

# INVASIVE

Invasive Species and Water Pollution in Our River



# POLLUTION

# ZINE

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# WHAT'S HAPPENING TO OUR RIVERS?

Boston-area rivers such as the Mystic, Charles, and Neponset are facing two growing problems: invasive species and water pollution.

Climate change, with stronger storms and hotter summers, worsens both issues by stressing native plants and overwhelming stormwater systems.



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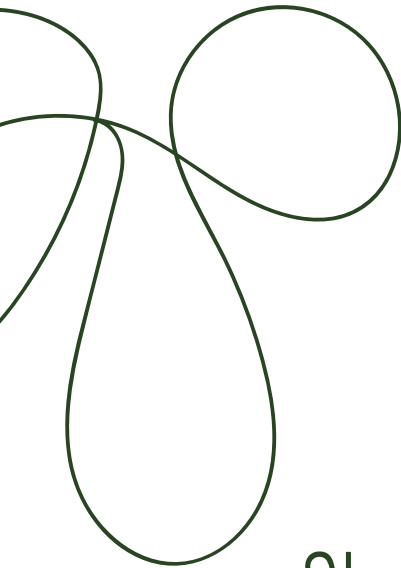
Our Goal is to make this information understandable and show clear ways to take action for everyone.

Climate change, including increased precipitation and higher temperatures, weakens native plants and allows invasive species to take over.

As conditions shift, species like Water Chestnut, Bittersweet, Japanese Knotweed, and Phragmites (Common Reed) spread rapidly across land and water, displacing native vegetation and reducing biodiversity.

## Action Steps:

- Support local invasive-pull volunteer days.
- Advocate for green infrastructure such as native plant buffers, stormwater gardens, and tree plantings.



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THE CLIMATE AND INVASIVE CONNECTION



# WATER CHESTNUT (TRAPA NATANS)



INTRODUCED IN THE 1800S IN CAMBRIDGE, WATER CHESTNUT NOW FORMS THICK FLOATING MATS THAT BLOCK SUNLIGHT, REDUCE OXYGEN, AND HARM AQUATIC LIFE.

## Action Steps:

- Join MyRWA and CRWA's seasonal Water Chestnut pulls. . . . .
- Encourage cities to fund mechanical harvesters in heavily infested areas. . . . .

# KNOTWEED AND PHRAGMITES



JAPANESE KNOTWEED AND PHRAGMITES THRIVE ALONG DISTURBED RIVERBANKS. THEY SPREAD AGGRESSIVELY, CROWDING OUT NATIVE GRASSES AND FLOWERS THAT STABILIZE SOIL AND SUPPORT POLLINATORS.

## Action Steps:

- Only remove Knotweed and Phragmites as part of an approved volunteer day or with landowner/municipal permission.
- Follow staff guidance, because improper removal can spread these plants and worsen soil erosion.
- After approved removal, replant with native species to stabilize soil and prevent regrowth.

# BITTERSWEET



BITTERSWEET IS A WOODY VINE THAT CLIMBS AND WRAPS AROUND TREES AND SHRUBS. ITS DENSE TANGLES AND BRIGHT BERRIES CAN LOOK ATTRACTIVE, BUT THE VINES GIRDLE TRUNKS, BREAK BRANCHES, AND SHADE OUT NATIVE PLANTS.

## Action Steps:

- Do not plant invasive bitter sweet or use wild vines and berries in wreaths or decorations. Choose native alternatives.
- For large patches or sites near water, join a Mystic River invasive-removal event or work with trained crews so removal does not damage trees or erode soil.
- Learn more at Mystic River's "Restoring Biodiversity" page.





More than half of Massachusetts' rivers and lakes are classified as "impaired," meaning they fail to meet state water-quality standards. Urban rivers, like the Mystic, Charles, and Neponset are particularly subject to stormwater pollution. When it rains, stormwater carries harmful nutrients like phosphorus – which encourage the growth of invasive plants – as well as oil, trash, and pet waste directly into local rivers. Impervious surfaces like roads, roofs, and parking lots worsen this problem by preventing water from soaking into the ground.

#### Action Steps:

- Reduce lawn fertilizers and pesticides, and keep yard waste away from storm drains.
- Always pick up pet waste and dispose of it in the trash.
- Use rain barrels, rain gardens, and native plant buffers to soak up runoff.
- Replace pavement with permeable surfaces where possible.
- Support stronger stormwater bylaws, green infrastructure funding, and public input on MWRA and municipal stormwater and sewer proposals.

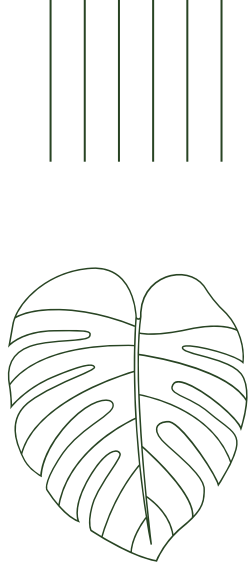


#### Action Steps:

- Ask local and state officials to finish CSO separation and storage projects at priority outfalls.
- Support green stormwater infrastructure that keeps water out of combined sewers, such as rain gardens, bioswales, tree trenches, and permeable paving.
- Follow CSO permits and hearings, and comment on draft permits, timelines, and volume reduction goals.

In older parts of Greater Boston, one pipe carries both household sewage and rainwater from streets to the Deer Island Wastewater Treatment facility. These “combined sewers” can fill during heavy storms, so the system is designed to release a mix of stormwater and untreated sewage into rivers to avoid basement backups. These events are called **combined sewer overflows (CSOs)**.

