



# Five Decades of Clean Water

**THE CLEAN WATER ACT'S INCREDIBLE  
SUCCESSSES, ITS CURRENT LIMITATIONS,  
AND ITS UNCERTAIN FUTURE**



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# 50 Years Ago: Our Waters in Crisis

*“I am sick of the river like this.  
Please do something about it.”*

In 1970, eleven-year-old Suzanne Clune wrote a letter to Senator Edmund Muskie of Maine about the “sickening stench” and dead fish in the Androscoggin River. “I am sick of the river like this. Please do something about it,” she implored.<sup>1,2</sup>

She wasn’t alone in her frustrations. As American cities boomed in the years after WWII, the increase in sewage and industrial waste overwhelmed rivers, lakes and coastal waters nationwide.<sup>3</sup>

The young Ms. Clune could not have picked a better person to complain to – Senator Muskie was already working closely with members of both parties to craft a bill that would address the nation’s water crisis.

This collaborative approach resulted in strong, bipartisan support for the Federal Water Pollution Control Act Amendments of 1972, popularly known as the Clean Water Act. The vote on the final text was unanimous in the Senate; only 11 House members voted against.<sup>4</sup> Congress swiftly overrode an initial Presidential veto and the bill became law on October 18, 1972.

## Over the past 50 years, the Clean Water Act has had many successes:

### Improving Wastewater Treatment

The Clean Water Act funded approximately 35,000 grants totaling \$650 billion in expenditure. On average, each grant significantly decreased pollution for 25 miles downstream.<sup>5</sup>

### Preventing Industrial and Municipal Pollution

The National Pollutant Discharge Elimination System (NPDES) program prevents 700 billion pounds of pollutants from entering our waters annually.



J. JOHNSON



MINNESOTA POLLUTION CONTROL AGENCY

*This collaborative approach resulted in strong, bipartisan support for the Federal Water Pollution Control Act Amendments of 1972, popularly known as the Clean Water Act.*





TIMOTHY J.

*An area of wetlands roughly the size of Maryland – 7.6 million acres of wetlands – were destroyed in the lower 48 states in the two decades before the law took effect.*

Approximately 200,000 “point source” polluters – such as sewage treatment facilities, paper mills, petroleum refineries, indoor hog farms and certain types of construction sites – are currently regulated under this section of the law.<sup>6</sup>

### **Protecting Wetlands**

Before passage of the Clean Water Act wetlands were being lost at an astonishing rate. An area of wetlands roughly the size of Maryland – 7.6 million acres of wetlands – were destroyed in the lower 48 states in the two decades before the law took effect.<sup>7</sup>

The Clean Water Act has slowed wetlands loss dramatically. An analysis of the National Land Cover Database found that the total area of wetlands remained steady in the lower 48 states between 2001 and 2016. Wetlands were lost in some areas, but gained in others.<sup>8</sup>

### **Creating Economic Value**

Cleaning up Boston Harbor was a particularly complicated effort that cost \$4.7 billion dollars over several decades. Today, the restored harbor now provides an estimated capital value of \$30 billion to \$100 billion in ecosystem benefits, such as recreation and habitat for fish and shellfish.<sup>9</sup>

### **Improving Public Health**

Wastewater upgrades that were made to meet Clean Water Act standards resulted in a small, but significant, increase in average infant birth weight in counties immediately downstream, according to a National Bureau of Economic Research analysis of more than 33,000 federally-funded wastewater projects.<sup>10</sup>

**Few laws have been as transformative to the nation’s quality of life as the Clean Water Act.** There are roughly 120 million more Americans today than there were in 1972, but the number of places that meet water quality standards have roughly doubled. Importantly, very few places are as polluted as most urban waters once were.

Still, water quality challenges linger and new threats have emerged, suggesting that the Clean Water Act needs to be fine-tuned or better implemented in certain areas.

**Instead, however, the scope of the law itself is under attack.** Currently, the Supreme Court is considering a case called *Sackett v. EPA* that has the potential to remove Clean Water Act protections for roughly half the nation’s streams and wetlands.

If the plaintiffs are successful, the result would put people and wildlife across the country at risk. The impacts would be disproportionately felt by low income communities and communities of color that already have inadequate water and



wastewater infrastructure and face greater flood risks. Climate change—including sea level rise, flooding, and drought—is exacerbating existing inequities because many such communities lack the resources to mitigate and adapt to climate-related changes. Strong protections for wetlands and streams are all the more important as more communities experience climate change impacts.

For example, removing protections for streams that do not flow year-round could lead to the sudden invalidation of thousands, or possibly tens of thousands, of existing discharge permits in states without their own water quality programs.<sup>11</sup> The factories, hog farms and wastewater plants, which formerly had to meet water quality standards, might suddenly be allowed to pollute freely. Furthermore, wetlands loss would dramatically accelerate, intensifying flooding. Many dams and mines could be built without federal review.

Many state environmental agencies do not have the legal authority to step in; others lack the funding. Additionally, many states have laws that prohibit the state from regulating waters more broadly than federal jurisdiction, so the protection of discharge permits in those states could also be removed even if the state administers the permit program.

It remains to be seen how the nation would protect our sources of drinking water, our wildlife and our way of life with a weakened Clean Water Act.

