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# Environmental justice disparities in Maryland's watershed restoration programs

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## ABSTRACT

Two Maryland watershed restoration and mitigation programs were assessed to determine whether they are distributing resources fairly and equitably with respect to environmental justice. A Freedom of Information Act was submitted to obtain the location and scope of all registered wetlands impacts from Maryland's Non-tidal Wetland Mitigation program and the distribution of grant funds from the Federal Clean Water Act Section 319(h) which are used to help eliminate water quality impairments caused by nonpoint sources of pollution. Information retrieved from both programs was compiled on Excel and mapped on GIS by 8-digit watershed. Findings indicate mixed results on geographic, racial, and socioeconomic disparities in the location of programmatic wetlands projects funded by the state and of the allocation of Section 319(h) dollars. It is anticipated the research will assist the efforts of advocates for disadvantaged communities to argue for stronger environmental protections and additional federal and state resources for environmental restoration.

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## 1. Introduction

### 1.1. The Chesapeake Bay

At about 322 km long and 6.5 km wide, the Chesapeake Bay is the largest estuary of more than 100 in the United States, residing inland from the Atlantic Ocean surrounded by the states of Maryland and Virginia. The Chesapeake Bay's watershed is even more expansive, stretching more than 103,000 km<sup>2</sup> across six states: New York, Virginia, Maryland, Pennsylvania, West Virginia, Delaware, and the entire District of Columbia. More than 17 million people live in the Chesapeake Bay watershed, and with this comes both a significant reliance

on the Bay's natural resources to support the fishing and tourism industries, and a substantial impact on the health of the Bay from pollution, intense development, and overfishing. In no state are these conflicts more apparent than Maryland, known for its crabs, oysters, kilometers of Bay shoreline, and an environmentally conscious citizenry that for three decades has had local, state, and federally elected leaders voicing their support for restoring the health of the Chesapeake Bay.

### 1.2. Chesapeake Bay clean-up

The restoration and protection efforts for the Chesapeake Bay have inspired many of the initiatives, agreements, and funding programs in Maryland.

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These efforts formally began with the creation of The Chesapeake Bay Program from the Chesapeake Bay Agreement in 1983, signed by the governors of Maryland, Pennsylvania, and Virginia, the mayor of the District of Columbia, and the administrator of the USEPA (Chesapeake Bay Program, 1996). The agreement established a Chesapeake Executive Council consisting of designees of the signatories to implement plans designed to restore the Bay, and an USEPA liaison office in Annapolis to help support the new Council. The 1983 agreement was followed up by a 1987 Chesapeake Bay Agreement which established the first numeric goals to reduce nitrogen and phosphorus pollution to the Bay by 40 percent by 2000 (Chesapeake Bay Program, 1987).

The next Bay Program agreement was Chesapeake 2000 (Chesapeake Bay Program, 2000) which set 102 wide-ranging goals, and recognized that partnering with local watershed organizations and governments to help restore local streams and rivers would help to tackle the Bay's problems at the local level where many decisions on land use and transportation were made. The agreement listed model "urban waters" that needed to be restored in the Bay basin, including the Anacostia River Baltimore Harbor, and Elizabeth River.

Although successful policies in retrofitting waste water treatment plans, lowering air pollution, and reducing agricultural land runoffs have been documented by the Chesapeake Bay Program to have a positive effect on the Bay watershed, the Bay restoration effort has made little to no progress in improving key indicators. A significant challenge has been population growth causing changes in land use from forest and wetlands to urban and suburban neighborhoods (Chesapeake Bay Program, 2014). An annual 2011 report card on the Bay's health gave it a D+, down from a C- in 2010 (UMCES, 2011). The report observed a decline in several key areas including excessive levels of chlorophyll a, declining water clarity, declining aquatic grasses, and a worsened condition of the benthic community. These stops and starts have been common, for example, the 2006 report card also gave the Bay's health a D+, declaring that year as the worst Bay-wide water clarity assessment since monitoring began in 1985. Similarly, the report saw dramatic reductions in aquatic grasses and one of the worst benthic community conditions since monitoring started in 1996 (UMCES, 2006). In 2010, the USEPA mandated that every Bay jurisdiction implement a Watershed Implementation Plan (WIP) to meet their Total Maximum Daily Load (TMDL) "pollution diet" by 2025 (USEPA, 2009). The TMDL includes limits on nitrogen, phosphorus, and sediment loadings, and allows states to work with local governments to build a plan watershed by watershed to reduce these pollution sources. Although unsuccessful so far, the Bay restoration effort has led to many environmental policies and water quality programs in Maryland that are concerned directly or indirectly with improving the water quality of the Bay.

### 1.3. Maryland wetland regulatory policy

In 1970, tidal wetlands were regulated through the Tidal Wetlands Act, and nontidal wetlands in the 1989 Nontidal Wetlands Protection Act (MD State Government, 2013). Building on these efforts, in 1997, Governor Parris Glendening

launched a Wetlands Restoration Initiative campaign to restore 60,000 acres (242.8 km<sup>2</sup>) of wetlands, and chose 10 acres (0.04 km<sup>2</sup>) of flood plain along the Anacostia River in predominantly African-American Bladensburg as the first restoration project (Wheeler, 1997). Both tidal and nontidal wetlands are protected through a "no net loss" policy approach requiring new wetlands to be restored or created to compensate for any wetland loss. The square acreage (km<sup>2</sup>) requirements for wetlands mitigation are determined based on the wetland type, but at a minimum require a 1:1 replacement ratio. Wetlands that are forested, are part of a bank, or are of Special State Concern require higher replacement ratios (Neff et al., 2011). Wetlands of Special State Concern are designated for increased protection based on their exceptional ecological and education value, they often support rare and threatened plant and animal species in the state (MDE, 2013).

In order to impact a wetland, a party must obtain state authorization from the Maryland Department of the Environment (MDE) by demonstrating that a proposed impact is necessary and unavoidable. As part of the review for this application, MDE seeks to minimize impacts before requiring mitigation. When determining the type and amount of mitigation required, MDE originally preferred on-site mitigation projects followed by off-site options, mitigation banks, and lastly fee-in-lieu payment. However, MDE has been working for a couple of years to revise their mitigation program to comply with the requirements of a new mitigation rule announced by the USEPA Corps of Engineers (US Army Corp of Engineers, 2008).

This rule prioritizes the establishment of wetland mitigation banks followed by fee-in-lieu, and then permittee-responsible mitigation based on a watershed approach. The watershed approach emphasizes the process of selecting and approving sites for mitigation by an applicant should be driven by assessment of watershed needs and how a particular type of wetland restoration project can address those needs (USEPA, 2008). This new focus on wetland mitigation banks and fee-in-lieu appears to be an effort by the Federal government and MDE to construct larger, more environmentally beneficial wetlands projects that are easier to administer and track when compared to hundreds of smaller off-site mitigation projects.

### 1.4. Clean water act section 319

The Section 319 Nonpoint Source (NPS) Management Program was established through amendments in 1987 to the Clean Water Act (CWA). The purpose of the program is to exercise federal leadership to help focus state and local nonpoint source pollution reduction efforts. Under this program, states, territories, and tribes receive grant money that supports a technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects (USEPA, 2013). Funding can be used for regulatory or non-regulatory programs. As required by Section 319 (a), all states must have assessment reports that identify NPS pollution problems and sources attributable to water quality impairments. Under 319 (b), states must have NPS

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