely be at a higher level

with no directed-fishery removals. No fishing would result in a foregone harvest of valuable crab resources that have great benefit to the industry and nation; however, elimination of directed fisheries would also eliminate fishery-induced bycatch mortality, pot loss, gear interactions and should maintain the crab stocks at higher levels of abundance.

A share-based program in which shares are sold or auctioned to participants

Some advocates of IFQ programs believe that shares should be auctioned as a means to establish a public return on the use of a public resource. The Council chose not to analyze an auction program because of the current financial condition of the BSAI crab fisheries. Several of the fisheries have suffered from low stocks in recent years, with many of the fisheries closed for one or more seasons. The financial stress currently on the industry would be exacerbated by the auctioning of shares to either sector. The allocation of shares based on historic activity is thought to be consistent with the need to establish economic stability in both sectors reflected in the problem statement. Allocation based on historical participation would reward long-term participants for their investment and longevity. Auctioning of shares as a means to reap public benefits overlooks the substantial public harm that may arise in the remote Alaskan communities that support historic participants as a result of the added financial stress on participants from these auctions. Historic participants have investment backed expectations based on current management of the fisheries. Implementation of an auction program could impose substantial hardship on those that have invested in the fisheries reliance of the current management program.

A share-based program in which harvest shares are allocated to both harvesters and processors

Some advocates of IFQ programs believe that processing interests can be effectively protected by the allocation of a portion of the harvest share allocation to processors. Supporters of this program type believe that the allocation of only one type of share (i.e., harvest shares) will simplify administration of the program and reduce transaction costs that could arise under programs that protect processor interests by the allocation of processing shares or the creation of requirements that harvesters land a specific portion of their harvest allocations with one or more identified processors. The Council chose not to advance a program that would allocate harvest shares to processors primarily because the Council believed that processor interests could be most equitably protected by providing direct protection to processing activity (rather than indirectly through the allocation of harvesting interests). The allocation of harvest shares to processors would not protect processing interests and investments in processing equipment since that allocation does not directly protect or support ongoing processing activity. Allocation of a portion of the harvest allocation to processors would be inadequate to support historic processing levels since the total allocation of harvesting would be divided between the two sectors. In addition, the allocation of harvest shares to processors was thought to potentially dilute of harvest allocations jeopardizing stability of that sector.