

# Federal Groundfish Fisheries MPAs in US Arctic Presentation to the Arctic MPA Workgroup – November 2015



**David Witherell**

**North Pacific Fishery Management Council**

**[www.npfmc.org](http://www.npfmc.org)**



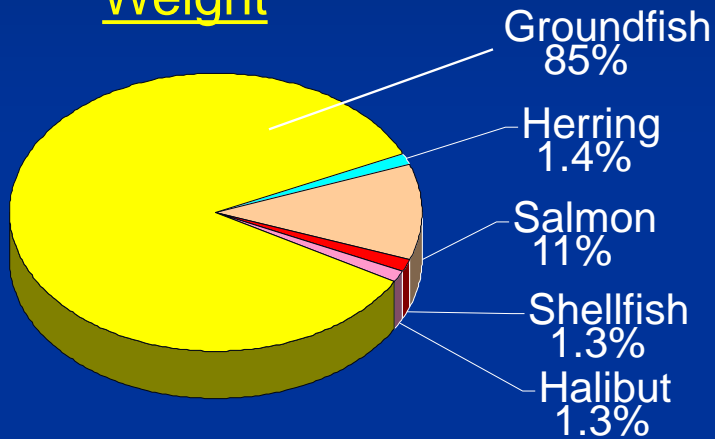
# Alaska Fisheries Catch

Catch Weight ~ 2,500,000 Metric Tons/yr

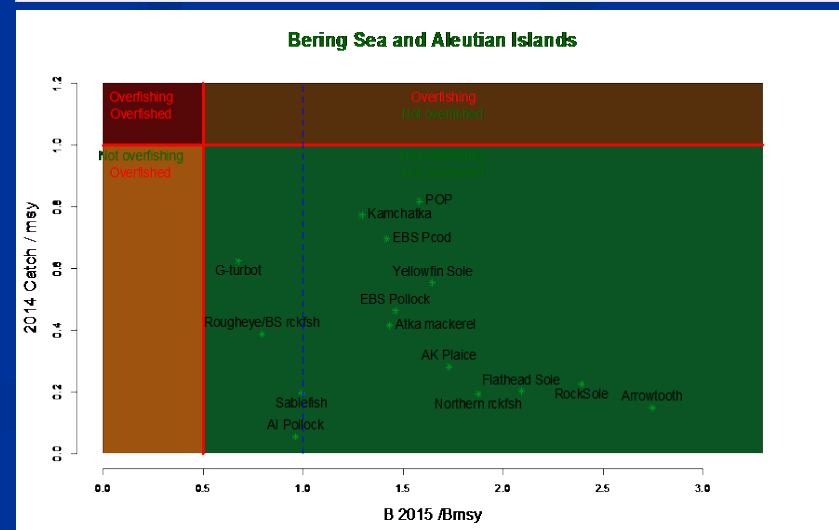
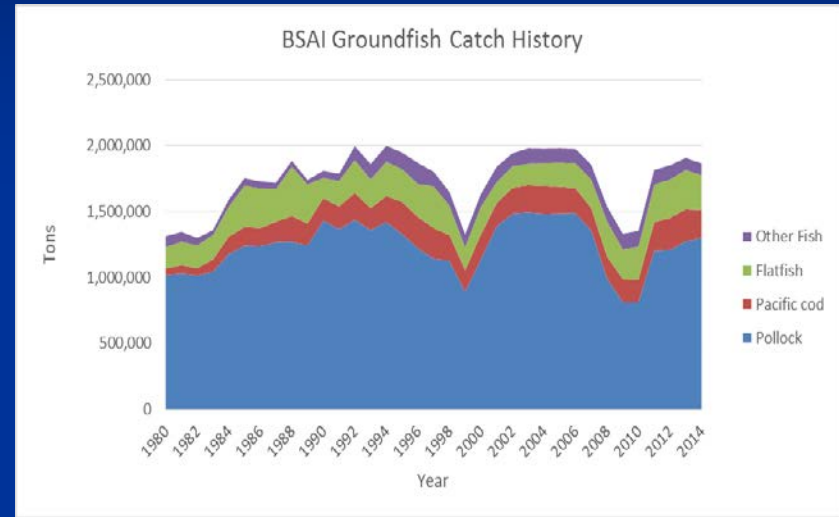
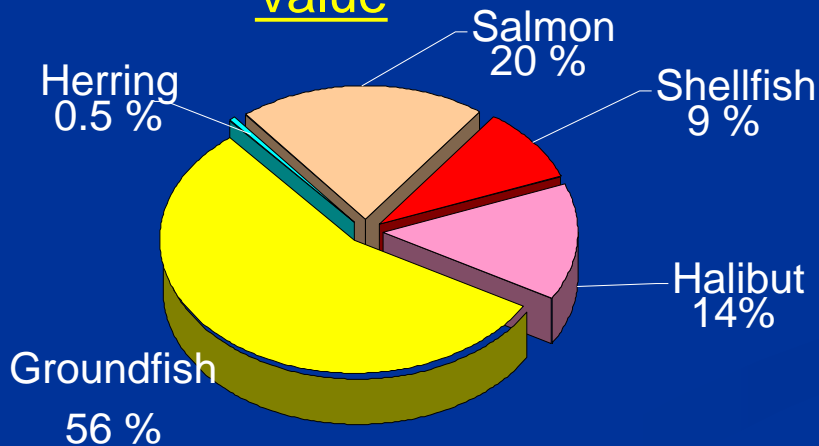
Catch Value ~ \$2 Billion ex-vessel/yr

