



February 10, 2022

Mr. Simon Kinneen, Chair
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, AK 99501

RE: E Staff Tasking

Dear Chairman Kinneen and Council members:

Alaska Longline Fishermen’s Association, Alaska Marine Conservation Council, Central Bering Sea Fishermen’s Association, Aleut Community of St. Paul Island, Kawerak Inc., the Pew Charitable Trusts and Ocean Conservancy submit the following comments to the North Pacific Fishery Management Council (the Council) regarding Agenda Item E, Staff Tasking. The membership of our organizations collectively includes thousands of commercial, subsistence and recreational fishermen, marine scientists, small business owners and seafood consumers whose lives, cultures and livelihoods depend on a healthy and resilient Bering Sea.

Per Council and stakeholder feedback from the December 2021 meeting, we have made a few minor changes to the Ecosystem Matrix (attached; p. 4) including adding the sablefish target fishery, conducting additional outreach with trawl sector representatives and improvements to the community impacts section. At February 2022 Staff Tasking, we submit the following revised request:

We request the Climate Change Taskforce (CCTF) add the Ecosystem Matrix concept to the Agenda at the March 2022 meeting. The Ecosystem Matrix concept specifically aligns with the CCTF’s workplan and forthcoming Climate Report, which will “Identify potential management tools and actions for consideration by the Council that could help increase resilience and adaptation to climate change impacts.”

We also request that the Ecosystem Matrix be put on the Ecosystem Committee Agenda at a subsequent meeting. The Ecosystem Matrix extends beyond climate resilience and into larger Ecosystem-Based Fishery

Management (EBFM) considerations in both the Gulf of Alaska and Bering Sea Aleutian Islands. Thus, the Matrix is appropriate for consideration beyond the CCTF as well.

Ecosystem Matrix as a Process Concept

The Ecosystem Matrix (p. 4) provides an example management tool or onramp to identify target fisheries for which ecosystem or climate status may warrant additional consideration in Total Allowable Catch (TAC) setting. It represents a science-based and stakeholder-driven approach to support the CCTF in identifying management tools that can enhance climate resilience in the North Pacific. Review of the Ecosystem Matrix concept and consideration by the CCTF will also inform a more focused conversation about this management tool at a subsequent Ecosystem Committee meeting.

Three primary strengths of the Ecosystem Matrix concept are:

- The Matrix includes diverse data and diverse knowledge systems: Traditional Knowledge, Local Knowledge, ecosystem models, and species trend data derived from stock assessments and Ecosystem Status Reports.
- The development of the Matrix represents a unique, stakeholder-driven methodology that has included community perspectives from its inception.
- The purpose behind the Matrix is progressive in the context of EBFM and TAC setting. The concept develops a framework for the Council to explicitly consider community, subsistence and associated bycatch and predator trend information in setting TACs in a transparent and intuitive manner.

Methods

We utilize a qualitative approach that evaluates associated bycatch and predator indicator species trends and addresses subsistence, community and climate considerations for four BSAI groundfish target fisheries: EBS pollock, EBS Pacific cod, BSAI yellowfin sole, AK sablefish. These fisheries were selected because they are data-rich and constitute the majority of removals in the BSAI. Ecosystem Status Reports, Stock Assessment and Fishery Evaluations, and scientific and Tribal publications and reports are used to inform the Matrix (p. 4,5).

As a group, we have worked to provide a sample set of indicators and representative community/subsistence data, and we note that there is a large body of pre-existing literature to support this concept. We recommend that future work on the Matrix continue to be inclusive of diverse stakeholders as well as representatives with a strong social science background. We also note that indicators, especially when used in a conventional sense, can fail to accurately explain sociocultural phenomena and can exclude marginalized or Indigenous communities. The process we have developed can enhance such approaches in that it is attuned to rich qualitative data, looks beyond indicators when necessary, and calls for collaborative development and interpretation of indicators. We also acknowledge that indicator species included in the Matrix cannot be considered reflective of all predator-prey relationships; however, the examples represent an important proxy of ecosystem health and function.

This approach focuses on the impacts of the example directed fisheries on the key ecosystem attributes considered in the Matrix:

- Two indicator predator species (associated with the reviewed target fishery) were selected based on relative reliance on the target fishery species in their diets.
- Two indicator bycatch species (associated with the reviewed target fishery) were selected based on bycatch rates and /or socio-economic importance.
- Habitat and community impacts associated with each target fishery.
- Subsistence species-relevant metrics and qualitative social science data were used to analyze subsistence and community impacts.
- Climate considerations are taken into account as they relate to the reviewed target fishery or associated indicator species.

Summary

The Ecosystem Matrix presented here represents a precautionary management approach that can enhance climate resilience via enhanced Ecosystem Based Fishery Management in the North Pacific. The Ecosystem Matrix is also responsive to the October 2021 Council Motion that the output of various climate and ecosystem “research efforts be linked to the Council process and management actions.” The concept is specifically intended to address groundfish specifications and TAC setting because there is a direct and clear opportunity in the process for more explicit consideration of the impacts of target fisheries on the ecosystem, communities and subsistence users.

