Potomac River Revival Plan (PRRP)

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Background

- The Potomac river has 6.11 million people within its watershed and covers almost 15,000 square miles. It reaches into West Virginia, Virginia, Maryland, Pennsylvania and the District of Columbia.
- The river drains an area of approximately 14,500 sq mi (37,600 sq km).
- The Potomac River stretches for 383 miles, of which 117 mi are tidal, from its starting point in West Virginia to where it meets the Chesapeake Bay at Point Lookout, Maryland.
- Many major tributaries flow to the Potomac River: the Anacostia River, Antietam Creek, the Cacapon River, Catoctin Creek, Conococheague Creek, the Monocacy River, the North Branch, the South Branch, the Occoquan River, the Savage River, Seneca Creek, and the Shenandoah River. When you add up all of these major tributaries, the entire Potomac River system is 12,878 miles long.

Background (cont'd)

- The Potomac River crosses several geologic regions on its journey from its headwaters to the Bay: the Appalachian Plateau, Ridge & Valley, Blue Ridge, Piedmont Plateau, and Coastal Plain.
- Nearly 90% of the Washington, D.C. metro area gets its drinking water from the Potomac River.
- The river is navigable to Washington, D.C., above which it descends from the Piedmont in a series of rapids and falls, including Great Falls, a cataract about 35 ft (11 m) high.

History

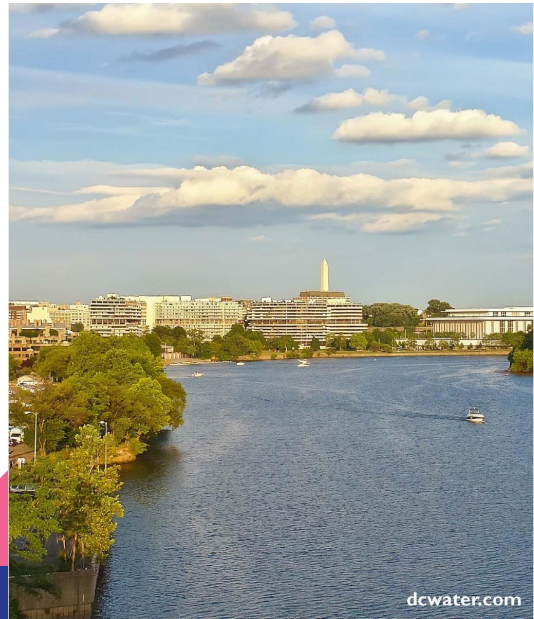
- Mount Vernon, home of George Washington, is on its banks below Washington, D.C. The river's name derives from "Patawomeck," as it was recorded by the colonist John Smith in 1608; its origin and meaning are unknown.
- In the 1600s, Cecilius Calvert and Thomas Colepeper both received land grants for what would later become the states of Maryland and Virginia. Both used the Potomac River as a boundary, but did so in a way that meant their territories overlapped, leading to disputes between the two areas.

History (cont'd)

- Then, in the first half of the 1700s, attempts were made to find the source of the Potomac River. Surveyors determined that the source began with the headwaters from the North Branch and placed a marker there that became known as the Fairfax Stone.
- During the American Civil War (1861–1865), the Potomac traced the border between the Union and the Confederacy.
- The river itself is at least 3.5 million years old, likely extending back ten to twenty million years before present when the Atlantic Ocean lowered and exposed coastal sediments along the fall line.

Potomac River Revival Plan: Main Purpose

- The Potomac River has been given a “B” rating in clean water in 2018, which is the cleanest it has been in a long time
- The main purpose is to continue the culture of keeping the water clean and enforcing pollution laws to keep pesticides out



Future Projects

- The Potomac River Tunnel is the next big part of the DC Clean Rivers Project. The Clean Rivers Project is DC Water's ongoing program to reduce combined sewer overflows into the river's waterways.
- Instead of muddying the Anacostia, choking out plants and wildlife and breeding bacteria, almost all of that muck will instead be diverted through an 18-mile network of four new tunnels and cleaned at Blue Plains, the utility's sprawling wastewater treatment plant in Southwest Washington.

