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U.S. Senator Ed Markey, EPA, State, and Watershed Associations to Announce Annual Water Quality Report Cards for Three Boston Rivers

BOSTON, MA—Today, the U.S. Environmental Protection Agency (EPA) joined U.S. Senator Ed Markey, Charles River Watershed Association, Mystic River Watershed Association, Neponset River Watershed Association, state and local leaders, and community partners to announce the 2022 Water Quality Report Card Grades for the three rivers that flow into Boston Harbor—the Neponset, the Charles, and the Mystic.

The 2022 Report Card Grades, which range from A to F, show vast overall improvements in the recreational health of the Charles, Mystic, and Neponset compared to prior decades, yet illuminate how the weather extremes of drought, heat, and increased precipitation impact river health, safe recreation, and enjoyment of these rivers, at a time when residents rely on them most.

“Today’s report card of water quality in the major urban rivers of Boston and surrounding communities underscores that when communities, governments at all levels, and organizations come together, we can solve long-standing environmental and equity challenges to create healthier rivers. But the report also highlights rivers that are polluted especially in underserved and overburdened communities that deserve to enjoy a clean and healthy environment. More work is needed to bring environmental justice to these communities,” said EPA New England Regional Administrator David W. Cash.

“From historic drought to record-breaking floods, communities across Greater Boston are bearing witness to the climate crisis each and every season,” said Senator Markey. “I am grateful for the leadership of the EPA and Charles River, Mystic River, and Neponset River Watershed Associations and their commitment to working alongside state, local, and federal partners to act in the face of this crisis. Together, we have made critical progress by doing our part to remediate environmental injustice and clean up these treasured urban rivers. I look forward to the day when every resident of Greater Boston has access to an A+ river or stream in their community.”

BACKGROUND ON EPA REPORT CARD GRADES

Since 1995, the U.S. EPA has issued the annual Charles River Report Card to report the recreational health of the river and educate the public on challenges to water quality. Since 2006 and 2021, respectively, U.S. EPA has issued Report Card grades for the Mystic River and Neponset River. Beginning in 2021, grades for the Charles, Mystic, and Neponset have been reported together at a joint announcement with state and local partners.

The Report Card Grades are based on the percentage of time *E. coli* bacteria concentrations are safe for recreation, precipitation data, and weighted with a three-year average. Additionally, in the Charles River, grades account for the presence of cyanobacteria blooms and combined sewer overflow (CSO) discharges, two additional threats to public health. These grades exclusively report recreational health—for a full picture of river health, a myriad of factors need to be considered, like nutrient pollution, biodiversity of aquatic life, river flow, temperature, and more.

COMMUNITY-DRIVEN SCIENCE

Each year, Charles River, Mystic River, and Neponset River Watershed Associations rely on **hundreds of community science volunteers** to collect samples, which are sent for analysis to the Massachusetts Water Resources Authority (MWRA). Those results are reported to EPA and announced as letter grades to help the public better understand the recreational health of the three rivers that flow into Boston Harbor.

“Robust water quality monitoring is at the heart of MassDEP’s efforts to maintain and restore Massachusetts waterways. The thousands of water samples taken in these rivers help identify pollution problems, inform cleanup efforts, and plan for the impacts of a changing climate,” said Massachusetts Department of Environmental Protection Commissioner Bonnie Heiple. “We are proud of our partnerships with the watershed associations in the Charles, Mystic, and Neponset rivers, and will continue to collaborate and invest in these important efforts to improve water quality.”

“DCR is committed to ensuring all communities across Massachusetts have access to clean water for recreation and to preserving our important natural resources like our riverways for generations to come,” said Massachusetts Department of Conservation and Recreation Commissioner Brian Arrigo. “We look forward to continuing to work with our local, state, federal and watershed association partners to improving water quality in these three urban rivers in the face of climate change driven extreme weather and to remedying longstanding injustices that have prevented lower income and communities of color from accessing our rivers.”

CLIMATE CHANGE & WATER QUALITY

Greater Boston and its three rivers are already seeing the effects of climate change—just the last three years show oscillating weather extremes of drought in 2020, heavy rainfall in 2021, and severe drought

again in 2022. Climate impacts—increased precipitation, drought, heat, and stronger storms—threaten to stall the progress made toward swimmable urban rivers.