### [50 Years Ago: Our Waters in Crisis Endnotes](#)



UNIVERSITY OF GEORGIA

# Water Pollution Was Once Widespread

*Before the law was passed, our rivers and streams were in crisis nationwide, particularly in urban or industrialized areas. For example:*

- The Delaware River was so polluted it darkened the paint on passing ships.<sup>12</sup>
- 26 million fish died in a single Florida lake in January 1969, triggered by food processing plants dumping waste into a creek upstream.<sup>13</sup>
- An oil spill in 1969 near Santa Barbara spewed an estimated 3 million gallons of crude oil into the Pacific Ocean – killing thousands of birds, fish and sea mammals.
- Lake Erie was considered “functionally dead,” with pollution from factories, sewage and farms triggering algal outbreaks that smeared beaches and killed fish.<sup>14</sup>
- Texas’ Trinity River was dubbed the “River of Death” due to the sewage and slaughterhouse waste that fouled its waters.<sup>15</sup>
- The federal government dumped nearly 50,000 drums of low-level radioactive waste in the Pacific Ocean west of San Francisco between 1946 and 1970.<sup>16</sup>
- General Electric discharged more than one million pounds of Polychlorinated Biphenyls (PCBs) in the Hudson River over a 30-year period. A 200-mile stretch of the river remains contaminated to this day.



BRAD SCHRAM

### [Widespread Water Crisis Endnotes](#)





ERIK DROST

# Success Stories

## Cuyahoga River

*Once flammable, the poster child for the need for the Clean Water Act is now fishable.*

When the Cuyahoga River burst into flames in 1969, Cleveland’s media-savvy mayor Carl Stokes – one of the first African-Americans elected to lead a major U.S. city – made sure that the fire brought attention to the need to clean up the nation’s rivers and improve living conditions in urban areas.<sup>17</sup>

*There are now more than 60 species of fish in the Cuyahoga and the river’s fish are considered safe enough to eat.*

The 1969 fire was far from the river’s first: the Cuyahoga had caught fire more than a dozen times in the decades before. Sewage and industrial waste from chemical, steel, and rubber factories led to the Cuyahoga being described as a river that “oozes rather than flows,” and into which a person “does not drown but decays.”<sup>18</sup> Few fish were found in its waters.

Twenty years after the fire, water quality in the Cuyahoga was improving thanks to Clean Water Act grants that helped finance sewage treatment plants and NPDES permits that required industry to limit what they put in the river.<sup>19</sup> By that time, more than two dozen species of fish had already returned to the river, and the Cleveland waterfront was becoming a destination, anchored by the newly-opened Rock and Roll Hall of Fame.<sup>20</sup>



Five decades later, the state is restoring the lower section of the Cuyahoga but the river has recovered to the point where it has been designated as an Ohio Scenic River, a National Heritage Corridor, an American Heritage River, and – most recently – an Ohio Water Trail, which encourages paddlers to discover its 100-mile course. There are now more than 60 species of fish in the Cuyahoga and the river’s fish are considered safe enough to eat.<sup>21</sup>

[Cuyahoga River Endnotes](#)



## Monterey Bay

*The Clean Water Act protects the “Serengeti of the sea” from sewage and industrial waste.*

Monterey Bay was once known mostly as the industrial backdrop to Steinbeck’s classic Cannery Row – and as the scene of a catastrophic ecosystem collapse in the late 1940s due to overfishing and industrial waste. Today, Monterey Bay is often called the “Serengeti of marine life” because it is an ecosystem with incredible diversity.<sup>22</sup>

This 6,000-square-mile protected zone harbors over 30 species of marine mammals as well as innumerable fish and birds. Tourism is a key economic driver as millions of people every year visit the aquarium, kayak with otters, dive in the kelp forests and take boat trips to see growing humpback whale populations.<sup>23</sup>

Protecting the bay’s health is critical to the regional economy. But before the Clean Water Act, the communities within Monterey County all had their own sewage operations that dumped straight into the bay – as close as a few hundred feet offshore – with only basic treatment.<sup>24</sup>

When the Clean Water Act passed, the communities surrounding the bay formed Monterey One Water, a centralized agency for water supply and sanitation. The Clean Water Act also provided funding to conserve land upstream and prevent runoff into freshwater tributaries. Today, much of Monterey’s wastewater is treated to meet drinking water standards and reused, the rest is discharged in deep water two miles off the coast.

Thanks to the Clean Water Act, water quality in the offshore areas of the sanctuary remains in relatively good condition. However, the bay’s coastal areas and tributaries often have elevated levels of nitrates, sediments, pesticides, metals, bacteria, pathogens, and detergents. These wash into the bay from its 7,000 square mile watershed, where Silicon Valley’s growth is encroaching on farmlands.<sup>25</sup> Protecting the smaller streams that feed the bay will be key to maintaining its health in the face of a warming world.<sup>26</sup>

### [Monterey Bay Endnotes](#)



ADAM REEDER



ALLEN CHEN



## Pebble Mine

*An expected Clean Water Act veto will permanently protect the nation's largest salmon fishery – and Native Alaskan communities – from a massive, open-pit copper mine.*

Alaska's Bristol Bay watershed stretches across 40,000 square miles of pristine rivers, lakes, streams, and tributaries. This intricate, intact network of waterways is why Bristol Bay supports the most valuable wild salmon fishery in the world and is also home to many other wildlife.

All five species of salmon have robust runs up the rivers and streams that feed into Bristol Bay – with record-breaking numbers in 2022.<sup>27</sup> The bay supplies almost half of the world's sockeye salmon and its fisheries support 13,000 jobs and create \$1.5 billion in economic activity.

The bay's bounty has sustained Alaska Natives, primarily Yup'ik Eskimo, Alutiiq and Athabaskan tribal members, for thousands of years.

