

MEMORANDUM

TO: Council, SSC and AP Members  
FROM: Chris Oliver *CO*  
Executive Director  
DATE: February 1, 2005  
SUBJECT: Staff Tasking

ESTIMATED TIME  
2 HOURS

ACTION REQUIRED

Review tasking and Committees and provide direction.

BACKGROUND

The list of Council committees is attached as Item D-2(a). The Ecosystem Committee has been reconstituted and new members have been appointed. That committee is scheduled to meet this week to develop a mission statement for the committee, review activities and recent literature on ecosystem based fishery management, and establish meeting dates through June.

Item D-2(b) is the three meeting outlook, and Item D-2(c) and Item D-2(d) are the summary of current projects, timelines, and tasking. Between now and the April meeting, the Council staff time is pretty much subsumed with existing projects and preparations for the 'Managing Our Nation's Fisheries II' Conference. However, the Council should discuss tasking priorities to address previously tasked projects that have not yet been initiated, and potential additions discussed at this meeting. On the list for tasking of existing projects include the items previously discussed (BSAI Pacific cod allocations, BSAI salmon bycatch, other species breakout, rockfish management, AI special management area, GOA Pollock trip limits) along with other potential new projects tasked in December. Discussion papers for two other projects (IFQ amendments, GOA other species and dark rockfish) are attached as Item D-2(e) and Item D-2(f). To complete either the GOA other species amendment package, or the IFQ amendment package, for implementation in January 2006, the Council would need to schedule initial review in April and final action in June, which is impractical given available time and existing tasks and priorities.

At the June 2004 meeting, the Council identified priority areas for implementing the groundfish management policy previously adopted as part of the Groundfish Programmatic SEIS. The list of priorities, and a review of ongoing activities to address these actions, is attached as Item D-2(g). Many of the priorities are being addressed directly or indirectly through current Council initiatives, either as amendments underway or in the form of developmental discussion papers. Staff recently prepared a paper to categorize and evaluate our marine protected areas (MPAs) for fisheries off Alaska (attached as Item D-2(h)). Based on this paper, the Council may wish to provide comments and direction, if any, for future work on MPAs evaluation and policy. For the other priority areas, we will revisit this list in April or June, once some of the major current initiatives become more defined, and discuss a specific process for addressing the PSEIS priorities.

**NPFMC Committees and Workgroups**  
 Revised February 3, 2005

**AP Committee**

<u>Status:</u> Idle	Roy Hyder, Chair Dennis Austin [Vacant]
Staff: Chris Oliver	

**National Conference Committee**

Appointed: June 2003	Stephanie Madsen, Chair Dennis Austin John Bundy Jim Balsiger
Staff: Chris Oliver	

**Council/Board of Fisheries Joint Protocol Committee**

Updated: 7/28/03	<u>Council</u>	<u>Board</u>
	Dave Benson	Mel Morris
	Hazel Nelson	Art Nelson
Staff: Jane DiCosimo	Doug Hoedel	Ed Dersham

**Council Executive Committee**

Updated: 2/3/05	<b>Chair:</b> Stephanie Madsen Dennis Austin Jim Balsiger Doug Mecum Roy Hyder
Staff: Chris Oliver	

**Crab Interim Action Committee**

[Required under BSAI Crab FMP]

Dennis Austin, WDF Jim Balsiger, NMFS Doug Mecum, ADF&G
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**Ecosystem Committee**

Updated: January 2005	<b>Chair:</b> Stephanie Madsen Jim Balsiger Doug DeMaster John Iani Dave Fluharty Jim Ayers Dave Benton
<u>Status:</u> Active	
Staff: Chris Oliver/David Witherell/Diana Evans	

# NPFMC Committees and Workgroups

Revised February 3, 2005

## Enforcement Committee

Updated: July 2003	<b>Chair:</b> Roy Hyder Earl Krygier, ADF&G James Cockrell, F&W Protection Jeff Passer, NMFS-Enforcement Al McCabe, USCG Sue Salveson, NMFS-Mgmt. Lisa Lindeman, NOAA - GC
<u>Status:</u> Active	
Staff: Chris Oliver	

## Essential Fish Habitat Committee

Appointed: 5/15/01 Updated: July 2003	<b>Chair:</b> Linda Behnken <b>Vice Chair:</b> Stosh Anderson Gordon Blue Ben Enticknap Jon Kurland John Gauvin Earl Krygier Heather McCarty Glenn Reed Michelle Ridgway Scott Smiley
<u>Status:</u> Idle, pending direction	
Staff: Cathy Coon	

## Finance Committee

Updated: 2/3/05	<b>Chair:</b> Stephanie Madsen Dennis Austin Jim Balsiger Doug Mecum Dave Hanson Roy Hyder Richard Marasco
<u>Status:</u> Meet as necessary	
Staff: Gail Bendixen/Chris Oliver	

## Fur Seal Committee

Updated: 7/25/03	<b>Chair:</b> David Benson Anthony Merculief Larry Cotter Paul MacGregor Aquilina Lestenkof Steve Minor
<u>Status:</u> Active	
Staff: Bill Wilson	

## NPFMC Committees and Workgroups

Revised February 3, 2005

### GOA Community Committee

Appointed: November 2004	<b>Chair:</b> Hazel Nelson Patrick Norman Chuck Totemoff Julie Bonney Chuck McCallum Joe Sullivan Ernie Weiss Duncan Fields
Staff: Nicole Kimball	

### Halibut Charter IFQ Implementation

<u>Status:</u> Pending SOC submittal
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### IFQ Implementation Committee

<u>Status:</u> Reconstituted as shown (July 2003).	<b>Chair:</b> Jeff Stephan Bob Alverson Arne Fuglvog/Cora Crome Dennis Hicks Don Iverson Don Lane	Gerry Merrigan Kris Norosz Paul Peyton David Soma
Staff: Jane DiCosimo		

### IRIU Technical Committee

Appointed: 7/12/02	<b>Chair:</b> Dave Hanson Michelle Ridgway Susan Robinson John Henderschedt Donna Parker Eric Olson Greg Baker Gerry Merrigan	Teressa Kandianis Matt Doherty Bill Orr Ed Richardson Dave Wood
<u>Status:</u> Pending reconstitution		
Staff: Jon McCracken Marcus Hartley, Northern Econ. Lauren Smoker, NOAA GC		

### Magnuson-Stevens Act Reauthorization Committee

<u>Status:</u> Pending appointment of additional members.	<b>Chair:</b> Stephanie Madsen Dennis Austin Doug Mecum Roy Hyder John Bundy
Staff: Chris Oliver	

## NPFMC Committees and Workgroups

Revised February 3, 2005

### Non-Target Committee

<p>Updated: 8/6/04 Appointed: 7/26/03</p> <p>Staff: Jane DiCosimo, Sarah Gaichas, NMFS</p>	<p><b>Chair:</b> Dave Benson Jule Bonney Karl Haflinger Whit Sheard Michelle Ridgway Eric Olson Lori Swanson Dave Wood Janet Smoker Paul Spencer</p>
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### Observer Advisory Committee

<p>Updated: February 2004</p> <p><u>Status:</u> Active</p> <p>Staff: Chris Oliver/ Nicole Kimball</p>	<p><b>Chair:</b> Joe Kyle LeeAnne Beres Julie Bonney Pete Risse Kim Dietrich [Alt: Gillian Stoker] John Gauvin Rocky Caldero</p>	<p>Tracey Mayhew Trevor McCabe Bob Mikol Kathy Robinson Susan Robinson Arni Thomson Jerry Bongen Brent Paine</p>
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### Pacific Northwest Crab Industry Advisory Committee

<p>Updated: 6/2/04</p> <p>Staff: Diana Stram</p>	<p><b>Chair:</b> Steve Minor Keith Colburn Lance Farr Phil Hanson Kevin Kaldestad Garry Loncon Gary Painter</p>	<p>Rob Rogers Clyde Sterling Gary Stewart Tom Suryan Vic Sheibert Arni Thomson, Secretary [non -voting]</p>
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### Steller Sea Lion Mitigation Committee

<p>Appointed: 2/10/01 Updated: Jan 2004 Pending membership adjustment [formerly SSL RPA Committee; renamed at Feb 02 meeting]</p> <p>Staff: Bill Wilson</p>	<p><b>Chair:</b> Larry Cotter David Benson Jerry Bongen Julie Bonney Shane Capron Tony DeGange Doug DeMaster Steve Drage John Gauvin Sue Hills</p>	<p>John Iani Terry Leitzell Denby Lloyd Chuck McCallum Matt Moir Bob Small Beth Stewart Farron Wallace John Winther</p>
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**NPFMC Committees and Workgroups**  
Revised February 3, 2005

**U.S.-Russia International Committee**

<u>Status</u> : Pending reconstitution.  Staff: Chris Oliver	<b>Chair</b> : Stephanie Madsen Dennis Austin John Bundy Earl Krygier CDR. Mike Cerne
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**VMS Committee**

Appointed: 06/02  <u>Status</u> : Idle, pending direction  Staff: Jane DiCosimo	<b>Chair</b> : Earl Krygier Al Burch Guy Holt	Bob Mikol Ed Page CDR Mike Cerne Lori Swanson
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DRAFT NPFMC THREE-MEETING OUTLOOK - updated 2/1/05

February 7, 2005 Seattle, Washington	April 4, 2005 Anchorage, Alaska	June 1, 2005 Girdwood, Alaska
AFA: <i>Review co-op reports/agreements</i>	Bairdi Crab Amendment: <i>Initial Review (T)</i>	Bairdi Crab Amendment: <i>Final Action (T)</i>
GOA Rockfish Demonstration: <i>Refine Alternatives</i>	CDQ Management of Reserves: <i>Initial Review (T)</i>	CDQ Management of Reserves: <i>Final Action (T)</i>
GOA Rationalization: <i>Review crab/salmon bycatch data and Community Committee Report</i>	GOA Rockfish Demonstration: <i>Initial Review (T)</i>	Crab Overfishing: <i>Initial Review (T)</i>
HAPC: <i>Final Action</i>	GOA Rationalization: <i>Action as necessary</i>	GOA Rockfish Demonstration: <i>Final Action (T)</i>
EFH: <i>Final Action</i>	PSEIS Priorities: <i>Review</i>	GOA Rationalization: <i>Action as necessary</i>
	Scallop SAFE: <i>Review</i>	
	Scallop FMP Update: <i>Final Action</i>	
Flatfish IRIU Trailing Am80: <i>Review Progress</i>	Flatfish IRIU Trailing Am80: <i>Initial Review (T)</i>	Flatfish IRIU Trailing Am80: <i>Final Action (T)</i>
	Observer Program: <i>Preliminary Review</i>	Observer Program: <i>Initial Review</i>
Rockfish Management: <i>Review Discussion Paper Outline</i>	Rockfish Management: <i>Review Discussion Paper</i>	
AI Special Management Area: <i>Review Discussion paper</i>	AI Special Management Area: <i>Determine next steps</i>	
IFQ Amendments: <i>Review Discussion Paper</i>		
GOA Pollock Trip Limits: <i>Review Discussion Paper</i>		
GOA Dark Rockfish and Other Species: <i>Review Disc. Paper</i>	GOA Other Species Calculation/Dark Rockfish: <i>Initial Review (T)</i>	GOA Other Species Calculation: <i>Final Action (T)</i>
GOA and BSAI Other Species Breakout: <i>Review Disc. Paper</i>		
BSAI P.cod sector allocations: <i>Finalize Alternatives</i>	BSAI P.cod sector allocations: <i>Action as Necessary</i>	BSAI P.cod sector allocations: <i>Action as Necessary</i>
BSAI salmon bycatch: <i>Finalize Alternatives</i>	BSAI salmon bycatch: <i>Action as Necessary</i>	BSAI salmon bycatch: <i>Action as Necessary</i>

TAC - Total Allowable Catch  
 BSAI - Bering Sea and Aleutian Islands  
 IFQ - Individual Fishing Quota  
 AFA - American Fisheries Act  
 HAPC - Habitat Areas of Particular Concern  
 LLP - License Limitation Program  
 PSC - Prohibited Species Catch

MSA - Magnuson Stevens Act  
 GOA - Gulf of Alaska  
 SSL - Steller Sea Lion  
 VIP - Vessel Incentive Program  
 SEIS - Supplemental Environmental Impact Statement  
 CDQ - Community Development Quota  
 IRIU - Improved Retention/Improved Utilization

SAFE - Stock assessment and fishery evaluation  
 VMS - Vessel Monitoring System  
 CV - Catcher Vessel CP- Catcher Processor  
 SSC - Scientific & Statistical Committee  
 FMP - Fishery Management Plan  
 DPSEIS - Draft Programmatic Groundfish SEIS  
 (T) Tentatively scheduled

**Council Project Summary** Updated February 1, 2005

<b>Mandated Actions</b>		<b>Projected Weeks</b>	<b>Council/ NMFS %</b>	<b>Comments</b>
1	Groundfish Management Policy Implementation Actions	0	20/80	Discuss/evaluate priorities at every meeting (Diana E)
2	Groundfish FMP Updates	0	90/10	Action Complete (Diana E.)
3	EFH EIS	0	20/80	Final action in February (David)
4	HAPC Designation	1	50/50	Final action in February (Cathy/NMFS)
5	Crab FMP EIS	0	50/50	Proposed rule out for public review (Mark)
6	Aleutian Islands Pollock Allocation	0	50/50	Being prepared for Secretarial review (Bill/NMFS)
7	GOA Rockfish Demonstration Program	10	80/20	Refine alternatives in February (Mark/Jim)

<b>Council Priorities</b>				
8	GOA Rationalization	?	90/10	Committee Report in Feb. (Jane,Mark,Nicole, Elaine, contractors)
9	IR/IU flatfish adjustments (Am 79)	0	80/20	Amendment 79 being prepared for Secretarial review
10	IR/IU flatfish trailing amendments (Am 80)	10	80/20	Progress report in Feb. (Jon /contract help)
11	SR/RE retention	4	80/20	Not started. Note: DSR Retention being prepared for SOC. (Jane/NMFS)
12	Halibut Charter IFQ	0	90/10	Being prepared for Secretarial Review (Jane/NMFS)
13	Non-target (other rockfish, other flatfish, other species) developmen	?	60/40	Committee report in Feb. (Jane/NMFS).
14	Rockfish management discussion paper	?	20/80	Staff report in Feb. (Jane/NMFS)
15	Observer Program (fee and deployment mechanism)	10	80/20	Initial review in June (Nicole/Chris)
16	BSAI Pacific cod Allocations	?	90/10	Refine alternatives in Feb. (Nicole/ contract help?)

<b>Other Projects Previously Tasked</b>				
16	BSAI Salmon Bycatch Discussion paper	?	?	Discussion paper for February (Diana S.)
17	IFQ Regulatory Changes (medical, hired skipper, check-in, blocks, QS categories, 4c&4D )	0	90/10	Being prepared for Secretarial Review (NMFS/Jane/Diana E.)
18	Repeal of VIP	2	0/100	Delayed (NMFS)
19	GOA Salmon and Crab Bycatch Controls	12	80/20	Discussion paper in February (Diana S./Cathy/ADF&G)
20	Opilio VIP	2	50/50	Not started -Pending action on existing VIP
21	Catch/bycatch disclosure (vessel level)	2	70/30	Discussion paper - Postponed



**Other Projects Previously Tasked (Continued)**

22	Paper on fee/loan program for IFQ Charter (NMFS?)	1	10/90	Pending SOC review of program (NMFS)
23	Groundfish overfishing definitions	?	10/90	FR notice on NS 1 forthcoming
24	SSL Trailing Amendment (GOA changes)	0	30/70	Secretarial Review (Bill)
25	Subsistence halibut amendment	0	90/10	Being prepared for Secretarial Review (Jane)
26	AFA s/b caps to quotas and trawl LLP recency	10	80/20	Pending further Council direction
27	Charter IFQ Community Set-Aside analysis	6	90/10	Awaiting Secretarial Approval (Nicole)
28	Industry proposal for pollock bycatch	?	90/10	Pending proposal and Council Direction
29	Scallop FMP update	1	80/20	Final Review in February (Diana S)
30	Crab Overfishing definition revision	?	10/90	Initial review in June 05 (NMFS/ADF&G/Diana S)
31	CDQ eligible communities	?	20/80	Pending due to possible Legislation (Nicole)
32	CDQ Amendment 71 (a) Investment in non-fisheries projects	0	20/80	Being prepared for Secretarial Review (Nicole)
33	CDQ Amendment 71 (b) Oversight and Allocation	8	50/50	Initial Review in 2005 (NMFS/Nicole)
34	CDQ quota transfers and alternative plans	0	10/90	Awaiting approval by SOC; comments closed 12/27/04 (NMFS/Nicole)
35	CDQ: Management of CDQ Reserves	1	10/90	Initial Review in April (NMFS/Nicole)
36	Aleutian Islands Special Management Area	10	90/10	Discussion paper in February (Diana E./David)

Project timeline and major tasking for council staff. Updated 2/17/05

Analytical Staff	February	March	April	May	June	July	August	September	October
David Witherell, Deputy Director Administrative EFH and MPAs National Meeting Coordination Ecosystem-based Approach		Conf. Speaker NPRB 3/2-4							
	MPA paper review								
	organize meeting, prepare paper and		presentation, edit proceedings, get printed				proceedings printed		
	Eco Committee		EBM Workshop						
Mark Fina, Sr. Economist GOA Rationalization GOA Rockfish Project (Lead) C. bairdi split	IFQ mtg 2/22-24 discuss Prel. Review	Conf. rapporteur	discuss Initial Review Initial Review		discuss Final Action Final Action		forward analysis to NMFS forward analysis to NMFS		
Jon McCracken, Economist Am. 80 IRIU Misc. economic assistance		Conf. Assistant	Initial Review		Final Action		forward analysis to NMFS		
Jim Richardson, Economist GOA Rockfish Project (assist) Misc. econ. assistance		Conf. Assistant							
		work on GOA trip limit?							
Elaine Dinneford, Fishery Analyst Misc Data Support AKFIN Liaison					retirement?				
Jane DiCosimo, Sr. Plan Coord GOA Rationalization NEPA Lead IFQ Issues Rockfish Management Other species/non-target GOA pollock trip limit	IFQ mtg 2/22-24 staff tasking Disc. Paper staff tasking Disc. Paper	Conf. Assistant BOF mtg? ComFish 3/18						AFS mtg 9/11-15	
								Plan Team 9/20-21	
Diana Stram, Plan Coordinator GOA Salmon/Crab Bycatch (Lead) BSAI Salmon bycatch (Lead) Scallop FMP/SAFE Crab Overfishing GOA Other spp./dark rockfish	Disc. Paper Disc. Paper	Conf. Assistant	AL 4/26-5/6					AFS mtg 9/11-15	
					Initial Review (T)				Final Action (T)
		3/3 plan team mtg							
	Disc. Paper		[awaiting prioritization]	5/17-19 pl team	Initial Review (T)			Plan Team 9/20-21	Final Action (T)
Bill Wilson, Protect Species Protected species issues Research Summaries	MMPA listing rev.	Conf. Assistant BOF mtg?	Am. 82 assistance	2 wk AL mid mo.	AFS meeting Coordination			AFS mtg 9/11-15	
Diana Evans, NEPA Specialist AI Special Management Am 80 impact analysis NEPA assistance	review disc paper	Conf. Assistant							
	Eco Committee		Initial Review PSEIS report						
Cathy Coon, Fishery Analyst HAPC EA GOA Salmon/Crab Bycatch (assis) BSAI Salmon bycatch (assist)	Final Action Disc. Paper Disc. Paper	Conf. Assistant forward analysis to NMFS AL 3/7-16	EFH Coord mtg.						
						Initial Review (T)			Final Action (T)
Nicole Kimball, Fishery Analyst GOA Community Provisions CDQ Projects Observer Program Analysis Community Issues BSAI P.cod Allocation	Am. 66 Report Disc. Paper	Conf. Assistant AL 3/14-21	Comm. Conf. 4/21-23	OAC meeting	Initial Review			OAC meeting	Final Action
		contract out?							

