NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
Angel Drobnica, Chair | David Witherell, Executive Director
1007 W. 3rd Avenue, Suite 400, Anchorage, AK 99501
Phone 907-271-2809 | www.npfmc.org

Scallop Plan Team

REPORT

March 4, 2025

VIRTUAL

Plan Team Members in attendance:

Tyler Jackson (ADF&G, Co-chair)
Anita Kroska (NPFMC, Co-chair/Coordinator)
Scott Miller (NMFS-SF)
Skylar Bayer (NMFS-HCD)

Members not in attendance: Ryan Burt (ADF&G)

Introductions

The 2025 Scallop Plan Team (SPT) meeting was held on March 4, 2025 online via Zoom. All meeting materials and connection information were posted to the SPT eAgenda. The meeting began at 12:30 p.m. and members welcomed new SPT coordinator, Anita Kroska. As this meeting is the first off-cycle meeting after Scallop FMP Amendment 18 went into effect, this meeting will serve only as an update. Fishery performance and overfishing information will be appended to next year's SAFE report.

Overfishing Determination 2024-25

Total fishing mortality during the 2024/25 season was 285,981 lb shucked meats, consisting of 274,570 lb retained catch and 11,411 lb discard mortality (20% handling mortality on discards). Since total mortality is well below the OFL of 1.284 million lb shucked meats, overfishing did not occur in 2024/25.

2024-25 Statewide Fishery Performance

The 2024/25 Alaska weathervane scallop fishery was open in all management areas except the Area H (Cook Inlet) and the East Kayak Island subsection of Area E (Prince William Sound). Vessels only fished in the Shelikof and Northeast districts of Area K (Kodiak), the West Kayak Island subsection of Area E, and Area D (Yakutat). A summary of catch statistics in pounds of shucked meats are in Table 1. Fishing in Areas M (AK Peninsula), O (Dutch Harbor), and Q (Bering Sea) has become sporadic since the 2020/21 season, mostly due to comparatively poor fishing performance and rising operation costs. Anecdotal reports from the fleet suggest that fishing performance and meat quality show improvement, and there may be plans to fish those areas in 2025/26. The Southwest district of Area K was not fished in 2024/25 due to poor meat quality encountered in 2023/24, though vessels plan to return there in 2025/26.

Table 1. Summary of fishery removals (lb shucked meats) and CPUE (lb per dredge hr) for the 2024/25 Alaska weathervane scallop season.

District	GHL	Retained	CPUE	Discards	Discard M	Total Mortality
K. Shelikof	100,000	100,020	93	20,326	4,065	104,085
K. Northeast	40,000	40,410	119	4,102	820	41,230
West Kayak Is.	7,200	7,260	115	635	127	7,387
Yakutat	145,000	126,880	59	31,995	6,399	133,279
Total		274,570		57,059	11,411	285,981

Status of Assessment Development

Tyler Jackson presented an update on assessment development. During the last cycle/meeting, it was established that there are data disparities that preclude development of a stock-wide age structured assessment model. Instead, Tyler presented a data-limited approach for estimating a model based index of biomass for ‘core’ surveyed areas. The SSC suggested exploring a simple size structured model to make better use of shell height composition data which is ubiquitous. In this meeting, Tyler presented a size structured model using the GMACS framework for the Kodiak Shelikof district.

The model began in a non-equilibrium state in 1993/94 and ran through 2023/24. It included a single sex (males and females combined) and two fleets: the directed fishery and the dredge survey conducted by ADF&G. The modeled year was from May 1 - Apr 30 beginning with the dredge survey followed by a period of natural mortality until June 1 when SSB was estimated, then followed by another period of natural mortality to the midpoint of the fishery when fishery catch occurred as a pulse, and lastly followed by a period of natural mortality, growth, and recruitment until Apr 30. SSB was defined as scallops > 70 mm shell height, though Tyler noted that size at maturity is not well understood and that it only informs SSB here. Recruitment was estimated as a series of annual deviations from average recruitment.

The retained catch data (from the fishery) ranged from 1993/94 to present and was in terms of round biomass (t). The discard catch data was from 1996/97 to present with 20% discard mortality. Abundance index data was informed by two data sources: standardized fishery CPUE calculated from 1996/97 to the present and dredge survey biomass is from 2016 to the present. Additional standard error was estimated for the fishery CPUE index, but not the survey index. Catchability was estimated for both indices and selectivity was logistic for both fleets. Shell height composition data in 10 mm bins from 31-160+ mm associated with the retained catch, discards, and dredge survey were used to inform size structure. The model used a Dirichlet multinomial likelihood for all three data sources, with arbitrary input sample sizes.

Growth transitions occurred annually for all sizes and assumes a von Bertalanffy growth, with individual variation in asymptotic length (Linf). Tyler estimated Linf and growth rate (kappa) using a linear mixed model on growth increment data from the survey and estimated the standard deviation associated with individual variation in Linf as a free parameter in GMACS. Round weight was assumed to be an allometric function of shell height based on survey data. Natural mortality was constant at 0.13 as specified in the FMP.