Bristol Bay has long faced a threat from the proposed Pebble Mine, which would be one of the largest open-pit copper mines in the world. Its network of roads, pipelines and the creation of a tailing pond to store billions of gallons of toxic waste in perpetuity would destroy more than 4,500 acres of pristine wetlands and 80 miles of untouched streams and threaten the bay, its salmon and the people who rely on it.

Tribal leaders, fishing interests and conservation groups have long advocated for the EPA to put a stop to this project by exercising its rarely-used veto power endowed by section 404c of the Clean Water Act. This section of the law allows the agency to put a final stop to projects that will have "unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas."<sup>28</sup>

In May 2022, after a long legal and political battle, EPA issued a draft proposal to use its Clean Water Act veto to permanently block this mine and any similar mines proposed for the same area.<sup>29</sup> More than half a million Americans commented in support of this proposal and EPA is expected to release the final document blocking the project by December 2022.<sup>30</sup>



### [Pebble Mine Endnotes](#)



## Potomac River

*Once a health hazard, the largest river in the nation's Capital is often clean enough for swimming.*

Much like many urban rivers before the Clean Water Act, the Potomac River was little more than an open sewer, leading TIME magazine to write the “Potomac River reaches the nation’s capital as a pleasant stream, and leaves it stinking from the 240 million gallons of wastes that are flushed into it daily.”<sup>31</sup>

In fact, the Potomac was described as “a severe threat to the health of anyone coming into contact with it;” those who did were advised to get a tetanus shot.<sup>32,33</sup> Algae blanketed the river from Georgetown to Arlington during the summer, killing fish en masse.

Regional cooperative efforts, the Clean Water Act’s limits on sewage and other pollutants, and improvements at the Blue Plains wastewater facility in Southwest DC improved water quality.<sup>34</sup> By 1976, largemouth bass had returned and there was less trash in the river.<sup>35</sup> More recently, the D.C. city government has received Clean Water Act grant funding to overhaul its antiquated sewage and stormwater system that sent untreated sewage into the river during heavy rains. When complete, the project will reduce nitrogen discharges to Chesapeake Bay by one million pounds annually.<sup>36</sup>

Although the Potomac remains at risk from extreme weather and rapid development in the watershed, the river is healthier than it has been in a long time. There is even a plan to reopen the Potomac to swimming – a far cry from the days when contact with the river merited a tetanus shot.<sup>37</sup>

### [Potomac River Endnotes](#)

## Des Plaines River

*Decades of data detail exactly how the Clean Water Act benefits fish and recreational fishing.*

The Illinois River system has some of the nation’s most robust data on water quality and fish populations. Some of the information dates to the end of the 19th century, when researchers set out to study why the Illinois River system produced unusually large numbers of fish.



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USACE

*Nowhere is the record clearer that healthy populations of fish cannot exist without clean water.*

Sadly, by the early 1960s, it was hard to find any fish at all in a tributary of the Illinois called the Des Plaines as it flowed through Chicago. Two invasive species – common carp and goldfish – made up 97 percent of the fish caught. And even these pollution-tolerant invasives were often visibly unhealthy, with signs of pop-eye disease, eroded fins, and tumors.<sup>38</sup>

After passage of the Clean Water Act in 1972, Chicago began work on the Tunnel and Reservoir Plan, a vast network of tunnels and reservoirs that captured the area’s sewage and stormwater for treatment. The massive project, still not fully complete, will eventually capture nearly 20 billion gallons of sewage and urban runoff during storms.<sup>39</sup>

By the 2010s – after key elements of the project were operational – fish had returned to the Des Plaines. Where it had once been virtually impossible to catch any fish at all, sportfish were now abundant.

As new sections of the project are completed, fish populations continue to rebound. In 2018 – just one year after a large storage reservoir came online – the amount of fish in the Des Plaines nearly doubled.<sup>40</sup>

The Des Plaines River is still far from pristine and it faces additional threats from climate change, urbanization, and newer species of invasive carp. Nonetheless, nowhere is the record clearer that healthy populations of fish cannot exist without clean water.

Researcher Daniel Gibson-Reinemer told the Environmental Monitor that data on the Des Plaines provides “an exceptional record of how well a major piece of legislation worked. As an angler and a dad, I have a strong interest in maintaining good, healthy fish populations, and this research goes a long way to showing how cleaner water can contribute to that.”<sup>41</sup>

**[Des Plaines River Endnotes](#)**

## **Columbia River**

*Washington State used the Clean Water Act to protect salmon, public health, and Tribes.*

The Columbia River is the largest river that flows into the Pacific Ocean and it once produced the largest salmon runs on earth.<sup>42</sup> However, today native fish populations