**HALIBUT AND SABLEFISH INDIVIDUAL FISHING QUOTA (IFQ) PROGRAM**  
**DISCUSSION PAPER FOR OMNIBUS V**  
**FEBRUARY 1, 2005**

In December 2004, the Council initiated a regulatory amendment package of four separate proposals received in 2004 and requested that staff develop a discussion paper as a first step in the development of an analysis. This paper is based on a discussion paper previously provided at the request of the Council for the IFQ Implementation Team for its December 2004 meeting. During its February 2005 meeting, the Council will review the paper and set a timeline for action.

**ACTION 1: Delete regulatory language in § 679.7(f)(15) and § 679.42(k) which prohibits the processing of non-IFQ species on a fishing vessel when IFQ halibut resulting from quota share (QS) assigned to vessel categories B, C, or D are on board the vessel in the Gulf of Alaska or Bering Sea/Aleutian Islands.**

**Problem Statement/Objective:** Currently, processing of non-IFQ species is only allowed if there is no unharvested catcher vessel (B, C, or D) IFQ that is held by any harvester on board a vessel. The proposed change would reduce inefficiencies inherent in requiring an IFQ holder (or all IFQ holders fishing on the same vessel) to fish 100 percent of his/her catcher vessel IFQs before s/he can process A category IFQs. The original intent of the prohibition on mixing processed and fresh IFQ and non-IFQ fish was to maintain the small boat, owner-operator nature of the fleet. The social or economic conditions that existed at initial implementation of the IFQ program may no longer be in effect. Landings have shifted due to improved fresh market conditions since the prohibition was implemented under an early plan amendment to the IFQ program in 1996. It is very difficult to zero an IFQ account without exceeding the overage limit and subsequent penalties. Stacking of QS is already well addressed by use and vessel caps. Increased retention and utilization have occurred over the years, and would increase further under the proposal. Increased prices would result from freezing other species and more small boats have freezer capacity. There is no market for unfrozen cod due to poor quality. No negative effects on communities would occur.

The objective of the proposal is to reduce inefficiencies of harvest and landings among fishermen who may hold vessel category A (processor) quota shares along with B, C, and or D category QS and other non-IFQ permits. The proposed action would allow QS holders the flexibility to harvest their QS without the prohibition of having processed non-IFQ species on board at the same time catcher vessel IFQ halibut is aboard. It will alleviate the requirement to first harvest vessel category A QS or non-IFQ fish and improve efficiency and market quality of non-IFQ species.

**BACKGROUND:** In 1991, the Council developed the IFQ program to end the race for fish that resulted from the open access management system for the halibut and sablefish longline fisheries during the 1980s. In crafting the IFQ program, the Council demonstrated a deep concern for the potential social and economic effects of a market-based allocation scheme especially on small Alaska fishing communities and the characteristic small-scale, owner-operator fishing businesses involved in these fisheries. Hence, the Council's recommended IFQ policy included a variety of rules to prevent excessive consolidation of QS, and economic protection of small-scale and entry-level fishermen. These rules were acknowledged to create inefficiencies in the fisheries but were considered necessary in a rationalized fishery.

The Secretary of Commerce approved the Council's recommended IFQ program and implementing rules were published November 9, 1993 (59 FR 28281). Fishing under the IFQ program started in March 1995. The implementing rules were amended frequently, however, before the end of the first year of fishing under the program. Three changes to the IFQ program rules were made in 1994 and seven in 1995. In 1996, the Council recommended further changes to the rules in the form of groundfish FMP Amendments 33 and 37. These amendments were approved by the Secretary on June 13, 1996, and implemented by rules published June 27, 1996 (61 FR 33382).

These amendments were designed by the Council to allow processing of non-IFQ species (i.e., any species of fish other than sablefish and halibut taken with longline gear off Alaska) on fishing vessels on which persons possess sablefish IFQ derived from QS in the non-processing or catcher vessel categories (i.e., categories B and C). This change was intended to relieve a restriction and associated inefficiency imposed on processor vessels. At that time, a person authorized to use sablefish IFQ derived from QS assigned to vessel categories B and C was not allowed to process any fish on board the harvesting vessel because the definition of "freezer vessel" included the processing of any species, regardless of whether it was an IFQ species.

The Council's recommendation to relieve this restriction, however, did not extend to persons holding halibut IFQ derived from QS assigned to the non-processing vessel categories B, C, and D. Hence, a person holding halibut IFQ in any of these categories would effectively prevent the vessel used by the person from processing any non-IFQ species, until the IFQ is exhausted or the person leaves the vessel.

The Council's rationale for making a distinction between halibut and sablefish was described in the preambles to the proposed and final rules implementing Amendments 33 and 37 as follows.

*The Council declined to extend the IFQ sablefish exemption to IFQ halibut due to the socio-economic differences between the fisheries. The halibut fishery characteristically is prosecuted by local vessels that do not have on-board processing capabilities. The Council does not intend to change this characteristic of the halibut fishery. Also, not extending the authorization to process fish other than IFQ sablefish and IFQ halibut [to holders of B, C, or D category IFQ] is consistent with one of the objectives of the IFQ Program, which is to maintain a diverse fleet where all segments, and the social structures associated with those segments, continue to exist.*

*The Council expressed concern that if the owners of large, industrial-type vessels that process their catch could harvest IFQ species with IFQ resulting from QS assigned to vessel categories B, C, or D while processed fish is on board, these owners could acquire the majority of the "catcher vessel" QS. The result would be an increase in harvesting IFQ species on large, industrial-type vessels that process their catch and a decrease in harvesting of IFQ species on small vessels that do not have processing capabilities. These small vessels that do not have processing capabilities are more likely to make landings at local coastal communities. The Council determined that phasing out small vessels that do not have processing capabilities, and which would not be able to compete with large, industrial-type vessels that process their catch..., would have a detrimental socio-economic impact on coastal communities. This is especially true for halibut IFQ. Many coastal communities rely on the delivery of halibut harvested by persons operating small vessels that do not have processing capabilities as a source of revenue. (Proposed rule preamble at page 14548).*

The Council's rationale for allowing the processing (e.g., freezing) of non-IFQ species on vessels used by persons holding sablefish IFQ assigned to vessel categories B or C, however, recognizes market value and product quality reasons for making the change as follows.

*Prohibiting the processing of fish other than IFQ halibut or IFQ sablefish on category B or C vessels resulted in the unanticipated waste of fish caught incidentally with IFQ sablefish, because sablefish can be preserved longer on ice than some incidentally-caught fish (e.g., Pacific cod). The longer "shelf life" of fresh sablefish allowed a typical sablefish longline trip to exceed the time period in which fish other than IFQ halibut or IFQ sablefish maintain sufficient quality to market as fresh fish. This often resulted in the discard of some or all incidentally caught fish. Also persons are required to retain Pacific cod and rockfish caught incidentally to IFQ sablefish. This forces persons authorized to harvest IFQ sablefish, based on an annual allocation of IFQ assigned to vessel categories B and C, to keep Pacific cod and rockfish caught incidentally with IFQ sablefish, even though the value of the Pacific cod and rockfish is diminished during a long sablefish trip. Amendments 33 and 37 will eliminate the lost revenue of discarding, or landing poor quality, fish other than IFQ halibut and IFQ sablefish due to the repealed prohibition on processing fish other than IFQ halibut and IFQ sablefish. (Final rule preamble at pages 33383-33384).*

**ACTION 2: Delete regulatory language in § 679.7(f)(15) and § 679.42(k) which prohibits the processing of non-IFQ species on a fishing vessel when IFQ halibut resulting from quota share (QS) assigned to vessel categories B, C, or D are on board the vessel in the Gulf of Alaska or Bering Sea/Aleutian Islands.**

**PROBLEM STATEMENT/OBJECTIVE:** The Magnuson-Stevens Act requires consideration of efficiency in the utilization of fishery resources. Current regulations prohibit frozen product of any species to be on board a vessel while harvesting catcher vessel IFQ halibut. The requirement to retain Pacific cod, without the ability to process it and maximize the marketability and quality, results in sub-standard quality fish for the marketplace. This includes processing sablefish harvested with vessel category A QS is also prohibited if any harvester aboard the vessel holds any catcher vessel halibut IFQ. This prohibition results in fresh landings of cod and other species going to meal with little ex-vessel value that otherwise would have been frozen and sold as a higher quality and valued product. The social and economic concerns that led to the prohibition of mixing fresh and frozen IFQ and non-IFQ species that were current at the start of the program are no longer valid.

**BACKGROUND:** see text under Proposal #1.

**ACTION 3: Allow use of pot gear in the Bering Sea sablefish fishery during June.**

**PROBLEM STATEMENT/OBJECTIVE:** Potential gear conflicts that were thought to have been occurring at the time of Council action that recommended the June prohibition on fishing was undocumented then and now. There is no limit on the number of pots that may be strung together. Further, longline pots are stored on the fishing grounds when not fished, which does not minimize potential gear conflicts. Pot gear can not all be stacked on the fishing vessel for transport off the fishing grounds.

**BACKGROUND:** The Council chose in 1991 to prohibit the use of longline pot gear in the Bering Sea subarea groundfish fisheries to prevent the pre-emption of fishing grounds by one gear type. The nature of longline pot gear and strategies used in fishing longline pots deter fishermen from deploying hook-and-line and trawl gear on fishing grounds where longline pot gear is set. This effectively pre-empts common fishing grounds. Regulations prohibiting longline pot gear were promulgated on August 21, 1992 (57 FR 37906).

The IFQ program changed the character of halibut and sablefish fixed gear fisheries by extending the season to a period of eight months, and allowing the fleet to spread its operations over time. As a result, the possibility of congestion and pre-emption of common fishing grounds was greatly reduced.

Longline pot fishing was re-authorized in the Bering Sea subarea directed sablefish fishery in 1996 (61 FR 49076), in response to increasing killer whale predation of hooked sablefish causing underharvest of the sablefish TAC, and recognizing the changes brought about by the IFQ program to the potential for grounds pre-emption. However, the Council expressed concern that small boat fishermen using traditional hook-and-line gear may be pre-empted from grounds by fishermen in larger boats using longline pot gear, The size of their vessels may not allow them to carry longline pot gear, and also restricts them to a shorter fishing season. Consequently, a Bering Sea closure to longline pot gear from June 1 through June 30 was established.

**PROPOSED ACTION 4: Remove all unused QS held by completely inactive initial recipients from the QS Pool.**

**PROBLEM STATEMENT/OBJECTIVE:** A significant number of initial recipients of halibut and sablefish have never fished ANY of their QS/IFQ. The QS held by these permit holders, however, is miniscule (e.g., < 0.1% in most areas and < 0.5% in the Area 2C halibut fishery). Approximately 630 halibut and 110 sablefish initial issues of QS have never made a landing (as of 9/03). Approximately 2,500 out of 4,400 QS holders are billed for IFQ cost recovery fees (indicating activity). (These figures are very preliminary and may be overestimates due to multiple permit holdings.)

**BACKGROUND:** There is no regulatory authority for NMFS to void QS. While a regulatory change could be made to allow permit holders to *voluntarily* relinquish his/her QS, few may opt to file the paperwork to relinquish small holdings. A QS (permit) holder also may voluntarily transfer (by sale or gift) his/her QS or fish the associated IFQ, neither one of which is apparently happening. NMFS/RAM updates several files of QS holders and transfer-eligible persons daily to facilitate transfers and for general public information. All files include descriptions of the QS held (e.g., species, area, category, block type, fish down flag, CDQ compensation QS flag), number of QS units held, and include business mailing addresses of QS holders.

QS permits held by inactive QS holders would be forfeited (with no compensation) under a "Use it or lose it" provision. One year's advance notice would be given to all initial recipients whose permits would be forfeited. RAM Division would poll such individuals to determine whether they wish to be included in a database to be posted on the RAM website that would notice their interest in selling their QS for those wishing to buy these QS during that one year notice period. Relinquished QS would be eliminated from the program which would result in slightly smaller QS pools. The concept mirrors that whereby voter registration rolls are "purged" periodically to remove those who don't exercise their right to vote.

**ANALYSIS:** RIR/IRFA for plan amendments to the BSAI and GOA Groundfish FMPs (Actions #1, #2, and #3) and a regulatory amendment (Action #4); a categorical exclusion for NEPA would be requested.

**RANGE OF ALTERNATIVES:**

**ACTION 1 and 2: Processing of non-IFQ species\***

1. No action.
2. Allow processing of non-IFQ species on a fishing vessel when IFQ halibut resulting from quota share (QS) assigned to vessel categories B, C, or D are on board the vessel in the Gulf of Alaska or Bering Sea/Aleutian Islands.

\*The IFQ Implementation Team recommended that Proposals 1 and 2 be analyzed separately because the rationales for the proposed actions were distinct; however staff recommends they be combined into one action.

**ACTION 2: Bering Sea sablefish pot gear**

1. No action.
2. Allow use of pot gear in the Bering Sea sablefish fishery during June.

**ACTION 3: Unfished QS**

1. No action.
2. Remove all unused quota shares held by completely inactive initial recipients from the QS pool.

**ESTIMATE OF STAFF RESOURCES:** Approximately 4 weeks of interagency staff time for analytical and regulatory writing and review, if limited to the proposed actions in an RIR/IRFA.

**TIMELINE TO IMPLEMENTATION:** No enforcement or biological issues were identified by NOAA Enforcement or International Pacific Halibut Commission staff. Final action would be needed by June 2005, for the possibility of a January 2006 implementation. The Council would have to identify this as a high priority action and redirect staff resources to schedule action in 2005.

## **GOA other species and dark rockfish Plan amendment**

February 2005 Staff Discussion paper

This discussion paper is in response to the Council's request in December 2004 to initiate an FMP amendment to adjust the other species TAC calculation in the GOA and to consider removing dark rockfish from the FMP and turning it over to the State of Alaska for management. Staff was requested to summarize the rationale and justification for these two amendments as well as to provide an overview of the approximate timing and analytical burden involved in completing the analysis.

### **Consideration and Decisions for this Council meeting:**

The Council initiated analysis of an amendment package at the December 2004 meeting. At this meeting, the Council should clarify the following points:

- 1- Scope and timing of analysis: Should these be two separate amendments and prioritized such that a streamlined other species TAC calculation analysis is available for initial review in April?
- 2- Purpose and Need statement: is it sufficient for the analysis?
- 3- Are the alternatives sufficient for the analysis?

### **Overview:**

The Council initiated an analysis of an amendment to revise the other species complex TAC calculation in the GOA groundfish FMP and to remove dark rockfish from the Federal FMP and turn over to the State of Alaska for management.

Currently under the FMP, the TAC for the other species complex is calculated as equal to the 5% of the sum of the TACs for all of the target species. No OFL or ABC is specified for this complex.

Dark rockfish are currently part of the pelagic shelf rockfish complex, although they are primarily located in nearshore waters. Removing them from the FMP entails turning dark rockfish over to the State for management. This was previously done in 1998 (under amendment 46) in the GOA FMP for black and blue rockfish, two other primarily nearshore rockfish species.

### **Background:**

#### **Other species:**

In 2003, the Council convened a Non-target species management committee to address on-going concerns and competing initiatives regarding the management of target versus non-target (i.e., incidentally caught) species. Previously an Ad Hoc working group of scientists had convened multiple times to begin to develop criteria for sorting complex, groups and species management into the two categories of target and non-target. The Council-appointed committee will continue

these efforts as they work towards a series of (or a single wide-ranging) plan amendments to the GOA and BSAI groundfish FMPs. This effort, while on-going presently, will be a long-range solution to the myriad of problems which arise in delineating between target and non-target species management. However, it may take the Council considerable time to come up with an action plan and an analysis in order to address these problems from a broad perspective.

In the meantime immediate problems have arisen in the other species complex in the GOA. Unlike the BSAI, where a complex-wide OFL and ABC are established for the other species, the GOA FMP established a hard TAC for the other species complex, fixed in regulation as equal to 5% of the sum of the target species TACs. This percentage was fixed in regulation in 1987, and was determined as "ample to provide for the anticipated incidental catch of those species" (GOA FMP). Since this time, species and species complexes have been removed from the other species complex, namely Atka Mackerel in 1994, Forage Fish (eulachon, capelin and other smelts) in 1999, and skates (big, longnose and other *bathyraja* species) in 2004. While forage fish were removed to a separate category and restricted from targeting under amendment 39, Atka mackerel and Skates were moved into the target species category where an OFL, ABC and TAC are specified for them. The 5% calculation remains the same, however the movement of these species to the target fisheries serves to increase the sum upon which the calculation was based and thus increases the overall TAC in the other species category.