Fishery Jobs ~ 60,000

## Weight

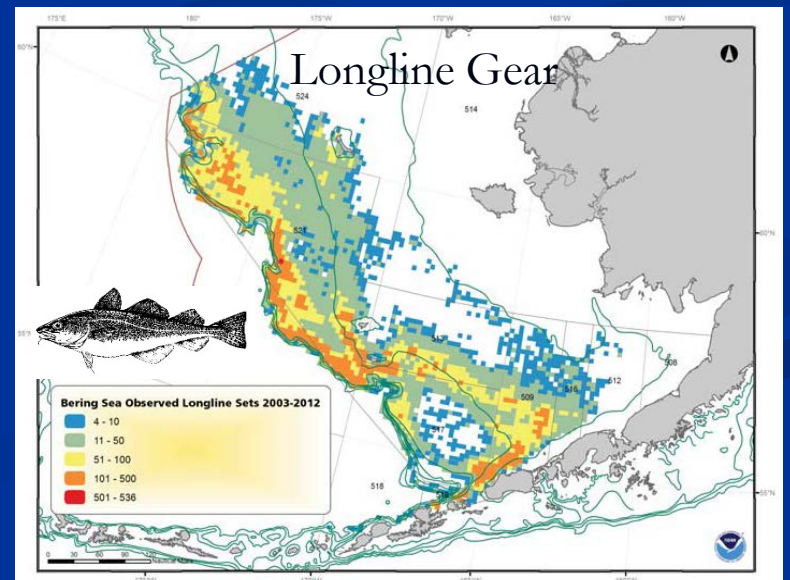
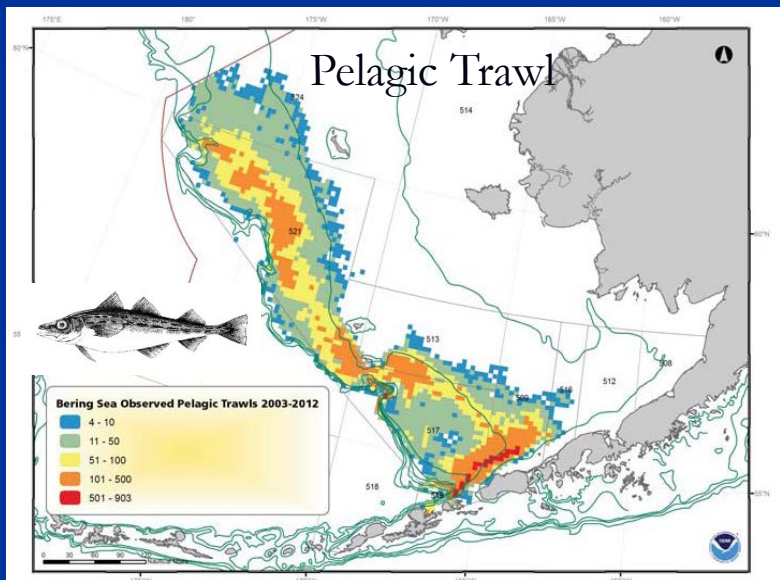
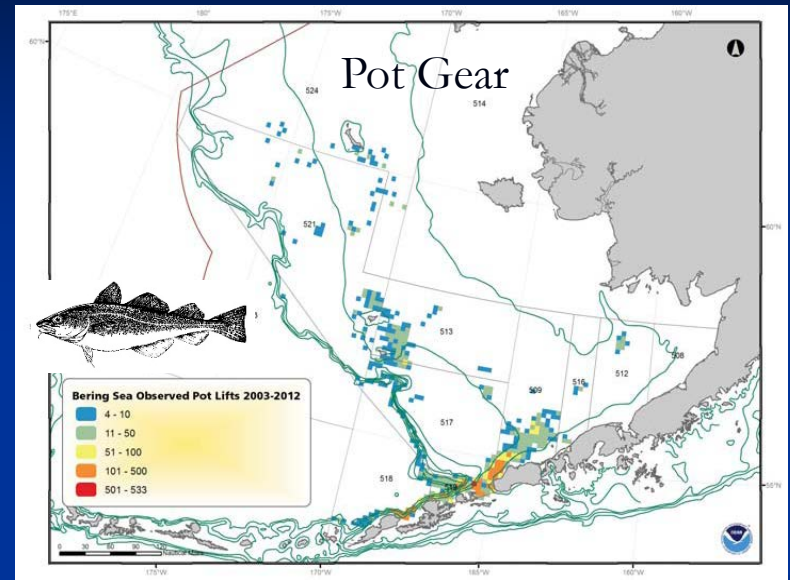
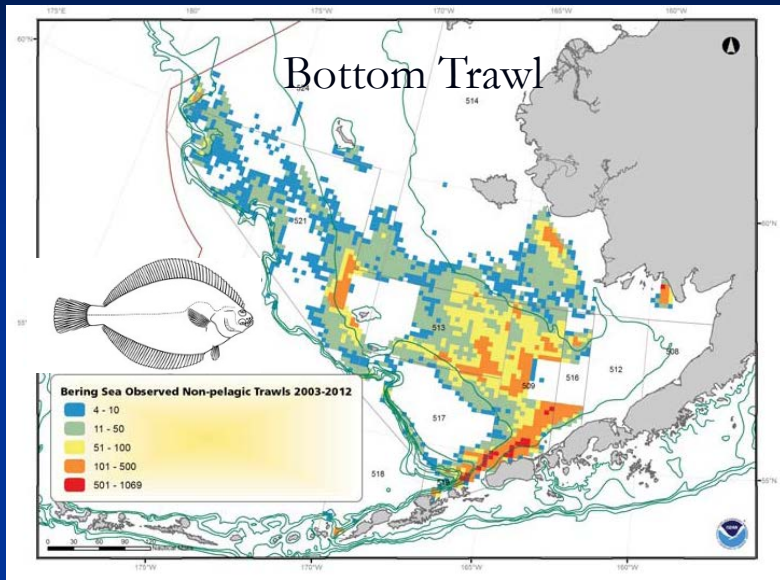


