

# Building a Resilient Crab Fishery

*Draft Action Plan*

CCTF Review - Nov 2023




**ALASKA**  
BERING SEA  
CRABBERS

## National focus on Climate Resilient Fisheries

However, over-emphasis on climate may distract from near-term actions necessary to save fisheries.

- *Collapsed crab stocks example* - SSC climate workshop noted incredible science and climate modeling but would not have predicted the snow crab collapse. Need to plan for future but also need to be able to respond to current crisis and act today. (need actionables)

Shift in focus to encompass more than just climate → build resilience from any disruption

Climate change planning  Resilience or disaster planning

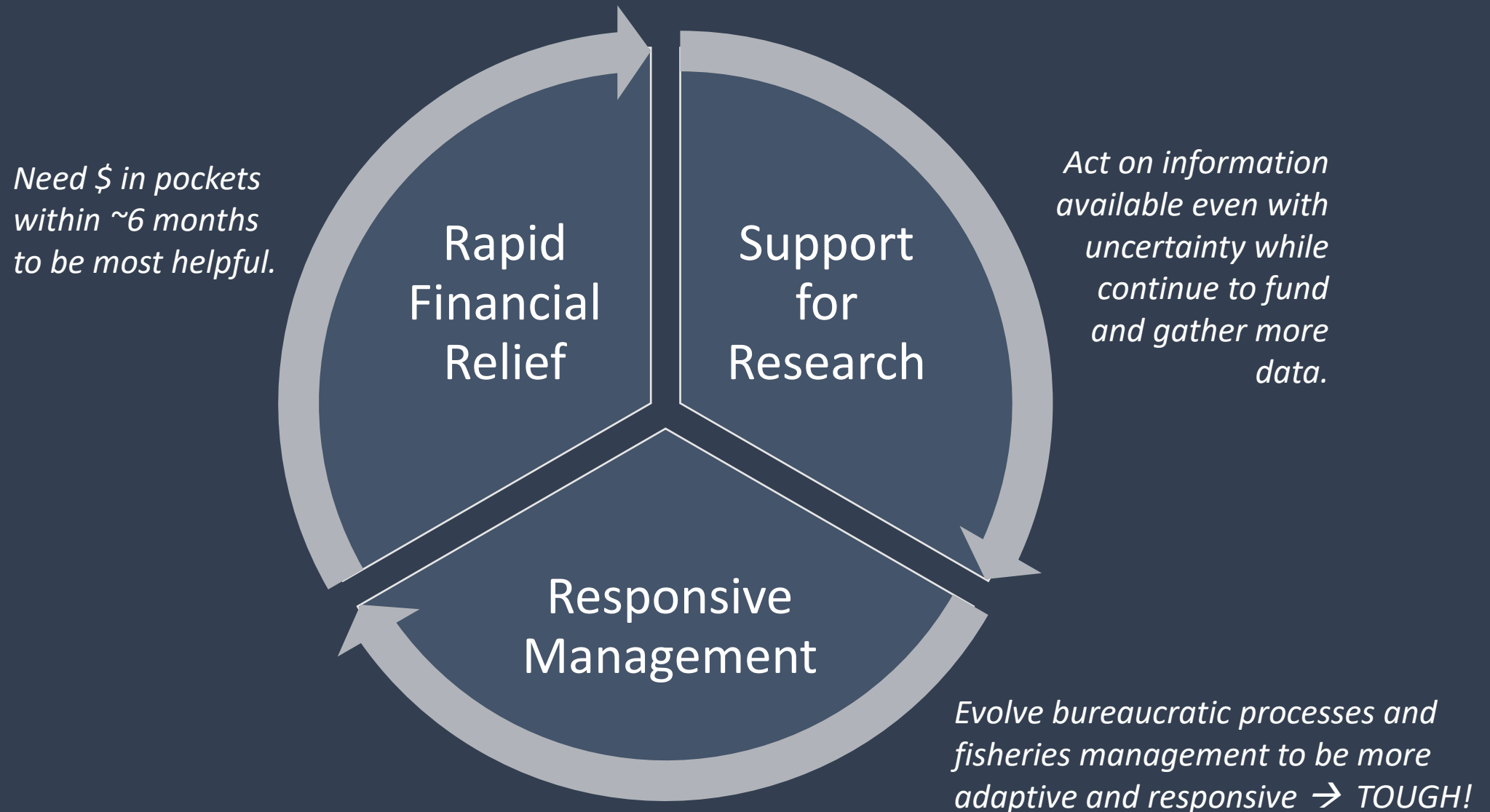
# What is Resilience?

