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The Virginia Marine Resources Commission

Division of Fisheries Management

Department of Conservation and Replenishment

Testimony

Before the Committee on Resources

United States House of Representatives

Hearings on the “The Status of the Eastern Oyster (*Crassostrea*

***virginica*) and the Petition to List the Eastern Oyster as**

Endangered or Threatened under the Endangered Species

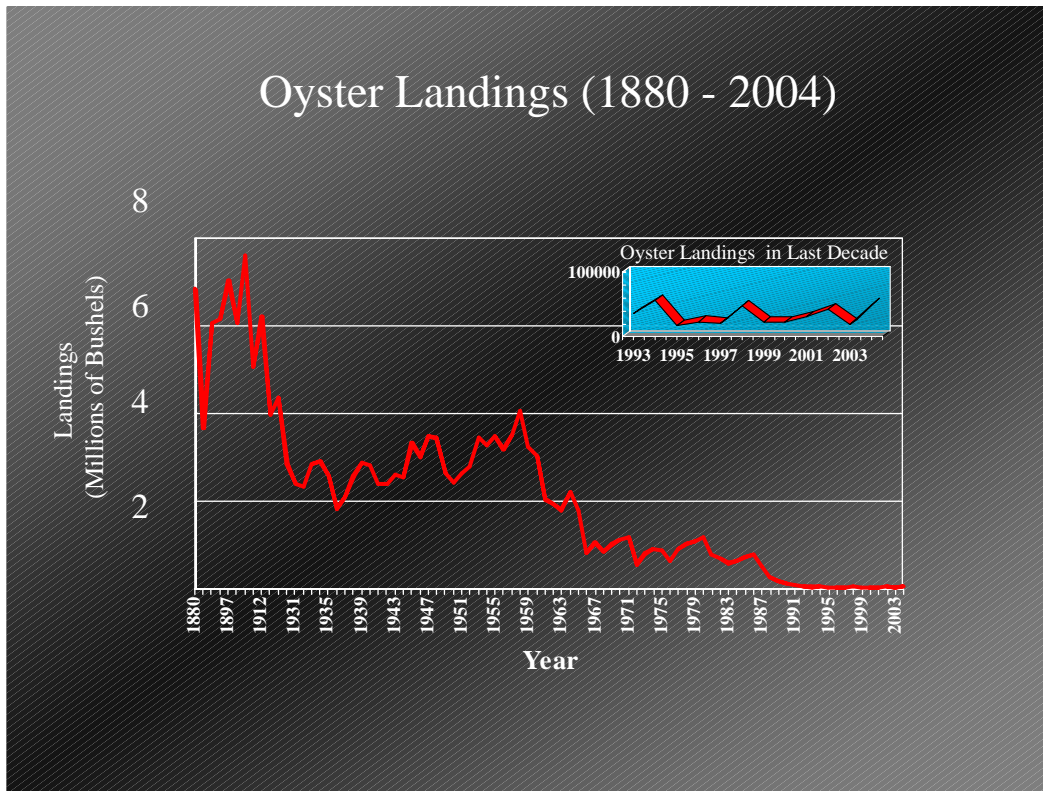
Act”

July 19, 2005

The Virginia Marine Resources Commission and the Commonwealth of Virginia strongly opposes the listing of the eastern oyster (*Crassostrea virginica*) as either a threatened or endangered species. We do not consider the eastern oyster in the Chesapeake Bay as a separate subspecies. We see no evidence of the entire species being in danger of extinction within the Chesapeake Bay nor any part of its native range. The eastern oyster still supports a significant commercial industry within the Chesapeake Bay, is actively managed by the Marine Resources Commission to insure both ecological and commercial benefits from the oyster, and is the focus of significant federal, state, and private efforts to restore current population levels to greater abundance.

