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The Clean Water Act & Maryland: An Investigative Report

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I. Introduction

The nation's concern over water pollution is a phenomenon that came about as the result of devastating water contamination and a new understanding that our water supply, like many other natural resources, is finite necessitating careful consideration and oversight. Over the past century, federal and state governments, along with numerous government agencies and private organizations, have collaborated in order to combat the nation's water pollution. The responsibility for aspects of water policy has shifted amongst various agencies over time, ranging from full authority of federal agencies and programs, to increased local empowerment in order to address specific regional conditions. The first stages of water policy focused primarily on point sources of pollution from manufacturing and sewage treatment activities, while more recent legislation has been designed to respond to the impact of nonpoint-sources, such as agricultural and storm-water runoff. Needless to say, the nation's legislatures have tried a variety of approaches to address this significant issue. Despite the vast amounts of attention and resources devoted to this matter, the overall success of improving water quality is a subject of much contention at this time.

II. History of Water Pollution in the United States

Since the early part of the twentieth century, the government has understood the importance of preserving the quality of America's waters. According to Cooper (2000), the first federal water legislation was passed in 1912 in response to the public's growing concern over the role of contaminated water in the spread of disease. The policy gave powers to the Public Health Service to investigate the connection between the nation's water quality and various health conditions (p. 8).

This legislation is quite different from the modern water policy that is in place today. In fact, Cooper (2000) writes that it was not until post World War II that the American people truly became worried about the impact of rapid industrialization on the nation's water supply. These concerns lead to the passage of the first comprehensive law governing clean water programs at the federal level in 1948, the Federal Water Pollution

Control Act. While the policy provided federal funding to state and local governments to study pollution issues, water quality was deemed to be a regional issue and no federal guidelines or regulations were subsequently created. The federal government limited its role in water pollution oversight to interstate waters, and only with the permission of the states involved. (p. 8).

Subsequent amendments in the next two decades gradually expanded the role and jurisdiction of the federal government. Most notably, a 1965 amendment introduced the first federal water-quality standards. Despite decades of legislative attempts at the local and national level, the country's water quality was still in dismal condition. As noted by Cooper (2000), it was not until 1969 when a heavily polluted section of the Cuyahoga River in Ohio went up in flames that the dire quality of the nation's waterways was able to gather the full support and attention of citizens (p. 8). Events that demonstrated the dire state of the environment, like the Cuyahoga fires, combined with the growing environmental movement of the 1970s in the aftermath of Rachael Carson's *Silent Spring*, helped to propel the passage of several landmark pieces of environmental legislation during this decade (Lovejoy & Hyde, 2003, p. 2).

As Lovejoy & Hyde (2003) report, 1972 was a groundbreaking year for the environment as Congress responded to the nation's demands for clean water by overhauling the Federal Water Pollution Control Act of 1948. This revised legislation eventually became known as the Clean Water Act and was aimed at controlling water pollution in order to provide Americans with clean water (p. 2). Cooper (2000) notes that while the new law was initially vetoed by President Nixon for being too expensive, Congress was able to override the veto and successfully enact the policy. With its passage, the legislation set a lofty national goal of eliminating all discharges of pollutants in to the nation's surface waters by 1985 (p.8). This was to be achieved by controlling point sources of pollution (Lovejoy & Hyde, 2003, p. 2). The law has been amended several times since its inception to respond to changing environmental conditions and knowledge.

III. Description of Clean Water Act of 1972 & Subsequent Amendments

The Clean Water Act of 1972 is the keystone piece of water legislation. As Cooper (2000) reports, the policy initially intended to improve the nation's water quality to the point of being "fishable and swimmable" by the mid-1980s. In order to achieve this, all municipal and industrial wastewater are to be treated before

being discharged into waterways. The federal government also increased funding for municipal treatment-plant construction and upgrades. This law expanded the oversight of the federal government by assigning enforcement authority to the recently established Environmental Protection Agency (EPA) while allowing the state's to retain some sovereignty for implementing the specifics of the law (p. 8).