BUSINESSES - *quickly **adapt to disruptions while maintaining continuous business operations** and safeguarding people, assets and overall brand equity.*

ECOSYSTEMS - *ability of an ecosystem to **maintain its normal patterns of nutrient cycling and biomass production after being subjected to damage** caused by an ecological disturbance.*

PEOPLE - *ability of an individual to **bend but not break, to bounce back, and “to adapt well in the face of adversity, trauma, tragedy, threats or even significant sources of stress.”***

# 3-prong approach to crisis management



# SOURCES

## for ABSC's resilient fishery action plan

- Peer reviewed literature
- Conversations with managers and scientists
- Poll of crab harvesters (March 2023 - 38 responses)

*This work was initiated by a NOAA Leadership Program detail in partnership with ABSC through the Intergovernmental Personnel Act.*



# Strategy to increase crab fishery resilience

- Stabilize the fleet
- Create opportunity
- Look to the future
- Managers
- Scientists
- Industry

[Figure 1]

	Managers	Scientists	Industry
<b>Stabilize the fleet</b>	<ul style="list-style-type: none"> <li>*Solidify trust with industry</li> <li>*Identify funding to cover minimum individual vessel business costs</li> <li>*Create a crisis roadmap of existing available resources</li> </ul>	<ul style="list-style-type: none"> <li>*Prioritize partnering with industry on research (and compensate industry)</li> <li>*Look beyond stock assessments</li> <li>*Use best scientific information available to act, even when uncertain</li> </ul>	<ul style="list-style-type: none"> <li>*Identify minimum individual vessel business costs</li> <li>*Find off-season work, cross training opportunities, or benefits to keep crew working and incentivize them to return</li> </ul>
<b>Create opportunity</b>	<ul style="list-style-type: none"> <li>*Diversify</li> <li>*Clearly state guiding [socioeconomic] principles</li> <li>*Implement actions to address fishing impacts to crab and crab habitat</li> </ul>	<ul style="list-style-type: none"> <li>*Invest in social scientist capacity</li> <li>*Identify research priorities and sustained funding</li> </ul>	<ul style="list-style-type: none"> <li>*Coordinate &amp; identify ways to keep operating as a fleet (diversify)</li> </ul>
<b>Look to the future</b>	<ul style="list-style-type: none"> <li>*Prioritize proactive management measures to address a range of disturbances</li> <li>*Adjust management representation to reflect all fishery participants</li> <li>*Evaluate emergency rule timing</li> <li>*Evaluate NS1 rebuilding provisions</li> <li>*Create and subsidize fleet insurance (not tied to climate) or reform fishery disaster process to be timely</li> </ul>	<ul style="list-style-type: none"> <li>*Research crab enhancement</li> <li>*Evolve and adapt to new research priorities and needs</li> </ul>	<ul style="list-style-type: none"> <li>*Pre-analyze information to populate disaster requests</li> <li>*Connect to carbon policy initiatives, like incentive programs or mitigating ocean acidification impacts</li> <li>*Create a trust to support independent harvesters</li> </ul>

Thank you to NOAA! The resilient fishery action plan work was initiated by Aja Szumylo on a NOAA Leadership Program detail in partnership with ABSC through the Intergovernmental Personnel Act.

