Plastic Foam Pollution

Reducing Plastic Pollution in Vermont Waters in an Era of Climate Change

Clean water. Healthy habitat. Thriving communities.

Connecticut River Conservancy

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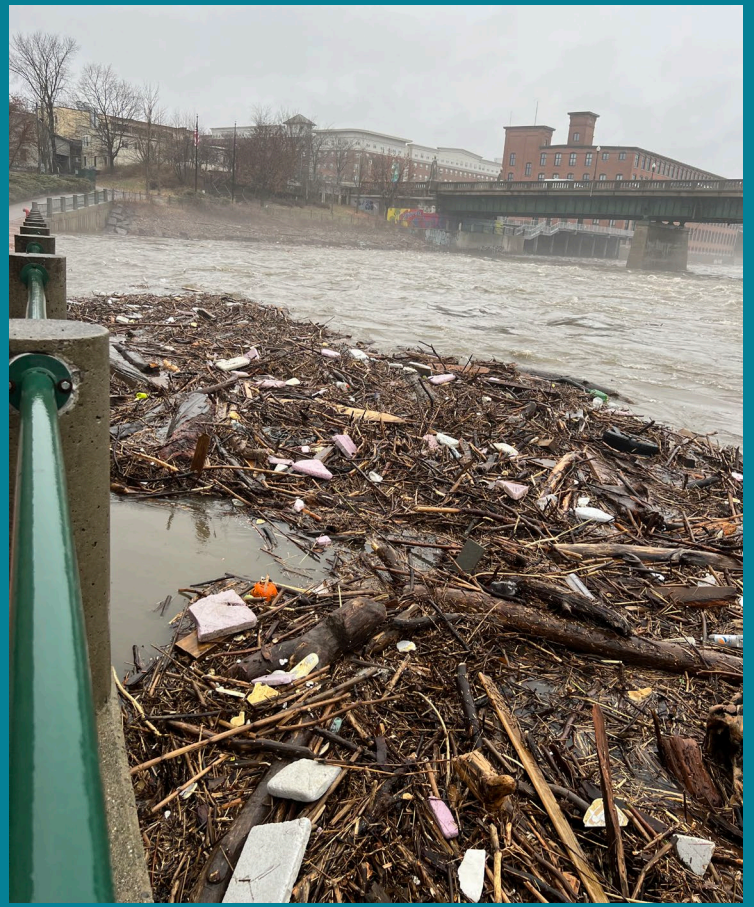
Plastic Foam & Climate Change



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Increased Severity and Intensity of Storms Make the Problem Worse

- Extreme Wind
- Increased Waves
- Dramatic Fluctuations in Water Levels
- Impacts from driftwood and ice

…Cause a significant increase of marine debris in our rivers, lakes, and ponds.

Climate Change Impacts From Flooding are Increasing

July 2023 Flood

We need to stop this now before it gets worse.

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Plastic Foam is Polluting Vermont Waters

Plastic foam used for dock, buoy, and moorings, flotation break up, spilling pollution and into lakes, ponds, and rivers harming wildlife, trashing beaches, and degrading water quality. The amount of pollution keeps increasing.

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Plastic Foam is Harming Vermont Wildlife

Research studies show plastic in digestive tracts of Lake Champlain creatures from invertebrates to fish to birds. Microplastics block and injure the GI tracts of animals that eat it, often filling their guts, starving them to death.

