

Maryland's Transportation and the Environment Subcommittee's
Briefing on the Asian Oyster Issue

January 19, 2005

The following written material was provided to the Subcommittee by W.- Dieter Busch. Short oral comments were provided due to time constraints. These comments addressed broader policy issues (see summary of comments on page 2).

Mr. Chairman, Madam Vice Chairman, and Committee members,

I thank you for the opportunity to provide information on my recent petition to NOAA Fisheries requesting them to list our native or Eastern oyster (*Crassostrea virginica*) as a threatened species under the Federal Endangered Species Act of 1973. I took this action because of the near collapse of the native oyster population, the degradation of its habitats, and the threat to its survival posed by the contemplated introduction of the Asian Suminoe oyster (*Crassostrea ariakensis*).

NOAA Fisheries (and Fish and Wildlife Service) have to use the following criteria to determine if a species should be listed as endangered or threatened (only one of the five factors needs to be met to qualify for listing):

- present or threatened destruction, modification, or curtailment of its habitat or range;
- overutilization for commercial, recreational, scientific, or educational purposes;
- disease or predation;
- inadequacy of existing regulatory mechanisms;
- other natural or manmade factors affecting its continued existence.

My petition identified that the native oyster may meet the listing criteria in all five categories. I would like to provide some information on three of the criteria as follows:

Overutilization - The catastrophic decline between 1880 and 2003 in the abundance of the native oyster can be seen in the decline in landings from all Atlantic coast jurisdictions (Figure 1) and also for the Chesapeake Bay area (Figure 2). These graphs probably under represent the actual decline in abundance in the 1880 to 1940 period due to the absence of historic comprehensive landings data requirements. The most complete data are for the 1955 to 2003 period presented in Figure 3.

Habitat destruction – Although we all know that the Chesapeake Bay ecosystem has been greatly modified, it is difficult to visualize the changes that have occurred to the historic oyster habitat. Whereas historically the oyster created high-rise reefs or “communities/condominiums” (up to 50 ft. high), washed by clean, nutritious waters of various levels of salinity, much of the current remnant stock is trying to survive in single layers, often in muck or “like in a temporary tent city,” washed by dirty water, frequently low in oxygen, and with little variations in salinity. These unsuitable conditions have encouraged low survival of their wild progeny or hatchery

seedings due to excessive mortality caused by diseases, predation, siltation and, extended areas of periodic low levels of oxygen (Figure 4).

Disease, predation and competition from an exotic species - The eastern oyster is now to face an exotic competitor that may also hybridize with the remnants of the eastern oyster population, pushing this species over the edge. The native oyster has been decimated by MSX and Derma. MSX was brought into the bay ecosystem by a planting of a different exotic oyster species. Preliminary experiments in North Carolina identified that the Asian oyster is susceptible to a parasite called Bonamia; it had wiped out some of their research stocks.

Synopsis of verbal comments given in addition to the written material

Mr. Chairman, I feel that I need to take a different approach from those who preceded me today. It seems to me that the need for these briefings addressing the potential introduction of the Asian oyster is an admission of management failure. Our Living Resource Management Agencies, including NOAA Fisheries, Fish and Wildlife Service, and the various DNRs of the applicable States, have failed in their comprehensive stewardship responsibilities.

These briefings are missing the “forest for the sake of focusing on two trees” namely the native oyster and the Asian oyster. There seems to be little controversy as to the drastic decline in the abundance of the native oyster which can also be seen in my Figures 1 and 2. However, as Dr Jamie King (NOAA CBO) clearly stated, the degraded habitat conditions that are stressing and suppressing the abundance of the native oyster would also suppress the geographic distribution and abundance of the Asian oyster. For example, 35 to 45 percent of the Bay’s bottom waters have low to no oxygen during portions of the summer months. Neither oyster can survive in these areas under these conditions. Therefore, the discussion should be on how to address and resolve the various habitat issues; such actions would benefit the native oyster without having to gamble on a potential permanent damage of the ecosystem through the introduction of an exotic.

