

Scallop Plan Team Research Priorities  
Feb 2022 (pre-meeting)

Res ID	Title	Description	Research Status	Scallop Plan Team Priority	Comments
166	<b>Estimate scallop stock abundance</b>	Estimate scallop stock abundance in unsurveyed areas using fishery independent methods including analysis of current camera sled data.	Partially underway	4_Strategic	
171	<b>Acquire basic life history information (e.g., natural mortality, growth, size at maturity) for data-poor stocks</b>	Basic life history information is needed for stock assessment and management of data-poor stocks, such as scallops, sharks, skates, sculpins, octopus, grenadiers, squid, and blue king crab (Bering Sea), golden king crabs (Aleutian Islands), and red king crab (Norton Sound). Specifically, information is needed on natural mortality, growth rates, size at maturity, and other basic indicators of stock production/productivity.	Partially underway	3_Important	
175	<b>Develop age-structured models for scallop assessment</b>	Age structured models for scallops are needed to increase understanding of population dynamics and harvestable surpluses.	Partially underway	3_Important	Data recovery and other steps needed to make existing data usable. Programmer needed
203	<b>Improve discard mortality rate estimates for scallops</b>	Field and laboratory studies are needed to estimate Alaskan scallop discard mortality by evaluating relationship between capture, release condition and deck time, and subsequent survival.	Underway - work to refine categorization of discarded scallops by observers	2_Urgent	
207	<b>Collect and analyze fishery effort and observer data for scallops</b>	Collect and analyze fishery effort and observer data for scallops. Standardize CPUE data to correct for factors contributing to variable CPUE.	Underway	1_Critical	
223	<b>Develop and evaluate global climate change models (GCM) or downscaled climate variability scenarios to assess impacts to recruitment, growth, and spatial distributions.</b>	Quantify the effects of historical climate variability and climate change on recruitment, growth, and spatial distribution. Develop standard environmental scenarios (e.g., from GCMs) for present and future variability based on observed patterns.	Partially underway	3_Important	
224	<b>Climate and oceanographic information covering a wider range of seasons</b>	There is a need for climate and oceanographic information that covers a wider range of seasons than is presently available.	Partially underway	4_Strategic	
238	<b>Develop a GIS relational database for habitat, to include a historical time series of the spatial intensity of interactions between commercial fisheries and habitat.</b>	Develop a GIS relational database for habitat, including development of a historical time series of the spatial intensity of interactions between commercial fisheries and habitat. Such time series are needed to evaluate the impacts of changes in fishing effort and type on EFH.	Underway	3_Important	Elevated priority since scallop EFH overdue for update
251	<b>Modeling studies of ecosystem productivity</b>	Modeling studies of ecosystem productivity in different regions (EBS, GOA, and AI). For example, studies could evaluate the appropriateness of the 2 million t OY cap.	Underway	4_Strategic	

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361	<b>Effects of Ocean Acidification on Scallops</b>	Laboratory studies are needed to understand the mineralization of scallop shells through their life cycle and under current spatial variability and future scenarios of ocean acidification.	Partially underway	2_Urgent	
362	<b>Monitoring potential water quality impacts</b>	Seasonal water quality monitoring in known scallop areas are needed to determine whether conditions are detrimental to scallop growth and survival.	No action	3_Important	Pending deployment of CTD and other WQ instruments on dredge and moored
363	<b>Area-specific variability in scallop population processes</b>	Investigate area-specific variability in vital population processes including growth, recruitment, natural mortality and movement including mark-recapture tagging studies. Bed-specific growth could be analyzed from archived shells.	Partially underway	3_Important	
472	<b>Evaluate causes of variable meat size, undersized meats in scallops</b>	Exploratory tows in the Bering Sea (District Q) and some areas open to harvest around Yakutat (District D) have shown scallops with disproportionately small meats relative to shell height. The cause of this condition as well as potential for recovery is unknown to industry. Additionally, samples from Bering Sea scallops with weak meats were collected and sent to the ADF&G Anchorage Pathology Lab for analysis of any evidence of diseases and/or parasites. The results showed that the scallops were infected with an apicomplexan-like parasite. To further evaluate the geographic extent and infection rates of this parasite, a sampling effort was initiated in July 2015 to collect samples from select locations across the state, from Yakutat to the Bering Sea.	Partially underway	3_Important	
511	<b>Computerized image analysis of current camera sled data for scallops</b>	Assessment of existing database of camsled images is needed to provide scallop counts and sizes, contributing to abundance estimates. Additionally, sediment and habitat type and presence of other organisms can be assessed.	<b>Complete</b>	2_Urgent	
513	<b>Evaluate extent and importance of parasites in scallop populations</b>	Samples from Bering Sea scallops with weak meats were collected and sent to the ADF&G Anchorage Pathology Lab for analysis of any evidence of diseases and/or parasites. The results showed that the scallops were infected with an apicomplexan-like parasite. To further evaluate the geographic extent and infection rates of this parasite, a sampling effort was initiated in July 2015 to collect samples from select locations across the state, from Yakutat to the Bering Sea.	Partially underway	3_Important	
551	<b>Estimate scallop survey catchability</b>	Catchability of scallops in the fishery independent survey is needed to generate abundance estimates of scallops. Currently the survey provides only CPUE data.	Partially underway	2_Urgent	A few paired tows have been done, but need more. Camsled data also available for use.
552	<b>Expand statewide scallop survey</b>	The State of Alaska fishery independent dredge survey has been conducted in a limited number of known beds. Expansion of the survey beyond the edges of known beds into previously un-surveyed areas will improve knowledge of bed size and true scallop distribution.	Underway	1_Critical	
553	<b>Population structure of scallops</b>	Currently scallop beds are monitored independently. Knowledge of source/sink dynamics and meta-populations processes will improve the ability to manage weathervane scallops at the stock level.	No action	3_Important	<b>Top Two</b> Basis for current pop structure is dated. Needs to be addressed with modern approaches, i.e., spatial genetics

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571	<b>Age validation for scallop shells</b>	The combination of O18 (oxygen isotope) analysis and a benthic temperature model can be used to validate that the bands in cross sections of scallop shells are annuli and can be used to determine scallop age. This method is less time consuming than other methods that require recapture of scallops.	Partially underway	3_Important	<b>Top Two</b> Pilot studies done. Need to collect more samples and apply methods
611	<b>Collection of socio-economic information</b>	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.	Partially underway	1_ Critical	<b>Council Top Ten</b>
612	<b>Maintain observer program</b>	Maintain the observer data collection activity and ensure that fishery dependent data collected provides a valid representation of the catch and can be compared easily to the previous data collection methods and time series remain intact.	Underway	1_ Critical	