DRAFT resilient crab fishery action plan – ABSC – June 2023 Page 2 of 2

*ABSC's draft resilient fishery action plan available at*

<https://www.alaskaberingseacrabbers.org/>

# Stabilize the fleet

## Managers

- Solidify trust with industry
- Identify funding to cover minimum individual vessel business costs
- **Create a crisis roadmap of existing available resources**

## Scientists

- **Prioritize partnering with industry on research (and compensate industry)**
- Look beyond stock assessments (humans/economics in addition to biology)
- Use best scientific information available to act, even when uncertain

## Industry

- **Identify minimum individual vessel business costs**
- Find off-season work, cross training opportunities, or benefits to keep crew working and incentivize them to return



# Stabilize the fleet (Managers)

*Create crisis roadmap of existing available resources*

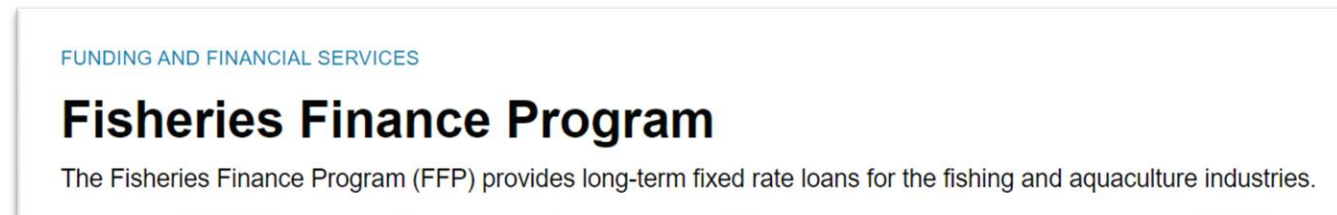
Example – ABSC fleet outreach & financial relief



The image shows a screenshot of a news release from the U.S. Small Business Administration. The header includes the SBA logo and the text "U.S. Small Business Administration" and "NEWS RELEASE". The main text of the release reads: "SBA Offers Disaster Assistance to Alaska Small Businesses Economically Impacted by the 2022/2023 Bering Sea Snow Crab and Bristol Bay Red King Crab Fisheries Closures".



The image shows a screenshot of a news article from NOAA. The header includes the NOAA logo and the text "National Oceanic and Atmospheric Administration" and "U.S. Department of Commerce". There is a search bar labeled "Search NOAA sites" and navigation links for "Home / News & Features". The main headline is "Secretary of Commerce approves disaster declarations in AK and WA". Below the headline is the sub-headline "Determination to address economic impacts from 2019 to 2023". There are also links for "Focus areas: Fisheries" and "Topics: fisheries". The date "December 16, 2022" is displayed at the bottom.



The image shows a screenshot of the Fisheries Finance Program page. The header includes the text "FUNDING AND FINANCIAL SERVICES". The main headline is "Fisheries Finance Program". Below the headline is the text "The Fisheries Finance Program (FFP) provides long-term fixed rate loans for the fishing and aquaculture industries."



# Stabilize the fleet (Scientists)


*Prioritize partnering with industry*

## Example – 2023 BBRKC Winter-Spring Collaborative Pot Survey


**Tagged Red King Crab**

First: Get Latitude/Longitude and Tag Number  
Second: Return to Sea  
Third: Send information to a project contact or give to an observer/ port sampler


Many tag types, treat them all the same



Satellite Tag on Harness





Traditional Spaghetti Tags




Acoustic Tags

**Project Contacts**

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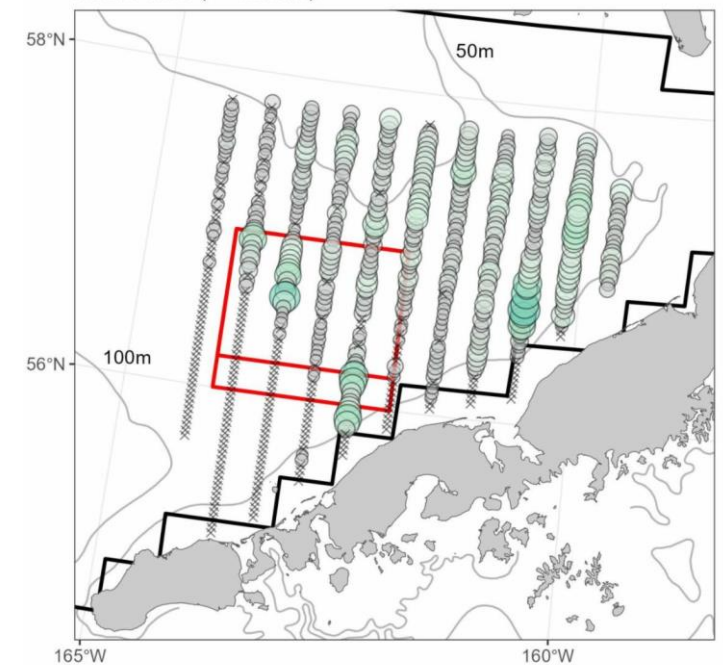
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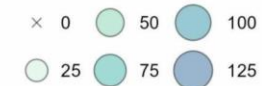