According to Lovejoy & Hyde (2003), the Clean Water Act initially focused on controlling point sources of pollution rather than nonpoint sources because the former was believed to be a larger threat that would be easier to control. The act was amended in 1977 to address nonpoint sources by requiring each state to design and execute plans that addressed all pollution sources. The governor of each state was required to designate at-risk bodies of water within their state to be the prime target of these new plans (p. 2). This would occur in a three-step process. First, states would identify projects that could address municipal and industrial waste-treatment goals. Next, each plan would identify key nonpoint sources of pollution. Finally, the plan would include the specific procedures for controlling these sources, of which the responsibility was often given to local governments (p. 2).

The 1977 amendment also recognized the importance of including agricultural workers in the process in order to improve soil quality and nutrient runoff, a major contributor to nonpoint source pollution. This was achieved by giving authority to the USDA's Soil Conservation Service to create a program for best management practices, like crop rotation and conservation tillage, and directly involving farmers in designing and carrying out these efforts (Lovejoy & Hyde, 2003, p. 2-3).

For the first fifteen years of the act's existence, the EPA and the states collaborated to focus on reducing point sources of pollution. State and local agencies would monitor the water to determine the levels of EPA-regulated contaminants and then issue permits to facilities that stipulated the maximum amount of pollutants (Total Maximum Daily Loads, or TMDLs) they were allowed to discharge into the water under the National Pollutant Discharge Elimination System set up under the law. States would then assess and report water quality results to the EPA biannually (Cooper, 2000, p. 9).

One decade later, the Clean Water Act was reauthorized and amended. According to Cooper (2000), the 1987 changes reflected the new understanding that while the Clean Water Act had succeed in improving water quality from point sources, contamination from nonpoint sources like runoff from city streets, farms

and sewers seriously needed to be addressed more thoroughly. A voluntary, incentive-based program was created that challenged each state to assess the extent and causes of nonpoint pollution within their borders and devise ways to control the problem with the help of the EPA's knowledge and financial resources. Estuaries and coastal waters were now understood to be the primary victims of runoff and the updated Clean Water Act directs the EPA to help state, regional, and local government restore estuarine water quality and fish populations (p. 9). The 1987 changes also established the State Revolving Loan Fund to help states fund the costs of projects related to improving water quality. Congress appropriated more than \$10 billion to the fund, and requires that states pay 40 percent towards the total costs of construction (Lovejoy & Hyde, 2003, p. 3).

During the 1990s the balance of power between the federal and local governments was upset by the Republican majorities in both the House and the Senate. As a result of the shifting influence, most of the responsibility for environmental oversight held by the federal government in the 1970s and 1980s devolved to the states. These major changes, combined with inconsistent funding and goals, have resulted in inconsistent application and success for the law (Cooper, 2000, p. 10).

IV. Subsequent Legislation

Additional water quality legislation has been passed in conjunction with the Clean Water Act to support the national efforts to improve water quality. The Safe Drinking Water Act of 1974 was signed into law by President Gerald Ford and set the goal of having a national supply of contaminant-free drinking water by instituting quality standards that gradually strengthen (Cooper, 2000, p. 9). Administration of this legislation is carried out by the Environmental Protection Agency (EPA) (Lovejoy & Hyde, 2003, p. 3-4).

The act was reauthorized in 1996 with two new reforms. First, the EPA was given the flexibility to consider any number of contaminants to regulate and study rather than the previously required twenty-five every three years. The edited act also created a revolving loan fund like the one under the Clean Water Act and gave states the authority to create programs for assessing and collecting user fees based on the quantity of water an industry uses or the amount of pollutants it releases (Lovejoy & Hyde, 2003, p. 3-4). Cooper (2000) also notes that the law required water systems serving more than 500 people to mail "consumer confidence reports" to all ratepayers with basic information on the water supply source, potential contaminants etc. (p. 9).