Policies and Mandates in Place

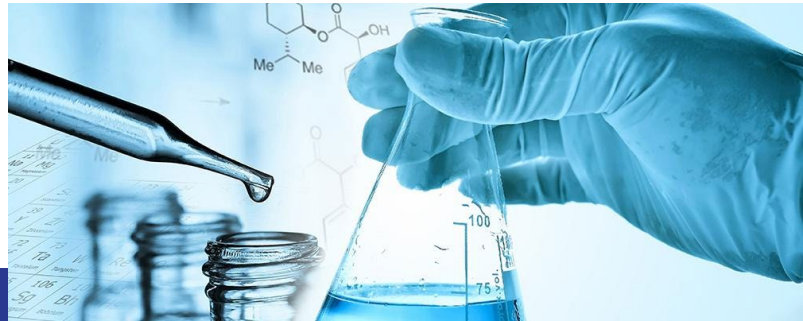
- Chesapeake Bay Preservation Act (Bay Act) was enacted in 1988 and has since seen amendments in 1991, 2001, and 2012 as the backbone of the protection of the Chesapeake Bay grows
- Put in place to balance water quality with continual development and specifically dealt with nonpoint source pollution
- Assist local bay governments financially as well as upholding regulations and water quality requirements within the bay zone
- Largely work with land use and zoning to ensure that the nonpoint source pollution can be properly managed before entering the bay

More Policies and Mandates

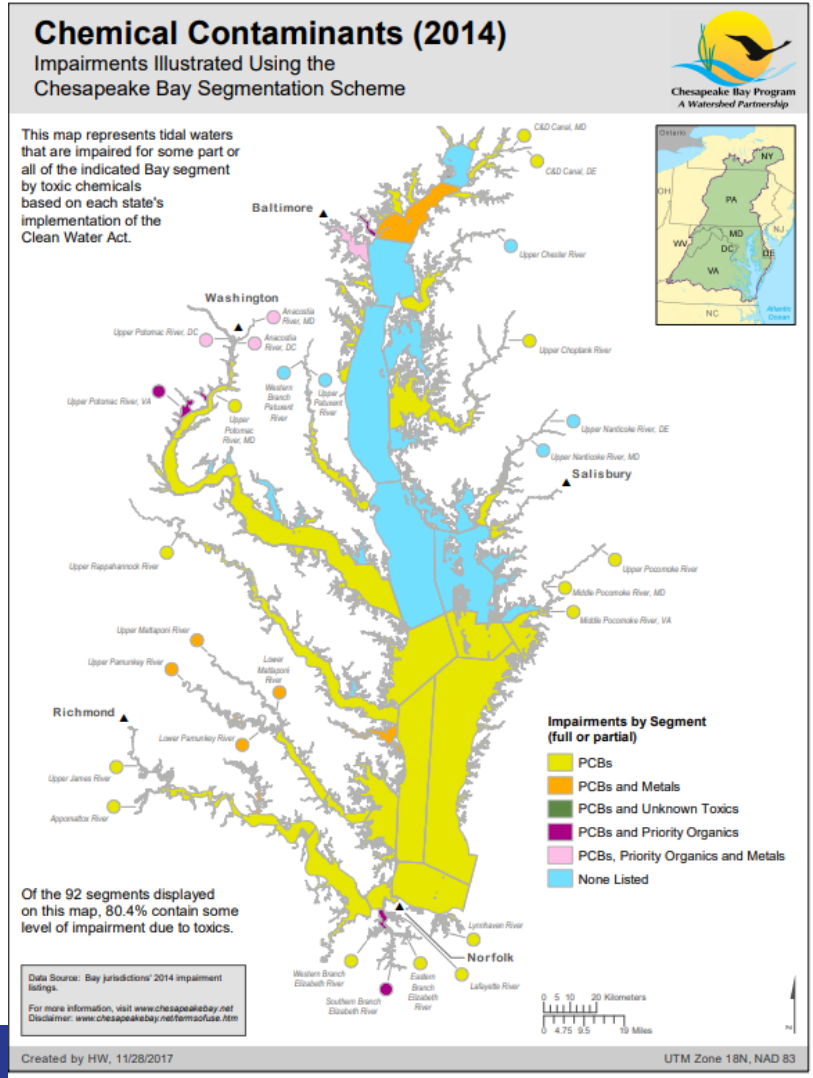
- Bay Act established and protects Resource Protection Areas (RPAs) and Resource Management Areas (RMAs) that are zoned and controlled accordingly based on their risk factor
- In 2009, Executive Order 13508 established a federal leadership committee and designated the Chesapeake as a national treasure in need of protection
- Chaired by a rep from the EPA with members in the departments of Agriculture, Commerce, Homeland Security, Interior, and transportation
- Many goals including increased stormwater management in the bay, assess impacts of climate change, and increase research efforts
- Work with Interstate Commission on the Potomac River Basin

Problem 1: Chemical Contaminants

- There have been an unusual amount of chemical contaminants that have found their way into the ecosystem
- Scientists say problems such as too much nitrogen and phosphorus from stormwater pollution and urban and agricultural runoff create dead zones in waterways
- These contaminants find their way into the smaller organisms which slowly bioaccumulate up the food chain until they become pervasive issues in the apex predators of the Chesapeake bay
- The river itself is deemed unsafe to swim in



- Our first map shows the chemical contaminant distribution in the Chesapeake Bay
- Contaminants include PCBs along with metals and unwanted organics
- These PCBs and metals are a byproduct of industry while the organics are a result of agriculture in the area that are a key problem in our remediation plan
- PCBs and Metals are the most abundant issues within the potomac