This increase has raised conservation concerns. The other species TAC can be taken on any single species within the complex-wide TAC. Conservation concerns were raised in 2003 regarding a developing skate fishery, and the inability of in-season management to adequately protect skate stocks while allowing for some directed fishing while these species were within the larger other species complex. In 2004, amendment 63 to the GOA FMP removed skates from the other species complex and placed them in a target category. Currently OFL, ABC and TACs are specified for big skates, longnose skates and the remaining skates in the *bathyraja* (or other skate) complex. This has allowed for some small but controlled directed fishing to occur on skates until such a time as additional data allows for adequate stock assessment and monitoring of these species to ensure their continued health and viability.

A similar situation has arisen in 2005, as a potential fishery is developing for spiny dogfish. Like skates, the life history characteristics of spiny dogfish make them particularly vulnerable to overfishing. Under current other species management, directed fishing on spiny dogfish in Federal waters could continue to the relatively high complex-level TAC for other species without any penalty and this could jeopardize the viability of these species.

It is anticipated that an amendment package will be forthcoming which will address other species management in both the BSAI and GOA. However, a short-term solution is needed prior to the broader scope (and longer term) initiative which is planned.

#### **Dark rockfish:**

Additionally, the Council should consider revising the pelagic shelf rockfish (PSR) assemblage to exclude the predominantly nearshore species, dark rockfish. This has been suggested for many years pending the identification to species level of two types of rockfish: Dusky rockfish, *Sebastes variabilis* (previously called light dusky rockfish) and dark rockfish, *Sebastes ciliatus* (previously called dark dusky rockfish). Clausen et al. (2003) have noted that the data in the stock assessment for PSR are predominantly from Dusky rockfish (the offshore variety) not dark rockfish (the nearshore, shallow water variety) as most of the available information is from the offshore trawl surveys and offshore commercial fishery and Dusky rockfish makes up the



majority of the exploitable biomass and catch from the assemblage. From 1991-2002, dark rockfish have not made up more than 2.6 percentage of the assemblage catch for pelagic shelf rockfish (Clausen et al. 2003). In most of these years dark rockfish made up only trace amounts of the catch with more than 99% of the catch made up of Dusky rockfish (Clausen et al. 2003). In the 2004 stock assessment for PSR, dark rockfish comprised less than 2% of the combined estimated exploitable biomass for both Dusky and dark rockfish. For 2002, the catch composition was 99.4% Dusky rockfish and 0.5% dark rockfish (Clausen et al. 2003).

The concern for dark rockfish is that it is predominantly located in nearshore, shallow waters, and if specifically targeted could be locally overfished under the relatively high TAC for the entire pelagic rockfish complex. The Plan Team requested that specific catches for each of the species in the PSR assemblage by area be quantified in the next assessment in order to evaluate the potential for any of these minor components (widow, yellowtail, dark) to be overfished on a local level. New survey information will be available after the summer 2005 survey and incorporated into the SAFE Report in the Fall of 2005. Similar to the rationale for removing black and blue rockfish in 1998, it is believed that management by the State of Alaska would better address localized harvest requirements for this nearshore species than is currently provided by federal management under the larger PSR complex.

### **Proposed problem statement for combined amendment:**

*The following problem statement was put forward by the non-target species committee:*

In May of 2004, a final rule was published that removed skates from the other species complex in the Gulf of Alaska. This rule established ABCs and TACs, based on survey biomass, for Big, Longnose and other skates and thus provided a measure of protection against possible overfishing of skates in the Gulf of Alaska. Those species remaining in the other species complex include sharks, sculpins, and octopi. None of these species are currently the object of a target fishery<sup>1</sup>, although the complex is open for directed fishing. While no ABC or OFL is set for this complex, TAC is defined as 5% of the combined TACs of all other groundfish species in the GOA.

While recognizing that no members of the complex are targeted, the non-target species committee also noted that the removal of skates from the complex resulted in the potential for increased harvest of the remaining other species. This is because the harvest of skates no longer accrues to the other species category. In addition, when a member is removed, the sum of all the single species TACs increases, resulting in an increase of the other species TAC when the 5% default TAC is applied. Ideally, the TAC for the other species complex would be lowered when a member such as skates is removed. Unfortunately, biomass estimates for most of the species in this group cannot be determined reliably by trawl surveys, and the remaining species still exist in a group with TAC determined by the TACs of other groundfish species in the Gulf of Alaska. Lacking any means of determining a survey-based TAC for this group leads to the conclusion that when members are removed, the Council should consider reducing the percentage basis for the other species TAC to something less than 5% of the combined members.

*The following is a staff addition for addressing dark rockfish:*

Dark rockfish are a nearshore, shallow water species which are rarely caught in offshore, Federal waters. For management purposes they are contained within the pelagic shelf rockfish complex,

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<sup>1</sup> Note: This problem statement was written prior to the initiation of a directed fishery for spiny dogfish.

whose OFL and ABC are based primarily on the stock assessment for Dusky rockfish which makes up the majority of the total exploitable biomass estimate for the PSR complex. As dark rockfish have now been identified as a separate species, are found in nearshore, shallow waters, and could potentially be locally overfished within the larger PSR complex TAC, the Council should consider removing this species from the GOA groundfish FMP and transferring their management to the State of Alaska.

### **Draft Alternatives to consider:**

As an interim measure and prior to a more comprehensive non-target species initiative, the Council recommended that a plan amendment analysis examine the following actions and alternatives for amending the other species complex TAC calculation:

#### Action 1: Other species

1. Status Quo (other species TAC = 5% of the sum of all target species TACs)
2. Other species TAC  $\leq$  5% of the sum of the target species TACs. This would allow for some conservative flexibility in establishing other species TAC below the maximum allowed.
3. Establish an OFL, ABC and TAC for the aggregate other species complex.

#### Action 2: Dark rockfish

1. Retain dark rockfish under the pelagic shelf rockfish assemblage. Continue to specify OFL and ABC for the complex as a whole, based primarily upon the stock assessment for Dusky rockfish. (Status Quo)
2. Remove dark rockfish from the federal groundfish FMP and move to the State of Alaska for management.

### **Considerations for analysis:**

#### **Other species alternatives:**

Analysis of the alternatives for changing the other species calculation should be relatively straight-forward. Analysis of Alternative 2, to change the calculation such that it could be established at  $\leq$  5% would be a simple analysis which would likely include a comparison of incidental catches of other species (since the regulation was enacted in 1987), together with the directed catch of those species which were later removed from the complex and moved into the target species category, and the relative increase in the TAC for other species. A discussion of the management flexibility and conservation benefits afforded by allowing TAC to be set less than 5% as well as all available information on those species within the complex and their potential vulnerability to directed fishing would be included. It may be difficult to analyze the actual impact of setting TAC below 5% of the sum of the TACs however, given the unclear nature of exactly what level "below 5%" might indicate. Another possibility (not yet considered) as an interim measure could be to set TAC for other species as 5% of the sum of the target TACs minus the TACs of those species which have been removed from the other species complex since this calculation was instituted. This would mean that the Atka Mackerel TAC and the Skate TAC

would be subtracted from the target TACs prior to establishing the sum upon which the 5% was based. For example, in 2005, the other species TAC would have been: 13,434 mt. This would represent a difference of 437 mt less than the 2005 TAC for other species. Should additional species in this complex be moved to the target category prior to the anticipated comprehensive amendment addressing other species management, altering the calculation in this manner would not serve to exacerbate the current problem.

Analysis of Alternative 3, to set ABC and OFL at a complex level would be a fairly simple analysis. This analysis would include an evaluation of the available information on each species component in the other species complex as well as an estimation of the ABC and OFL for the whole complex. Information is available to support component specific ABCs and OFLs for each group in the other species complex using either Tier 5 (Biomass multiplied by mortality rate) or Tier 6 (average catch) criteria. The 1999 GOA SAFE Report contained a chapter as an appendix (Appendix D to the 1999 GOA SAFE report) which provided the first (and only) assessment of other species in the GOA. This information would be coupled with updated information in the BSAI/GOA shark assessment (Appendix to the BSAI Other species chapter in the 2005 SAFE Report) as well as updated catch estimates from the observer database/catch accounting system. Catch of individual species within the aggregated other species catch would need to be extrapolated.

On a related note to the analytical burden of the analysis itself, establishing an ABC and OFL for the other species complex would necessitate the production of a stock assessment chapter for the annual SAFE Report for the GOA groundfish. For staffing purposes, the AFSC would need to accommodate the added responsibility of assigning a stock assessment author for the GOA other species assessment. A full assessment chapter for other species in the GOA would represent a new assessment for the GOA SAFE report. A preliminary assessment was done in 1999 (2000 SAFE report) as an appendix to the main SAFE report document. In the GOA, full assessment chapters are now being completed every other year in conjunction with the timing of the GOA trawl survey. The next trawl survey is scheduled for the summer of 2005, thus full assessments for GOA stocks will be produced in the fall of 2005. In the off-year assessments are comprised of a summary section of any additional new information as available. A regulatory impact review (RIR) would be necessary for this analysis.

#### **Dark rockfish alternatives:**

Analyzing removal of dark rockfish to state management is a fairly simple analysis and would be similar to that which was done for amendment 46 in 1998 which removed black and blue rockfish from the GOA FMP and transferred them to the State for management. The justification for the potential vulnerability of this species to localized depletion under the relatively high complex level TAC for PSR as well as the composition of the catch gulfwide are available in the annual SAFE Report documents. Additional information on dark rockfish will be available following the summer 2005 GOA survey. Additional information on the relative biomass by area and composition of the catch by area in the gulf will also be produced (per Plan Team request) for the November 2005 SAFE Report chapter on pelagic shelf rockfish. A regulatory impact review (RIR) would be necessary for this analysis to evaluate the potential socio-economic impacts of this transfer to state management (similar to the amendment 46 EA/RIR/IRFA, NPFMC 1998).

#### **Timeline for Analysis:**

This amendment analysis would be an EA/RIR/IRFA for the combined actions of amending the other species calculation and removing dark rockfish to state management. The Council initiated the analysis of this amendment in December 2004 pending staff timing and availability. Timing-wise this amendment should ideally be in place for the 2006 specification process, particularly in light of the aforementioned developing shark fishery.

In order for rulemaking to be in place for the 2006 specifications process, final action by the Council would need to occur no later than June 2005. Thus, initial review by the Council would occur in April 2005.

If a full analysis of this combined amendment including the draft alternatives is not feasible for initial review in April, staff has the following recommendations to streamline and prioritize the amendments.

- 1- Other Species amendment: streamline to include only alternatives 1 and 2. This analysis would proceed quickly and would be in place in time for the specifications process in 2006. The flexibility to set TAC below 5% is imperative by the following fishing year. Analysis of alternative 3 could be effectively included in the larger BSAI/GOA other species amendment package.
- 2- Dark rockfish: evaluate this as a separate amendment analysis to follow, or combine with any proposed amendment package in the BSAI to transfer management of black, blue and dark rockfish management to the state in that region. Additional information on dark rockfish will be available following the 2005 GOA trawl survey thus the analysis will be strengthened by the incorporation of this information as well as the updated stock assessment report for pelagic shelf rockfish.

## References

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- NPFMC 1998. Environmental Assessment/Regulatory Impact Review for Amendment 46 to the Fishery Management Plan for the Groundfish Fishery of the Gulf of Alaska to Revise Management Authority of Pelagic Shelf Rockfish. Prepared by staff of the North Pacific Fishery Management Council (NPFMC), National Marine Fisheries Service (NMFS) and the Alaska Department of Fish and Game (ADFG). 605 West 4<sup>th</sup> Avenue, Anchorage, Alaska. 99501.

General Priority (in no particular order of importance)	Specific priority actions	Status (updated 2-1-05)	2005					2006						
			Feb	Apr	Jun	Oct	Dec	Feb	Apr	Jun	Oct	Dec		
Protection of Habitat	a. complete EFH action as scheduled	final action scheduled for Feb 05	■											
	b. recommend to NOAA Fisheries increased mapping of benthic environment													
	c. develop and adopt definitions of MPAs, marine reserves, etc.	discussion paper to be reviewed in Feb 05	■	■										
	d. review all existing closures to see if these areas qualify for MPAs under established criteria	discussion paper to be reviewed in Feb 05	■	■										
	e. evaluate effectiveness of existing closures	discussion paper to be reviewed in Feb 05	■	■										
Bycatch Reduction	a. complete rationalization of GOA fisheries	analysis ongoing	■	■	■	■	■							
	b. complete rationalization of BSAI non-pollock fisheries	partially addressed through IRIU Amd 80; also Pacific cod sector allocations	■	■	■	■	■							
	c. explore incentive-based bycatch reduction programs	partially addressed through GOA rationalization; discussion paper on BSAI salmon alternatives for Feb 05	■	■										
	d. explore mortality rate-based approach to setting PSC limits													
	e. consider new management strategies to reduce incidental rockfish bycatch and discards	discuss in Feb 05	■	■										
Protection of Steller Sea Lions	a. continue to participate in development of mitigation measures to protect SSL including development of an EIS and participation in the ESA jeopardy consultation process													
	b. recommend to NOAA Fisheries and participate in reconsideration of SSL critical habitat	on hold pending completion of the recovery plan												
Prevent Overfishing	a. continue to participate in the development of "lumping and splitting" criteria	committee recommendations in Feb 05; analyses of 'other species' categories initiated	■	■	■									
	b. consider new harvest strategies for rockfish	discuss in Feb 05	■	■										
	c. set TAC at or < ABC	<b>Amendment approved by Council</b>												
Ecosystem Management	a. revisit calculation of OY caps													
	b. recommend to NOAA Fisheries and participate in the development and implementation of ecosystem indicators as part of stock assessment process	development ongoing; ecosystem SAFE chapter to be presented each April; NPRB considering funding a workshop to address		■							■			
Improve Data Quality and Management	a. expand or modify observer coverage and sampling methods based on scientific data and compliance needs	initial review scheduled for Jun 05	■	■	■	■								
	b. develop programs for economic data collection that aggregate data	partially addressed through GOA rationalization												
	c. modify VMS to incorporate new technology and system providers													

[Draft manuscript in preparation; distributed to the MPA Federal Advisory Committee as background information 9/04]

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## Application of Marine Protected Areas for Sustainable Production and Marine Biodiversity off Alaska

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David Witherell

**Abstract:** Marine protected areas (MPAs) have been implemented to manage fisheries in the federal waters off Alaska. Existing MPAs were established to protect ecological structure and function, establish control sites for scientific research studies, conserve habitat, protect vulnerable stocks, and protect cultural resources. Many of the MPAs were designed to achieve multiple objectives. In total, over 20 named MPAs, many of which include several sites, encompass virtually all federal waters off Alaska. Most of the MPAs include measures to prohibit a particular fishery or gear type on a seasonal or year-round basis. The 104,000 nm<sup>2</sup> closed to bottom trawling on a year-round basis off Alaska equates to the combined land area encompassed by the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, and Virginia. Many additional MPAs are being considered to further conserve essential fish habitat and protect habitat areas of particular concern, including seamounts and sites with coral aggregations. Although the effectiveness of existing MPAs is difficult to evaluate on an individual basis, as a group they are an important component of the management program for sustainable fisheries and marine biodiversity off Alaska.

### INTRODUCTION

Marine protected areas (MPAs) are considered to be an important tool for managing fisheries and other human activities in the ocean. As defined by Executive Order 13158, a marine protected area is: "any area of the marine environment that has been reserved by Federal, State, tribal, territorial, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein".

MPAs have been established to meet a number of goals, including conservation of biodiversity and habitat, increased scientific knowledge, educational opportunities, enhancement of recreational activities, maintenance of ecosystem services, protection of cultural heritage, and managing fisheries (National Research Council 2001). For fisheries management, marine protected areas have been implemented to control exploitation rates of target species, protect spawning and nursery areas, improve sustainable yields, reduce bycatch of non-target species, protect benthic habitat from perturbations due to fishing gear, ensure against uncertainties, conserve genetic diversity, or to achieve other objectives (National Research Council 2001). MPAs are a critical element of ecosystem-based fishery management, which is being developed and promoted as the new approach to managing fisheries in the United States and elsewhere (Pikitch et al. 2004).

Regional fisheries management councils, established under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), have the primary authority to develop marine protected areas that restrict fishing in Federal waters (3-200 nm from the shoreline) of the United States. Regulations developed by the councils are subject to approval by NOAA Fisheries (National Marine Fisheries Service; NMFS), acting on behalf of the Secretary of Commerce, before they can be implemented. NOAA Fisheries can also restrict fishing activities if actions taken by a regional council are insufficient to meet legal requirements for fisheries management. States can also develop MPAs in federal waters to restrict activities of fisheries managed by the state, and not subject to approved federal fishery management plans.

Numerous marine protected areas have been implemented by fishery managers in the federal waters off Alaska, and are an important component of the precautionary management system established to provide sustainable fisheries. These MPAs are permanently designated in the federal fishery management plans (FMPs) and the implementing regulations governing the crab, scallop, salmon, and groundfish fisheries.

It is generally accepted that fisheries management in the North Pacific region has been successful in achieving the conservation and management objectives of the Magnuson

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**Acknowledgments:** Maps were prepared by Cathy Coon, GIS analyst, North Pacific Fishery Management Council.

Stevens Act, and is considered to be a model for the rest of the U.S. (U.S. Commission on Ocean Policy 2004). Strict catch quotas for all managed target and non-target species, coupled with an effective monitoring program, form the foundation of the fishery management program. Other management measures, including MPAs, effort limitation, rights-based programs, community development programs, and protected resources considerations combine to provide a comprehensive conservation and management program (Witherell et al. 2000). As a result of these measures, sustainable production has been maintained. Annual groundfish harvests have been in the three to five billion pound range for the past 30 years (NPFMC 2004). Additionally, all groundfish, salmon, and scallop stocks, and most crab stocks managed by the federal FMP, are considered to be above established minimum stock size thresholds (NMFS 2004).