The Environmental Protection Agency's authority has been expanded to other domains as a result of several pieces of legislation. As a result of gradual revisions to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the EPA has the authority to control pesticides that may taint ground or surface waters. The 1972 Coastal Management Act and its 1990 amendments directs the EPA to assist state and local governments in managing land-use activities, particularly residential development and agriculture, that may negatively impact coastal waterways (Cooper, 2000, p. 9).

V. Understanding Maryland's Natural Resources & Conflicting Interests

Maryland's waterways have important symbolic and financial implications for the state and its citizens. According to the Maryland Department of the Environment (2008), Maryland's cultural heritage and economic sustainability are closely tied to its rivers, coastal waters, and the Chesapeake Bay. The seafood and tourism industry in particular, as well as the overall quality of life for Maryland citizens, is heavily dependant on caring for its waterways (p. 1).

Maryland has unique natural resources as it is the site of one of the nation's most prized national treasures – the Chesapeake Bay. As the largest estuary in North America, it is home to more than 3,600 species of plants, fish, and animals as well as the 16 million people that live in the Bay's watershed. The watershed covers nearly 44.5 million acres over six states and the District of Columbia, and its health is heavily influenced by land-based activities (USDA & NRCS, 2006, p. 1). Clearly given its immense size and varied topographic conditions, there is no one-size fits all procedure for caring for the Bay. In addition to the Chesapeake Bay, Maryland is home to miles of Atlantic coastline, particularly the top tourist destination, Ocean City. Maryland's Assembly must also consider area-specific issues like beach erosion and replenishment, pollution, and hurricane and nor'easter damage (Bettelheim, 1998, p. 1-2).

In order to uncover the causes for pollution as well as devise viable solutions, Maryland's legislators must work with their counterparts from other Bay watershed and Atlantic coast states. While addressing such issues would be complicated enough when just trying to operate internally, the challenges are compounded when the conflicting desires and resources of other parties must be taken in to account.

Economically, several of Maryland's best-known and most profitable industries are in direct competition with one another when it comes to environmental regulations. While the lifestyle and continued operations of Maryland's watermen and the state's tourism industries depend on having a viable Chesapeake Bay, Maryland's agriculture industry – particularly poultry producers – are often the biggest source of the Bay's pollution and the loudest opponents to any environmental reforms that may negatively impact their business operations. According to Anne Haddad (1999), state officials have found that 50 to 60 percent of the state's runoff, particularly runoff consisting of the two most damaging nutrients, phosphorous and nitrogen, can be attributed to the state's largest industry - agriculture (p. 1B). While Maryland's dairy and hog farms are already subject to animal waste regulations, Ian Urbina (2008) discovered that poultry farmers have managed to avoid excessive rules and permit processes for the manure generated by their chickens (New York Times, 2008).

Despite efforts to reduce agricultural runoff, any significant improvements in recent years have been cancelled out by two new statewide trends. As Karl Blankenship (2008) reports, nutrient runoff has actually grown as the result of urban and suburban developments that have removed forests and other natural barriers to runoff, while increasing the pressure on municipal sewer systems. In addition, pollution from agriculture may end up rising despite the implementation of reduction programs and best practices, as more farmers are expected to plant corn to meet the rising demand for ethanol (p. 2).

Maryland's unique ecological and economic conditions create a challenging arena for lawmakers to effectively legislate. While almost every Maryland leader decries the importance of protecting the Bay for future generations, the long-term effects and practicality of their policies is the subject of much contention.

VI. Maryland's Attempts at Compliance

Maryland's federal and local representatives have been consistent in their active policy attempts to protect the state's waterways. While support and funding have ebbed and flowed as a result of the priorities and budgeting processes of various governors and presidents, Maryland has consistently worked to implement the Clean Water Act and related legislation passed at the state and federal level.

Maryland has succeeded in developing a cooperative relationship with the federal agencies working to protect the environment, most notably the EPA. According to the Clean Water Network (2004), one of the

most valuable tools that states like Maryland rely on to carry out water quality work is federal financial assistance through loans and grants, particularly those loans and programs run by the EPA (p. 1). When funding is reduced for any number of reasons, states and local governments are often forced to end environmental programs unless they can secure resources some other way.