ERIC ALLIX ROGERS



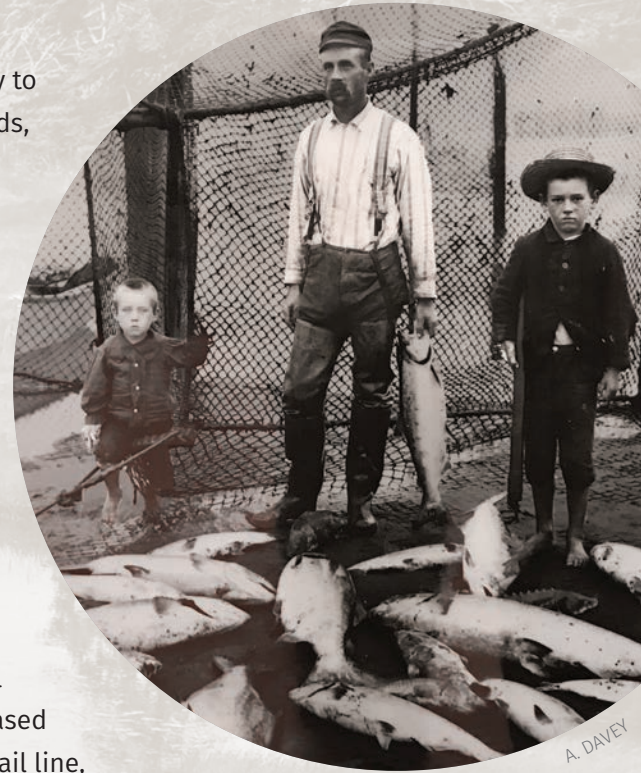
are in free-fall throughout the Columbia River basin, with the scientists from Nez Perce Tribe Fisheries Department finding that many populations will be unrecoverable within a few years without action.<sup>43, 44</sup>

Tribes in the Northwest have relied on these salmon and steelhead runs for generations. These also serve as a critical part of the food chain, serving as a food source for wildlife, from bears to the orca in Puget Sound.

Section 401 of the Clean Water Act gives states and Tribes the authority to review federal permits for new projects such as dams, pipelines or roads, that will affect local waters. Over the decades, states and Tribes have used this section of the Clean Water Act to protect waters in various ways – ensuring fish can complete their migrations, protecting water temperatures and flow patterns, and allowing recreational access.

States and tribes generally use the Section 401 process to approve or improve projects. It is rarely used to stop projects from moving forward entirely. But in 2017, the state of Washington denied a water quality permit for what would have been the largest proposed coal export terminal in North America, citing the impact on wetlands, aquatic habitat and Tribal access to the river.<sup>45</sup>

The project was unpopular in the state for additional reasons: The coal terminal would have caused air and water pollution, would have increased cancer rates in the low-income and minority neighborhood along the rail line, while only creating 135 permanent jobs.



SHEILA SUND

The courts upheld Washington State's denial of the permit. But two years later, the Trump Administration issued an executive order limiting the issues states and Tribes can consider when reviewing a water quality permit as well as the time they have for review.<sup>46</sup>

Using the Clean Water Act to stop this particular project was an important win for the Columbia River, but the law's ultimate goal is to restore the "biological integrity" of the nation's waters. Lawmakers will need to act swiftly, and boldly, to restore healthy populations of salmon in the Columbia River basin while there is still time.

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### [Columbia River Endnotes](#)



# Limits to the Law's Success

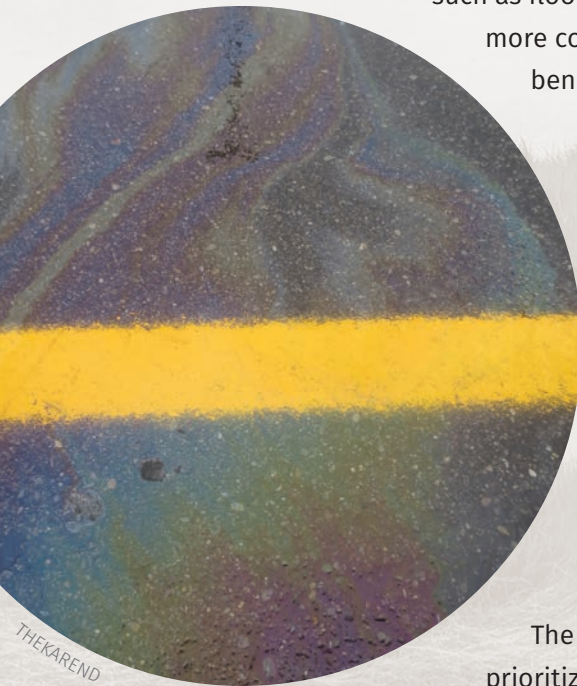
*There is a long way to go before the overarching goal of the Clean Water Act – “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” – is fully achieved.*

**W**hile the number of waters that meet Clean Water Act’s goals has doubled over the past fifty years, fully half of the rivers and stream miles across the country are still considered “impaired” under the law.<sup>47</sup> There is a long way to go before the overarching goal of the Clean Water Act – “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” – is fully achieved. Furthermore, implementation of the Clean Water Act has not fully lived up to EPA’s mission to ensure that “federal laws protecting human health and the environment are administered and enforced fairly, effectively and as Congress intended.”

**The Act’s Benefits Are Not Equally Distributed:** Much of the original impetus for the passage of the Clean Water Act came from urban low-income communities and communities of color who were disproportionately impacted by the pollution choking many urban waterways. Fifty years later, too many Americans from these demographics remain overburdened by water pollution. Communities of color and low-income communities are still more likely to come into contact with polluted water from sources such as flooding, sewer overflows, and basement backups – events that will become more common as the climate continues to warm – and often do not equitably benefit from the law’s funding.<sup>48</sup>

The bulk of the Clean Water Act funds are made available through Clean Water State Revolving Funds, a federal-state partnership that provides grants and low-cost loans for water quality infrastructure projects. And despite guidance from the EPA, the funding, which is distributed by the states, does not always reach small communities that need technical assistance or communities whose ratepayers may not be able to bear the increased costs of repaying the loans.<sup>49</sup> This issue – alongside similar challenges with the Drinking Water State Revolving Funds – helps to create crises in water quality, access, and affordability for communities of color and low-income communities across the nation.

