

2024 Recommendations from public for Research Priorities to be considered by the Bering Sea FEP Team

Research ID	Description of research priority	Management concern addressed	Category <i>(if indicated)</i>	Notes
N006	Identify EFH by crab life stage and consider habitat protections by localized stock management unit	Important crab stock management units are at historic lows with increasing habitat disturbance from fishing and multiple stressors by life stage	Urgent (1-2 years)	
N025	Research on the cumulative impacts of bycatch and habitat damage, including in the context of climate change (e.g. effects to genetic diversity and resilience within species, effects across species, cumulative impacts from updated understandings of bottom contact from pollock trawling, etc.). This should also include the impacts of unobserved mortality, conceptualized either as bycatch or fully incorporated via some other metric/mechanism.	There is a research need for understanding the potential cumulative effects of bycatch both at the individual species level as well as the ecosystem level, over time and within the context of changing environmental conditions. For example, do bycatch withdrawals have amplified and cascading effects on highly climate-vulnerable species, e.g. in terms of weakening the genetic pool and diversity which may have otherwise contributed to climate resilience? Similar research should also be directed at cumulative impacts to habitat. For example, the significant extent of bottom contact from pollock pelagic trawling is becoming better understood. Considering the footprint of the pollock fishery, and decades of seafloor contact, it is critical to comprehensively understand the impacts of this for designing a sustainably-managed fishery. Such (and other) bottom contact likely has impacts to benthic communities, including snow and red king crab, that are currently not accounted for in assessment and management of pelagic trawling, and may be misdiagnosed as climate-related.	Critical ongoing monitoring	
N035a	Emphasize the ongoing urgency of priority #189 from the 2021 review: “Develop stock-specific ecosystem indicators and incorporate into stock assessments. ” This work should include precautionary responses to climate change factors.	Informing ecosystem-based fisheries management with data collection and research that bolsters use of ecosystem indicators, and dynamic management frameworks, within stock assessments, fishery management plan development, and TAC setting processes. These approaches are increasingly critical considering the large-scale changes occurring in North Pacific ecosystems, the cascading effects of those changes, and the complexity of interactions/impacts between fisheries.		Submitted by Hannah Heimbuch with Under Sixty Cod Harvesters (USCH) as pdf eAgenda Comment. Priority 189: Develop stock-specific ecosystem indicators and incorporate into stock assessments.

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N035e	Assessment of habitat and ecosystem impacts from fishing effort , including the cumulative impact of repeated effort over time. This should include benthic structures, habitat damage and disturbance, and “ecosystem component” fauna.	Informing ecosystem-based fisheries management with data collection and research that bolsters use of ecosystem indicators, and dynamic management frameworks, within stock assessments, fishery management plan development, and TAC setting processes. These approaches are increasingly critical considering the large-scale changes occurring in North Pacific ecosystems, the cascading effects of those changes, and the complexity of interactions/impacts between fisheries.		Submitted by Hannah Heimbuch with Under Sixty Cod Harvesters (USCH) as pdf eAgenda Comment
N037c	Ecosystem Indicators: Using indicator species as a proxy for overall ecosystem health and function can be both a cost- and time-efficient measure (Carignan & Villard 2002). This is particularly relevant in biodiverse, species-rich systems like the Eastern Bering Sea, where it is not possible to monitor all taxa (Lindenmayer 1999). The use of indicator species can be used to achieve specific management objectives including assessing the efficacy of management measures and detecting both early stage and long term ecological changes or shifts (Siddig et al. 2016).	We urge the Council to extend the numerous indicator items identified in the 2021 Research Priorities and move beyond monitoring to develop a new Urgent Research Priority that explores management targets, reference points and onramps for ecosystem indicators to inform management action.		Submitted by Ocean Conservancy. See comment pdf file for additional information.
N039d	AMCC underscores the urgency of: #164: Effects of trawling on crab and benthic communities: A) Quantification of unobserved mortality must be developed and considered retrospectively, in accordance with National Standard 9; and B) Species identified as benthic habitat in the Essential Fish Habitat review are considered with susceptibility and recovery rates that are arbitrary and do not reflect BSIA; some species named do not exist in the North Pacific, highlighting the problematic nature of borrowing models from a different (i.e. warmer and more fast-growing) ecosystem without diligent and precautionary adjustments; octocorals are evaluated differently from corals that attach to hard substrates, despite having similar susceptibility and recovery rates from disturbance			

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N039e	AMCC underscores the urgency of: #244: Collect and maintain time-series data on the community composition, production and biomass of benthic invertebrate and vertebrate fauna : This should be expanded to include sedentary megafauna, which contribute substantially to ecosystem health and are particularly vulnerable to disturbance			