## Value





# Effort Distribution: Groundfish Fisheries



# The Toolbox for Managing Fisheries in the North Pacific

## Foundation

- Strong **science** and research base, peer review, and adherence to scientific advice
- Effective and timely reporting, accounting, **in-season management**, and enforcement
- Comprehensive **observer monitoring** program
- Economic and **environmental impact analysis** of proposed changes w/ scientific review
- Bottom-up process with **stakeholder involvement** in development of regulations
- Open and **transparent regulatory process** that is responsive to new information

## Regulatory Tools

- Limits on entry; Cooperatives and IFQ programs
- Allocation
- Fishing Seasons
- Catch limits and OY caps
- Limits on bycatch and retention
- Gear requirements
- Area closures

## Non-Regulatory Measures

- Fleet can efficiently address unforeseen bycatch issues (e.g., salmon, squid)
- Fleet can study and implement measures difficult to regulate (e.g., excluders, careful release)

# Why MPAs?

- **Ecological Structure:** Areas are closed to reduce disturbance of walrus at haulouts; reduce competition for prey for Steller sea lions
- **Preserve Scientific Understanding:** The Northern Bering Sea closed to trawling to allow scientific study of impacts. Arctic area closed to all fishing as a precautionary measure due to lack of scientific data.
- **Conserve Habitat:** Many areas with sensitive/less resilient habitats with deep-sea corals, sponges, or other living substrate that can be damaged by fishing have been closed to gear that can impact this habitat.
- **Protect Vulnerable Stocks:** Some closures have been implemented to protect crabs and crab habitats that are particularly sensitive to disturbance and unobserved mortality.
- **Preserve Cultural Resources:** Closure areas have been designed to reduce interaction of commercial and subsistence fisheries and habitats for subsistence resources (e.g., Kuskokwim Bay).

There are nearly 200 individual MPA sites for fisheries in the Arctic.

# Why not MPAs?

- **Prohibiting fishing in an area moves and concentrates effort in other areas.** Can cause more problems by pushing fleet to area with more vulnerable habitat, higher bycatch, more gear interactions, increase mammal and bird interactions, less safe fishing areas, etc.
- **Fish move!** MPA boundaries don't.
- **Other solutions can be more optimal:** Gear requirements, bycatch limits, monitoring, voluntary measures, etc.

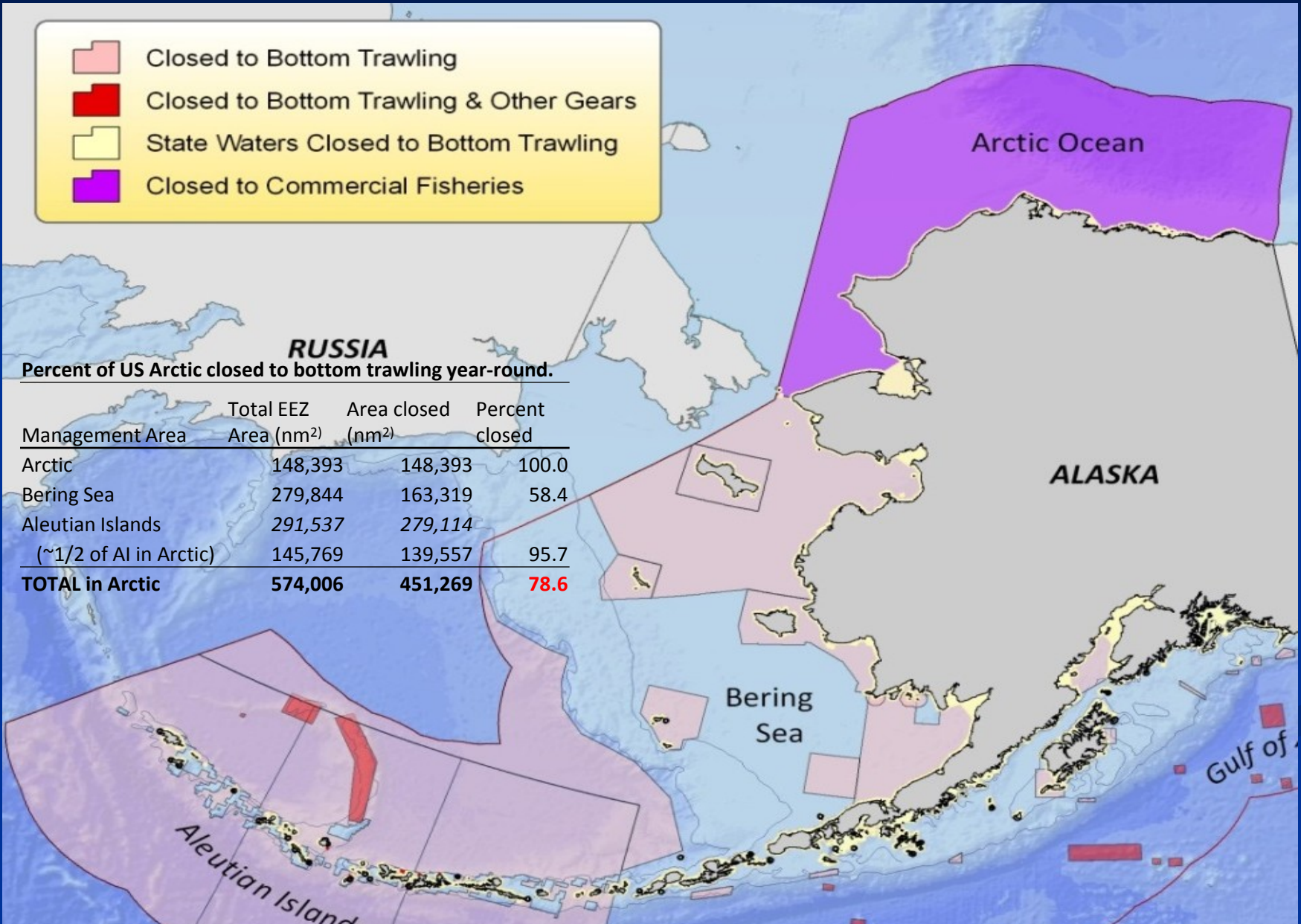
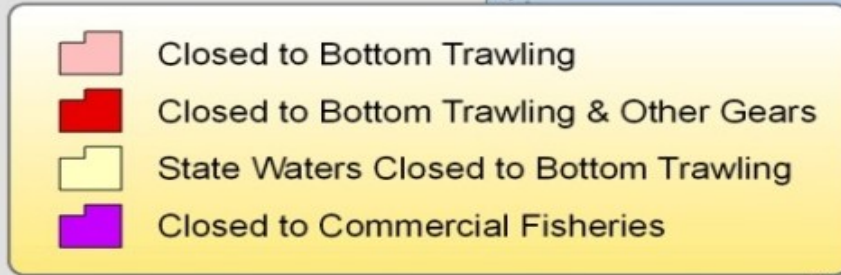
Example: Closure areas based on historic high bycatch rates were implemented to minimize chinook and chum salmon bycatch, but **the salmon moved** to different areas, **and bycatch increased!** *Replaced with bycatch incentive caps: fleet moves away from high areas & uses excluder gear = bycatch reduced.*

