

Testimony of Dr. Donald F. Boesch, Annapolis, Maryland, on Senate Bill 76

Senate Committee on Education, Energy and the Environment

February 4, 2025

I am President Emeritus and Professor Emeritus of the University of Maryland Center for Environmental Science and offer this testimony in opposition to SB 70 in its present form. While heading UMCES I built the hatchery infrastructure and oyster setting pier that has enabled the tremendous success Maryland has experienced in oyster reef restoration. During my service I also served on the Maryland Oyster Advisory Commission and its forerunner, the Oyster Roundtable.

Although now retired and speaking only for myself, with no official capacity, I provide this testimony based on these experiences. Restoration of oyster reefs in no-harvest oyster sanctuaries was vigorously resisted by many oyster harvesters, but the sanctuaries have turned out to provide huge benefits for both oyster populations and the health of the Bay. The public investments restored reefs and in sanctuaries, in general, deserve the strongest protection.

The need for deterrence was recognized during the enactment of legislation that revoked the authority to exploit the state's oyster resources for individuals who knowingly and illegally harvested oysters from such protected areas. I am concerned that substituting short term suspensions of the authority to catch oysters for persons illegally taking oysters from these sanctuaries greatly reduces deterrence. I will leave it to former Attorney General Frosh to testify on the level of deterrence and enforcement required as you consider amending the Commercial Oyster Authorizations statute. I will try to give you a sense the remarkable gains that have been made in oyster restoration and why this requires the utmost protection.

As part of the 2014 Chesapeake Watershed Agreement, Maryland's Department of Natural Resources, together with Federal partners, has worked to restore oyster reefs in five Maryland tributary sanctuaries: Harris Creek and the Little Choptank, Tred Avon, St. Mary's, and Manokin rivers. The last of these will be completed this year. More than \$88 million has been invested, with substantial federal expenditures from the National Oceanic and Atmospheric Administration and the Army Corps of Engineers making this possible. About 8 billion oyster spat attached to shells that were produced by the UMCES hatchery have been planted on top of large amounts of solid substrate, to create 1,332 acres of oyster reefs, equivalent in size to 800 football fields, in Maryland. After 6 years, essentially all of the restored areas have oyster densities and biomass that meet the criteria for success and 83% of these areas greatly exceed these metrics. I should point out that other, community-supported restoration efforts in protected areas outside of the five tributary sanctuaries are also achieving positive results.

Significant and diverse benefits of reef restoration have now been demonstrated. The planted spat grew and coalesced to create strong, vertical reef structures. Because male and female oysters are side-by-side and not scattered feet apart, they are able to spawn synchronously and improve the successful fertilization of eggs released into the water. Consequently, not only have the reefs become self-perpetuating, but, as the larvae develop over two weeks and are carried

by the tides, the sanctuary oysters are seeding much broader areas of the Bay. This has no-doubt contributed to the substantial increase in spat set observed in the last few years.

But there are benefits for other living resources, as well as the health of the Bay beyond those for recovering oyster populations. Abundant populations of small animals are supported by the restored reefs, including worms, shrimps and crabs. They serve as prey for the large numbers of fish that are drawn to these habitats. The filter-feeding oysters improve water clarity and deposit large amounts of organic-rich sediment. Microbes denitrify these materials, much like an advanced sewage treatment plant, sending inert nitrogen gas into the atmosphere and helping us achieve our nitrogen pollution diet.

Early reef restoration in Harris Creek suffered setbacks as a result of illegal power dredging within the sanctuary. The effects were not limited to the loss of harvested oysters but included extensive collateral damage. Large clumps of oysters growing into reefs were overturned or suffocated by muds toxic with hydrogen sulfide. Given the substantial public investments that had been made, replacement costs would be measured in the hundreds of thousands of dollars. Moreover, the value of the broader services these restored reefs were already providing for the Bay are priceless. But, the challenge before the General Assembly is not restitution for damages but to ensure that there is a strong and effective deterrent, including revocation, to prevent those damages in the first place.