

# THREE RIVERS REPORT CARD



## Water Quality Grades for the Charles, Mystic, and Neponset Rivers

Each year, Charles River, Mystic River, and Neponset River Watershed Associations bring together hundreds of dedicated community science volunteers to collect vital data, which is then reported to EPA, and announced as annual Water Quality Report Card Grades to help the public better understand the health of our rivers.

The 2021 Report Card Grades, which range from A to F, take into account *E. Coli* bacteria concentrations, a significant public health hazard for safe recreation and enjoyment of our rivers.

While the grades show vast improvement compared to decades before, new challenges have emerged in ensuring our rivers are clean, healthy, and safe for all. Stormwater pollution, combined sewer overflows (CSOs), and climate change all threaten to degrade water quality and hurt the progress we have made.

## WHAT ARE THE GRADES BASED ON?



E.COLI BACTERIA



WEATHER  
DATA



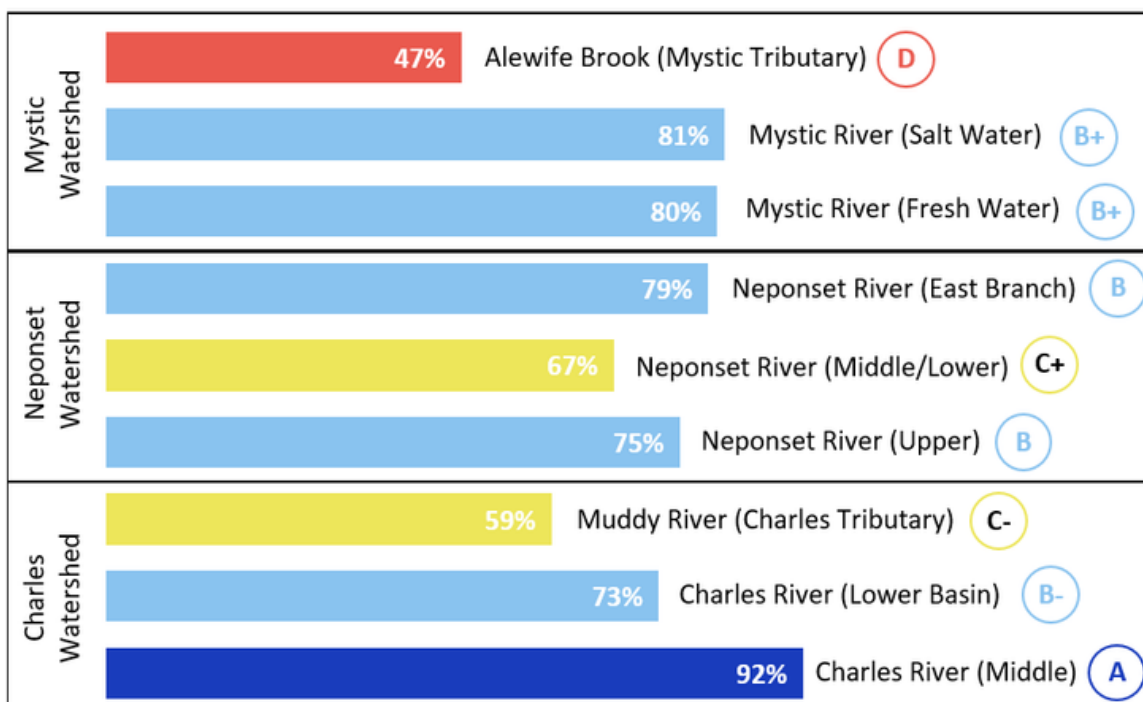
3-YEAR  
AVERAGE

## WHAT DO THEY TELL US?



THE PERCENTAGE OF  
TIME THE RIVER IS  
SAFE FOR ACTIVITIES  
LIKE BOATING &  
SWIMMING

## 2021 SELECTED SEGMENTS & GRADES FOR THE CHARLES, MYSTIC RIVER, & NEPONSET RIVERS



# 50 YEARS OF THE CLEAN WATER ACT

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This year marks the 50th anniversary of the Clean Water Act, the 1972 landmark legislation that called for all waterways in America to be “fishable and swimmable” by 1983, and the elimination of all discharges of pollutants into navigable waters by 1985.