- Closed areas considered but rejected to reduce incidental catch of seabirds, juvenile halibut bycatch, skate nurseries, etc.
- Existing MPAs should be reexamined regularly to accommodate distributional shifts resulting from climate change.



# Year-round Closure Areas

(not including Steller sea lion closures)



## RUSSIA

Percent of US Arctic closed to bottom trawling year-round.

Management Area	Total EEZ Area (nm <sup>2</sup> )	Area closed (nm <sup>2</sup> )	Percent closed
Arctic	148,393	148,393	100.0
Bering Sea	279,844	163,319	58.4
Aleutian Islands	291,537	279,114	
(~1/2 of AI in Arctic)	145,769	139,557	95.7
<b>TOTAL in Arctic</b>	<b>574,006</b>	<b>451,269</b>	<b>78.6</b>

# Closure Areas for Sea Lions

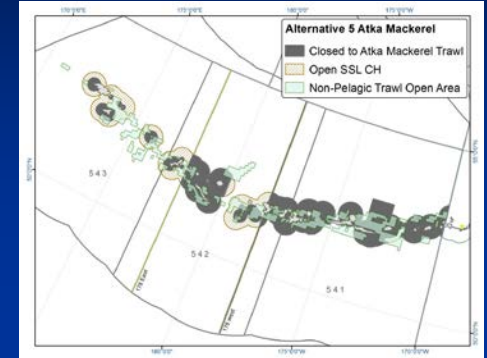
Pacific cod Trawl



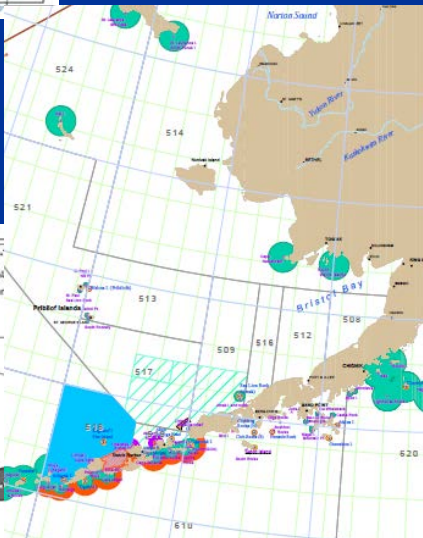
3 nm closures around rookeries and haulouts to all vessels

Fishery and gear specific closures 0-20 nm, plus large foraging areas, to reduce potential competition for prey (pollock, cod, and mackerel).

