



Floating Docks & Marine Debris

Storm damage and general wear and tear can impact floating docks made from **polystyrene foam**.

This foam material breaks into small beads that can spread through our waterways into our beaches, marshes, wetlands and seafood. The good news is that it can be prevented!

Read on to learn what YOU can do to prevent foam pollution in our community.

What is unencapsulated polystyrene?

- Traditional dock floats composed of polystyrene foam are light, inexpensive, and wrapped in filter cloth which offers limited protection from the elements.
- This **unencapsulated** foam becomes brittle and breaks apart when exposed to wave energy, sunlight, and temperature fluctuations.
- Free-floating foam fragments and beads pollute critical coastal habitats like wetlands and beaches.



How do we manage polystyrene pollution?

- It is nearly impossible to remove pea-sized polystyrene beads, and the material is non-biodegradable, meaning it never goes away.
- Recycling and waste management facilities do not accept this kind of material.
- The only preventative solution for issues with pre-existing polystyrene foam is to remove larger foam fragments from waterways by hand.



Photos courtesy of Joe Huie

➤ **Wildlife**

33% of microplastics found in marine wildlife – including a number of commercially important seafood species – contain polystyrene beads.

➤ **Toxicity**

Foam materials contain chemicals including benzene, styrene, and ethylene, which can pose serious health risks when leached into water.

➤ **Physical Environment**

Foam debris has been found in every single debris removal location surveyed by Federation staff and crews. Most of it cannot be removed, and impacts persist.

Since August 2019, The Coastal Federation has **removed 656,000 lbs** of marine debris from waters in the Greater Topsail area

What is Encapsulated Polystyrene?

To prevent foam deterioration and pollution, a process known as **encapsulation** secures the floating foam material, protecting it from the elements.

A thick, plastic shell is thermally formed around the foam bricks, making them more resistant to impacts, impermeable to water, and a more rugged component for the floating dock system.



Benefits of Encapsulated Polystyrene

- ✓ Defends against foam breakdown and pollution
- ✓ Lasts longer and is more durable
- ✓ Saves dock owners replacement and repair costs in the long run
- ✓ Works with multiple dock styles and materials, including concrete and wood
- ✓ Prevents damage to the coastal environment and wildlife
- ✓ Compliant with potential new ordinances aimed to prevent pollution



Encapsulated Polystyrene Foam



Unencapsulated Polystyrene Foam

Learn more at nccoast.org/marinedebris