Additionally, across the three watersheds, stark disparities exist—low-income, language isolated, and communities of color face disproportionate exposure to pollution, unequal access to the outdoors and green spaces, and outsized risk from impacts of extreme heat and flooding.

“It’s great to be here again to celebrate the improvements we have all made in the water quality of these rivers, but challenges remain,” said Fred Laskey, MWRA’s Executive Director. “And the impact of climate change on the rivers is no longer a future threat – it’s here now. We must continue to work together to find viable and affordable solutions.”

DROUGHT

In 2022, the severe, prolonged drought significantly affected Massachusetts rivers. Such droughts have become a pattern—in 2016, Massachusetts experienced the most significant drought since the 1960s with record low surface and groundwater levels. Then, severe drought again in 2020 and 2022. Drought impacts not only water quality for recreation, leading to more concentrated bacterial pollution, but also has devastating consequences for the river ecosystem, wildlife, and all who depend on healthy rivers for drinking water, recreation, and enjoyment.

INCREASED PRECIPITATION

In the three highly urbanized watersheds, with over 80% impervious cover in some communities, the scale and consequences of heavier rainfall and extreme weather are stark, resulting in more stormwater pollution, combined sewer overflows (CSOs), and flooding.

Stormwater pollution is one of the greatest threats to clean rivers—rainstorms wash gasoline, trash, oil, pet waste, and more from our roads, parking lots, and roofs straight into storm drains, which carry this polluted runoff straight into rivers, untreated, carrying excess nutrients that degrade the river ecosystem and cause rampant invasive species growth, toxic cyanobacteria blooms, and even fish kills. Combined sewer overflows occur when heavy rain and intense storms cause our outdated combined sewer systems in Boston, Chelsea, Somerville, and Cambridge to overflow into local waterways, exposing river users to bacteria, viruses, excess nutrients, pharmaceuticals, trash, and even PFAS compounds.

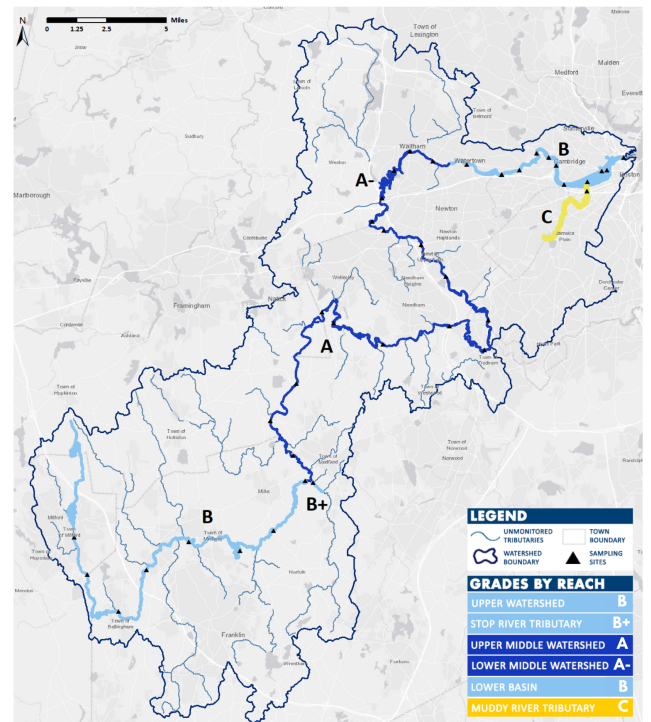
CHARLES RIVER REPORT CARD GRADES

In the Charles River, grades ranged from A's in the upper and middle watershed, B's in the headwaters and Lower Basin, and a C in the Muddy River, following trends observed across recent years. More urbanized, paved areas consistently see lower grades due to stormwater pollution while greener, more forested areas of the watershed are swimmable on most days.

