

THREATS IN THE MYSTIC RIVER WATERSHED

Flooding (Fluvial, Pluvial, Tidal, Sea Level Rise, Storm Surge, Underground)*

- Undersized culverts and aging crossings
- Low-lying roads repeatedly overtopped (e.g., River Road, Old Mystic)
- Wetlands losing storage capacity due to development pressure
- Increased frequency of intense rainfall events
- Tidal flooding affecting Groton/Stonington neighborhoods

Drought

- Private wells running dry, especially shallow dug wells
- Stress on farms, livestock, and irrigation systems
- Forest health decline (tree stress, increased pest vulnerability)
- Reduced streamflow affecting aquatic habitat

Extreme Heat

- More frequent multi-day heat waves
- Heat stress for seniors, outdoor workers, and children
- Hotter buildings and paved surfaces increasing local heat islands
- Elevated water temperatures → algal blooms, fish stress

Water Quality Decline

- Mystic River estuary, Whitford Brook, and Williams Brook are impaired
- Stormwater runoff carrying nutrients, bacteria, and sediment
- Algal blooms and cyanobacteria during heat + nutrient spikes
- Septic system failures and aging infrastructure
- Erosion contributing sediment to waterways

Wildfire Risk

- Wildland-urban interface areas across the watershed
- Drought + heat increasing ignition potential
- Accumulated leaf litter and deadwood near homes

RECOMMENDATIONS (WATERSHED-WIDE)

Flooding

- Upsize culverts and replace failing crossings
- Restore wetlands and floodplains to store water
- Expand riparian buffers along brooks and rivers
- Increase permeable surfaces in driveways, parking lots
- Improve stormwater systems using green infrastructure

Drought

- Promote drought-tolerant native plants
- Expand soil health programs (mulch, compost, organic matter)
- Increase groundwater monitoring and well testing
- Support agricultural water conservation practices

Extreme Heat

- Plant shade trees in neighborhoods and public spaces
- Add cooling infrastructure (shade structures, tree canopy)
- Increase green space and reduce paved surfaces
- Promote reflective roofing and light-colored materials

Water Quality

- Reduce nutrient runoff (fertilizer reduction, buffer strips)
- Upgrade septic systems; expand sewer access where feasible
- Install bioswales, rain gardens, and stormwater filtration
- Protect high-quality wetlands and headwaters

Wildfire

- Vegetation management around homes
- Fire-resistant landscaping
- Defensible space around propane tanks and sheds
- Community education on safe yard practices

WHAT NOW —

What you can do NOW, in addition to participating in our policy group and solutions co-design circles

Flooding

- Plant native trees/shrubs
- Install rain gardens
- Redirect downspouts into vegetated areas
- Replace asphalt with permeable materials
- Reduce lawn area

Extreme Heat

- Plant shade trees
- Add shrubs/groundcover
- Use light-colored mulch
- Install shade sails or pergolas

Water Quality

- Avoid fertilizers/pesticides
- Plant native buffer strips along wet areas
- Pick up pet waste
- Maintain septic systems (pump every 3–5 years)
- Reduce impervious surfaces

Drought

- Plant drought-tolerant natives
- Mulch garden beds
- Collect rainwater
- Add compost to soil

Wildfire

- Trim vegetation near structures
- Remove dead branches and leaf piles

- Choose fire-resistant native plants
- Clear around propane tanks

Biodiversity

- Plant pollinator gardens
- Leave fall leaf litter
- Delay spring mowing
- Avoid pesticides

***Types of flooding:**

Fluvial—overflow of rivers, streams, lakes, erosion

Pluvial—too much rain on the surface that doesn't drain fast enough

Tidal (varies by time of year) and Sea Level Rise (constant and increasing)

Storm Surge—water level increase driven by wind, low pressure, and the shape of the land

In our experience, there should be another category of flooding: underground increases in the mean high water table, so that basements are staying underwater, sewage pipes are sitting in salt water, wells are absorbing wastewater from leach fields, and wells near the shore salinate. We don't see it, but it is having a detrimental and costly effect.

Many thanks to volunteer Christian Allyn for preparing this summary of our Mystic River Watershed Vulnerability Assessment