The purpose of this paper is to provide a comprehensive inventory and classification of these areas, a brief history of their development, and an examination their effectiveness to date at achieving objectives.

## METHODS

MPAs have been classified many different ways. The most recent classification system was developed by the National MPA Center, established within the National Oceanic and Atmospheric Administration. The MPC Center classifies MPAs based on six fundamental characteristics of design and management: primary conservation goal, level of protection, permanence, constancy (year-round or seasonal), scale, and allowed extractive activities as detailed in Table 1 (National MPA Center 2004). I classified MPAs in the federal waters off Alaska using this system.

Further, I categorized the MPAs based on their primary management objective. Adapting from the categories developed by Coleman et al. (2004) for Gulf of Mexico fishery MPAs, I categorized the North Pacific fishery MPAs into those primarily intended to protect ecological structure and function, establish control sites for scientific research studies, conserve habitat, protect vulnerable stocks, and protect cultural resources.

I researched the history and development of marine protected areas by examining available literature and reviewing the analytical reports and meeting records of the North Pacific Fishery Management Council (Council). Additionally, I augmented these reports and records with my personal observations as an analyst for the Council. I evaluated the effectiveness of the MPAs from a conservation perspective by examining available reports and reviewing the most recent information (biomass

trends, trends in year-class strength) on the status of the stocks, including non-target species (e.g., NPFMC 2003a, 2003b, 2003c).

## RESULTS

MPAs have long been used as a fishery management tool off Alaska, and the application of MPAs has evolved to meet changing management needs. Beginning in 1939, trawling for king crab was prohibited in Cook Inlet and all waters east of 150° west longitude, to limit the catch of halibut and red king crab taken by foreign fleets. Later, in 1961, Japan established a no trawl zone in Bristol Bay to limit interactions between its trawl fleet and its crab pot fleet. Numerous other MPAs were established off Alaska in subsequent years through international agreements with Japan, the Soviet Union, Republic of Korea, and Poland prior to implementation of preliminary fishery management plans in 1977 (Fredin 1987). The preliminary groundfish fishery management plans contained many year-round and seasonal trawl closure areas to foreign fishing, intended to protect domestic fisheries for crab, sablefish, and halibut from competition with foreign fleets. As the domestic fisheries phased out the foreign fisheries in the 1980s, MPAs were primarily developed to control bycatch of species whose harvest is legally limited to other gear types (e.g., crabs can only be harvested with pot gear, but are taken incidentally in trawl fisheries). By the 1990's, fishery managers off Alaska began to use MPAs to protect sensitive benthic habitat from the effects of mobile gear (particularly scallop dredges and bottom trawls), and to address concerns regarding potential competition with Steller sea lions (*Eumetopias jubatus*).

The current suite of MPAs in the North Pacific can be categorized into several groups on the basis of the primary management objective identified by the Council. In many cases, the MPAs achieve multiple objectives but in this study they were categorized based on their primary objective. A list of the North Pacific MPAs, by category, along with summary classification information, is provided in Table 2.

Details for each MPA are provided in the following sections, which are discussed in categorical order. I provide information on (1) the background and objective for the MPA, (2) the process to designate the MPA, (3) the size and location of the MPA, (4) the estimated costs to the fishing industry to implement the MPA, and (5) an examination of how well the MPA has achieved its objectives to date. Maps of the areas are provided in Figures 1-5.

### *Ecosystem MPAs*

### Sitka Pinnacles Marine Reserve

Off Cape Edgecumbe near Sitka, two small pinnacles rise off the bottom from about 160 m, reaching to within 40 m of the ocean surface. Extensive observations made from submersible dives have shown that the boulder field at the base of the pinnacles provides refuge for adult yelloweye rockfish (*Sebastes ruberrimus*), tiger rockfish (*S. nigrocinctus*), sharpchin (*S. zacentrus*), pygmy rockfish (*S. wilsoni*), redstripe rockfish (*S. proriger*), prowlfish (*Zaprora silenus*) and lingcod (*Ophiodon elongatus*) as well as octopus (O'Connell 1998). The sides and top of the pinnacles are composed of columnar basalt, and gorgonian corals (*Primnoa* sp.) grow on the steep walls of the pinnacles. Juvenile rockfishes are abundant at the top of the pinnacles, and pelagic rockfish species, such as black (*S. melanops*), yellowtail (*S. flavidus*), dusky (*S. ciliaus*) and widow (*S. entomelas*) rockfishes, congregate in the water column above the pinnacles. The top of the pinnacles are covered with dense assemblages of sessile invertebrates, including anemones, tunicates, and hydrocorals. Adult lingcod utilize the top of the pinnacles as a seasonal feeding platform after spawning, occurring in dense aggregations during the late spring and early summer (O'Connell 1993).

In 1991, a few lingcod fishermen had discovered high concentrations of lingcod on these pinnacles, and experienced unusually high catch rates. Underwater investigations of the area by State biologists confirmed the large aggregations of lingcod, and revealed the unique nature of the pinnacle area. State fishery biologists and managers were concerned about the risk of overfishing the concentrations of lingcod on these pinnacles, and beginning in 1997, implemented an emergency order to prohibit retention of all groundfish by commercial vessels in the vicinity of the pinnacles. However, the pinnacles soon became a target destination for the charter boat and sport fleet, and in 1998, the Alaska Board of Fisheries permanently closed the pinnacle area to all state managed fisheries at the request of their local Fish and Game Advisory Committee. Public support for establishing a reserve was widespread as a result of a public outreach initiative (that included showing underwater footage from submersible dives on the pinnacles) by the local area biologists and managers.

The State biologists also petitioned the Council to prohibit fishing for federally managed species (including halibut) in the pinnacle area, and thereby creating a comprehensive marine reserve. The Sitka Pinnacles Marine Reserve was implemented in 2000 as GOA Groundfish FMP Amendment 59. Regulations prohibit the use of all recreational and commercial fishing gear (except pelagic troll gear used for salmon), and anchoring by fishing

vessels, within a 3 nm<sup>2</sup> rectangular area encompassing the pinnacles.

This MPA appears to be effective at protecting a post-spawning aggregation of lingcod, however comprehensive surveys of the lingcod population are lacking. Closure of this area is supported by the local fleet of commercial, charter, sport, and subsistence fishermen. Compliance with the MPA regulations appears to be high. Although there have been a few anonymous reports of violations to state biologists, there have been no citations issued by enforcement personnel (T. O'Connell, ADF&G, personal communication).

### Walrus Islands Closure Areas

Pacific walrus (*Odobenus rosmarus divergens*) occur throughout the Chukchi and Bering Seas, with the southernmost major haulouts occurring in northern Bristol Bay on the islands of Round Island and the Twins, as well as on Cape Pierce. These haulouts are occupied by adult males during the spring and summer months, when resting between foraging trips for invertebrates throughout Bristol Bay. Although the incidental catch of Pacific walrus in groundfish fishing operations was known to be rare, the potential disruption of animals on their haulout sites or during feeding was of concern to federal biologists and Alaska natives who hunt Pacific walrus for subsistence uses.

Biologists studying Pacific walrus at these haulouts had noticed that their numbers declined over the season, coincident with fishing effort by trawl vessels targeting yellowfin sole in the spring once the ice sheet had retreated. Biologists believed that sound from the vessels could potentially be disrupting acoustic communication of these animals, both in the air and water environments, and proposed a 12 nm boundary around haulouts to reduce acoustical disruption. Based on analysis of this proposal, the Council developed regulations to prohibited all vessels from fishing for groundfish species within 12 miles of Round Island, the Twins and Cape Pierce in northern Bristol Bay, during the period April 1 through September 30. It was estimated that this regulation cost the fleet up to \$4 million in lost ex-vessel revenues, based on 1988 catches and prices (NPFMC 1991). This MPA, which totals 900 nm<sup>2</sup>, was first established as a temporary measure in 1989 under BSAI Groundfish FMP Amendment 13, and adopted as a permanent measure under Amendment 17 in 1992.

The Walrus Islands closures have substantially reduced acoustic disturbance, based on observations that more walrus that occupy the haulouts throughout the summer (D. Seagars, USFWS, personal communication). Nevertheless, it may be impossible to ascertain the impact



of the MPA on the Pacific walrus population as a whole. The population had been reduced by commercial exploitation to a low in the mid-1950s, and by the late 1970's had apparently recovered to pre-exploitation levels of 200,000 to 250,000 animals (Angliss and Lodge 2002).

#### Steller Sea Lion Mitigation MPAs

The western stock of Steller sea lions had declined about 80% between the 1950's and the late 1980's, and was listed as threatened under the Endangered Species Act in 1990 by emergency rule. At the time of listing, NMFS enacted several regulations to reduce direct mortality as a result of fishing, including no shooting at sea lions, a reduced incidental catch limit, and establishment of 3 nm radius no-entry buffer zones around all rookeries to reduce disturbance and reduce opportunities for shooting at sea lions.

In 1991, NMFS issued a Biological Opinion, pursuant to Section 7 of the Endangered Species Act, on proposed groundfish harvest specifications, and concluded that the spatial and temporal compression of Gulf of Alaska pollock fisheries could create competition for prey and thus contribute to the decline of sea lions (Fritz et al. 1995). In response, NMFS prohibited trawling within a 10 nm radius of all rookeries in the Gulf of Alaska. In 1992, 10 nm radius trawl closures were also implemented around all rookeries in the Bering Sea and Aleutian Islands area. Simultaneously, the Bogoslof area was closed to pollock fishing, and concerns about the redistribution of effort led to a seasonal extension of five Aleutian Islands rookeries from 10 nm to 20 nm through April 15 each year. The western stock of Steller sea lions were listed as endangered in 1997, and in 1999, trawling for pollock was also prohibited within 10 nm of major haulout areas, with some closures extending out to 20 nm.

In November 2000, NMFS issued another Biological Opinion on groundfish fisheries, concluding that proposed fisheries for walleye pollock, Pacific cod, and Atka mackerel, would jeopardize the continued existence of Steller sea lions and adversely modify their critical habitat, due to potential prey competition and modification of their prey field. To bring the fisheries into compliance with the Endangered Species Act, the Council established a large stakeholder committee to develop fishery management measures that would address the concerns about prey competition and still allow viable fisheries to be prosecuted. The Committee developed the alternative that was adopted by the Council in October 2001, and implemented by NMFS for 2002 and thereafter. Management measures adopted were gear, fishery, and area specific and provide full or partial closure to 58,000 nm<sup>2</sup> of the ocean. Implementation of this complex suite of MPAs was projected to result in losses of \$2.6 million to

\$14.0 million in ex-vessel revenue to the harvesters, and resulted in loss of 15 to 411 full time jobs in the harvesting and processing sectors (NMFS 2001).

In addition to mitigating effects of fishing on Steller sea lions, the MPAs also offer substantial protection to deep sea coral and sponge communities along the Aleutians. Submersible observations have found areas with complex coral and sponge communities within the areas encompassed by the MPAs, although the absolute amount of protection to this habitat has not been quantified. Additional submersible research to understand the distribution of corals and sponges in the Aleutian Islands is ongoing (R. Stone, NMFS, personal communication).

#### *Scientific Research MPAs*

##### Chiniak Gully Research Area

In 2000, scientists from the Alaska Fisheries Science Center designed of a four-year investigation of the effects of fishing on Steller sea lion prey abundance and distribution in a commercial fishing ground located on the eastside of Kodiak Island. The sampling design utilizes control (unfished) and treatment (fished) areas, and fish abundance and distribution are measured using acoustic surveys. When control and treatment sites are reasonably similar, the control allows the analyst to differentiate responses due to the treatment from factors due to natural variability. Barnabas and Chiniak gullies share many biological and physical characteristics, and thus were selected control and treatment sampling sites. Regulations were established to close Chiniak gully to fishing from August 1 to September 20. This closure area will remain in effect through 2004.

Preliminary results from have yet to suggest a significant link between fishing activities and changes in adult and age-1 pollock geographical distribution, biomass, vertical distribution, or various school size and shape related descriptors (A. Hollowed, AFSC, personal communication).

##### Cape Sarichef Research Area

One of the research efforts funded by Congressionally appropriated Steller sea lion research monies is a field study of localized depletion of Pacific cod. This study is being conducted by the Alaska Fisheries Science Center in the area of the Bering Sea west of Cape Sarichef known as "cod alley". This area has historically been the source of a large portion of the Bering Sea cod harvest. The intensive trawling that occurs here during the winter cod season is being used to test the hypothesis that fishing may create a localized depletion in the abundance of groundfish that are eaten by Steller Sea Lions.

The study uses catches of Pacific cod in pot gear as an index of local abundance. The study is expected to provide results suitable for statistical testing of whether or not a measurable localized depletion occurs. Tagging of cod for tracking movement patterns, development of scientific pot sampling gear, and collection of biological specimen data are also an integral part of the study. The study proposal was presented to the Council in 2002, and the Council approved a small special closure area near Cape Sarichef to allow this study to be conducted. All directed fishing for Pacific cod is prohibited in the Cape Sarichef Research Area from March 15-31 for the years 2003 through 2006. Preliminary results from the 2003 and 2004 field work did not indicate a depletion effect due to fishery removals (E. Conners, AFSC, personal communication).

### *Habitat Conservation MPAs*

#### Kodiak Trawl Closure Areas

The fishery for red king crab stocks in the Kodiak Area of the Gulf of Alaska collapsed unexpectedly in the late 1960's, likely due to a combination of factors including overfishing and changing oceanographic conditions (Kruse 1996). State and Federal fishery managers sought to take whatever actions were necessary to provide recovery of this stock. Beginning in 1982, the fishery was closed, and other fisheries were displaced to limit bycatch and habitat effects of fishing. With no signs of recovery by the end of 1985, the Alaska Department of Fish and Game proposed that emergency action be taken to implement bottom trawl closures in areas around most of Kodiak Island. Emergency regulations were implemented through June 1996, and the Council established an industry workgroup to develop a long-term solution to protect red king crabs from trawling induced mortality, particularly during their molting period, and protect habitat from potential impacts due to trawling. The workgroups recommendations were adopted by the Council as Amendment 15 to the GOA Groundfish FMP.

In 1987, three types of trawl closure areas were established based on the use of areas by crab at different life stages. Type I areas, totaling 1,000 nm<sup>2</sup>, have very high king crab concentrations and, to promote rebuilding of the crab stocks, and are closed all year to all trawling except with pelagic gear. Type II areas, which total 500 nm<sup>2</sup>, have lower crab concentrations throughout most of the year, but are closed to non-pelagic gear from February 15 through June 15 -- the time period when crabs are molting and have higher bycatch mortality rates. Type III areas have been identified as important juvenile king crab rearing or migratory areas. Type III areas would be closed to trawling following a determination that a recruitment event

has occurred. Originally established as a temporary measure while the stock recovered, the MPA later became established as a permanent measure for the Gulf of Alaska Groundfish FMP.

The red king crab stocks throughout the Gulf of Alaska remain at very low levels, despite all management measures implemented over the years to minimize fishing mortality and conserve crab habitat. The MPA closures have been in place for the last 17 years, and their benefits are difficult to ascertain. Certainly, they have helped to control crab bycatch in groundfish fisheries by reducing the probability of a trawler encountering aggregations of crabs, as well as limited any effects trawling may have on crab habitat. However, Type III closures have never been triggered due to a lack of recruitment, although pods of small juveniles continue to be observed in several bays of Kodiak Island. Adult biomass also remains low as measured by trawl surveys in and around the Kodiak trawl closure areas.

#### Cook Inlet Trawl Closure Area

Similar to the fate of other crab stocks in the Gulf of Alaska, the Tanner crab and red king crab populations in Cook Inlet declined dramatically and have not recovered. The king crab fishery has been closed since 1984 and the Tanner crab fishery has been closed since 1991. Trawl surveys of Cook Inlet failed to detect any recovery of these populations, and State fishery managers raised concerns about the state of the remaining spawning stock.

Although bottom trawling had never been conducted in Cook Inlet to any extent, State fishery managers felt that it would be prudent to be proactive and prevent trawling from expanding into the area, thus eliminating the possibility of bycatch or habitat impacts. In 1995, the Alaska Board of Fisheries prohibited bottom trawling in State waters of Cook Inlet. The State proposed that the Council take complementary action for federal waters, so the Council initiated an analysis of several alternatives to address the issue. In September 2000, the Council adopted an MPA that prohibited bottom trawling in all federal waters of Cook Inlet. This MPA was implemented in 2002 under GOA Groundfish Amendment 60.

The Cook Inlet Trawl Closure Area has only been in effect for 2 years and thus impossible to evaluate its effectiveness as an allocation or conservation measure. Nevertheless, recent trawl surveys have detected higher than average numbers of juvenile Tanner crabs. In the absence of bycatch mortality and habitat impacts, the outlook is positive for rebuilding this stock, however, the red king crab stock appears to remain at a very low level.

#### Scallop Dredge Closure Areas

The weathervane scallop fishery has been managed by the State of Alaska, since the inception of the fishery in the late 1960s (Shirley and Kruse 1995). Concerns about crab bycatch in the scallop fishery and habitat affects due to scallop dredging prompted the Alaska Department of Fish and Game to establish seasonal and year-round closures to fishing with scallop dredges in state and federal waters. Extensive areas of the EEZ have been closed in the vicinity of Kodiak, the Alaska Peninsula, Unimak Island, Unalaska Island, and Amchitka Island. In 1998, the NMFS approved the Alaska Scallop FMP, although the FMP delegated most authority to the State of Alaska to manage the scallop resources in the EEZ, including establishment of MPAs for this fishery. Coordination of State and Federal managers has resulted in more comprehensive MPA regulations. For example, in addition to the scallop dredge closure areas established by State managers, the State has also prohibited scallop dredging in most of habitat conservation MPAs (no-trawl areas) adopted by the Council and NOAA Fisheries.

