

The Power of Participation and Collaboration

An Alaska Groundfish
Success Story

Jane DiCosimo
7 December 2021

ORGANIZATION OF PRESENTATION

- **ALASKA GROUND FISH FISHERIES**
- **NOAA FISHERIES (NMFS)**
 - HQ
 - ALASKA REGIONAL OFFICE
 - ALASKA FISHERIES SCIENCE CENTER
- **NORTH PACIFIC FISHERY MANAGEMENT COUNCIL**
- **NMFS/UNIVERSITY/INDUSTRY COOPERATIVE RESEARCH**
- **PUBLIC PARTICIPATION**
- **SUMMARY**

ALASKA FISHERY MANAGEMENT AREAS

The Alaska (North Pacific) partnership oversees ~ **50 percent of the fish** caught in U.S. waters, contributing > **\$7 billion**.

Alaska's Exclusive Economic Zone (EEZ) - between 3 and 200 nmi offshore - **1.5 Mmi²** = **70% of the U.S. continental shelf**.

Two groundfish fishery management plans:

Bering Sea/Aleutian Islands

26 species/complexes

2 million mt quota limit

Gulf of Alaska

24 species/complexes

500,000 mt quota



COMMERCIAL GROUNDFISH FISHING VESSELS

Catcher Vessels (deliver shoreside)



150 Trawlers
Pollock
Cod
Flatfish
Rockfish



500 Longliners
Cod
Halibut
Sablefish



15 Jig Gear
Cod



300 Pot Gear
Cod
Sablefish
Crab



35 Trawlers
Pollock
Flatfish
Atka Mackerel
Rockfish



50 Longliners
Cod
Sablefish
Turbot



5 Dredge Gear
Scallops



10 Pot Gear
Cod
Crab

Source: NPFMC

Catcher-Processors (process at sea)

BERING SEA AND ALEUTIAN ISLANDS (BSAI) GROUNDFISH QUOTA CATEGORIES

22 TOTAL (TIER 1, TIER 3, TIER 5, TIER 6)

- EBS Pollock

- Al pollock

- Bogoslof pollock

- EBS Pacific cod

- Al Pacific cod

- Yellowfin sole

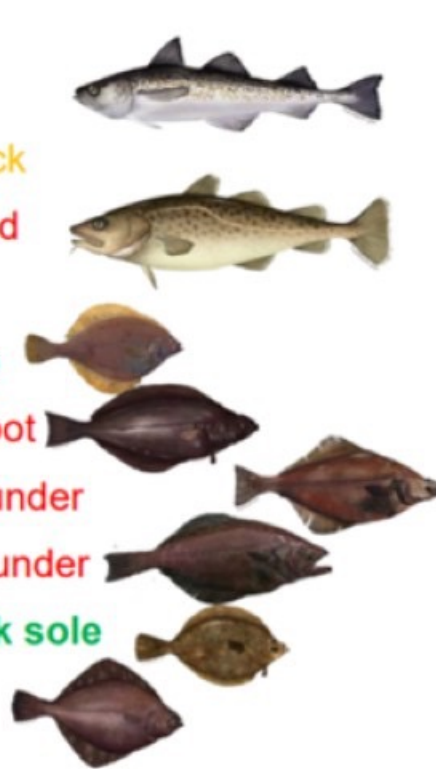
- Greenland turbot

- Arrowtooth flounder

- Kamchatka flounder

- Northern Rock sole

- Flathead sole



- Alaska plaice

- Other Flatfish

- Pacific ocean perch

- Northern rockfish

- Blackspotted/rougheye rockfish

- Shortraker rockfish

- Other rockfish

- Atka mackerel

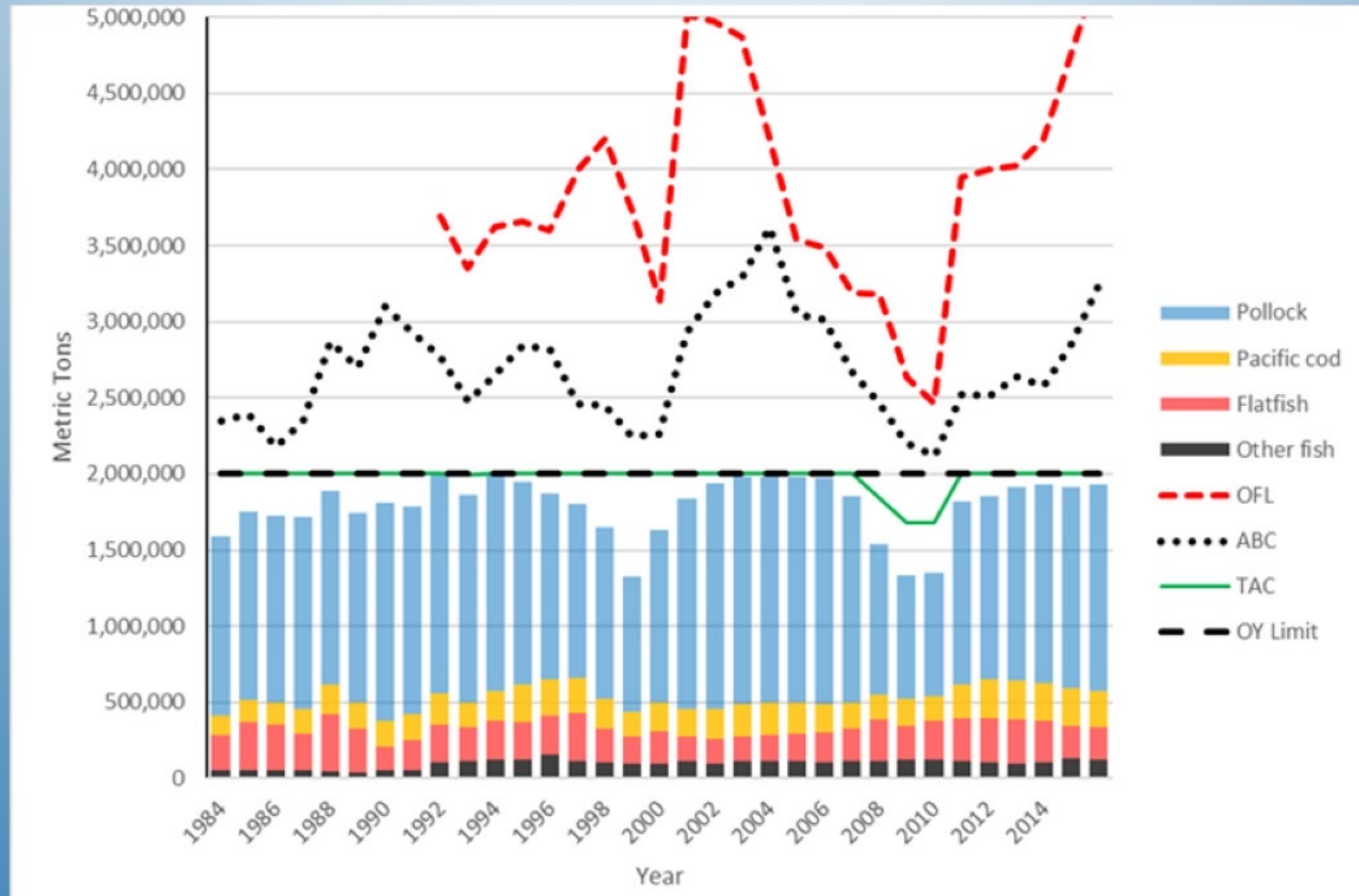
- Skates

- Sharks

- Octopus



BSAI GROUNDFISH 'STATUS OF STOCKS'



BSAI GROUNDFISH 'REPORT CARD'

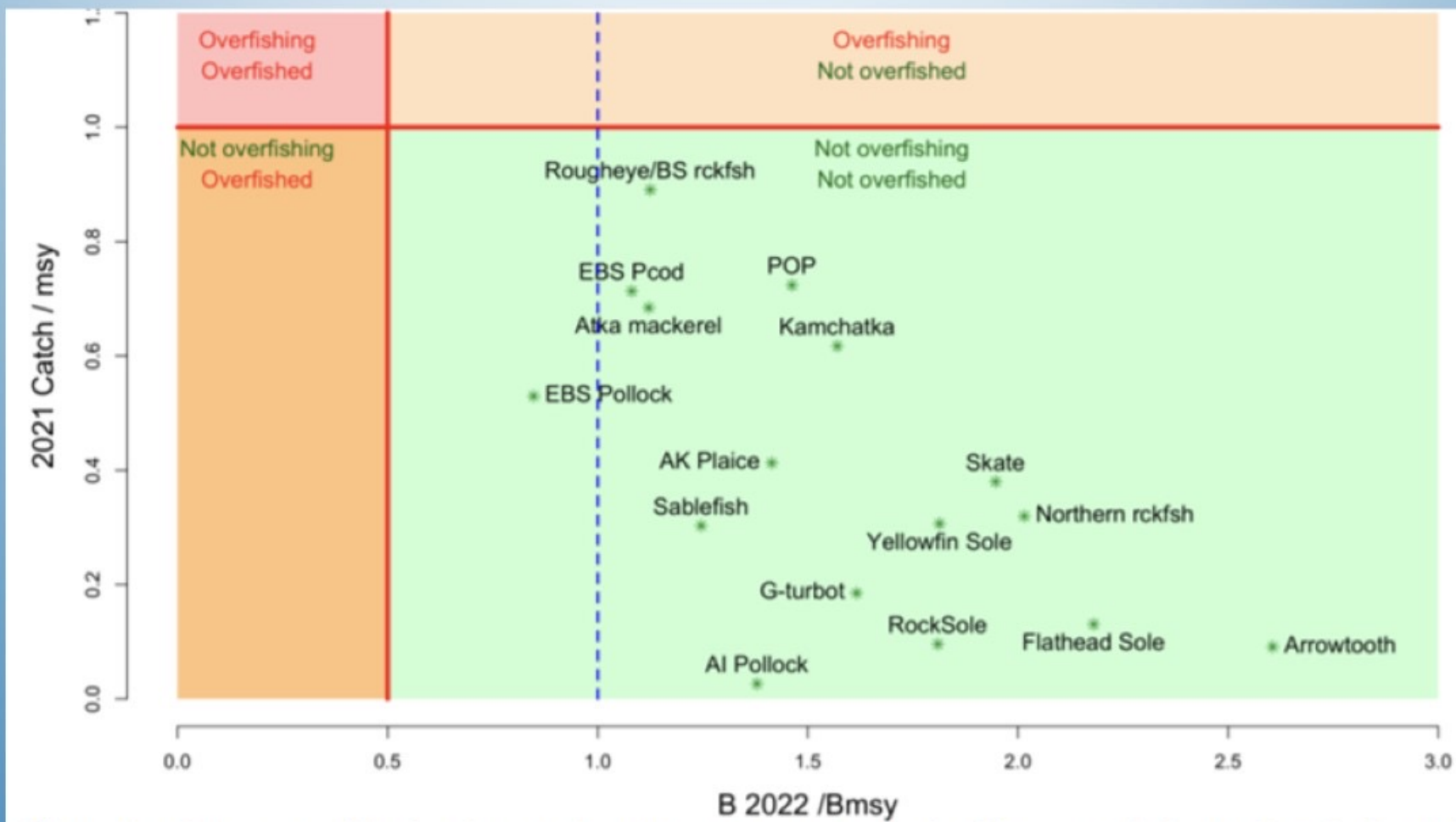


Figure 2. Summary of Bering Sea stock status next year (spawning biomass relative to B_{msy} ; horizontal axis) and current year catch relative to fishing at F_{msy} (vertical axis) where F_{OFL} is taken to equal F_{msy} .