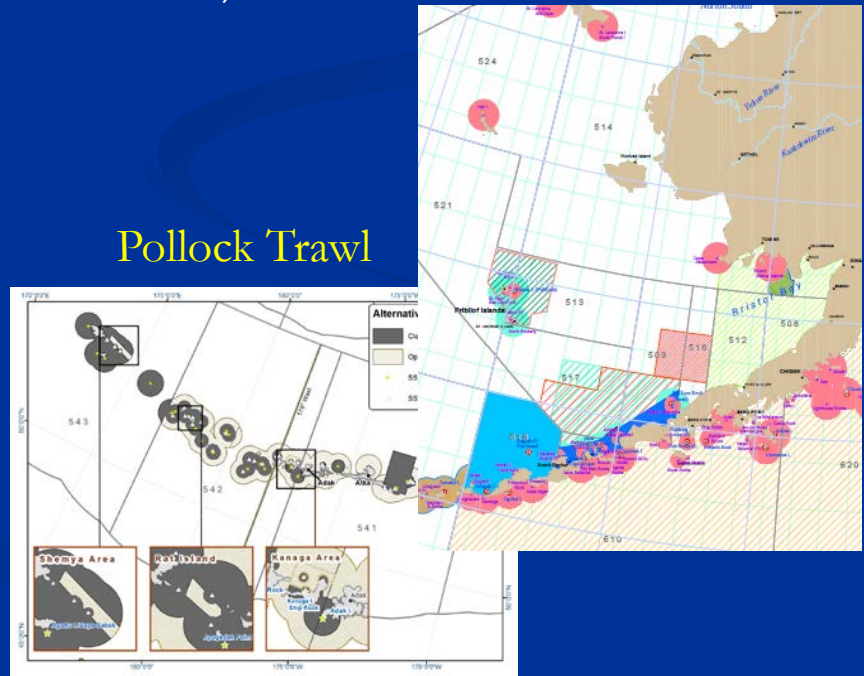
Atka mackerel



Pacific cod Longline and Pots



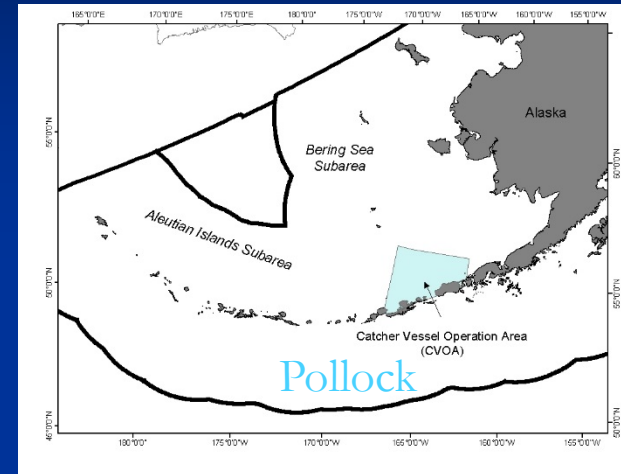
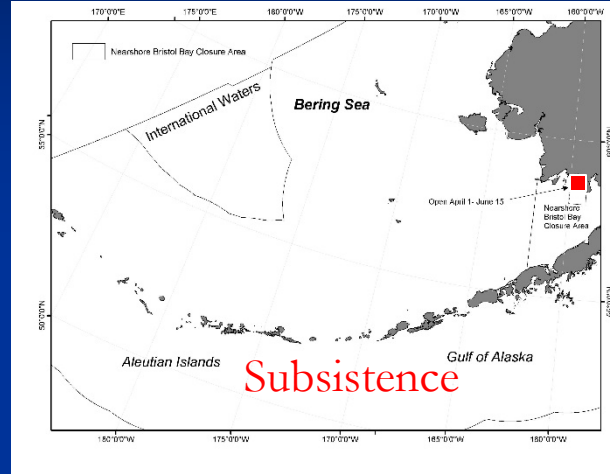
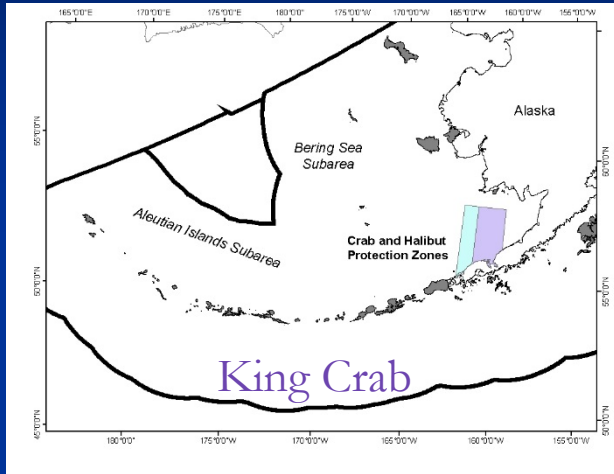
Pollock Trawl