I find it appalling that the current state of the Chesapeake Bay habitat is similar to that of Lake Erie’s habitat in the 1960s. And, I find it sad that EPA’s Regional Administrator apparently takes pride in having reached agreement with the six Bay connected States and the District of Columbia to limit discharges of phosphorous (by 1 million pounds) and nitrogen (by 17.5 million pounds) from 350 municipal and industrial wastewater treatment plants. These point source reductions would be less than 5 percent of the current loads entering the Bay each year. And even these very limited reductions are projected to take five or more years to implement.

Mr. Chairman, I submitted the petition to list the native oyster so that the Living Resource Management Agencies would have greater authority to force the clean-up of the Bay’s ecosystem. This could be achieved through the development and implementation of an oyster recovery plan – a requirement for a listed species. I agree that the Bay ecosystem needs a filter feeder like the oyster. However, the focus needs to be on restoring the native oyster. Introducing an exotic species at this time should be considered a failure in stewardship.

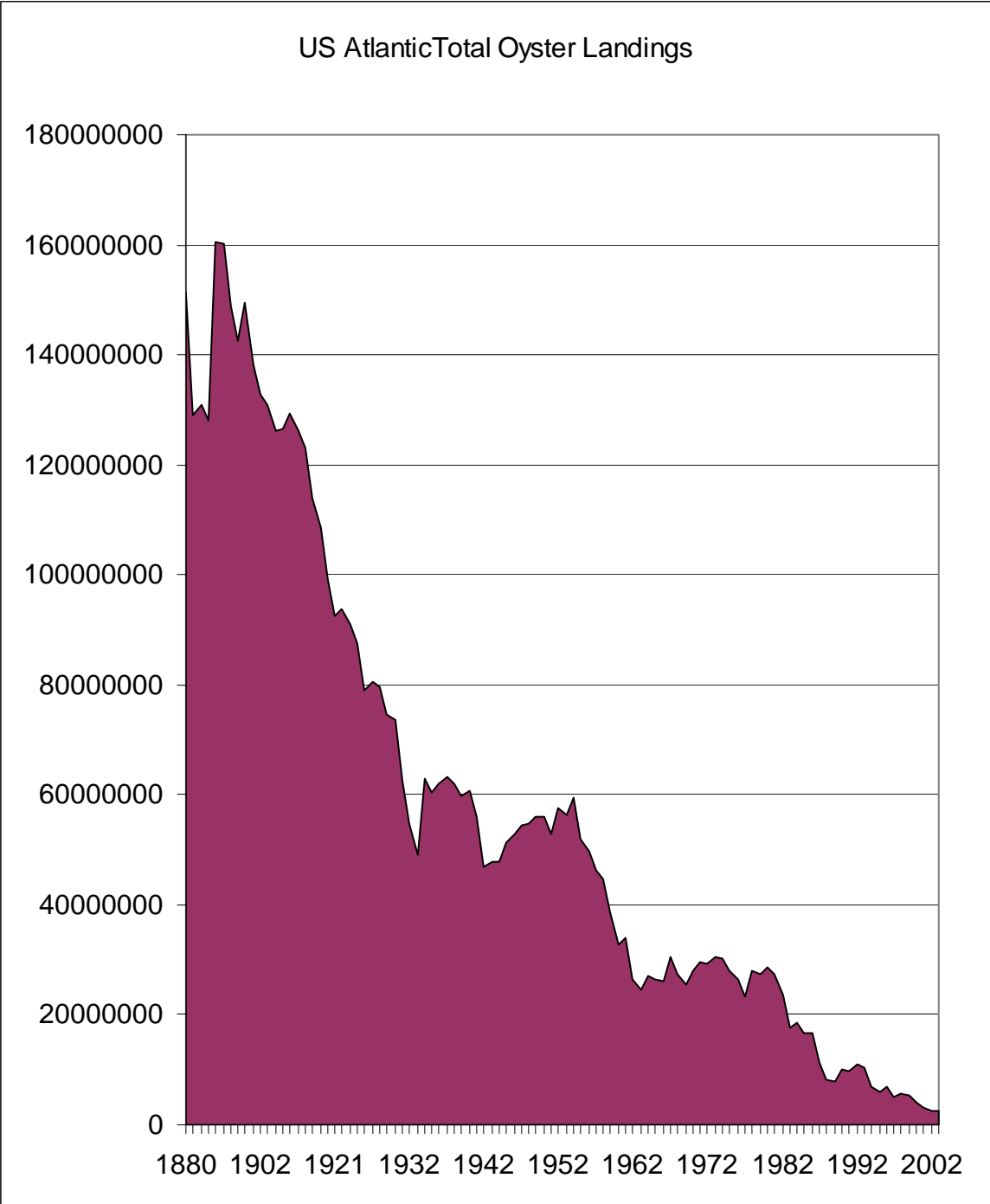


Figure 1. Reported commercial harvest, by year and in pounds landed

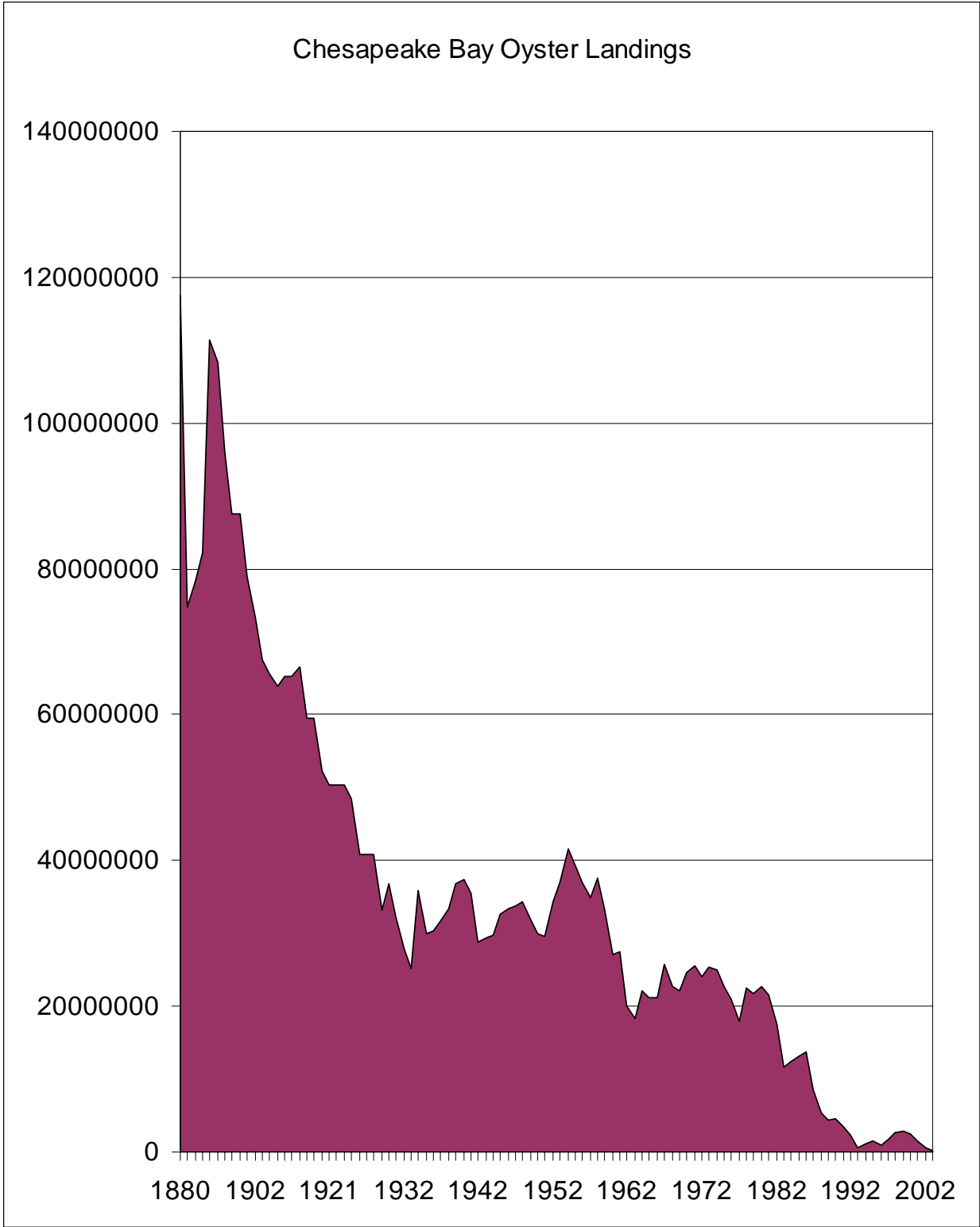


Figure 2. Reported commercial harvest, by year and in pounds landed.