NATIONAL STANDARDS



Magnuson-Stevens
Fishery Conservation and
Management Act
As Amended Through January 12, 2007



U. S. Department of Commerce
Office of Fisheries, Secretary
National Oceanic and Atmospheric Administration
Fishery Conservation Act, Chapter 10, Title 16, U.S.C.
State Department for Ocean and Fisheries
National Marine Fisheries Service
William J. Douglas, Assistant Secretary for Fisheries

1. **Prevent overfishing** while achieving optimum yield
2. Use **best scientific information** available
3. Manage individual stocks **throughout their range**
4. Allocation of privileges to fish must be **fair and equitable**
5. **No** such measure shall have **economic allocation as its sole purpose**
6. Allow for **variation among and contingencies** in fisheries, fishery resources, and catches
7. **Minimize costs, avoid duplication**, where practicable
8. Account for importance of fishery resources to **fishing communities**
9. **Minimize bycatch** or mortality from bycatch
10. Promote **safety of human life at sea**

Who are the decision-makers?

The North Pacific Fishery Management Council and National Marine Fisheries Service

- Together manage U.S. Federal fisheries off Alaska, 3-200 nautical miles
- Management is coordinated, and in some cases jointly managed, with the State of Alaska
- Council makes recommendations to NMFS
- NMFS approves, implements and enforces them

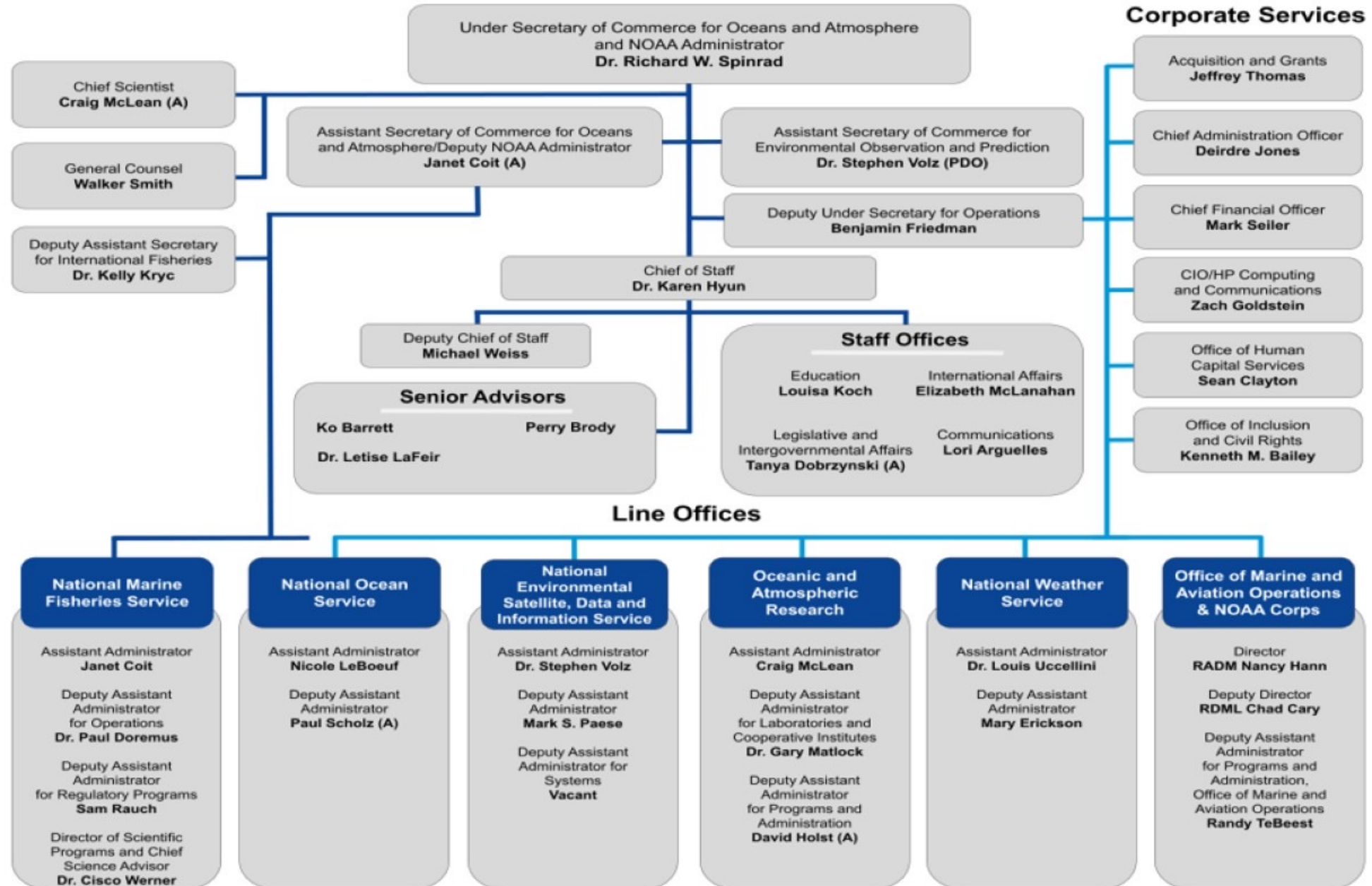


(PDO) = Performing the Duties of
(A) = Acting

NOAA Headquarters Organization



Office of the Under Secretary for Oceans and Atmosphere



Source: NOAA

Updated 11/23/2021

NMFS ORGANIZATION



NMFS HEADQUARTERS

Silver Spring, MD

Office of Sustainable Fisheries

Atlantic Highly Migratory Species Management

Randy Blankinship
Division Chief

- > **Rulemaking**
Karyl Brewster-Geisz, HQ Fish Branch Chief
- > **Products & Services**
Peter Cooper, Operations & Planning Branch Chief
- > **Information, Reporting, & Monitoring**
*Brad McHale, Northeast Branch Chief, HMS
Recreational Coordinator*

Domestic Fisheries

Michael Ruccio
Division Chief

- > **Policy and Guidance**
Stephanie Hunt, Branch Chief
- > **Sustainable Stocks & Ecosystems**
Karen Abrams, Branch Chief

Operations & Regulatory Services

Jafnar Gueye
Division Chief

- > **Regulations**
Tracey Thompson, Branch Chief
- > **Operations and Regulatory Services**
Shahaira Davy, Branch Chief

Office of Science & Technology

Fisheries Statistics Division

Richard Cody, Ph.D.
Chief

- > **Commercial Fishery Statistics**
*Michael Liddel, Ph.D., Commercial Fishery Statistics
Branch Chief*
- > **Recreational Fisheries Statistics**
*John Foster, Recreational Fisheries Statistics Branch
Chief*

Economics & Social Analysis Division

Rita Curtis, Ph.D.
Chief

- > **Scientific Publication Office**
Willis Hobart, Branch Chief

Operation, Management, and Information Division

Karl Moline
Chief

Science Information Division

Franklin Schwing, Ph.D.
Chief

- > **Application Development**
Scott Sauri, Application Development Branch Chief
- > **Operations**
Glen Taylor, Operations Branch Chief

Assessment & Monitoring Division

Patrick Lynch, Ph.D.
Chief, Assessment and Monitoring

- > **Fish and Protected Species Assessments**
Jim Berkson, Ph.D., Assessment Branch Chief
- > **Fisheries and Living Marine Resource
Monitoring**
Elizabeth Chilton, Monitoring Branch Chief

Marine Ecosystems Division

Kenric Osgood, Ph.D.
Chief

- > **National Systematics Laboratory**
*Allen Collins, Ph.D., Director, National Systematics
Laboratory*

Examples of national coordination:

- Strategic planning, budgeting & execution for regional offices
- Fisheries policies & regulations
- Tracking status of stocks
- Council budgets
- Council member training
- Council Coordination Committee
- Strategic planning, budgeting & execution for fisheries centers
- Center for Independent Experts
- Stock assessments (inc. new tools)
- National databases
- Fishery surveys
- Observer programs
- Advanced technologies
- Cooperative research
- Ecosystem management