#### Nearshore Bristol Bay Trawl Closure Area

The Bristol Bay red king crab population collapsed in 1981, following a huge buildup in biomass (and catches). The cause of the collapse remains unknown, but has been hypothesized by different scientists to be due to any number of factors including overfishing, discard mortality, trawl interactions, disease or other source of natural mortality, or reduced recruitment due to climatic events (Kruse 1995). State fishery managers closed the fishery in 1982 and 1983, and requested that the Bristol Bay area be again closed to trawling (the area had been closed to trawling from 1975-1984) to protect the remaining stock and their habitat from further impacts. In response, the Bering Sea and Aleutian Islands Groundfish FMP was amended in 1987 to prohibit all trawling in central Bristol Bay where most crabs were found. This area encompassed about 8,000 nm<sup>2</sup>. Unfortunately, surveys conducted in subsequent years failed to detect signs of recovery, and fishery managers again raised concerns that additional measures were needed.

To address these concerns, several options to reduce the impacts of trawling and dredging on red king crab stocks were considered by the Council, including time/area closures, bycatch limits, individual bycatch quotas, and penalties (Witherell and Harrington 1996). After much analysis and deliberation, the Council decided the best measure would be to implement an additional trawl closure area to protect juvenile red king crab and critical rearing habitat that includes stalked ascidians and other living substrates (Ackley and Witherell 1999). Beginning in 1999, BSAI Groundfish FMP Amendment 37 established a 19,000 nm<sup>2</sup> year-round closure to all trawling in all of

Bristol Bay. One small area within the Nearshore Bristol Bay MPA, bounded by 159° to 160° W longitude and 58° to 58°43' N latitude, remains open to trawling during the period April 1 to June 15 each year. Analysis of observer data indicated that fisheries for yellowfin sole (*Limanda aspera*) could be prosecuted within this area and not impact crab habitat or increase crab and herring bycatch.

This MPA, in combination with favorable environmental conditions, may have assisted in the recovery of the Bristol Bay red king crab stock. Survey information suggests that sessile benthic invertebrates used by juvenile king crab may be increasing in Bristol Bay (NPFMC 2003c). Further, the red king crab stock has increased to biomass levels associated with maximum sustainable yield, and there are many year classes present in the population. The fishery reopened in 1996, and annual catches have increased steadily, such that a conservative catch limit of 15 million pounds was set for 2004.

#### Red King Crab Savings Area

The 1994 Bering Sea trawl survey indicated that the Bristol Bay red king crab stock was at a historically low level and declining. Alarmed by survey results, state and federal biologists and managers proposed complete closure of the entire Bristol Bay area east of 163° to groundfish trawling, to eliminate all sources of fishing mortality and limit potential habitat effects. In 1995, the Red King Crab Savings Area was established by emergency rule as a year-round bottom trawl and dredge closure area. This 4,000 nm<sup>2</sup> area was known to have high densities of adult red king crab and was thus assumed to be an important habitat area as well. The closure became permanent in 1997 with implementation of BSAI Groundfish FMP Amendment 37.

The red king crab stock in Bristol Bay has quickly recovered to high biomass levels, due in part to implementation of area closures (including the Red King Crab Savings Area), lower exploitation rates, and favorable environmental conditions.

#### Area 516 Seasonal Closure

In 1987, when the central area of Bristol Bay was re-closed to trawling to protect red king crab, managers also decided to extend the closure further west on a seasonal basis to protect red king crab when they are in a fragile molting condition. This seasonal closure area, designated as Area 516, is closed to all trawling from March 15 through June 15. The northern portion of the area became a year-round trawl closure in 1995, with the implementation of the Red King Crab Savings Area. The southern part of Area 516 remains open during the second part of the year, and most of the Bering Sea red king crab bycatch is taken in this area by bottom trawl vessels targeting rock sole.

### Pribilof Islands Habitat Conservation Area

In 1989, the Central Bering Sea Fishermen's Association initiated a proposal to prohibit trawling around the Pribilof Islands to protect juvenile blue king crab (*P. platypus*) habitat, forage fish for marine mammals and seabirds, and maintain a stable ecosystem in the surrounding waters. The blue king crab population had decreased over ten-fold from a peak in 1975, and the fishery was closed entirely in 1988 due to low abundance.

The Council initiated analysis of the proposal in 1991, and the analysis was revised several times to consider other boundary configurations. Through spatial display of NMFS survey data, groundfish observer data, and commercial crab fishery data, the analysis provided an understanding of blue king crab habitat and trawl fishing effort distribution. The area that was ultimately selected was designed to include the vast majority of blue king crabs, while at the same time, allowing the trawl fishery access to the edge of the 100 m contour, which is economically important to trawl vessels targeting walleye pollock and Pacific cod. The yellowfin sole trawl fishery was negatively affected by the closure north and east of the Pribilof Islands, but the costs of the closure to this fleet were not quantified. In 1995, the 7,000 nm<sup>2</sup> Pribilof Islands Habitat Conservation Area was implemented by BSAI Groundfish FMP Amendment 21a, and the area was permanently closed to all trawling and dredging year-round.

The Pribilof Islands Conservation Area has not been successful in rebuilding the blue king crab stock, although it may have served to limit the effects on juvenile crabs and habitat. Despite the protection offered by the MPA, and closure of the crab fisheries, the Pribilof Islands stock of blue king crab has continued to decline to very low levels and is considered to be in an 'overfished' condition (NPFMC 2003b). On the other hand, Pribilof Islands red king crabs seemed to have benefited from the trawl closure. Since 1996, the stock of red king crab appears to have doubled in abundance (NPFMC 2003b).

Some people living on the Pribilof Islands remain concerned about trawling at the edge of the closure area, about 3 nm south of St. George Island. Local halibut fishermen using longline gear have experienced substantially reduced catch rates in the past two years, and apparently some attribute the lower catch rates to bycatch by the trawl fleet fishing in waters adjacent to the MPA. Others feel that environmental conditions in the area, or the status of halibut, may be causing the changes in halibut catch rates.

### Southeast Alaska Trawl Prohibition

In 1991, longline fishermen from Sitka and other local citizens proposed that all trawling (using bottom trawls or pelagic trawls) be prohibited off Southeast Alaska. The rationale for this was that trawling was causing long term damage to deep sea corals, conservation problems for rockfish, and social disruption to the local fishing industry (Behnken 1993). In evaluating this proposal, the link between coral use by rockfish and damage to rockfish habitat as a result of trawling was unknown. Rather than prohibit trawling entirely, the Council instead adopted a rebuilding plan for Pacific Ocean Perch (*Sebastes alutus*), the primary rockfish species in the area fished by trawl gear.

Although the original MPA proposal was not adopted when brought to the Council for final decision, it was later adopted as part of the license limitation program that was implemented under GOA Groundfish FMP Amendment 41. Beginning in 1998, all trawling was prohibited in Southeast Alaska east of 140° east longitude. This MPA, with a total area of 52,600 nm<sup>2</sup>, includes continental shelf, slope, and basin areas.

The value of the Southeast Alaska trawl closure is difficult to evaluate. From a conservation perspective, the MPA appears to have met its objectives of conserving habitat for rockfish. Biomass of Pacific ocean perch in the Gulf of Alaska has increased dramatically in the past decade (NPFMC 2003a). However, this increase can be primarily attributable to large year-classes produced prior to implementation of the MPA, as well as a reduced harvest rate on exploitable sized fish. From a social perspective, the MPA is viewed as successful to local Southeast Alaska fishermen, who predominantly target groundfish with longline gear. Interactions between fixed gear (longlines) and mobile gear (trawls) have been eliminated, and concerns about habitat degradation have been addressed. More recently, longline fishermen have begun to develop techniques to harvest species of rockfish that previously could only be harvested in commercial quantities with trawl gear (D. Falvey, commercial fishermen, personal communication).

### *Vulnerable Species MPAs*

#### Commercial Salmon Fishery Prohibited Area

The International Convention for the High Seas Fisheries of the North Pacific was signed in 1952. Under the Convention (as amended), Japan agreed to prohibit its mothership salmon fishery from operating within 200 nm of the Alaska coast east of 175° east longitude (near Attu Island). The intent of this prohibition was to keep the Japanese from competing with U.S. fishermen, and minimize harvesting salmon of mixed stock origin. The

United States implemented the North Pacific Fisheries Act of 1954 to codify its role in the Convention, thus prohibiting domestic fishermen from fishing for salmon with nets in the North Pacific outside of Alaska waters, except for three historical fisheries managed by the state: False Pass, Cook Inlet, and Copper River net fisheries. The original Salmon FMP adopted this regulation, and prohibited all commercial salmon fishing in the EEZ east of 175° east longitude and west of Cape Suckling, with the above mentioned exceptions. Only troll gear was allowed in the EEZ east of Cape Suckling. In 1990, the Salmon FMP was revised to include the area west of 175° east longitude, and prohibit all commercial salmon fishing in that area as well, thereby increasing the total MPA area to about 1,594,000 nm<sup>2</sup>, not including the EEZ area of the Chukchi and Beaufort Seas (NPFMC 1990).

Most salmon stocks originating from Alaska rivers (except in western Alaska) increased to high run sizes during the 1980s and 1990s. Although high seas interception may have affected the run sizes in the 1970's, in more recent years the primary factor influencing run sizes of Alaska salmon is thought to be environmental conditions (Adkison and Finney 2003).

#### Herring Savings Areas

Most Pacific herring (*Clupea harengus pallasi*) stocks in the Bering Sea had begun to decline by 1990, with the passage of very strong 1977-78 year classes followed by poor production in subsequent years. Several stocks were projected to decline below minimum threshold levels established for commercial fisheries, and potentially affecting subsistence fisheries, both of which are important to many western Alaska coastal villages. Further, as the stocks declined, the percentage of the Pacific herring population taken annually by trawl fisheries (particularly the midwater walleye pollock fishery) had increased to 4 to 7 percent annually. Given the declines in Pacific herring stocks and their importance to the marine ecosystem, together with associated fishery reductions and concerns for maintaining traditional subsistence herring fisheries, the Council initiated an analysis of measures to control Pacific herring bycatch in trawl fisheries.

In September 1990, the Council adopted Amendment 16a to the BSAI Groundfish FMP, and the regulations were implemented in July 1991. The amendment established a biomass-based bycatch limit for Pacific herring, and a series of time and area closures that would be triggered by attainment of the bycatch limit by trawl fisheries. The bycatch limit was established at 1% of the herring population biomass projection. The limit is further allocated among trawl fisheries, so that attainment of the limit by one target fishery does not impact other trawl target fisheries. The time/area closures were established

based on spatial analysis of bycatch rates and the seasonal migration of herring, such that the closure areas encompass the times and places where herring are concentrated.

The measures to control herring bycatch appear to be successful, and may have contributed to a substantial reduction in bycatch over time. In 1994, for example, 1,700 mt of herring were taken as bycatch; by 2002, herring bycatch had been reduced to only 134 mt (NPFMC 2004). Closures of the Herring Savings Areas were triggered every year 1992 through 1995 (Witherell and Pautzke, 1997), but no closures have been triggered in recent years.

#### Chinook Salmon Savings Area

The incidental catch of salmon in non-salmon fisheries has long been a concern to fishery managers and state residents, particularly those in western Alaska who depend on salmon for income and subsistence. The original fishery management plan for the Bering Sea groundfish fishery included provisions that prohibited the retention of salmon. In 1982, the first amendment to the plan established a bycatch limit for Chinook salmon (*Oncorhynchus tshawytscha*), with the available bycatch amounts apportioned to foreign nations with fishing fleets participating the groundfish trawl fisheries. Once a nation's limit was reached, seasonal area closures were triggered, thus prohibiting that nation's fleet from fishing in the prescribed area. The overall Chinook salmon bycatch limit was further reduced in 1983, but the growing joint venture fleet, and later the fully domestic fishery, offset these reductions.

Low Chinook salmon runs in the Nushigak, Yukon, and Kuskokwim rivers in the late 1980s and early 1990s prompted the Council to re-examine measures to control salmon bycatch in groundfish fisheries. Spatial analysis of groundfish observer data provided information on areas that had consistently high bycatch rates of Chinook salmon. In 1995, the Council adopted Amendment 21b, that established three areas in the Bering Sea that would close to all trawling when a bycatch limit of 48,000 fish was taken. Implementation of this incidental catch limit was projected to potentially cost the trawl fleet several million dollars in foregone catches and added operational costs. In 1999, the bycatch limit trigger was further reduced by the council to 29,000 salmon taken in the walleye pollock fishery. In evaluating Amendment 58, more recent observer data indicated low bycatch rates of Chinook salmon in the area south of the Pribilof Islands, so this component of the Chinook Salmon Savings Areas was dropped from the regulations

The incidental catch of Chinook salmon in groundfish fisheries has been substantially less since the

implementation of Amendment 58. Although the bycatch limits have never triggered an area closure, the prospect of this possibility has resulted in fishing vessels sharing information to avoid areas of high salmon bycatch rates, and an industry funded bycatch avoidance program (Haflinger 2004).

The bycatch controls for Chinook salmon serve to prevent extremely high bycatch amounts that could raise serious issues. With the controls in place, Chinook salmon bycatch averages less than 2.7% of the returning adult population to western Alaska systems (Witherell et al. 2002), but still remains a concern to some subsistence users in western Alaska. Chinook salmon runs in the Yukon and nearby drainages were reported to be very strong in 2004.

#### Chum Salmon Savings Area

Western Alaska chum salmon (*O. keta*) runs declined dramatically in the early 1990's, dropping to historically low levels in 1993. In that same year, the incidental catch of chum salmon in groundfish fisheries spiked to a record high of about 243,000 fish. Many were concerned that the trawl fisheries were impacting the salmon returns, and the Council voted to move ahead quickly with an analysis to expand observer coverage on all trawl vessels, and to examine the use of 'hot spot' closures to control chum salmon bycatch. Analysis of groundfish observer data indicated spatial and temporal patterns of chum salmon bycatch in trawl fisheries. In April 1994, based on this analysis, the Council requested that NMFS take emergency action to close five contiguous 30 nm by 30 nm blocks in the southeast Bering Sea, once a specified bycatch amount was attained.

The emergency action was further developed into a permanent regulation, and in January 1995, the Council adopted the Chum Salmon Savings Area as Amendment 35. The Chum Salmon Savings area is closed to all trawl fishing for the entire month of August (the time of year when bycatch is highest). In addition, the prescribed area remains closed or re-closes after September 1, if 42,000 salmon bycatch are taken in the southwestern area of the Bering Sea.

Bycatch of chum salmon has fluctuated over the years, but has not reached the levels seen prior to the implementation of this MPA. Changes in annual bycatch amounts are likely due to changes in salmon abundance, establishment of the Chum salmon Savings Area and other regulatory changes, and bycatch avoidance measures and operational changes made by the fishing fleet (Witherell et al. 2002). Because the walleye pollock fishery now operates in a cooperative fashion as allowed under the American Fisheries Act, and implements its own real-time salmon bycatch avoidance program, the pollock fleet has requested

that the chum salmon savings area closure be reconsidered. Under the current regulations, the walleye pollock fleet is prohibited from fishing within this area during August, even in years when observations indicate low chum salmon bycatch rates could be encountered (K. Haflinger, Sea State Inc., personal communication).

#### Tanner Crab and Red King Crab Bycatch Limitation Zones

The bycatch of crabs in trawl fisheries has been a long-standing issue for fishermen targeting crabs with pot gear. In 1983, bycatch limits for king crab (*Paralithodes camtschaticus*) and Tanner crabs (*Chionectes bairdi*) were established for foreign trawl fisheries operating in the Bering Sea. In 1997, domestic fisheries and joint ventures were included in the crab bycatch limit regulations under Amendment 10. The regulations specified Tanner crab bycatch limits for areas east of 165° (Zone 1) and areas west of 165° (Zone 2), and bycatch limits for red king crab in Zone 1. Although the boundaries for the Zones have not been modified, the bycatch limit amounts have been revised numerous times (Amendment 12a in 1990, Amendment 16 in 1991, Amendment 37 in 1996, Amendment 41 in 1997, Amendment 57 in 1999).

Bycatch limits have controlled the incidental catch of king and Tanner crabs in trawl fisheries. Directed trawl fisheries, particularly those targeting flatfish species, have been closed out of lucrative fishing areas when limits are attained. Closures have been triggered for at least one of the specified trawl fisheries in every year since implementation. However, in more recent years, closures have been infrequent, due in part to changes in the distribution and abundance of Tanner crab and the establishment of no-trawl MPAs in the Bristol Bay area, along with reductions in total allowable catch limits for flatfish species.

#### Snow Crab Bycatch Limitation Zone

By the early 1990's, snow crab (*C. opilio*) had become the mainstay species of the Bering Sea crab fleet; abundance and prices for this species had sharply increased, while the other crab species had declined. Recruitment of large snow crab, however, had dropped off by 1996, and catch limits were scaled back to 51 million pounds, down substantially from the 1992 limit of 333 million pounds. Crab fishermen claimed financial distress, and requested that the Council limit the incidental take of snow crab in trawl fisheries. In response, the Council formed a small stakeholder committee, consisting of three crab fishery representatives and three representatives of the trawl sector, to examine available data and recommend a solution. The committee was provided a spatial analysis of survey data for snow crabs, and trawl bycatch data. Their recommendations for a trawl closure area that would be triggered by an

abundance-based snow crab bycatch limit, was adopted by the Council as Amendment 40, and implemented in 1998. This area, deemed the Snow Crab Bycatch Limitation Zone, encompasses 90,000 nm<sup>2</sup>.

As an allocation measure, the MPA has appeased crab pot fishermen concerned about the observed bycatch of snow crab, although some have expressed concern about 'unobserved mortality' due to trawl gear interactions. Trawl fisheries have adapted to the limits, and to date, have not triggered closure of the Snow Crab Bycatch Limitation Zone.

As a conservation measure, the Snow Crab Bycatch Limitation Zone appears to offer only minor benefits, as the bycatch amounts represent less than 0.1% of the population (Witherell et al. 2000). The snow crab stock has declined substantially since 1997, and is currently considered to be below the established minimum stock size threshold due to lack of recruitment (NMFS 2004).