CSOs are different from regular storm drains. A storm drain in a separate system usually carries only runoff. A CSO outfall can carry that runoff plus sewage during overflows, adding raw human waste, household chemicals, and other contaminants right where people boat, fish, and play. Infrastructure upgrades have reduced CSO volumes, but climate-driven downpours still cause overflows in some locations. During these major storms, both stormwater and CSOs can impact water quality all at once.



- 1.9 billion gallons of untreated sewer water were released statewide in 2024.
- Heavy rainfall linked to climate change is increasing overflow frequency.
- Health studies show higher risks of gastrointestinal illness near CSO discharge areas.

### **Legislative Action You Can Take (2025–2026):**

- Support H.R. 5730 (“Sewer Overflow and Stormwater Reuse Municipal Grants Reauthorization”), contact your Representative to co-sponsor or vote yes.
- Ask your state and city officials to prioritize CSO and stormwater-management funding in budgets.
- Push for transparency, require public CSO event maps and real-time data sharing.
- Encourage municipal ordinances that mandate green infrastructure in new developments.

Sources:

Mass Rivers Alliance (2024) | Massachusetts Sewage Notification Report (2024) | EPA NPDES CSO Policy

# VOLUNTEER WITH COMMUNITY ACTION

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Volunteer with:

- **Mystic River Watershed Association (MWRA)**

– organizes year-round community events such as Water Chestnut Pulls, River Cleanups, Storm Drain Marking Days, and Native Plant Restoration Projects.

<https://mysticriver.org/get-involved>

- **Charles River Watershed Association (CRWA)**

– hosts Charles River Cleanup Day, Stormwater Education Workshops, and Invasive Removal Days.

<https://www.crwa.org/volunteer>

- **Neponset River Watershed Association (NepRWA)**

– offers river sampling teams, citizen science monitoring, and coastal cleanup events.

<https://www.neponset.org/volunteer>

- **Friends of the Malden River**

– focuses on habitat restoration, public access, and riverbank cleanups.

<https://maldenriver.wordpress.com>

- **Groundwork Somerville**

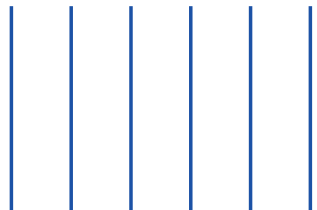
– runs Green Team youth programs and urban gardening projects that support healthy watersheds.

<https://www.groundworksomerville.org>



At Home Stewardship:

- Reduce lawn chemical and fertilizer use.
- Compost and use mulch to retain soil moisture.
- Disconnect downspouts from storm drains.
- Create rain gardens and native plant buffers.
- Check local alerts and CSO maps



# INDIGENOUS STEWARDSHIP AND ECOLOGICAL KNOWLEDGE 10

The Mystic and surrounding waters lie on the homelands of Indigenous nations including the Massachusett, Wampanoag, and Nipmuc peoples, who have cared for rivers, wetlands, fish runs, and forests here for thousands of years. Their stewardship is based on reciprocity with land and water, taking only what is needed and managing habitats so that fish, shellfish, plants, and people can thrive together. Today, Indigenous nations and organizations in eastern Massachusetts continue to lead work on river restoration, climate resilience, and food and medicine sovereignty.



## Action Steps:

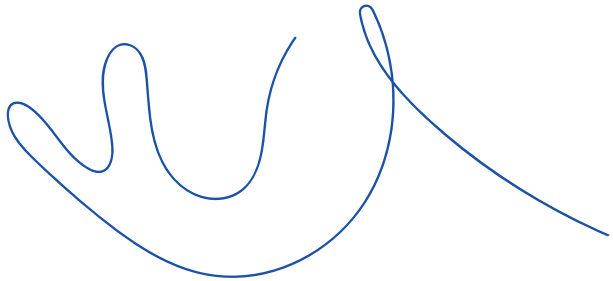
- Include Indigenous leadership and consent in river and restoration projects, with paid collaboration.
  - Partner with Indigenous-led groups on wetland, river, and food-sovereignty projects and follow their guidance.
  - Learn whose homelands you live on and support efforts to return land, decision-making power, and resources to Indigenous communities.

# LEARN AND SHARE: COMMUNITY TOOLKIT

Everyone can be part of protecting our rivers. This toolkit offers low-barrier ways for learners of all ages to get involved in environmental stewardship.

## Explore and Learn

- Go on a native vs. invasive plant walk at a local river or park. Find field guides and plant lists from Massachusetts Invasive Plant Advisory Group and [Mystic River Watershed Association Website!](#)
  - Test water samples for E. coli, turbidity, or nitrates with citizen-science kits (e.g., EarthEcho Water Challenge).
  - Try a runoff experiment using soil trays to compare pavement vs. vegetation in slowing water flow.
  - Map your neighborhood's impervious surfaces and nearby CSO outfalls using the [EPA EnviroAtlas Tool](#) or local GIS maps.



# GET INVOLVED

Everyone lives in a watershed, get involved with your local watershed association! Together, we can pull, plant, protect, and advocate.

Volunteer Sign-ups: [Mystic River](#) | [Charles River](#) | [Neponset River](#)

Contact: [info@mysticriver.org](mailto:info@mysticriver.org) | [charles@crwa.org](mailto:charles@crwa.org) | [staff@neponset.org](mailto:staff@neponset.org)

Hashtags: #MysticRiverZine