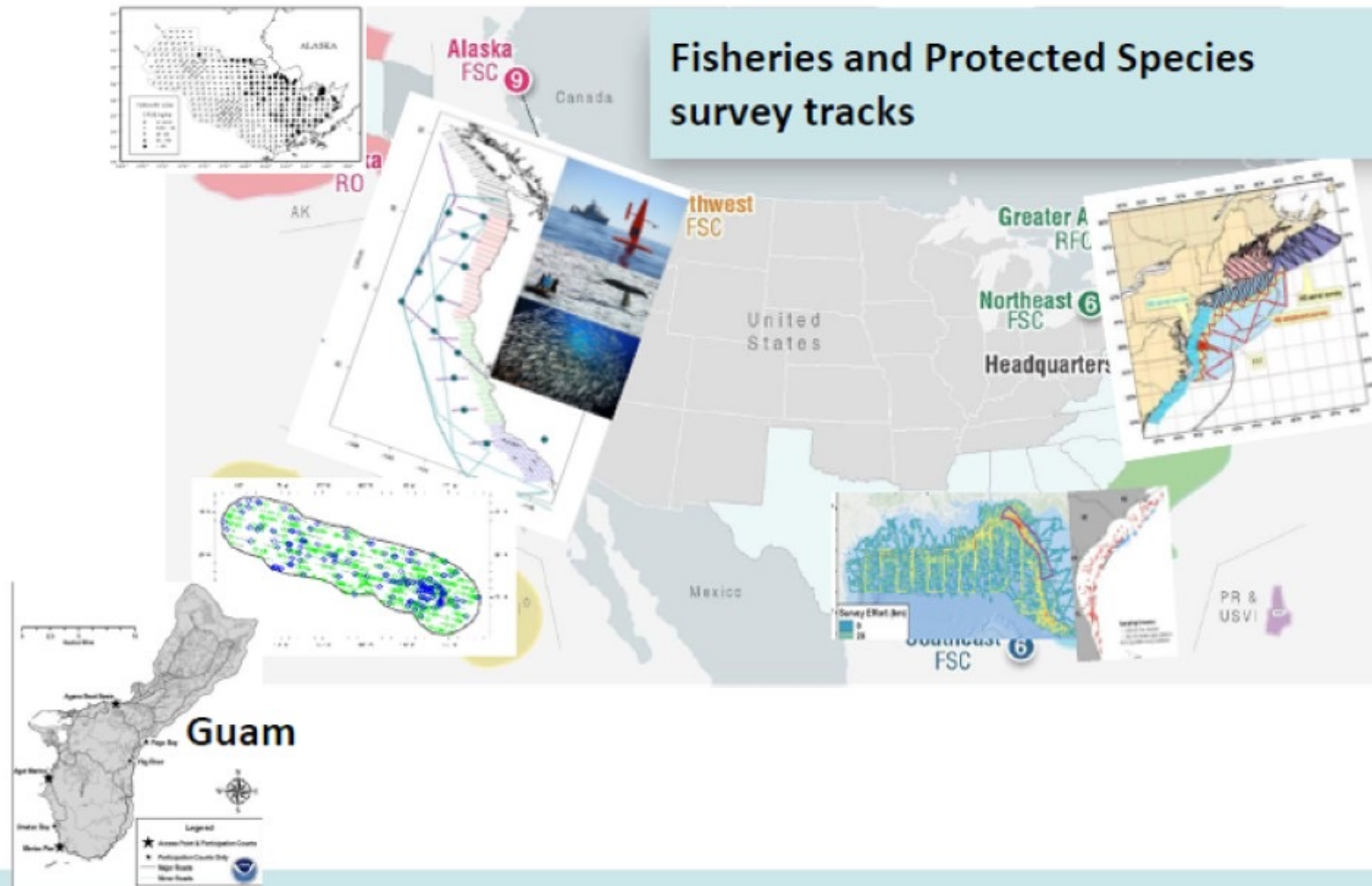
Source: NMFS

SURVEYS

FY 21 Survey Overview

Status 9/30/2021

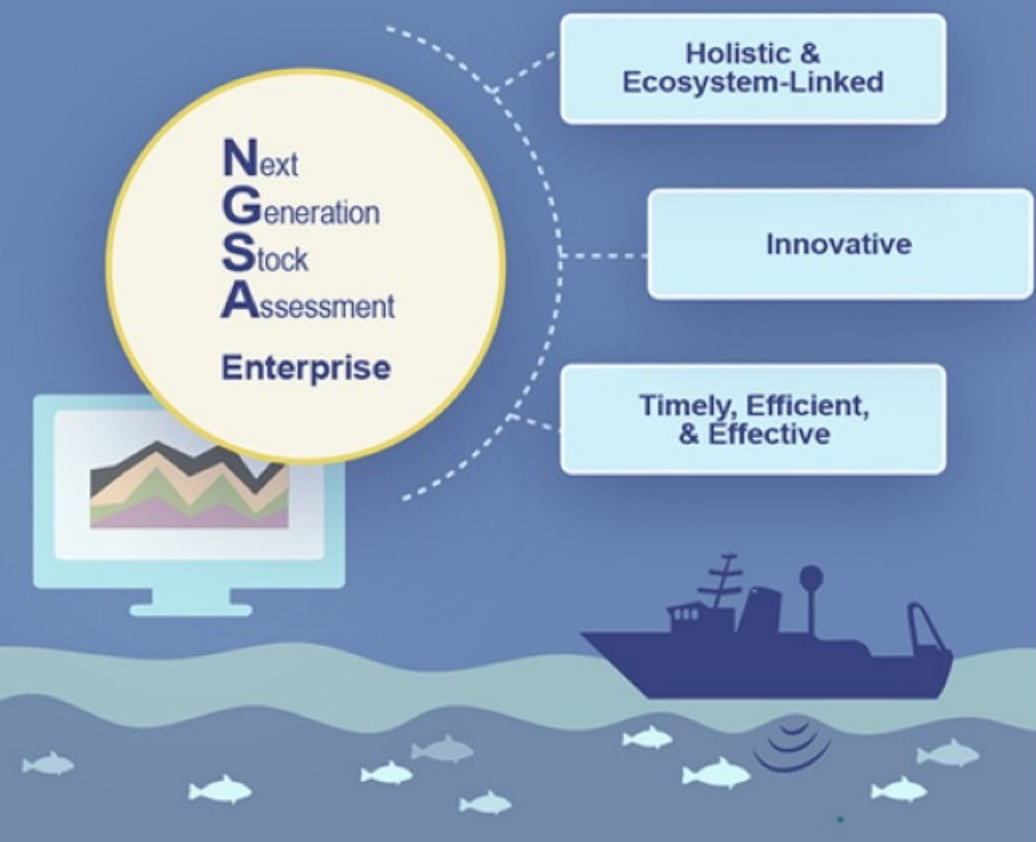
- ~48 surveys (some are multiple-leg)
 - 28 OMAO
 - 20 Charter
- 1761 DAS
- Six surveys are currently underway (additional 458 DAS)
- Currently finalizing the FY22 FAP (Fleet Allocation Plan)



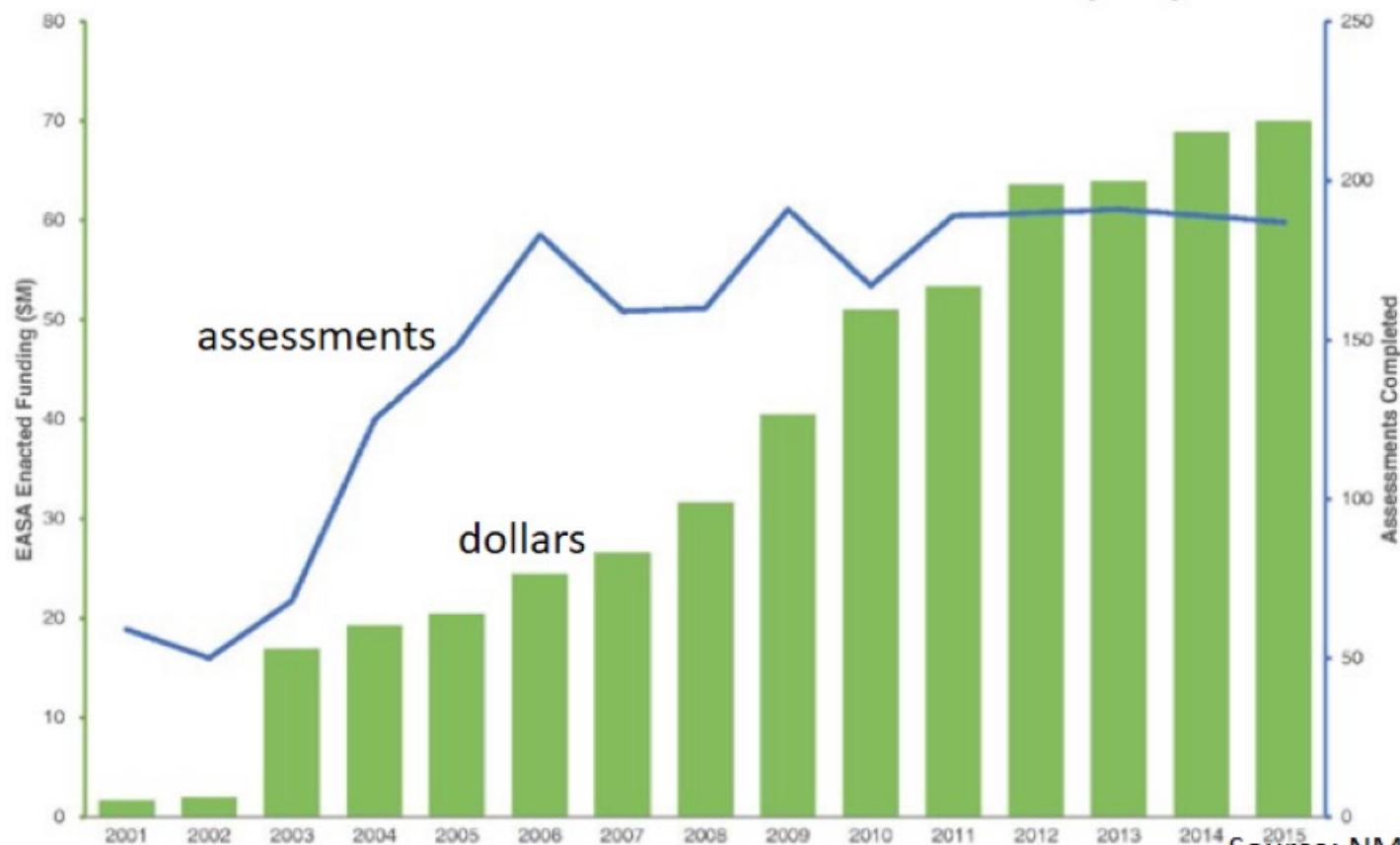
STOCK ASSESSMENTS

NOAA Fisheries manages nearly 500 fish stocks/complexes and conducts nearly 200 stock assessments each year.

NOAA Fisheries

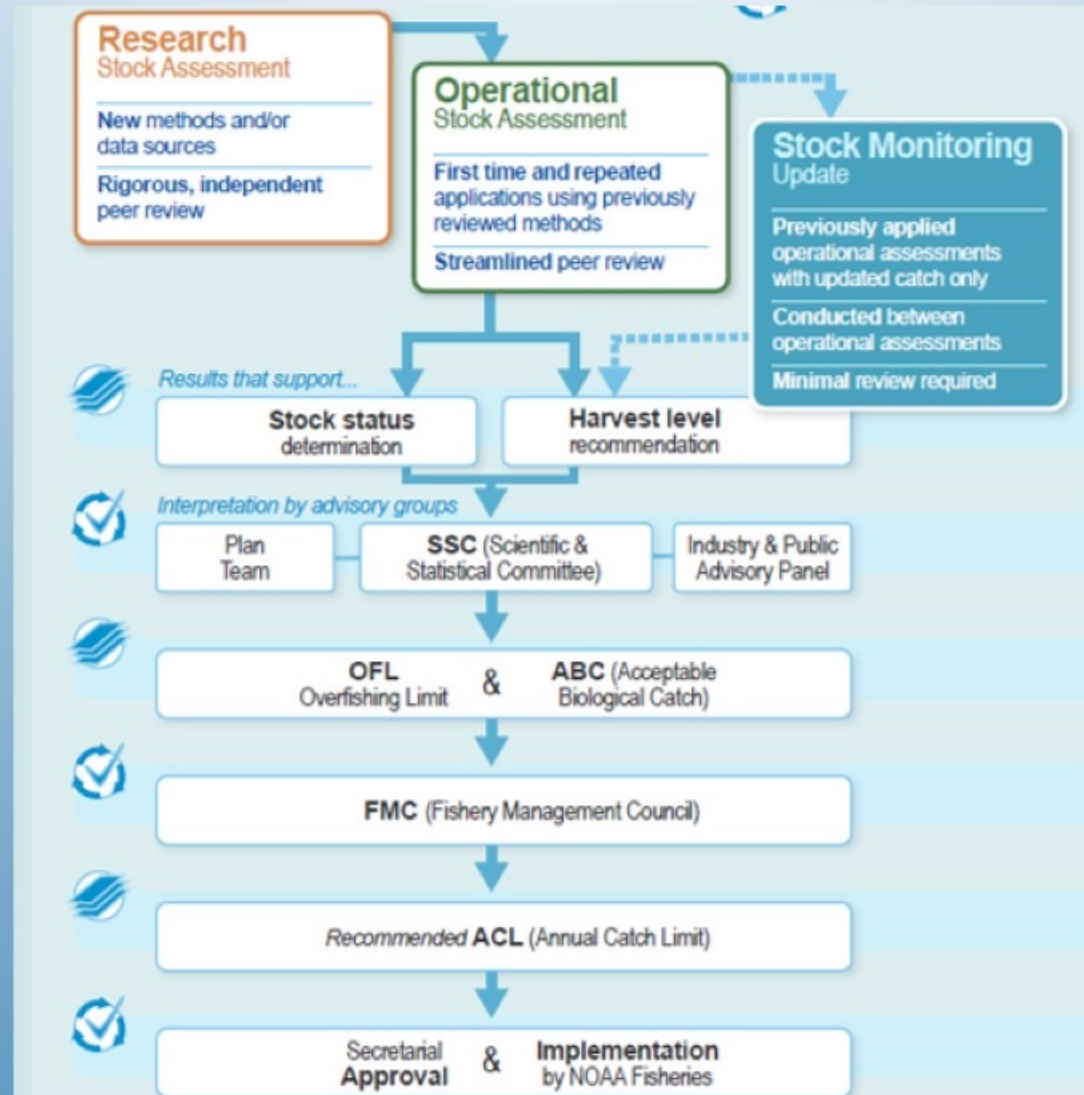


Growth in NOAA Fisheries' Stock Assessment Capacity



Source: NMFS

NEXT GENERATION STOCK ASSESSMENT



ADVANCED TECHNOLOGIES

- Drones, both aerial and sail
- Satellite tags
- Remote underwater vehicles & automated underwater vehicles
- Acoustics
- Genetics
- Research ships
- Electronic Monitoring (observer data)
- Electronic Reporting (catch, bycatch, & observer data)