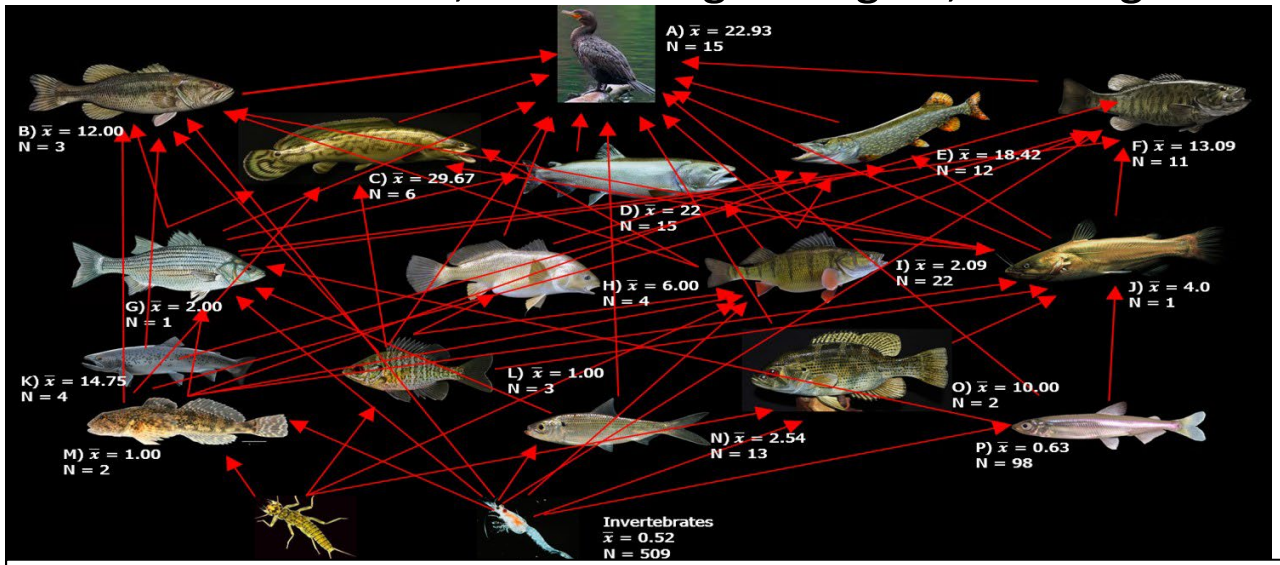

Figure. A-P. Organisms sampled within the Lake Champlain food web. Mean microplastics consumed and abundance reported. A) double-crested cormorant B) largemouth bass C) bowfin D) lake trout E) northern pike F) smallmouth bass G) white perch H) sheepshead I) yellow perch J) bullhead catfish K) Atlantic salmon, L) sunfish M) slimy sculpin, N) alewife O) rock bass P) rainbow smelt and invertebrates (See Masterson et al. 2018) **(image credit: undergraduates Kathleen Bullis, Chad Hammer, James Stewart, Alex Putnam**

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Plastic Foam is Polluting Vermont Shorelands

Small foam pieces and beads are almost impossible to clean up once they entered the water and wash up on beaches, riverbanks, wetlands, and floodplains.

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Plastic Foam is Polluting Vermont Beaches

Clean beaches are critical climate refuges and sanctuaries where people swim to cool off during increasingly hot summers months - disproportionally affecting Vermonters that have no other way to cool down.

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Unencapsulated Polystyrene Foam Flotation

Docks with pink polystyrene, Connecticut River

Breakwater with blue polystyrene, Lake Champlain

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Loose Bead Polystyrene Foam Filled Flotation

Broken Dock Flotation Discharging Plastic Dock Foam.
Harbor Watch Condo Beach
Burlington, VT, July 14, 2020

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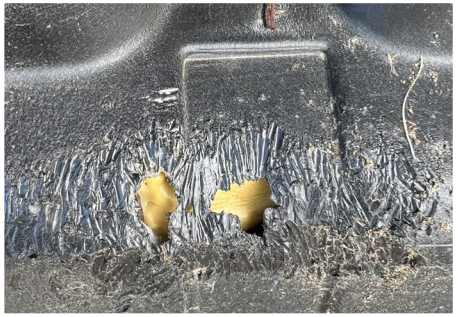
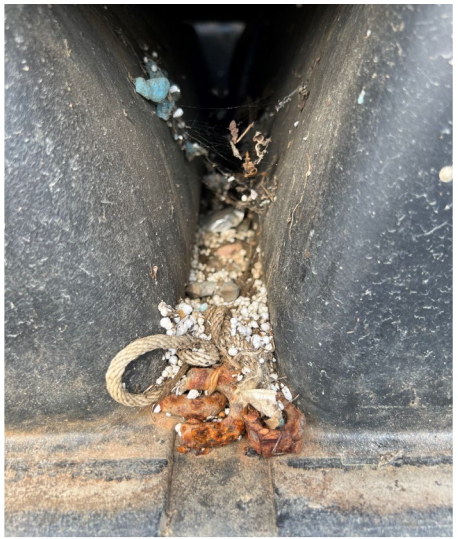
Broken Dock Floats and Attempted Repairs





