Oysters in the Chesapeake Bay

By: Clay Best and Holly Power

In 1608, John Smith explored the Chesapeake Bay for the first time along with a crew of 14 members. They originally nicknamed the body of water the Great Shellfish Bay for the massive amounts of oysters scattered across its edge. Although these men traveled to America hoping to discover gold, they found a unique type of treasure known as the Chesapeake Bay oyster. This shellfish seemed to exist in never-ending quantities, so the sailors immediately began a trading system for this precious item. Chesapeake Bay oysters were sent to the Queen of England for their delicious taste. Known as "Chesapeake Gold", Oysters have always been huge economic factor on the bay. For now more than 400 years, the Chesapeake Bay has provided the oyster to thousands of customers; however, the oyster has not always been an easy item to find. After their original discovery, the oyster was overfished on an extremely wide scale, resulting in a quick decrease in number. The shellfish seemed to come in such large quantities that its demise was unfathomable. Oysters were sent in the trainloads all over the country and being shoveled out of the bay. In the late 1950s the disease MSX, or *Multinucleate Sphere X*, was brought to the Chesapeake Bay oysters, almost completely wiping out the population. It is believed to reside in many Pacific oysters, and was brought to the Chesapeake Bay by man. Following the outbreak of MSX that resulted in a steep decrease of oysters and an outbreak of Dermo, or *Perkinsus marinus,* occurred in the 1980s. Because of many cold, and rainless years in a row, the disease Dermo began expanding upstream, and resulted in the Chesapeake Bay. Because the oysters were just recovering from MSX, they were already rather low in numbers. The shellfish became extremely close to extinction. However, laws restricting fishing of oysters were put in place in an attempt to save the population. The Chesapeake Bay oysters have begun a rebound and are

growing stronger than ever, as they are now immune to these diseases. The battle to save the oyster population is not complete yet, as the number of oysters in the Chesapeake Bay is about 1% of what it once was. When John Smith sailed upon an untouched bay, the oysters could filter the entire bay in three days. Now, with an estimated one percent of historic levels, it takes a year to filter the bay. It is now our generation's job to work towards restoring this precious shellfish.

The Crassotrea Virginica, more commonly known as the Chesapeake Bay oyster, is one of bays best products. These seemingly small creatures have a big impact on the Bay. Oysters are filter feeders. Oysters suck in water and filter the detritus and plankton from the water, consume this plankton, then release the new, pure water. This simple process can allow an oyster to filter as much as fifty gallons a day. Through disease and overharvesting the oyster population has declined to almost 1% of what it once was. One of the most successful things being done to the oyster population is Oyster restoration. Oyster Restoration projects have been started up all over the Chesapeake Bay. These projects start with young oysters that are given to people who live on the water and are grown in protection from prey. Once they have reached a certain age, the program, which runs the oyster restoration, comes and collects these raised oysters and put them on protected reefs. These reefs are built on either concrete balls or dead oyster shells. While at the Virginia Institute of Marine Science, the Chesapeake Bay fellows cleaned and transported oyster shells that would soon be made into reefs. These now clean oyster shells are put into a no harvest zone. This zone protects oysters from being taken out of the water and sold. A new business has been introduced because of the oyster catch being as little as was in the last thirty

years, and this business was aquaculture. Aquaculture is the scientific farming of oysters. Scientists in laboratories gradually warm the water temperature to trick the oysters believing that it is an early spring causing them to propagate. Then the oyster release their eggs and sperm into the water hoping that they are able to produce offspring. When they meet these small oysters are called spat. The spat floats through the water until it attaches itself to a hard place. These oysters are strategically planted. Once the oysters are big enough, the baby oysters are taken outside too what looks like long bathtubs. They are place in these tubs and water is pumped into the tubs where the oysters filter it and clean water is put back into the Chesapeake Bay. As soon as the oysters are strong enough to be put into the water, they are. There they stay and filter the water in a natural environment but stay protected by nets. These oysters have been genetically modified to not reproduce and go through spring without reproducing. After the oysters reach the size of two inches they are pulled from the water and packaged and shipped around the world because of their delicious taste. Through both Aquaculture and oyster restoration the water is being filtered, leading to a cleaner and healthier Bay.

In January of 2007, The Chesapeake Bay Foundation upload information on an experiment they were conducting entitled Virginia Spat-on-Shell Experiment. They used special aquaculture procedures to create an unnatural developing area that consisted of oyster shells resting at the bottoms of tanks. Experimenters allowed the spat to attach to these oyster shells and observed them grow. About 12 spat latched onto each oyster shell as they began to grow into mature oysters. This technique for raising spat proved to be extremely efficient and profitable,

because the oysters could begin development at a younger age and the reefs formed in better conditions than a natural reef might have. This experiment transformed into a technique of growing oysters used all along the Chesapeake Bay. The survival rates of the oysters used within this experiment were hopeful but ranging very widely. It may not be the solution to restoring the oyster population completely; however, it was most definitely a step in the right direction.

Although many more years and efforts are necessary for the oyster population to reach its maximum potential, organizations such as the Chesapeake Bay Foundation and Virginia Institute for Marine Sciences are helping the oysters to reach this goal. From over 100 thousand tons of oysters in the 1880s to about 10 thousand tons of oysters in the 1980s, the oyster population has been severely struggling to stay alive. This number of current oysters, however, is beginning a slow but steady increase. It is our job to restore the Chesapeake Bay's oysters, not only to help keep the Bay clean, but also to save a population on the brink of extinction.