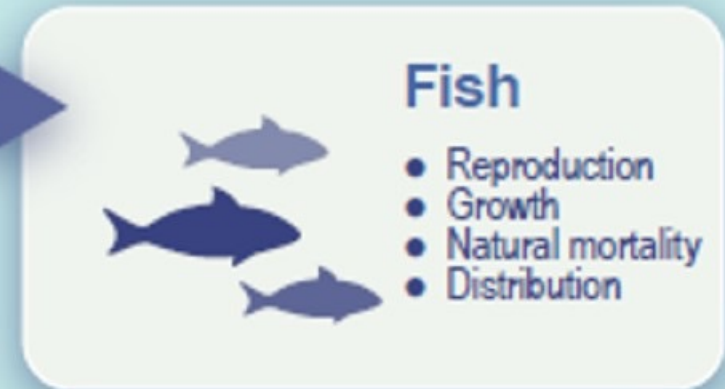
Source: NMFS

POTENTIAL LINKAGES between ECOSYSTEM/ SOCIOECONOMIC DRIVERS and FISHES/FISHERIES

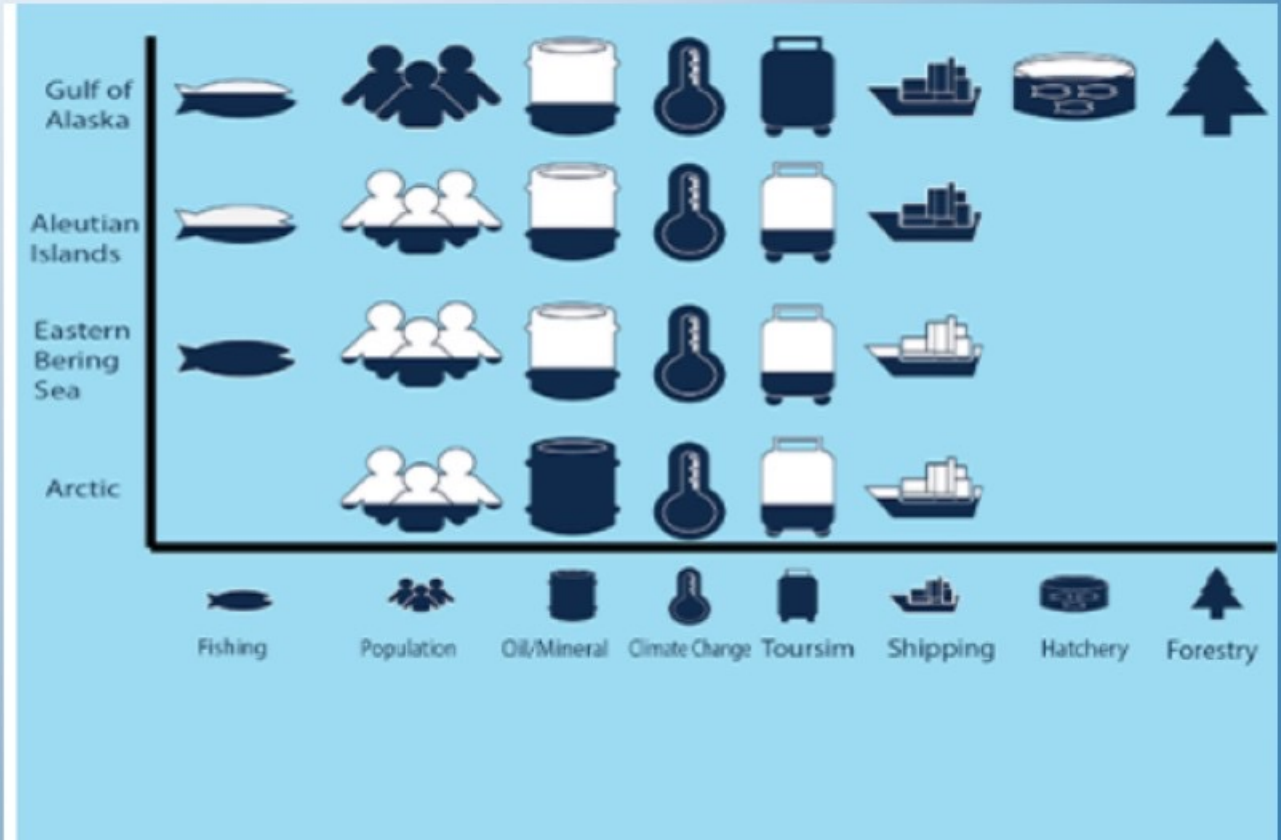
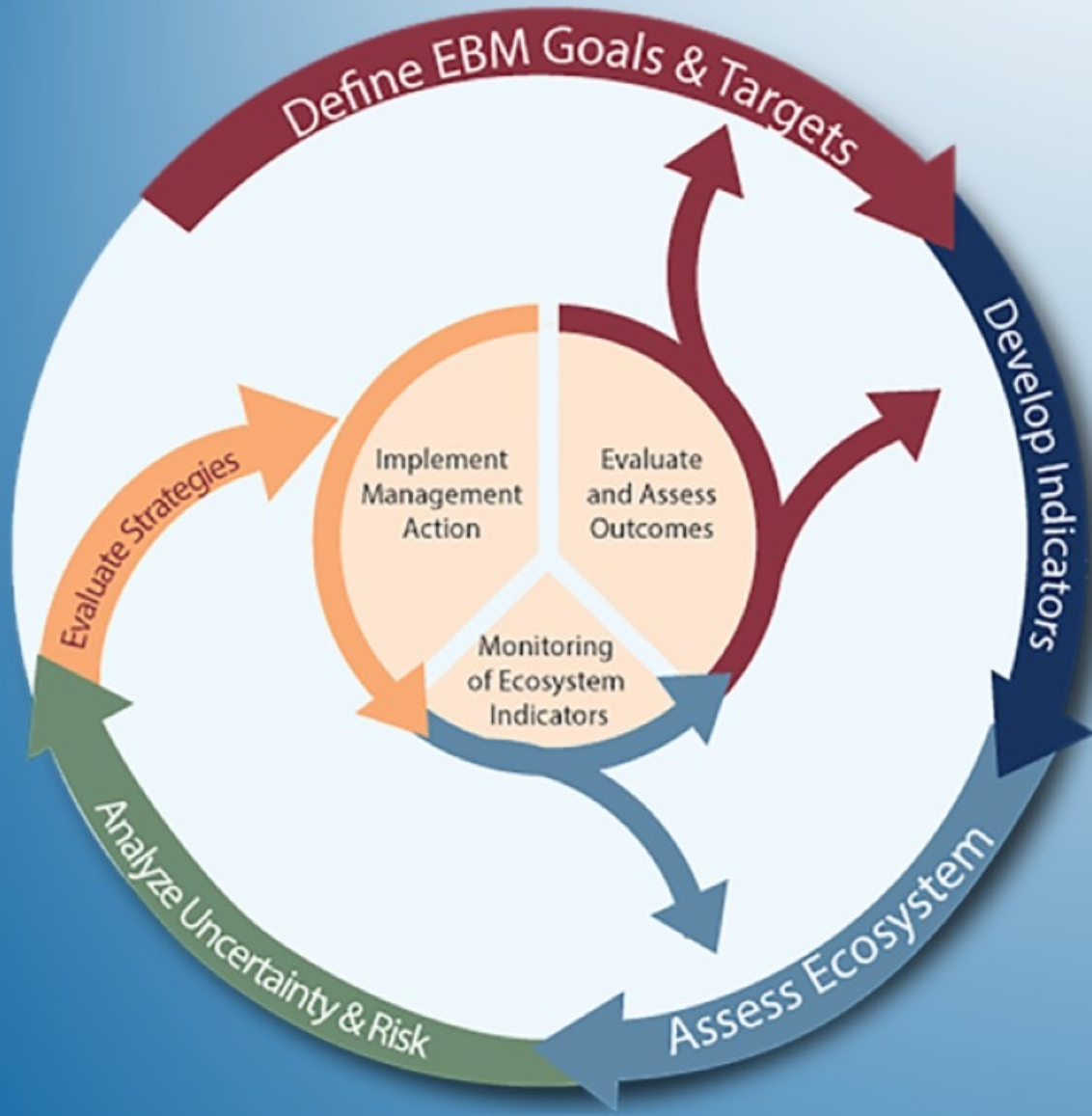
Drivers



Potential Effects



INTEGRATED ECOSYSTEM APPROACH



Qualitative depiction of the relative amount of human drivers and pressures on each Alaskan ecosystem.

