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The Interesting Oyster

The oyster plays a very important role in filtering sediments, nitrogen, and phosphorous out of the water around them. They take in organisms from the water to eat, but not only do they take in those organisms, they also take in sediments and nitrogen and phosphorous. They have a special filtration system in their body that compacts the things they don't need into pellets, then they get them out of their body. An adult oyster can filter about 50 gallons a day! So, as you can see, they are very important to places like the Chesapeake Bay. Unfortunately, though, there has been a massive decrease in the population of oysters.

The decrease of our friend, the oyster, is caused by many problems. One problem is overfishing. There were lots of wild oysters when Yorktown was being settled. In fact, there were so many that the settlers had to make sure they wouldn't ground their ships on them. Sadly, the number of oysters has gone down by a lot since then. Virginia's economy really relies on oysters, and if there are none left, that is not going to be good for Virginia's economy, and, of course, it is not going to be good for the oysters either. In the Chesapeake Bay, around the 1850s, over 1.5 million oysters were harvested each year! In the 1880s, the number of oysters being harvested increased to 20 million. That is a lot of oysters that were taken from the Chesapeake Bay. Overfishing is an issue for oysters, and so is an excess amount of nutrients, debris and pollutants.

Another issue is an excess amount of debris, pollutants, and nutrients in the water. A big source of debris is hurricanes. They cause all that damage, and where does it go? In the tributaries and bays nearby, where the debris will eventually reach the oysters. Long ago, like when Yorktown was a settlement, maybe the oysters could have handled the debris better, but now that the population has really decreased, they have difficulty taking care of the debris, and it is not good for them. An excess amount of nutrients in the water, like nitrogen and phosphorous, can cause algae blooms. Algae blooms

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take the oxygen out of the water around them, which causes dead zones. Sea creatures cannot live in dead zones, because those areas no longer have what they need (like oxygen). This kills many sea creatures, especially those that are anchored down and can't move, (including oysters). An excess amount of nutrients, like nitrogen and phosphorous, can get in the water from things like runoff from farms, or even air pollution. Air pollutants can get to bodies of water through a process called atmospheric deposition. In atmospheric deposition, pollutants are carried by wind and after a while are dropped either on land or in the water. The pollutants are either attached to precipitation or are dry particles. Not only does the excess amount of debris, pollutants, and nutrients negatively affect the oyster population, but so do diseases.

Like diseases affect humans, diseases also affect oysters. At this point, diseases are the biggest problem for oysters. Dermo (also known as Perkinsus Marinus) and MSX (Haplosporidium Nelsoni) are two diseases that really harm oysters. Dermo makes oysters grow more slowly and it kills them. It usually affects them when they are two years old. MSX can kill oysters at any age and water with higher salinity can make oyster deaths more likely. Dermo reduces the amount of tissues in oysters. MSX can degrade shell growth, make meat quality not as good, and decrease their ability to reproduce. There are no visible symptoms for MSX and Dermo, but scientists have studied deceased oysters and discovered dermo and MSX in the oysters. As you can probably tell, diseases like Dermo and MSX are very harmful to oysters.

An excess amount of oyster harvesting, too much debris and too many nutrients and pollutants in our water, and diseases can negatively affect oyster populations. So, how can we help our oyster friends? Scientists have genetically modified oysters, and those oysters are called triploid oysters. They can resist diseases like MSX and Dermo. Hopefully, this will keep oysters from going extinct.

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Unfortunately, triploid oysters cannot reproduce, though. We can also have oysters in oyster farms, which raise oysters in a safe environment. We must protect the oysters!

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