FMP SEA SCALLOP FMP
STOCK(S) Sea Scallop (Georges Bank and Mid-Atlantic - combined)
LAST ASSESSMENT 2020 Management Track Assessment

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL (mt) (GB/MA)	ABC/ABC CR (GB/MA)	ACL (GB/MA)	ACT
Combined CASA model, 2019	A statistical length based model. Separate analyses for GB open, GB closed and Mid-Atlantic and results combined to assess the entire stock.	No	No	73,421 for 2019 (SAW65, F=0.64) 59,186 for 2020 (SAW65, F=0.64) 45,392 for 2021 (2020, F=0.61) 36,135 for 2022 (2020, F=0.61) 27,504 for 2023 (2020, F=0.61) 33,406 for 2024 (2020, F=0.61) 28,970 for 2025 (2020, F=0.61)	**ABC= Catch associated with fishing rate that has 25% chance of exceeding OFL** 62,989 mt in 2019, 50,460 mt in 2020, 35,627 mt in 2021, 28,702 mt in 2022, 22,631 mt in 2023, 26,326 mt in 2024, 22,840 mt in 2025 (including discards)	ABC- Discards 57,003 mt for 2019 45,414 mt for 2020 30,517 mt for 2021 24,304 mt for 2022 19,828 mt for 2023 21,497 mt for 2024 17,901 mt for 2025	Maximum that ACT for LA fishery can be is set at catch associated with an F rate with 25% of exceeding ABC, actual targets often set lower
				MSY/OY	**AMs**	**Discards (GB/MA)**	**State Waters**
Adjustment of the access area boundaries to protect small scallops and re-allocation of access trips when an area's biomass proves to be less than expected are ongoing challenges addressed in each framework action.				From 2020 Assessment: MSY = 32,079 mt, BMSY = 102,657 mt	Proactive AMs- Setting fishery targets below the catch limits. Reactive AMs - future reductions in allocations equivalent to any overage depending on the impact overage had on fishing mortality.	5,986 mt estimated for 2019 5,046 mt estimated for 2020 5,110 mt estimated for 2021 4,398 mt estimated for 2022 2,803 mt estimated for 2023 4,829 mt estimated for 2024 [illegible] mt estimated for 2025	Not included in the FMP

Availability of Biological and Assessment Data	Used in Assessment: Scallop dredge survey data (NEFSC & VIMS) as well as indexes from towed digital camera survey (HabCam video survey); and video drop camera survey (SMAST). Gulf of Maine Survey Data: Data from surveys of the Gulf of Maine has been included in OFL and ABC estimates for the fishery since 2022. The biomass in this area is estimated to be ~5% of the overall scallop biomass from 2023 surveys. Coverage in 2023 included banks and ledges fo the region where scallops have historically settled (Stellwagen Bank, Jeffreys Ledge, Ipswich Bay, Platts Bank, Fippennies Ledge, and Cashes Ledge). Other Data: Commercial catch, LPUE, commercial shell height compositions, data from dredge surveys conducted by VIMS, growth increment data from scallop shells, and shell height/meat weight data adjusted to take commercial practices and seasonality into account (observer data).
Recent Performance Against Harvest Control Rule	Stock has remained in rebuilt conditioning with no overfishing occurring in recent years. Landings were 51% of ACL in 2016, 50% in 2017, and 57% in 2018, 48% in 2019, 43% in 2020, 58% in 2021, 46% in 2022, and 53% in 2023. The ACL is based on total exploitable biomass, while fishery allocations follow spatial management of the resource. In years where exploitable biomass is in closed area, landings as a percentage of the ACL is anticipated to decline.
Current Management Program	Comprised of open area DAS management and access area trip allocations with possession limits for the Limited Access (LA) Fishery. Annual individual quota allocations combined with possession limits for the LAGC Fishery with IFQ permits, possession limits for the LAGC fishery for vessels holding NGOM and Incidental catch permits. 94.5% of the ACL is allocated to LA fishery, and 5.5% to the LAGC IFQ fishery. Separate TAC for NGOM Management Area.