Source: NMFS



Alaska

- > Arctic
- > Cook Inlet beluga whale
- > Deep-sea corals and fish habitat
- > Ecosystem science & management
- > Electronic monitoring and observers
- > Northern fur seals



NMFS ALASKA REGIONAL OFFICE/ JUNEAU ANCHORAGE

Sustainable Fisheries Division, AKRO

Glenn Merrill
Assistant Regional Administrator

- > **Ecosystem Branch**
Anne Marie Eich, Ph.D., Deputy Assistant Regional Administrator
- > **Inseason Management**
Mary Furuness, Supervisory Fishery Management Specialist
- > **Monitoring Branch**
Josh Keaton, Supervisory Fishery Management Specialist
- > **Catch Share Branch**
Alicia M. Miller, Supervisory Fishery Management Specialist
- > **Catch Accounting and Data Quality Branch**
Jennifer Mondragon, Supervisory Fishery Management Specialist
- > **Operations Branch**
Jennifer Watson, Supervisory Fishery Management Specialist

Operations & Management Division, AKRO

Kristie Balovich
Acting Chief of Operations

- > Dana Whiteley, Regional Budget Officer

Aquaculture Program

- > **Aquaculture Program**
Alicia Bishop, M.S., Aquaculture Coordinator

Protected Resources Division, AKRO

Jon Kurland
Assistant Regional Administrator

- > **Juneau**
Aleria Jensen, Deputy Assistant Regional Administrator and Supervisory Biologist
- > **Anchorage**
Greg Balogh, Supervisory Biologist
- > **Anchorage**
Verena Gill, M.S., Supervisory Biologist

Information Services Division

Daniel Rothman
Supervisory IT Specialist

- > David Hanson, Supervisory IT Specialist
- > **Applications Team**
Brian Lieb, Applications Team Supervisor

Habitat Conservation Division, AKRO

Gretchen Harrington, M.S.
Assistant Regional Administrator

- > **Anchorage**
Matt Eagleton, Deputy Director and Regional Essential Fish Habitat Coordinator
- > **Anchorage**
Sean McDermott, Supervisory Marine Habitat Resource Specialist
- > **Juneau**
Jodi L. Pirtle, Ph.D., Juneau Branch Chief & Deputy Assistant Regional Administrator

Restricted Access Management

- > Brian Brown, Supervisor

Examples of regional coordination between HQ OSF and Council:

- Regional operating agreement
- Strategic planning
- Writing and implementing fisheries regulations
- Contributing to NEPA/RIR/RFA analyses
- Catch accounting (inc. EM)
- Restricted Access Management

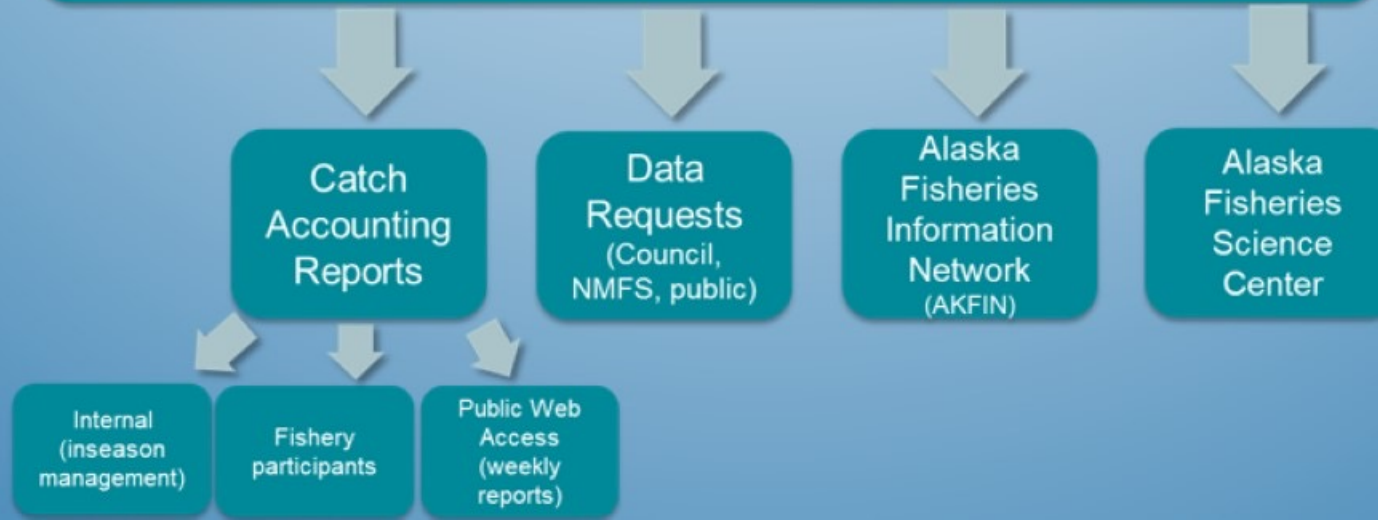
Source: NMFS

CATCH ACCOUNTING PROCESS

Data Sources



Data Access



ALASKA FISHERIES SCIENCE CENTER/

SEATTLE
JUNEAU
KODIAK

Management Team

Auke Bay Laboratories

Dana Hanselman
Director, Auke Bay Laboratories
Allison Bidlack
Deputy Director, Auke Bay Laboratories

- > **Facilities**
John Cooper, Program Manager
- > **Ecosystem Monitoring and Assessment**
Ed Farley, Program Manager
- > **Marine Ecology & Stock Assessment**
Chris Lunsford, Program Manager
- > **Genetics Program**
Wes Larson, Program Manager
- > **Recruitment, Energetics, and Coastal Assessment Program**
Robert Surjan, Program Manager

Marine Mammal Laboratory

John Bengtson
Division Director, Marine Mammal Laboratory
Nancy Friday
Deputy Director, Marine Mammal Laboratory

- > **Polar Ecosystems Program**
Peter Boving, Program Manager
- > **Cetacean Assessment and Ecology Program**
Rozlyn Angilas, Program Manager
- > **California Current Ecosystems Program**
Sharon Melin, Research Biologist, Program Manager
- > **Alaska Ecosystems Program**
Thomas Gelatt, Research Biologist, Program Manager

Directorate Office, AFSC

Ajith Abraham
Division Director, Office of Fisheries Information Systems
Director

- > **Habitat and Ecological Processes Research**
Jim Thorson, Program Leader
- > **Laure Hoberecht, Planning Officer**

Office of Management and Information Services Division

Lori Budbill
Division Director, Office of Management and Information Services Division

- > **Communications**
Maggie Mooney-Seus, Program Manager

Fisheries Monitoring & Analysis Division

Jennifer Ferdinand
Division Director, Fisheries Monitoring and Analysis Division

- Lisa Thompson
Deputy Director, Fisheries Monitoring and Analysis Division
- > **Observer Services Training**
Brian Mason, Program Manager
- > **Observer Services Debriefing**
Merion Concepcion, Program Manager
- > **Information and Monitoring Technologies**
Jennifer Ferdinand, Division Director, Fisheries Monitoring and Analysis Division

Resource Assessment and Conservation Engineering

Lyle Britt
Division Director, Resource Assessment and Conservation Engineering Division
Michael Martin
Deputy Director, Resource Assessment and Conservation Engineering Division

- > **Administrative Support**
Dore Cocking, Program Manager
- > **Fisheries Behavioral Ecology Program, Newport Laboratory**
Thomas Hurst, Program Manager, Newport Laboratory Director
- > **Groundfish Assessment Program**
Stan Kozicki, Program Manager
- > **Midwater Assessment and Conservation Engineering**
Sandra Parker-Stetter, Program Manager
- > **Research Assessment and Conservation Engineering**
Janet Duffy-Anderson, Program Manager
- > **Shellfish Assessment Program, Kodiak Laboratory**
Mike Litow, Program Manager, Kodiak Laboratory Director

Resource Ecology & Fisheries Management

Ron Felthoven
Division Director, Resource Ecology and Fisheries Management

- Stephani Zador
Deputy Director, Resource Ecology and Fisheries Management
- > **Age and Growth**
Thomas Helser, Program Manager
- > **Economic and Social Sciences Research**
Steve Kasperski, Program Manager
- > **Resource Ecology and Ecosystem Modeling**
Kerim Aydin, Program Manager
- > **Status of Stocks and Multispecies Assessment**
Anne Hollowed, Program Manager

AFSC OFFICES



Pacific Cod Satellite Tagging

Winter Pollock Survey of the Gulf of Alaska/Bogoslof

Winter Pollock Survey of the Gulf of Alaska/Kenai Peninsula

Spring Larval Fish and Eggs Survey in Southeastern Bering Sea and Gulf of Alaska

Spring and Fall Plankton and Oceanographic Surveys

Summer Bottom-Dwelling Community Survey of the Southeastern Bering Sea and the Gulf of Alaska

Bottom-Dwelling Community Survey of Southeastern Bering Sea and Aleutian Islands

Sablefish and Groundfish Longline Survey

Juvenile Sablefish Tagging Survey

Summer Pollock Survey

Southeast Coastal Monitoring Age-0 Groundfish and Salmon Survey

Juvenile Pacific Cod Near-Shore Survey

Bottom-Dwelling Community Survey of Northern Bering Sea Continental Shelf

Northern Bering Sea Ecosystem Survey

Fall Juvenile Fish Survey in the Southeastern Bering Sea and Gulf of Alaska

Year-Round Monitoring of Pollock Movements in Eastern Bering Sea

ALASKA FISH RESEARCH SURVEYS



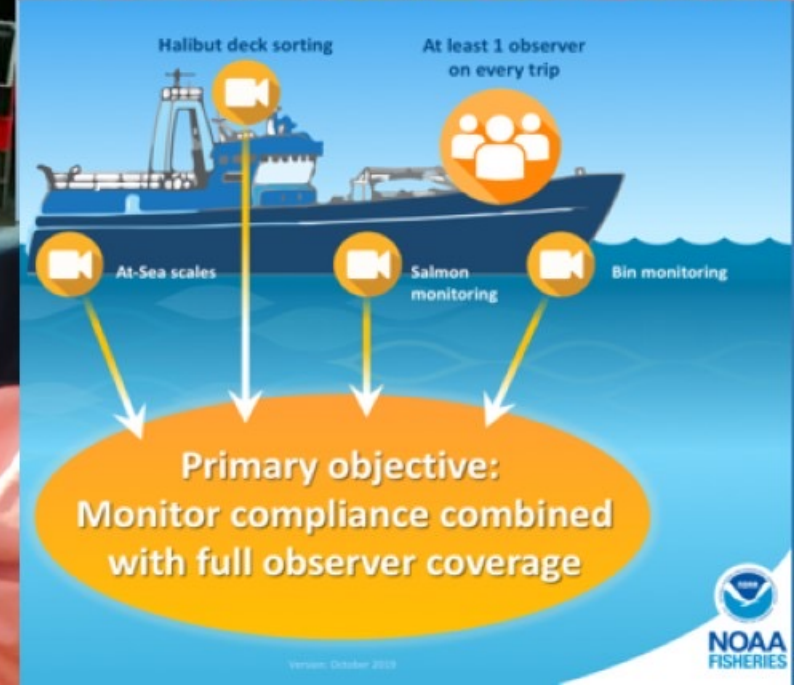
Source: NMFS

SCHEDULE FOR BSAI STOCK ASSESSMENTS

Stock	2021 SAFE Assessment status	Tier	Schedule (years)	Year of next full assessment
Eastern Bering Sea pollock	Full	1	1	2022
Bogoslof Island Pollock	None	5	2	2022
Aleutian Islands pollock	Full	3	2	2022
Eastern Bering Sea Pacific Cod	Full	3	1	2022
Aleutian Islands Pacific cod	Full	5	1	2022
Sablefish	Full	3	1	2022
Yellowfin sole	Full	1	1	2022
Greenland Turbot	Partial	3	2	2022
Arrowtooth flounder	Partial	3	2	2022
Kamchatka flounder	Partial	3	2	2022
Northern Rock sole	Partial	1	2	2022
Flathead sole	Full	3	2	2022
Alaska plaice	Full	3	2	2023
Other flatfish	None	5	4	2024
Pacific ocean perch	Partial	3	2	2022
Northern rockfish	Full	3	2	2023
Rougheye & blackspotted rockfish	Partial	3	2	2022
Shortraker rockfish	None	5	2	2022
Other rockfish	None	5	2	2022
Atka mackerel	Full	3	1	2022
Skates	Partial	3/5	2	2022
Sharks	None	5	2	2022
Octopus	None	6	2	2022
Sculpins	None	Eco	4	2024
Forage Species (including Squids)	Report	Eco	2	2023
Grenadiers (BSAI/GOA)	None	Eco	4	2024

SCIENCE, MANAGEMENT, AND POLICY RELY ON DATA

At-sea data collection onboard government research ships
and by observers on commercial fishing boats



REGIONAL FISHERY MANAGEMENT COUNCILS

The Council is guided by the MSA

or the Magnuson-Stevens Fishery Conservation and Management Act.

