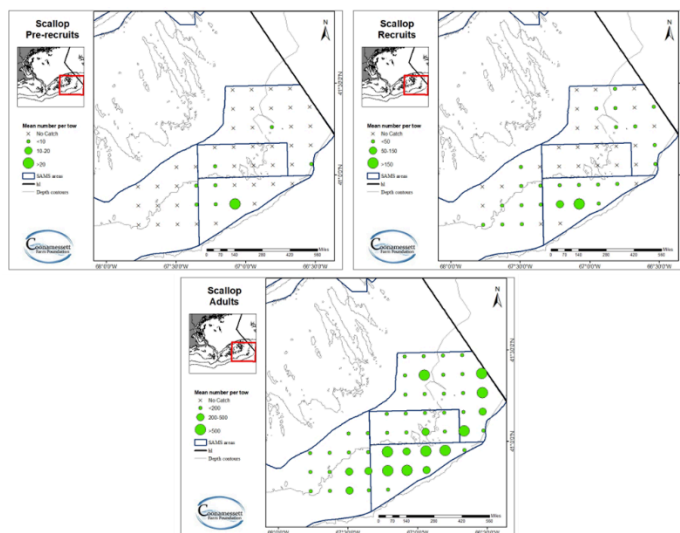


## The 2023 Seasonal Survey Wraps up!

The Atlantic sea scallop (*Placopecten magellanicus*) fishery along the eastern U.S. coast is among the most successful and economically valuable in the world, with a market value of \$480.4 million in 2023 (NOAA 2024). However, recent years have seen below-average scallop recruitment in the Mid-Atlantic, leading to a significant decline in overall biomass (NEFMC 2020). As a result, Georges Bank has become the primary fishing ground, intensifying pressure on the region's resources. In June 2024, CFF completed data collection for its ongoing project, **“Seasonal Survey for the Atlantic Sea Scallop Fishery on the Eastern Part of Georges Bank,”** and submitted a final report to the funding agency last month. This grid-based survey focuses on evaluating seasonal changes in the distribution and abundance of various shellfish and finfish species. Data was gathered using two scallop dredges, one equipped with a 45-mm mesh net extending from the skirt to the clubstick, designed to retain smaller animals that might otherwise escape while towing at commercially representative speeds.



Picture of the cover net during the 2023 August seasonal survey trip



Distribution of pre-recruit, recruit and adult scallops caught with the uncovered dredge during the 2023 seasonal survey on eastern GB

As with every year, notable fluctuations in abundance and distribution of the main species were observed. Scallop recruitment events were observed in several regions of the sampling area. The CAII-Ext region exhibited the highest relative biomass of pre-recruit, recruit, and adult scallops. A fall spawning was identified for scallops, aligning with the species' historic spawning period. Scallop health assessments revealed that only 1.48% showed poor meat quality, and 1.23% showed signs of shell blisters.

Additionally, the abundance of scallop shell epibionts was quantified by epibiont density and shell coverage. Model analysis revealed that scallop meat weight decreases with increasing annelid *Polydora* sp. density inside the valves and with higher mussel density on the upper valve. High *Polydora* sp. levels have been associated with gray or brown muscles, which results in lower meat weights and are typically considered unmarketable (Levesque 2016). In the same way, dense mussel beds can have significant ecological impact, including control over phytoplankton availability as a food source and influence on local current velocity patterns (Strohmeier 2009, Dame and Prins 1996).

Since both sea scallops and mussels are filter feeders primarily consuming phytoplankton, diatoms, and microscopic animals (Hart 2004), the overlap of these two species in the same area may lead to intraspecific competition for food resources. Furthermore, the location of some of the mussels on the scallops' shells may affect their mobility, ultimately impacting their ability to feed effectively.

During the survey, unclassified skates, red hake, and fourspot flounder had the highest relative abundance. Monkfish, the most abundant commercially important species, peaked in December 2023, with model outputs showing a consistent hot spot in the southeast of the sampling area. Windowpane flounder was the most abundant flatfish, with peak catches in February 2024. Seasonal hot spots for this species were identified across different areas: middle-west in the fall, around the center in winter, west in the spring, and northwest in the summer. Models for yellowtail, winter, and summer flounder were not possible due to low catch amounts. Windowpane flounder had spawning periods in fall and spring, while yellowtail spawned in spring. CFF seasonal survey data provides information on many aspects of the scallop fishery that are not delivered by other surveys. The survey is conducted in a systematic fashion, using full-scale dredges over a range of scallop densities, providing spatiotemporally explicit information about scallop and bycatch stocks in these areas in six discrete times of the year. For more information about this project and future updates, please visit our website!