Landings, Revenues, and their Variability	Sea scallop landings continually declined in FY2020 through FY2023 from their recent peaks in FY2018 and FY2019. Landings in FY2023 (25 mil. lb) were much lower than the FY2009-2022 average (47.25 mil. lbs), and the lowest during this period. Landings in FY2019 (59.67 mil. lb) were the highest in the period. Revenue in FY2023 ($324 mil., in 2023 dollars) was substantially less than FY2022 ($434 mil.) primarily due to drop in scallop landings as well as prices. Average revenue from 2009-2023 was $612 million, and FY2021 revenue was the highest revenue year (i.e., $744 mil) in the period.
Data - Vessels, Permits, Dealers, Processors, Employment	344 LA permits including 315 FT, 29 PT vessels, all active in FY2023. As of 2019 there were 300 IFQ (212 active and 88 in CPH), 110 active NGOM and 236 active incidental permits. There were 79 NGOM/Incidental permits in CPH in 2019, for a total of 425 LAGC Category B/C permits. In FY2023, 90 of the "IFQ only" and 89 "NGOM only" permit holders were active (i.e., that landed scallops). In FY2023, the employment level in the scallop fishery is estimated to be about 81,102 crew days in FY2023 vs 91,730 crew days in FY2022 vs about 96,096 crew days in FY2021. In FY2023, there were about 2,298 crew positions in LA fishery, 257 crew positions employed in "IFQ only" active fleet, and 236 crews positions employed in "NGOM only" fleet whether full- or part-time.
% Food, % Recreational	About 100% food, recreational fishing is not common due to the gear involved and distribution of stock offshore.
Fishing Communities	Scallop fishing communities are widely distributed from ME to NC. As of 2023, the ports with this highest recent landings are in MA (New Bedford), followed by NJ (Cape May) and VA (Hampton/Seaford, Newport News). Of the 11 primary scallop ports, eight have over 75% of fishing revenue from scallops. Factors that influence scallop fishing activity in communities include: revenue, geographical distribution of scallop resource, and differences in abundance and access area allocations by area.
Other Economic/Social Factors	Economic factors that impact prices, revenues, profits and crew shares in the scallop fishery include the size composition of landings, demand for scallops in the domestic and export markets, import prices and net scallop landings. Price flexibility is considered low. Short-term fluctuations in landings due to area and season closures and effort reduction measures also affect prices, revenues, profits and crew shares. The price premiums for larger scallops (U10s and U12) increased in the recent years as the U.S. has become one of the major exporters of large scallops. Scallop prices declined during FY2017-FY2019 as landings and the proportion of large scallops increased. For example, average annual U10 price per pound (in 2023 dollars) declined from $21.88 in FY2016 to $16.75 in FY2017, $14.01 in FY2018 and $14.147 in FY2019 with corresponding landings of 4.04 mil lb in FY2016, 9.02 mil lb in FY2017, 8.67 mil lb in FY2018, and 7.38 mil lb in FY2019. U10 landings decreased to 5.89 mil in FY2020 compared to previous year, with a slight uptick in U10 price to $14.94 in FY2020. In FY2021, U10 landings further declined to 4.39 mil lb (below FW32 projections for U10) with unprecedented increase in U10 price to $27.79. Average annual price for U10 scallop doubled in FY2021 compared to previous year. Landings and prices in FY2020 were also affected due to COVID-19. However, prices were higher in later part of FY2020 for all scallop grades and remained high throughout FY2021, reaching over $35 per pound. In FY2022, scallop prices have decreased relative to FY2021, but are still high compared to before FY2021. In FY2022, U10 price per pound was $24.83. In FY 2023 U10 price fell to $15.41 per lb due to higher U10 landings (5.48 mil lbs or 23% of total landed scallop volume). Prices of 11-20 scallops are relatively stable compared to U10 although smaller scallops also experienced price swings in recent years. In FY2023, 11-20 grade scallops fetched $13.64 per pound vs $15.41 in FY2022 and $18.49 in FY2021.