Broken Dock Floats Filled with Loose Plastic Foam.
The Moorings Marina
Malletts Bay, Colchester, VT
August 27, 2022

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Legislation Summary

- **Prohibit** use of **unencapsulated polystyrene and encapsulated loose bead polystyrene** in buoys, docks, or floating structures.
- **Installations, repairs, or replacement** of buoy, dock, or floating structures using polystyrene foam for flotation shall be **encapsulated by a protective covering** or shall be designed to **prevent** foam from disintegrating into the water.
- Unused or replaced polystyrene foam flotation shall be removed from the water and **disposed of in an approved manner.**
- **Prohibits selling, distributing**, or using unencapsulated polystyrene foam and loose bead polystyrene products for dock floats, mooring buoys, anchors or navigation markers.
- Set a deadline with **penalties for noncompliance** for removal and replacement of existing unencapsulated polystyrene and encapsulated loose bead polystyrene dock flotation.

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Legislation Effective Dates

1. Prohibit use of unencapsulated polystyrene and encapsulated loose bead polystyrene: **Effective 2 years after the passage**

2. Installations, repairs, or replacement using polystyrene foam shall be encapsulated: **Effective Immediately**

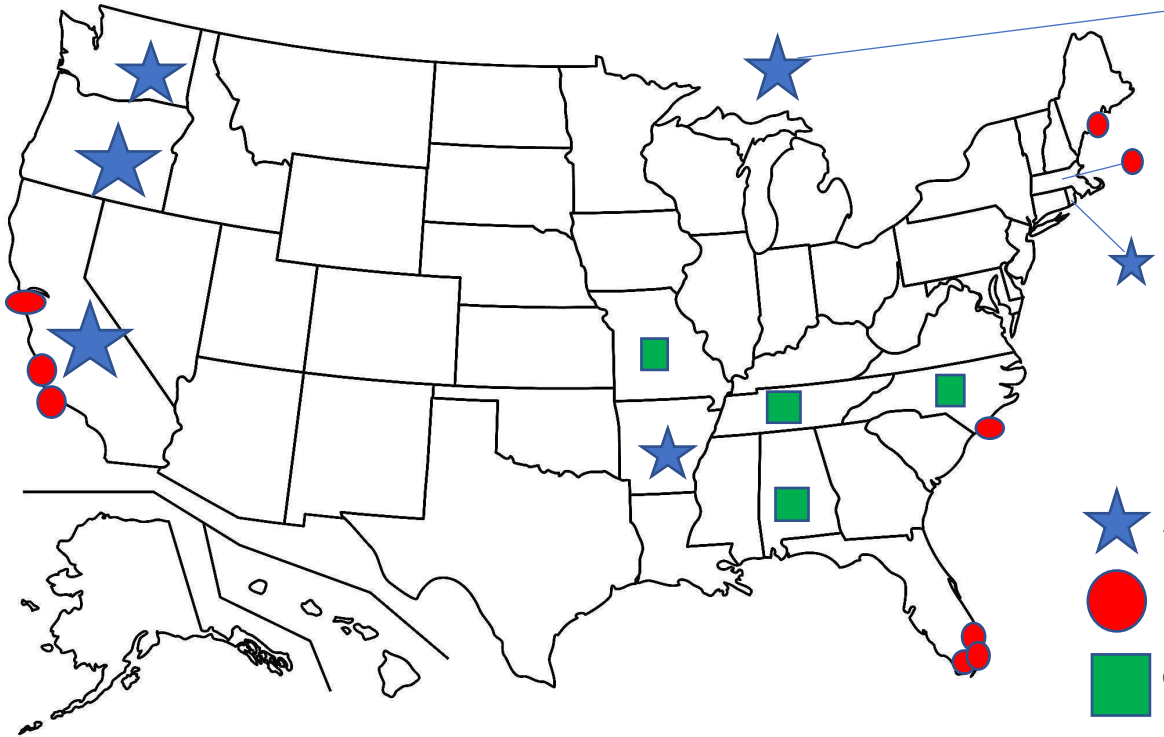
3. Unused or replaced polystyrene foam flotation shall be removed from the water and disposed of in an approved manner. **Effective Immediately**