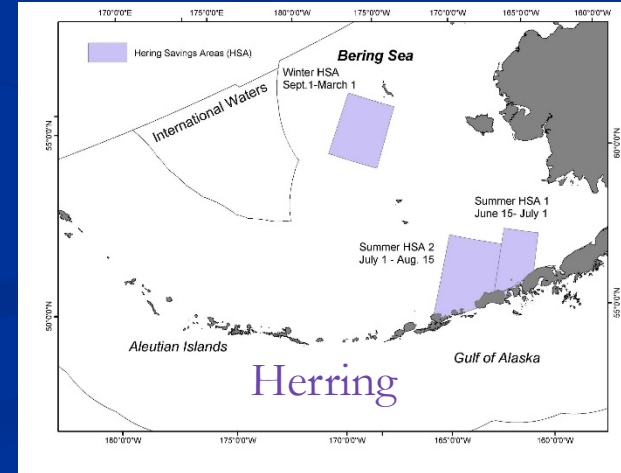
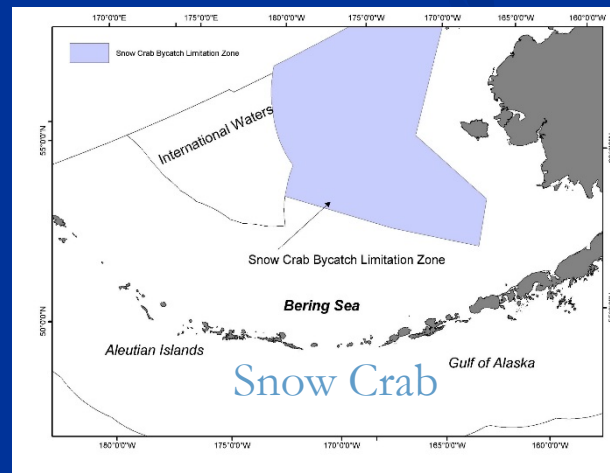
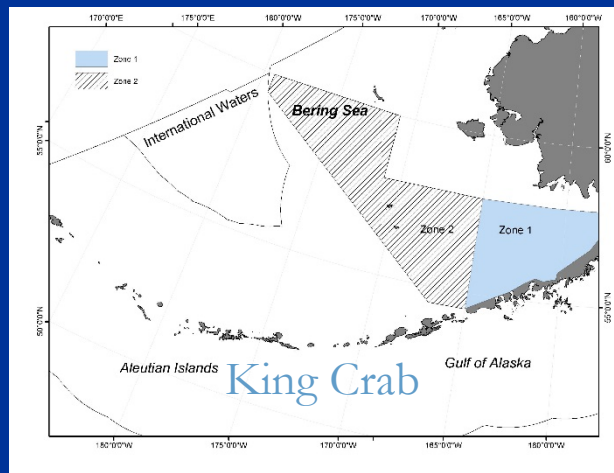


# Other Closure Areas

## Seasonal Closure Areas



## Bycatch Limit Closure Areas



# Activities, Threats, and Opportunities

- What are the primary management activities you are currently undertaking for marine resources in the MPAs you manage? **Maintaining sustainable yields using a precautionary ecosystem-based approach to fisheries management.**
- What are the major threats or vulnerabilities to your sites, and how are you currently addressing these threats? **No major threats to MPA sites.**
- What are the major opportunities for enhancing marine resource management at existing sites? **No enhancement is needed.**
- How could an MPA network approach assist your agency in meeting its conservation goals? **Council regularly networks with NMFS, USFWS, ADF&G, ABOF, IPHC, USCG, PSMFC, and State Dept. Also MPAs are discussed at meetings of Alaska Marine Ecosystem Forum (NPFMC, NMFS, USFWS, BOEM, NPS, BLM, EPA, USFS, USCG, COE, DOD, DEC, ADF&G, DNR, DCCED).**

# Ecological Network of MPAs?

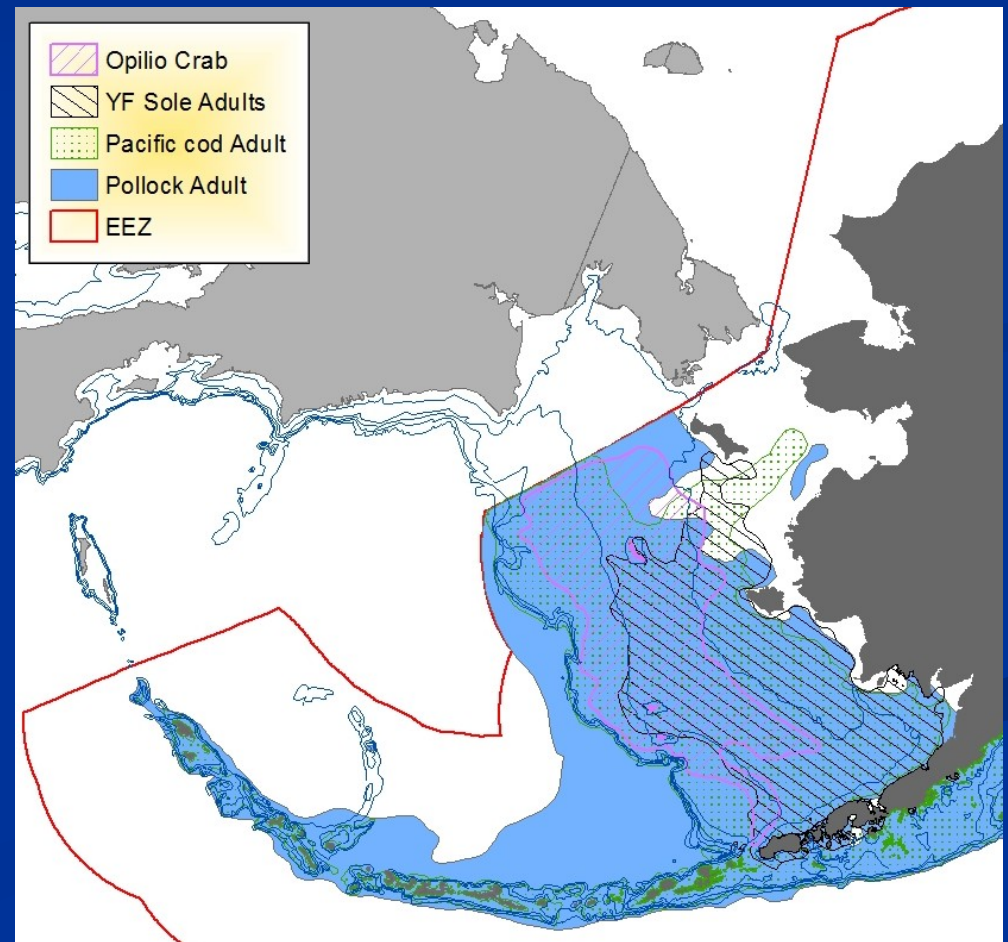
## Our Experience with Essential Fish Habitat (EFH)

The Magnuson-Stevens Act requires the Councils and NMFS to identify EFH, and minimize to the extent practicable adverse effect on EFH caused by fishing.