The EPA also needs to ensure that these overburdened communities are prioritized in the creation and implementation of clean up plans for impaired waters.<sup>50</sup> For example, Maryland used Clean Water Act funding to restore nearly 500 acres of wetlands between 1999 and 2012 – but just 20 acres of these restored wetlands were in census tracts where the majority of residents were people of color.<sup>51</sup>





**Addressing “Nonpoint” Pollution:** The original drafters of the Clean Water Act wrote the law to tackle the biggest water quality issues of its day – industry effluent and sewage – and addressing “point source pollution” is where the Clean Water Act has achieved its biggest improvements.

Today “nonpoint” pollution – created when rainfall picks up pollutants like fertilizers, pesticides, or animal waste before flowing into a waterway – has become the largest source of water quality problems nationwide, as agriculture has intensified and urban and suburban areas have grown dramatically. But the Clean Water Act does not currently have the tools or the funding to meaningfully address nonpoint pollution.

Agricultural runoff, which is not regulated by the Clean Water Act, is now the leading reason waterbodies fail to meet water quality standards.<sup>52</sup> Runoff from growing urbanizing areas is also an increasing problem. The law requires many urban communities to get stormwater discharge permits, but in most places, runoff enters waters without treatment. The Clean Water Act Nonpoint Source Management program offers a small amount of funding to address both types of runoff pollution, but without additional resources and leadership from Congress and the Administration, these challenges will continue to worsen, particularly as the climate continues to warm.

The real-world problems caused by runoff are already growing. One study found that 1,500 water bodies in 30 states are impaired due to toxic algae outbreaks, which are largely fueled by runoff pollution. States have completed the clean up plans required by the Clean Water Act for less than a third of these places.<sup>53</sup> Even where these types of clean-up plans exist, they are often not enforced.<sup>54</sup>

#### [Limits to the Law’s Success Endnotes](#)

## **PFAS: A Nationwide Water Quality Crisis**

*After decades of inaction, EPA is finally moving to better protect people from “forever chemicals.”*

After the passage of the Clean Water Act, the Environmental Protection Agency worked quickly, creating a list of priority pollutants and publishing effluent guidelines for dozens of industries within a few years.<sup>55, 56</sup> The EPA needs to emulate this era of bold, swift decision-making as the agency finally takes action to address the nationwide PFAS crisis.



NRCS, NEW MEXICO

*Agricultural runoff, which is not regulated by the Clean Water Act, is now the leading reason waterbodies fail to meet water quality standards.*





It has been widely understood for at least two decades that per- and polyfluoroalkyl chemicals pose significant environmental and health risks. As many as 9,000 varieties of these chemicals, known as PFAS or “forever chemicals,” are used in a wide variety of everyday products, such as pizza boxes, carpet, clothing and toothpaste.

Detectable levels of PFAS are now widespread in Americans’ drinking water. Nearly all Americans have PFAS compounds in their blood. PFAS chemicals have been linked to reduced fertility, slow fetal growth, increased risk of cancers, and harm to the immune system.<sup>57</sup> New research continually expands our understanding of the extent of the contamination from PFAS and their effects on people and wildlife.<sup>58</sup>

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Until very recently, EPA’s PFAS response has focused on research and non-enforceable recommendations. In the absence of leadership from the agency, only a handful of states have set stricter, binding limits on any PFAS chemicals.

In 2021 the Administration laid out its plan to address PFAS using its authority under the Clean Water Act and other laws.<sup>59</sup> In August 2022, the Administration released a draft rule listing the two most common PFAS chemicals as federally hazardous substances, a top priority of activists from communities affected by them.

This has set the stage for EPA to regulate these two chemicals under the Clean Water Act, for example, by developing protective water quality criteria, requiring river and stream monitoring, setting effluent limits, ensuring the protective limits are incorporated in permits, and enforcing the rules when they are violated.<sup>60</sup>

In addition to leveraging the Clean Water Act and other laws to protect sources of drinking water, Congress and the Administration should continue to increase accountability for polluters, fund efforts to clean up water supplies, and center the affected communities in decisions about PFAS clean-up efforts and regulations.

[PFAS: A Nationwide Water Quality Crisis](#)  
[Endnotes](#)



DREW YOUNGDYKE



## Urban Runoff Threatens Progress in the Charles River

*The once-famously filthy Charles River is now often clean enough to swim in. However, toxic algae outbreaks triggered by stormwater runoff are an emerging threat.*

The 1966 hit song “Dirty Water” is still Boston’s unofficial anthem, but today the Charles River and Boston Harbor are draws – largely due to decades-long efforts to reduce sewage effluent in the river. The water is frequently clean enough for swimming and there are even plans for a public swimming park downtown.<sup>61</sup>

Boston’s Charles River is often rightfully heralded as a Clean Water Act success story. Unfortunately, in recent years, sections of the Charles River have been hit by toxic algae outbreaks almost every summer. These are triggered by pollution from a seemingly innocuous source: the rainwater that flows off urban areas into the river after storms.

These blooms – which can be dangerous for people, pets and wildlife – are fed by high temperatures and unnaturally high levels of nutrients, particularly phosphorus and nitrates.