Agencies in Maryland have worked tirelessly to develop specific procedures and guidelines to fill in where federal law has failed to be specific. According to the Maryland Department of the Environment (2006), one of the biggest hurdles for states is that although consistency with water quality standards is required under federal law, federal regulations do not prescribe the specific steps necessary to achieve and maintain these guidelines, particularly when it comes to Total Daily Maximum Loads (TMDLs) (p. 1).

To overcome the lack of federal specification, Maryland has divided the remaining responsibilities for oversight and execution between state and local governments. Local governments are delegated legal authority for water quality management, such as sediment and erosion control. Local governments are also primarily responsible for activities like land use planning and development, which bear heavily on water quality. It has been determined that local jurisdictions are in the best position to implement TMDLs as they are in the ideal geographic location to oversee their execution and are often directly involved in the decisions that most directly impact local water quality (MD Dept. of Environment, 2006, p. 1).

Maryland has created other statewide initiatives that complement federal programs by taking the region's needs into account. The Maryland Water Quality Financing Administration (WQFA) was created during the 1988 Maryland General Assembly to encourage capital investment for wastewater and drinking water projects in order to meet the objectives of the Federal Clean Water Act of 1987. The WQFA administers two loan programs and two grant programs. The loan programs receive federal funding from the EPA, while the grants are funded by state issued bonds and revenue from water-related fees assessed on homes and businesses (Maryland Department of the Environment, p. 1-2).

The current leadership of Maryland has actively worked to improve the health of the bay. Democratic Governor Martin O'Malley was elected to the office in 2006 after serving as Mayor of the City of Baltimore. His predecessor, Republican Robert Ehrlich, was often criticized for following President Bush's lead and not placing enough of a priority on local environmental issues. Even before being elected as governor, O'Malley

was an avid environmentalist and ran his campaign for governor with a promise to improve Maryland's environmental health for the good of the state's families and businesses by implementing new programs and improving accountability (Friends of Martin O'Malley, p. 1-2).

In the spring of 2008, O'Malley signed landmark legislation intended to protect Maryland's environment and the health of the Chesapeake Bay, while also helping to provide stable energy in the future. According to the Office of the Governor (2008), this bill would strengthen Maryland's critical areas law to protect the most environmentally sensitive and significant lands within the watershed. The law increases the enforcement powers of the Critical Area Commission, establishes new procedures and redefines areas to be protected. In addition, the law also secures \$25 million for the Chesapeake Bay 2010 Trust Fund (p. 1).

In his first fourteen months in office, O'Malley worked to get several crucial policies approved by the Assembly, including the Stormwater Management Act, which provides increased funding for nutrient removal programs and septic and sewer system upgrades; the Oyster Restoration Act to provide funding for programs to improve the Bay's declining oyster population, as well as several acts that deal with issues that directly impact the Bay's health, including irresponsible farming and overdevelopment/urban sprawl (Office of the Governor, 2008, p. 2).

O'Malley has recognized that the health of the Bay cannot be improved solely through actions within the state and has developed partnerships with his counterparts throughout the Bay's watershed. His closest ally has been Virginia Governor Tim Kaine, with whom he made a commitment to rebuild the Bay's ailing blue crab population. According to the Office of the Governor (2008), this is to be done by directing regulatory agencies to reduce the 2008 female crab harvest by 34 percent, while developing long-term management strategies to ensure the future health and economic sustainability of the prized crustacean (p. 2).

O'Malley is a member of the Chesapeake Executive Council, which oversees the 24-year old state-federal Chesapeake restoration effort. The council includes the governors of Pennsylvania and Virginia, an EPA administrator, the mayor of the District of Columbia, and the Chair of the Chesapeake Commission (Blankenship, 2008, p. 1-2). As a result of their last meeting at the end of 2007, O'Malley declared 2008 to be a year of "recommitment to the Bay" by taking several crucial actions including promoting local government involvement by sponsoring a leadership summit to focus on ways to incorporate communities in the cleanup

effort. He also set out to create a Chesapeake Bay Venture Capital Technology Fund with an initial \$250,000 to invest in technologies to restore the Bay's health. O'Malley announced that he would improve accountability for the progress of restoration efforts through better management of Maryland's BayStat program, in addition to partnering with West Virginia to improve local government involvement in improving upstream localities (Blankenship, 2008, p. 1-3).