EFH is waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity for fish species covered by an FMP. EFH is defined and mapped for adults, juveniles, larvae, and eggs.

**Result = EFH is everywhere, many times over.**

Example: This map shows multiple overlap for *only* the adult stages of *only* 4 species of fish.





# Take home messages

Alaska **fisheries are sustainably managed** using an ecosystem-based precautionary approach with annual catch limits as the foundation. Alaska fisheries are worth \$2.5 billion exvessel /year and support 60,000 jobs.

MPAs are only one tool used for management; it is a blunt tool that concentrates fishing effort – **Fish move, MPA boundaries don't.**

**MPAs can impose enormous costs** to the fishing industry, moving effort to less optimal locations (lower catch rates, higher bycatch rates, as well as higher fuel use, longer travel times, and other operational costs ).

There are **hundreds of fishery MPA sites in Alaska already**, and only a limited area is left open to fishing for groundfish.

Creating a comprehensive '**ecological network**' of MPAs designed to protect all life stages of all species in the ecosystem **is unworkable. Every square inch of the Bering Sea and Aleutian Islands is essential fish habitat** for the 148 managed groundfish species.

# For further information on Federal Fisheries

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

DAVID WITHERELL and DOUG WOODY

### Introduction

Marine protected areas (MPAs) are an important tool for managing fisheries and other human activities in the ocean. As defined by Executive Order 13158 (Clinton, 2000), a marine protected area is "any area of the marine environment that has been reserved State, tribal, territorial, or local regulations to provide lasting for part or all of the natural resources therein."

MPAs have been established to meet several 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 sensitive fisheries (National Research

Habitat Commission has authority to exact conservation measures, including MPAs, for the Pacific halibut, *Hippoglossus stenolepis*, fishery. States can also develop MPAs in Federal waters to restrict activities of fisheries managed by the state and for those fisheries not subject to seasonal Federal fishery

## Ecosystem-based Management for Protected Species in the North Pacific Fisheries

JEANNIE M. HELTZEL, DAVID WITHERELL, and WILLIAM J. WILSON

### Introduction

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**ABSTRACT**—Fisheries managers have established many marine reserves (MPAs) in the Federal and off Alaska to protect ecologic and economic resources. While scientific research studies, on the habitat, protect vulnerable protect cultural resources, it achieve multiple objectives. On MPAs, many of which include encompass virtually all Fed off Alaska and most of the where commercial fisheries of the MPA's include measures to particular fisheries or gear type (bottom trawls) on a seasonal or basis, and several MPAs prohibit all commercial fishing. Although MPAs is difficult to an individual basis, as a group important component of the program for sustainable fishery serving marine biodiversity off

Jeannie Helzel is with the North Pacific Fishery Management Council in Corvallis, Oregon (email jeannie.helzel@npfmc.org). David Witherell is Deputy Director of the North Pacific Fishery Management Council. William Wilson is retired from the Alaska Department of Fish and Commercial Fisheries. He expressed or implied are those and do not necessarily reflect the National Marine Fisheries Service

jects to the fullest extent consistent with applicable law. An ecosystem-based strategy to manage marine ecosystems (Francis et al., 2007; Marasco et al., 2007; Witherell, 2009).

ICES Journal of Marine Science, 57: 771-777, 2000  
doi:10.1006/jmsc.2000.0719, available online at <http://www.elsevier.com/locate/jmsc>

## An ecosystem-based approach for Alaska groundfish fisheries

David Witherell, Clarence Pautzke, and David Fluhraty

Witherell, D., Pautzke, C., and Fluhraty, D. 2000. An ecosystem-based approach for Alaska groundfish fisheries. ICES Journal of Marine Science, 57: 771-777.

An ecosystem-based approach is being used in the North Pacific Ocean off participation, reliance on scientific research comprehensive monitoring and enforce territorial and socioeconomic consider employed as a precautionary approach to groundfish stocks are considered healthy million tonnes annually. Management in impacts of fishing on seabed habitat and mammals and seabirds.

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Key words: Alaska, ecosystem, groundfish  
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### Introduction

Ecosystem-based management strategy widely adopted throughout the United States and freshwater aquatic systems management is being applied to marine ecosystems (Research Council, 1999). Fisheries management in numerous ways. Population dynamics can be affected by harvest, migration, and mortality. Fisheries can also affect disturbance, nutrient cycling, and species, pollution, and other ecosystem components can be affected by harvest, migration, and mortality. Fisheries can also affect disturbance, nutrient cycling, and species, pollution, and other ecosystem components can be affected by harvest, migration, and mortality.