Three years ago, local groups petitioned EPA to use its “residual designation authority” under the Clean Water Act to require large commercial properties to get a NPDES permit for their stormwater discharges, arguing that the pollution from these properties is preventing the river from reaching its Clean Water Act goals.<sup>62, 63</sup>

EPA has not yet made a decision on the petition. But the Charles River is not alone – urban runoff is a growing problem in many urban rivers, one that the Clean Water Act does not have the tools to fully address. A Government Accountability Office report noted that the Clean Water Act’s current approach to urban and agricultural runoff may mean that “the act’s goals are likely to remain unfulfilled.”<sup>64</sup>

### [Urban Runoff Threatens Progress in the Charles River Endnotes](#)





## Combined Sewer Overflows Persist in Majority Black Communities

*Fifty years later, sewage is still bubbling up into the bathrooms and basements of Mount Vernon, New York – and scores of other majority-Black communities.*

Less than 30 minutes from the high rises of Manhattan, nestled amongst some of the wealthiest White communities of Westchester County, sewage-laden water bubbles into sinks where teeth are brushed, into bathtubs where children are bathed, into basements and ground floors where people sleep.

For more than a thousand residents of Mount Vernon, NY, the incursions of effluent are a persistent threat, occurring with nauseating regularity for decades. On a basic level, they are the result of a long out-of-date sewer design that collects domestic sewage, rainwater runoff, and industrial wastewater into one pipe. Whenever it rains, sometimes even lightly, the volume of flow can quickly exceed the capacity of the system and blackwater laced with human and industrial waste bubbles back up into residents' homes.

The larger question for Mount Vernon and the scores of other communities nationwide still saddled with decaying combined systems is why regular sewer overflows have been allowed to persist for more than half a century even when surrounding communities have long since upgraded their infrastructure.

A majority-Black community, Mount Vernon has suffered from decades of underinvestment. Fifty years ago, the Clean Water Act initially provided impetus for change. The Act's new national standards for handling and treating sewage and other wastewater prompted the creation of revolving funds to provide grants and loans to help communities rethink and rebuild their wastewater infrastructure.

Yet, in the past 30 years Congress and states have repeatedly cut this funding and tightened the strings attached to it.<sup>65</sup> The result is lower-income communities of color, such as Mount Vernon, have been unable to secure the capital needed to prevent sewer overflows into residential homes.



BART EVERSON



The Bipartisan Infrastructure Law provides a historic amount of funding – \$50 billion – for water infrastructure investments. But the nation’s wastewater needs still far exceed the funding available, which means that Congress and the states will need to do more to ensure the funding reaches the communities that need it most.

[Combined Sewer Overflows Persist in Majority Black Communities Endnotes](#)

## Indian River Lagoon Pollution Puts Wildlife at Risk

*Dirty water is killing seagrass beds, causing manatees to starve to death.*

Florida’s Indian River Lagoon is among the most biologically diverse estuaries in North America. Its mangrove wetlands, seagrass beds, and salt marshes provide habitat for 685 different kinds of fish, 370 different birds and important habitat for endangered manatees.

Today, the Indian River Lagoon is in crisis. Last year, more than a thousand manatees died in Florida – more than any other year on record. Many of these manatees starved to death due to lack of seagrass, with more than half of the manatee deaths occurring in Indian River Lagoon.<sup>66</sup>

Nitrogen and phosphorus pollution in the estuary essentially acts as a fertilizer, sparking an overgrowth of algae which chokes out seagrass. A large outbreak of algae killed more than half of the lagoon’s seagrass in 2011.<sup>67</sup> This was followed by two years where a different type of algae killed 47,000 acres of seagrass.<sup>68</sup>

Among the biggest sources of pollution are the septic systems commonly used in the area and agricultural runoff from as far away as Lake Okeechobee.<sup>69, 70</sup>

The Clean Water Act requires states to establish a plan – which goes by the acronym TMDL, for “total maximum daily load”– that sets limits on the amount of each type of pollutant a body of water can receive.

In 2009, the state of Florida set TMDL standards for nitrogen and phosphorus in the Indian River Lagoon, intending to protect its biodiversity. But since 2009 the lagoon has lost 58 percent of its seagrass overall, and in some areas nearly all the seagrass is gone.<sup>71</sup>



*Last year, more than a thousand manatees died in Florida – more than any other year on record. Many of these manatees starved to death due to lack of seagrass, with more than half of the manatee deaths occurring in Indian River Lagoon.*





It is clear that Florida needs to cut the phosphorus and nitrogen allowed in the current TMDL. But revising a TMDL is a lengthy process, and a tighter TMDL will not improve the health of the bay unless it is strictly enforced.

To save the bay and its manatees, the state needs to get communities around the Indian River Lagoon onto proper sewer systems, to meaningfully reduce agricultural runoff into Lake Okeechobee, and to continue pushing for comprehensive Everglades restoration.<sup>72</sup>

For Florida's threatened manatees – gentle giants that need to eat between 100 to 200 pounds of seagrass a day – solutions to the state's water quality problems cannot arrive a moment too soon.

#### [Indian River Lagoon Pollution Puts Wildlife at Risk Endnotes](#)

## Challenges in the Chesapeake

*The steep obstacles to improving water quality in Chesapeake Bay mirror those faced by communities nationwide.*

Chesapeake Bay is a biological and economic powerhouse, home to more than 3,600 species and producing about 500 million pounds of seafood a year. However, the bay has experienced poor water quality that triggers “dead zones,” areas where there isn't enough oxygen for fish, crabs, and oysters to survive.

In 2010, EPA, the six watershed states, and the District of Columbia agreed to the Chesapeake Bay Blueprint, aimed at making the bay safe for fishing and swimming by 2025. The states and D.C. agreed to meet water quality targets, while EPA agreed to enforce the Blueprint if the goals were not met.

