

NPFMC Top Ten Research Priorities for 2022-2024

Research ID	Year Added	Title	Rationale for Elevation to Top Ten	Council Priority
148	2018	Spatial distribution and movement of crabs relative to life history events and fishing	Environmental conditions are changing rapidly in the eastern Bering Sea, driving related changes in the distribution of commercial crab stocks. Fishing behavior and life history timing (e.g., reproduction, growth) may subsequently be influenced by changes in crab distribution. The CPT discussed collection of data on distribution and movement relative to oceanographic conditions as critical for the development of the complex models needed to predict future stock abundance, stock boundaries, stock production, and management strategies.	Urgent
163	2018	Conduct routine fish, crab, and oceanographic surveys in the Arctic Ocean	Although fishing is currently prohibited in Alaska's Arctic waters, the region is changing rapidly and fish or crab populations may expand into or increase locally in the Arctic. Therefore, it is important to conduct routine surveys to monitor changes in Arctic waters.	Important
178	2018	Develop a framework and collect economic information	Addresses the need for a framework for collection of economic information on commercial, recreational, and charter fishing, as well as fish processing, to meet the requirements of the MSFCMA sections 303(a)(5, 9, 13), 303(b)(6), and 303A.	Urgent
189	2018	Develop stock-specific ecosystem indicators and incorporate into stock assessments	To support an ecosystem approach to management in the context of single- (or multi-) species assessments, there is a continued need to develop indicators that link ecosystem variability and changes to variability in growth, survival and recruitment of fish stocks as illustrated by the recent dramatic downturn in Pacific cod. This provides an important avenue for linking ecosystem changes directly to management-relevant reference points such as OFL and ABC.	Urgent
246	2018	Cooperative research efforts to supplement existing at-sea surveys that provide seasonal, species-specific information on upper trophic levels	The pelagic distributions and abundances of top predators (seabirds and marine mammals) provide indicators of the availability of prey, many of which are commercially important species such as pollock or Pacific cod. Thus, knowledge of their distributions and abundances can be useful as indicators of ecosystem "health". Also, in some instances, these top predators are inadvertently impacted by fisheries. Thus knowledge of their distributions can be important for fisheries where impacts may occur.	Important
431	2018	Develop tools for analyzing coastal community vulnerability to fisheries management changes	Predictive accuracy of pre-implementation economic and social impact assessments of proposed fishery management changes (e.g., halibut ABM) would be improved through better understanding of how various dimensions of community vulnerability and resilience can be effectively analyzed and, ultimately, how identified and measured vulnerabilities are likely to variously interact with the nature, direction, and magnitude of proposed changes to the fishery. An example needing these tools is understanding the linkages between federal commercial fisheries PSC catch of chinook and impacts on use of salmon resource by communities in western coastal Alaska by continued development of genetic tools.	Important
592	2018	Maturity estimates for Bering Sea and Aleutian Island crab stocks	The availability of maturity data from male and female crab are incomplete for use in stock assessment models. Key parameters defining size at maturity, proportion mature at size, and the potential for biennial reproductive cycles are currently uncertain for many stocks. Methods for determining spatial and temporal variability of these quantities are needed to adequately characterize mature biomass.	Urgent
611	2018	Collection of socio-economic information	Collect socio-economic information on commercial, recreational, and charter fishing, as well as fish processing, to meet the requirements of the MSFCMA sections 303(a)(5, 9, 13), 303(b)(6), and 303A.	Critical Ongoing Monitoring
712	2021	Gap Analyses on loss of biological samples due to implementation of EM	Research to determine the effects of loss of biological data collections due to Electronic Monitoring (EM). As the use of EM increases in different fisheries, fewer at-sea observer observations and collections are being made which reduces haul specific data collections. Evaluations of the effects of this on catch accounting estimates and stock assessment are needed as well as an evaluation of alternative sources or proxies for biological data as EM use increases.	Urgent
731	2021	Norton Sound Red King Crab case study	Needed to help understand and address urgent stock assessment and management challenges in the NSRKC fishery, including the efficacy of previously instituted community protection management measures through the collaborative involvement of the LKTKS taskforce and the Climate Change taskforce. This could be informative for better understanding predation by groundfish on juvenile crab in nearshore areas and population bottlenecks, and to improve management to improve stock condition. What is happening in this fishery involves cross-jurisdictional considerations, points to the need to work with multiple knowledge systems, highlights the intertwined nature of human dimensions and fishery changes (e.g. the effect of climate changes on species distribution and harvest capabilities), and is an urgent matter given the gravity of the changes occurring with the crab population and harvest.	Urgent