There are more than 240,000 acres of public oyster grounds in Virginia's portion of the Chesapeake Bay and the coastal embayments of the Eastern Shore. There is a new map atlas of the 200,000 acres of public oyster grounds in Chesapeake Bay that has recently been completed which is available on the Virginia Institute of Marine Science website (www.vims.edu/mollusc/oyrestatlas/index.htm). Significant oyster populations exist throughout all of these public grounds. Additionally, nearly 100,000 acres of state bottomlands are leased by private entities and oyster aquaculture operations are conducted on the private leases.

Obviously oyster landings have declined dramatically over the past century, but most dramatically in the last 45 years.



For the period from 1880 through the 1920's, the decline in harvest was directly related to harvesting activities. The value of the harvested shell as a building commodity on land resulted in significant reef loss because the shells were not placed back in the bay once harvested. Oyster populations declined significantly with the loss of habitat. Oyster restoration began when the Commission of Fisheries and the private oyster industry in Virginia began putting shells back on the oyster "rocks" or reefs in the late 1920's. At that time, the value of the shell as a building material had declined due to the availability of quarry stone and a better highway transportation system to the bay shore communities. As shells were returned to the oyster rocks, oyster populations and commercial production increased significantly between the late 1920's and the 1950's. Oyster

management and private oyster husbandry maintained and increased oyster populations and Virginia became a worldwide leader in oyster production.

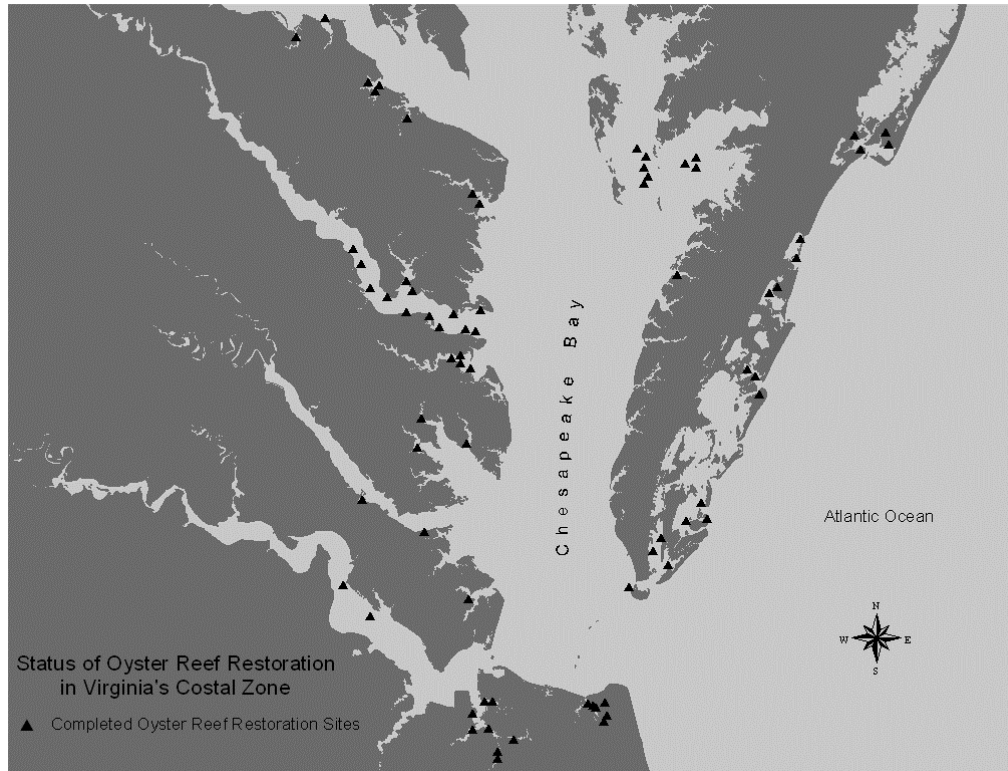
In the late 1950's, a new oyster disease was introduced to the Delaware and Chesapeake Bays, which began the rapid, and sustained decline in oyster production and population levels to the low levels that we currently have in Virginia's Bay waters. The newly introduced disease called MSX, in combination with the native disease called Dermo, have totally decimated the oyster industry, with oyster harvest reduced to less than one percent of levels only 45 years ago. The small oyster processing industry that remains in the Commonwealth survives almost exclusively from the processing of imported eastern oyster shellstock primarily from the Gulf States. The Virginia shucking industry remains at a competitive disadvantage in the marketplace due to the costs of importation, and more oyster shucking houses close with each passing year. There were more than 400 shucking houses in Virginia in the late 1950's, while currently no more than 15 still continue any significant amount of shucking activity. The oyster shucking industry in the Chesapeake Bay is far more endangered or threatened in its existence than the oyster itself.