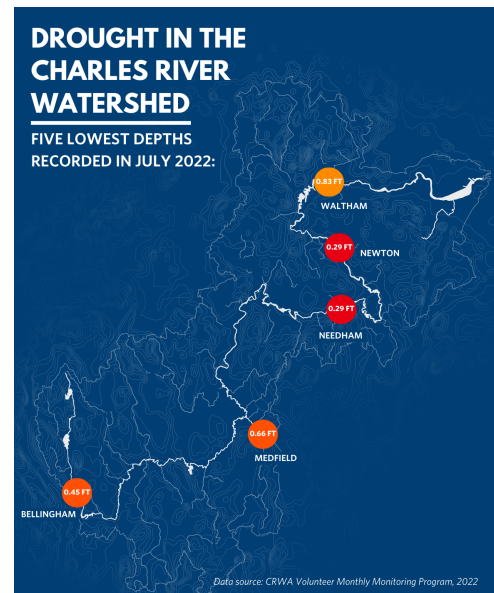
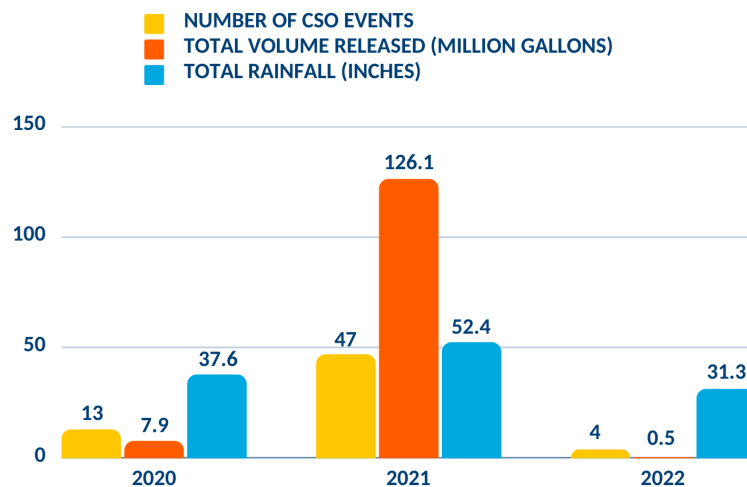
While the grades show vast improvements from 1995, progress has largely stalled. Increased precipitation, drought, and heat from climate change make combined-sewer overflows, stormwater pollution, low water levels, and toxic cyanobacteria blooms routine, inhibiting safe recreation.

In Summer 2021, due to a record thirty-five inches of precipitation, fifty-three known CSO events, over 126 million gallons of sewage and stormwater were discharged into the Charles. Additionally, in 2022, severe drought caused several sections of the Charles River to run nearly dry, with observed water levels under half a foot in Bellingham, Medfield, Needham, Newton, and Waltham.

2022 CHARLES RIVER REPORT CARD GRADES



COMBINED-SEWER OVERFLOWS (CSOs) IN THE CHARLES RIVER



Many areas saw grades decrease slightly in 2022 as a result—the upper watershed fell from a B+ in 2021 to a B, the upper middle watershed decreased from an A in 2021 to an A-, and similar trends are seen in the Stop River and Lower Basin. Some improvements were observed, as in the Muddy River which improved from a C- to a C in 2022. However, a C grade is still not acceptable, and the Muddy remains the most polluted above-ground tributary within the Charles River watershed.

“While we’ve made such amazing progress since 1995, the work is not done until residents can experience the joy of swimming in cool, clean urban rivers on a hot day,” said Emily Norton, Executive Director at Charles River Watershed Association. “We have the solutions we need, the strong foundation of decades-long federal, state, and local partnership, and the passion and dedication for cleaner rivers—we just have to get to work, with urgency. We need rapid advancement of nature-based solutions—green infrastructure, land conservation, sewer system infrastructure improvements, and flood storage—especially in environmental justice areas, to build the future our communities deserve.”

“As climate change makes drought more frequent, proactive measures like statewide water conservation requirements, green infrastructure to replenish groundwater, and public education for a culture shift in water conservation are imperative,” said Marielena Lima, Watershed Scientist at Charles River Watershed Association.