While those ambitious goals are yet to be achieved, the Clean Water Act has been a game-changer for the Neponset, Charles, and Mystic Rivers. Before its passage, the three rivers that flow into Boston Harbor were industrial dumping grounds, awash with raw sewage and toxic pollutants, inhospitable to plant and animal life.

By setting a broad vision for restored waterways and providing a regulatory framework to achieve it, the Clean Water Act provided the necessary leverage to hold polluters accountable and ensure clean, fishable, swimmable rivers for current and future generations. The Clean Water Act’s power, coupled with decades of relentless, loving vigilance and advocacy from the three watershed associations, has transformed our rivers again into beautiful, living waterways.

**"For fifty years, the Clean Water Act has stemmed the tide of pollution and improved water quality for communities across Massachusetts. The tremendous work of the Charles River, Mystic River, and Neponset River Watershed Associations is a testament to the vital partnership between federal, state, and local leaders in our mission to guarantee clean water, mitigate environmental injustice, and safeguard against climate change. Every community deserves access to clean, safe waterways. I am proud to support the Clean Water Act and all our partners who will ensure that Boston Harbor will thrive in the decades to come."**

— U.S. Senator Ed Markey

**On the 50th Anniversary of the passage of the Clean Water Act, the Water Quality Report Card underscores how far we’ve come, yet how far we have to go to ensure our urban rivers are clean, healthy, and safe for all.**

We need bold leadership from all levels of government— federal, state, and local— as well as a coordinated effort from community organizations, business leaders, and residents to rise to the challenges of climate change and achieve environmental justice across our three watersheds.

# CLIMATE CHANGE NECESSITATES URGENT ACTION

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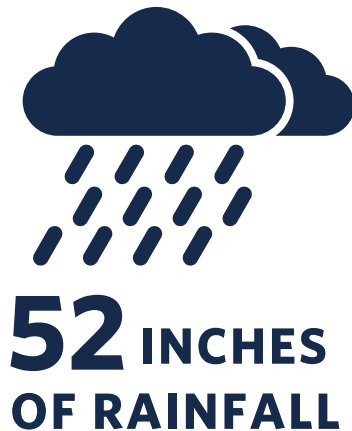
Greater Boston, and its three rivers, are already seeing the effects of climate change, especially in the form of heavier downpours, extreme heat, severe storms, and more frequent drought.

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 runoff and sewer overflows which degrade ecosystem health and expose public to hazards. As our climate continues to change, the challenges polluted stormwater runoff and combined-sewer overflows pose for our rivers will only worsen.

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## WHAT DOES CLIMATE CHANGE LOOK LIKE IN 2021?