The Virginia Marine Resources Commission (VMRC) and the Virginia Institute of Marine Science (VIMS) have jointly monitored oyster stocks in a quantitative fashion since 1993. We have a quantitative estimate of the standing stocks of oysters throughout Virginia's portion of the Chesapeake Bay. Though the populations are low relative to historic numbers, billions of oysters remain on the public beds. The intensity of the oyster disease is controlled primarily by salinity. Over the past four decades almost all of the historically productive oysters grounds have been impacted by disease, with the

impact primarily on the large oysters. Small oysters have continued to spawn and maintain the population of oysters in all of the historic range. Spatsets have been dependable throughout most of the oyster grounds in Virginia's portion of the Chesapeake Bay. Though populations are low in comparison to historic numbers, population levels are stable and trend more in relation to rainfall and salinity changes in the Bay, rather than from either harvest or the significant effort that has been devoted to restoration during that same time period.

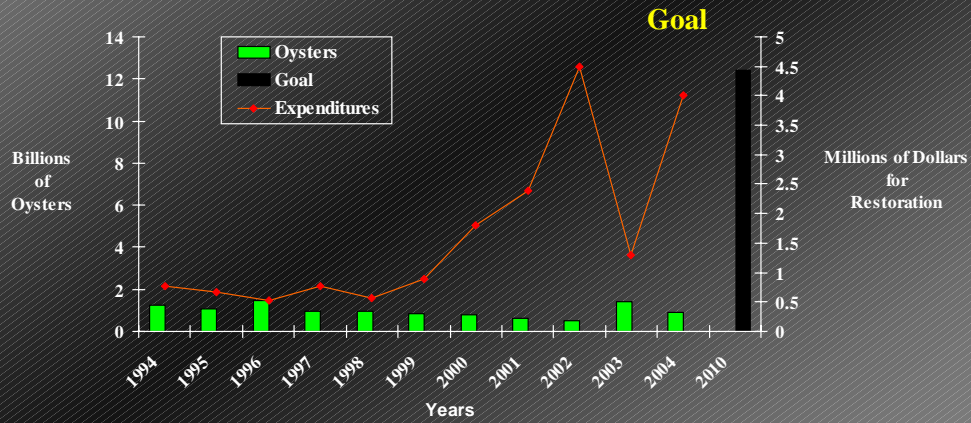
The VMRC and VIMS have implemented countless strategies, research projects, and restoration programs to combat the disease-controlled decline in oyster populations since the 1950's. The private oysters industry has invested and lost many millions of dollars in strategies to grow oysters within the disease dominated conditions in the Bay. Private investment in "on-bottom" aquaculture has mostly been suspended because of the inherent risks and losses in producing market sized oysters. Selective breeding for disease resistance began in the early 1960's at the VIMS, and it continues to the present time. Eastern oysters from throughout its geographic range, that have potentially exhibited "disease tolerance" to one or the other diseases, have been crossbred and tested in the Chesapeake Bay. Certain genetic crosses have shown enough disease tolerance to entice modest efforts toward intensive oyster aquaculture. Results have been mixed in the Chesapeake Bay, but a small industry has begun for the more lucrative "raw or half-shell" trades. Intensive aquaculture has remained uncompetitive for the shucking industry because of the availability of imported shell stock and the lower price margin due to the competition from oysters processed locally in the Gulf States and from the Pacific oyster industry on the West Coast.