### 2023 BBRKC Winter/Spring Pot Survey

Mature male ( $\geq 120\text{mm}$ )



COUNT



 EBS Summer Survey Boundary  
 Red King Crab Savings Area

# Stabilize the fleet (Industry)

*Identify minimum individual vessel costs*

Example – March 2023 ABSC fleet poll

**2. For your business to survive the next few years, what is the bare-minimum ex-vessel value that the fleet would require?**

~\$1-2M per vessel

~\$100M per year for Bering Sea crab fisheries combined

...but more nuanced than that

# Create opportunity

## Managers

- **Diversify**
- Clearly state guiding [socioeconomic] principles (e.g., protect small businesses, prioritize flexibility)
- Implement actions to address fishing impacts to crab and crab habitat

## Scientists

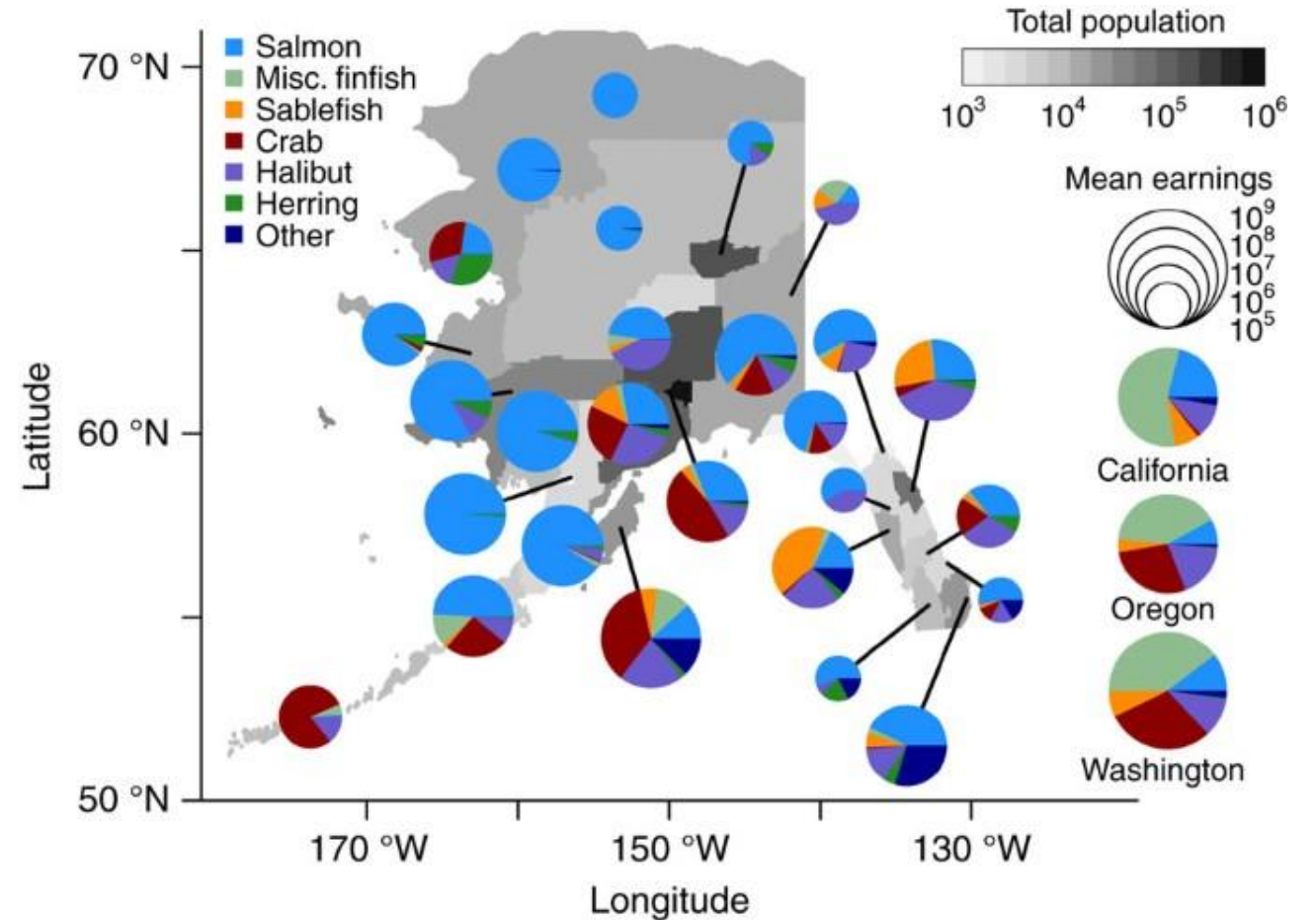
- **Invest in social scientist capacity**
- Identify research priorities and sustained funding