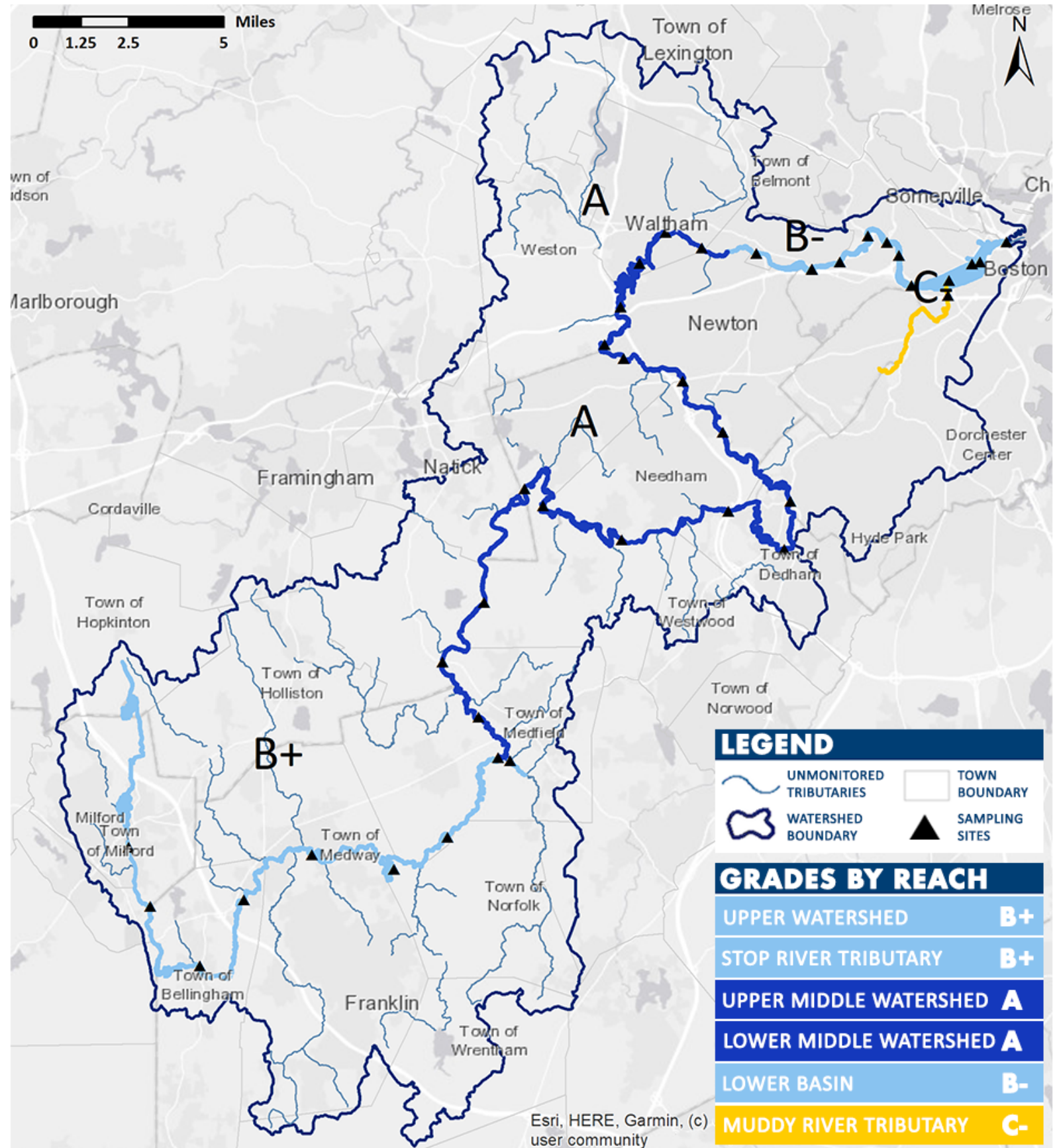
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**"For far too long, Boston's environmental justice communities have been bearing a disproportionate burden of climate change and environmental hazards. As a Dorchester resident, I dream of the day when residents along the Neponset River Watershed can swim in these waters with joy. I am grateful for Boston's partnership with the U.S. EPA and our three watershed organizations, and I look forward to our continued collaboration."**

— Reverend Mariama White-Hammond  
*Chief of Environment, Energy, and Open Space for the City of Boston*

# 2021 CHARLES RIVER REPORT CARD GRADES





# WHAT DO THE GRADES MEAN?

In the Charles River, grades ranged from “A”s in the middle reaches (Sherborn to Waltham) to a “C-” in the Muddy River, a tributary in Brookline and Boston. The Upper Watershed (Hopkinton to Medfield) received a “B+”, mainly a result of low water levels and encroaching development causing more polluted stormwater runoff.

## THE SUMMER OF COMBINED-SEWER OVERFLOWS

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.

**That's about the volume of 36 Olympic-sized swimming pools.**

CSOs are extremely dangerous, exposing river users and watershed residents to pollutant-laden water, carrying bacteria, excess nutrients, pharmaceuticals, and even harmful PFAS compounds. The increased frequency and volume of CSO events alone dropped the Lower Basin's grade significantly, from a “B” to a “B-”.