#### Bogolsof Area

Catch limits for walleye pollock in the Eastern Bering Sea originally applied throughout the management area, but research began to indicate that two separate stocks occupied the Bering Sea. One of these stocks, the Aleutian Basin stock, was projected to decline substantially in the early 1990s. Research had indicated that walleye pollock in international waters of the 'Donut Hole' and the Aleutian Basin portion of the U.S. EEZ were the same population, and that the area around Bogoslof Island was thought to be the principal spawning area for the Aleutian Basin pollock stock (Dawson 1989). To prevent the possibility of over harvesting pollock during the 1991 season, the Council recommended emergency action to establish the Bogoslof District with restrictive catch limits.

To further protect the Aleutian Basin pollock stock (the Donut Hole stock), the United States passed the 'Central Bering Sea Fisheries Enforcement Act' in 1992 to prohibit U.S. fishermen from fishing in the Donut Hole. Unfortunately, the stock continued to decline, and by the end of the year, all the countries involved in harvesting pollock (U.S., Russia, China, South Korea, Japan, Poland) had agreed to voluntarily suspend fishing in the Donut Hole in 1993 and 1994. In 1994, all these parties signed the "Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea" to prohibit fishing for walleye pollock until the stock reached a threshold of 1.67 million mt. The Convention further specifies that the pollock biomass in the Bogoslof area is deemed to represent 60% of the Aleutian Basin pollock biomass. In other words, when the Bogoslof area Pollock biomass exceeds one million mt, a fishery would be allowed in the Donut Hole.

No pollock fishing has been allowed in the Bogoslof district since it became permanently established in 1992 by amendment 17 (NPFMC 1991). As part of the Steller sea lion protection measures implemented in 2002, all fishing for walleye pollock, Pacific cod, and Atka mackerel (*Pleurogrammus monopterygius*), was permanently prohibited in the Bogoslof area. Despite the closure and prohibition on walleye pollock fishing, the Aleutian Basin pollock stock biomass remains at very low levels (NPFMC 2003a).

#### *Cultural Resources MPAs*

##### Subsistence Crab Areas

The King and Tanner Crab FMP prohibits commercial crab fishing within 10 nm of King Island, Little Diomed Island, and Saint Lawrence Island. The objective of this MPA is to allocate the nearshore crab resources to local people of these islands who take them for subsistence use. The prohibition on commercial fisheries in this area also reduces the potential for discard mortality and the risk of localized overexploitation of crabs in these nearshore areas. Research has shown that the shallow waters (< 40 m) around Saint Matthew Island contains high densities of ovigerous female blue king crab; presumably nearshore areas are also important for other populations of blue king crab in the northern portion of their range (NPFMC 2000).

##### Subsistence Halibut Regulatory Areas

Areas have been set aside to reduce competition for halibut, and ensure access to the halibut resource by local subsistence users. By 1997, increased fishing effort and halibut removals from Sitka Sound by commercial and charter fleets were causing increased competition for halibut, and thus creating difficulties for personal use and subsistence fishermen. To address this problem, the Alaska Board of Fisheries appointed a task force of community representatives to prepare a local area management plan. The plan was developed with the objective to reserve access to halibut in Sitka Sound for the fishermen who could not fish outside the Sound, namely the non-guided sport anglers, personal use, and subsistence fishermen. In 1998, the Council adopted the plan, and prohibited halibut fishing by all commercial fishing vessels in Sitka Sound, except that vessels less than or equal to 35 feet and charter fishing vessels could fish within the area during June, July, and August. During the remainder of the season, commercial fishing vessels less than or equal to 35 feet are prohibited from harvesting more than 2,000 lbs. of halibut within Sitka Sound per fishing trip.

In 2001, the Council adopted a halibut subsistence fishery program to legalize Alaska Native and rural Alaskan

harvest of halibut throughout the state for personal consumption and traditional barter and trade. The program allows harvest of halibut with longline gear, and up to 20 halibut per day can be harvested. To address concerns about localized depletion of halibut from increased fishing pressure (due to its easy access on the road system), the State and Council adopted regulations to prohibit halibut subsistence harvest in most of Cook Inlet waters. This area was already subject to high fishing pressure for halibut from recreational anglers fishing from private and charter vessels. Although subsistence fishermen are restricted within the Cook Inlet area, they are granted new opportunities throughout the remainder of the State's coastal areas.

## DISCUSSION

Marine protected areas have been a useful tool to Federal fishery managers in Alaska seeking to meet specific goals, such as limiting bycatch of special species, limiting the interaction with marine mammals, and protecting sensitive seafloor habitat from potential damage due to fishing activities. Many of the MPAs were designed to meet multiple objectives. In total, there are over 20 named MPAs, many of which include multiple sites. Taken together, the MPAs encompass virtually all federal waters off Alaska. Most of the MPAs include measures to prohibit a particular fishery or gear type on a seasonal or year-round basis. About 104,000 nm<sup>2</sup> are closed to bottom trawling for any species on a year-round basis, and is a substantial portion (about 20%) of Alaska's continental shelf, not including the unfished area in the northern Bering Sea. This enormous area equates to the combined land area encompassed by the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, and Virginia.

In most cases, MPAs have successfully achieved their objectives. Sustainable production has been maintained in the groundfish fisheries, and conservation and allocation issues involving the incidental catch of vulnerable species such as salmon, herring, and crab species have been addressed. The success of MPAs at achieving habitat conservation is more difficult to evaluate. In some cases (e.g. the Bristol Bay Trawl Closure Area), the positive effects on stocks can be attributed to some extent on MPA regulations. In other cases, such as the Pribilof Islands Habitat Conservation Area, the signals are mixed. The current environmental regime appears to be preventing full recovery of the Pribilof blue king crab stock, whereas the Pribilof red king crab stock has increased to very high levels (NPFMC 2003b).

In addition to marine protected areas established in federal waters off Alaska, there are numerous and extensive areas

in state waters (0-3 nm) that are closed to trawling, dredging, or other gear types (Woodby et al. 2002). Bottom trawling, for example, is prohibited in virtually all state waters in the Gulf of Alaska and in Bristol Bay. At the extreme, all vessels, including fishing vessels, are prohibited from even entering within 3 nm of all Steller sea lion rookeries along the Aleutian Islands east to Prince William Sound. In combination with the MPAs established in federal waters, the resulting 'network' of MPAs provides substantial protection for marine resources and their habitats off Alaska.

There are many other area closures established for fisheries management that do not seem to meet the MPA definition of Executive Order 13158, and these are not discussed within this paper. These include areas designated for testing trawl gear, regulatory areas and subareas, TAC allocation areas, harvest limit areas, sector allocation areas, and other types of designated marine managed areas. These sites may not meet the definition in that they do not provide "lasting protection" for the natural or cultural resources.

Additional MPAs are being considered by fishery managers to minimize the effects of fishing in essential fish habitat and in habitat areas of particular concern. Although analysis of the effects of groundfish fishing on benthic habitats had concluded that fishing had only minimal effects on target stocks, several alternatives are being considered by the Council would prohibit bottom trawling over a very large portion of the continental shelf (NMFS 2003). One alternative would prohibit bottom trawling in all but a few small areas along the Aleutian Islands, resulting in closure of 99% of the total management area to fishing with this gear type. In addition to minimizing the effects of fishing on essential fish habitat, seamounts and complex coral habitats used by rockfish are being considered for designation as habitat areas of particular concern. Deepwater corals are vulnerable to fishing gear impacts, and fishery managers have been examining possible means to protect these organisms (Witherell and Coon 2000). Options currently being evaluated to protect these coral and sponge assemblages from fishing effects include establishment of areas where fishing with any gear that contacts the bottom would be prohibited, similar to regulations established for the Sitka Pinnacles Marine Reserve.

Before new MPAs are implemented, the cumulative impacts need to be fully considered. Regulations that prohibit or restrict fishing activity in one area will result in additional fishing effort in the remaining open areas, potentially creating other problems. The court ordered closure of Steller sea lion critical habitat to trawling in 2000, for example, resulted in an increase in bycatch of salmon (Witherell et al. 2002). Other effects of



implementing additional MPAs include more complex regulations, additional operating costs, and reduced operating flexibility for fishermen.

Evaluation of MPAs after they have been implemented is essential for monitoring performance and to be responsive to new information (Coleman et al. 2004). Several MPAs off Alaska have been reevaluated after implementation, and adjustments made to make them more effective. For example, the Bristol Bay closure area was reevaluated in 1995 relative to its ability to protect juvenile king crab and their habitats, and adjustments were made in the boundaries of the area to encompass the full range of known young-of-the-year habitat (Witherell and Harrington 1996). In 1999, the Council modified the Chinook Salmon Savings area boundaries after spatial analysis showed that bycatch 'hotspots' had changed over the years. More recently, several MPAs in the Gulf of Alaska designed for Steller sea lion mitigation were modified in response to updated research.

Research is required to fully evaluate the effectiveness of existing MPAs. For example, the Steller sea lion mitigation MPAs clearly provide some conservation benefits to deepwater coral and sponge assemblages in the Aleutian Islands, but the level of protection has not been quantified. Ongoing direct observations using submersible transects may help provide estimates for coral conservation in the Aleutian Islands (B. Stone, NMFS, personal communication). Similar research should be done in the other closure areas to evaluate the effectiveness of the existing MPAs at meeting their objectives, and to ascertain other ecological effects of implementing MPAs.

Compliance with MPA regulations off Alaska appears to be very high due to a combination of factors, including strong enforcement presence, an industry funded onboard observer program, satellite tracking of positions with vessel monitoring systems (VMS), and the availability of other economic alternatives. The United States Coast Guard patrols the North Pacific with planes, cutters, and helicopters, and provides regular feedback to the Council on enforcement presence (e.g., number of C-130 flights, cutter days) and offers advice relative to the enforcement aspects associated with MPAs early in the development process. NOAA Enforcement agents also report on violations, including MPA violations. To date, however, very few violations to MPA regulation have been reported. Compliance is also affected by the presence of an observer onboard. The NMFS comprehensive observer program for the groundfish fisheries requires that all vessels larger than 125 ft (length overall) carry an observer, and vessels 60 ft to 125 ft carry an observer 30% of their fishing time. Vessels participating scallop and crab fisheries carry observers as well. Although the observers' primary duties are to measure total catch and discards, they do record

vessel positions, and their logbooks can become the basis for prosecution. VMS is now widely used to monitor fishing vessel positions off Alaska. Regulations required that vessels fishing for walleye pollock, Pacific cod, and Atka mackerel carry an operating VMS at all times. Because virtually all trawl vessels fish for one of these species during the year, and many of the longline vessels fish for Pacific cod, most of the fleet potentially affected by MPA regulations can be monitored by VMS tracking. Lastly, because alternative productive fishing grounds, in most cases, can be found in areas outside of existing MPAs off Alaska, there is little incentive for violating the regulations.

Although no-take marine reserves have been promoted as the ocean conservation tool by many in the scientific and environmental community (e.g., Allison et al. 1998, Agardy 2000), the need for such restrictive reserves off Alaska has yet to be demonstrated. Unlike other areas of the world, the existing fishery management system addresses, at least to some degree, the objectives for implementing no-take marine reserves as identified by the National Research Council (2001). The ecosystem-based approach utilized off Alaska provides insurance against uncertainty, prevents overexploitation, limits fishing effort, and protects habitats (Witherell et al. 2000). Moreover, extensive unfished areas of the continental shelf, slope, and basin region serve as refugia, or de-facto marine reserves. Marine reserves have been proposed for North Pacific waters to serve as control areas for distinguishing natural variability from human impacts, such as fishing on benthic habitat and Steller sea lion foraging. However, implementation of no-take research reserves has been hindered due to lack of scientific evidence, research funding, and in the case of Steller sea lions, legal issues associated with the Endangered Species Act.

All of the existing MPAs were developed through a public process to meet practical objectives, such as protecting vulnerable species and habitats from potential effects of bottom trawls. It would make little sense to fishermen that all fishing (including pelagic fishing for mobile species) should be prohibited in large areas of the ocean, for the sake of offering additional insurance against loss of biodiversity. Without scientific studies to provide evidence that no-take reserves are needed off Alaska, proposals by government agencies or non-governmental organizations to implement no-take marine reserves would likely be viewed with skepticism by fishery participants. An evaluation of 1990-2000 National Marine Fisheries Service bottom trawl survey data found that species diversity and evenness did not increase within the Bristol Bay trawl closure MPAs after implementation as expected, but instead, diversity had increased in areas open to trawling (Frazier 2003). Field studies off Alaska on the effects of no-take marine reserves on biodiversity should

be a research priority, and these studies should be developed and conducted in a cooperative manner with fishery participants. Should these studies find that no-take reserves enhance long-term sustainability, I would anticipate that the Alaska fishing industry would not only accept, but also actively seek implementation of this management tool.

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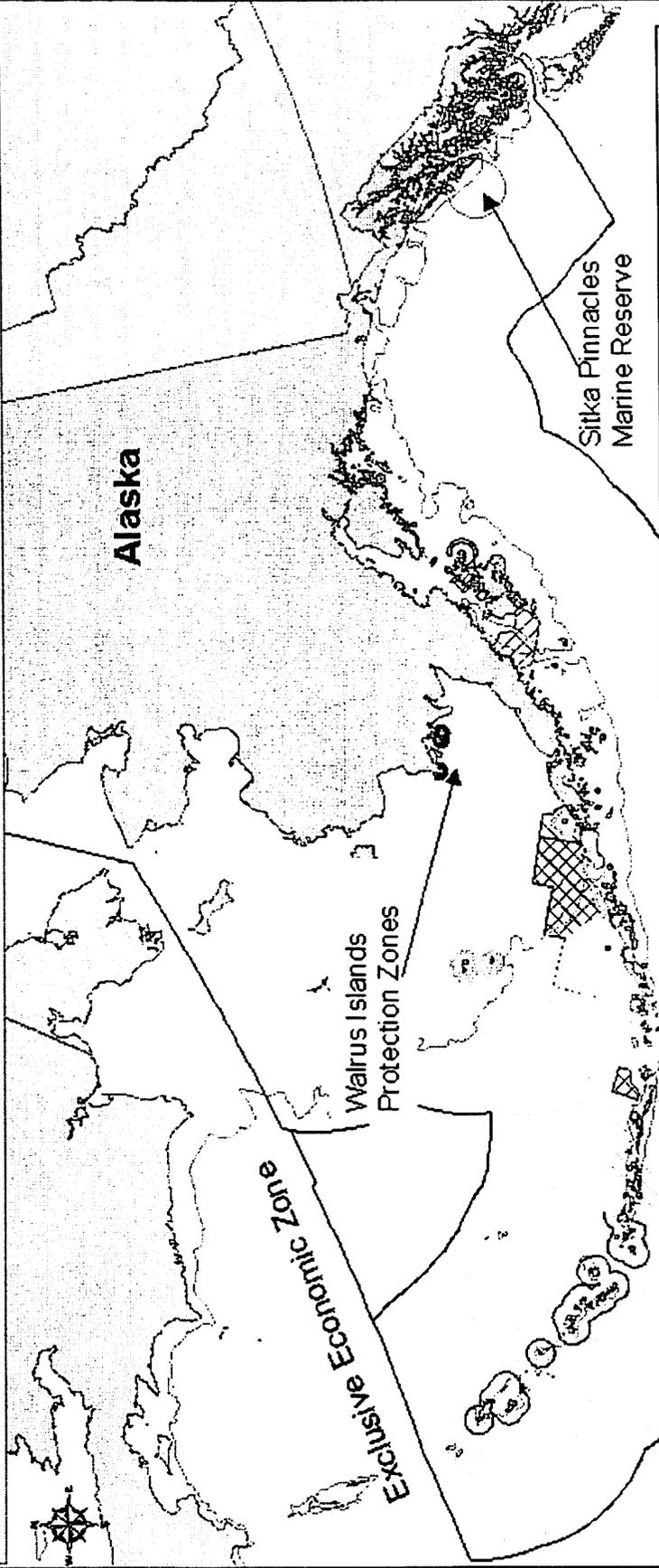
Table 1. The annotated MPA classification system developed by the MPA Center.

1. Primary Conservation Goal
  - Natural Heritage – established to sustain biological communities, habitats, and ecosystems for future generations.
  - Cultural Heritage – established to protect submerged cultural resources.
  - Sustainable Production – established to support continued extraction of renewable resources.
2. Level of Protection
  - No Access – restricts all access into area except for research monitoring or restoration.
  - No Impact – prohibits all extraction, discharge, or disposal, and significant alteration of ecosystem.
  - No Take – prohibits extraction of natural or cultural resources.
  - Zoned With No-Take Areas – multiple use areas, with some areas where all extraction is prohibited.
  - Zoned Multiple Use – allows some extractive activities throughout, but zoned to reduce some adverse impacts.
  - Uniform Multiple Use – applies constant level of protection across entire protected area.
3. Permanence of Protection
  - Permanent – legal authorities protect areas in perpetuity for future generations.
  - Conditional – areas that have potential to persist over time, but legal authorities must be renewed.
  - Temporary – areas that are designated for a finite duration, with no expectation of renewal.
4. Constancy of Protection
  - Year-Round – constant protection throughout the year.
  - Seasonal – protection for only a portion of the year.
  - Rolling – protection for finite duration, then de-designated and moved to another location.
5. Scale of Protection
  - Ecosystem – measures intended to protect entire ecosystem or habitat within its boundaries.
  - Focal Resource – measures intended to protect one or more identified resources.
6. Allowed Extractive Activities
  - Commercial Fishing – allows fish to be caught for sale.
  - Recreational Fishing – allows sport fishing in the area.
  - Subsistence Hunting/Fishing – allows extraction of resources for subsistence uses.
  - Scientific/Educational Collecting – allows extraction of resources for scientific or educational purposes.
  - Mineral/Energy Extraction – allows mining within the area.
  - Other – may allow other specified activities.