## Industry

- **Coordinate & identify ways to keep operating as a fleet (diversify)**

# Create Opportunity (Managers) *Diversify*

Example – Fisheries portfolio diversification and turnover buffer Alaskan fishing communities from abrupt resource and market changes



Cline, T., Schindler, D. & Hilborn, R. Fisheries portfolio diversification and turnover buffer Alaskan fishing communities from abrupt resource and market changes. *Nat Commun* **8**, 14042 (2017). <https://doi.org/10.1038/ncomms14042>



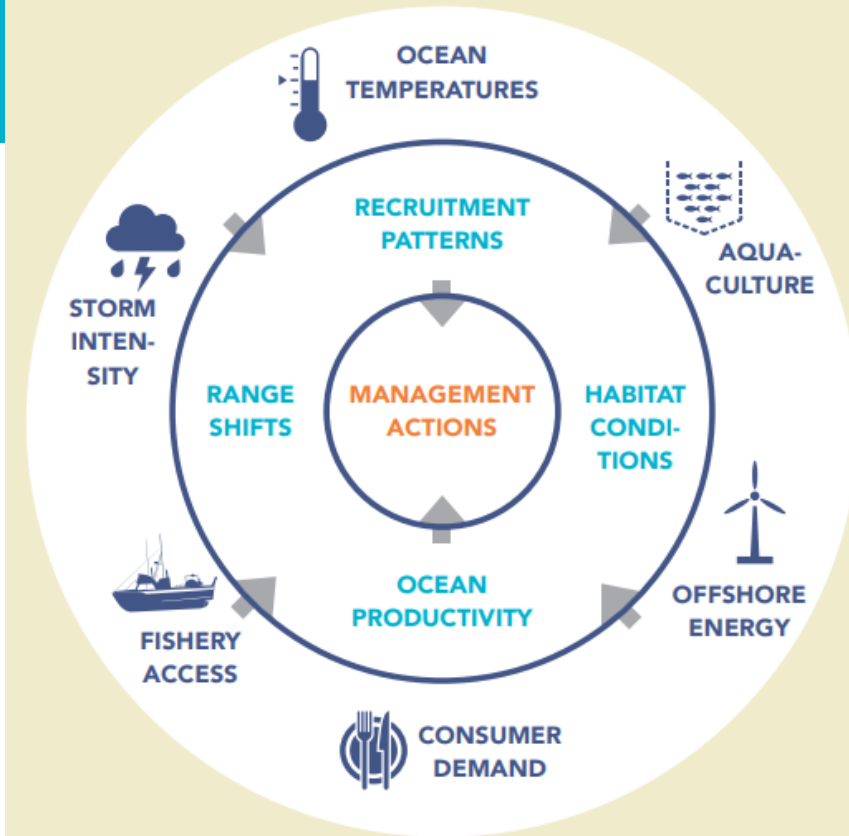
# Create Opportunity (Scientists)

*Invest in social  
scientist capacity*

Example – East  
Coast Climate  
Change Scenario  
Planning Initiative

## EAST COAST CLIMATE CHANGE SCENARIO PLANNING

What could shape East Coast fishing  
by 2040?