Twelve years in, implementation of the Blueprint is behind schedule.<sup>73</sup> EPA considered the Blueprint an unenforceable “aspiration” under the Trump Administration, leading three states and the District to sue the agency in 2020.<sup>74,75</sup> Pennsylvania in particular is not meeting its goals. But even Maryland and Virginia – the two states that have done the most to improve water quality – are behind schedule on reducing pollution from agricultural runoff.

*Twelve years in, implementation of the Blueprint is behind schedule. EPA considered the Blueprint an unenforceable “aspiration” under the Trump Administration, leading three states and the District to sue the agency in 2020.*



The obstacles to implementing the Blueprint mirror those faced by communities around the country: Without accountability, progress slows. Addressing agricultural runoff is challenging due to the sheer number of landowners, the expense of on-farm conservation, and the lack of enforcement. Municipal wastewater upgrades create large, measurable, and lasting improvements, but can result in ratepayers – particularly low-income ratepayers – shouldering disproportionate costs, while other polluters in the watershed are not held financially accountable in the same way.

Over the last decade, new challenges have emerged: Forests and fields are being lost to development that increases stormwater runoff. Extreme rainfall intensified by climate change is washing more pollutants into our waters, slowing progress. But conservationists are still holding on to hope. New leadership at EPA has three years to make improvements to achieve the Blueprint’s ambitious goals. Additionally, an influx of cash from the American Rescue Plan, the Bipartisan Infrastructure Package, and the Inflation Reduction Act will help accelerate cleanup efforts.

#### [Challenges in the Chesapeake Endnotes](#)

## An Uncertain Future for Clean Water

*We should be asking how we can use the Clean Water Act to protect against threats posed by climate change. Instead, the law itself is under siege.*

**A**s the climate warms, and America’s population grows, the challenges facing our waters will only increase. Droughts will grow longer. Storms will become more frequent, more intense, and will cause more flooding. Rising seas will encroach on coastal communities. All of these changes will cause great harm to our rivers, streams, wetlands, coasts, and communities and will put significant strains on our already ailing water and wastewater systems.

We should be preparing for this uncertain future by protecting the health of our rivers, streams and wetlands, and upgrading our wastewater infrastructure with an eye towards keeping all residents safe in a warming world. It is well-established that

*Over the last decade, new challenges have emerged: Forests and fields are being lost to development that increases stormwater runoff. Extreme rainfall intensified by climate change is washing more pollutants into our waters, slowing progress.*



NY NATIONAL GUARD



*One recent study found that destroying even a small area of urban wetlands – the size of two football fields – would create \$8,000 in additional costs every year to the taxpayer-funded National Flood Insurance Program.*

wetlands absorb floodwaters, save lives, prevent property damage, and are essential for fish and wildlife. One recent study found that destroying even a small area of urban wetlands – the size of two football fields – would create \$8,000 in additional costs every year to the taxpayer-funded National Flood Insurance Program.<sup>76</sup>

But instead of protecting our waters as best as we can in the face of this uncertain future, we may be going in the opposite direction.

In October 2022, the Supreme Court heard a case, *Sackett v. EPA*, that calls into question which wetlands and streams can be protected by federal law. The Pacific Law Foundation, which has a long history of fighting water quality regulations, is asking the Supreme Court to remove long standing Clean Water Act protections for more than half of the nation's streams and wetlands. A decision is expected from the Court in the first half of 2023.

If the court agrees with the plaintiffs, the consequences – and costs – for our waters, our wildlife, and our way of life would be devastating.

#### [An Uncertain Future for Clean Water Endnotes](#)

## Protecting Rivers without Protecting Streams?

*The Supreme Court may soon decide which kinds of streams are protected by the Clean Water Act.*

Small streams flow into bigger ones, which flow into still bigger ones and eventually into the rivers and reservoirs which supply most people's drinking water. When the Clean Water Act was passed, the law was widely understood to apply to all types of streams to protect communities' drinking water, even the smallest streams and those that only flow seasonally or after a heavy rain, as is common in more arid parts of the nation.

In 2006, a split Supreme Court ruling cast doubt on that understanding. While the ruling only applied to wetlands, the controlling opinion held that only wetlands with a "significant nexus" to a "traditional navigable water" could be protected by federal law.<sup>77</sup> EPA and the U.S. Army Corps have interpreted that decision to mean streams also need to meet the same criteria.

But determining which streams have a "significant nexus" to larger waters – and which do not – is not simple. The Army Corps has made a case-by-case determination for every permit.



ROBERT NUNNALLY



The Obama Administration's effort at clarification, called the Clean Water Rule, set out a "bed and banks" test that was fairly simple to implement because it largely relied on a visual inspection, yet was reasonably protective.<sup>78</sup> However, it became tied up in the courts and was eventually repealed by the Trump Administration.

The Trump Administration's attempt to settle the issue, called the Navigable Water Protection Rule, removed federal protections for a significant portion of the nation's streams.<sup>79</sup> The courts invalidated the rule after a number of Tribal Nations that would have been harmed by the rule filed suit.

Now the Supreme Court is considering a case that could roll back protections for both streams and wetlands. There is a lot at stake: More than one-third of all Americans get their drinking water from systems fed by streams that could lose protection.<sup>80</sup>

The Southwest, where rainfall is seasonal, is particularly at risk. In Arizona, the Trump rule would have invalidated 98 percent of the point-source pollution permits and left Phoenix's drinking water supplies at risk.<sup>81</sup> The Pascua Yaqui Tribe sued to block the Trump rule in order to protect Black Wash, a stream that is dry much of the year, but that can flow as fast as 100,000 cubic feet per second after a rain.