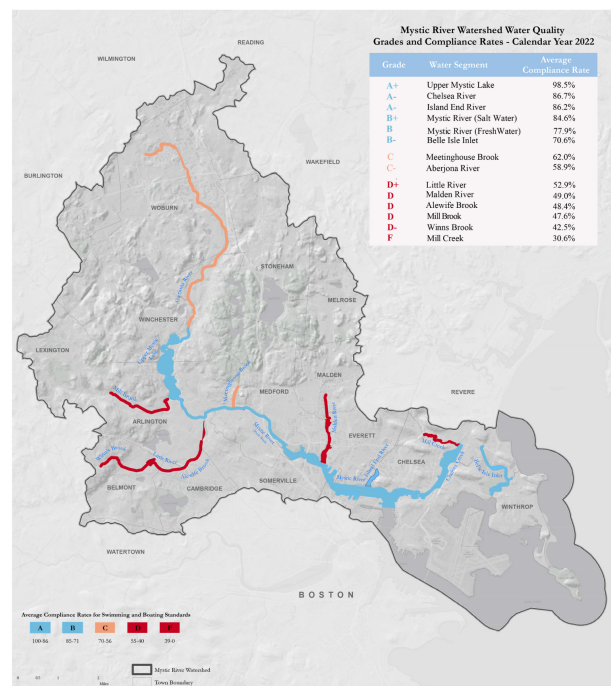
MYSTIC RIVER REPORT CARD GRADES

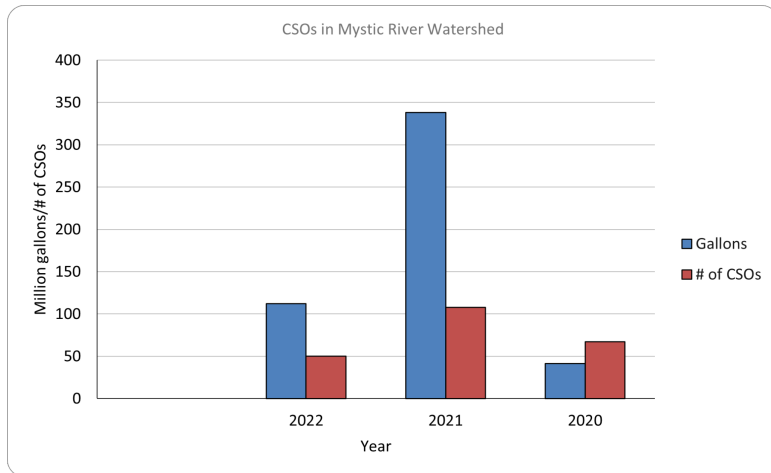
In the Mystic River watershed, water quality remains consistent with previous years. Upper Mystic Lake continues to have high swimmability, the mainstem of the Mystic River has generally good water quality, and a number of tributaries—including Alewife Brook and the Malden River—continue to show poor grades, which is evidence of sewage contamination, especially, though not exclusively, in wet weather.

Several areas, including the Mystic mainstem and streams, show marginal declines in grades in this year's Report Card, which may reflect the impact of changing precipitation patterns where larger storms are more common, leading to more stormwater pollution.

The continued presence of combined-sewer overflows (CSOs) on the Alewife, Mystic, and Charles represent an unfinished chapter in the huge success story that is the clean-up of Boston Harbor.

2022 MYSTIC RIVER REPORT CARD GRADES





“In wet summers like the one we are currently experiencing, and most dramatically in 2021 when 14 inches of rain fell in July, CSO releases are a commonplace occurrence—routinely exposing river users to bacteria, trash, and more. There is stark evidence these impacts are not felt equally—reports show CSOs are more likely to occur near environmental justice communities, like Alewife Brook” said Patrick Herron, Executive Director at the Mystic River Watershed

Association. “We understand that the elimination of remaining CSOs will be expensive—but we believe investment in public health and safety for all communities is worth it, given these discharges inhibit residents from fully enjoying vital greenspaces and riverways.”