**Table 2. Inventory and classification of MPAs for fisheries in federal waters off Alaska.**

MPA Objective and Site Name	Approx. Size of Site (nmi <sup>2</sup> )	Primary Conservation Goal	Specific Objective	Permanence of Protection	Level of Protection	Constancy of Protection	Scale of Protection	Prohibited Fishing Activities
<b><u>MPAs Primarily Intended to Protect Ecological Structure and Function</u></b>								
Sitka Pinnacles Marine Reserve	3	Natural Heritage	Protect unique area	Conditional	No Take	Year-round	Ecosystem	All bottom contact gear
Walrus Islands Closure Areas	900	Natural Heritage	Minimize disturbance	Conditional	Uniform Multiple Use	Seasonal	Ecosystem	All groundfish fishing
Steller Sea Lion Mitigation Closures	58,000	Natural Heritage	Minimize potential competition	Conditional	Zoned With No-Take Areas	Year-round/ seasonal	Ecosystem	Pollock, cod, mackerel fisheries
<b><u>MPAs Primarily Intended to Improve Scientific Understanding</u></b>								
Chiniak Gully Research Area	1,000	Natural Heritage	Provide control for fishing impact study	Temporary	Uniform Multiple Use	Seasonal	Ecosystem	Pollock fishing
Cape Sarichef Research Area	130	Natural Heritage	Provide control for fishing impact study	Temporary	Uniform Multiple Use	Seasonal	Ecosystem	Cod fishing
<b><u>MPAs Primarily Intended to Conserve Habitat</u></b>								
Kodiak Trawl Closure Areas	1,500	Sustainable Production	Conserve red king crab population	Conditional	Zoned Multiple Use	Year-round/ seasonal	Focal Resource	All trawling
Cook Inlet Trawl Closure	7,000	Sustainable Production	Conserve red king crab population	Conditional	Uniform Multiple Use	Year-round	Focal Resource	Bottom trawling
Scallop Dredge Closure Areas	12,000	Sustainable Production	Conserve red king crab population	Conditional	Uniform Multiple Use	Year-round	Focal Resource	Dredging
Nearshore Bristol Bay Closure	19,000	Sustainable Production	Conserve juvenile red king crab habitat	Conditional	Zoned Multiple Use	Year-round	Ecosystem	Bottom trawling
Red King Crab Savings Area	4,000	Sustainable Production	Conserve red king crab population	Conditional	Zoned Multiple Use	Year-round	Focal Resource	Bottom trawling
Area 516 Seasonal Closure	4,000	Sustainable Production	Protect red king crab when molting	Conditional	Uniform Multiple Use	Seasonal	Focal Resource	Bottom trawling
Pribilof Islands Habitat Conservation Area	7,000	Sustainable Production	Conserve juvenile blue king crab habitat	Conditional	Uniform Multiple Use	Year-round	Ecosystem	Bottom trawling
Southeast Alaska Trawl Closure	52,600	Natural Heritage	Conserve benthic habitat	Conditional	Zoned Multiple Use	Year-round	Ecosystem	All trawling
<b><u>MPAs Primarily Intended to Protect Vulnerable Stocks</u></b>								
Commercial Salmon Fishery Prohibited Area	1,594,000	Sustainable Production	Limit mixed stock salmon fisheries	Conditional	Uniform Multiple Use	Year-round	Focal Resource	Salmon fishing with nets
Herring Savings Areas	30,000	Sustainable Production	Control bycatch by groundfish trawlers	Conditional	Uniform Multiple Use	Seasonal Trigger	Focal Resource	Trawling by target fishery
Chinook Salmon Savings Areas	9,000	Sustainable Production	Control bycatch by groundfish trawlers	Conditional	Uniform Multiple Use	Seasonal Trigger	Focal Resource	Trawling for pollock
Chum Salmon Savings Areas	5,000	Sustainable Production	Control bycatch by groundfish trawlers	Conditional	Uniform Multiple Use	Seasonal & Trigger	Focal Resource	All trawling
King and Tanner Crab Bycatch Limitation Zones	80,000	Sustainable Production	Control bycatch by groundfish trawlers	Conditional	Zoned Multiple Use	Seasonal Trigger	Focal Resource	Trawling by target fishery
Snow Crab Bycatch Limitation Zone	90,000	Sustainable Production	Control bycatch by groundfish trawlers	Conditional	Uniform Multiple Use	Seasonal Trigger	Focal Resource	Trawling by target fishery
Bogostof Area	6,000	Sustainable Production	Conserve Aleutian Basin pollock stock	Conditional	Uniform Multiple Use	Year-round	Ecosystem	Pollock, cod, mackerel fisheries
<b><u>MPAs Primarily Intended to Preserve Cultural Resources</u></b>								
Subsistence Crab Areas	1,500	Cultural Heritage	Provide subsistence opportunities	Conditional	Uniform Multiple Use	Year-round	Focal Resource	Commercial crab fishing
Subsistence Halibut Areas	6,000	Cultural Heritage	Provide subsistence opportunities	Conditional	Uniform Multiple Use	Year-round	Focal Resource	Commercial halibut fishing

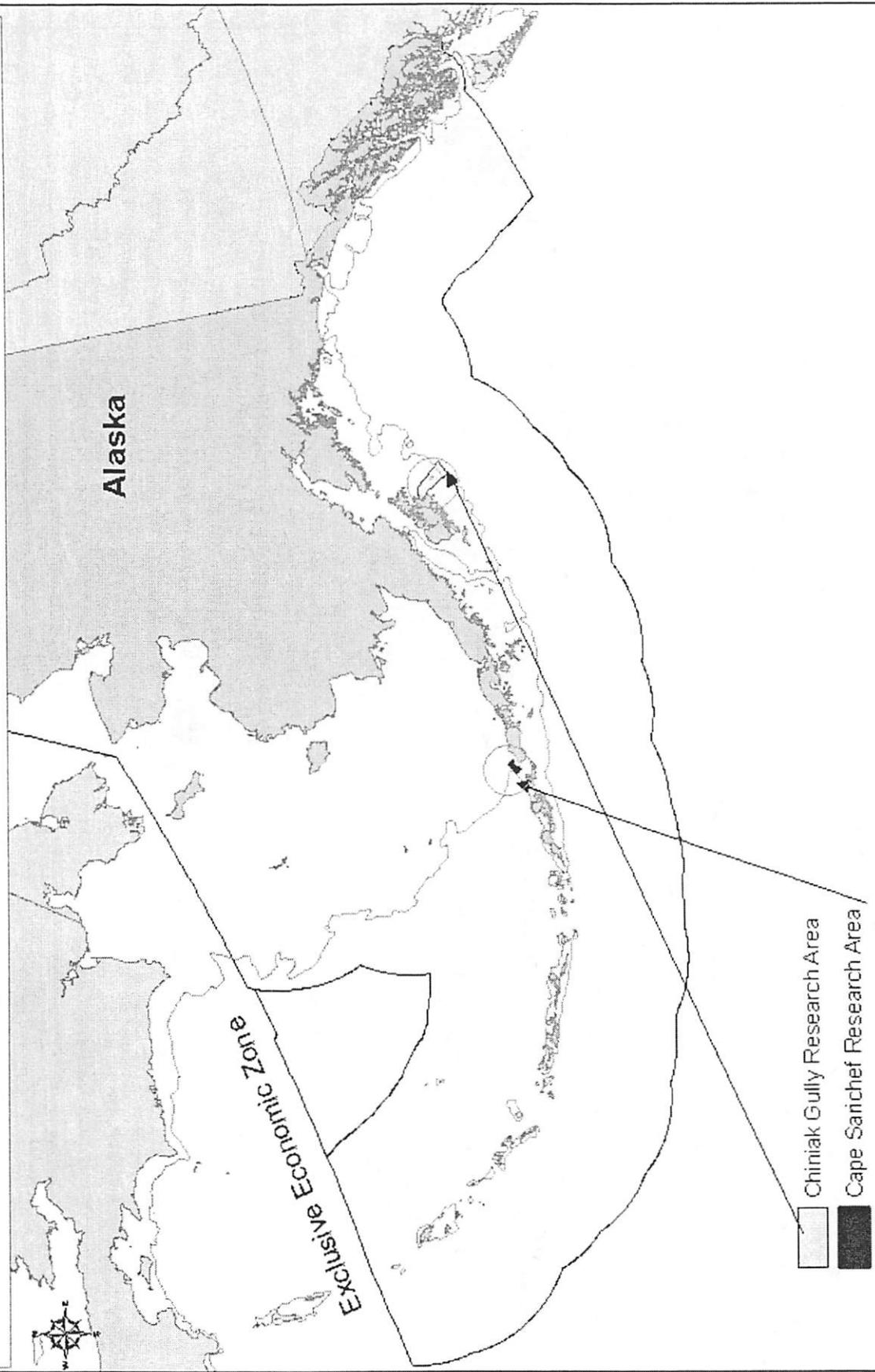
# Ecosystem Marine Protected Areas



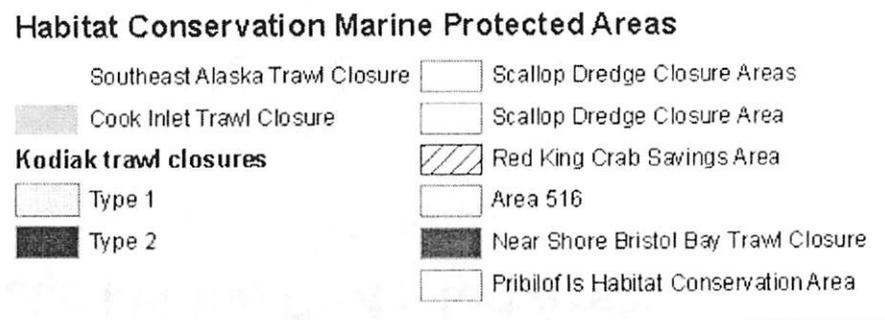
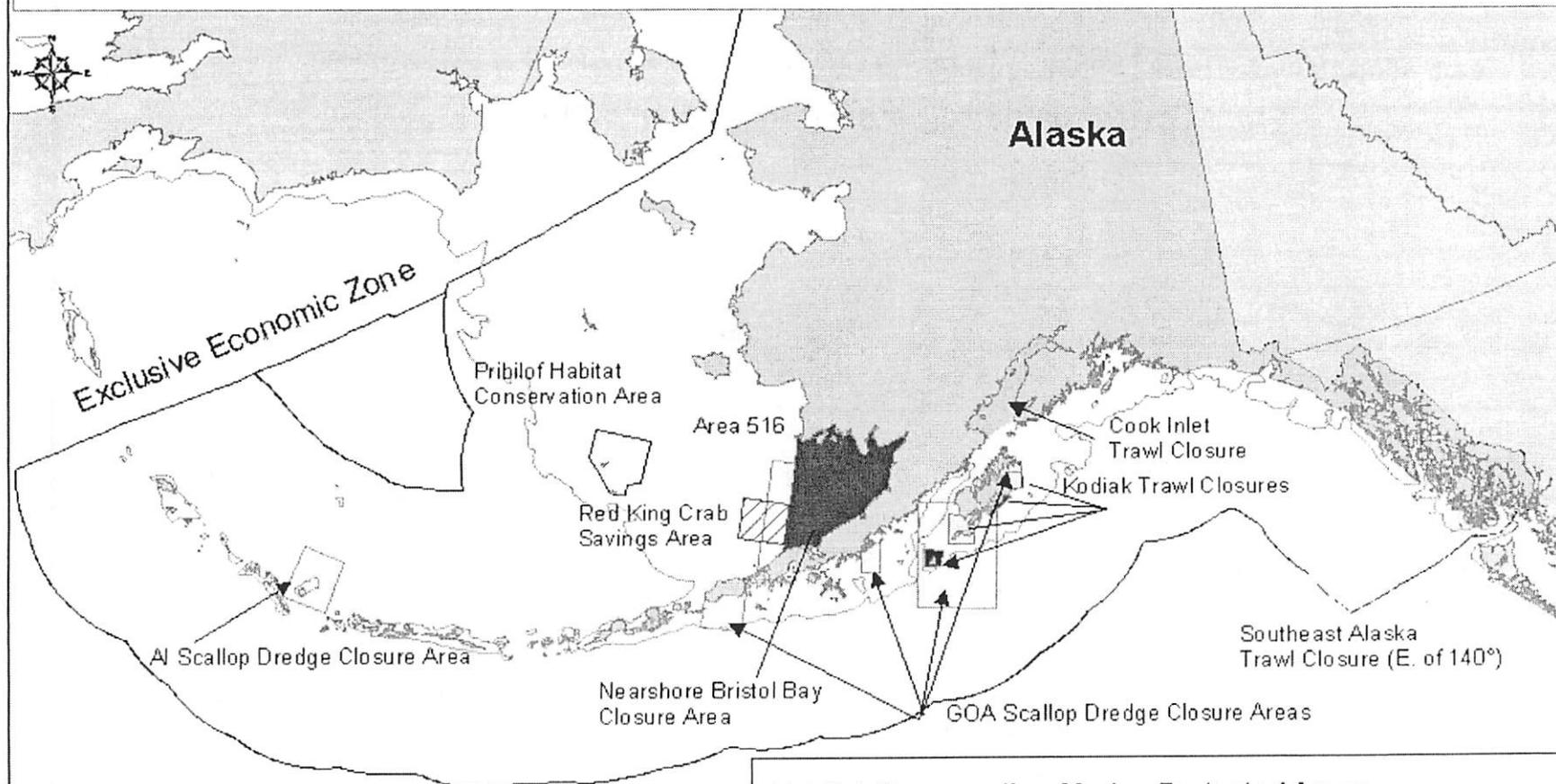
## Key to Steller Sea Lion Protection Measures

- |   |   |   |  |
|---|---|---|--|
|  | 3nm No Transit Zone                     |  | AI No Atka Mackerel after harvest limits |
|  | PWS Rookeries No Fishing                |  | BS 20nm No Atka Mackerel                 |
|  | GOA No trawl 1st half yr                |  | Bogostof No Fishing                      |
|  | GOA No trawl 2nd half yr                |  | SSL Conservation Area                    |
|  | GOA, BS No Trawling                     |  | SSL Foraging Areas                       |
|  | GOA No Atka Mackerel                    |   |  |
|  | AI critical habitat no pollock all year |   |  |
|  | AI No Hook and Line or Pot gear         |   |  |
|  | AI No Atka Mackerel all year            |   |  |