While O'Malley was inaugurated as governor less than two years ago, he has thus far maintained his campaign promise to improve the health of the Chesapeake Bay. In addition to passing legislation addressing direct and indirect contributors to the Bay's water pollution, he has properly delegated funding and responsibilities to the agencies necessary to get the job done, all while looking to create partnerships with his counterparts beyond Maryland's borders. This comprehensive approach is a departure from the policies of his predecessor, and Maryland residents are anxious to see the long-term implications of O'Malley's actions.

VII. The Federal Government's Role in Maryland's Environment

The state's environmental concerns are likely to experience a new era of support and funding with the inauguration of Barack Obama and his Democratic Congress in 2009. This is a promising opportunity for the state's environmentalists, many of whom feel the Bush Administration did little to improve the health of the Bay over the past eight years.

Congressionally speaking, Maryland looks to enjoy an unusual advantage in the House of Representatives in that Maryland congressman Steny Hoyer is the Majority Leader of the House. Before assuming this role, Hoyer had a long legislative history of supporting environmental policies, particularly those related to clean water initiatives (US Federal News Service, 2007).

The election of Barack Obama was a joyous occasion for Maryland's environmentalists, as Obama's platform recognizes the unique nature of the Chesapeake watershed. According to David Bancroft (2008), Obama would support a comprehensive solution for improving the nation's treasures and would change direction from the policies of the previous eight years by strengthening the enforcement of environmental laws. Specific to the Bay, Obama is supportive of initiatives that reduce nutrient and sediment runoff, restore federal financing for water treatment infrastructure and increase monetary support for the research and

development of new technologies. Obama would also appropriate millions for various conservation programs that directly impact the health of the Bay, including the Wetlands Reserve Program (p. B.6).

VIII. Legislation & Compliance – Has it worked?

Legislative efforts to improve the quality of the nation's waterways have a complex and controversial history, complete with inconsistent policy application, funding, and oversight. Despite the best intentions of legislatures since the passing of the Clean Water Act in 1972, there is still much contention over whether the policy has actually achieved its intended goals.

Since the act was passed over thirty-five years ago, water quality has gradually improved, although not to the extent of making every body of water safe for recreation. As Erin Kelly (2007) writes, 60 percent of our waterways are safe for activities like swimming today, compared to only about one-third in the early 1970s. This is due mostly to major improvements in treating point sources of pollution, like sewage discharge (p. 1).

Despite this accomplishment, there is still much more to be done. According to a report released by U.S. PIRG entitled, "Troubled Waters," (2007) nearly 57% of the nation's facilities exceeded their Clean Water Act permit limits at least once during 2005 (Leavitt, p. 5). In addition, Leavitt (2007) states that the EPA estimates that more than 20,000 bodies of water are too polluted to meet basic quality standards (p. 7).

Within Maryland, the prognosis is not as dire as compared to the rest of the nation. In fact, the Maryland Department of the Environment (2008) is proud of the state for having one of the most comprehensive, estuary restoration programs in the country (p. 2). While that is a notable achievement, it is worth examining the state's areas of weakness. For one, 38% of the state's rivers, 57% of its lakes, and 63% of estuaries are considered impaired due to pollution from runoff in conjunction with habitat destruction (Clean Water Network, 2004, p. 1). The Clean Water Network (2004) also reports that eight of Maryland's major industrial facilities (8.1%) were non-compliant with EPA TMDL standards, while 97 community water systems (19%) had reported health standard violations (p. 2). Objectively these statistics are significantly better than those in the majority of U.S. states, yet any violations still fail to achieve the Clean Water Act's original goals.