The North Pacific Fishery Management Council is a regional organization

1054-3136/00/00771-07 \$20.000

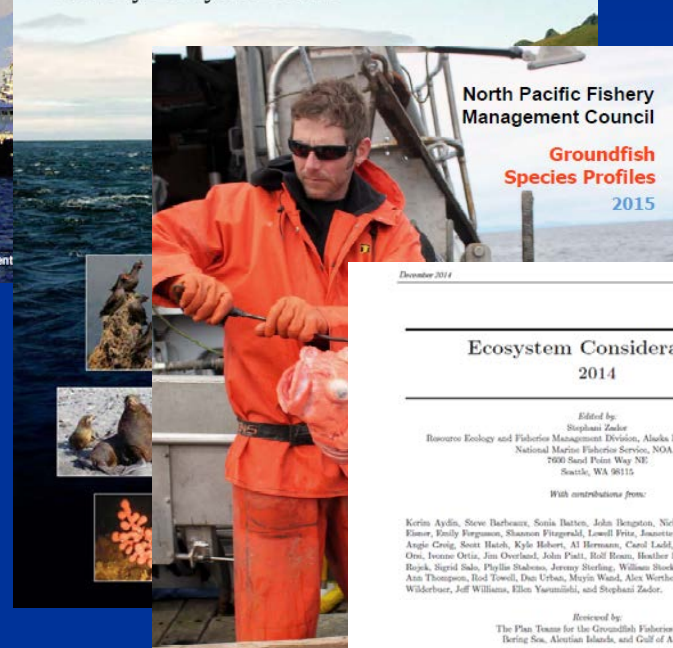
## North Pacific Fishery Management Council

### Fishing Fleet Profiles

April 2012

[www.npfmc.org](http://www.npfmc.org)

## Overview of the Aleutian Islands Fishery Ecosystem Plan



North Pacific Fishery Management Council  
Groundfish Species Profiles  
2015

Ecosystem Considerations  
2014

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Revised by:  
The Plan Team for the Groundfish Fishery Ecosystem Plan of the Bering Sea, Aleutian Islands, and Gulf of Alaska

Biology • Management • Conservation

**COLUMN: GUEST DIRECTOR'S LINE**

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Rich, published on Cover of *ICES Journal of Marine Science*

**A New Management Plan for the Arctic Waters of the United States**

The fishery resources in the Arctic seas controlled by the United States are under a new management regime. In August 2009, the Secretary of Commerce approved a fishery management plan (FMP) for all federal waters north of Bering Strait. This FMP was a joint effort between the North Pacific Fishery Management Council (NPFMC) and National Oceanic and Atmospheric Administration (NOAA) Fisheries. The new FMP effectively closes the U.S. Arctic to commercial fishing until sufficient data become available for sustainable management of Arctic fish stocks. In this article, we describe the conception and crafting of this FMP.

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the NPFMC is authorized to conserve and manage the fishery resources of the U.S. Exclusive Economic Zone (EEZ) off Alaska (between 2 and 200 nautical miles [nm] from shore). To date, no commercial fisheries have developed in U.S. Arctic waters and the NPFMC has not had a compelling reason to develop an FMP for this region. However, due to growing concerns over global climate change and its impacts on marine ecosystems, and to continue the policy of the NPFMC and NOAA Fisheries to integrate ecosystem considerations into fisheries science and management, the NPFMC recognized the need to prepare for potential changes in U.S. northern marine waters. These changes are likely to include a reduction of seasonal sea ice coverage, which would increase vessel accessibility to the Arctic, and may result in changes to fish distribution and abundance that could make Arctic fisheries a profitable venture.

These concerns parallel a growing awareness of and interest in Arctic ecosystems on the part of NOAA Fisheries and other organizations. The fourth International Polar Year was declared for 2007-2009, this is a period of time where nations decide to coordinate research, policy, and outreach concerning the polar regions. Through the Russian-American Long-term Census of the Arctic (RUACA), NOAA and the Russian Academy of Sciences have jointly been conducting multi-disciplinary marine research in the Bering and Chukchi seas since 2006. The U.S. Coast Guard ice breaker Healy has been carrying scientists from NOAA, the University of Alaska, and other institutions into Arctic waters for the last several years. Concerns about increased ocean temperatures have also led NOAA to launch the Loss of Sea Ice Initiative, a research effort designed to investigate the consequences of reduced seasonal sea ice cover on the Bering, Chukchi, and Barents seas. See NOAA's Arctic website at [www.arctic.noaa.gov](http://www.arctic.noaa.gov) for more information.

Beginning in 2006, the NPFMC began discussing strategies to prepare for future change in the Arctic region. It explored various policy options, including an FMP to address management of any existing or potential future commercial fisheries in this region. Under the MSA and other government regulations, the fishery management process requires thorough analysis of the biological, economic, and social impacts of proposed actions. These analyses typically include a consideration of the status quo as well as one or more action alternatives that are reasonable and may accomplish the stated objectives. In the case of the Arctic FMP the process began with an initial discussion document that helped frame the issues and included several alternative actions. Staff from the NPFMC and NOAA Fisheries conducted the analysis, which was reviewed by the NPFMC, as well as its Ecosystem Committee, Scientific and Statistical Committee, and Advisory Panel. At each step in the process the council also solicited public comments.

As a result of the above process, the NPFMC and NOAA Fisheries developed an Arctic FMP that would (1) close the Arctic to commercial fishing until sufficient information is available to allow sustainable fishing, (2) clarify the management authorities in the Arctic and create a vehicle for addressing future management issues, and (3) implement an ecosystem-based management policy for the Arctic. The scientific resources of the U.S. Arctic and the potential for fishery development that might affect those resources, particularly in the face of a changing climate.

Because human residents of the Arctic are extremely dependent on natural resources for survival, a special effort was made to enhance public participation in the policy-making process. Outreach efforts were designed to involve Arctic residents, particularly Native Alaskans, regional fisheries resource management entities, and other groups interested in the Arctic, in the dialogue and decision-making related to adoption of an Arctic FMP. Staff from the NPFMC traveled to Arctic communities to participate in planning commission meetings, through assembly meetings, and other regional gatherings, and participated in interviews on local radio stations. Flyers, e-mail, and

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20



# Questions?