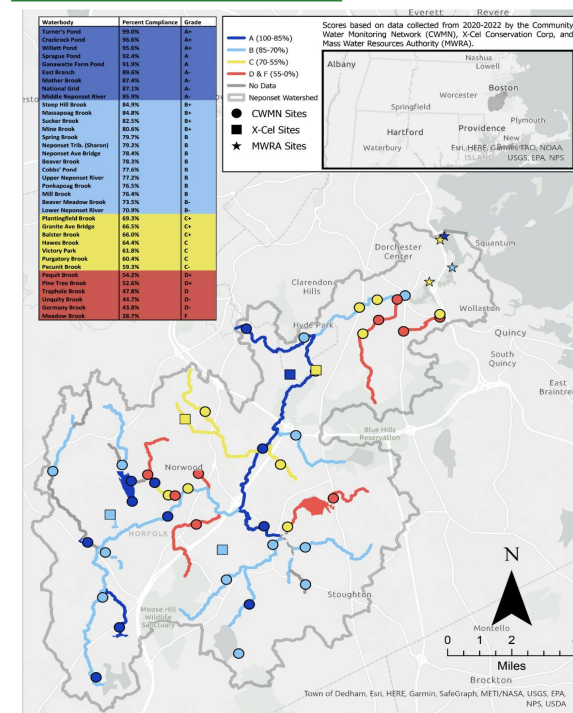
NEPONSET RIVER REPORT CARD GRADES

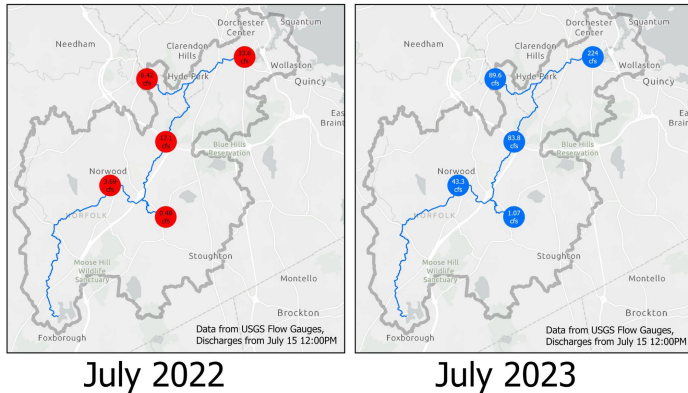
In the Neponset River, the grades are based on the percentage of time *E. coli* bacteria concentrations are safe for recreation, weighted based on precipitation data across a three-year average. Grades are given to twenty-six segments, including four main reaches, eighteen tributaries, and several ponds. In addition, *Enterococcus* data collected by MWRA is used to grade the Neponset Estuary.

In the Neponset watershed, water quality remains quite good in the mainstem, receiving “A’s” and “B’s,” with three of four sections improving slightly in 2022. Numerous lakes and ponds receive high marks for swimmability, with the highest grades in Turners Pond, Crackrock Pond, and Willett Pond.

However, many tributaries, especially those flowing through the cities and towns with the highest impervious surface area and populations, have seen water quality worsen in 2022, likely reflecting the impact of extreme weather like drought and increased precipitation experienced over the course of the last three years.

2022 NEPONSET RIVER REPORT CARD GRADES





“Polluted stormwater runoff from streets continues to be a huge problem, and we are working to educate residents and upgrade stormwater infrastructure systems to reduce pollution and prepare for climate change,” said Ian Cooke, Executive Director of Neponset River Watershed Association. “We need to slow the flow of stormwater, replenish the groundwater, and return clean, filtered water to our rivers.”

GREEN INFRASTRUCTURE SOLUTIONS

Green Infrastructure are urban design solutions that mimic the natural water cycle to stop runoff from polluting rivers and flooding homes, as well as make neighborhoods more resilient to climate change, create wildlife habitat, cool our neighborhoods, and beautify public spaces. Green infrastructure comes in many forms—rain gardens, permeable pavement, infiltration chambers, and tree trenches. All three watershed organizations are working with federal, state, and local partners to advance these projects.

“I am proud of the progress that has been made to clean up the Charles and our regional waterways. I am excited to continue our collaboration with the Charles River, Mystic River, and Neponset River Watershed Associations as well as our regional partners to continue greening our infrastructure and cleaning up our rivers. Our residents deserve access to these urban gems and it is our responsibility to provide it,” said Mayor Sumbul Siddiqui of Cambridge.

For more than twenty years, Boston-based non-profit X-Cel Education has been helping adult students get their high school education. In 2020, X-Cel added a new curriculum, the X-Cel Conservation Corps, which trains students from underserved communities to pursue careers in wastewater treatment. With guidance from the Charles River Watershed Association and Neponset River Watershed Association, Corps Members maintain green infrastructure projects at Boston Public Schools and learn water quality sampling protocols in rivers and streams, exploring new career opportunities in the green workforce.

"As we make progress towards a green economy, developing the green workforce is an important component, and it is crucial that equity is at the center in that development," said Don Sands, Executive Director of X-Cel Conservation Corps. "Providing career pathways to previously underserved populations that lead to well-paying careers will lead to a more diverse and equitable green workforce."

"Programs like X-Cel Conservation Corps (XCC) are important because a lot of newly graduated high school students like me aren't clear about their career path direction, whether it be to higher education

at a college or jumping into the workforce straight away. This program prepared me for a variety of lucrative careers that benefits both the individual and the City of Boston," said Amani Jones, current X-Cel Conservation Corp member.