Overall the model fit the catch data well and followed the trend of the index data although fishery CPUE data were considerably downweighted due to the extra observation error. The model estimated survey catchability to be 0.6, though it was suggested to consider 0.83 (assumed dredge efficiency) as a prior. Survey selectivity was estimated as 1 for all sizes, which Tyler flagged as an area of further investigation. Some misspecification was clear based on fits to size data, though the model seemed to capture the approximate modes of the data.

Estimated SSB declined through 2016, but then steadily increased as retained catch has rebounded in that same time period. Tyler noted that the scale and trend of SSB may likely change as selectivity, catchability, and natural mortality are better understood. While the model appears to generally capture population dynamics, it is with misspecifications and therefore not ready to use in management without further diagnostics. While some of the outcomes for the Kodiak Shelikof district were generally acceptable, exploration with Yakutat data was not as promising. The next steps for the model is to identify misspecification and continue to tailor the model to other survey districts (i.e. Yakutat, West Kayak Island, and Kodiak Northeast). Tyler noted hesitation to add much more complexity to the model because there is very limited capacity for maintaining complex models for each district and fine resolution isn't required for management of this stock.

There was a discussion regarding research topics that could help improve model parameters. The group identified growth, natural mortality, size of maturity, general knowledge of scallop biology, and population connectivity as some important topics. Size of maturity is helpful in understanding what portion of the population we want to manage, determining the relationship between meat weight to size is also important. Improved understanding of population connectivity can help portion out beds in the model as part of the core stock assessed.

Further, spatial analyses on patchiness and habitat availability could be important in determining where preferred habitat may be available in different areas; some patchiness may be due to the bathymetry around Kodiak as well. Scallops are able to swim to escape predators, but likely aren't moving in a particular direction towards habitats and great distances traveled may just be due to dominant currents based on research on Atlantic sea scallops (e.g., Pogsay 1981, Stokesbury & Himmelman 1996). However, to our knowledge, this research has not been conducted on Weathervane scallops. Skylar Bayer indicated that scallop beds that have diversity in size likely have consistent self-recruitment, but beds that may only have one size class might exist because of a one-off recruitment event to that location (i.e. not a common occurrence). An industry representative said they've witnessed scallop larvae at a hatchery settling in response to the presence of adults, so it may be that adult Weathervanes are the habitat that their larvae are searching for in order to settle and recruit.

Finally, it was discussed how, once the model was deemed appropriate for use in management, an FMP amendment would be required. Currently, biological reference points are determined for the full stock. A model based approach covering only a portion of the stock would require more consideration for how reference point calculations should be delineated.

Socioeconomic Considerations

Total harvest was 274,570 lbs of shucked meats in the 2024-25 season. Two vessels participated in the fishery. No change in vessel or permit ownership occurred. Total value will likely be between $2.75 million and $3.5 million but average price will come from the Commercial Operators Annual Report process that is filed at the end of March. This compares to $4.082 million in total value last season on 318,647 lbs of shucked meats landed. Kodiak SW was not fished due to off color meats that are not marketable. An industry representative indicated that this has happened in other areas and when not fished for a period of time, the meats return to normal white color. The cause of meat discoloration is unknown, however, parasites were mentioned as one potential contributor.

Marketability of scallops from the Bering Sea is hampered by color and consistency issues but there are some signs of improvement and industry is going to fish the area this year. Japanese scallops are still coming into the US and are not allowed into China. Atlantic scallops are declining in abundance so market prices are increasing so import pressure is not as great of a factor this year.

2025 Dredge Survey Plan

The 2024 ADF&G dredge survey was cancelled due to delays associated with vessel mechanic issues and ADF&G staffing availability. The 2025 survey will operate in the western GOA, covering Kodiak Shelikof, Kodiak Northeast, and Kamishak beds (194 stations in total) as previously planned in 2024. The survey will take place during the second half of April coinciding with the lowest tidal swings for the month.

New Business

In accordance with established practice, the SPT nominated Anita Kroska, NPFMC Coordinator, as the new Co-Chair. This was approved by unanimous consent.

SPT members were asked to bring forward any additional topics for the next meeting cycle (e.g., research talks) that might be of interest or address ongoing knowledge gaps.

The SPT is currently looking for nominations to fill vacant seats. In particular, strong candidates would have quantitative expertise in stock assessments, and/or those experienced in shellfish management. For more information, contact Tyler Jackson (tyler.jackson@alaska.gov) or Anita Kroska (anita.kroska@noaa.gov).

Scallop FMP Amendment 18 allows for non-annual assessments and to set harvest specifications less frequently than an annual basis. As a result, the SPT will present a final scallop SAFE report next cycle in 2026. The next meeting is tentatively planned for Tuesday, March 3, 2026.

Others in attendance:

Katie Palof (ADF&G)

Serine Reeves (NPFMC)

Kendall Henry (ADF&G)

Kevin McNeel (ADF&G)

Jan Rumble (ADF&G)

Cassie Whiteside (ADF&G)

Jim Stone (AWS)

Ben Daly (ADF&G)