The health of Maryland's aquatic creatures is also dismal. According to Christy Goodman (2008), the Bay's oyster population is at just 1 percent of the historic highs recorded in the 1880s (p. B.1). Maryland has

also had an increase in fish consumption advisories and has 65 rare wetland-dependant species, some of which are considered endangered (Clean Water Network, 2004, p. 2). Ian Urbina (2008) adds that the working oysterman on the bay have dropped in the past two decades from 6,000 to less than 500, while the harvestable crab population has fallen by 70 percent (New York Times, 2008).

Contributing to these conditions is Maryland's failure to pass critical legislation reforming the manure disposal practices of the state's poultry farmers – one of the single largest sources of runoff pollution. As Ian Urbina (2008) points out, while other areas of agriculture, including dairy farming, are already regulated, the state's poultry industry has managed to avoid the same oversight, fines and laws their peers are subjected to. While the poultry industry contributes more than \$700 million annually to the state's economy and is one of its largest employers, the 650 million pounds of manure the industry produces are a major pollutant to the Bay and significantly hinder the progress of the \$100 million that has been spent annually for over a decade on restoration efforts. Given that many pollution sources like sewage treatment plants already have numerous compliance requirements, there are significant environmental benefits that could be seen with heavier regulations for poultry farmers. While new rules impose a heavy financial burden on the individual farmers, in the larger context tighter enforcement of animal waste costs a tenth of what would be spent to achieve the same pollution reductions as from altering activities like urban development (New York Times, 2008).

The limited progress in improving the nation's waterways is attributed to a lack of consistent funding and enforcement at the federal and state level. As Erin Kelly notes (2007), state and federal agencies have not fully enforced the laws against polluters. Cuts in funding, particularly for sewer treatment plants, have slowed the progress for improving water quality as well (p. 1).

The differing policy priorities of various executive administrations since the 1970s have meant that environmental initiatives have not received the consistent funding necessary to successfully carry out lasting improvements. One example of this is when President Bush cut EPA funding for water programs in 2003 by \$524 million. This meant that Maryland alone was denied a critical \$12.4 million for water quality programs (Clean Water Network, 2004, p. 1). Many argue that the effectiveness of government spending and programs has not been proven, and additional expenditures are not justifiable until their impact can be quantified.

Policy-makers continue to struggle with whether to create new programs or sustain existing ones. There are fundamental ideological differences amongst politicians as to whether the federal government needs to take a harder-edged role or if voluntary, incentive-based approaches will achieve the desired effects (Cooper, 2000, p. 14-15). While the effectiveness of the federal government's large role was proven successful in achieving results from point-source pollution, the complicated and ambiguous nature of nonpoint-source pollution has led many to suggest this next phase of pollution control should be addressed locally and backed with federal funds (Cooper, 2000, p.3). Given that nonpoint-source pollution is now the biggest challenge confronting the nation's waterways, politicians will have to act quickly to develop initiatives to effectively address this issue.

While lawmakers and agencies at the state and federal level have acted with the best intentions of improving the nation's waterways, the actual quantifiable results of their actions are mixed. While point sources of pollution have been significantly reduced, nonpoint sources have subsequently emerged as a more significant threat to our waterways. Given that it is local circumstances that cause nonsource pollution, it is likely that enforcement and support will have to be shifted from the federal government to the state and local level in order to achieve significant improvements.

IX. Conclusion: Is Maryland complying with the Clean Water Act?

Maryland is unique in its environmental issues and priorities as it is the site of the nation's largest estuary, the Chesapeake Bay. From the analysis above, it is clear that Maryland has thoroughly complied with the requirements put forth by the Clean Water Act and subsequent legislation. In many cases, Maryland lawmakers have gone above and beyond the law's requirements by enacting their own state-wide policies and creating new programs and agencies to address the specific needs of the locality. While the environmental conditions of the state are by no means ideal, Maryland has made tremendous progress on several key issues and has been proactive in focusing on areas that still need to be improved. With continued vigilance and the creation of additional regulatory and incentive programs, Maryland's efforts allow them to continue to maintain the aquatic conditions, without actually making viable steps towards long-term improvements and sustainability.

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