

Oyster Restoration Project

The University of Florida and Florida Fish and Wildlife Conservation Commission (FWC) now are in the fourth year of a five-year study funded by the National Fish and Wildlife Foundation and designed to find the best shelling density for restoring oyster reefs. Results in the first two years provided us with insight into this question, and, fortuitously, the experiment has allowed us to have one of the most comprehensive assessment programs ever done in the bay. The program is shedding light on the health of the entire ecosystem.

In the recent quarter of sampling, oyster-health observations and water-quality measurements were heavily influenced by Hurricane Michael and the onset of winter. Salinity, pH, and temperature were lower, and turbidity was higher than we have seen in previous quarters. Field sampling efforts after the hurricane revealed that a substantial amount of rock cultch material that was planted on Cat Point remained in place, and fresh oyster spat were found. Thus, future opportunity remains for oyster-reef colonization and stabilization, unless colonization is exceeded by fishery- and non-fishery-related mortality.

Health observations from the few oysters that could be sampled under the extreme conditions provide a cautiously positive outlook. Oysters had generally healthy bodies, and the prevalence of Dermo disease was at an all-time low (less than 10% of oysters are infected). Shell damage due to boring parasites (worms, sponges, and clams) was also low.

While this is good news, the data also continue to reflect a diminished oyster population in the bay. Most of the oysters trying to survive there are small. The number of harvest-sized oysters is very low and insufficient to support a fishery. Of greatest concern is the deterioration of living oyster reef habitat and the loss of the benefits that come from a healthy, oyster-dominated reef system. These observations underscore the need for



Photos AS Kane

future efforts to focus on large-scale re-establishment of reefs as a vital component of the resource that, in turn, can once again support vital oyster, crab, fish, and shrimp fisheries.

Rock substrate from a recent planting effort on Cat Point was recovered in place after Hurricane Michael. The upper left image shows settlement of limpets and growth of an oyster spat; the upper right image shows a piece of substrate with several “scars” where oyster spat settled but died, as well as one lucky individual that survived to approximately two inches. The bottom image shows rock substrate colonized by barnacles that can compete with oyster larvae for suitable real estate to settle on.

The next generation of 1- to 2-inch oysters sampled for health assessments. These animals appear to be mature males at this small size, in overall good health. Understanding how to support spat growth to this size—and bigger—will be key to helping “tip” Apalachicola Bay back to an oyster reef-dominated ecosystem.

Florida Fish and Wildlife Conservation Commission (FWC) researchers sample the NFWF (National Fish and Wildlife Foundation) study sites quarterly by collecting oyster and substrate (cultch) samples from multiple quadrats. The researchers count the total number of live oysters in each quadrat, then calculate an average number of live oysters per square meter. Researchers also measure the live oysters to determine their average size. Live oysters

were present at all parcels in each of the study sites in fall 2018. Average numbers of live oysters per square meter were low in all parcels with the greatest numbers recorded at the Hotel and Bulkhead Bar parcels planted with 400 cubic yards per acre of fossil shell cultch (Figure 1). At all parcels, the average size of the live oysters was small and ranged from approximately 3 to 8 mm shell height.