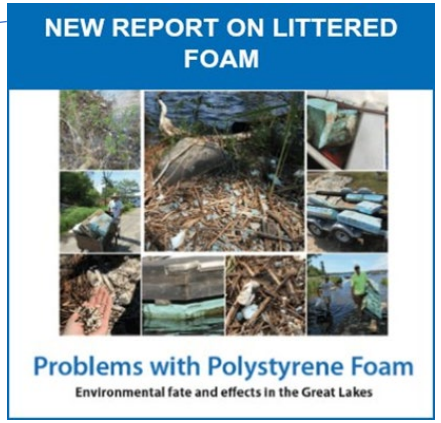
4. Prohibits selling, distributing, or using unencapsulated expanded and loose bead polystyrene foam products: **Effective Immediately**

5. Penalties for noncompliance for removal and replacement of existing unencapsulated polystyrene and encapsulated loose bead polystyrene dock flotation: **Effective 2 years after the passage**

National & Local Actions

National Dock Foam Legislation and Regulations





State/Provincial Actions (6)

Local Actions (9)

Other (4)

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Vermont Dock Foam Advocacy and Actions

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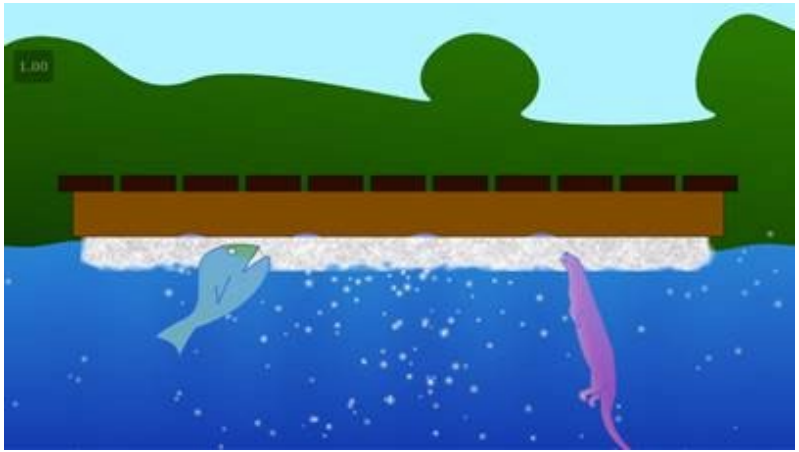
Swap Your Dock for Cleaner Rivers
2019 Campaign



Source to Sea cleanup removed 1.46 cubic yards of polystyrene including 50 pieces of polystyrene dock floats.

2019 BILL H.50

Introduced by Rep. Mary Sullivan

The bill mandated encapsulated protective coverings for all expanded polystyrene buoys, docks, or floating structures in waters of the State. Prohibited selling of certain expanded polystyrene foam products (coolers and toys) within 250 feet of waters of the State.

This bill is a framework for the new legislation.

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FAQ

Does New York have a ban on unencapsulated polystyrene dock flotation? How about loose bead encapsulated polystyrene?

New York has enacted a polystyrene ban relating only to food service products. New York drafted two bills (S.4974 and A.8142) that their legislator are considering that would prohibit unencapsulated, expanded or extruded (different types of plastic foam) polystyrene in floating docks, floating platforms, and buoys on both lakes and rivers statewide.