**“We are pleased that some areas of the Charles earn “A” grades. But the poor grades in urban areas show how much work remains.”**

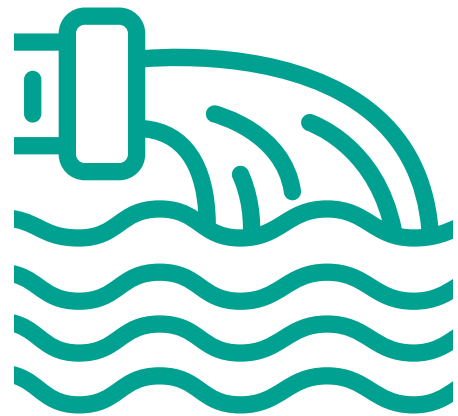
**“We hope these grades will spur members of the public to join us in demanding that local, state, and federal government leaders commit to eliminating CSOs, reducing polluted stormwater runoff, and investing in nature-based solutions to return the Charles to a fishable, swimmable river, as the Clean Water Act envisioned.”**

— Emily Norton

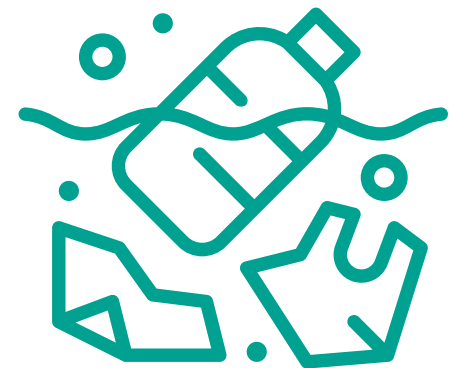
*Executive Director, Charles River Watershed Association*



**35 INCHES  
OF RAINFALL**



**53 SEWER  
OVERFLOWS**











**126 MIL.  
GALLONS  
OF SEWAGE**

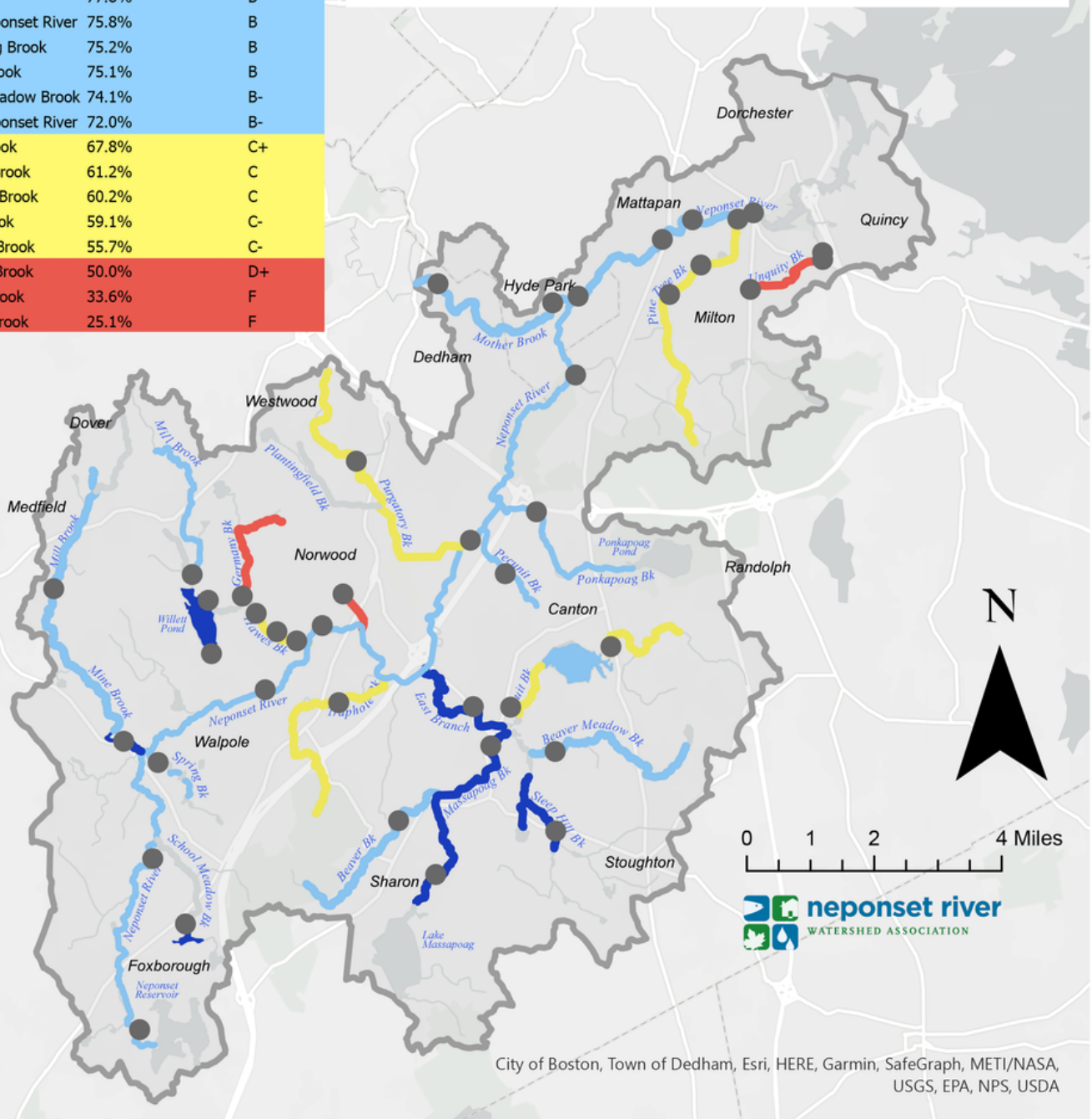
# 2021 NEPONSET RIVER REPORT CARD GRADES