*What other factors would you include?*





## Create Opportunity (Industry)

*Coordinate & identify options to remain  
operating as a fleet (diversify)*

Example – ABSC work with fleet

# Look to the future

## Managers

- **Prioritize proactive management measures to address a range of disturbances (Rapid response, Framework)**
- Adjust management representation to reflect all fishery participants
- Evaluate emergency rule timing
- Evaluate NS1 rebuilding provisions (add fleet focused component in addition to species focused)
- Create and subsidize fleet insurance (not tied to climate) or reform fishery disaster process to be timely

## Scientists

- **Research crab restoration**
- Evolve and adapt to new research priorities and needs

## Industry

- Pre-analyze information to populate disaster requests
- **Connect to carbon policy initiatives, like incentive programs or mitigating ocean acidification impacts**
- Create a trust to support independent harvesters

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**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**50 CFR Part 660**

[Docket No. 180625576–8999–02]

RIN 0648–BJ81

**Magnuson-Stevens Act Provisions;  
Fisheries Off West Coast States;  
Pacific Coast Groundfish Fishery;  
2019–2020 Biennial Specifications and  
Management Measures; Inseason  
Adjustments**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Final rule; inseason adjustments to biennial groundfish management measures.

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**SUMMARY:** This final rule announces routine inseason adjustments to management measures in commercial groundfish fisheries. This action is intended to allow commercial fishing vessels to access more abundant groundfish stocks, while protecting overfished and depleted stocks.

**DATES:** Effective June 9, 2020.

The increased trip limits were requested by industry stakeholders and the Groundfish Advisory Subpanel (GAP) to relieve some restrictions for non-trawl commercial fisheries off the coasts of Washington, Oregon, and California, and to allow increased potential for utilization of available stocks where markets exist. The trip limit increases in this action are intended to expand access to certain fish stocks for the commercial non-trawl fleets during overall market declines and state restrictions that may limit fishing effort, and will help meet the current and rising demand of smaller domestic markets that are providing fresh fish to coastal communities and grocers. These increases to trip limits are intended to provide some relief to coastal fishing communities that have sustained severe disruptions in markets and decreases in tourist income due to state fishery closures.