Established:

- 8 Regional Fishery Management Councils composed of government and fishermen representatives
- a 3 to 200-mile limit for Federal fishery authority
- National Standards and other requirements for conservation and management



Under the science-based framework of the MSA, **47 stocks have been rebuilt since 2000** of 460 stock complexes in 46 fishery management plans. More than **90% of stocks are not subject to overfishing** and **80% are not overfished.**

46 stocks are deemed overfished and 22 are deemed subject to overfishing; the status of the remainder are unknown. Source: NPFMC

What do the Councils do?

- **Develop and amend fishery management plans** for approval/implementation by the National Marine Fisheries Service (NMFS) on behalf of the Secretary of Commerce
- **Set annual catch limits and accountability measures** based on the best available science
- **Develop research priorities** with scientists and stakeholder/industry partners
- **Adhere to MSA's mandate and 10 National Standards**; prevent overfishing; balance resource conservation with achieving optimum yield for domestic fisheries

Who serves on the Councils?

- Councils have two types of **Voting Members**:
 - Appointed Members** are private citizens who are knowledgeable about the region's fisheries, such as commercial and recreational fishermen, industry leaders, environmentalists, academics, and tribal representatives. These individuals are nominated by each state's Governor and appointed by the Secretary of Commerce for three-year terms.
 - Designated State/Federal Members** include marine fishery management officials from each state and the NMFS regional administrator.
- **Non-Voting Members** include representatives from the Coast Guard, State Department, U.S. Fish and Wildlife Service, and Interstate Commissions.

How do the Councils operate?

- Management of federal fisheries is done through a **public, transparent process**.
- Stakeholders have opportunities for involvement during all stages of decision-making.
- Councils receive input from advisory bodies, Council committees, plan development teams, Scientific and Statistical Committees, and the general public.
- Council decisions are based on best available science that is peer reviewed in public meetings, which allows fishermen to monitor stock assessments. Fishermen also participate in cooperative research projects with scientists.

Types of Management Actions

Catch Quotas: Specify overfishing limits (OFL), allowable biological catch levels (ABC), and total allowable catch (TAC)



Catch Quotas

Gear Types and Seasons: identification of legal gear types, and seasons to distribute harvest in time to avoid gear conflicts, reduce bycatch and marine mammal interactions



Gear Types and Seasons

Bycatch and PSC: Bycatch and prohibited species catch limits, time/area/ gear type closures



Bycatch and PSC Limits

Protected Resources: Time and area closures to protect critical areas, prey species limitations



Protected Resources

Habitat: Description and identification of essential fish habitat for all managed species, gear/area closures to protect key areas



Habitat

Community Protections: Harvest quota set asides for communities, regional delivery restrictions



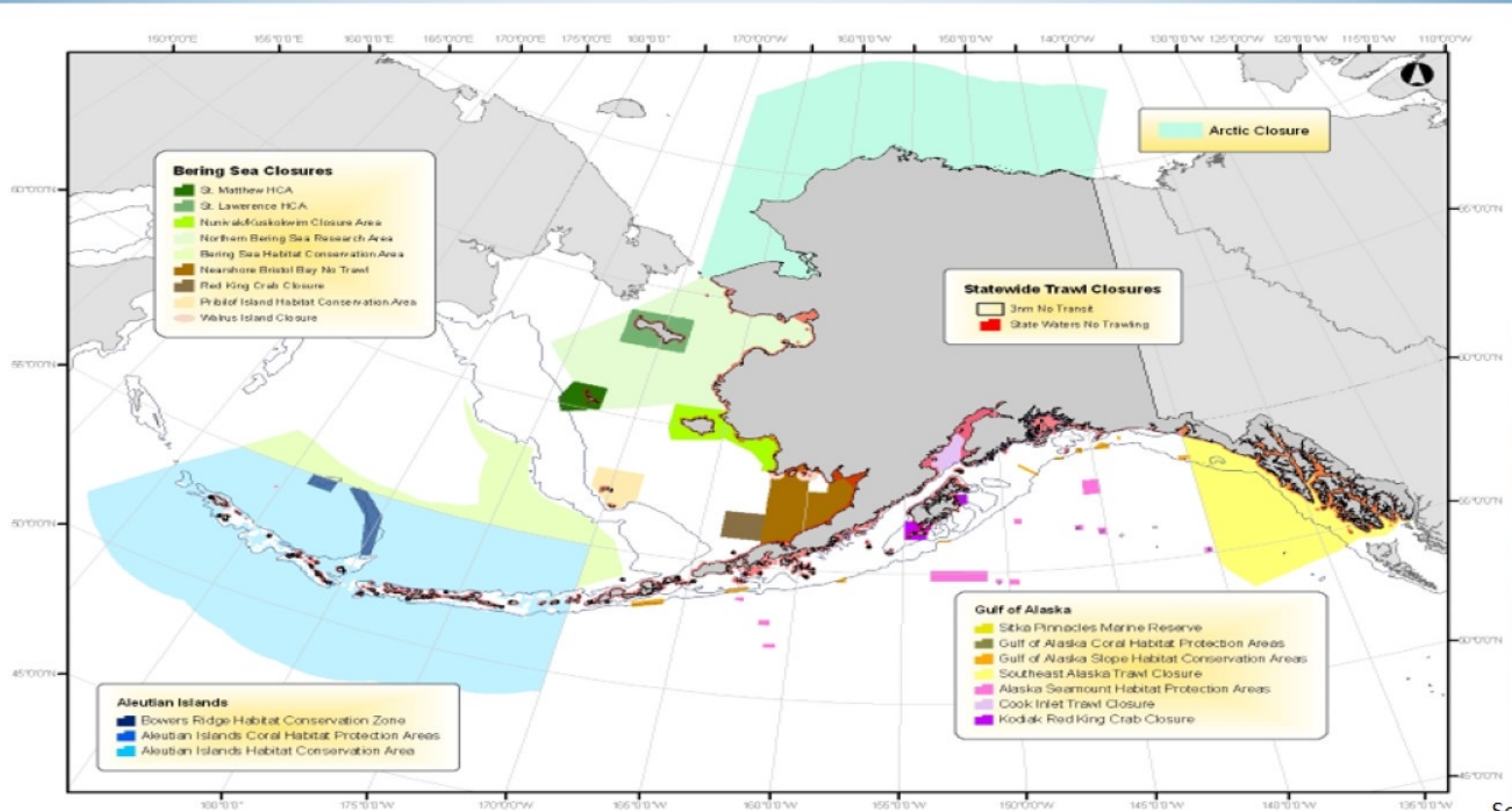
Community Protections

Limited Access Privileges: Create limited access programs, sector allocations, rationalization privileges

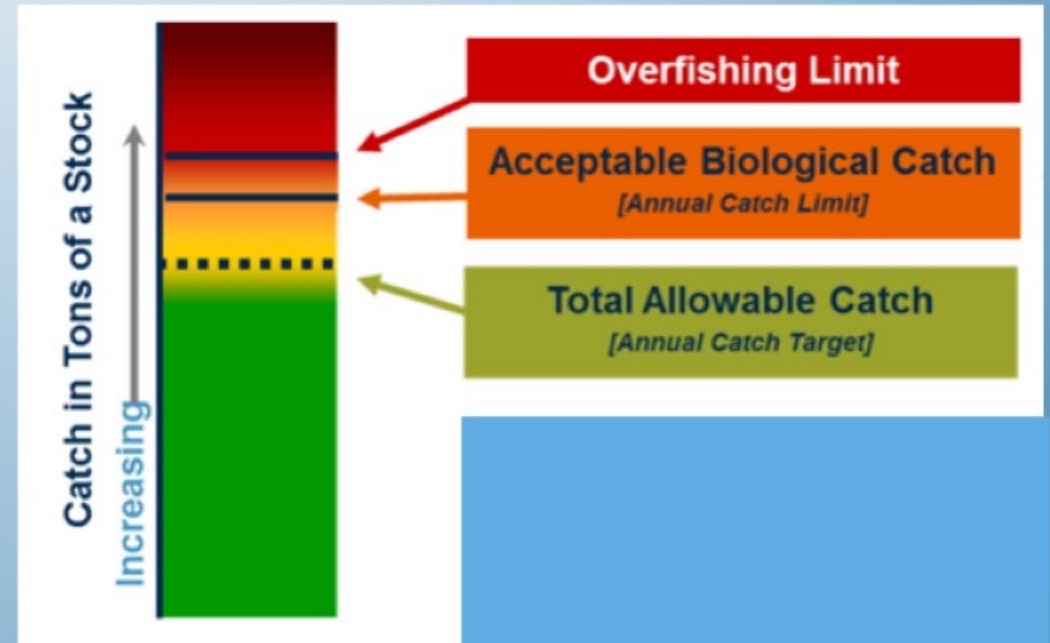
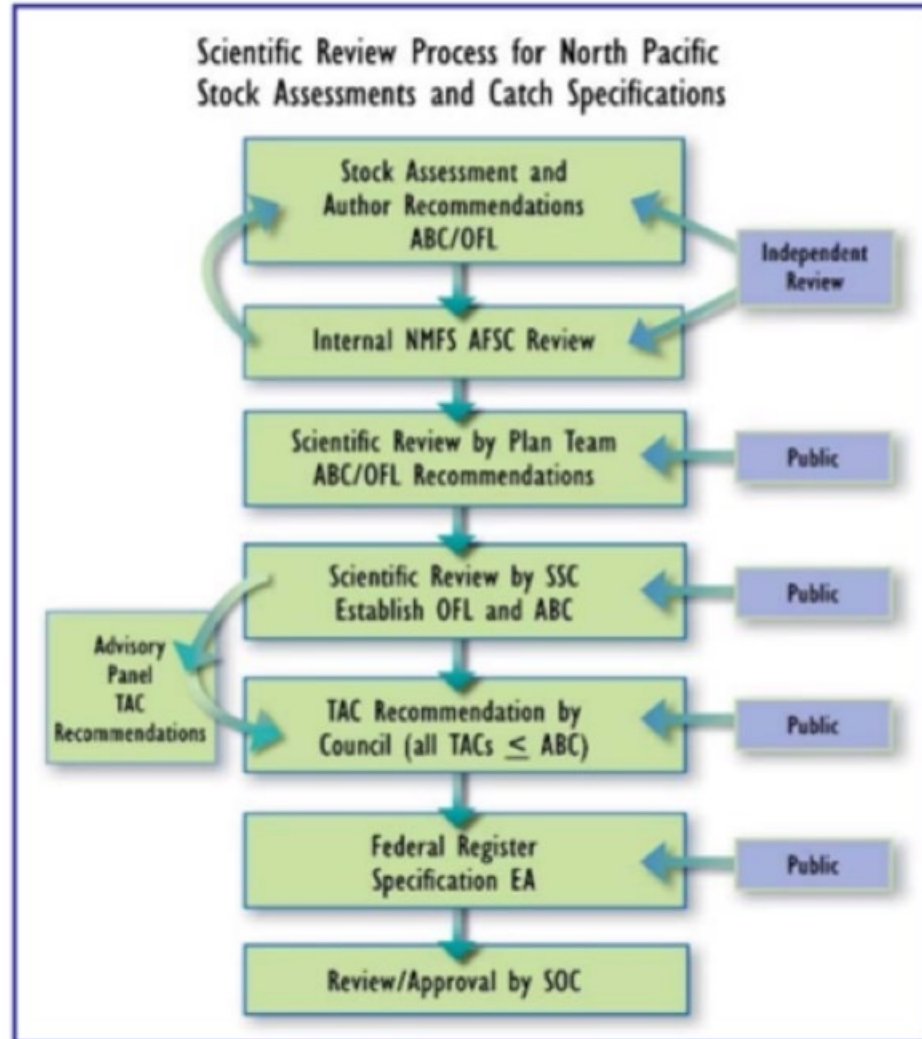


Limited Access Privileges

ALASKA AREA CLOSURES



QUOTA-SETTING PROCESS



NORTH PACIFIC COUNCIL MEETINGS



5 Meetings Annually

3 in Anchorage
1 in local fishing community
1 in Seattle or Portland



Access

All meetings are open to the public



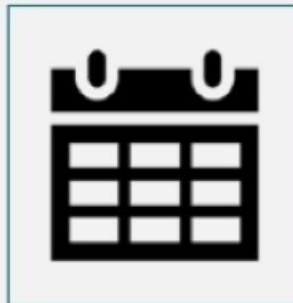
SSC & AP

AP and SSC provide input to Council at each meeting.