This concept is not duplicative of any work at the Council or Agency as it is geared to inform TAC setting, primarily considers the impacts of fishery itself on the ecosystem, includes diverse stakeholder perspectives and strives to develop new ways of considering community and subsistence data and socio-cultural phenomena in management processes.

We introduce this process concept in a transparent way in the hopes that the Council and Council bodies will take it up to advance sustainable and precautionary fishery management at the CCTF and EC. We commend the Council for their work to advance EBFM and climate readiness and thank you for your consideration of our comments.

Sincerely,



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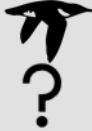






























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DRAFT	Pollock		Pacific cod		Yellowfin sole		Sablefish	
Predator Indicator Species	<p>N. fur seal Reliant on pollock, Decline since 2004</p> 	<p>Com. murre Reliant on juv. pollock, UME 14-16, Current trend unknown</p> 	<p>Steller sea lion Seasonally reliant on cod and pollock, mixed trends regionally</p> 	<p>Tufted puffin Reliant on juvenile cod, trend unknown</p> 	<p>Pacific cod Moderate decline since 2015; Overall variable trends in NBS and EBS</p> 	<p>Pac. halibut Declines since mid-1990s, stable-low since 2010</p> 	<p>Arrow. Flounder Variable long-term, recent declines since mid-2000s</p> 	<p>Sperm whale Data-limited, current trend unknown</p> 
Bycatch Indicator Species	<p>Salmon Chinook declines size & runs; Chum declines in NW AK 20/21</p> 	<p>Pacific cod Moderate decline since 2015; Overall variable trends in NBS and EBS</p> 	<p>Short-tailed albatross ESA-listed risk & at risk of extinction, recovering trend</p> 	<p>Skates (spp.) Alaska skate stable, mod. reduction Aleutian & Bering skate</p> 	<p>Pac. Halibut Declines since mid-1990s, stable-low since 2010</p> 	<p>Tanner crab Significant declines since 2014</p> 	<p>Giant grenadier Variable population trends since early 2000s</p> 	<p>Sharks spp. Data-limited, Catch data suggest stable populations for 3 primary species</p> 
Subsistence Impacts	<p>Salmon bycatch one of many cumulative stressors. W. AK communities have not met subsistence targets since 2010. Subsistence closed and/or dramatically reduced. Negative impacts to food security and culture.</p> 		<p>Less direct impacts to subsistence users; however, catch of non-target fish in Pacific cod fishery in opposition to traditional values to not waste resources.</p> 		<p>2018 Pacific halibut subsistence harvests in EBS regions down ~40% compared to 2014. Negative impacts to food security and culture. Reductions in Alaska</p> 		<p>Less direct impacts to subsistence users; however, catch of non-target fish in sablefish fishery in opposition to traditional values to not waste resources.</p> 	
Community Impacts	<p>Job creation and food security in US. Low salmon returns have limited and/or resulted in closures of Chinook and chum fisheries. Rising average age of commercial salmon fishermen.</p> 		<p>Job creation in the EBS and food security in US. Pacific cod fishery has mixed impacts to communities reliant on Pacific cod and other directed fisheries.</p> 		<p>Job creation and food security in US. Halibut bycatch primary source of BSAI removals. Reductions in permit holdings for Alaska Native and rural Alaskans.</p> 		<p>Job creation and food security in Alaska. Community concerns regarding bycatch of large year classes of juvenile sablefish.</p> 	
Habitat Impacts	<p>Pollock fishery pelagic trawl; however, gear is known to contact the bottom. 65% of Alaska EEZ closed to bottom trawling. Lost gear issues.</p> 		<p>Pacific cod fisheries generally occur over mud and sand substrates. Multiple gear types with differential impacts. Lost gear issues.</p> 		<p>Benthic trawl gear impacts to seafloor productivity and composition. Percentage trawl-disturbed habitat above average since 2013. Lost gear issues.</p> 		<p>Longline gear impacts to seafloor and mobile epifauna. Fishery occurs over different substate types. Lost gear issues.</p> 	
Climate	<p>Predicted SSB declines of up 70% by 2100 under high emissions scenarios. Predicted declines in recruitment in warmer temperatures.</p> 		<p>Egg hatch success temperature dependent. Predicted SSB declines of up 41% by 2100 under high emission scenarios.</p> 		<p>Long-term declines in SSB predicted. Increased growth correlated with warmer temperatures.</p> 		<p>Potential for strong year classes in warm conditions due to larval growth, diverse diets, high thermal/hypoxia tolerance.</p> 	
POTENTIAL OUTCOME	<p>Recommended TAC modifications by target fishery based on above matrix - TBD</p>							

Abbreviated Reference List Used in Ecosystem Matrix

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