## Waterbody Percent Compliance Grade

Crackrock Pond	100.0%	A+
Ganawatte Farm Pond	97.3%	A+
Turner's Pond	96.7%	A+
Willett Pond	93.0%	A
Massapoag Brook	89.6%	A-
East Branch	86.3%	A-
Steep Hill Brook	86.2%	A-
Mother Brook	83.4%	B+
Mine Brook	83.4%	B+
Beaver Brook	80.2%	B+
Middle Neponset River	79.3%	B
Spring Brook	77.9%	B
Mill Brook	77.8%	B
Upper Neponset River	75.8%	B
Ponkapoag Brook	75.2%	B
Pecunit Brook	75.1%	B
Beaver Meadow Brook	74.1%	B-
Lower Neponset River	72.0%	B-
Hawes Brook	67.8%	C+
Traphole Brook	61.2%	C
Purgatory Brook	60.2%	C
Pequit Brook	59.1%	C-
Pine Tree Brook	55.7%	C-
Germany Brook	50.0%	D+
Unquity Brook	33.6%	F
Meadow Brook	25.1%	F

-  No Data
-  A 100-85%
-  B 85-70 %
-  C 70-55%
-  D 55-40%
-  F 40-0 %
-  Neponset River Watershed
-  Water Sampling Locations

Scores based on data collected from 2019-2021 by the Community Water Monitoring Network.



# WHAT DO THE GRADES MEAN?

In the Neponset River watershed, most streams and river segments earned grades of "A" or "B", and all monitored ponds earned "A's". Only Unquity Brook, Germany Brook, and Meadow Brook received grades of "D" or "F". In addition, the mainstem of the Neponset, where most recreation occurs, received grades in the "B" range.

## PERSISTENT POLLUTED STORMWATER RUNOFF

The biggest challenge in the Neponset is polluted stormwater runoff from streets, parking lots, and yards. When it rains, pollutants on our roadways and parking lots—oil, gas, bacteria, pharmaceuticals, and more—are washed directly into our waterways.