The oyster restoration effort has been especially ambitious since the early 1990's with a combination of 3-Dimensional (3-D) oyster reef reconstruction projects, the setting aside of large acreage of sanctuary areas, and the strict control of wild oyster harvest. The 3-D oyster reef restoration and sanctuary program implemented by the Marine Resources Commission has become the model for baywide oyster restoration efforts. The 3-D reef restoration sites duplicate oyster reefs that were observed prior to harvesting activities. These reconstructed reefs improve juvenile oyster survival (resulting in improved spatset), allow oysters to grow faster (resulting in improved fecundity or reproductive capacity) and physically position oysters in the most optimal configuration for spawning success (resulting in improved fertilization rates). Broodstock oyster populations on these reefs have been allowed to either develop naturally, or in many cases, have been augmented with genetically selected oyster broodstock. Since there has been baywide consensus that the restoration of 3-D reef structures, and the establishment of oyster sanctuaries, throughout the bay is the best way to achieve the Chesapeake Bay 2000 goal of a ten-fold increase in native oyster population by 2010, there has been an influx of more than \$40,000,000 in state, federal, and private monies to rebuild these reefs in Virginia. Since 1993, more than 100 of these reefs have been constructed throughout Virginia's portion of the Chesapeake and coastal bays.



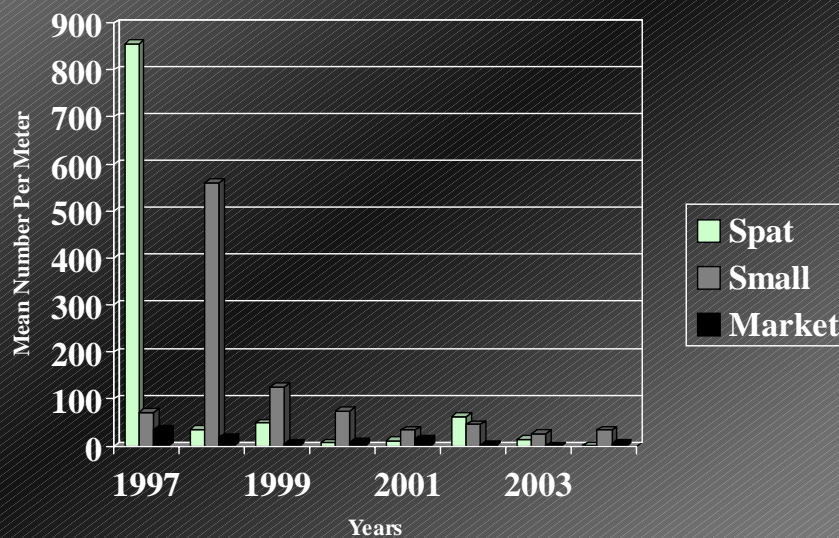
The significant infusion of money and effort to rebuild oyster reefs in the short term has not resulted in an immediate increase in oyster populations in the Bay. Since the reef restoration effort began in 1993, the standing stock of native oysters has fluctuated more closely with rainfall than with the magnitude of the restoration efforts.

Virginia's Progress Towards the 10-fold Oyster Goal



Oyster diseases still dominate the survival of large oysters as can be seen from the monitoring results from the restored 3-D, sanctuary reefs.

Typical 3-D Reef Survey 1997 - 2004



Newly constructed reefs are rapidly colonized by oysters in all areas, the oyster grow very fast for the first one to 2 years, but most oysters, even on the ideally constructed, sanctuary reefs, succumb to disease within 2 to 4 years.

Virginia remains committed to restoration of the native oyster populations and to the restoration of the historic commercial fishery. Restoration efforts continue to adapt based on the results from monitoring, and research continues to find solutions to counteract oyster disease. Oyster populations, though at historically low levels, remain stable and are distributed throughout the historic range. There is no evidence that the eastern oyster in the Commonwealth is either endangered or threatened in its existence.