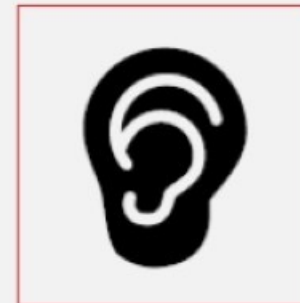
Public Testimony

Public testimony is taken for each agenda item at the SSC, AP, and Council.



Agenda & Schedule

Meeting agendas and schedules are published online.



Listen Live

Audio is available to listen to the Council meetings online in real-time.

Source: NPFMC

NORTH PACIFIC COUNCIL'S ADVISORY GROUPS

Advisory Panel

- 22 members
 - User groups
 - Environmentalists
 - Recreational fishermen
 - Consumer groups

Scientific & Statistical Committee

- 18 members
 - Federal employees
 - State employees
 - Academics
 - Independent experts

Plan Teams

- Scientists, managers, or academics
- Stock assessment:
 - BSAI/GOA Groundfish
 - BSAI Crab
 - Scallop
- Bering Sea Fishery Ecosystem Plan
- Social Science

Committees

- Issue-specific committees provide stakeholder advice on particular actions.
- Standing committees
 - Ecosystem
 - Enforcement
 - Fishery Monitoring
 - Charter halibut measures
- Ad hoc

PLAN AND REGULATORY AMENDMENT CYCLE

Council Decision Process



Proposal

Public testimony to the Advisory Panel or Council identifies a problem or need.



Review

Council develops problem statement and alternatives, often through a discussion paper or with Committee input.



Analysis

Council initiates analysis of alternatives.
1. Initial review – feedback on alts and impacts
2. Public review/Final action – adopt an alt.



Review/Approval

Council forwards proposed amendment to the Secretary of Commerce for review and approval.



Rulemaking

1. Proposed Rule and Public Comment
2. Final Rule



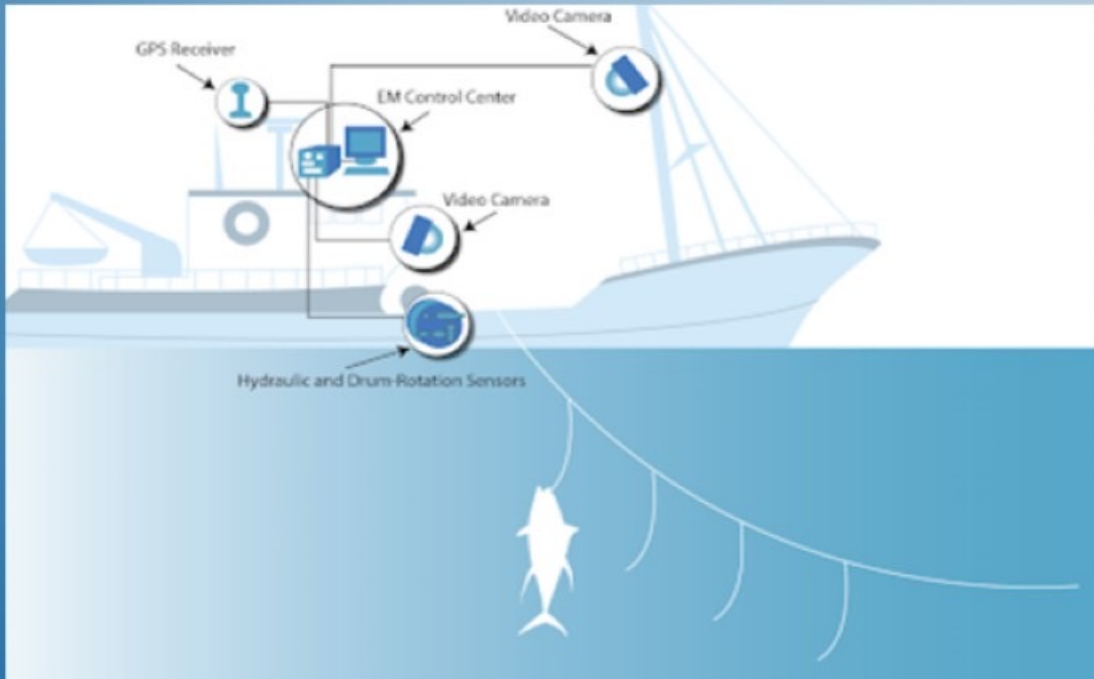
Implementation

Final decision by the Secretary of Commerce is implemented.

NMFS/INDUSTRY COLLABORATIONS



Electronic Monitoring and Reporting 2021



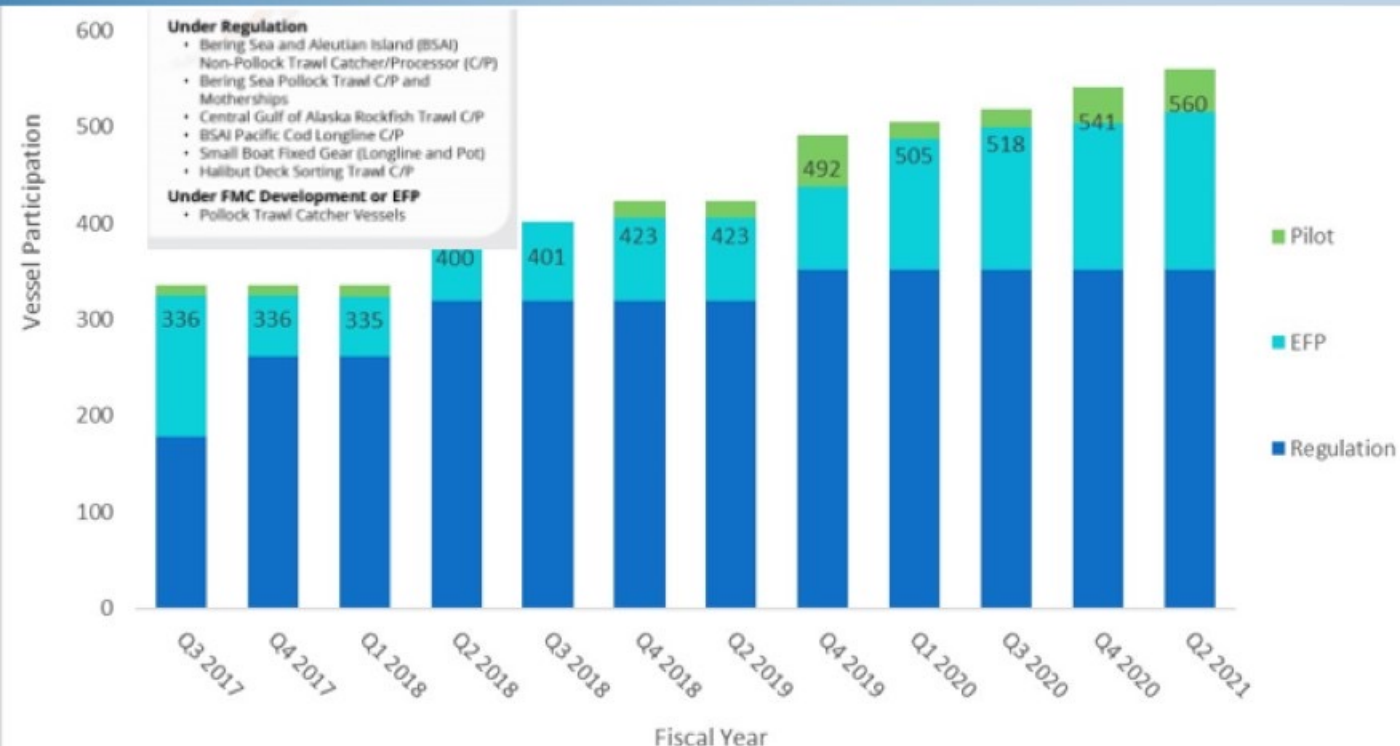
The National Fish and Wildlife Foundation and NMFS awarded **\$3.7 million** in **12 grants** to support the implementation of electronic technology solutions and modernization of data management systems for fisheries in U.S. waters. The grants will generate **\$7.7 million in non-federal matching contributions** for a **total conservation impact of \$11.4 million.**

Since 2015 the program has awarded more than **\$25 million to 83 projects** in U.S. fisheries plus **\$60.5 million through matching contributions.** Congress has appropriated **\$3.5 million to NMFS for this program each year.** Project recipients collaborate with a NMFS regional experts to conduct the project.

EM IN ALASKA

Seven EM programs in Alaska are designed to:

- 1) monitor compliance with regulations;
- 2) estimate catch and discard for fisheries management.

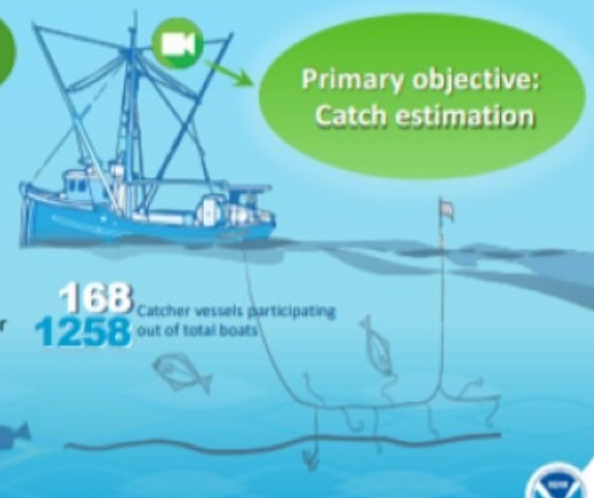


Electronic Monitoring (EM) in Alaska



Electronic monitoring on small fixed gear vessels

- Electronic monitoring for catch and discard information**
- EM provides catch and discard information.
 - Vessels chosen to have EM on their boats instead of observers.
 - Trips are randomly selected for monitoring.
 - Data collected from EM is used with observer data to estimate catch of the entire partial coverage fixed gear fleet.