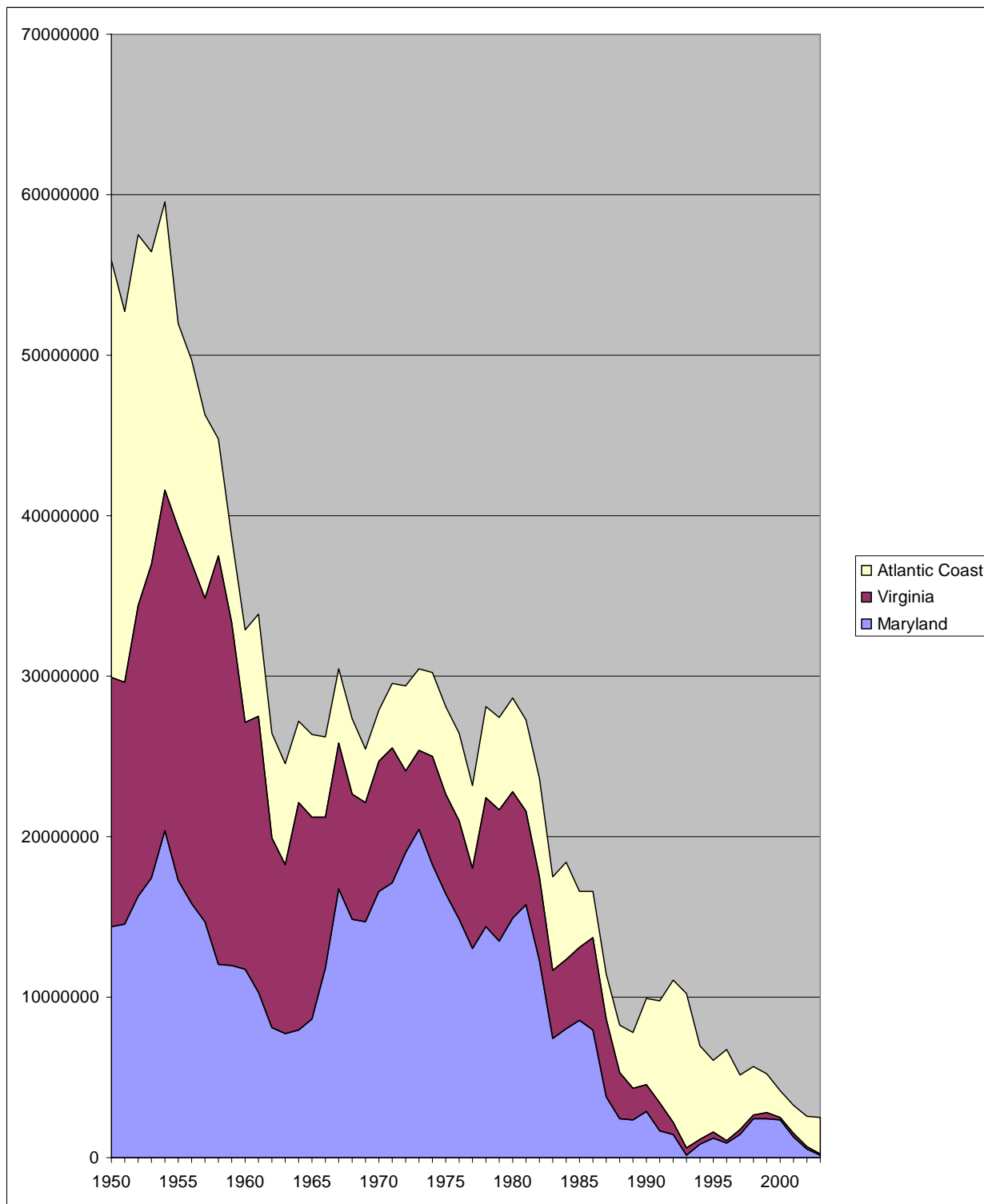


Figure 3. Commercial harvest by Virginia and Maryland (Chesapeake Bay) and the US Atlantic coast, by year and in pounds.

Chesapeake Bay and Tidal Tributary Nutrient and/or Sediment Impaired Waterbodies

Portions of the Chesapeake Bay and its tidal rivers are listed under the Clean Water Act as “impaired waters” largely because of low dissolved oxygen levels and other problems related to nutrient pollution.