**In wet weather, water quality grades drop 22% on average, nearly two full letter grades, impairing water quality and rendering many areas of the river unsafe for recreation.**



**"Polluted stormwater runoff from streets continues to be a huge problem. We are working to educate residents and upgrade stormwater infrastructure systems to reduce pollution and prepare for climate change."**

— Ian Cooke

*Executive Director, Neponset River Watershed Association*

**"Knowing what's ahead in terms of climate change makes it more important than ever to invest in restoring our waterways. The recent designation of the Lower Neponset River as a Superfund site to clean up contaminated river bottom sediments is a great example of the kinds of steps we need to be taking now to prepare for the future."**

— Sean McCanty

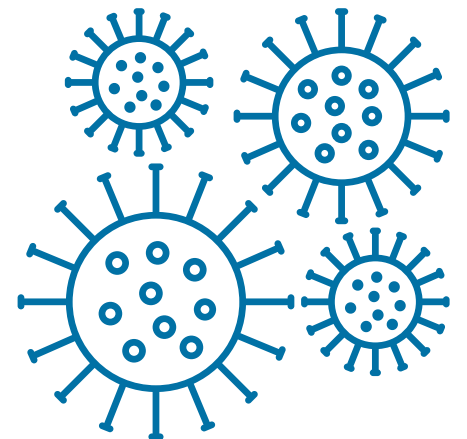
*River Restoration Director, Neponset River Watershed Association*