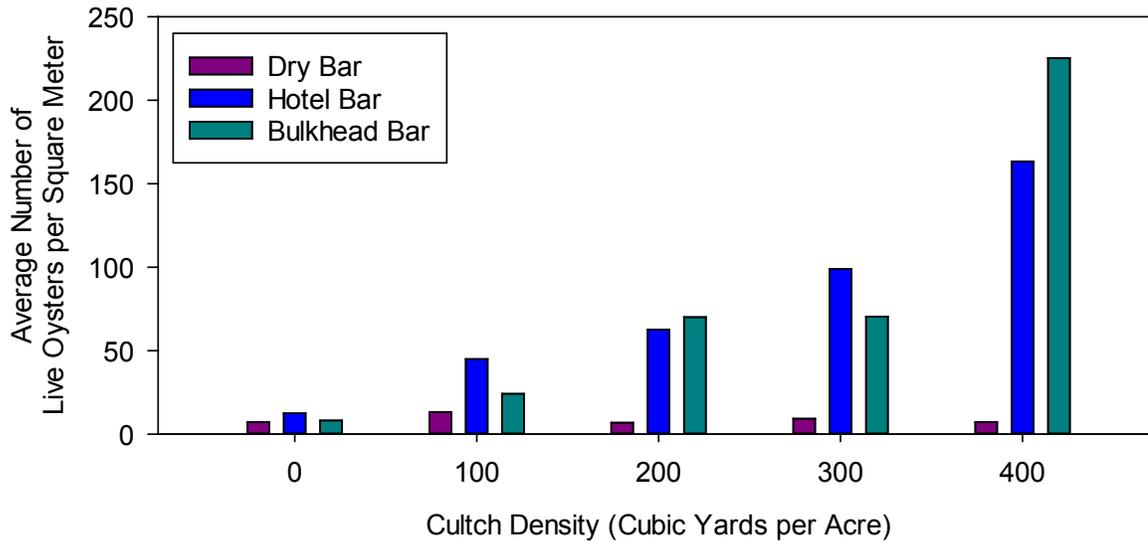


Figure 1. The average number of live oysters per square meter from the fall 2018 quarterly sample.

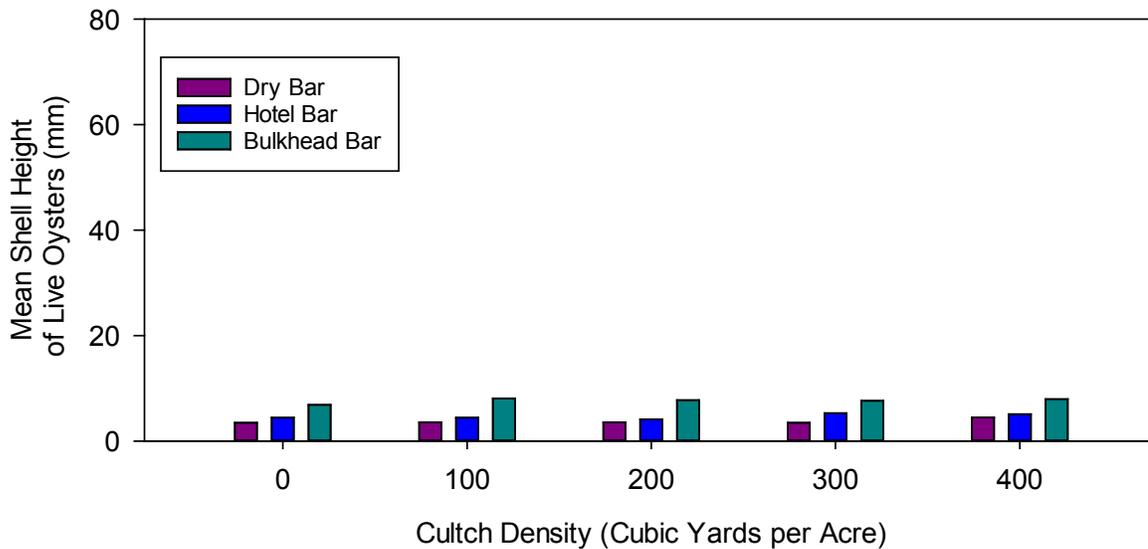


Figure 2. The average shell height of live oysters from the fall 2018 quarterly sample.

Karl Havens
Florida Sea Grant
 352-392-5870 office
 352-284-8558 cell
 khavens@ufl.edu

Andrew Kane
UF/EGH
 352-213-8407 cell
 kane@ufl.edu

Angela Lindsey
UF/IFAS
 352-273-3552 office
 904-509-3518 cell
 ablindsey@ufl.edu

Erik Lovstrand
UF/IFAS Extension
 850-653-9337 office
 850-766-8929 cell
 elovstrand@ufl.edu

Jim Estes
FWC
 850-617-9622 office
 850-251-2458 cell
 jim.estes@myfwc.com

Project funded by:

NFWF
 National Fish and Wildlife Foundation
<http://nfwf.org/>