A.8142 contains provisions targeting the sale and distribution of unencapsulated polystyrene.

Photos: Chazy Yacht Club, 2023 (top); Mooney Bay Marina, 2022 (bottom)

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Opposition/Issues

Replacing unencapsulated and loose fill foam filled dock floats with alternatives is too expensive.

Over 30 years, encapsulated floatation will save you money and swapping foam filled floats to air filled floats will cost less or roughly $500-$700 more than replacing unencapsulated plastic foam (see Dock flotation replacement options table).

Doesn't Vermont already have a law that dock floats must be covered/encapsulated?

No. Act 69 bans only expanded polystyrene (foam) food service products including food containers, plates, hot and cold beverage cups, trays, and cartoons for eggs or other food.

Law Island, Colchester, 2023

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FAQ

I sell and manufacture docks in Vermont, how will this legislation impact me?

This legislation would prohibit the sale and distribution of unencapsulated polystyrene docks and flotation devices, effective immediately upon passage of the legislation. You would no longer be legally allowed to sell those types of docks but could continue sale of the various encapsulated dock and buoy products.

What alternatives do I have to unencapsulated and loose bead polystyrene floats?

There are various replacement options that vary from the DIY version to full retrofit options. **Air floatation** is the best option since it will not pollute if the float is breached.

Air Filled Float

Foam filled Float

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Options

Clean water. Healthy habitat. Thriving communities.
Connecticut River Conservancy

Visit ctriver.org/swap-your-dock to learn more about how you can help prevent plastic foam pollution!

Dock Replacement Options

Plastic foam is often perceived as a cheap and easy-to-install option for dock owners. **However, with a closer look at the lifetime costs and benefits of plastic foam in this chart, it becomes clear that alternatives such as encapsulated foam, barrels or compressed air, provide a cheaper option for dock owners and better deal for our environment.** Animals in and along the Connecticut River burrow into plastic foam or break it off, creating microplastics in the waterways that never fully break down. This presents a danger to our environment and its inhabitants. It's time to consider the real costs of plastic foam in our waterways and **SWAP YOUR DOCK!**

Floatation Materials	Pros	Cons	Upfront Cost for 4'x10' Dock Floatation	Expected Lifespan	Estimated Cost of Replacement Over 30 Years
Un-encapsulated plastic foam (Polystyrene)	Minimal upfront costs, widely available.	Animals can damage material by boring into the foam, creating hazards for aquatic species and microplastic pollution in rivers and oceans. Illegal in some areas.	$270	10 years	$1,080
Encapsulated plastic foam	Eliminates plastic foam pollution and can be made from recycled materials.	Can suffer damage from animals chewing, weep holes and boat contact.	$400	35 years	$400
New 55 Gallon Barrels	Float high in the water and are easy to transport. Can withstand harsh weather and ice.	Can be time-consuming to assemble at home. Raises docks to a higher level and can be unstable.	$215 for new barrels	40 years	$215
Used 55 Gallon Barrels	Reuse of existing materials, durable and very inexpensive/easy to find used. Can withstand harsh weather and ice	May come in varying condition if obtained used. Could potentially leach chemicals depending on former contents. Raises docks to a higher level and can be unstable.	$30 - $50 for reused barrels	30 years	$40
Pre-assembled Docks					
Air in Molded Polyethylene Cubes	Produced from High Density Polyethylene, which is recyclable and can be produced through a zero waste manufacturing process. Easy to assemble and come with a lifetime warranty from most sellers. Needs no additional dock surface.	Higher upfront costs. Can be unstable without additional dock support.	$850- $1,600	Lifetime warranty (50+ years)	$1,000
Aluminum Floating Dock with Resin Top (encapsulated foam)	Provides a complete kit for assembling docks without other materials.	High upfront costs. Subject to damage from animals and forms of contact.	$1,500	40 years	$1,335

Funding for this project provided by the Ocean Conservancy: International Coastal Cleanup

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Supporters

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Foam Pollution
This is a problem we can stop!