**STORMWATER  
POLLUTION FROM  
IMPERVIOUS SURFACES  
DEGRADES THE  
ECOSYSTEM & CAUSES:**



**INVASIVE SPECIES  
GROWTH**

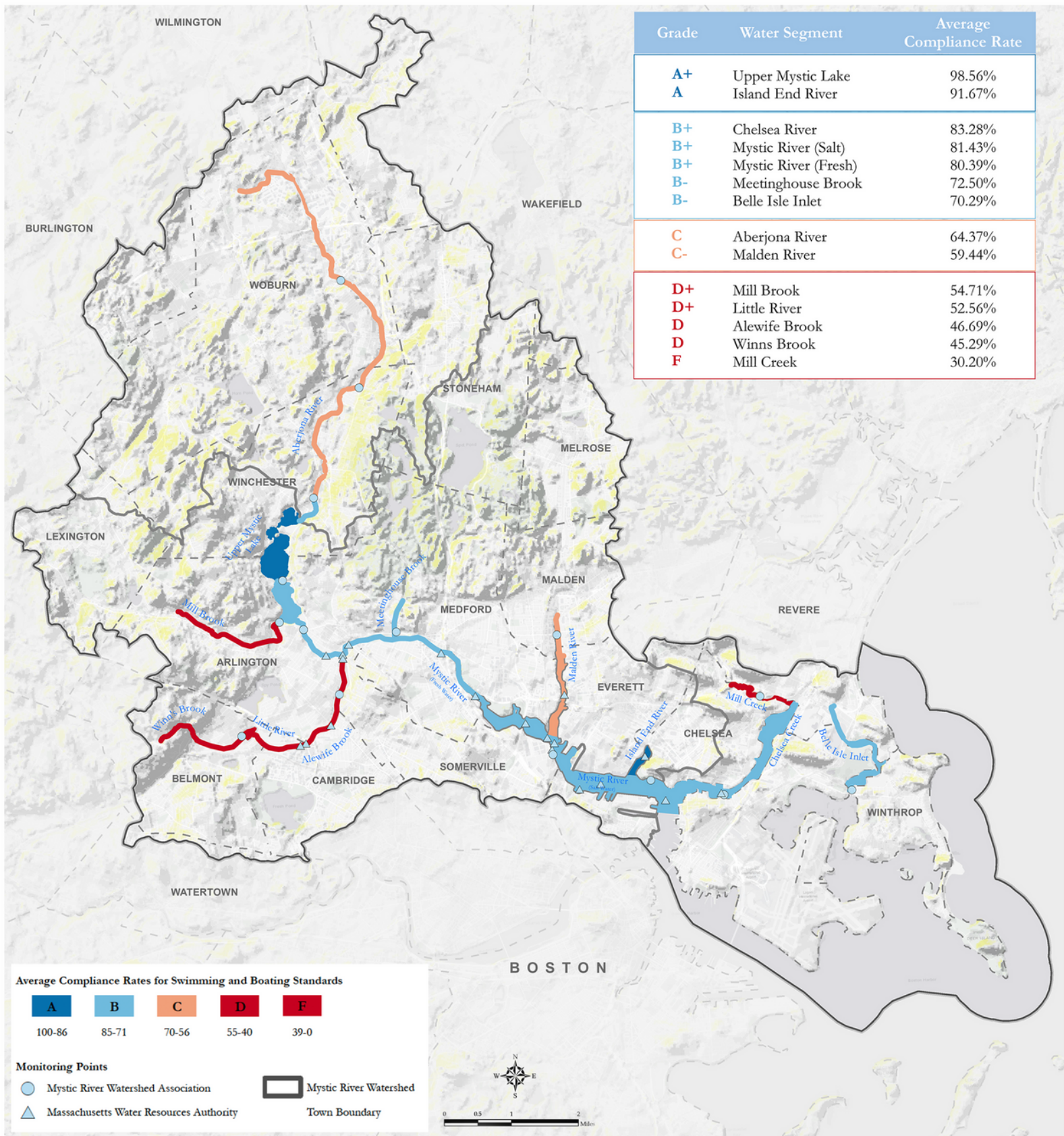


**HARMFUL ALGAL  
BLOOMS**



# 2021 MYSTIC RIVER REPORT CARD GRADES

**Mystic River**  
WATERSHED ASSOCIATION





# WHAT DO THE GRADES MEAN?

The Mystic River itself and the Mystic Lakes receive grades from “B+” to “A+”, indicating that they meet boating standards almost all the time in dry weather; and some important tributaries, including Winn’s Brook in Belmont, Alewife Brook in Cambridge and Arlington, and Mill Creek in Chelsea continue to show clear evidence of frequent contamination by wastewater, earning the lowest grades.

## PRIORITIZING ENVIRONMENTAL JUSTICE

The Alewife Brook tributary stands out as a place where infrastructure improvements should be prioritized to protect Environmental Justice (EJ) communities.

**Stormwater from four urban municipalities, Cambridge, Somerville, Arlington, and Belmont, and frequent combined-sewer overflows from Cambridge and Somerville, all flow into Alewife Brook.**

Alewife Brook is significantly degraded, and it's waters routinely pose public health hazards to residents living nearby, at a time when we need clean rivers and healthy urban parks the most.

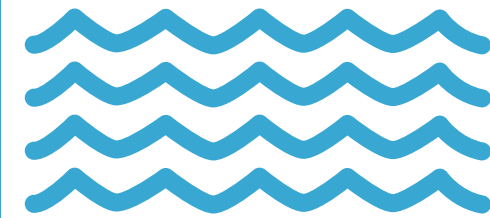


**“For all of us to be true to our commitment to EJ, and to undo the disproportionate impacts of pollutants on disadvantaged populations. We need to focus our investments on areas where EJ populations are being directly impacted by poor water quality like Alewife Brook.”**

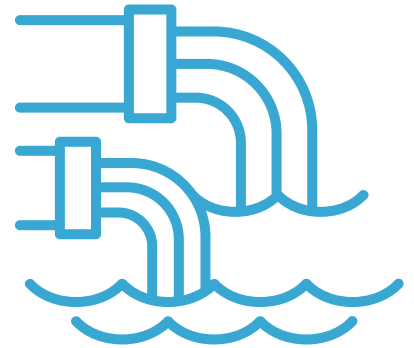
**“Many waterways in the Mystic are safe for recreation, and we should celebrate that. But, we also need collectively to invest in urban infrastructure at scale, so that all residents living along and near the Mystic and its tributaries can enjoy and access the clean water they deserve.”**

— Patrick Herron

*Executive Director, Mystic River Watershed Association*



**ENVIRONMENTAL JUSTICE COMMUNITIES ARE OVERBURDENED WITH POLLUTION & HISTORICALLY LEFT OUT OF INVESTMENTS**



**51 MILLION GALLONS OF SEWAGE DISCHARGED IN ALEWIFE BROOK**



**INTO THE HEART OF A DIVERSE, CLIMATE-VULNERABLE EJ NEIGHBORHOOD**