Goal for Chemical Contaminants

- To lower chemical contaminants, consider using non-toxic pesticides or chemical-free cleaning and personal-care products
- Follow safe and legal disposal methods for paint, motor oil and other household chemicals and prevent storm drain dumping
- Return unused medicine to a consumer drug return location or foul it with coffee grounds or cat litter before putting it in the trash

Problem 2: Invasive Species

- Blue catfish are one of the most threatening invasive species in the Potomac River, as they make it harder for native species to compete for food and other resources, and have been known to prey on native fish and shellfish
- There are more than 200 possible species including: Mute swans, Nutria, and Water chestnut
- Invasive species have put more that 40 percent of already threatened or endangered species at risk of further decline

Goal for Invasive Species

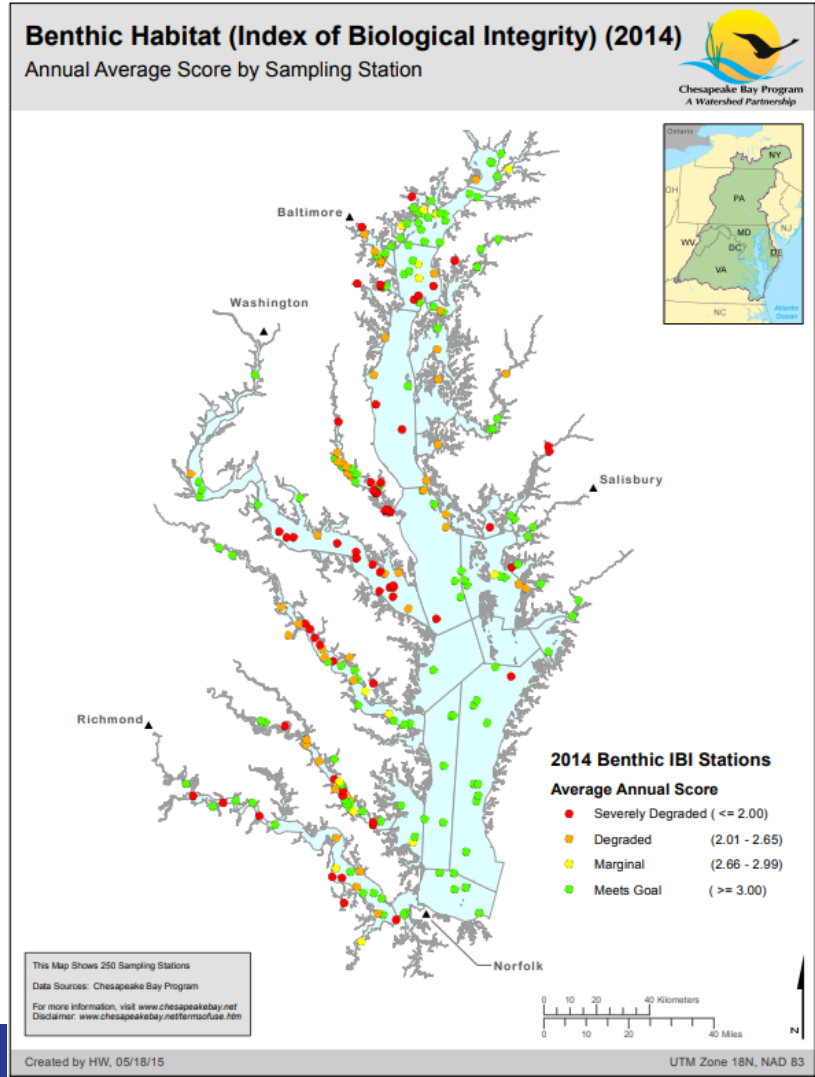
- Prevent the spread of invasive species by planting native flowers, shrubs and trees in your garden
- Protect waters from aquatic hitchhikers by cleaning your boat hull before moving it to another body of water
- Keeping bait or aquarium species out of storm drains and waterways

Problem 3: Oyster Population Decline

- Oysters are needed since they act as natural filters
- Oysters feed by pumping water through their gills and trapping harmful contaminants
- They keep our waters clean
- Contribute to the region's economy through catching and selling
- Over-harvesting, disease, and habitat loss contribute to the decline



- Our second map gives an index of Biological Integrity known as Benthic Habitat
- This is a ‘score’ of the biological health of the river
- The potomac is primarily well below average as it approaches the bay, a prime contributor to the decline in oyster population
- Oysters are a keystone bentho species that help filter and clean the river



Goal for Oyster Population Decline

- Recycling oyster shells
- Using recycled oyster shells to build new reefs
- Establishing oyster sanctuaries
- Restoration of oyster reefs

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