# Scientific Research Marine Protected Areas

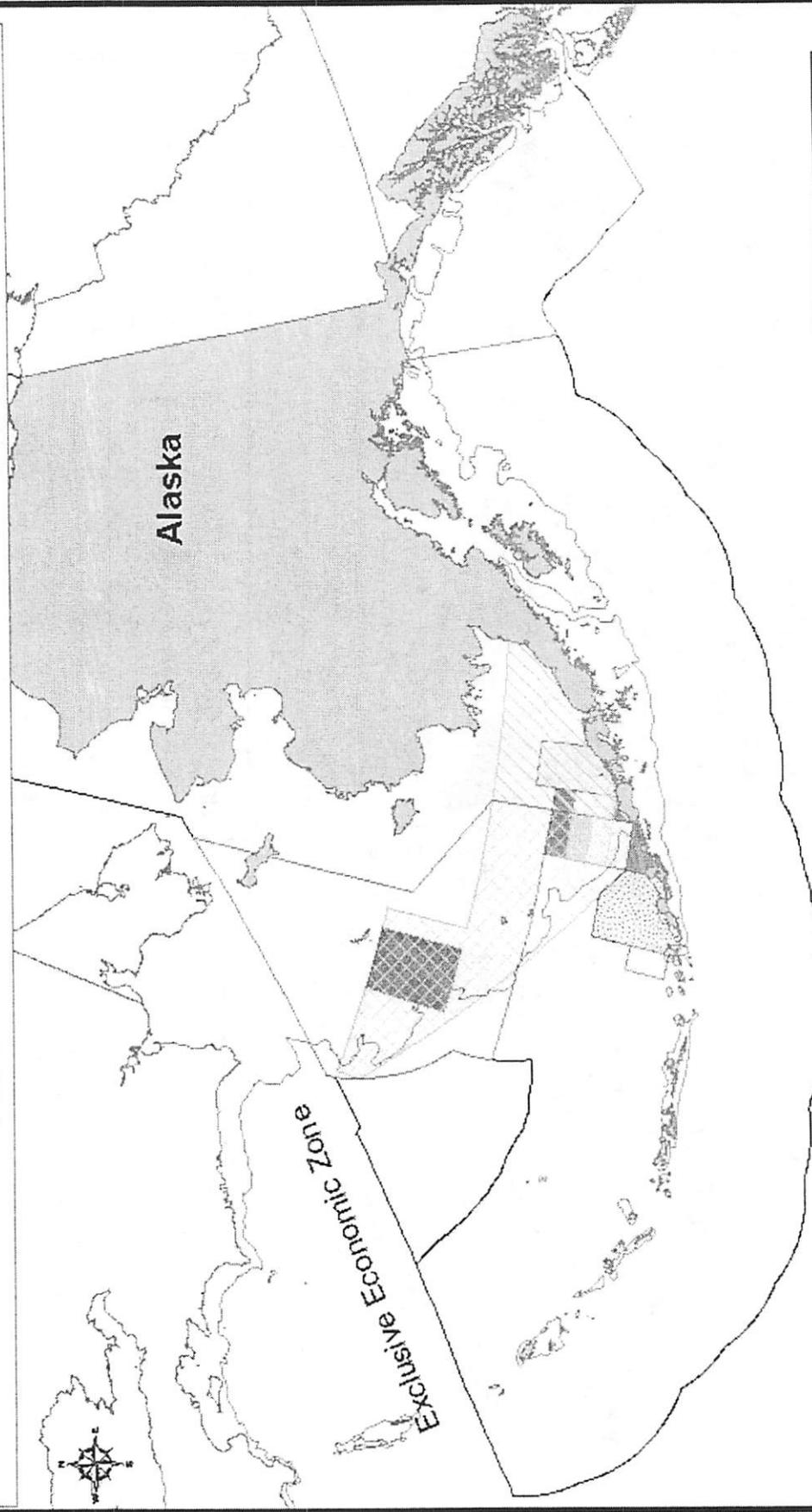


# Habitat Conservation Marine Protected Areas





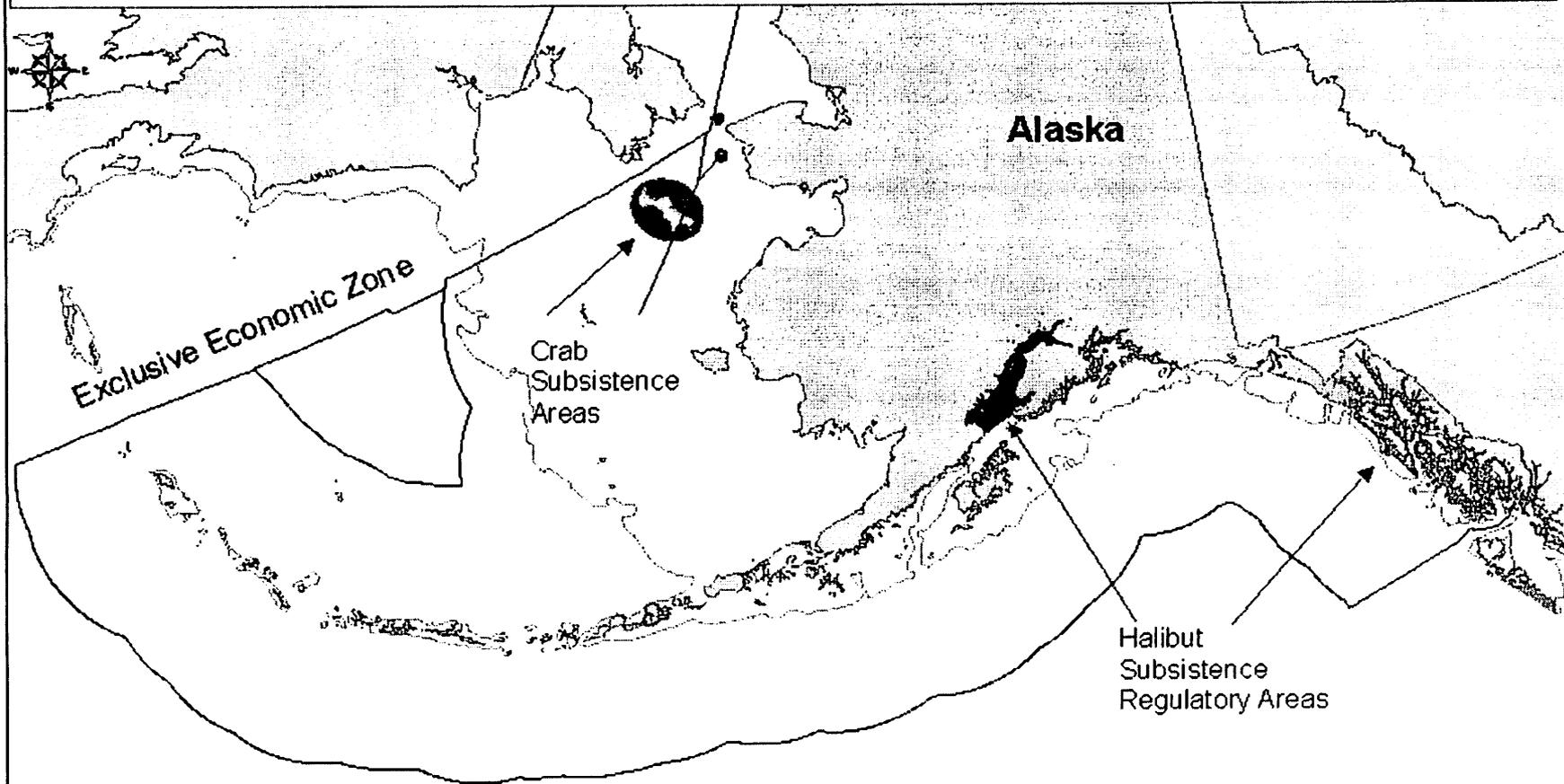
# Vulnerable Stocks Marine Protected Areas



## Vulnerable Stocks Marine Protected Areas

- |   |                                    |   |                                   |   |                       |
|---|------------------------------------|---|-----------------------------------|---|-----------------------|
|  | Salmon Fishery Closure (W of 144°) |  | Zone 1 Red King Crab              |  | Winter Savings Area   |
|  | Chum Salmon Savings Area           |  | Zone 2 Tanner Crab                |  | Summer Savings Area 1 |
|  | Chinook Salmon Savings Area        |  | C. Opilio Bycatch Limitation Zone |  | Summer Savings Area 2 |
|  | Bogoslof No Fishing                |   |                                   |   |                       |

# Cultural Resources Marine Protected Areas



## Cultural Resources Marine Protected Areas

-  Halibut Subsistence Regulatory Areas
-  Crab Subsistence Areas

**Public Testimony Sign-Up Sheet**

**and**

**Handouts Received During the  
Meeting on this Agenda Item**

# Public Testimony Sign Up Sheet

Agenda Item D-2(b) STAFF TASKING

	NAME (PLEASE PRINT)	AFFILIATION
1	Linda Rozak	Alaskan Leader Fisheries
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NOTE to persons providing oral or written testimony to the Council: Section 307(1)(I) of the Magnuson-Stevens Fishery Conservation and Management Act prohibits any person "to knowingly and willfully submit to a Council, the Secretary, or the Governor of a State false information (including, but not limited to, false information regarding the capacity and extent to which a United State fish processor, on an annual basis, will process a portion of the optimum yield of a fishery that will be harvested by fishing vessels of the United States) regarding any matter that the Council, Secretary, or Governor is considering in the course of carrying out this Act.

D-2 (8)  
Supple.  
w/IFQ Disc Pay.

AGENDA D-2(a)  
FEBRUARY 2005  
Supplemental

## PROPOSAL

Submitted by Tim Henkel

### Crew Lottery for unused small blocks of Quota Share

- 1) Lottery would be held one year after individuals holding any quota share/IFQ which has never been fished or transferred, have been given an opportunity to fish it or transfer it.
- 2) Individuals would need to make application to RAM.
- 3) There would be a 60-day window for making application.
- 4) Those individuals applying for the lottery would need bona fide crewman status i.e. Transfer Eligibility Certificate.
- 5) Lottery winners would receive all associated first generation allocation privileges.
- 6) Those individuals receiving quota would have one year (365 days) after first day of full season to fish or sell their quota shares. After that time, any unfished or non-transferred shares would by default return to the general quota share pool.
- 7) Crewman would apply by species and area.
- 8) Proposed area and species lottery breakdown.
  - A) Halibut
    - i. Area 2C - 4 Winners
    - ii. Area 3A – 10 winners
    - iii. Area 3B – 1 winner
    - iv. Area 4A – 1 winner
    - v. Area 4B – 1 winner
    - vi. Area 4C – 1 winner
  - B) Sablefish
    - i. Bering Sea – 1 winner
    - ii. Central Gulf – 1 winner
    - iii. SouthEast – 1 winner
    - iv. Western Gulf – 1 winner
    - v. West Yakitat – 1 winner
- 9) Quota share awarded in the lottery would maintain its area and vessel restrictions; however, all lottery quotas would be designated unblocked.

**WHO IS LIKELY TO BENEFIT?** Community Development Quota program participants.

**WHO IS LIKELY TO SUFFER?** No one.

**OTHER SOLUTIONS CONSIDERED?** None.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-04-F-290)

\*\*\*\*\*

**PROPOSAL 421 - 5 AAC 34. King Crab Fishery; 5 AAC 35; Tanner Crab Fishery; and 5 AAC 39 General Provisions.** Develop and modify regulations as follows:

Develop and modify regulations to implement Bering Sea/Aleutian Islands crab rationalization.

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**WHAT WILL HAPPEN IF NOTHING IS DONE?** BS/AI crab fisheries will not be rationalized.

**WILL THE QUALITY OF THE RESOURCE HARVESTED OR PRODUCTS PRODUCED BE IMPROVED?** Rationalized crab fisheries are expected to improve the quality of harvested products by slowing the race for fish and allowing better product handling.

**PROPOSAL 419 - 5 AAC 58.022(b). Waters; seasons; bag, possession, and size limits; and special provisions in the Cook Inlet—Resurrection Bay Saltwater Area, and 5 AAC 77.516(1). Personal use Tanner crab fishery. Amend these regulation as follows:**

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**PROBLEM:** No Tanner fishery.

**WHAT WILL HAPPEN IF NOTHING IS DONE?** Lost opportunity.

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**WHO IS LIKELY TO BENEFIT?** Winter crab fishermen, the department will benefit from increased information.

**WHO IS LIKELY TO SUFFER?** No one.

**OTHER SOLUTIONS CONSIDERED?** Seasons other times of the year. Invites higher levels of participation than can be safely supported by this fishery.

**PROPOSED BY:** Homer Advisory Committee (HQ-04-F-037)

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**WHO IS LIKELY TO BENEFIT?** Community Development Quota program participants.

**WHO IS LIKELY TO SUFFER?** No one.

**OTHER SOLUTIONS CONSIDERED?** None.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-04-F-290)

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**PROBLEM:** No Tanner fishery.

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**WHO IS LIKELY TO SUFFER?** No one.

**OTHER SOLUTIONS CONSIDERED?** Seasons other times of the year. Invites higher levels of participation than can be safely supported by this fishery.

**PROPOSED BY:** Homer Advisory Committee (HQ-04-F-037)

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**PROPOSED BY:** Alaska Department of Fish and Game (HQ-04-F-290)

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**PROPOSAL 421 - 5 AAC 34. King Crab Fishery; 5 AAC 35; Tanner Crab Fishery; and 5 AAC 39 General Provisions.** Develop and modify regulations as follows:

Develop and modify regulations to implement Bering Sea/Aleutian Islands crab rationalization.

**PROBLEM:** The North Pacific Fishery Management Council is rationalizing specific crab fisheries that are managed by a cooperative state/federal regime under the Bering Sea/Aleutian Islands King and Tanner Crab FMP. Rationalized crab fisheries are scheduled to begin in August 2005. Substantial changes to state regulations will be necessary to provide for rationalization to occur. The board has established a task force to help develop regulatory proposals. Specific regulatory change is expected in the fall of 2004 and during the spring 2005 Board of Fisheries regulatory meetings. Therefore this proposal is submitted as a placeholder. The board is expected to consider proposals that relate to Category 2 and 3 management measures in the crab FMP. Issues that the board will likely need to consider, but is not limited to, include:

- Convert GHL to defined TAC without inseason adjustment (FMP Category 2, GHL)
- Modify CDQ fishing season (FMP Category 2, Fishing seasons)
- Hail in, Hail out requirements (FMP Category 3, Reporting requirements)
- Delete AFA Management Plan (FMP Category 2 Harvest limitations for AFA vessels)
- Implement VMS (FMP Category 2, Closed waters; other, such as Category 1)
- Adopt reporting and weighing requirements (FMP Category 3, Reporting requirements)

- Review existing fishing seasons (FMP Category 2, Fishing seasons)
- Structure of fishing seasons to permit concurrent species harvest (FMP Category 2, Fishing seasons)
- Review pot limits (FMP Category 2, Pot limits)
- Modify gear placement and removal requirements (FMP Category 3, Gear placement and removal)
- Modify operation of other gear (FMP Category 3, Other)
- Review gear, bycatch reduction measures (FMP Category 3, Gear)
- Observers – increased coverage and duties, C/P monitoring (FMP Category 3, State observer requirements)
- Modify landing requirements (FMP Category 3, Other)
- Registration areas (FMP Category 2, Registration areas)
- Establish CDQ fisheries for king crab in the Aleutian Islands (FMP Categories 2 and 3)
- Modify gear marking requirements (FMP Category 3, Other)

**WHAT WILL HAPPEN IF NOTHING IS DONE?** BS/AI crab fisheries will not be rationalized.

**WILL THE QUALITY OF THE RESOURCE HARVESTED OR PRODUCTS PRODUCED BE IMPROVED?** Rationalized crab fisheries are expected to improve the quality of harvested products by slowing the race for fish and allowing better product handling.



**PROPOSAL 419 - 5 AAC 58.022(b). Waters; seasons; bag, possession, and size limits; and special provisions in the Cook Inlet—Resurrection Bay Saltwater Area, and 5 AAC 77.516(1). Personal use Tanner crab fishery. Amend these sregulation as follows:**

Open sport/personal use Tanner fishery in Kachemak Bay during November and December with a limit of five crab per person per day and two pots per boat.

**PROBLEM:** No Tanner fishery.

**WHAT WILL HAPPEN IF NOTHING IS DONE?** Lost opportunity.

**WILL THE QUALITY OF THE RESOURCE HARVESTED OR PRODUCTS PRODUCED BE IMPROVED?** This proposal offers a low impact opportunity for fresh crab.

**WHO IS LIKELY TO BENEFIT?** Winter crab fishermen, the department will benefit from increased information.

**WHO IS LIKELY TO SUFFER?** No one.

**OTHER SOLUTIONS CONSIDERED?** Seasons other times of the year. Invites higher levels of participation than can be safely supported by this fishery.

**PROPOSED BY:** Homer Advisory Committee (HQ-04-F-037)

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**PROPOSAL 420 - 5 AAC 39.690(e). Bering Sea/Aleutian Islands King and Tanner Crab Community Development Quota (CDQ) Fisheries Management Plan. Prohibit a CDQ group from possible over fishing before a catch transfer has occurred as follows:**

(e)(6)(D): A CDQ group, and a vessel participating in a CDQ fishery for a CDQ group, may not take CDQ crab on board, or deliver CDQ crab unless the CDQ group's quota is greater than or equal to the amount of CDQ crab brought onboard a CDQ vessel plus any CDQ crab previously landed during the CDQ fishery for that species.

**PROBLEM:** The Bering Sea-Aleutian Islands King and Tanner Crab Community Development Quota (CDQ) Fisheries Management Plan requires that the department will calculate an overall CDQ fishery allocation in pounds based on the federal CDQ allocation and the total general fishery harvest. In addition, the department is required to calculate the poundage of king and Tanner crab as specified in the federal CDQ allocation that may be taken by each CDQ group. The CDQ groups are required to manage their fishing activities so that they do not exceed their group's quota. During recent fishing seasons, some groups have continued to fish and exceed their quota, counting on after-the-fact transfers of quota from other groups to take place and cover the excess harvest

**WHAT WILL HAPPEN IF NOTHING IS DONE?** Program participants may continue to fish and exceed individual group quotas, with the intent of transferring poundage from another CDQ group to cover the harvest that exceeds the group's allocation. If other groups do not have available poundage to transfer, the overall CDQ quota may be exceeded.

**WILL THE QUALITY OF THE RESOURCE HARVESTED OR PRODUCTS PRODUCED BE IMPROVED?** No.

**WHO IS LIKELY TO BENEFIT?** Community Development Quota program participants.

**WHO IS LIKELY TO SUFFER?** No one.

**OTHER SOLUTIONS CONSIDERED?** None.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-04-F-290)

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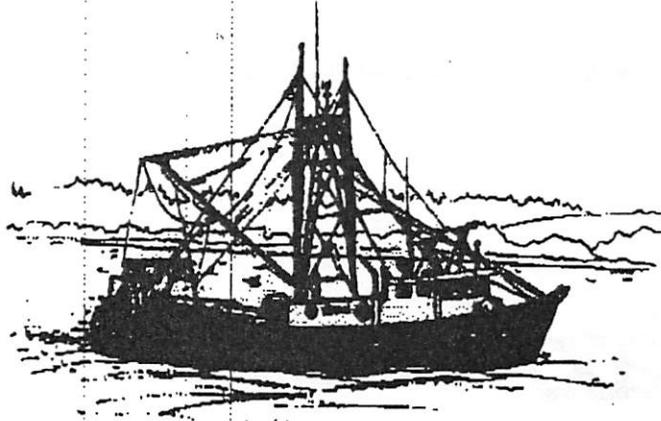
**WILL THE QUALITY OF THE RESOURCE HARVESTED OR PRODUCTS PRODUCED BE IMPROVED?** No.

**Mar Pacifico, Inc. c/o**  
**F/V Mar Pacifico**

P. O. Box 1

South Bend, Washington 98586

(360) 875-5672



February 3, 2005

Dear Mrs. Stephanie Madison, Chairman of NPFMC in Juneau, Alaska:

Reference: Captain Wayne Tipler of the F/V Mar Pacifico Chemical Sensitive/Request for cameras on board vessel to replace Federal Observers.

This letter is written to request that NMFS install cameras on board the F/V Mar Pacifico, Documentation #524001 due to Captain Wayne Tipler's multiple chemical sensitivity.

Captain Wayne Tipler has spent hundreds of hours over the last five years ridding his body of chemicals.

His body is so sensitive to chemicals that once he boards the F/V Mar Pacifico he does not leave the vessel. His condition is well known in the City of Kodiak by all vendors within the City including NMFS Enforcement Agents Officer Hillary and Office Gould. We know of individuals who have this condition and who have had cameras installed on their vessel.

As the owner of the F/V Mar Pacifico I would like to request in writing that our vessel, the F/V Mar Pacifico be granted installation of cameras solely on the multiple chemical sensitivity of Captain Wayne Tipler.

Thank you for your immediate attention referencing my written request.

Sincerely,

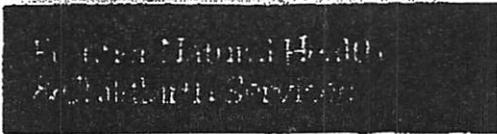
*Christina R. Bolice*

Secretary/Treasurer of Mar Pacifico Inc.

Sent by fax on 2/3/05 to fax # (907) 271-2817

cc: Mr. Wayne Tipler

1020 East Road Homer, AK 99603 (907) 235-3665



# Fax

To: Stephanie Madsen From: Laura

Fax: 907-271-2817 Page: 1

Phone: \_\_\_\_\_ Date: 2/4/05

Re: \_\_\_\_\_ CC: \_\_\_\_\_

- Urgent     For Review     Please Comment     Please Reply     Please Recycle

• Comments.

**WARNING: This Fax contains medical information**

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Frontier Natural Health  
& Childbirth Services

Dr. Patrick C. Huffman

1020 East Rd. • Homer, Alaska 99603  
 Soldotna: (907) 260-7725 • Email: herbdoc@xyz.net  
 Homer: 235-3665 phone • 235-3691 fax

Wayne Tipler

2/4/05

Due to a medical condition for which Mr. Tipler is currently being treated, it is imperative that he avoid exposure to all Volatile Chemicals. i.e. perfume, deodorant, paint, etc