Oyster Farm Sampling Report
Farm: Bodie Island Oysters
Location: Roanoke Sound, NC
Date: September 2018

BACKGROUND ON OUR PROJECT
During 2018 and 2019 we sampled 18 oyster farms from around North Carolina to answer the question: "How do oyster farms impact estuarine habitat for marine species?" At each lease, we sampled the fish and invertebrates (crabs and shrimp) within the farmed area and compared that to identical sampling at a nearby control site.

We sampled using two different methods. First, we used a number of traditional gears including gill nets, minnow traps, and crab pots. This traditional approach is useful in determining what kinds of species are present but does not always give an accurate view of abundance. For example, drifting algae can clog up a gill net and it will not fish well.

Our second sampling method was the use of cutting-edge sonar technology. We used an "acoustic camera" that functions much like an ultrasound used in medicine. Our sonar device was mounted to a kayak which allowed us to sample at many positions inside each farm. This approach gives us a clearer picture of how many fish are on a farm compared to a control site.

Table 1—Here is the record for all fish and invertebrates that we caught on this farm using traditional net and trap gear.

Table 1

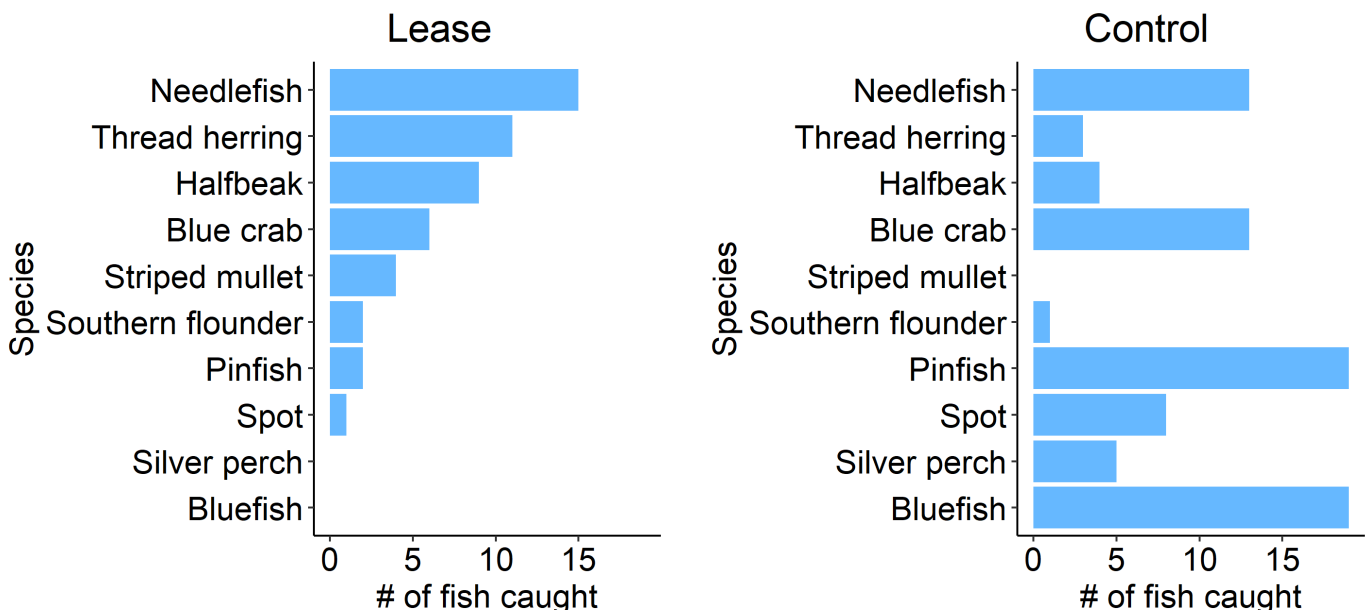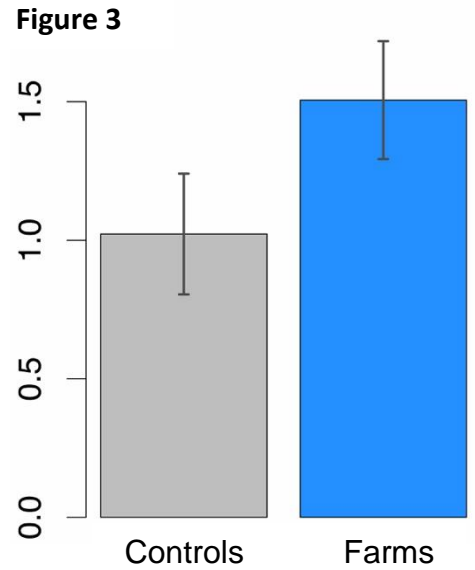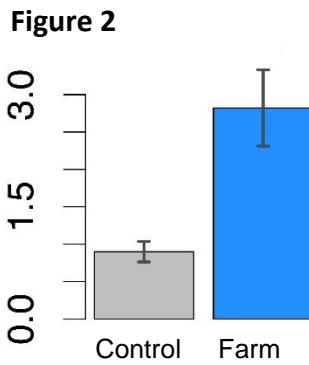| Species	Number
Needlefish	15
Thread herring	11
Halfbeak	9
Blue crab	6
Striped mullet	4
Portunid crab	3
Brown shrimp	2
Leatherjacket	2
Pinfish	2
Southern flounder	2
Gizzard shad	1
Menhaden	1
Mojarra	1
Sheepshead	1
Spot	1
White mullet	1
White shrimp	1

Figure 1

Figure 1—A comparison of catch (net and trap gear) between this farm and a control site that was located several hundred meters away from the farm. Note, only a subset of the sampling gear on the lease is shown here, so the catches in Figure 1 and Table 1 do not always match.

Figure 2—A comparison of fish abundance on this farm with the adjacent control site, using sonar. *Note, sonar data from farms sampled in 2019 have not been analyzed yet, stay tuned*.

Figure 3—When all farms sampled during 2018 are averaged together, fish abundance within oyster farms is around 50% higher than nearby controls. Note that this is on a logarithmic scale for statistical comparison.

Figure 2

Figure 3

Project Partners: