



A typical culling board display of organisms sampled from Apalachicola Bay during Spring 2018 show oyster shell, shell fragments and shell hash, sponge shell parasitism, barnacles, sea squirts, predatory snails, brittle stars, sea urchins, and not too many oysters. Oyster reef areas planted with cultch shell as well as rock material show evidence of live oyster in all size classes, albeit minimal. The diminished oyster population, minimal live reef structure, and observations of a shifting fauna may reflect larger changes in the Bay. (Florida Sea Grant photo by Andy Kane)

## Oyster Population Continues to Decline in Apalachicola Bay

In the first two years of the NFWF project, we identified that shelling density affects recruitment and growth of oysters. Recently, however, it has been more difficult to discern results of the experiment because of extremely low densities of oysters in the experimental plots. In the most recent quarter of sampling, it was not possible to gather a sufficient number of oysters from

the experimental plots to determine their health, so samples were taken from areas at Cat Point, Head of the Bay and Cabbage Top.

The decline in the bay's oyster population coincides with high densities of predators such as oyster drills and parasitic boring sponges. When combined with continued harvesting from an already depleted population, there is a serious risk

of driving the bay ecosystem into an undesirable state where oysters, shrimp, fish and other aquatic organisms are adversely impacted.

The ability of Apalachicola Bay to recover from this degraded state will in large part depend on how the resource is managed. This NFWF-funded project will provide critical data needed to track the state of the resource and restoration outcomes.

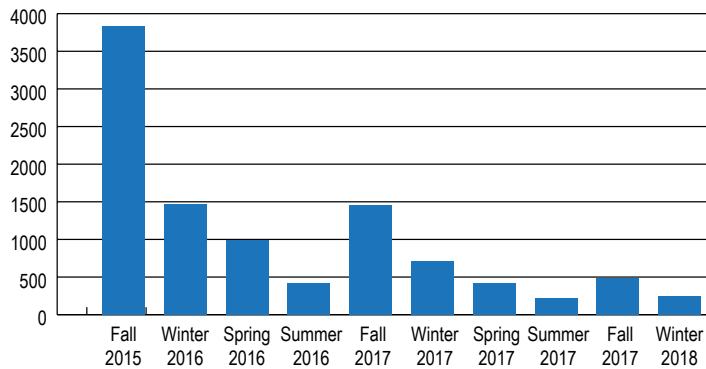


Figure 1. Observed average number of live oysters per square meter from each quarterly sample. (FWC data)

## Downward Trend Continues in Oyster Abundance

Researchers from FWC's Fish and Wildlife Research Institute sample the NFWF study sites quarterly by collecting oyster and substrate (cultch) samples from multiple quadrats. The researchers count the total number of live and dead oysters in each quadrat, and then determine an average number of live and dead oysters per square meter. Researchers also measure all oysters, or a subset of oysters if there are many, to determine the average size of the oysters. These measurements have revealed a downward trend in live oysters, and seasonal patterns of larval settlement, spat recruitment and oyster growth over the past two years.

In the fall, spat set in large numbers, translating to a noticeable increase in total number of live oysters per square meter (Figure 1). As the spat grow, they suffer natural mortality through competition for space and from predation and disease. As a result, we see a decrease in the average density of live oysters and a

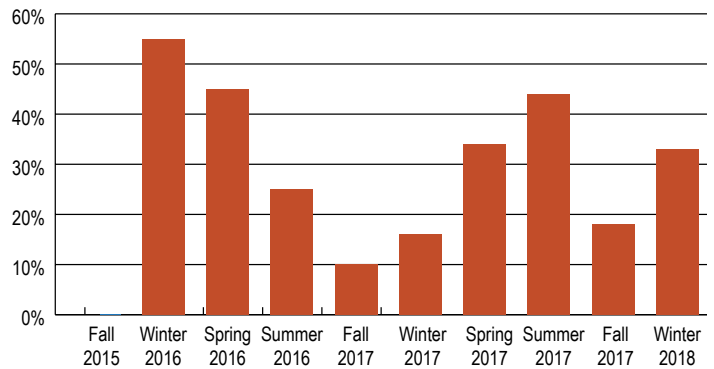


Figure 2. The average percentage of dead oysters per square meter from each quarterly sample. (FWC data)

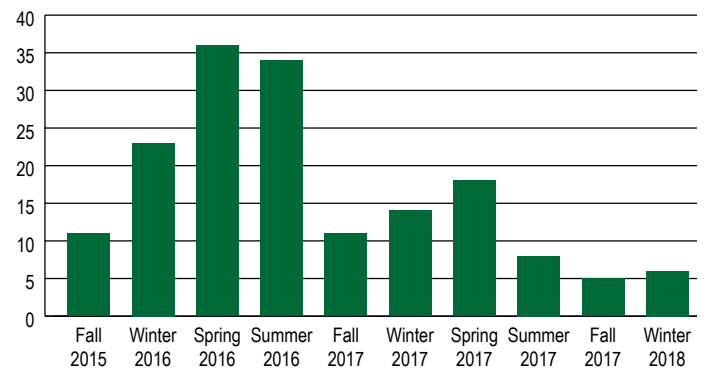


Figure 3. The average shell height of live oysters from each quarterly sample. (FWC data)

higher percentage of dead oysters (Figure 2). Oysters that survive continue to grow, and even though there are fewer live oysters per square meter, the average size of those oysters is larger (Figure 3), and the percentage of dead oysters decreases.

Each year can have varying conditions that lead to differences in the magnitude and timing of spat settlement, oyster growth, survival and mortality.

Project funded by:



Learn more at:



**UF/IFAS Extension Franklin County**  
<http://sfyl.ifas.ufl.edu/franklin/marine-and-coastal/oyster-recovery-home/>

Who can you contact with questions? These individuals are part of the research team and can provide more information about the project.

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