NMFS COOPERATIVE RESEARCH PROGRAM



- Longline Survey for Sablefish
- Tagging of Pacific cod in the western Gulf of Alaska
- Evaluating factors affecting the efficacy of bycatch reduction devices in the pollock fishery, and the development of innovative data collection tools to quantify performance
- Eastern Bering Sea Shelf Bottom Trawl Survey
- AFSC Groundfish Tag Recovery Reporting Application for Mobile Devices
- Evaluating variability in Pacific salmon escapement rates from pelagic trawls
- Development and evaluation of fleet specific catch rates for use in standardized Catch Per Unit Effort (CPUE) indices of Pacific cod

The Cooperative Research Program has two components – the **regional** component, which is managed locally, and the **national** component, which is managed by NMFS HQ. Basic requirements are that a NMFS researcher serves as the principal investigator and that the research project partners with industry, academia, Tribes, or another government agency.

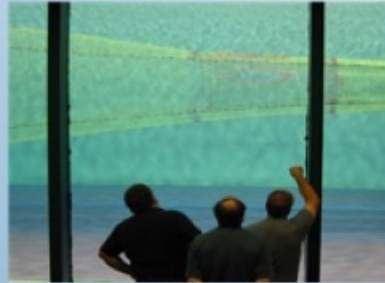


INDUSTRY-NMFS COOPERATIVE RESEARCH

Groundfish Forum has funded > dozen projects over the last 6 years for its members with costs of participation >\$100K per year



Installing sonar and camera to observe fish behavior, leading to salmon excluders



Flume tank tests of salmon excluder designs

Raised sweeps being test against conventional sweeps for catch rate (twin trawl)



Crew installing devices to measure height of sweeps above seafloor



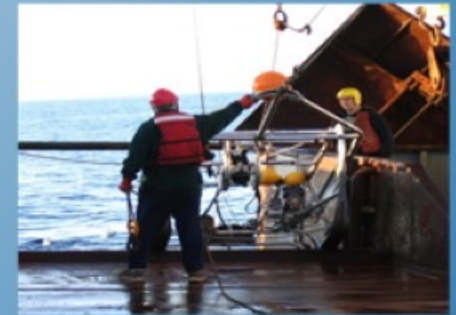
Halibut excluder trials



Camera chute to account for halibut bycatch



Opening a net that catches crabs after passing under sweeps/groundgear to assess injuries and mortality



Seafloor sled to assess seafloor effects of trawl and sweeps



Installation of video and triggering devices for active exclusion

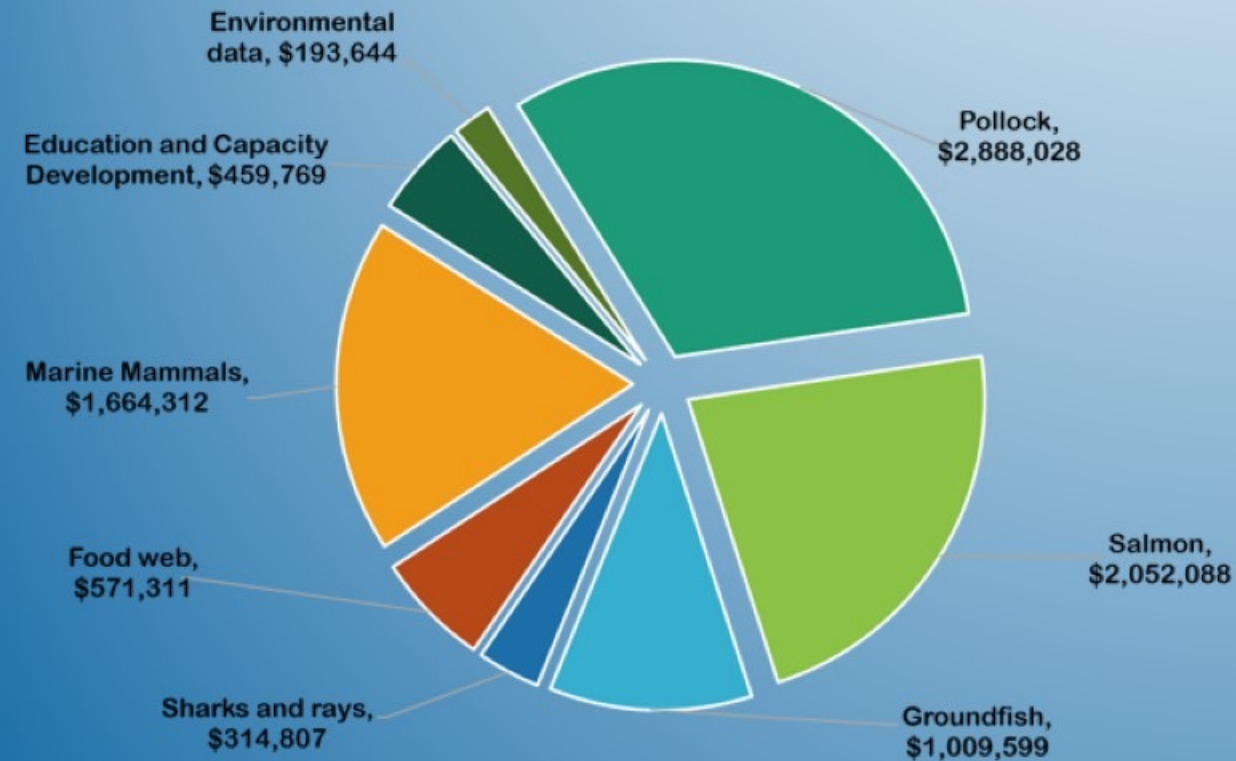


Alternative footropes to improve crab escapes and reduce injury

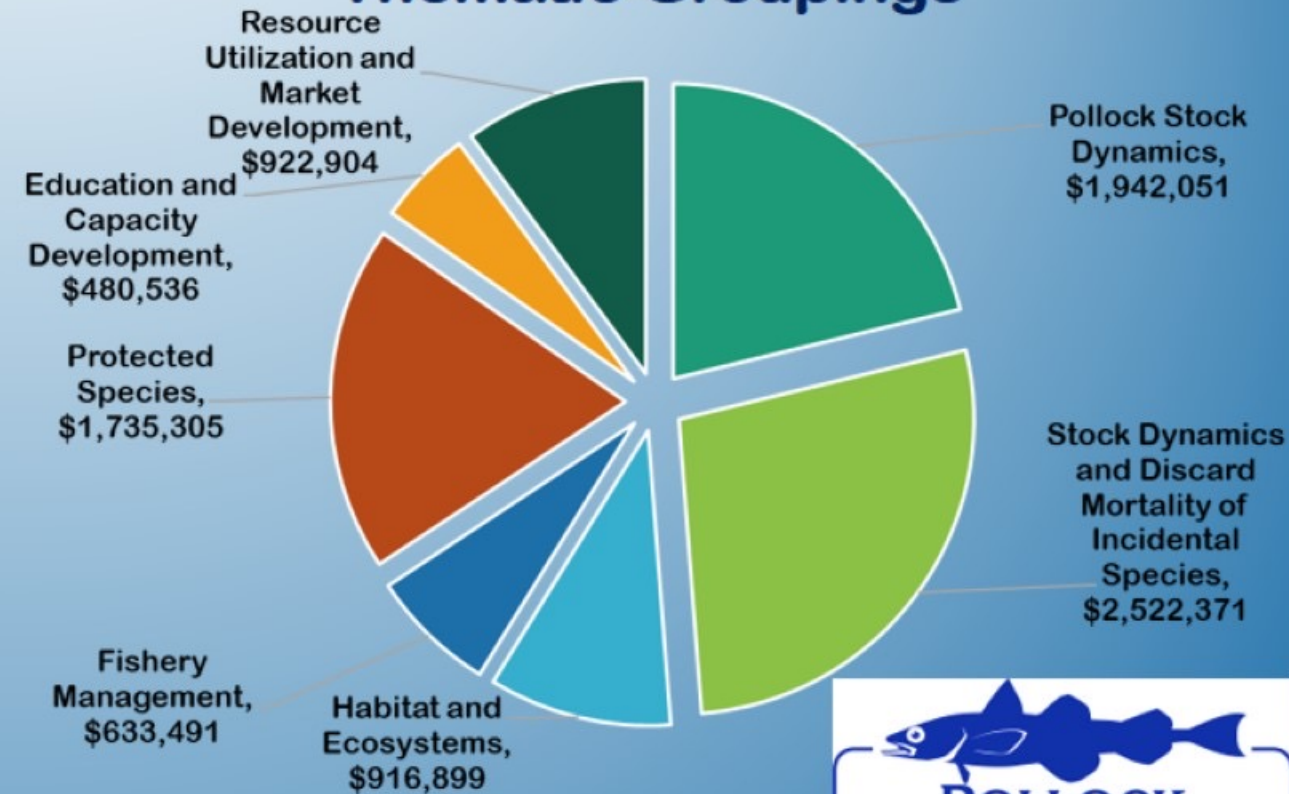
INDUSTRY-UNIVERSITY COOPERATIVE RESEARCH

The PCC funded **\$9.2 million** in research projects and **51** graduate fellowships, 2000-2021.

Taxonomic Groupings



Thematic Groupings





How to be Heard

Testimony at the Meeting

- You can testify on an agenda item to all three bodies: the SSC, the AP, and the Council
- You need to sign up on the sign-up sheet before the staff reports for your issue are completed.
- Before the Council, individuals or businesses get 3 minutes to testify, and persons representing organizations or associations get 6 minutes

PUBLIC TESTIMONY SIGN-UP SHEET

Agenda Item: _____

NAME (PLEASE PRINT)	TESTIFYING ON BEHALF OF:
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By signing this sheet, you agree to testify on the agenda item listed above. If you are unable to attend the meeting, you must notify the staff at least 48 hours before the meeting. If you do not show up, you will be removed from the list. If you are unable to attend the meeting, you must notify the staff at least 48 hours before the meeting. If you do not show up, you will be removed from the list.

Written Comments

- The Council accepts written testimony on agenda items.
- You may send a letter by mail or fax to the Council to the address.
- The Council accepts comments online via the Agenda at www.meetings.npfmc.org
- Comments must be for an item on the agenda, must include the submitter's name and affiliation, and must be submitted before the stated deadline. Attachments are accepted.

Open for comment until 04/14/2019 11:59 PM AKDT

0 Comments

All comments are part of the public record.

Meeting Time: 04/15/2019 08:00 AM AKDT

Comment Now (0)



SUMMARY

- Stakeholder participation has led to successful groundfish management through:
 - **Public input at every stage of the Council process** (proposal through public comment on proposed rule) improves transparency and peer reviews
 - **Stakeholder collaboration on research projects** address data needs for stock assessments (e.g., electronic monitoring) and improvements in gear technologies to reduce bycatch (Pollock Conservation Cooperative and Groundfish Forum)
 - Continued **outreach** to Tribes and rural communities
 - **Virtual meetings**

Yes, as a matter
of fact I do have
a retirement
plan...

FISHING!

JaneDiCosimo@gmail.com