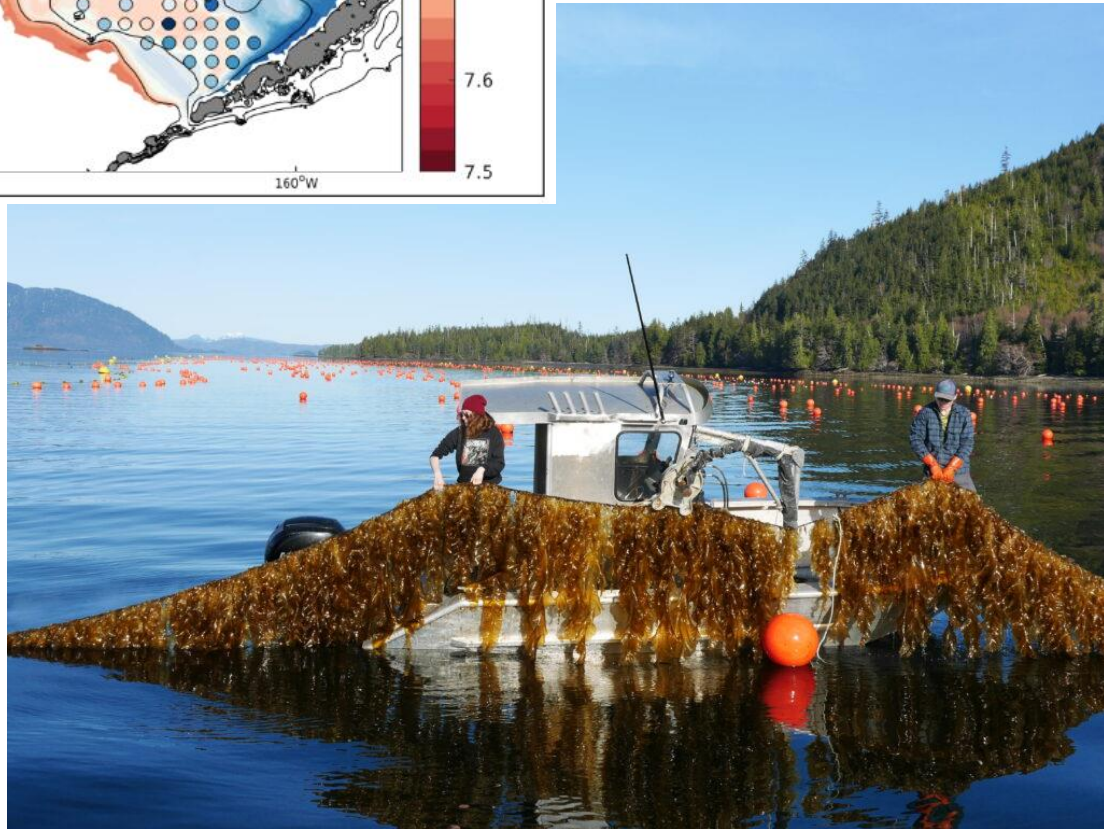
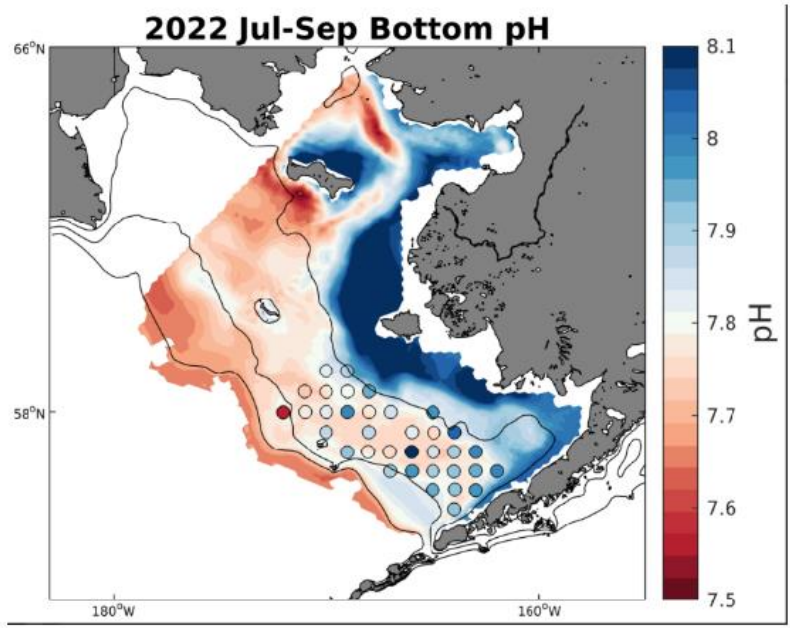
Look to the Future  
(Managers)  
*Prioritize rapid  
response*

Example – April 2020  
Pacific Coast  
Groundfish Inseason  
(Council action April,  
June implementation)



## Look to the Future (Scientists) *Research crab restoration*

Example – Alaska King  
Crab Research,  
Rehabilitation, and  
Biology (AKCRRAB)  
Program



Look to the Future  
(Industry)  
*Connect to carbon  
policy initiatives*

Example – incentive  
programs, mitigation  
of ocean acidification





<https://toolkit.climate.gov/>

# Ideal management approach for US fisheries

- 1) Identify fishery disturbances
- 2) Consider past magnitude of disturbances and rank vulnerability
- 3) Brainstorm list of proactive management responses
- 4) Select most relevant solutions and create LATENT management capacity in fishery
- 5) Take action for least diversified fisheries first





**Thank you and  
we welcome feedback**



**ALASKA  
BERING SEA  
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