#### [Protecting Rivers without Protecting Streams? Endnotes](#)

## **Prairie Potholes, Potentially Unprotected**

*Will voluntary actions be enough to sustain America's duck factory?*

When glaciers retreated over 10,000 years ago, they left millions of shallow depressions that look like potholes in portions of the Upper Midwest and Canada. These potholes act as seasonal wetlands and provide nesting habitat for more than half of North American migratory waterfowl.<sup>82</sup> They recharge groundwater, which supplies drinking water for the region, and also absorb floodwaters and store carbon, making these wetlands critical in mitigating climate change.<sup>83</sup>



CORBY ZIESMAN



RYAN HAGERTY/USFWS



*Less than half of the original pothole region remains undrained, in small, disconnected fragments that continue to face threats from drainage, development, and agricultural pollution.*

These wetlands are also highly threatened. Less than half of the original pothole region remains undrained, in small, disconnected fragments that continue to face threats from drainage, development, and agricultural pollution.<sup>84</sup> A 2006 Supreme Court decision determined that wetlands could be protected under the Clean Water Act if they had a “significant nexus” to a body of water that is navigable – a test that requires a case-by-case determination. Despite their collective ecological importance, their geographic isolation leaves protections for the prairie potholes in doubt.

A case now before the Supreme Court could overturn the “significant nexus” test and leave these potholes entirely unprotected by the Clean Water Act. Without legal protections, the Farm Bill’s voluntary conservation programs, which pay landowners not to fill these wetlands, and private efforts by conservation groups like Ducks Unlimited will be the main avenues for safeguarding the prairie potholes. It remains to be seen if these private and voluntary efforts will be enough to keep these critical wetlands healthy long into the future.

[Prairie Potholes, Unprotected Endnotes](#)

## **Hurricane Harvey and Houston**

### *What will happen to cities if wetlands are no longer protected?*

In late August 2017, a massive Category 4 hurricane made landfall on the Texas coast and soon settled over Houston. Over four days, Hurricane Harvey deposited over 40 inches of rain on the sprawling metropolitan region of over six million. The resultant flooding was unprecedented. Over 100 people died and damages exceeded \$125 billion. It was among the most expensive storms in the nation’s history.<sup>85</sup>

Harvey was also a painful demonstration of the extensive damage in store for flood-prone cities if the scope of the Clean Water Act is further curtailed.

Houston was built on top of a massive quilt of coastal prairie punctuated by pothole wetlands. The wetlands function as a giant sponge, absorbing, holding, and slowly releasing the millions of gallons of stormwater from systems that regularly blow in from the Gulf. Research shows even today, Houston’s so-called “isolated” wetlands are interconnected, especially during heavy rains where flows “pulse” along the once-vast coastal wetland network.<sup>86</sup>





Tempted by the illusion of an empty horizon of unused space, developers have rapidly filled in much of Houston's prairie. Since 2001, high-intensity development, characterized primarily by concrete and asphalt cover, grew by nearly 60 percent on the Katy prairie – the sprawling prairie complex west of downtown. In Houston's Harris County, impervious cover grew by nearly 30 percent in the same period.<sup>87</sup>

The result of all this paving was a much bigger city with far fewer places for rain water to go. During Harvey, the disappearance of wetlands proved disastrous, with the city's concrete storm drains and reservoirs unable to cope with the double-blow of an unprecedented deluge and runoff from thousands of square miles of newly-unabsorbent land.

If the Clean Water Act no longer protects 'isolated' wetlands, cities such as Houston – facing unprecedented growth spurts and more extreme rain events – will confront a grim future of repeated catastrophic flooding.

### [Hurricane Harvey and Houston Endnotes](#)

## Conclusion

Few laws have done more to protect public health and wildlife habitat than the Clean Water Act. Five decades of federal safeguards and investments have brought many waters back to life and kept others from being polluted, degraded, or destroyed.

Although the law has been successful in many ways, too many communities, particularly low income communities and communities of color, are still affected by water pollution and lack proper sewage, often due to historic under-investments in water infrastructure and inequitable enforcement. The Clean Water Act should be strengthened to ensure our most vulnerable communities are truly protected and prioritized, particularly as the effects of climate change increase.<sup>88</sup>







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However, the *Sackett v. EPA* Supreme Court case has the potential to undo five decades of progress. Communities across the country will be at greater risk of unsafe drinking water and increased flooding. Additionally, the waters wildlife depend on will be put at serious risk of degradation and destruction.

The Supreme Court justices will consider the *Sackett* case over several months, with a final decision in early 2023. If the Court rejects industry’s arguments, the EPA must move swiftly to develop and finalize a new regulation that is grounded in science, protective of our waters, and that helps achieve the foundational goals of the Clean Water Act. These goals are impossible to attain without protecting tributary streams from pollution or protecting wetlands from being drained and filled.

If the Supreme Court rules in favor of industry, it could tie the EPA’s ability to protect our waters as the Clean Water Act intended. This would leave it up to Congress to fix the damage done and reaffirm the Clean Water Act’s broad protections for our nation’s waters. In the meantime, the states would be left with the burden of implementing and enforcing clean water protections.

Regardless of how the Court rules, we must continue to defend clean water and the communities that rely on it for decades to come.

### Conclusion Endnotes

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***Join us in taking action to protect our  
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