This “listing” requires the development of a clean-up plan for the Bay by 2011

(Copied from a presentation by the CB Program).

Note: Representation of 303(d) listed waters for nutrient and/or sediment water quality impairments for illustrative purposes only. For exact 303(d) listings contact EPA (<http://www.epa.gov/owow/tmdl/>).

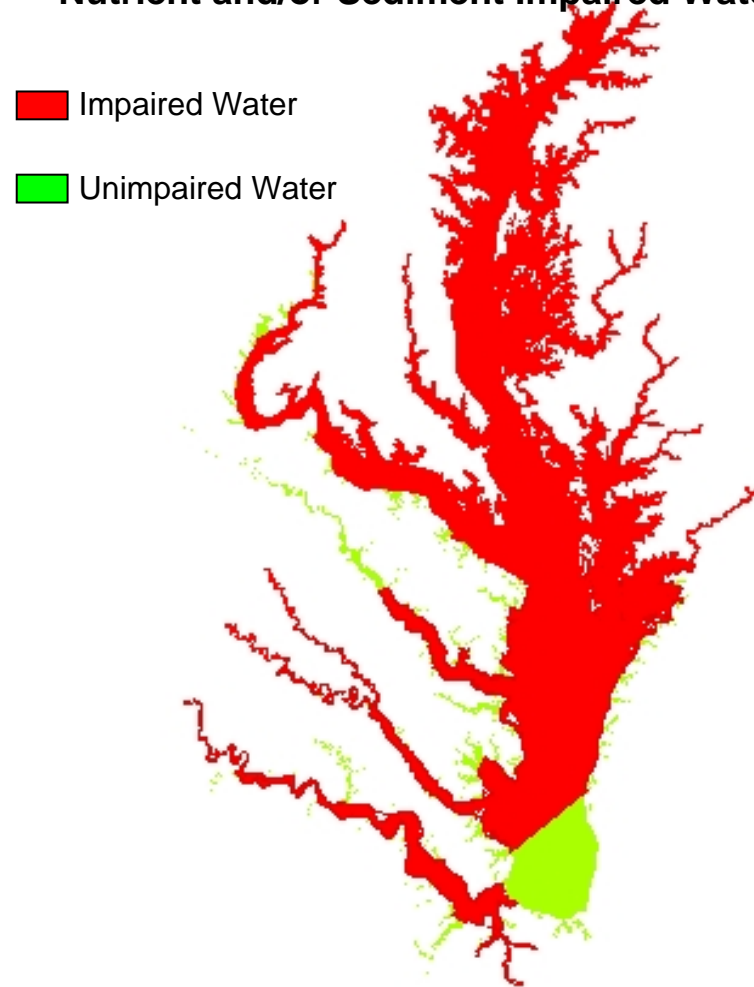


Figure 4. Representation of Chesapeake Bay water quality in 2002