Major Sources of Scientific Uncertainty	Highest sources of scientific uncertainty include discard mortality, incidental mortality and stock-recruit relationship. Medium sources of uncertainty are natural mortality, sea scallop growth, maturity and fecundity, density dependence , shell height/meat weight relationship.
Major Sources of Management Uncertainty	Management uncertainty is due to DAS carry-over, estimates of catch from Open Areas that are regulated by DAS management, ability to fish unused Access Area allocation within the first 60 days of the following year and uncertain efficiency due to vessel upgrades and replacements. Management uncertainty is addressed by establishing ACTs which will have an F that has a 25% chance of exceeding ABC.
How is the probability of overfishing currently addressed?	Uses risk based harvest rules such that ABC is set at an F that has a 25% of chance of exceeding F_{max}. This rate is associated with less than 1% loss in yield relative to Fmax. In addition, risk associated with management uncertainty is addressed by setting ACTs for the limited access fleet. Stock assessments and stochastic estimate of Fmax which considers uncertainty in natural mortality, growth, meat yield, selectivity, discard mortality and non-capture mortality.
What is the consequence of overfishing?	Overfishing could lead to an reduction in overall LPUE and an increase in costs in the short-term and a reduction in scallop stock biomass, yield and net economic benefits over the long-term. However, reactive AMs would be applicable if overfishing is occurring. If the sub-ACL is exceeded, reactive AM would include a reduction in future IFQ for LAGC vessels and a reduction in overall DAS for LA vessels in the subsequent year to account for any overages with the exception that if the overall F estimated after the fishing year has ended is equal to or less than the ACT, no AMs would be triggered. In-season adjustments could also be considered to prevent ACL from reached.
How are expected net benefits to the Nation currently measured/evaluated?	Expected net benefits to the nation are estimated by the cumulative present value of the (sum of) producer and consumer surpluses (benefits) over the long-term (usually over 15 years) net of status quo benefits using the biological projections for landings, size composition of scallops, projected LPUE, price and cost models.
Interactions with Other Fisheries/Stocks, Bycatch Issues	Yellowtail flounder and windowpane flounder bycatch is addressed by AMs (gear modification requirements). Sea turtle interactions are addressed by seasonal restrictions and gear modifications to minimize severity of potential impacts.
Ecosystem Considerations: Trophic Interactions	Predation by cancer crabs and sea stars affect juvenile scallop mortality and sea scallop density. Negative relationship were found between the spatio-temporal abundance of the sea star *Astropecten americanus* and scallop recruitment. Similarly, scallop density in high density sites has declined due to predation especially by crabs.
Ecosystem Considerations: Habitat	Impacts on habitat are addressed by effort reduction measures and area closures. The increase in the LPUE due to these measures and area rotation system reduced the area swept by dredge activity considerably. Estimates of area swept corresponding to each alternative is taken into account in the fishery specifications process.
Ecosystem Considerations: Climate	Increasing bottom temperature could affect mortality and productivity across the range of this stock, but particularly at the southern extent of the range. Bottom temperatures of 20°C are considered lethal (~70°F). Increasing ocean acidification could affect the sea scallop seed production negatively. These factors are not incorporated to the assessment at this time.
Other Important Considerations/Notes	Scallop biomass has steadily declined as the fishery gained access to several new areas through the partial approval of OHA2, and has fished the exceptional 2012 and 2013 year classes. Spatial nature of the fishery and associated risks related to localized fishing pressure/underutilization. Distributional issues related to accessibility for different permit types and vessels from different ports. Differential impacts of the IFQ program on the participants of the LAGC fishery and the issues related to lease and quota prices. Recruitment in the fishery was unremarkable for several years following exceptional recruitment in 2012 and 2013. Recent strong recruitment has been limited to two cohorts on Georges Bank. In the Mid-Atlantic there has been recent recruitment in the Elephant Trunk and New York Bight areas as of 2024, but elevated natural mortality leaves the future of this cohort uncertain.